

Private Pilot (ASEL) Ground School Course

Lesson 14 | Federal Aviation Regulations (FARs) / AIM

Chester County
Aviation



Lesson Overview

Lesson Objectives:

- Develop knowledge of the FARs and AIM.
- Develop an understanding of how to use the FARs and AIM.

Lesson Completion Standards:

- Student demonstrates satisfactory knowledge of FARs/AIM by answering questions and actively participating in classroom discussions.

Regulation Basics

Federal Aviation Regulations (FARs) / AIM

Regulations

- The legislative branch of the federal government creates laws.
- They do so by putting those law in the Code of Federal Regulations under different sections or “Titles”
- Title 14 is Aeronautics and Space

	Part / Section
▼ Title 14 Aeronautics and Space	
▶ Chapter I Federal Aviation Administration, Department of Transportation	1 – 199
▼ Chapter II Office of the Secretary, Department of Transportation (Aviation Proceedings)	200 – 399
Subchapter A Economic Regulations	200 – 298
Subchapter B Procedural Regulations	300 – 331
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Subchapter A General	400 – 401
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Subchapter C Licensing	411 – 1199
▶ Chapter V National Aeronautics and Space Administration	1200 – 1299
▼ Chapter VI Air Transportation System Stabilization	1300 – 1399
Subchapter A Office of Management and Budget	1300
Subchapter B Air Transportation Stabilization Board	1310 – 1399

