

Wings of Carolina Flying Club
Cessna 172 SP Aircraft Type Checkout and Currency Quiz

Pilot _____ Member Number _____ Date _____

Instructor _____ Score _____

Instructors: Please note the final score on the checkout form and file the quizzes in the Pilot Records folder.

Information required to correctly answer the following questions may be found in the Cessna 172 S/SP POH and AFM, the WCFC SOPs, and club checklists, documents and instructional practices.

1) The engine in a Cessna 172 SP is a

- A. Continental O-300
- B. Lycoming IO-320
- C. Lycoming O-235
- D. Lycoming IO-360

2) The rated power of the engine as installed in a Cessna 172 SP is

- A. 172 HP
- B. 14.2 lbs/hp
- C. 200 BHP
- D. 180 BHP

3) The quantity of oil in the engine for flight should be

- A. 4 quarts minimum, 6 quarts maximum
- B. 8 U.S. quarts
- C. 6 quarts minimum, 8 quarts maximum
- D. 7.5 pounds minimum, 10 pounds max

4) The type of oil normally in the engine should be

- A. SAE rated SE (severe environment) multi-viscosity
- B. Aviation grade ashless dispersant
- C. High quality automotive type high detergent (HD) motor oil
- D. Aviation grade "straight mineral oil"

5) The correct type of fuel for the C172SP is

- A. Aviation 80, 100LL, or 100/130 fuel
- B. Automotive high test
- C. Aviation 100LL or 100/130 fuel (100LL preferred)
- D. Aviation 100LL (light blue) or 100 fuel only

Cessna 172 SP Aircraft Type Checkout and Currency Quiz

- 6) The total usable capacity of all the fuel tanks in the Cessna 172 SP aircraft is
- A. 56.0 U.S. gallons
 - B. 53.0 U.S. gallons
 - C. 26.5 U.S. gallons
 - D. 28.0 U.S. gallons
- 7) The usable quantity of fuel when both left and right tanks are fueled to the bottom of the filler indicator tabs is:
- A. 53 U.S. gallons
 - B. 35 U.S. gallons
 - C. 48 U.S. gallons
 - D. 44 U.S. gallons
- 8) At a pressure altitude of 6000 feet under standard temperature conditions, leaned as recommended in the POH, at 65% power the Cessna 172 SP burns approximately
- A. 10.6 gallons per hour
 - B. 9.0 gallons per hour
 - C. 10.5 gallons per hour
 - D. 10.4 gallons per hour
- 9) The maximum demonstrated cross-wind component for the C172SP is
- A. 12 knots
 - B. 15 knots
 - C. 17 knots
 - D. 25 knots
- 10) The maximum gross takeoff weight for the WCFC C172SP aircraft is
- A. 2558 pounds
 - B. 2208 pounds
 - C. 2550 pounds
 - D. 2200 pounds

Cessna 172 SP Aircraft Type Checkout and Currency Quiz

- 11) WCFC SOPs (for all except student pilots) would require that cross-country VFR flights not be planned with legs longer than how many hours and minutes. Round down (to be conservative) to the nearest quarter hour. Assume the fuel consumption specified in question 8 above and assume starting fuel to the tabs. .
- A. 4 hours and 45 minutes
B. 4 hours and 15 minutes
C. 2 hours and 45 minutes
D. 3 hours
- Extra credit: How many hours and minutes with club reserves would full tanks allow? Again, please round down to the nearest quarter hour.
- E. 5 hours and 45 minutes
F. 4 hours and 45 minutes
G. 3 hours and 45 minutes
H. 4.5 hours
- 12) Given the following loadings, are the Normal category weight and balance limitations met for a WCFC Cessna 172 SP N614SP? (Assume BEW=1659.4, Arm=39.277, Moment=65177. These are the actual W&B numbers without wheel pants.)
- Front seats: 145 lb pilot and 45 lb child passenger
 Rear seats: one 200 and one 190 lb passenger
 Fuel: fueled to tabs
 Baggage area 1 (forward of baggage door latch): 50 lbs
 Baggage area 2 (aft of baggage door latch): 50 lbs
- A. No, the airplane is over the maximum ramp weight
B. Yes. Both the weight and the CG are within limits
C. No. The weight is within the maximum ramp weight but the CG is too far aft
D. No. The weight is within limits, but the CG is too far forward
- 13) What would be a minimally inconvenient loading change that would suffice to bring this aircraft within limits?
- A. No change is necessary.
B. Leave 50 lbs of baggage behind.
C. Offload at least one passenger.
D. Ask the 45 pound child in the front seat and the 200 pound rear seat passenger to exchange seats.
- 14) V_{fe} , the maximum flap extension speed, for 10 degrees flaps in the C172SP is:
- A. 110 KIAS
B. 163 KIAS
C. 129 KIAS
D. 85 KIAS

