

FAR – Federal Aviation Regulations

Hanscom Aero Club

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Hanscom Aero Club – Private Pilot Ground School

Agenda and Topics

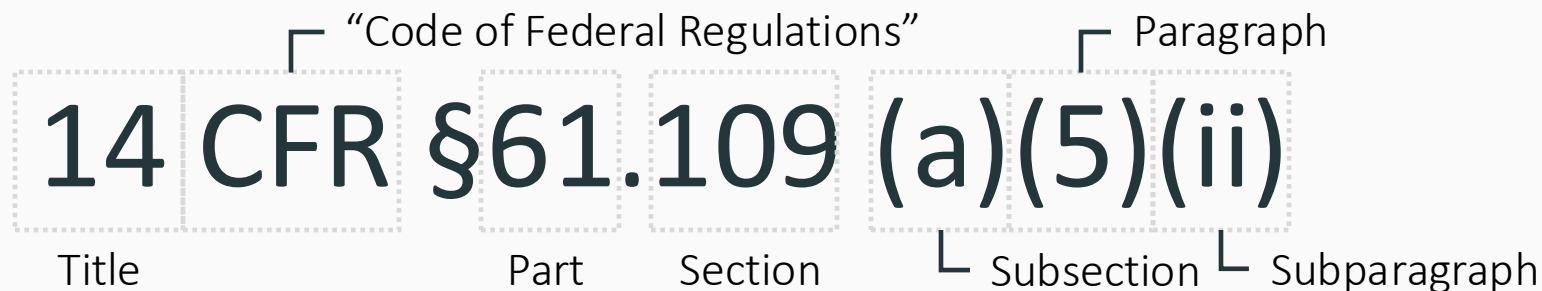
- FAR - Federal Aviation Regulations
- Private Pilot FAR and AIM
- NTSB - 830



FAR – Federal Aviation Regulations

CFR 14 & 49

Federal Aviation Regulations (FARs)



- Title 14: Aeronautics & Space
 - Subchapter A (Parts 1 - 5) Definitions and General Requirements
 - Subchapter C (Parts 21 - 50-59) Aircraft
 - Subchapter D (Parts 60 - 68) Airmen
 - Subchapter E (Parts 71 - 77) Airspace
 - Subchapter F (Parts 89 - 108-109) Air Traffic And General Operating Rules
 - Subchapter G (Parts 110 - 139) Air Carriers and Operators for Compensation or Hire: Certification and Operations
 - Subchapter H (Parts 140 - 147) Schools and Other Certificated Agencies
- Title 49: Transportation
 - Part 830 Notification of Aircraft Accidents or Incidents

Airmen Certification

Category	Class
Airplane	• Single-engine land • Multiengine land • Single-engine sea • Multiengine sea
Rotorcraft	• Helicopter • Gyroplane
Gliders	
Lighter than air	• Airship • Balloon
Powered-lift	
Powered Parachute	• Land • Sea
Weight Shift Control Aircraft	• Land • Sea

Aircraft Certification

- **Class:** Broad grouping of aircraft; similar characteristics
 - Airplane, rotorcraft, glider, balloon
- **Category:** Based on intended use or operating limitations
 - Transport, normal, utility, acrobatic, limited, restricted, provisional
- “A transport-category airplane”

Class Category	Airplane	Rotorcraft
Transport		
Normal		

FARs Related to VFR

FEDERAL AVIATION REGULATIONS (FARs) for Visual Flight Rules (VFR)

- FAR Part 1
 - Definitions: Read and review
- FAR Part 61
 - Certification of Pilots
- FAR Part 91
 - Rules for Operation
- FAR Part 141
 - Flight Schools
- NTSB 830
 - Mishaps, Incidents and Accidents

FAR 61.3

Requirement for certificates, ratings, and authorizations

Whenever acting as a required pilot flight crew member of a civil aircraft in the United States, you must physically possess and have readily accessible, your pilot certificate, a government issued photo ID, and your medical certificate.

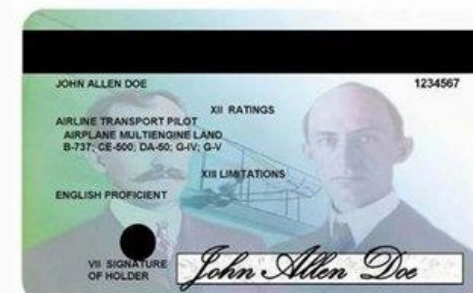
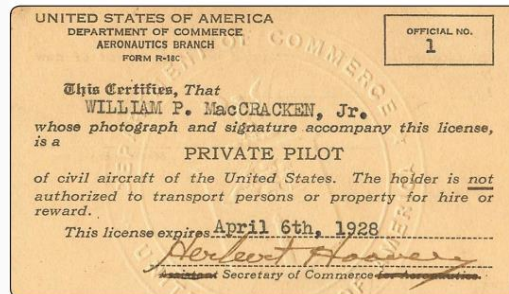
If you are a student pilot doing a solo, you will also need your logbook with appropriate endorsements. If exercising privileges of a flight instructor, you must have all of the previous documents as well as your flight instructor certificate.

14 CFR § Part 61

Applicability and definitions.

- (a) Except as provided in part 107 of this chapter, this part prescribes:
 - (1) The requirements for issuing pilot [...] certificates and ratings; the conditions under which those certificates and ratings are necessary; and the privileges and limitations of those certificates and ratings.

– 14 CFR § 61.1



Required Identification

Requirement for certificates, ratings, and authorizations.