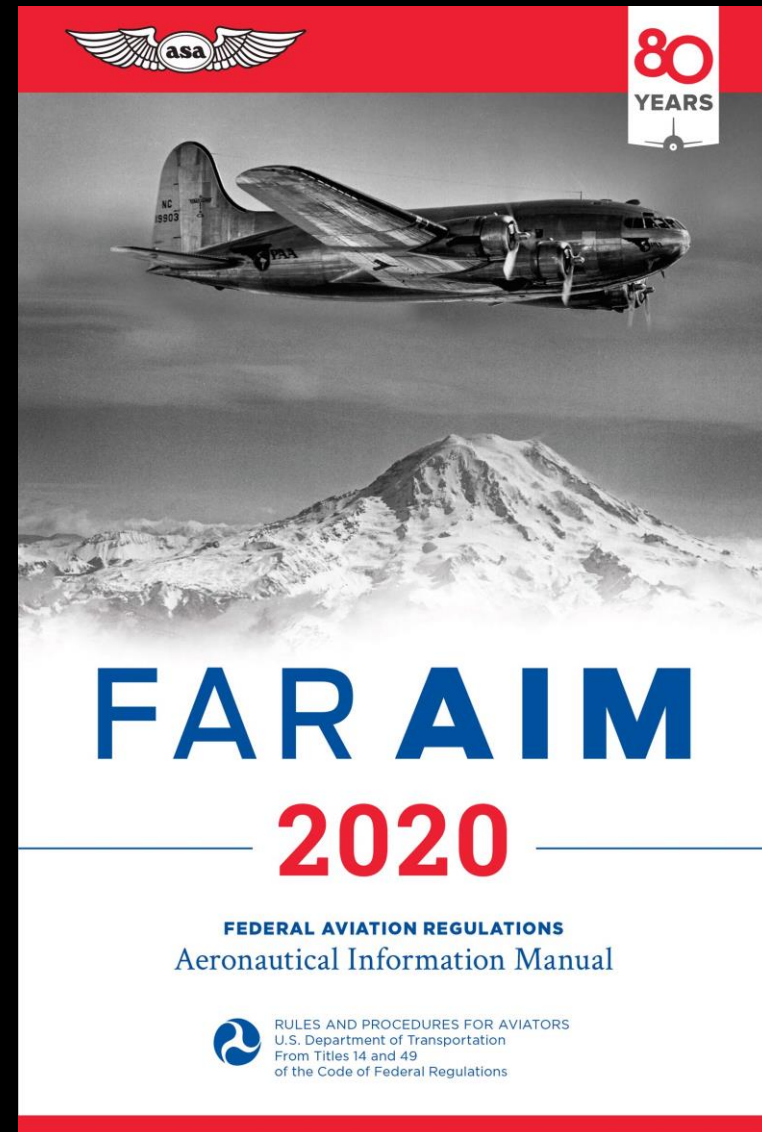
Regulations

- Chapter I cover most of the sections that apply to US.
- Parts 1-199

	Part / Section
▼ Title 14 Aeronautics and Space	
▼ Chapter I Federal Aviation Administration, Department of Transportation	1 – 199
Subchapter A Definitions and General Requirements	1 – 5
Subchapter B Procedural Rules	11 – 17
Subchapter C Aircraft	21 – 59
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Subchapter H Schools and Other Certificated Agencies	140 – 147
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Subchapter K Administrative Regulations	183 – 193
<i>Subchapters L-M [Reserved]</i>	
Subchapter N War Risk Insurance	198 – 199


FAR/AIM

- The Federal Aviation regulations can be seen through the electronic CFR online (eCFR) or a physical copy can be purchased yearly.
- The FARs are also commonly published with the Aeronautical Information Manual (AIM).
 - Think of the AIM as highly suggest by the FAA



Advisory Circulars

- If the FAA finds something that is important to share with the aviation community, they send a MEMO (aka Advisory Circular) to all airmen.
- An Advisory Circular (AC) is an informational document only – it is not regulatory in nature.
- AC's titles have meaning
 - 1st Identifies the subject matter (14 CFR)
 - 2nd Identifies the sequence
 - 3rd Identifies a letter assigned by the author
 - AC 61-65H

	<h2>Advisory Circular</h2>	
Subject: Towbar and Towbarless Movement of Aircraft	Date: 8/27/09	AC No: 00-65
	Initiated by: AFS-330	Change:
1. PURPOSE. This advisory circular (AC) provides guidance for towbar and towbarless movement of aircraft.		
2. APPLICABILITY. The guidance in this AC applies to all Operators under Title 14 of the Code of Federal Regulations (14 CFR) parts 91, 91K, 121, 125, 129, and 135.		
3. RELATED CFR REGULATIONS.		
<ul style="list-style-type: none">• Title 14 CFR part 91, General Operating and Flight Rules;• Title 14 CFR part 121, Operating Requirements: Domestic, Flag, and Supplemental Operations; and• Title 14 CFR part 139, Certification of Airports.		
4. RELATED MATERIAL (current editions).		
<ul style="list-style-type: none">• AC 91-73, Part 91 and Part 135 Single-Pilot Procedures During Taxi Operations;• AC 120-57, Surface Movement Guidance and Control System;• AC 120-74, Parts 91, 121, 125 and 135, Flightcrew Procedures During Taxi Operations;• AC 150/5200-37, Introduction to Safety Management Systems (SMS) for Airport Operators;• AC 150/5210-5, Painting, Marking, and Lighting of Vehicles used on an Airport;• AC 150/5210-18, Systems for Interactive Training of Airport Personnel;• AC 150/5210-20, Ground Vehicle Operations on Airports;• AC 150/5210-21, Announcement of Availability: Airport Surface Safety Training Programs for Mechanics and Ramp Personnel; and• AC 20-35, Tiedown Sense.		

FAR Part 01: Definitions

Federal Aviation Regulations (FARs) / AIM



Make and Model of Airplane

- Once you have your private pilot's certificate, you can legally fly any specific make and model of aircraft within the category and class for which you are rated:
 - Cessna 152
 - Cessna 172
 - Piper Archer PA28-181
 - Piper Cherokee 6
 - Diamond D20
 - Beechcraft Bonanza A36

Student Pilots

- You may only fly the specific make and model of aircraft endorsed in your pilot's logbook by your instructor
- If you are signed off to solo a Cessna 172, you may not solo a Cessna 152 unless your instructor endorses your pilot's logbook for that specific make and model

Student pilot logbooks are endorsed for the make and model of aircraft in which solo flight is permitted.



