

Private Pilot Practical Test Expanded Briefing

Aircraft Documents

- 1) What documents must be on board the aircraft before flight operations? Where are they normally located? Do any of these documents expire?
- 2) Which of the documents is not an FAA requirement?
- 3) Must the engine and aircraft maintenance records be carried on board the aircraft?
- 4) Locate the last annual inspection in the aircraft maintenance records and determine when the next inspection is due.
- 5) If the engine maintenance records does not reflect a current annual inspection but the aircraft maintenance record does, is the aircraft legal for operation?
- 6) When is a 100-hour inspection required? What is an A.D.? Are there any recurring A.D.'s for your aircraft? What is a S.T.C.? Does your aircraft have an S.T.C.?
- 7) If the aircraft has a transponder, locate its last inspection in the logbook. When is its next inspection due?
- 8) If an airplane is equipped with a transponder and the aircraft logbook indicates the inspection has expired, can the transponder still be used?
- 9) Describe the items that you can use to determine limitations of the aircraft? Where can you find the aircraft's empty weight?

Airplane Systems

- 1) What is the minimum grade of fuel required for your aircraft? What color is the fuel?

- 2) In the event that the specific grade of fuel is not available, should you use a lower or higher grade of fuel than normal grade? Why? Can you burn Jet A fuel in your aircraft?
- 3) What is the total fuel capacity of the aircraft? How many gallons are unusable?
- 4) Where is the fuel selector located? What is the correct procedure for switching tanks, if appropriate?
- 5) What is the purpose of an auxiliary fuel pump? When should it be used?
- 6) What is the purpose of the fuel tank quick drains? How many are there? Where are they located?
- 7) What is the purpose of the fuel tank vent?
- 8) When should you check the tanks for fuel contamination?
- 9) What are some of the ways to reduce the possibility of fuel contamination? What is the electrical system voltage when the alternator is running? What is the battery voltage?
- 10) Does your aircraft have a generator or an alternator? Does it produce alternating current (AC) or direct current (DC)? What are the basic advantages of an alternator over a generator?
- 11) What is the purpose of the voltage regulator? How do you reset the voltage regulator circulator?
- 12) What is the purpose of the voltage regulator?
- 13) How do you detect alternator or generator failure?
- 14) Why is an ammeter or load meter installed on the aircraft, and what does each indicate?

- 15) Is the electrical system protected by circuit breakers or fuses?
- 16) What is the procedure for resetting a tripped circuit breaker?
- 17) Describe how you should use the primer during cold and warm weather operations.
- 18) After priming the engine during cold weather start, is it advisable to “pump” the throttle during engine start-up?
- 19) During a cold weather start, the oil pressure gauge does not indicate oil pressure for nearly 30 seconds. What should you do if the magneto check fails, what action would you take?
- 20) During the magneto check before takeoff, when you switch from BOTH to the RIGHT position, the RPM remains the same as it was in the BOTH position. Does this mean the aircraft has an exceptionally good magneto? Explain.
- 21) Is it possible for carburetor icing to develop during a taxi operation? Explain.
- 22) Should you normally use carburetor heat during takeoff and/or cruise? Explain.
- 23) What might cause engine roughness during run up at a high elevation field (5,000 ft. MSL) during hot weather? What action is appropriate in this situation?
- 24) What is the first indication of carburetor icing on an airplane with a fixed-pitch or constant-speed propeller?
- 25) What methods should you use to prevent engine overheating during climbs?
- 26) What methods should you use to achieve a lean fuel mixture during cruise flight?
- 27) Define the term “Basic Empty Weight.”
- 28) Is it acceptable to use the empty weight posted in the pilot’s operating handbook sample problem for weight and balance computations? Explain.

- 29) What is the “reference datum”? Where is it located on the aircraft?
- 30) Define the term “allowable center of gravity (or moment) range.”
- 31) What is the center of gravity (or moment) range for your training airplane at its maximum takeoff weight?
- 32) Compute a weight and balance problem for the actual flight test conditions. Does the center of gravity (or moment) fall within limits?
- 33) What flight characteristics may you expect if the aircraft is loaded with the CG too far aft?
- 34) What is the maximum allowable baggage weight if the CG is within the center of gravity envelope?
- 35) How do you know if the weight and balance data of the aircraft have been changed? How is it the change and nature of the modification recorded?