- (a) No person may serve as a required pilot flight crewmember of a civil aircraft of the United States, unless that person:
 - (1) Has in the person's physical possession or readily accessible in the aircraft when exercising the privileges of that pilot certificate or authorization—
 - (i) A pilot certificate issued under this part and in accordance with § 61.19; [...]
 - (2) Has a photo identification that is in that person's physical possession or readily accessible in the aircraft when exercising the privileges of that pilot certificate or authorization. The photo identification must be a:
 - (i) Driver's license issued by a State, the District of Columbia, or territory or possession of the United States; [...]

– 14 CFR § 61.3

Duration of Certificates

- Temporary Certificates [14 CFR § 61.17]
 - Issued for up to 120 days
 - Expires on the expiration date shown, upon receipt of the permanent certificate, or upon receipt of a notice that the certificate or rating sought is denied or revoked.
- Pilot Certificates [14 CFR § 61.19 (c)(1)]
 - A pilot certificate issued after April 1, 2016 issued under Part 61 is issued without a specific expiration date.
 - Including a student pilot certificate.

Temporary Certificate

i. UNITED STATES OF AMERICA DEPARTMENT OF TRANSPORTATION – FEDERAL AVIATION ADMINISTRATION						iii. CERTIFICATE NO. PENDING	
ii. TEMPORARY AIRMAN CERTIFICATE							
THIS CERTIFIES THAT		iv. ARTHUR HSI-PING CHU v. [REDACTED]					
DATE OF BIRTH [REDACTED]	HEIGHT [REDACTED] IN.	WEIGHT [REDACTED]	HAIR BLACK	EYES BROWN	SEX M	NATIONALITY vi. USA	
ix. [REDACTED] has been found to be properly qualified and is hereby authorized in accordance with the conditions of issuance on the reverse of this certificate to exercise the privileges of STUDENT PILOT							
RATINGS AND LIMITATIONS xii. ; [LIMITATIONS]: CARRYING PASSENGERS IS PROHIBITED							
xiii.							
THIS IS ☒ AN ORIGINAL ISSUANCE ☐ A REISSUANCE OF THIS GRADE OF CERTIFICATE				DATE OF SUPERSEDED AIRMAN CERTIFICATE			
BY DIRECTION OF THE ADMINISTRATOR						EXAMINER'S DESIGNATION NO. OR INSPECTOR'S REG. NO.	
x. DATE OF ISSUANCE 05/26/2018 04:01:37 PM		xi. SIGNATURE OF EXAMINER OR INSPECTOR MANAGER, AIRMEN CERTIFICATION BR IACRA E-SIGNED APPLICATION				DATE DESIGNATION EXPIRES	
FAA Form 8060-4 (8-79) USE PREVIOUS EDITION Application Number: 1762613 IACRA Equivalent							

vii. AIRMAN'S SIGNATURE

XIV. CONDITIONS OF ISSUANCE

This is an interim certificate issued subject to the approval of the Federal Aviation Administration pending the issuance of a certificate of greater duration. It becomes void –

1. Upon the receipt of a certificate of greater duration to replace it;
2. Upon a finding by the FAA that an error has been made in its issuance;
3. Upon a finding by the FAA that it was issued illegally or as the result of fraud or mis-representation;
4. Upon the refusal or failure by the holder to accomplish a flight check by a Flight Standards Inspector if so requested; and
5. In any case, at the expiration of 120 days from date of issuance.



FAR 61.23 Medical Certificates: Requirements

•1st Class Medical

- You must have a 1st class medical certificate in order to exercise privileges of an ATP certificate.
 - If you 40 years of age or older, your 1st class medical is valid for 6 calendar months.
 - If you are under 40 years of age, your 1st class medical is valid for 12 calendar months.
- If you go passed the 6 or 12 calendar months, you medical certificate drops down to a 3rd class privileges for the next 12 calendar months.

•2nd Class Medical

- You must hold at least a 2nd class medical certificate to exercise privileges of a commercial certificate.
- No matter what your age is, your 2nd class medical is valid for 12 calendar months.

•3rd Class Medical

- You must hold at least a 3rd class medical certificate in order to perform a solo flight with a student pilot certificate, act as PIC with a private pilot certificate, or to take a check ride for any certificate.
 - If you are 40 years of age or older, your 3rd class medical certificate is valid for 24 calendar months.
 - If you are under 40 years of age, your 3rd class medical certificate is valid for 60 calendar months.

Even with a current medical, FAR 61.53 states that, "A pilot can not act as a crew member on an aircraft is they know, or have reason to know, of any medical conditions that would make them unsafe to operate an aircraft."

- Must hold a current valid U.S. driver's license and comply with all associated medical requirements or restrictions;
- Must *have held* a medical certificate valid at any time after 15 July 2006;
- Most recent application for a medical certificate cannot have been denied;
- Most recent medical certificate cannot have been suspended or revoked;
- Must have available in logbook—
 - Medical examination checklist completed every 48 months per 14 CFR § 68.7; and
 - Certificate of course completion [[AOPA](#) or [the Mayo Clinic](#)] required under 14 CFR § 61.23(c)(3) every 24 months.

Limitations for BasicMed

- Exam every 48 calendar months, course every 24 months
- Aircraft
 - 6,000 lbs MTOW
 - No more than 6 seats
- Airspace
 - No international operation
 - No operation at or above 18,000 feet MSL
- Operation
 - Less than 250 knots indicated
 - Not for compensation or hire

FAR 61.56 Flight Review

To act as PIC, within the previous 24 calendar months, you must have accomplished a flight review and have a logbook endorsement stating you have satisfactorily completed that review by an authorized instructor.

