EDWARDS AFB AERO CLUB
Subject: BE-55 Aircraft Examination Reference: Beechcraft Pilot's Operating Handbook
Dated: 7 January 1998

1. The Beechcraft Baron is powered by

   a. two Continental IO-470L Fuel Injected air cooled six cylinder engines rated at 260 HP
   b. Continental IO-470L Fuel Injected air cooled six cylinder engines rated at 260 HP on the left and a Continental IO-470R Fuel Injected air cooled six cylinder engines rated at 260 HP on the right
   c. two Lycoming IO-470 fuel injected air cooled six cylinder engines rated at 300 HP derated to 260 HP
   d. dual quad, four speed, positraction, 409

2. Beechcraft N56AF has total fuel capacity of _____ and total usable fuel of _____ .

   a. 142 gallons; 106 gallons
   b. 112 gallons; 106 gallons
   c. 142 gallons; 136 gallons
   d. 136 gallons; 112 gallons

3. Do not take off if the main tanks are _____ .

   a. less than full
   b. have less than 13 gallons each or indicate in the yellow arc
   c. have less fuel than the auxiliary tanks
   d. filled above the yellow arc on the gages

4. The crossfeed position on the fuel selector _____ .

   a. is used to balance the tanks on long duration flights
   b. should not be used if either tank gage indicates in the yellow arc
   c. is only prohibited from during takeoff and landing
   d. is to be used during emergency conditions and in level flight only

5. The most important aspect of engine failure is the necessity to maintain lateral and directional control, if the airspeed is below ___ knots, _____ .

   a. 78; reduce power on the operative engine as required to maintain control
   b. 84; increase throttle, propeller, and mixture full forward on the operative engine
   c. 78; roll bank into the good engine and lower the nose to increase airspeed
   d. 84; reduce power on the operative engine as required to maintain control

6. The landing gear manual extension is designed to _____ .

   a. extend or retract the landing gear as required
   b. only to lower the landing gear
   c. use an alternate hydraulic system to lower the gear
   d. lower the main landing gear only, the nose gear falls into place by gravity

7. If the cabin is not locked, it may come unlatched in flight. If the door comes open after takeoff, _____ .

   a. the aircraft does not have enough power to overcome the drag and control will likely be lost
   b. it is likely to depart the aircraft and could cause structural and personal damage
   c. the door will train in a position 3 to 4 inches open. Flight characteristics will not be affected except for a reduction in performance
   d. pull the door shut using the storm window for leverage and be sure to get the top latch latched

8. The maximum demonstrated crosswind component is _____ knots.

   a. Undefined
   b. 84
   c. 25
   d. 22

9. The alternator control switches must be turned OFF prior to connecting an auxiliary power unit for starting, battery charging or electrical equipment check-out. This procedure _____.

   a. protects the voltage regulators and system electrical equipment from voltage transients
   b. is necessary to prevent over charging the batteries
   c. protects the magnetos from receiving power and possible damage
   d. prevents the aircraft from grounding through the power unit and damaging critical component

10. In the event of an overprime condition, place the mixture in _____ and _____ the throttle, operate the starter to remove excess fuel.

    a. IDLE CUT-OFF; CLOSED
    b. IDLE CUT-OFF; OPEN
    c. FULL RICH; OPEN
    d. FULL RICH; CLOSED

11. Do not move the propeller control lever aft past the detent when exercising the propellers in their governing range. To do so will

    a. Require the engine shutdown, cooled, feathering accumulator recharged, and the propeller limiters reset.
    b. Use up the available charge in the unfeathering accumulators, imposing high stress on the governing mechanism.
    c. Allow the propeller to overspeed, exceed the maximum RPM limits, and impose high stresses on the engine crank shaft.
    d. Allow the propeller to change rapidly to the full feathered position, imposing high stresses on the blade shanks and engine.

