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QUESTIONS (and the INDEX to ANSWERS)

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¹ **Please help me**—Comments, supplemental information, corrections are appreciated.

Note: Web links often become out of date due to changes at host sites of which I am unaware. If you see such, notify me and I will attempt to make correction; if you already know the new link, include this in your notification. For www.faa.gov links that have changed, you may search the FAA site for the new location of the material.

ANSWERS (and QUESTIONS)

1. How long does it take to become a Private Airplane Pilot (PA)?

I like to use the Nice Air website for this question, http://www.niceairaviation.com/private_pilot.htm. Below is a quote from Nice Air on 20-Aug-2008; check their website for the most current information. Also remember that these could be minimum times and costs and will differ with different people.

The Private Pilot course takes a minimum of 3 weeks to complete. Accelerated students finish in three or four weeks flying every day. If you can't fly every day, here is an estimate of how long it will usually take to complete your license.

5-7 times per week	3 weeks to 1 month
4 times per week	2 to 3 months
3 times per week	3 to 4 months
2 times per week	6 months to 1 year
1 time per week	1 to 1-1/2 years

2. What are the requirements for becoming a Private Airplane Pilot?

Summary of things you have to do before you can become a Private Pilot:

- Be at least 17 years old
- Read, speak and understand the English language. Fluency is not required
- Pass an FAA written
- Have 5 hours cross country
- Pass a check ride with the FAA or designated examiner

DETAILS FOLLOW:

Eligibility requirements are found in 14 CFR Part 61

Subpart C—Student Pilots [Fly solo in an airplane]

§ 61.83 Eligibility requirements for student pilots

To be eligible for a student pilot certificate, an applicant must:

- (a) Be at least 16 years of age for other than the operation of a glider or balloon.
- (b) Be at least 14 years of age for the operation of a glider or balloon.
- (c) Be able to read, speak, write, and understand the English language.

NOTE: A Student Pilot Certificate and a THIRD CLASS Medical Certificate is required to operate an aircraft as Pilot in Command (Some types of Pilot certificates do not require a Medical Certificate).

Subpart E—Private Pilots [Carry passengers in an airplane]

§ 61.103 Eligibility requirements: General.

To be eligible for a private pilot certificate, a person must:

- (a) Be at least 17 years of age for a rating in other than a glider or balloon.
- (b) Be at least 16 years of age for a rating in a glider or balloon.
- (c) Be able to read, speak, write, and understand the English language.
- (d) Receive a logbook endorsement from an authorized instructor who:
 - (1) Conducted the training or reviewed the person's home study on the aeronautical knowledge areas listed in §61.105(b) of this part that apply to the aircraft rating sought; and
 - (2) Certified that the person is prepared for the required knowledge test.
- (e) Pass the required knowledge test on the aeronautical knowledge areas listed in §61.105(b) of this part.
- (f) Receive flight training and a logbook endorsement from an authorized instructor who:
 - (1) Conducted the training in the areas of operation listed in §61.107(b) of this part that apply to the aircraft rating sought; and
 - (2) Certified that the person is prepared for the required practical test.
- (g) Meet the aeronautical experience requirements of this part that apply to the aircraft rating sought before applying for the practical test.
- (h) Pass a practical test on the areas of operation listed in §61.107(b) of this part that apply to the aircraft rating sought.
- (i) Comply with the appropriate sections of this part that apply to the aircraft category and class rating sought.

NOTE: A Pilot Certificate and a THIRD CLASS Medical Certificate is required to operate an aircraft as Pilot in Command.

3. What are the requirements for taking the Private Pilot Exam?
How long is the exam?

See RECREATIONAL & PRIVATE PILOT section of

http://www.faa.gov/training_testing/testing/airmen//media/testing_matrix.pdf

~~http://www.faa.gov/education_research/testing/airmen/media/testing_matrix.pdf~~

Here is the FAA's Knowledge Test Guide

http://www.faa.gov/training_testing/testing/airmen/test_guides/media/FAA-G-8082-17d.pdf

Acceptable Forms of Authorization (for all tests listed above, except PCP):

- Certificate of graduation or a statement of accomplishment certifying the satisfactory completion of the ground school portion of a course for the certificate or rating sought. The certificate or statement may be issued by a Federal Aviation Administration certified pilot school or an agency such as a high school, college, adult education program, Civil Air Patrol, or Reserve Officers Training Corp (ROTC) flight training school.
- Written statement or logbook endorsement from an authorized ground or flight instructor certifying that the applicant completed an applicable ground training or home study course and is prepared for the knowledge test.
- Failed, passing or expired Airman Knowledge Test Report, provided the applicant still has the ORIGINAL test report in his/her possession. (See RETESTING explanation(s) below.)
- "Expired test/credit" letter issued by the Airmen Certification Branch (in lieu of a duplicate Airman Knowledge Test Report).