Date 19	AIRCRAFT MAKE & MODEL	AIRCRAFT IDENT.	POINTS # OF DEPARTURE & ARRIVAL		REMARKS, PROCEDURES, MANEUVERS	NO. INSTR APP	NO. LDG.
			FROM	TO			
Presolo flight training: § 61.87(c)							
I certify that Mr. Bjorn Tu Fli has received the required presolo training in a Cessna 172. I have determined he has demonstrated the proficiency of § 61.87(d) and is proficient to make solo flights in a Cessna 172. 3-16-2016							
Rocket Rod 987654321 CFI Exp. 04-31-18							
						AMT. FORWARD	
						TOTAL TO DATE	

Type Ratings

- If an aircraft weighs over 12,500 pounds or is turbojet powered, a type rating is required to act as pilot in command (PIC) of that aircraft
- A type rating is a specialized checkout in that specific airplane
- Such checkouts entail extensive ground school on the aircraft's systems as well as substantial flight training



Visual Flight Rules (VFR)

- The basic premise of VFR flight is to see and avoid other aircraft
- Visual flight rules stipulate a minimum in-flight visibility as well as a minimum distance from any cloud formation
- This ensures that a pilot can control the airplane by visual reference to the horizon or the surface
- If you can't maintain this visual reference, you'll be forced to fly by reference to your airplane's instruments, which requires an Instrument Rating

Instrument Flight Rules (IFR)

- Once you obtain your private pilot's certificate, you can acquire the skills necessary to fly under IFR
- An instrument rating allows you to fly to your destination while in the clouds and land under low visibility conditions

Night

- Officially defined as the time between the end of evening civil twilight and the beginning of morning civil twilight
- Published in the American Air Almanac

Pilot In Command (PIC)

- The pilot in command is the captain of the ship and is responsible for the safe operation of the aircraft during flight
- He or she is also the person the FAA will look to in the event of a violation, accident, or other event

FAR Part 61: Certification of Pilots, Flight Instructors, and Ground Instructors

Federal Aviation Regulations (FARs) / AIM

61.3 Requirement for Certificates, Ratings, & Authorizations

- To act as pilot in command (PIC) or as a required flight crewmember you must have your:
 - Pilot certificate
 - Medical certificate (or BasicMed)
 - Photo identification

Who can request it?

- You can be asked to present your pilot or medical certificate and photo ID for inspection by the:
 - Federal Aviation Administrator
 - National Transportation Safety Board or Transportation Security Administration representative
 - Customs
 - Any federal, state or local law enforcement officer

61.15 Offenses Involving Alcohol or Drugs

- If convicted for any illegal drug activity, you'll have your pilot certificate suspended or revoked
- Once a certificate is revoked, it no longer exists
- In some cases, it's possible to reapply for that certificate after a minimum waiting period of one year
- Reapplying means a pilot must retake all applicable knowledge exams as well as the flight tests

61.15 Offenses Involving Alcohol or Drugs

- Action taken against your driver's license because of a drug or alcohol problem is known as a motor vehicle action
- Two or more motor vehicle actions within three years of each other is grounds for suspension or revocation of a pilot certificate
- This is also grounds for denial of an application for a certificate or rating up to one year after the date of the last motor vehicle action

61.15 Offenses Involving Alcohol or Drugs

- All drug and alcohol motor vehicle actions must be reported to the FAA within 60 days
- Failure to do so is itself grounds for suspension or revocation of a certificate or rating as well as denial of any application for a certificate or rating for up to one year after the date of the motor vehicle action

61.15 Offenses Involving Alcohol or Drugs

- Regulations require you to avoid acting as pilot in command or as a required crewmember for 8 hours after consuming alcohol
- You may not act as PIC if you have blood alcohol content of .04% or more

61.23 Duration of Medical Certificates

- Medical certificates come in three classes: first, second, and third class
- Each with its own requirements and privileges

UNITED STATES OF AMERICA
Department of Transportation
Federal Aviation Administration
MEDICAL CERTIFICATE THIRD CLASS

This certifies that (Full name and address):
Bud Afterburner
911 SOS Lane
Emergencyville, California 01215

Date of Birth	Ht.	Wt.	Hair	Eyes	Sex
08/26/69	69"	165	Brown	Hazel	Male

has met the medical standards prescribed in Part 67, Federal Aviation Regulations, for this class of Medical Certificate.