12. Baron 56 Alpha Fox-trot is equipped with pneumatic boots on the leading edges for ice protection, with this system installed, the _____ .

    a. aircraft may be flown into areas of forecast light to moderate icing
    b. aircraft stall speed is lowered if accumulations of ice are on the wing surfaces
    c. pilot must exit icing conditions as soon as possible if ice accumulates on the airplane
    d. pilot can rely on the system to shed any ice that might be encountered

13. If the Emergency Static Air Source is desired for use, the pilot should _____ .

    a. break the glass on the VSI for the proper static pressure
    b. not attempt to use the Emergency Static when flying solo
    c. rely only the instruments on the left side of the instrument panel as the right side instruments are not connected to the emergency static source
    d. refer to the Performance section of the POH to obtain airspeed and altimeter calibration

14. For practicing maneuvers such as the Demonstration Of V_{MCA}, simulated engine loss below 84 KIAS is _____ .

    a. prohibited
    b. restricted to a minimum of 3,000 feet AGL
    c. not advisable
    d. the only way to get the full effect of the critical engine

15. Figure the weight and balance, center of gravity and determine if the aircraft is within limits, given the following:
    Baron N56AF, pilot weighing 160, copilot weighing 180, rear passengers weighing 320 combined, 160 pounds of baggage in the rear baggage area, and full fuel tanks

    a. 5,107 pounds @ 4402.76; Not within limits, exceeds maximum gross weight
    b. 5,011 pounds @ 4079.80; Within limits, at forward limit
    c. 5,086 pounds @ 4387.01; Not within limits, aft of the aft CG limit
    d. 4,996 pounds @ 4161.80; Within limits, at the aft limit

16. Figure the weight and balance, center of gravity and determine if the aircraft is within limits, given the following:
    Baron N56AF, pilot weighing 190, copilot weighing 180, no rear passengers, no baggage, full main tanks, and empty auxiliary tanks

    a. 4,285 pounds @ 34315.95; Within limits
    b. 4,657 pounds @ 3703.90; Not within limits
    c. 3,621 pounds @ 2820.30: Within limits
    d. 5,111 pounds @ 3703.90; Not within CG limits

17. With the following conditions: temperature of 85^0; altimeter 30.00”; at Edwards AFB; and

5,000 lbs gross weight, what is the takeoff roll?

a. 1800'
b. 1950'
c. 2300'
d. 3150'

18. With the following conditions: temperature of 85^0; altimeter 30.00"; at Edwards AFB; and 5,000 lbs gross weight, what is the Acceleration/Stop Distance?

a. 3600'
b. 3950'
c. 4350'
d. Not Available

19. With the following conditions: temperature of 85^0; altimeter 30.00"; at Edwards AFB; and 5,000 lbs gross weight, what is the Take-off Climb Gradient that can be expected with one engine inoperative?

a. 0.4%
b. 1.4%
c. 2.4%
d. 3.4%

20. With the data presented in the previous question, what would be the expected rate of climb and fuel flow?

a. 240 fpm; 11.9 psi
b. 440 fpm; 14.8 psi
c. 40 fpm; 13.6 psi
d. 240 fpm; 13.6 psi

21. With one engine inoperative, at 4,700 pounds and 10^0C, what is the Service Ceiling?

a. 6,700
b. 7,100
c. 7,900
d. 8,400

22. On a standard day, cruising at 9,500, 2300 RPM, what is the predicted TAS and GPH/Engine?

a. 208; 11.9
b. 177; 11.1
c. 177; 22.4
d. Unable, in shaded area of Cruise Power Setting Chart

23. What is the Landing Distance at 5,000 pounds gross weight, 85^0 F, and PA of 4,000 feet?

a. 1,920
b. 1,750
c. 1,450
d. Not within Performance Data Criteria

24. To adjust the rudder pedals, _____ .

a. press the spring-loaded lever on the side of each pedal arm and move the pedal as desired
b. pull the T-shaped handle between the pedals out and adjust the pedals to the desired position
c. the seat must be moved forward or aft for the desired position away from the pedals
d. the pilot's must take what they get, the pedals are not adjustable

25. If one pilot is applying brake pressure while the other pilot applies overriding pumping action, the result could be _____ .

a. locking of the main wheel brakes and potential failure of the tires
b. the loss of braking action on the side which continuous pressure is being applied
c. unequal braking on the left and right side of the aircraft with a potential ground loop
d. the brakes will respond to the first command received and stop as commanded by the pilot