Cessna 172 SP Aircraft Type Checkout and Currency Quiz

15) According to the WCFC SOPs, the minimum field length allowed for the C172 SP is

- A. 1500 feet
- B. 2000 feet
- C. 2500 feet
- D. any field length allowed by the performance tables in the C172 SP POH

16) Best rate of climb speed for the C172SP at gross weight at sea level is

- A. 74 KIAS
- B. 72 KIAS
- C. 75 KIAS
- D. 85 KIAS

17) Best angle-of-climb speed for the C172SP at gross weight at sea level is

- A. 85 KIAS
- B. 80 KIAS
- C. 62 KIAS
- D. 67 KIAS

18) Stall speed, power-off, without flaps for the C172SP is

- A. 53 KIAS
- B. 53 KCAS
- C. 48 KCAS
- D. 40 KIAS

19) In the event of a complete engine failure in flight, what is the best glide speed for the C172SP?

- A. 105 KIAS
- B. 95 KIAS
- C. 98 KIAS
- D. 68 KIAS

20) In the event of an engine failure in flight, with the recommended best glide speed established, the prop windmilling, and no wind, what height above terrain would be required for the C172 to glide 12 miles?

- A. 5000 feet
- B. 7000 feet
- C. 8000 feet
- D. 12000 feet

Cessna 172 SP Aircraft Type Checkout and Currency Quiz

- 21) Which of the following is true about the C172SP electrical system?
- A. 28 volt direct current electrical system powered by a 60 amp alternator and a 24 volt battery located on the firewall
 - B. 24 volt direct current electrical system powered by a 60 amp alternator and a 24 volt battery.
 - C. A 12-volt system with a 60 amp alternator and a 12 volt negative-ground battery located in the engine compartment
 - D. It is a 24-volt system with a 24 amp alternator and a battery located under the rear passenger seat similar to the Piper Warrior.
- 22) If the "low voltage" warning light illuminates in flight, what action should be taken?
- A. None. The annunciator is advisory in nature. Report it to maintenance (squawk it) after the flight
 - B. Alternator off / electrical equipment off / terminate the flight immediately
 - C. Avionics master off / alternator (field) circuit breaker in / master off / master on
 - D. Alternator field circuit breaker off / Magneton off / monitor ammeter for discharge condition
- 23) Spare fuses for the power distribution module are located
- A. Inside the module which is located on the forward side of the firewall
 - B. Beneath the right-side underpanel
 - C. In the glovebox compartment
 - D. There are no fuses in the airplane – all circuit breakers are of the "push to reset" or "switch/breaker" type.
- 24) When the engine is operating and the master switch is ON, the ammeter, located on the lower left side of the instrument panel, indicates
- A. The voltage supplied to the primary bus by the alternator
 - B. The voltage of the battery
 - C. The battery discharge rate if the alternator is not functioning
 - D. The current supplied by the generator to the primary bus and battery
- 25) When starting a hot (recently-operated) C172SP in hot weather
- A. The injector nozzle lines remain full of fuel
 - B. Priming will be required to overcome fuel vaporization
 - C. Start with both throttle and mixture fully open to assure an adequate flow of cool, non-vaporized fuel
 - D. Starting is facilitated by advancing the mixture to 1/3 open as soon as the engine starts and then advancing to full rich as power is developed.
- 26) The recommended procedure for starting the C172SP engine when it remains warm is:
- A. Throttle open 1/4 inch; mixture full rich; start
 - B. Auxiliary fuel pump on; throttle open 1/4 inch; mixture full rich momentarily then to idle cutoff, start; advance mixture after start
 - C. Auxiliary fuel pump on; mixture full rich momentarily then idle cutoff; auxiliary fuel pump off; throttle open 1/4 inch; start; advance mixture after start
 - D. Auxiliary fuel pump off; throttle open 1/4 inch; mixture idle cutoff; start; advance mixture after start