However, a successful FAA practical test towards a certificate or rating can take the place of a flight review.

Each time you get a new certificate or rating, or even when you renew your flight instructor certificate, your 24 calendar months starts over again. Your flight review will be 24 calendar months after you most recent rating or certificate.

FAR 61.57 Recent Flight Experience: Pilot in Command

To act as pilot in command while carrying passengers, you must have had 3 takeoffs and 3 landings, while being the sole manipulator of the controls, within the last 90 days.

These takeoffs and landings will have to be in an aircraft of the same category, class, and type (and/or if type rating is required).

What happens now if you are going to be flying your passengers at night? Let's first define **night** as it applies to recency.

Nighttime will be considered 1 hour after sunset through 1 hour before sunrise.

The PIC will be required to complete 3 takeoff and landings at night and the landing to be completed to a full stop.

These night takeoff and landings can not be touch-and-goes.

FAR 61.60 Change of Address

If you move to a new permanent mailing address, you must notify the FAA within 30 days of your move.

If you do not notify the FAA, then after 30 days, you are unable to exercise your flight privileges for the certificates you hold.

This one is pretty straight forward, make sure you give the FAA your new address every time you move.

FAR 61.103 Private Pilot Eligibility Requirements

This regulation simply outlines the requirements that must be met in order to qualify for a private pilot certificate. These requirements include the following:

- Must be at least 17 years of age
- Be able to read, write, speak, and understand English
- Hold either a student pilot, sport pilot, or recreational pilot certificate
- Have a logbook endorsement by an authorized instructor that states that they conducted training they certify the pilot is ready for the both the knowledge and practical tests
- Have logbook entries showing that all the required training and aeronautical experience was completed and
- Pass the required FAA knowledge exam
- Pass the required FAA practical exam

Private Pilot Privileges and Limitations (FAR 61.113)

- May not act as PIC of an aircraft carrying passengers or property for compensation or hire.
- May act as PIC for compensation/hire if incidental to the business and no passengers or property.
- May not pay less than the pro rata share of the operating expenses of a flight provided the expenses involve only fuel, oil, airport expenditures, or rental fees.
- May be reimbursed for operating expenses directly related to search and location operations.
- May act as PIC for a charitable, nonprofit, or community event. (91.146)
- May be reimbursed for operating expenses directly related to search and rescue.
- May demonstrate an aircraft to a potential buyer if have over 200 hrs and are an aircraft salesman.
- May act as PIC of an aircraft towing a glider. (61.69)
- May not act as PIC for comp/hire as SIC of an aircraft type certificated for more than 1 pilot or act as SIC for an aircraft carrying persons/property for com

FAR 91.7 Civil Aircraft airworthiness

There are 2 parts to the regulation. First, it states that you can not operate any aircraft that is not airworthy. It then states that the PIC is the one responsible for determining whether the aircraft is in a condition for a safe flight or not. If not, the pilot must discontinue the flight.

So what does that mean, we have to do all the maintenance checks and make sure everything is working?

NO. The PIC will be responsible for determining the airworthiness based on a few different things such as the preflight walk around and the maintenance records.

You will need to do the walk around to determine all required items are working and check the maintenance records to make sure all required inspections have been done.

FAR 91.3 Responsibility and Authority of the Pilot in Command

The pilot in command will be fully responsible for and have final authority for the operation of the aircraft. This regulation also states that if there is any inflight emergency, the pilot in command has the full authority to deviate from any other regulation to the extent required in order to handle said emergency.

If you deviate from any regulation, you are only required to send a written report of that deviation, if the FAA requests it.

FAR 91.7 Civil Aircraft Airworthiness

This is another pretty straight forward regulation that states that you can not operate an aircraft unless it is in airworthy condition. It also states, that as the Pilot in Command, it is your job to determine whether the aircraft is safe to fly or not.

If it is not safe to fly, you should make the decision to not take the flight in the aircraft until the issue you determined to be unsafe is resolved and the aircraft is safe to fly.

FAR 91.15 Dropping Objects

It states that you can not drop anything from your aircraft while you are in flight if it creates a hazard to any person or property.

Right after that, it states that you CAN drop objects if the proper precautions are taken to avoid injury or damage to any person or property.

Use common sense.

FAR 91.17 Alcohol or Drugs

You can not act as a crew member of a civil aircraft if you:

- Have consumed any alcohol within the previous 8 hour
- Are under the influence of alcohol
- Are using any drugs that inhibit your abilities to safety
- Have an alcohol concentration of 0.04 or greater in your blood or breather specimen

The second part to the regulation *91.17(b)* states that a pilot can not allow any person aboard the flight who appear intoxicated or seems to be under the influence of drugs.

This does not include an emergency or a medical patient under special care.

FAR 91.103 Preflight Action

As the PIC you must become familiar with all the information concerning your flight, start to finish.

We use the acronym NWKRAFT to remember all the information we must be familiar with.

- **N**OTAMS
- **W**eather
- **K**nown ATC Delays
- **R**unway lengths at each airport
- **A**lternate Airports if needed
- **F**uel Requirements
- **T**akeoff and Landing Distances

Preflight Action (2)

N – W – K – R – A – F – T

- Notice to Air Missions (NOTAM's)
- Weather reports and forecasts
- Known traffic delays
- Runway lengths at airports of intended use
- Alternatives available
- Fuel requirements
- Take off and landing distance data

Passenger Seatbelts

Use of safety belts, shoulder harnesses, and child restraint systems.