Limitations
NONE

Fig. 7A

Date of Examination: 09/06/06
Examiner's Serial No. [REDACTED]

Examiner
Signature: [Handwritten Signature]
Typed Name: SKU Master

AIRMAN'S SIGNATURE: SKU Master

61.23 Duration of Medical Certificates

- The terms of all medical certificates are calculated in calendar months
- Clock starts ticking on the first day of the month after the month in which you obtain your exam
- If you obtain your medical in January, the monthly count starts the following month (February)

61.23 Duration of Medical Certificates

- Airline pilots require a first-class medical which is valid for six months (12 months if under age 40)
- If you're an airline pilot over 40 and take your first-class medical on January 13, 2022 (or January 29th, or January 3rd), it is valid through July 30, 2022
- February, March, April, May, June and July equal six calendar months of time
- For use with a private pilot certificate, it's good for 24 or 60 calendar months depending on whether you're 40 years of age or older or under 40 years of age

61.23 Duration of Medical Certificates

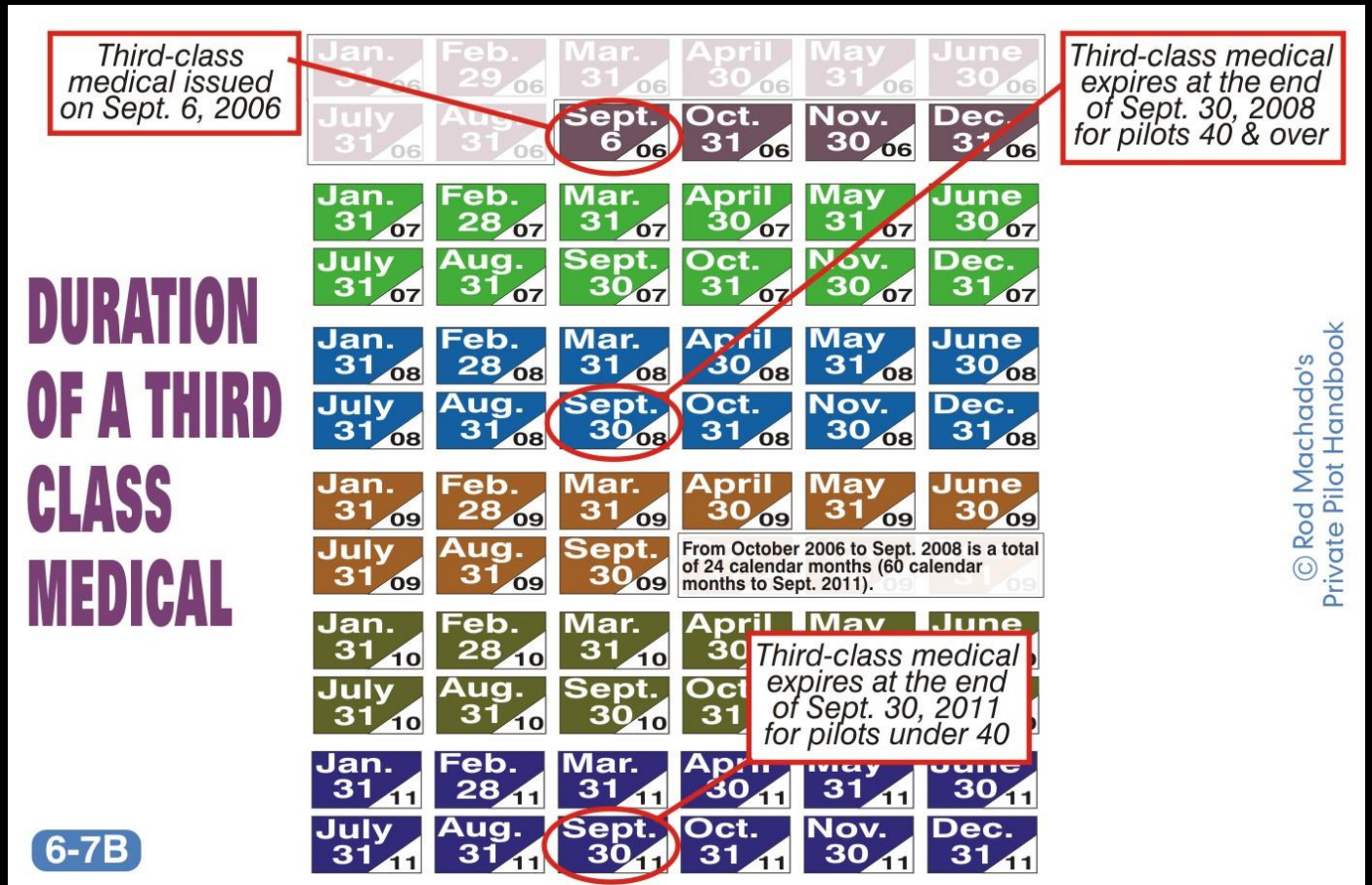
- With a commercial pilot certificate and flying commercially (banner towing, pipeline patrol, sightseeing flights, etc.), you need a second-class medical
- This medical is valid for 12 calendar months for commercial operations
- For operations as a private pilot, the second-class medical is good for 24 calendar months if you're 40 or older and 60 calendar months if you're under 40
- For commercial operations, if the medical is issued on July 13, 2022, the certificate is valid through July 31, 2023, for someone 40 or older
- The monthly count starts in August (the month after it was issued) and goes 12 calendar months later to the end of July 31, 2023

