

USAF Aero Club Aircraft Test

Name: _____ Date Completed: _____

PRINT

Raw Score: _____ Date Corrected to 100% _____

I certify that all items were thoroughly debriefed and all questions answered.

Pilot Signature

Instructor Pilot Signature

PA-34-200T **SENECA II**

1. If a rapid power reduction is made on a slow final approach, a high sink rate might be experienced because:
 - a. P-Factor is reduced
 - b. the cowl flaps are open
 - c. induced airflow is reduced
 - d. torque is eliminated

2. During the take off run, the pilot should check the RPM, MP and oil pressure/temperature, in addition to checking the:
 - a. fuel-flow indicators and the airspeed indicator
 - b. exhaust gas temperature gauges and fuel selectors
 - c. flight instruments and the fuel quantity gauges
 - d. the flap position indicator and the cabin door

3. After lift off during a normal take off, the most desirable climb speed is:
 - a. between V_{xse} and V_{yse}
 - b. between V_{mc} and cruise climb speed
 - c. V_{yse}
 - d. V_y

4. During a normal take off, the point of gear retraction should occur:
 - a. as soon as possible after lift off
 - b. when a positive rate of climb has been established and insufficient runway remains for landing
 - c. as the airplane reaches a safe maneuvering altitude
 - d. just prior to the first power reduction

5. The most efficient and accurate method of adjusting the mixture at cruising altitude is through use of the:
 - a. EGT gauge
 - b. fuel-flow indicators
 - c. propeller synchronization system
 - d. power setting tables in the pilot's operating handbook

6. When should the pre-landing checklist be completed?
 - a. prior to entering the pattern
 - b. before turning base leg
 - c. during base leg
 - d. anytime before short final approach

7. The moment for the weight placed in a particular aircraft compartments calculated by multiplying the weight in pounds times its distance in inches from the airplane's:
 - a. mean aerodynamic chord
 - b. engine compartment
 - c. main landing gear
 - d. datum reference

8. What is the most dangerous condition for airplane weight and balance in terms of total weight and CG location?
 - a. over gross and CG forward of limits
 - b. over gross and CG aft of limits
 - c. under gross and CG forward of limits
 - d. under gross and CG aft of limits

9. The twin engine service ceiling is defined as the altitude at which
 - a. the airplane can no longer climb
 - b. the airplane can climb at 50 ft/min
 - c. the airplane can climb at 100 ft/min
 - d. the airplane needs service after climbing to this altitude

10. The maximum continuous power (at sea level) for the continental TSIO-360E engine is:
 - a. 300 HP
 - b. 200 HP
 - c. 215 HP
 - d. 310 HP

11. The electrical power for PA-34-200T (N39522) comes from:
- a. one 12 volt battery and two 65 amp alternators
 - b. one 12 volt battery and two 65 volt generators
 - c. two 12 volt batteries and two 14 volt alternators
 - d. two 12 volt batteries in-series and two 14 volt generators
12. How many gallons of usable fuel does the Seneca carry?
- a. 93 Gals.
 - b. 98 Gals.
 - c. 123 Gals.
 - d. 128 Gals.
13. The landing gear operational speed is:
- a. 105 KIAS
 - b. 129 KIAS
 - c. 136 KIAS
 - d. 140 KIAS
14. On takeoff, the landing gear should be retracted before an airspeed of _____KIAS.
15. Define "Maximum Zero Fuel Weight"

16. Which engine is the "Critical Engine"? Why? _____

17. Where are the cross feed drains located? _____

18. What is the maximum RPM and Manifold settings used for takeoff power?
_____RPM _____ Inches
19. The "OVERBOOST" indicator lights on the annunciator panel will illuminate at approx._____ Hg. Manifold pressure
20. What are the cruise climb setting and speed?
_____MP _____RPM _____KTS

21. List the maximum speed allowed for the following flap settings.
10° _____ KIAS, 25° _____ KIAS, 40° _____ KIAS
22. How is asymmetrical thrust eliminated during takeoff and climb.

23. The propellers cannot be feathered below _____ RPM.
24. What prevents feathering during engine shutdown? _____

25. If the landing gear is in transit, it is not advisable to do what? _____

26. Emergency gear extension MUST not be attempted at airspeed in excess of _____ KTS.
27. If the gear selector switch is placed in the "DOWN" position and the landing gear lights are not illuminated, what would you suspect? _____

28. When one engine is inoperative and the fuel selector for the operating engine is on "X FEED" the selector for the inoperative engine MUST be in what position?

