

Private Pilot Oral Exam
Answers

Airworthiness Certificate
Registration Certificate
Owner's manual or operating limitations
Weight & Balance Data

The Airworthiness Certificate is issued by the FAA after being inspected and found in safe condition. It remains in effect as long as it receives the required maintenance and is properly registered in the U.S.A. Some of the required maintenance and inspections are:

Annual Inspection	12 months	Keep in log books
100 HR	For hire / Rental	Keep in log books
Pitot Static System	24 months	Keep in log books
Altimeter	24 months	Keep in log books
Transponder	24 months	Keep in log books
ELT Inspection	12 months	Keep in log books
VOR Check	30 Days	Keep in Airplane for IFR

A.D. (Airworthiness Directive) is what the FAA uses to notify aircraft owners about unsafe conditions and specify the conditions under which the product may continue to be operated. The records on A.D.'s are kept in the log book and show status, method of compliance and who did the work.

REQUIRED EQUIPMENT FOR DAY VFR

Airspeed Indicator	Altimeter
Compass	Tachometer
Oil Pressure	Oil Temperature
Fuel	Safety Belts
Rotating Beacon or Anti Collision light	
*Decathlon must have a manifold pressure gauge	

To get a Ferry Permit, contact the local FSDO or a Designated Airworthiness Representative can assist and supply forms. Reasons for needing one:

Flying to get repaired	Delivering
Flight testing new aircraft	Evacuating Aircraft from Disaster

A Private Pilot must carry with him:

A Valid Pilot Certificate Photo ID Current Medical Certificate.

To stay current he/she must have accomplished a flight review in the preceding 24 months. To carry passengers he/she must make 3 takeoff and landings in the last 90 days. They must be to a full stop in a tail wheel airplane. They must be made at night if your operation will be from one hour after sunset to one hour before sunrise.

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RADAR SUMMARY CHART (These are made from radar weather reports): It has possible precipitation types, cell movements, maximum tops, locations of lines of echoes, and remarks are plotted on this chart. Severe thunderstorm and tornado watches are plotted if they are in effect. This is updated every hour. This is weather now or a short time in the past.

AC (Convective Outlooks): This shows areas of slight risk, moderate risk or high risk of severe thunderstorms for a 24 hour period. There are 2 and 3 day charts also. This is only a forecast.

AWOS (Automated weather observing system): Transmits minute-by-minute weather observations directly to the pilot.

ASOS (automated surface observing system): Minute-by minute observations generating METARS and other aviation weather information, transmitted directly to the pilot.

ATIS (Automatic Terminal Information Service): A continuous broadcast of recorded non-control information in a terminal area. It broadcast essential but routine information to reduce frequency congestion.

FLIGHT WATCH (En-route flight advisory service): Use 122.00 to update your weather briefing in the air, give a pilot report, or open a VFR flight plan.

PIREP (Pilot weather report): Reports from aircraft in flight. Observed actual icing, turbulence, cloud tops, visibility and weather.

There are two types of light-sensitive cells in the eye, the cones and rods.

CONES: Detect color, detail and far away objects. They are useful during the day but are not very effective at night.

RODS: Are for peripheral vision and detect movement. They take about 30 minutes to adjust to darkness and are primary for night vision.

For night flying take the time to let your eyes adjust to the darkness, then avoid bright light, keep the dash lights as dim as possible and view off center.

AIRPORT LIGHTS:

Taxiway light is BLUE.

Runway lights are WHITE then AMBER on the side.

The approach ends are GREEN

Departure ends are RED

Airport Beacon for land is WHITE / GREEN

Airport Beacon for sea is WHITE / YELLOW

Airport beacon for military is WHITE / WHITE / GREEN

Pilot control lights are activated by 3 or 5 or 7 clicks of the mike.