- (a) Unless otherwise authorized by the Administrator —
 - (1) No pilot may take off a U.S.-registered civil aircraft [...] unless the pilot in command of that aircraft ensures that each person on board is briefed on how to fasten and unfasten that person's safety belt and, if installed, shoulder harness.
 - (2) No pilot may cause to be moved on the surface, take off, or land a U.S.-registered civil aircraft [...] unless the pilot in command of that aircraft ensures that each person on board has been notified to fasten his or her safety belt and, if installed, his or her shoulder harness.

– 14 CFR § 91.107

FAR 91.111 Operating Near Other Aircrafts

You should not operate an aircraft close enough to another aircraft that it causes a collision hazard.

If you want to fly formation flying, you have to first make appropriate arrangements with the PICs of all aircrafts flying in formation.

You also can not fly formation if you are carrying passengers for hire.

FAR 91.117 Aircraft Speed

- Just like there are speed limits in your car, there are speed limits in the air
- Aircraft below 10,000ft MSL - **250 KIAS limit**
- Within 4nm of Class C or D, from the surface to 2,500ft AGL – **200 KIAS**
- Under the Class B shelf or within a VFR corridor - **200 KIAS**
- Note: The majority of aircraft traffic is GA traffic and GA traffic is usually below 10,000ft MSL

FAR 91.119 Minimum Safe Altitudes

Whenever you are over congested area, you must remain 1,000 ft above the highest obstacle, within a 2,000 ft radius.

Whenever you are flying around cities or populated areas, and within a 2,000 ft radius of a tall building, you must remain at 1,000 ft above that building.

The next part that is discussed is over other than congested areas, or sparsely populated areas.

Obviously, this does not apply to when you are taking off or landing, the FAR specifically says this incase of any confusion.

FAR 91.151 Fuel Requirements for VFR Flight

Fuel Reserve during the Day - **30 minutes**

Fuel Reserve at Night - **45 minutes**

If you are operating an airplane, you are required to ensure that you have enough fuel to fly to your airport of intended landing and assume normal cruise speed for another 30 minutes during the day, and 45 minutes at night.

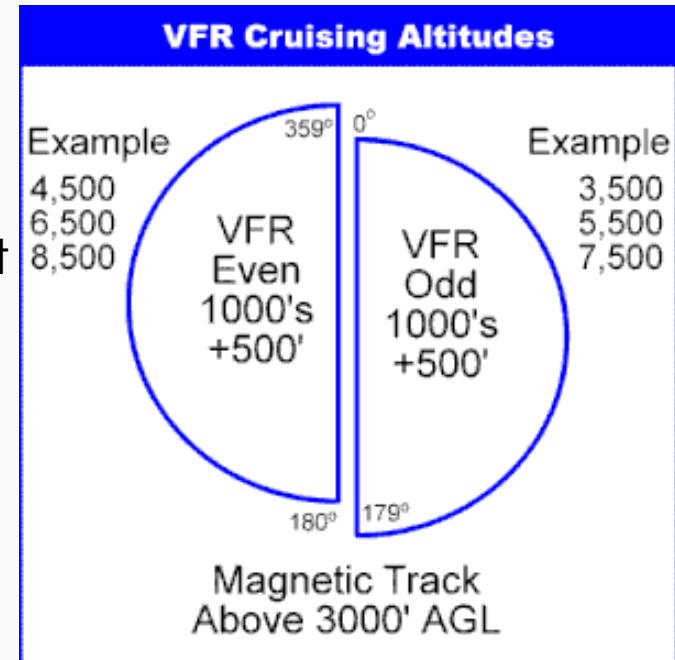
FAR 91.159 VFR Cruising Altitudes

If you are below 18,000 feet, your altitude will be determined by your magnetic course.

Magnetic Course and altitudes:

- **0-179 degrees** = Odd thousand foot + 500 feet
- **180 - 360 degrees** = Even thousand foot + 500 feet

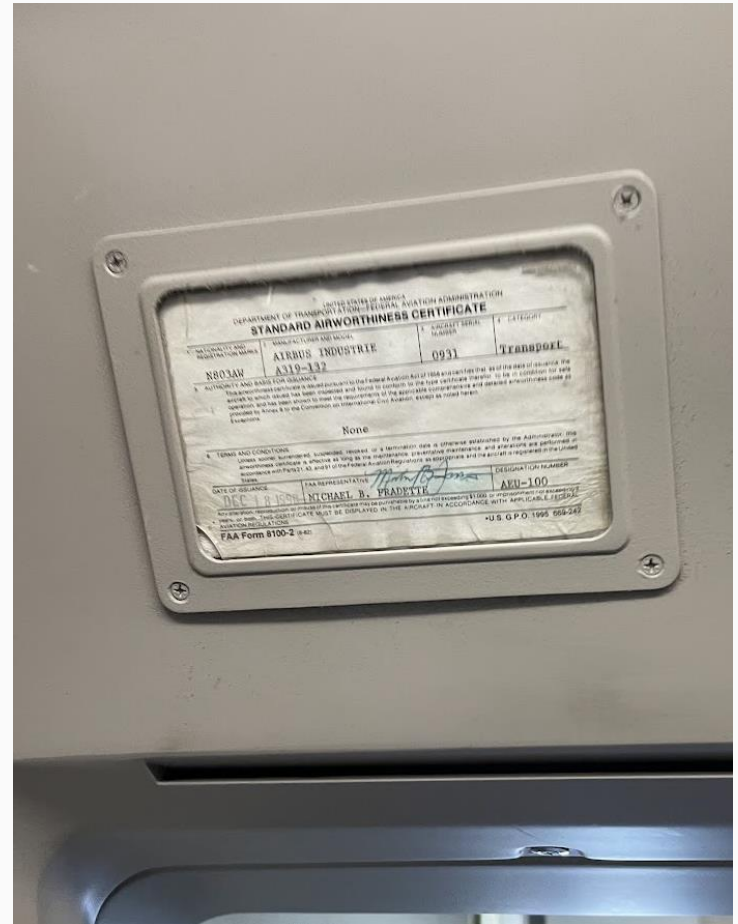
This helps keep aircraft separation. This regulation does not apply for altitudes 3,000 feet AGL and below and it doesn't apply when turning or in a holding pattern for 2 minutes or less.