Retesting:

- Applicants retesting AFTER FAILURE are required to submit the applicable score report indicating failure, along with an endorsement from an authorized instructor who gave the applicant the additional training, and certifying the applicant is competent to pass the test. The original failed test report presented as authorization must be retained by the proctor and attached to the applicable sign-in/out log. The latest test taken will reflect the official score.
- Applicants retesting IN AN ATTEMPT TO ACHIEVE A HIGHER PASSING SCORE may retake the same test for a better grade after 30 days. The latest test taken will reflect the official score. Applicants are required to submit the ORIGINAL applicable score report indicating previous passing score to the testing center prior to testing. Testing center personnel must collect and destroy this report prior to issuing the new test report.

4. For how long is the passed Private Pilot Written good?

24 calendar months

Sec. 61.39

Prerequisites for practical tests.

(a) Except as provided in paragraphs (b) and (c) of this section, to be eligible for a practical test for a certificate or rating issued under this part, an applicant must:

(1) Pass the required knowledge test within the **24-calendar-month period preceding the month the applicant completes the practical test**, if a knowledge test is required;

(2) Present the knowledge test report at the time of application for the practical test, if a knowledge test is required;

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(d) If all increments of the practical test for a certificate or rating are not completed on one date, all remaining increments of the test must be satisfactorily completed not more than 60 calendar days after the date on which the applicant began the test.

(e) If all increments of the practical test for a certificate or a rating are not satisfactorily completed within 60 calendar days after the date on which the applicant began the test, the applicant must retake the entire practical test, including those increments satisfactorily completed.

5. For how long is the Instructor's Test Authorization for Private Pilot written exam good?

I put a approximately 60 day limit on mine.

6. For how long is the Instructor's Test Authorization for Private Pilot written exam good?

7. How does one find testing centers?

FAA list of testing centers is found at:

http://www.faa.gov/training_testing/testing/airmen/media/test_centers.pdf

~~http://www.faa.gov/education_research/testing/airmen/media/test_centers.pdf~~

General information about Pilot Testing is at <http://www.faa.gov/pilots/testing/>.

Some San Francisco Bay area locations captured on 11/20/2007 are:

State/City	Site ID	Site	Address	Country	TCS	Phone
HAYWARD	ABS94502	CALIFORNIA AIRWAYS	20511 SKY WEST DRIVE	CA	KEITH J. AMARO	(510) 887-7686
HAYWARD	LAS94502	FLYING VIKINGS, INC.	21593 SKYWEST DRIVE	CA	CELINE M. CORREA	(510) 670-7419
HAYWARD	ABS94509	WEST VALLEY FLYING CLUB - HAYWARD	21015 SKYWEST DRIVE	CA	VICTORIA N. UTVICK	(510) 781-0101
LIVERMORE	ABS94602	SIERRA ACADEMY OF AERONAUTICS	INTERNATIONAL TRAINING CENTER	CA	JOSHUA P. DILS	(925) 443-6100
LIVERMORE	LAS94504	AHART AVIATION, INC.	186 AIRWAY BOULEVARD	CA	HEATHER A. WOLLARD	(925) 449-2142
OAKLAND	LAS94602	**WYOTECH	8291 EARHART ROAD, HGR 6	CA	INNOCENT J. PAPPALY	(510) 638-1973
OAKLAND	ABS94603	COLLEGE OF ALAMEDA TESTING CENTER	970 HARBOR BAY PKWY BLDG 920	CA	KRISTOPHER D. GUNTER	(510) 748-2291
PALO ALTO	ABS94301	**WEST VALLEY FLYING CLUB - PALO A	1901 EMBARCADERO ROAD, SUITE 100	CA	JOEL E. HARRIS	(650) 856-2030
SAN BRUNO	ABS94003	COMPUSA SAN BRUNO STORE #267	1250 EL CAMINO REAL #M3	CA	DANIEL AZARCON	(650) 244-4730
SAN CARLOS	LAS94001	BEL-AIR INTERNATIONAL	SAN CARLOS AIRPORT, 795 SKYWAY	CA	INGE VERSCHUERREN	(650) 596-9900
SAN FRANCISCO	ABS94102	COMPUSA SAN FRANCISCO STORE #254	760 MARKET STREET, STE 435	CA	MARGARET FOSTER	4157433230
SAN JOSE	LAS95101	NICE AIR EXPRESS	2575 ROBERT FOWLER WAY	CA	VICKI GONZALES	(408) 729-3383
SAN JOSE	ABS95101	SQUADRON 2 FLYING CLUB - RHV	2655 ROBERT FOWLER WAY	CA	TOM HORNAK	(408) 926-4030

8. Is hard for a diabetic without medication to get a FAA medical certificate class 1 or class 2

You can check the FAA web site, http://www.faa.gov/licenses_certificates/medical_certification/. Here is what I found:

Disease Protocols Diabetes Mellitus - Diet Controlled

http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/aam/ame/guide/dec_cons/disease_prot/diabetes_diet/

“Applicants with a diagnosis of diabetes mellitus controlled by diet alone are considered eligible for all classes of medical certificates under the medical standards, provided they have no evidence of associated disqualifying cardiovascular, neurological, renal, or ophthalmological disease.”