Cessna 172 SP Aircraft Type Checkout and Currency Quiz

- 27) If over-priming may have flooded the engine, the recommended start procedure is:
- A. Close the throttle fully, move the mixture to idle cut-off, leave the electric fuel pump off and crank. When the engine fires, advance the throttle one-half inch and advance the mixture.
 - B. Turn off the auxiliary fuel pump, open the throttle from $\frac{1}{2}$ to full open, and crank with the mixture full lean. When the engine starts, advance the mixture to full rich and retard the throttle to idle speed.
 - C. Open the throttle fully, move the mixture to idle cut-off, turn the electric fuel pump on and crank. When the engine fires, advance the mixture and retard the throttle.
 - D. Open the throttle approximately one-half inch, move the mixture to full rich, turn the electric fuel pump off and crank. When the engine fires, turn off the electric fuel pump and set the throttle for 1000 rpm.
- 28) If you discover pink fuel in the tanks of the C172SP you should
- A. Refuel with the same type of fuel if possible. Do not mix fuel grades
 - B. Refuel with only light blue aviation fuel
 - C. Not fly the aircraft until the fuel has been drained and replaced
 - D. Flight the aircraft, but closely monitor engine temperatures and any evidence of detonation
- 29) The maximum combined weight capacity for Baggage Area 1 and Baggage Area 2 is
- A. 50 pounds
 - B. 120 pounds
 - C. 545 pounds
 - D. 147 pounds
- 30) If the engine-driven fuel pump should fail in flight, the pilot should:
- A. Select different power settings and enrichen the mixture
 - B. Reduce engine power immediately and select a suitable forced landing field
 - C. Lean the mixture to the recommended lean setting for cruise flight
 - D. Immediately turn on the auxiliary fuel pump to restore engine power
- Note: From POH 3-20: "Failure of the engine-driven fuel pump will result in an immediate loss of engine power, similar to fuel exhaustion or starvation ... "
- 31) The fuel-injection system can become susceptible to fuel vapor formation during ground operations
- A. When the ambient air temperature is above 80F
 - B. When the temperature is above 70F with high humidity
 - C. When the engine is operated above 1800 rpm
 - D. When the auxiliary fuel pump is left on during ground operations
- 32) A pilot observing an altimeter that does not respond to changes in altitude should
- A. Break the case of the vertical speed indicator to admit static air to the system
 - B. Suspect a pitot tube blockage and turn on the pitot heat
 - C. Turn on the alternate static source and expect maximum airspeed variation of 4 knots from normal and 30 feet of altitude over the normal range of flight
 - D. Suspect a broken or leaking static line and squawk it for maintenance

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33) After each engine shutdown, in preparation for fueling the C172SP, the fuel selector should be placed in which position?

- A. The LEFT position
- B. The RIGHT position
- C. The BOTH position
- D. The LEFT or RIGHT position but not the BOTH position

34) Abrupt use of controls is prohibited above what speed when operated in the utility category?

35) Takeoffs and landings should be made with the fuel selector in what position?

36) Operation on either LEFT or RIGHT fuel tanks is limited to

- A. Taxi only
- B. Level flight only
- C. Flight above 3000 MSL
- D. Cruise and landing. Takeoff must be made in the BOTH position

37) The flap limitation range for takeoff is

- A. 0 degrees flaps (no flaps)
- B. 10 degrees flaps
- C. 10 to 30 degrees flaps
- D. 0 to 10 degrees flaps

38) The flap limitation range for landing is:

- A. 0 to 30 degrees flaps
- B. 0 to 10 degrees flaps
- C. 0 to 20 degrees flaps
- D. 30 degrees flaps

39) What would indicate that the alternator is producing an excessive charge?

40) What is the recommended action for an excessive rate of charge and what harm might be done?

41) If water is found when sumping fuel the normal preflight procedure requires

42) Describe the recommended starter duty cycle

43) Describe leaning for ground operations

44) According to the C172SP checklist in the POH the auxiliary boost pump should be ON for:

- A. Priming, starting, takeoff and landing
- B. Priming, takeoff and landing
- C. Priming and starting
- D. Priming only

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45) We are taking the C172SP to the mountains. We will be landing and departing the private airport at Boone, NC, located in the northwest corner of the NORTH side of the Charlotte Sectional. Since we are unfamiliar with the airport, we will assume that we may have the proverbial 50-foot obstacles to clear on landing and takeoff. We are at maximum gross weight. Assume standard temperature and a hot summer day with 30-degree Celsius temperature. We will use the recommended short field technique found in the POH for both landing and takeoff and have calm winds and a paved, level runway. What would our landing and takeoff distances be? (Note that club regulations would prohibit use of this runway. We are not concerned here with club regulations pertaining to runway length – only with performance considerations.)

Landing? _____

Takeoff? _____

Please provide the C172SP speeds (in KIAS) that correspond to the following definitions:

46) The speed limit that may not be exceeded at any time

47) The speed that should not be exceeded except in smooth air and then only with caution

48) The maximum speed at which full or abrupt control movements may be used without overstressing the airframe

At 2550 pounds maximum takeoff weight? _____

At 2200 pounds – limit for utility category operations? _____

At 1900 pounds? _____

49) The maximum speed at which the flaps may be extended to the 30-degree position

50) If the vacuum gauge indicates normal suction in the green range (4.5 to 5.5 inches of mercury) and an amber "L VAC" message is illuminated on the annunciator panel

- A. The annunciator panel is providing advance warning of a "low vacuum" condition that will soon develop and cause the vacuum instruments to fail
- B. The vacuum pump has failed but the electrical standby vacuum pump is providing adequate vacuum
- C. Output of the left vacuum pump has fallen below 3.0 inches of mercury
- D. The annunciator panel is in error because the vacuum gauge indicates adequate vacuum to the instruments