Airworthiness Certificate

Duration.

- (a) Unless sooner surrendered, suspended, revoked, or a termination date is otherwise established by the FAA, airworthiness certificates are effective as follows:
 - (1) Standard airworthiness certificates, special airworthiness certificates—primary category, and airworthiness certificates issued for restricted or limited category aircraft are effective as long as the maintenance, preventive maintenance, and alterations are performed in accordance with Parts 43 and 91 of this chapter and the aircraft are registered in the United States.



– 14 CFR § 21.181

Airworthiness Directives

Definition of airworthiness directives.

FAA's airworthiness directives are legally enforceable rules that apply to the following products: aircraft, aircraft engines, propellers, and appliances.

– 14 CFR § 39.3

When does FAA issue airworthiness directives?

FAA issues an airworthiness directive addressing a product when we find that:

- (a) An unsafe condition exists in the product; and
- (b) The condition is likely to exist or develop in other products of the same type design.

– 14 CFR § 39.5

NTSB 830 Summary

830.5 An immediate notification to the NTSB is required when...

- An aircraft accident or any of the following incidents occur:
- Flight control system malfunction or failure
- Inability of crew member to perform duties due to illness or injury
- Uncontained turbine engine failure
- In-flight fire
- Mid-air collision
- Damage to non-aircraft property in excess of \$25,000 for repair or replacement
- Propeller blade separation excluding that caused by ground strike
- For equipped aircraft, a loss of 50% or more of EFIS, EICAS or ECAM or PFD
- For equipped aircraft on IFR, an ACAS advisory where compliance is required to avoid a mid-air
- For large multi-engine (>12,500lbs), major electrical or hydraulic systems, multiple engine failure, or emergency evacuation.
- When an air carrier experiences a runway incursion requiring immediate correction to avoid an accident, or when an airplane lands or departs an incorrect runway or non-runway surface.

830.10 Wreckage, mail and cargo must be preserved following an accident or incident except as required to remove people injured or trapped, protect the wreckage from more damage or protect the public from injury.

831.15 The operator must file with the NTSB within 10 days of an accident, or after 7 days if an aircraft is still missing. If a crew member is incapacitated, they shall submit the statement as soon as physically able.

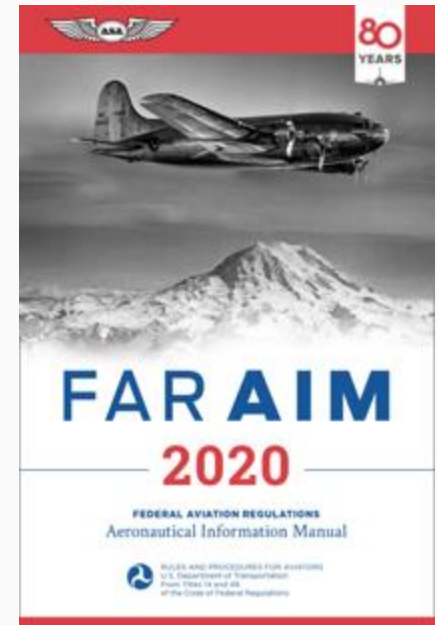
Aeronautical Information Manual (AIM)

- It is the official guide to basic flight information and ATC procedures is the AIM.
- It is revised several times a year.
- Also includes items of special interest for pilots such as medical facts and safety information.

FAA AIM

<https://www.faraim.org>

https://www.faa.gov/air_traffic/publications/media/aim_change_3_dtd_11-3-22.pdf



Notice to Air Missions (NOTAMS)

- Changes in AIM are not known far enough in advance to be included in the most recent chart supplement. The notice to airmen provides with time critical flight planning.

- ☐ !PDX 11/052 PDX OBST TOWER LGT (ASR 1061622) 453421.40N1223719.60W (1.4NM SW PDX) 182.4FT (105.3FT AGL) OUT OF SERVICE 1511281901-1512130800
- ☐ !PDX 11/051 PDX COM REMOTE TRANSMITTER/RECEIVER 121.65 OUT OF SERVICE 1511281537-1512022100EST
- ☐ !PDX 11/050 (KPDX A1251/15) PDX TWY W CLSD LGTD AND BARRICADED 1511260134-1512302300
- ☐ !PDX 11/049 (KPDX A1249/15) PDX SVC PCL RWY 10R PAPI OUT OF SERVICE 1511240644-1512022100EST
- ☐ !FDC 5/5202 (KPDX A1142/15) PDX STAR PORTLAND INTL, PORTLAND, OR. MOXEE SIX ARRIVAL... CROSS VANTZ AT 250 KIAS OR LESS. 1510292030-1610292030EST.
- ☐ !FDC 5/6654 (KPDX A0640/15) PDX STAR PORTLAND INTL, PORTLAND, OR. MOXEE SIX ARRIVAL... NA FOR RNAV EQUIPPED TURBO JETS LANDING PORTLAND INTL. 1506261615-1606261615.