61.23 Duration of Medical Certificates

- As a private pilot (or student pilot in solo operations), you are required to have a third-class medical certificate to act as PIC
- A third-class medical is valid for 24 calendar months if you're 40 or over and 60 calendar months if you're under 40

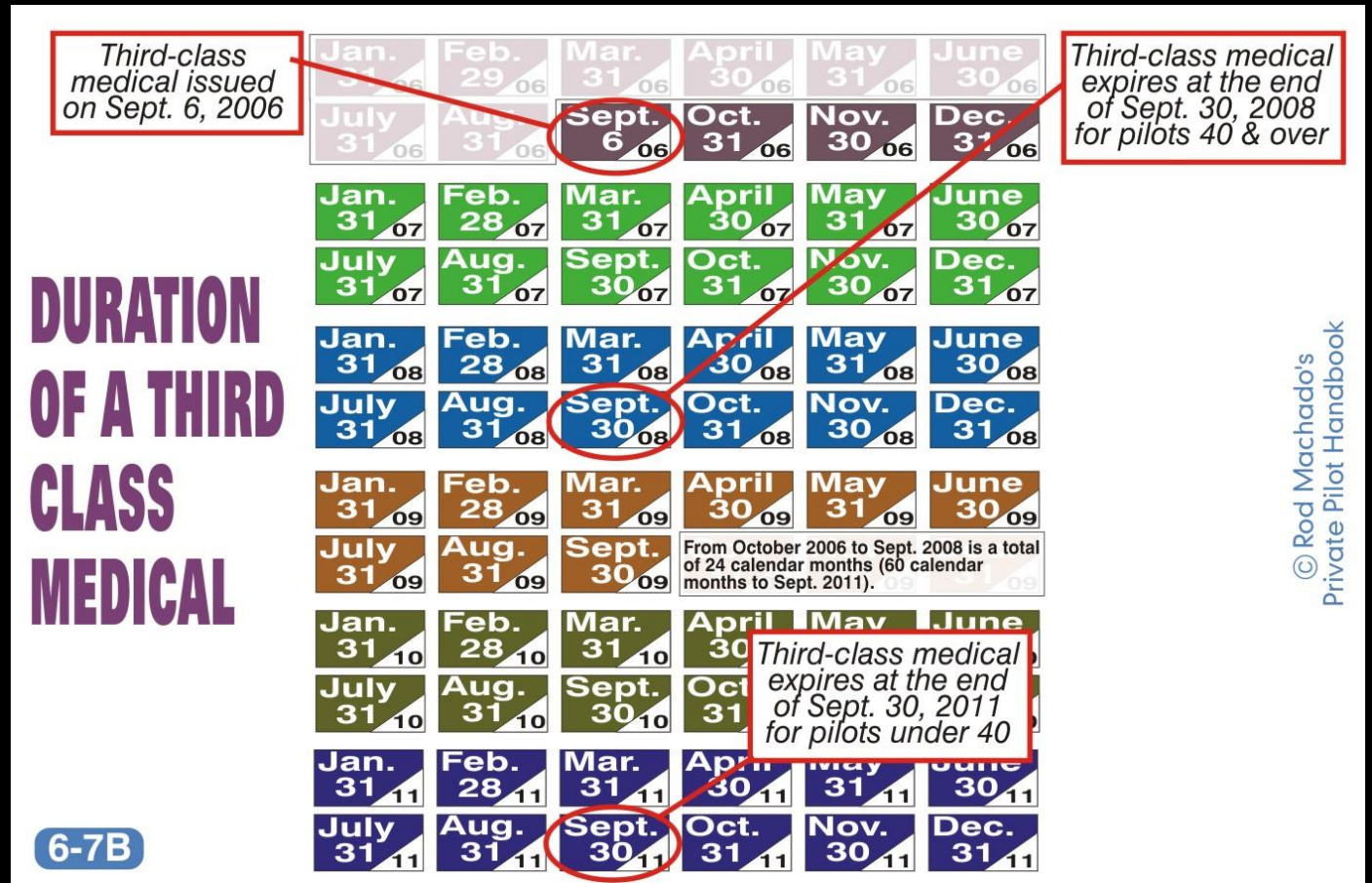
Third Class Medical Under 40

- If you're under 40 and obtain a third-class medical on September 6th, 2006, it's valid through September 30, 2011



Third Class Medical Under 40

- If you're 40 or over and obtain a third-class medical on September 6, 2006, it's valid through September 30, 2008



BasicMed

- Allows pilots to act as PIC without having a third-class medical certificate
- Must hold a valid U.S. driver's license and comply with any of the restrictions shown on that license
- Must have held a valid FAA medical certificate on or after July 15, 2006
- Pilots must take a free online medical course every two years and visit a personal physician every four years

BasicMed

- Subjects pilots to the following limitations:
 - No flight for compensation or hire
 - Aircraft has six seats or less
 - Aircraft weighs up to 6,000 pounds
 - Pilot flies no faster than 250 knots indicated airspeed and operates at or below 18,000 feet MSL
 - May conduct VFR or IFR flights within the United States (and the Bahamas and Mexico)
 - Must keep a copy of the Medical Education Course certificate of completion and the Completed Medical Examination Checklist in your logbook
 - May act as a safety pilot under BasicMed but only if you are the PIC of the airplane.
 - Flight instructors may give flight instruction under BasicMed, including instruction to others not holding an FAA medical certificate

61.31 Additional Training Requirements

- Training and endorsements necessary to fly four different varieties of airplanes:
 - High performance airplanes
