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MEET YOUR AIRCRAFT QUIZ

FOREWORD

The purpose of this series of Federal Aviation Administration (FAA) Aviation Safety Program publications is to provide the aviation community with safety information that is informative, handy, and easy to review. Many of the publications in this series summarize material published in various FAA advisory circulars, handbooks, other publications, and various audiovisual products produced by the FAA and used in its Aviation Safety Program.

Some of the ideas and materials in this series were developed by the aviation industry. FAA acknowledges the support of the aviation industry and its various trade and membership groups in the production of this series.

Comments regarding these publications should be directed to the National Aviation Safety Program Manager, Federal Aviation Administration, Flight Standards Service, General Aviation and Commercial Division, Aviation Safety Program Branch, AFS-810, 800 Independence Avenue, SW, Washington, DC 20591. Attn: H.Dean Chamberlain, Editor.

ACKNOWLEDGMENT

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PURPOSE

This quiz is designed to help a pilot meet his or her aircraft. Although no attempt is made to cover in depth all of the information contained in the typical Pilot's Operating Handbook (POH), Owner's Manual (OM), or Aircraft Flight Manual (AFM), the quiz will provide a review of some of the basic information a pilot should know before taking off on any flight and especially on a long cross-country flight with passengers. The quiz will also help a transitioning pilot better understand his or her new aircraft.

Since this is an open book quiz, there is no minimum passing score. It is assumed that a certificated pilot will be able to answer every question. Since different pilots will use different aircraft data to complete the quiz, no "stock" answers are provided. It is assumed that each pilot will research and answer every question that is appropriate to the make and model aircraft used in the quiz. Pilots are reminded they should periodically review the flight manual of their aircraft to maintain the knowledge gained by taking this quiz.

INSTRUCTIONS

You may use any book or device that will help you determine the correct answers. The aircraft manual for the specific aircraft you plan to use is required. The FAAAeronautical Information Manual (AIM) (the former Airman's Information Manual) and the Federal Aviation Regulations (FAR) will also help. All answers concerning aircraft performance and limitations should be obtained from the aircraft's approved manual. You should use the aircraft's actual weight and balance data to answer any question dealing with weight and balance, rather than the sample data usually given in an aircraft manual to demonstrate how to compute weight and balance. If you fly more than one type aircraft, you should test your knowledge of each type aircraft. You should skip any question that is not applicable to your type of aircraft. If you are unable to answer a question, you should discuss the question with a certificated flight instructor or other experienced pilot.

ARE YOU LEGAL TO FLY?

Name _____ Date _____
Ratings _____
Medical: Type _____ Expiration date _____
Date of last Flight Review _____ Date next one due _____
Flight time in category/class in the last 90 days _____
Number of takeoffs and landings in category/class last 90 days _____
Number of night takeoffs and landings in category/class in the last 90 days _____
Do you meet the FAR requirements to be PIC of this aircraft and carry passengers? Day—Yes ___ No ____ ; Night—Yes ____ No ____
IFR hours (actual/simulated) flown in the last 6 months _____
Number of IFR approaches flown in the last 6 months _____
Are you IFR current to be PIC: Yes _____ No _____
If applicable, do you have the required CFI endorsements to fly this aircraft? _____

QUIZ BASED UPON FOLLOWING MAKE AND MODEL AIRCRAFT

Make _____ Model _____ Year _____

AIRCRAFT OPERATING SPEEDS

What is the normal rotation speed (Vr)? _____
What is the normal climb-out speed? _____
What is the best rate of climb speed (Vy)? _____
What is the best angle of climb speed (Vx)? _____

What is the normal cruise speed? _____
What is the maximum flap extended speed (Vfe)? _____
What is the maximum landing gear operating speed (Vlo)? _____
What is the maximum landing gear extended speed (Vle)? _____
What is the approach-to-landing speed? _____
What is the stalling speed in the landing configuration (Vso)? _____
What is the clean, gear-up stall speed? _____
What is the stall speed in a 60 degree bank with full flaps? _____
What is the stall speed in a 60 degree bank with 0 flaps? _____
What is the design maneuvering speed (Va)? _____
What is the never-exceed speed (Vne)? _____
What is the normal operating speed range? _____
What is the maximum structural cruising speed (Vno)? _____
What engine-off glide speed will give you the maximum glide range? ____
What is the maximum demonstrated crosswind component for the aircraft? _____
Is this an operating limitation? Yes _____ No ____
Twin-engine aircraft only:
- What is the minimum control speed with the critical engine inoperative (Vmc)? _____
- What is the safe single-engine speed (Vsse)? _____
- What is the best rate of climb speed—single engine (Vyse)? _____
- What is the best angle of climb speed—single engine (Vxse)? _____
- What is the single-engine service ceiling? _____
- Can the aircraft maintain altitude on one engine? _____