26. The back windows are to be closed before takeoff and during flight, when closing the windows, ascertain that the _____ is securely in place.

a. over-center locking device
b. window frame
c. emergency release pin
d. emergency hatch ejection pin

27. The propellers are equipped with two blade full feathering, constant speed, propellers. Springs aided by _____ move the blades to _____ pitch.

a. feathering accumulators, low
b. feathering accumulators, high
c. counter-weights, low
d. counter-weights, high

28. In high ambient temperatures, the fuel boost pumps should be used on low pressure for ground operation, takeoff, and climb. The fuel boost pump draws fuel _____ .

a. only from the main tanks
b. from any tank within the system
c. only when crossfeed is used
d. from the aux tanks and transfers it to the mains

29. Two 50 -ampere, 24 volt, belt driven alternators are controlled by _____ .

a. a Delco Remy double breaker point regulator

b. individual loadmeters on the instrument panel
c. two transistorized voltage regulators
d. a paralleling relay connecting the voltage regulators

30. For maximum heat, the CABIN AIR control can be pulled _____ .

a. out to increase the temperature of the heated air in the cockpit
b. slightly out to divert the incoming air to the defroster air ducts
c. out more than halfway to increase the air flow in the cockpit
d. partially out to the reduce the volume of incoming cold air

31. Deice boots are designed to remove ice _____ .

a. as it accumulates on the wings and should be on prior to entering icing
b. after it has accumulated, rather than prevent its formation
c. after 1/2 to 1 inch of ice accumulates rapidly on the wing
d. before it has a chance to accumulate on the wing

32. When towing the airplane, there are certain percautions that should be taken, these include; do not attempt to tow the aircraft from the tail tiedown ring, limit turns to prevent damage to the nose gear, do not exert force on the propellers, control surfaces, and _____.

a. ensure the rudder lock is removed
b. someone must operate the brakes
c. ensure the main struts are not over inflated
d. disconnect the rudder linkage

33. If chocks are installed and the aircraft is to be left unattended, the brakes should be

a. left off to prevent inadvertent towing of the aircraft with the brakes engaged.
b. left off as changing ambient temperature may change the brake pressure.
c. left on in case the chocks are removed before the cockpit is occupied.
d. left on as a backup to the chocks.

34. There are ___ fuel drains to purge any water from the system

a. two
b. four
c. six
d. eight

35. When the aircraft is on the ground with full tanks, ____ inches of the main gear struts piston should be exposed.

a. one
b. two and one quarter
c. three
d. four and one half

36. If the Baron is flown into icing conditions, the pilot must maintain _____ KIAS as a minimum airspeed when another airspeed is not specified in the manual.

a. 84

b. 101
c. 130
d. 140

37. Loss of power from one engine represents a 50% loss of horsepower but, climb performance is reduced by _____%.

a. 20
b. 50
c. 70
d. 80

38. Loss of power from one engine reduces airflow over the wing causing a roll _____ which must be balanced with the aileron.

a. toward the “dead” engine
b. away from the “dead” engine
c. that blanks out the rudder
d. moment about the longitudinal axis

39. Airspeed is the key to safe single engine operations, what are the descriptions of: V_{MCA}; V_{SSE}; V_{YSE}; V_{XSE} **?**

1. Airspeed below which directional control cannot be maintained
2. Airspeed that will give the best single engine rate-of-climb
3. Airspeed that will give the steepest angle-of-climb with one engine out
4. Airspeed below which an intentional engine cut should never be made

a. $V_{MCA} = 4$ $V_{SSE} = 3$ $V_{YSE} = 2$ $V_{XSE} = 1$
b. $V_{MCA} = 1$ $V_{SSE} = 4$ $V_{YSE} = 3$ $V_{XSE} = 2$
c. $V_{MCA} = 1$ $V_{SSE} = 4$ $V_{YSE} = 2$ $V_{XSE} = 3$
d. $V_{MCA} = 4$ $V_{SSE} = 1$ $V_{YSE} = 2$ $V_{XSE} = 4$

40. Engine out minimum control speed generally _____ with altitude while the single engine stall speed _____.

a. increases; increases
b. decreases; decreases
c. decreases; remains the same
d. Increases; remains the same