Performance

- 1) Indicate the 5 to 10 factors that can affect take off distance.
- 2) Compute the density altitude given the following factors:
 - 1) Field Elevation= 5,000 feet
 - 2) Altimeter=30.12 in. Hg
 - 3) Outside Air Temperature= 35 deg. Celsius
- 3) Given the following conditions, compute the take off distance.
 - a. Runway= Hard surfaced
 - b. Flaps=Up
 - c. Aircraft Weight= Maximum take off

- d. Headwind= 10 kts.
 - e. Field elevation=4,000 ft.
 - f. Outside Air Temperature= 29 deg. Celsius
 - g .Turf field
- 4) Given the following conditions, determine the landing distance.
- a. Field elevation= 3,000 ft.
 - b. Outside air temperature= 10 deg. Celsius
 - c. Headwind= 10 knots
 - d. Aircraft weight=minimum loading
- 5) Assume you depart an airport that is at sea level and climb to a cruising altitude of 8,500 feet. Calculate the time, fuel and distance you will need to complete the climb.
- 6) During a short field landing, what technique provides maximum braking effectiveness?
- 7) When landing, what technique provides maximum landing roll? What should you expect on a runway covered with water, snow or slush?
- 8) Define the angle-of-climb and best rate of climb airspeed. What are these airspeeds for your aircraft? How do these change with altitude?
- 9) How do you convert indicated to calibrated airspeed? Is this conversion necessary during normal operations? Explain TAS, IAS, CAS.

Limitations

- 1) Under what category is your airplane certificated? Are spins approved?

- 2) What is the maximum positive G-loading with flaps up? What is the maximum G-loading with the flaps down?
- 3) State the V-speed value of each color code on the airspeed indicator and define its meaning and significance.
- 4) Define the maneuvering speed and its significance to the aircraft. Is this speed designated by a colored marking on the airspeed indicator? How does V_a change with weight?
- 5) What other airspeed limitations exist for this aircraft?
- 6) What are the maximum takeoff and landing weights for this aircraft?

Weather and Cross Country Planning

- 1) How can you obtain weather reports and forecasts? Where do you find a listing of appropriate telephone numbers?
- 2) How can you update weather reports and forecasts during flight?
- 3) If your destination does not issue a terminal aerodrome forecast, how can you determine the forecast weather for your ETA?
- 4) What is a PIREP? How significant is it?
- 5) If you encounter moderate to severe turbulence, what action should you take? Explain.
- 6) If you discover you are lost, what should you do?
- 7) What are the different types of weather forecasting products available? What constitutes a “legal briefing”?

Aeronautical Charts and Operations

- 1) Provide at least 10 different items of operation pertaining to a controlled airport.
- 2) Is class D airspace designated around a controlled airport? If so, when is it in effect?
- 3) What is the minimum MSL altitude you can use to fly over a tower-controlled airport without establishing two-way communications with the control tower?
- 4) At what times is the control tower in operation at this airport?
- 5) If you cannot contact the control tower on the normal frequency, can you receive an airport advisory on the UNICOM frequency? What are your other options? Explain.
- 6) What frequency should you take to obtain an airport advisory at a non-towered airport?
- 7) What other frequencies can you use to communicate with the ATIS?
- 8) What is the minimum weather required at the non-towered airport before you can land under VFR?
- 9) Assume that all attempts to contact ATIS at the non-towered field are unsuccessful because your communications radio is apparently inoperative. According to regulations, is it legal to enter the surrounding class E airspace without establishing two-way radio communications?
- 10) In this situation, what is the proper procedure for determining the runway in use? How do you enter the traffic pattern? Can you use the ATIS light signals?
- 11) How are VOR's, VORTAC's, and VOR/DME's identified on a sectional chart? How do you determine the service volume of a VOR?
- 12) Of the following which are referenced to magnetic north and which are referenced with true north? 1) runway 2) winds aloft 3) surface winds

13) Locate an example of each of the following types of airspace and explain its vertical and lateral limits, as well as its significance to a VFR flight.

- Class D
- Class E
- Class G
- Restricted airspace
- Military Operations Area (MOA)
- Military training Route (MTR)

2) Locate an MTR on the sectional chart. Explain all you can about the MTR, based on the designation.

3) On the sectional chart, locate an airport within Class D airspace. If the weather at that airport is reported as IFR due to ground fog, would you need to establish two-way communications with the control tower to fly VFR through the lateral limits of this Class D airspace area at 6,000 feet AGL?

4) Assuming the airport is reporting a 600-foot ceiling and one-mile flight visibility, could you conduct a VFR flight to and from the airport?

5) What are the VFR and Special VFR minimums for Class D airspace? Are you able to get a special VFR in class G airspace?

6) Locate an obstruction on the sectional chart. Immediately adjacent to it are 2 numbers(1 in parentheses). What is the significance of each number?

7) If the DME is tuned to a VOR/DME or VORTAC facility, what indications can you expect from a DME?