What medical conditions does the FAA consider disqualifying?

http://www.faa.gov/licenses_certificates/medical_certification/faq/response6/

Guide for Aviation Medical Examiners Decision Considerations

http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/aam/ame/guide/dec_cons/disease_prot/

9. Where can I get high altitude (hypoxia) training?

FAA sponsored high altitude physiology training classes are offered at Beale Air Force Base, northeast of Sacramento. See link at:

http://www.faa.gov/pilots/training/airman_education/aerospace_physiology/index.cfm.

See on-line blog at <http://jeremy.zawodny.com/blog/archives/006511.html>.

10. Explain how Coriolis deflects wind to the right in northern hemisphere?

<< answer not yet available, please check later >>

11. Explain counter clockwise circulation about a low and clockwise circulation about a high?

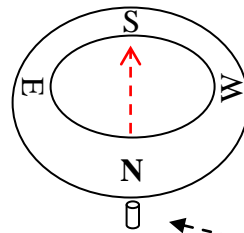
<< answer not yet available, please check later >>

12. Explain the physics behind magnetic compass turning errors and acceleration/deceleration errors (in the earth's northern hemisphere).

Dip, the pulling of the compass needle down towards the earth due to the magnetic lines of force and the compass construction, causes erroneous reading whenever the compass is tilted in an easterly or a westerly direction.

The compass is a direction seeking instrument which aligns itself with the north-south poles (in the northern hemisphere we say it points to the north). It is suspended from the top.

Magnetic North Pole



Magnetic South Pole

Compass card is suspended within the aircraft and always points in direction of red needle which is attached to the card. The head of needle and the "S" label of the card are always towards magnetic north.

Aircraft and pilot rotate around compass card and thus can see the direction being flown.

When the aircraft is on a north heading, the pilot will see "N" on compass face. When the aircraft is on an east heading, the pilot will see "E" on compass face

Weights attached to the "N" side of the card help keep the card level by compensating for head of the needle dipping downward.

Turning errors occur on turns from a north heading or turns from a south heading. In the northern hemisphere, the north-pointing end of the compass is pulled down towards the earth when the aircraft is banked (compass is tilted in east-west direction).

Acceleration / deceleration errors occur because the compass has weights attached to the rotating card to compensate for dip. Due to the inertia of the weights, the aircraft's speeding up or slowing down affects the compass card which is resisting the change.

(Newton's 1st law of motion says that a body at rest remains at rest; a body in motion remains in motion unless an outside force is applied. The weights on the compass card resist a change in the aircraft's motion.)

If this is not clear, ask the instructor to demonstrate using a model compass as above.

13. Winglets (on some large aircraft wingtips), what is the purpose?

Reference: Wikipedia on the web (2008-08-27).

http://en.wikipedia.org/wiki/Wingtip_device

http://en.wikipedia.org/wiki/Wingtip_device#Raked_wingtip

A winglet is a near vertical extension of the wing tip. The design and exact shape unique in each application. The [Airbus A340](#), and the [Boeing 747-400](#) use winglets.

The vortex which rotates around from below the wing strikes the [cambered](#) surface of the winglet, generating a force that angles inward and slightly forward, analogous to a sailboat sailing closed hauled [close hauled](#). The winglet converts some of the otherwise wasted energy in the wing tip vortex to an apparent thrust.

This small contribution can be very worthwhile, provided the benefit offsets the cost of installing and maintaining the winglets during the aircraft's lifetime. Another potential benefit of winglets is that they reduce the strength of wingtip vortices, which trail behind the plane. When other aircraft pass through these vortices, the turbulent air can cause loss of control, possibly resulting in an accident.

14. Sport, Recreational, Private Pilot Certificate?

The below reference is from Sporty's Pilot Shop web page at <http://www.sportys.com/courses/vs.cfm>.

Also see the Gleim Aviation link <http://www.gleim.com/aviation/rpcert.php>.

When you start flying, you may be presented the choice of pursuing your Sport Pilot, Recreational Pilot or Private Pilot certificate. Understanding the differences between them will help you to choose the right one for you.