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Visibility and cloud clearances for basic VFR in different classes of airspace:

Airspace	Flight Visibility	Distance from Clouds		
A	No VFR	No VFR		
B	3 Miles	Clear of clouds		
C	3 Miles	1000' above	500' below	2000' Horizontal
D	3 Miles	1000' above	500' below	2000' Horizontal
E Less than 10K'	3 Miles	1000' above	500' below	2000' Horizontal
E 10K' or Above	5 Miles	1000' above	1,000 below	1 Mile
G 1,200' AGL or less Day	1 Miles	Clear of clouds		
G 1,200' AGL or less Night	3 Miles	1000' above	500' below	2000' Horizontal
G Above 1,200' AGL but less than 10K' - Day	1 Miles	1000' above	500' below	2000' Horizontal
G Above 1,200' AGL but less than 10K' - Night	3 Miles	1000' above	500' below	2000' Horizontal
G 1200' AGL above &/or above 10K' MSL	5 Miles	1000' above	1,000 below	1 Mile

Class Airspace	Entry requirements	Equipment	Minimum Pilot Certificate
A	ATC Clearance	IFR	Instrument Rating
B	ATC Clearance	Two-Way Radio, Transponder with Altitude Reporting Capability	Private - Primary Student - Non Primary
C	Two-Way Radio Communication Prior to Entry	Two-Way Radio, Transponder with Altitude Reporting Capability	No Specific Requirement
D	Two-Way Radio Communication Prior to Entry	Two- Way Radio	No Specific Requirement
E	None for VFR	No Specific Requirement	No Specific Requirement
G	None	No Specific Requirement	No Specific Requirement

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LIGHT GUN SIGNALS

(This column not a priority)			
COLOR AND TYPE OF SIGNAL	MOVEMENT OF VEHICLES, EQUIPMENT AND PERSONNEL	AIRCRAFT ON THE GROUND	AIRCRAFT IN FLIGHT
Steady Green	Cleared	Cleared for takeoff	Cleared to land
Flashing Green	N/A	Cleared for taxi	Return for landing 9to be followed by steady green at the proper time
Steady Red	STOP	STOP	Give way to other aircraft & continue circling
Flashing Red	Clear the taxiway/runway	Taxi clear of the runway in use	Airport unsafe, do not land
Flashing White	Return to starting point on airport	Return to starting point on airport	N/A
Alternating Red and Green	Exercise Extreme CAUTION !!!!!	Exercise Extreme CAUTION !!!!!	Exercise Extreme CAUTION !!!!!

HAND PROPPING AN AIRPLANE

Hand propping an airplane is a two man operation.

One person in the plane must be familiar with the controls.

The one pulling on the prop is in charge of all activity.

He needs firm footing.

Move the plane if necessary.

Both participants should discuss the procedure and the voice commands.

Do not stand too far from the prop, less than one arms length. (So you do not lean to reach the prop.)

Do not wrap your fingers around the prop. (If it would backfire it could pull you into the prop.)

Do not relocate the prop with the mags on.

Once the engine is running, remember that the prop is almost invisible.

Tie down the tail if there is no one to help you.

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PROPELLER: Aluminum, fixed pitch or constant speed, brand.

ELECTRICAL: 12V or 24V, alternator or generator, fuses or circuit breakers, Amp gauge, regulator, spare fuses, turn coordinator, lights, radios, starter. NOT the magnetos.

ENVIRONMENTAL: Heater, AC, vents, locate and explain.

FLAPS: Which type of flaps: Fowler, plain, split or slotted?
How operated: Electric, hydraulic or mechanical.
Degrees for each setting.

PITOT-STATIC SYSTEMS:

The airspeed indicator compares the ram air pressure in the pitot tube with the static pressure at the static port.

The vertical speed indicator has a calibrated bleed hole connected to the static port. A change in pressure through the bleed hole will make the needle move up or down.

The altimeter has a diaphragm that changes size with a change in static pressure. When the diaphragm changes size, it will cause the needles to move.

The pitot tube has an electric heating element that is controlled by the pitot heat switch. This is for ice protection.

The pitot static system and the altimeter must be checked every 24 months.

VACUUM:

An engine driven vacuum pump drives the artificial horizon (attitude indicator) and directional gyro (heading indicator).