Notice to Air Missions (NOTAMS)

NOTAM information is classified into five categories:

- **Distant, or NOTAM (D)**
 - NOTAM (D) outlines all local and distant (D) NOTAMs for all navigational facilities, public use airports, seaports, and heliports in the U.S. Chart supplement. For example, information regarding runway closures or obstructions can be found in this NOTAM
- **Flight Data Center (FDC) NOTAMs**
 - FDC, or Flight Data Center NOTAMs outline changes to instrument approach procedures and airways within the U.S.
- **Pointer NOTAMs**
- **Special Activity Airspace (SAA) NOTAMs**
- **Military NOTAMs**

Notice to Air Missions (NOTAM-D)

Keyword	Example	Meaning
RWY	RWY 3/21 CLSD	Runways 3 and 21 are closed to aircraft.
TWY	TWY F LGTS OTS	Taxiway F lights are out of service.
RAMP	RAMP TERMINAL EAST SIDE CONSTRUCTION	The ramp in front of the east side of the terminal has ongoing construction.
APRON	APRON SW TWY C NEAR HANGARS CLSD	The apron near the southwest taxiway C in front of the hangars is closed.
AD	AD ABN OTS	Aerodromes: The airport beacon is out of service.
OBST	OBST TOWER 283 (245 AGL) 2.2 S LGTS OTS (ASR 1065881) TIL 0707272300	Obstruction: The lights are out of service on a tower that is 283 feet above mean sea level (MSL) or 245 feet above ground level (AGL) 2.2 statute miles south of the field. The FCC antenna structure registration (ASR) number is 1065881. The lights will be returned to service 2300 UTC (Coordinated Universal Time) on July 27, 2007.
NAV	NAV VOR OTS	Navigation: The VOR located on this airport is out of service.
COM	COM ATIS OTS	Communications: The Automatic Terminal information Service (ATIS) is out of service.
SVC	SVC TWR 1215-0330 MON -FRI/1430-2300 SAT/1600-0100 SUN TIL 0707300100 SVC FUEL UNAVBL TIL 0707291600	Service: The control tower has new operating hours, 1215-0330 UTC Monday Thru Friday. 1430-2300 UTC on Saturday and 1600-0100 UTC on Sunday until 0100 on July 30, 2007.
		Service: All fuel for this airport is unavailable until July 29, 2007, at 1600 UTC.
	SVC CUSTOMS UNAVBL TIL 0708150800	Service: United States Customs service for this airport will not be available until August 15, 2007, at 0800 UTC.
AIRSPACE	AIRSPACE AIRSHOW ACFT 5000/BLW 5 NMR AIRPORT AVOIDANCE ADZD WEF 0707152000-0707152200	Airspace. There is an airshow being held at this airport with aircraft flying 5,000 feet and below within a 5 nautical mile radius. Avoidance is advised from 2000 UTC on July 15, 2007, until 2200 on July 15, 2007.
U	ORT 6K8 (U) RWY ABANDONED VEHICLE	Unverified aeronautical information.
O	LOZ LOZ (O) CONTROLLED BURN OF HOUSE 8 NE APCH END RWY 23 WEF 0710211300-0710211700	Other aeronautical information received from any authorized source that may be beneficial to aircraft operations and does not meet defined NOTAM criteria.

Advisory Circular

- **Advisory Circular (AC)** refers to a type of publication offered by the (FAA) to provide guidance for compliance with airworthiness regulations, pilot certification, operational standards, training standards.



Advisory Circular

Subject: Transition to Unfamiliar Aircraft

Date: 6/29/15

AC No: 90-109A

Initiated by: AFS-800

Change:

1. PURPOSE. This advisory circular (AC) is intended to help plan the transition to any unfamiliar fixed-wing airplanes, including type-certificated (TC) and/or experimental airplanes. It provides information and guidance to owners and pilots of experimental, simple, complex, high-performance, and/or unfamiliar airplanes. It also provides information to flight instructors who teach in these airplanes. This information and guidance contains recommendations for training experience for pilots of experimental airplanes in a variety of groupings based on performance and handling characteristics. This AC does not address the testing of newly built experimental airplanes. The current edition of AC 90-89, Amateur-Built Aircraft and Ultralight Flight Testing Handbook, provides information on such testing. However, if a pilot is planning to participate in a flight test program in an unfamiliar and/or experimental airplane, this AC should be used to develop the skills and knowledge necessary to safely accomplish the test program utilizing the guidance found in AC 90-89.

2. CANCELLATION. AC 90-109, Airmen Transition to Experimental or Unfamiliar Airplanes, dated March 30, 2011, is canceled.

3. BACKGROUND.

a. Transitioning between Aircraft. The Federal Aviation Administration (FAA) has recognized a need to devote resources to preventing accidents occurring because of inadequate training when transitioning between aircraft types. Specifically, accidents resulting from loss of aircraft control or situational awareness frequently result from pilot unpreparedness for challenges presented by the aircraft. Pilots transitioning to unfamiliar aircraft require specific training in the new aircraft's systems and operating characteristics to include normal, abnormal, and emergency procedures.

b. Experimental Airplanes. The experimental airplane community is an important part of the civil aviation industry in the United States; some of aviation's greatest technological achievements were developed by amateur airplane builders. The amateur builder community is foundational to General Aviation (GA) in the United States. Historically, experimental airplane flight operations represent a small percentage of flight hours, but a significant percentage of GA accidents.

c. High-Performance and Complex Airplanes. Many contemporary and legacy GA aircraft have features such as retractable landing gear, turbocharging, pressurization, sophisticated avionics, autopilots, and turbine powerplants, all of which add operational

Questions?



