

# Commercial Pilot Complex Transition Test Briefing

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## Electrical System

1. Is the electrical system in this aircraft protected by fuses or circuit breakers?
2. Is the electrical power provided by an alternator or a generator?
3. What is the voltage of the electrical system when the alternator/generator is operating and when it is off?
4. What is the purpose of an ammeter? What is the purpose of a load meter? Which is installed in this aircraft?
5. How will an alternator/generator failure be indicated on an ammeter or on a load meter?
6. What should you expect if the alternator/generator fails prior to landing?
7. What is the correct procedure for resetting a popped circuit breaker?
8. What should you do in the case of an electrical fire?

## FUEL SYSTEM

1. Is this aircraft equipped with a carburetor or a fuel injection system?
2. How many fuel tanks does this aircraft have? What is the total usable fuel?

3. What is the minimum allowable grade of fuel that you can use with this aircraft? What color is it?
4. Describe the recommended fuel management procedures in the POH.
5. What is the purpose of the fuel pump, if appropriate, on this aircraft? When should you use it?
6. Where are the fuel tank vents located and what is their purpose?
7. Where are the fuel drains located on this aircraft? When should you use them?
8. Should you run one tank completely dry before switching to another? Explain.
9. If you inadvertently exhaust the fuel supply on one tank, explain the procedure for switching tanks.
10. Some fuel tanks have a tab located within them that is visible with the fuel cap removed. What is its purpose?

## **LANDING GEAR SYSTEM**

1. What is the source of power for the landing gear system on this aircraft?
2. Explain how the landing gear system operates.
3. Explain the procedure for manually extending the landing gear if the primary source of power fails.
4. After extending the landing gear manually as a training procedure, is it advisable or possible to retract it normally?

5. Is it possible to retract the landing gear manually?
6. What airspeed limitations exist during landing gear extension and retraction? Is there an additional limit when it is down and locked?
7. Explain the purpose of each annunciator light associated with the landing gear system.
8. Should a gear-down annunciator light fail to illuminate, what procedure should you follow?
9. Explain the operation of the landing gear warning system.
10. At what point during a normal takeoff should you retract the landing gear? When should you retract the landing gear in a short-field takeoff?
11. During an approach to landing, where do you normally extend the landing gear?

### **COWL FLAPS**

1. What is the purpose of cowl flaps?
2. How are the cowl flaps controlled?
3. What instrument in the cockpit helps you determine how to position the cowl flaps?
4. Generally, how should you position the cowl flaps for takeoff, during the climb, in cruise flight, during descent, approach and after landing?

## **CONSTANT-SPEED PROPELLERS**

- 1.** Explain the advantages and disadvantages of constant speed and fixed-pitch propellers.
- 2.** Explain how a constant speed propeller operates.
- 3.** How should you set the propeller control for takeoff, climb, cruise, and landing? Explain.
- 4.** Which instrument do you use to set the propeller?
- 5.** When you apply power by using the throttle, which instrument will indicate the increase in power?
- 6.** What will the manifold pressure gauge indicate when the airplane is sitting on the ramp after the engine is shut down?
- 7.** As a general rule, when decreasing power, which control is adjusted first, the throttle or the propeller control? Which do you move first to increase power?
- 8.** If the oil pressure to the propeller governor is cut off, what pitch setting will the propeller go to in most single engine aircraft?
- 9.** Why is it advisable to check the oil pressure during propeller cycling at the engine run up?
- 10.** What should you do if you are ready for takeoff before the oil temperature is in the normal operating range?

## **WEIGHT AND BALANCE**

1. What is the basic empty weight for your aircraft?
  
2. Compute the weight and balance of your aircraft, as it will be flown during training.
  
3. Compute the weight and balance problem assuming full fuel. What is the maximum payload that the aircraft can carry?
  - 3.1. How must the weight be distributed to keep it in balance?
  
4. Compute a weight and balance problem assuming you and three 170-pound adults will occupy the aircraft. Each passenger has 20 pounds of baggage. How much fuel can the airplane carry?
  - 4.1. With that fuel load, how must the baggage be loaded to keep the airplane in balance?

## **GENERAL CONSIDERATION**

1. List the following airspeeds and, where applicable, the corresponding airspeed indicator color codes.
  - 1.1. Stalling speed in the landing configuration
  - 1.2. Stalling speed in the specified configuration
  - 1.3. Best angle-of-climb speed
  - 1.4. Best rate-of-climb speed
  - 1.5. Normal approach speed
  - 1.6. Approach speed with flaps retracted
  - 1.7. Short-field landing approach speed
  - 1.8. Maximum flap extension speed(s)
  - 1.9. Maximum landing gear extended speed
  - 1.10. Maximum landing gear operating speed

- 1.11. Design maneuvering speed
- 1.12. Maximum structural cruising speed
- 1.13. Never-exceed speed

- 2. Where is the ELT located?
- 3. Explain the proper procedures for leaning the mixture for this aircraft.
- 4. If an alternate static air source is available, where is it located and how do you use it?
- 5. Explain the procedures for dealing with an engine fire during flight.
- 6. What is the configuration and airspeed that will provide the greatest glide distance with the least loss in altitude?

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