Use the following data to answer the following questions: OAT 90 degrees; PA 4,000 feet; gross weight; winds 090 degrees at 10 mph; grass runway:
- What is the accelerate-stop distance? _____
- What is the accelerate-go distance? _____
- What is the takeoff distance to clear a 50 foot obstacle? _____

What is the landing distance to clear a 50 foot obstacle? _____

GENERAL AIRCRAFT INFORMATION

Does the aircraft have a current and original airworthiness certificate? _____
Does the aircraft have a current registration certificate? _____
If required, does the aircraft have a current radio station license? _____
Does the aircraft have a current weight and balance data sheet? _____
Have all airworthiness directives been complied with? _____
What is the type, make, and model of the engine/s?
_____
Is the propeller fixed pitch or variable? _____
What is the power output of the engine/s? _____
Type of fuel control—carburetor, fuel injection, other? _____
If carburetor, when do you use carburetor heat? _____
_____
Describe how the heater functions. _____
_____
Is there an alternate air source? _____ When is it used?
_____
Describe the electrical system _____
_____
_____
Do you know the location of the critical fuses or circuit breakers for the landing gear, flaps, landing lights, and generator/alternator?
What is the proper tire pressure for the nose gear? _____
What is the proper tire pressure for the main gear? _____

FUEL AND OIL

Describe the fuel system. _____
_____
What type of fuel is used? _____ What is its color? _____
If there is an approved alternate fuel, what is it? _____
_____
What is the number, location, and capacity of the fuel tank/s?

	Location		Total Gallons	Usable Gallons
Main tank	_____	_____	_____	
Other	_____	_____	_____	
Other	_____	_____	_____	
Other	_____	_____	_____	
Other	_____	_____	_____	
Other/s	_____	_____	_____	

What is the total number of gallons of usable fuel? _____
(Multi-engine aircraft only) In the event an engine fails, can all on-board usable fuel be fed to the operating engine/s?
_____
If yes, explain how: _____
How many fuel sumps are there and where are they located?
Number _____ Location/s _____
_____
How do you drain the fuel sumps? _____
_____
Describe the oil system. _____
_____
What is the type and weight of oil used? _____

What is the minimum and maximum oil requirements for each engine?
Min. _____ Max _____
Does the aircraft have an inverted fuel/oil system? Yes ____ No ____
If yes, how long can the aircraft fly inverted? _____

LANDING GEAR SYSTEM

Is the landing gear fixed, manual, hydraulic, or electric?
_____
If retractable, what is the alternative procedure for lowering the gear?
_____
_____

AIRCRAFT WEIGHTS

What is the aircraft's gross weight? _____
What is the aircraft's empty weight? _____
What is the aircraft's Zero Fuel weight? _____
What is the aircraft's useful load? _____
What is the aircraft's gross takeoff weight? _____
What is the aircraft's gross landing weight? _____
What is the maximum allowable weight the aircraft can carry in its baggage compartment/s?
Rear _____ Pounds
Front _____ Pounds
Belly _____ Pounds
Left engine nacelle _____ Pounds
Right engine nacelle _____ Pounds
Other locations _____ Pounds

PERFORMANCE PLANNING

How much useful load can the aircraft carry with full fuel? _____

How many pounds of baggage can this aircraft carry with full fuel and each seat occupied by a 190 pound passenger?
_____
Solve the following weight and balance problem for a maximum range flight with yourself and a 200 pound passenger in each remaining seat.
What is the gross weight? _____
What is the center of gravity? _____
Is the flight within the weight and balance envelope? _____
How much fuel can you carry with no baggage? _____
Where must the fuel be loaded? _____
How long can you fly? _____
With full fuel and allowing for a 45 minute fuel reserve, what is the maximum fuel endurance in hours at 65% power at 5,000 ft PA, standard conditions, lean mixture, zero wind, 2,500 RPM and gross weight? ____
What is the TAS at 5,000 ft. PA and 65% power? _____
What RPM or combination of RPM and Manifold Pressure yields 75% power at 8,000' PA with standard conditions?
RPM _____ MP _____
What is the fuel flow per hour at 75% power at 10,000 ft. PA with standard conditions?
_____
What takeoff distance is required to clear a 50 ft. obstacle at gross weight at a pressure altitude of 8,000 ft. and 75 degrees Fahrenheit? (Assume no wind and a hard surface runway.) _____.
What would the answer be if the takeoff was made at a sea-level pressure altitude grass surface runway?
_____
Would high humidity increase or decrease this distance? _____
Why? _____

Contact your local FAAFlight Standards District Office's Safety Program Manager for more safety information.

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