29. How are the auxiliary fuel pump system lights function tested?

30. What would indicate a malfunction of a pressure pump (VAC SYS)?

31. Where is the Pitot-static system drains located?

32. Where are the Manifold pressure lines drains located?

33. The radio master switch has three positions, OFF, NORMAL and AUXILIARY, What does the AUX position provide?

34. List the warning lights on the annunciator panel.

35. The combustion heater uses fuel from the _____ tank at a rate of approx. _____GPH.

36. The stall warning indicator is activated by two lift detectors on the leading edge of the left wing. When would the inboard and outboard detectors be activated?

Inboard _____ Outboard _____

37. What would be the proper cool down time for the turbo-charged engines and when would this time start?

_____ Minutes _____

38. What are the following weights?

- a. Basic empty weight _____
- b. Maximum gross weight _____
- c. Useful load _____
- d. Maximum landing weight _____
- e. Zero fuel weight _____

39. Calculate a weight and balance, for a training flight, based on the following data:

	WEIGHT	MOMENT
BEW	3080	265010
Pilot & Passenger	425	_____
Fwd baggage	40	_____
Aft Baggage	0	_____
<i>Fuel:</i>		
Full _____gals	_____	_____

Weight _____ C.G. _____ Moment _____

40. Is this A/C within the CG limits? _____ If not, what must be done to bring within limits. Please explain and recalculate below, if required.

BEW	3080	265010
Pilot & Passenger	425	_____
Fwd Baggage	_____	_____
Rear Baggage	_____	_____
Fuel	_____	_____
Weight _____	C.G. _____	Moment _____

41. A two hour flight is planned to King Salmon, using the following data, complete the weight and balance as necessary. Explain any problems with this.
 Pilot and passenger weights are: Pilot-200, Paxs 200, 190, 190, and 150 lbs.
 Total baggage - 140 lbs.

	WEIGHT	MOMENT
BEW	3080	265010
Pilot and Pax	_____	_____
Center seats	_____	_____
Rear seat	_____	_____
Fwd baggage	_____	_____
Rear Baggage	_____	_____
Fuel _____gals	_____	_____
Weight _____	C.G. _____	Moment _____

Remarks: _____

42-49. To answer questions 42 through 49, use the appropriate charts with the following conditions from EDF to AKN (King Salmon):

	EDF	AKN
Temperature.	30°F	40°F
P.A.	S.L.	S.L.
Takeoff weight	4570	Landing _____
Rwy conditions:	Dry	Wet - RCS Fair
Wind	5 kts tailwind	5 kts headwind
Distance	290 NM	
Alt	10,000 Ft - OAT 10° F	
Power	- 75%	
Ground speed	150 Kts	

42. Accelerate and stop distance (Standard) _____ ft.
43. Take off ground roll (Normal) _____ ft.
44. Take off distance (Normal) _____ ft.
45. Time, fuel and distance to climb F _____ T _____ D _____
46. True airspeed @ altitude _____ kts.
47. Landing Weight _____ lbs.
48. Landing distance (normal, standard wheels) _____ ft.
49. Landing ground roll _____ ft.
50. List the following V speeds with their proper definition.
 - a. V_{so} -speed _____ -definition _____
 - b. V_{s1} -speed _____ -definition _____
 - c. V_a -speed _____ -definition _____
 - d. V_{xse} -speed _____ -definition _____
 - e. V_{yse} -speed _____ -definition _____
 - f. V_x -speed _____ -definition _____
 - g. V_y -speed _____ -definition _____
 - h. V_{mc} -speed _____ -definition _____
 - i. V_{no} -speed _____ -definition _____
 - j. V_{le} -speed _____ -definition _____
 - k. V_{lo} -speed _____ -definition _____
 - l. V_{fe} -speed _____ -definition _____
 - m. V_{sse} -speed _____ -definition _____
 - n. V_{ne} -speed _____ -definition _____
 - o. V_r -speed _____ -definition _____

SENECA II EMERGENCY TEST
CLOSED BOOK

1. Immediately following an engine failure, or any abnormal situations, the pilot's primary concern is to:

- A. identify the inoperative engine
- B. feather the propeller
- C. maintain aircraft control
- D. apply maximum power

2. What procedures should you follow if you lose an engine on short final?

- A. Full power and feather props.
- B. Continue landing, power as required, gear down.
- C. Go around.
- D. Retard power on good engine.

3. List from memory the procedures following an engine failure during flight, above 66 KIAS.

- 1. _____
- 2. _____
- 3. _____
- 4. _____

4. List the steps for engine fire on ground - engine not started.

- 1. _____
- 2. _____
- 3. _____
- 4. _____

5. List the emergency descent procedures.

- 1. _____
- 2. _____
- 3. _____
- 4. _____
- 5. _____

Continued on next page

6. List the steps for manual extension of the Landing Gear.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____