There is a filter on the inlet and a gauge to measure the vacuum pressure.

A green arc on the gauge will indicate normal operation. If there is no green arc, consult the POH for normal vacuum pressure readings.

DE-ICING / ANTI-ICING: Our airplanes have carburetor heat or alternate air that can be used if the air cleaner ices over.

They also have Pitot heat to keep the air speed indicator working, an alternate static source to keep the static system operating and a defroster to keep the ice off windshield.

There are other systems: Pneumatic boots on the wings and tail, weeping wings, heated props and windshields.

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OVERHEATING OR ROUGHNESS

Reduce power

Increase airspeed (reduce climb or lower the nose)

Enrich the mixture

Open cowl flaps

This could be caused by pre-ignition (caused by hot carbon build up on a piston igniting the fuel before the spark plug fires it) or detonation (the fuel exploding because of too low of octane).

ALTERNATOR FAILURE

If the ammeter shows a discharge, reset the master switch and alternate breaker.

If this doesn't work shut off all non essential electrical equipment and **land ASAP**.

No electrical is needed to keep the engine running.

FLIGHT INSTRUMENTS

If the pitot tube freezes, the airspeed indicator acts like an altimeter. Turn on the Pitot heat.

If the static port freezes the altimeter indicates the altitude at which the system was blocked, the vertical speed indicates level flight.

The airspeed indicator will read accurate at the altitude frozen.

High at lower altitudes

Low at higher altitudes

If this happens, open the alternate static source, if there isn't one; break the glass on the vertical speed indicator.

The turn coordinator is electrically driven, check the fuses or breaker.

It may have a flag to notify you it has failed.

The attitude indicator and directional indicator is vacuum driven, check this vacuum gauge.

GEAR

Fixed gear will be down and locked. But if you know there is a problem with one side, land on the good main and carry the bad as long as possible.

TRIM

The controls can be overpowered, but the answer they are looking for is: you can reduce power (or increase) and find a power setting to maintain altitude, climb or descend.

FLAPS

The flaps are electric, hydraulic or mechanical.

Know the different setting and degrees of each.

If you land with no flaps your approach speed and stall speed will be higher.

If full flaps are deployed a go around might be impossible.

If only one flap comes down, the plane will try to roll and yaw, over power with ailerons and rudder, and retract the flap.

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MOTION SICKNESS

Motion sickness is caused by the brain receiving conflicting messages about the state of the body, or over stimulation of the inner ear.

Symptoms:

- Sweating
- Dizziness
- Nausea and vomiting

If this sets in:

- Open airvents
- Focus on an object far off in the distance.
- Avoid unnecessary head movements
- Land as soon as practical

STRESS

Stress is the body's reaction to physical or psychological demands on it.

Heart rate, blood pressure, breathing rate increase.

Chronic or long term stress is an intolerable burden that exceeds the ability to cope.

If you have chronic stress or fatigue, see a doctor.

Acute or short turn stress involves an immediate threat.

Most times a person can deal with acute stress

Fatigue is caused by lack of sleep or too much physical activity.

It can also be from psychological stress.

Acute fatigue can be prevented or cured by diet and sleep.

If you have Chronic Fatigue from Insomnia or other medical problems, see a doctor.

DEHYDRATION

Dehydration is a critical loss of water from the body.

The first noticeable effect is fatigue.

Physical and mental ability decline.

Dizziness and nausea can set in.

Drink water on long flights.

SCUBA DIVING

Scuba diving allows nitrogen to dissolve in body tissue and fluid.

The body needs time to purge the nitrogen.

Flying shortly after scuba diving can give you the Bends.

If this happens descend and land as soon as practical.

The minimum time between non-decompression diving and flying is 12 Hours.

The minimum time between decompression diving and flying is 24 hours.

ALCOHOL

Even a small amount of alcohol can impair judgment, coordination, memory and attention span.

Altitude multiplies the effect of the brain.

8 hours between a bottle and a throttle.