Disclaimer

Please note that information within this presentation comes from various sources which may or may not have been validated.

Always use official FAA materials and documents for current FARs and publications.

Refer to Certified Flight Instructors for clarification and questions, as needed.

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- (b) The condition is likely to exist or develop in other products of the same type design.

– 14 CFR § 39.5

(g) Revision of Airplane Flight Manual (AFM): Certificate Limitations

Within 3 days after receipt of this AD, revise the Certificate Limitations chapter of the applicable AFM to include the information in figure 1 to paragraph (g) of this AD.

Figure 1 to paragraph (g) of this AD – *Certificate Limitations*

Required by AD 2018-23-51

Runaway Stabilizer

In the event of an uncommanded horizontal stabilizer trim movement, combined with any of the following potential effects or indications resulting from an erroneous Angle of Attack (AOA) input, the flight crew must comply with the Runaway Stabilizer procedure in the Operating Procedures chapter of this manual:

- Continuous or intermittent stick shaker on the affected side only.
- Minimum speed bar (red and black) on the affected side only.
- Increasing nose down control forces.
- IAS DISAGREE alert.
- ALT DISAGREE alert.
- AOA DISAGREE alert (if the option is installed).
- FEEL DIFF PRESS light.
- Autopilot may disengage.
- Inability to engage autopilot.

AD – Legal Effect

What is the legal effect of failing to comply with an airworthiness directive?

Anyone who operates a product that does not meet the requirements of an applicable airworthiness directive is in violation of this section.

– 14 CFR § 39.7

What if I operate an aircraft or use a product that does not meet the requirements of an airworthiness directive?

If the requirements of an airworthiness directive have not been met, you violate § 39.7 each time you operate the aircraft or use the product.

– 14 CFR § 39.9

Preventative Maintenance

Persons authorized to perform maintenance, preventive maintenance, rebuilding, and alterations.

- (g) Except for holders of a sport pilot certificate, the holder of a pilot certificate issued under part 61 may perform preventive maintenance on any aircraft owned or operated by that pilot which is not used under part 121, 129, or 135 of this chapter. [...]

– 14 CFR § 43.3

General definitions.

Preventive maintenance means simple or minor preservation operations and the replacement of small standard parts not involving complex assembly operations.

– 14 CFR § 1.1

Preventive Maintenance (2)

Major Alterations, Major Repairs, and Preventive Maintenance

- (c) Preventive maintenance. Preventive maintenance is limited to the following work, provided it does not involve complex assembly operations:
 - (1) Removal, installation, and repair of landing gear tires.
 - (2) Replacing elastic shock absorber cords on landing gear.
 - (3) Servicing landing gear shock struts by adding oil, air, or both.
 - (4) Servicing landing gear wheel bearings, such as cleaning and greasing.
 - [...]
 - (31) Removing and replacing self-contained, front instrument panel-mounted navigation and communication devices [...]

– Appendix A to 14 CFR § Part 43

Return to Service

Approval for return to service after [...] preventive maintenance [...].

No person may approve for return to service any aircraft, airframe, aircraft engine, propeller, or appliance, that has undergone [...] preventive maintenance [...] unless—

- (a) The maintenance record entry required by § 43.9 or § 43.11, as appropriate, has been made;

– 14 CFR § 43.5

Persons authorized to approve aircraft, airframes, aircraft engines, propellers, appliances, or component parts for return to service after [...] preventive maintenance [...]

- (g) A person holding at least a private pilot certificate may approve an aircraft for return to service after performing preventive maintenance under the provisions of § 43.3(g).

– 14 CFR § 43.7

Preventive Maintenance – Record Keeping

Content, form, and disposition of [...] preventive maintenance [...] records [...].

- (a) Maintenance record entries. Except as provided in paragraphs (b) and (c) of this section, each person who [...] performs preventive maintenance [...] shall make an entry in the maintenance record of that equipment containing the following information:
 - (1) A description (or reference to data acceptable to the Administrator) of work performed.
 - (2) The date of completion of the work performed.
 - (3) The name of the person performing the work if other than the person specified in paragraph (a)(4) of this section.
 - (4) If the work performed on the aircraft, airframe, aircraft engine, propeller, appliance, or component part has been performed satisfactorily, the signature, certificate number, and kind of certificate held by the person approving the work. The signature constitutes the approval for return to service only for the work performed.

– 14 CFR § 43.9

Take Off and Landing Currency – Day

Recent flight experience: Pilot in command.

(a) General experience.

- (1) Except [...], no person may act as a pilot in command of an aircraft carrying passengers [...] unless that person has made at least three takeoffs and three landings within the preceding 90 days, and—
 - (i) The person acted as the sole manipulator of the flight controls; and
 - (ii) The required takeoffs and landings were performed in an aircraft of the same category, class, and type (if a type rating is required), and, if the aircraft to be flown is an airplane with a tailwheel, the takeoffs and landings must have been made to a full stop in an airplane with a tailwheel.
- (2) For the purpose of meeting the requirements of paragraph (a)(1) of this section, a person may act as a pilot in command of an aircraft under day VFR or day IFR, provided no persons or property are carried on board the aircraft, other than those necessary for the conduct of the flight.

– 14 CFR § 61.57

Take Off and Landing Currency – Night

Recent flight experience: Pilot in command.