20) Locate a maximum elevation figure (MEF). Explain its significance.

- 21) Explain proper control wheel positioning for crosswind taxiing.
- 22) Relative to directional control, what must you be aware of during takeoff in a strong crosswind?
- 23) Describe the symbols on an airport that indicates either left-handed or right-handed traffic patterns.
- 24) Discuss the different colors associated with airport lighting and what each represents.

Collision Avoidance

- 1) Two aircraft of the same category are converging at the same approximate altitude. Which aircraft has the right-of-way?
- 2) If a glider and airplane are approaching head-on, or nearly so, who has the right-of-way and what action should be taken?
- 3) One aircraft is on final approach and the other is waiting to take off. Which aircraft has the right-of-way?

Post Flight Procedures

- 1) After shutdown, why is it important to make sure the ignition switch has been placed in the OFF position?
- 2) When should you refuel the airplane? What are some precautionary steps that you should take during refueling?

Night Operations

- 1) What are the differences between scanning for aircraft at night versus during the day?
- 2) Must you carry another form of light (i.e. flashlight) in the cockpit of small piston-powered aircraft?
- 3) Is it easier or more difficult to avoid obstructions and/or other aircraft at night? Explain.
- 4) Is weather easier or more difficult to avoid at night? Explain.
- 5) How is a night takeoff different from one performed during the day? Explain.
- 6) Is a night approach flown differently than one flown during the day? Explain.

Emergency Operations

- 1) What is the definition of the best glide or maximum glide speed? What is the best glide speed for your aircraft? Does it change with aircraft weight?
- 2) Explain and define the approximate glide ratio for your aircraft.
- 3) Discuss the procedures to be used in the event of partial or complete engine failure.
- 4) If an engine fire develops during flight, what steps should you follow?
- 5) What procedure should you use in the event of an electrical fire?
- 6) While in flight, you note that the oil pressure gauge is low, but the oil temperature remains normal. Explain what action you should take in this situation.
- 7) During flight, the engine oil pressure suddenly drops to zero and the oil temperature begins to rise. Explain what would happen and what action you would take in this situation.

8) After takeoff, your engine suddenly stops at an altitude of 100 feet AGL. What action should you take?

Aerodynamics

- 1) Discuss the aerodynamic factors associated with stalls and spins.
- 2) At what indicated airspeed will your aircraft stall at maximum takeoff weight with flaps down and power off?
- 3) What increase in stall speed can you expect in a 60 degree bank in the clean configuration?
- 4) What is an accelerated stall? When is it most likely to occur? What are the typical causes of a spin and how you recover?
- 5) If you are operating the aircraft at low airspeed with full power during a descent what action should you take to arrest the descent?
- 6) Explain ground effect and explain how you can use it to your advantage during takeoff.
- 7) How many miles wide is a Victor airway?
- 8) What is the significance of 14,500 feet MSL in the classification of airspace?
- 9) What type of information do you find in the Aeronautical Information Manual?
- 10) What time of day may you begin logging night flight time?
- 11) During what time period must you turn on the aircraft position lights?
- 12) What recent flight experience must you possess in order to carry passengers at night in a particular category and class of aircraft? Do these requirements vary for each aircraft category?

- 13) Must an aircraft always be equipped with an emergency locator transmitter? If no, explain the exceptions.
- 14) Under what conditions must your passengers be supplied with supplemental oxygen? When are you, as the pilot in command, required to use oxygen? When is it recommended? During the day; during the night?
- 15) When are passengers required to wear seat-belts and if installed, shoulder harnesses?
- 16) What is the minimum allowable flight altitude over a sparsely populated area?
- 17) Is it ever legal to drop an object from an aircraft while in flight? When?
- 18) When are flight plans required by the FAA for VFR flights?
- 19) What are the pilot and equipment requirements for operation within Class B airspace?
- 20) What are the pilot and equipment requirements for operation within a terminal area classified as Class C airspace?
- 21) According to 14 CFR Part 61, who may give a flight review? How often must you obtain one?

Aeromedical Factors

- 1) Discuss the similarities and differences between the conditions of hypoxia, hyperventilation and carbon monoxide poisoning. What are the symptoms and effects of each condition? What corrective action should you take in each case?

- 2) If a passenger exhibits symptoms which could be attributed to more than 1 condition, what should you do?
- 3) What are the rules concerning the use of alcohol and the operation of an aircraft?
- 4) Name several common over the counter medications that you should not take before or during a flight.
- 5) What is spatial disorientation? When is it most likely to occur? What corrective action should you take if you become spatially disorientated?
- 6) What are the effects of fatigue on a pilot?