 - Complex airplanes
 - Pressurized airplanes capable of operating at high altitudes
 - Tailwheel airplanes

High Performance and Complex Endorsements

- A high-performance airplane is an airplane having more than 200 horsepower
- A complex airplane is an airplane having retractable landing gear, flaps, and a controllable propeller (regardless of the horsepower)



Endorsements

- To act as pilot in command of a high-performance airplane, you must have received and logged ground and flight training in such an airplane from an authorized instructor
- To act as pilot in command of a complex airplane also requires ground and flight training from an authorized instructor
- Your instructor must also make a one-time endorsement in your logbook certifying that you are proficient to operate a high performance and/or complex airplane

IVAL	REMARKS, PROCEDURES, MANEUVERS	NO. INSTR APP.	NO. LDG.
A	I certify that Mr. Al Timeter, private pilot, #7654321 has received the required training of § 61.31(f) in a Cessna 206. I have determined that he/she is proficient in the operation and systems of a high performance airplane.		
	<i>Rod Machado 10/13/08, Rod Machado 123456 CFI, Exp. 4/30/09</i>		
B	I certify that Mr. Al Timeter, private pilot, #7654321, has received the required training of § 61.31(e) in a Comanche 250. I have determined that he/she is proficient in the operation and systems of a complex airplane.		
	<i>Rod Machado 10/13/08, Rod Machado 123456 CFI, Exp. 4/30/09</i>		

Pressurized Airplane Capable of Operating at High Altitudes



Pressurized Airplane Operating at High Altitudes

- You may not act as PIC of a pressurized airplane capable of operating above 25,000 feet MSL unless you've received and
- logged ground training from an authorized instructor as well as flight training in a pressurized aircraft
- Both the ground and flight training require separate logbook endorsements