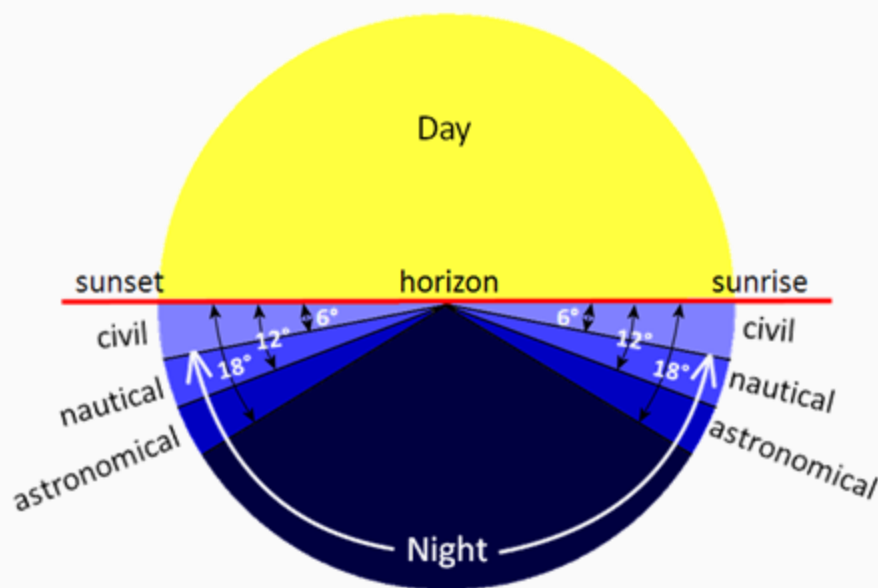
(b) Night takeoff and landing experience.

- (1) Except [...], no person may act as pilot in command of an aircraft carrying passengers during the period beginning 1 hour after sunset and ending 1 hour before sunrise, unless within the preceding 90 days that person has made at least three takeoffs and three landings to a full stop during the period beginning 1 hour after sunset and ending 1 hour before sunrise, and—
 - (i) The person acted as the sole manipulator of the flight controls; and
 - (ii) The required takeoffs and landings were performed in an aircraft of the same category, class, and type (if a type rating is required).

– 14 CFR § 61.57

Three Types of Night

Context	Night Begins At	Night Ends At	Authority
Must have lighted position lights	Sunset	Sunrise	14 CFR § 91.209
To carry passengers at night (Night currency)	One hour after sunset	One hour before sunrise	14 CFR § 61.57
To log night experience; All other references to night in FAR	End of evening civil twilight	Beginning of morning civil twilight	14 CFR § 1.1



Sunrise and sunset

Times for 29-Oct-2023

	Local (UTC-4)	Zulu (UTC)
Morning civil twilight	06:46	10:46
Sunrise	07:15	11:15
Sunset	17:40	21:40
Evening civil twilight	18:09	22:09

[[AirNav.com](https://www.airnav.com)]

Immediate Notification Required [49 CFR 830.5]

- Accident – Any person suffers death or serious injury, or in which the aircraft receives substantial damage
- Serious Incident (excerpt)
 - Flight control system malfunction or failure;
 - Flight crewmember incapacitation due to injury, illness;
 - Uncontained turbine engine failure or in-flight fire
 - Mid-air collision
 - Collateral damage > \$25,000
 - Propeller breakage due to other than prop strike
 - Complete loss of information on > 50% cockpit displays
 - Runway incursions during take-off/landing, or those requiring evasive action
- Aircraft overdue and believed to have been involved in an accident.

Preservation of Wreckage

Preservation of aircraft wreckage, mail, cargo, and records.

- (a) The operator of an aircraft involved in an accident or incident for which notification must be given is responsible for preserving to the extent possible any aircraft wreckage, cargo, and mail aboard the aircraft, and all records [...] pertaining to the operation and maintenance of the aircraft and to the airmen until the Board takes custody thereof or a release is granted [...].
- (b) Prior to the time the Board or its authorized representative takes custody of aircraft wreckage, mail, or cargo, such wreckage, mail, or cargo may not be disturbed or moved except to the extent necessary
 - (1) To remove persons injured or trapped;
 - (2) To protect the wreckage from further damage; or
 - (3) To protect the public from injury.

[...]

– 49 CFR 830.10

NTSB Report Requirements

Reports and statements to be filed.

- (a) **Reports.** The operator of a civil, public (as specified in § 830.5), or foreign aircraft shall file a report on Board Form 6120. 1/2 (OMB No. 3147–0001) 2 within 10 days after an accident, or after 7 days if an overdue aircraft is still missing. A report on an incident for which immediate notification is required by § 830.5(a) shall be filed only as requested by an authorized representative of the Board.

– 49 CFR § 830.15

Notification Requirements, Take Three

Subject of Notification	Recipient	Time Limit	Authority
Motor Vehicle Action (DUI)	Civil Aviation Security Division	60 days	14 CFR § 61.15 (e)
Change of Address	Airman Certification Branch	30 days	14 CFR § 61.60
Accident; Serious Incident	NTSB	Immediately	49 CFR § 830.5

Subject of Report	Recipient	Time Limit	Authority
Pilot Deviation (PD) for an emergency	FAA (“The Administrator”)	Upon request	14 CFR § 91.3 (c)
Priority Given (No PD)	Manager of that ATC facility	48 hours, if requested	14 CFR § 91.123 (d)
Accident; Overdue	NTSB	10 days; 7 days	49 CFR § 830.5
Serious Incident	NTSB	Upon request	49 CFR § 830.5