The **Sport Pilot** certificate is a new development that allows you to earn your pilot's license in as little as 20 hours of training, and does not require a medical certificate. You are, however, limited to flying Light Sport Aircraft (LSAs), defined as a maximum of 1320 lbs. maximum weight and 120 knots maximum speed.

Another great option for new pilots is the **Recreational Pilot** Certificate. Federal Aviation Regulation Part 61 requires a minimum of 30 hours of flight training for the Recreational. This certificate will allow you to carry up to 1 passenger, during the day, and in aircraft with a maximum of 4 seats and a 180 horsepower engine (a new Cessna 172, for example). This is perfect for local flights with family or friends, and will get you into the air quickly. You can also transition to the Private Pilot certificate when you're ready-you'll just do some additional training on cross country and night flying.

The **Private Pilot** certificate has been around the longest, and is often what people mean when they say they "got their license." There are fewer restrictions on the type of airplane you can fly and the places you can fly to, and there are plenty of options for add-on privileges, like Instrument and Multi-Engine ratings. The minimum training time is 40 hours--20 with an instructor and 20 solo--but most students take 60-80 hours. These figures are for flight time only, and do not include time spent on ground school or personal study.

For all three of these certificates, there is a written exam and a flight test. Also remember that you can change your mind as you train. For example, Sport Pilot training time can go towards a Recreational or Private license.

15. Effect of forward CG?

Emmanuel Fonacier AERO100 Fall 2009

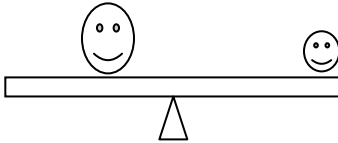
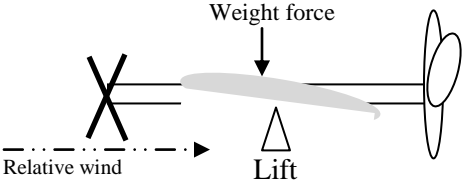
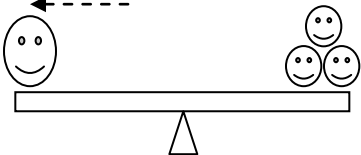
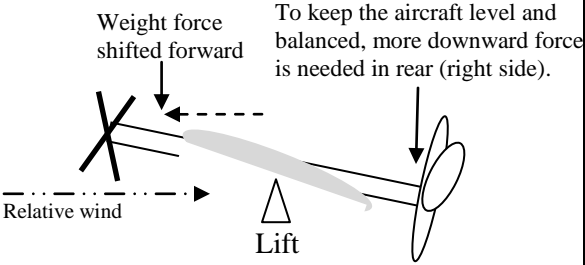
My question is in regards to figure 1-17 "the effects of forward CG [in ASA Test Prep 2010]. I imagine that if a plane is heavy forward of CL that in flight it would make the nose of the plane dive down. What I'm having trouble with is the book says that in both lower and higher speeds the wing flies at a higher angle of attack to create more lift, but if the nose of the plane is down how does a plane fly with a higher angle of attack?

Simplified explanation to the "Why higher angle of attack with forward CG?" question.

The plane is like a seesaw (teeter-totter). Think of a seesaw where the left side of the seesaw is the front of the airplane and the right side of the seesaw is back side of the airplane (this would be like a plane that is facing to the left). See the below drawing. The seesaw is held up in center by wings; the weight in front (towards the nose) and weight in back (towards the tail) are balanced. So the plane (seesaw) remains level.

Now shift some weight towards the left or front (e.g. forward CG). The front tries to rotate downward and the back tries to rotate upward. How does one keep the seesaw (or plane) level? More force is needed on the right or in back to remain level.

But, more force adds to the total weight; now the seesaw is heavier (3 small people instead of 1).

	Seesaw (teeter-totter)	Airplane
a	<p>Balanced with equal force on both sides</p> 	<p>Balanced</p> 
b	<p>To keep balanced as more downward force is on left (forward), must compensate with more force on right (back).</p> <p>Forward weight shift creates more downward force on the left (i.e. nose down force). To keep level and balanced, more downward force is needed in rear (right side).</p> 	<p>As weight shifts forward, downward force in back (right) of the airplane is provided by additional UP-ELEVATOR. This additional downward force adds to the aircraft's total load (making it heavier). So the aircraft must be rotated in a more nose up (larger angle of attack) position in order to generate the additional needed lift to remain in level flight.</p> 

Higher Angle of Attack (AOA) means **1**) less streamline flying and more drag (hence slower cruise speed), **2**) higher stall speed (Consider this: if AOA continued to increase due to increased forward weight, eventually the AOA would be large enough to produce a stall even at the cruise speed), **3**) But, plane is more stable because if it stalls, nose will easily pitch down building up the speed needed to recover (positive static stability).

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