IVAL	REMARKS, PROCEDURES, MANEUVERS	NO. INSTR APP.	NO. LDG.
	I certify that Mr. Wan Wing Loe, commercial pilot, #91191191, has received the required training of § 61.31(g) in a Cessna StratoBuster. I have determined that he/she is proficient in the operation and systems of a pressurized aircraft.		2
	<i>Rod Machado</i> 10/13/08, Rod Machado 123456 CFI, Exp. 4/30/09		

Tailwheel Airplanes

- To act as PIC of a tailwheel airplane, you must have received and logged flight training from an authorized instructor in a tailwheel airplane



Tailwheel Airplanes

- The instructor must find you proficient in the operation of a tailwheel airplane including at least normal and crosswind takeoffs and landings, wheel landings, and go-around procedures
- The instructor must place a one-time endorsement in your logbook

VAL	REMARKS, PROCEDURES, MANEUVERS	NO. INSTR APP.	NO. LDG.
	<p>I certify that Ms. Aftar Burner, private pilot, #3456789, has received the required training of § 61.31(i) in a Cessna 195. I have determined that he/she is proficient in the operation of a tailwheel airplane.</p> <p><i>Rod Machado</i> 10/13/08, Rod Machado 123456 CFI, Exp. 4/30/09</p>	8	
PAGE TOTAL			
AMT. FORWARD			

61.56 Flight Reviews

- The purpose of the flight review is to ensure that you are still in possession of the basic piloting skills needed to fly safely
- Consists of a refresher on Part 91 of the regulations and the necessary flight maneuvers
- A minimum of one hour of flight training and one hour of ground training is required for this review
- Taking any checkride for a new certificate or rating automatically counts as a flight review
- It's applicable for anything you're certified to fly

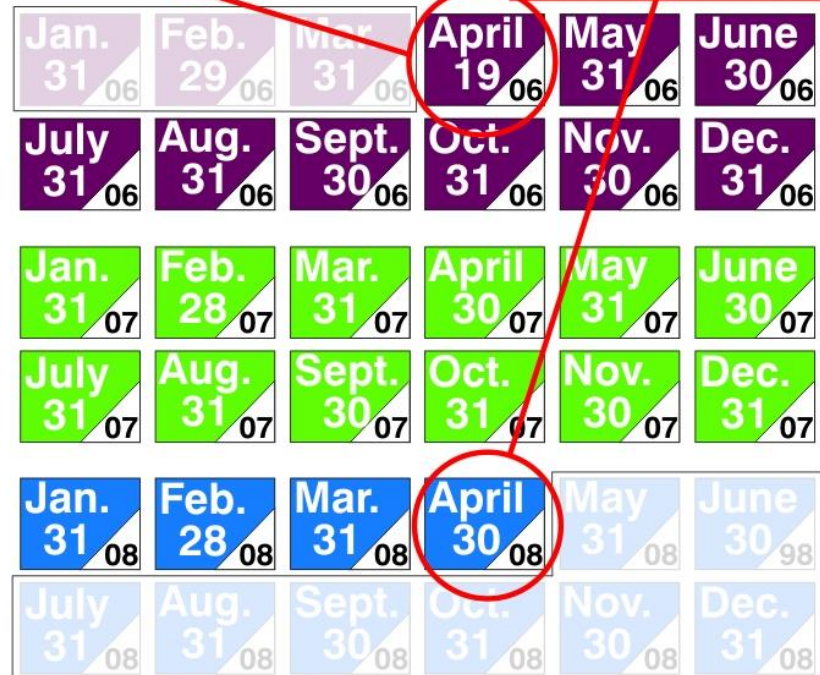
61.56 Flight Reviews

- To act as PIC, you must have had a flight review within the preceding 24 calendar months
- If you take a flight review on April 19, 2006, this review is valid through April 30, 2008
- (May 1, 2006 to April 30, 2008 is 24 calendar months)

DURATION OF THE FLIGHT REVIEW

Flight review taken on April 19, 2006

Flight review good till the end of April 30, 2008



6-14A

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Private Pilot Handbook

61.56 Flight Reviews

- Logbook endorsement for Flight Review

REMARKS, PROCEDURES, MANEUVERS	NO. INSTR APP.	NO. LDG.
I certify that Ms. Martha Spinproof, private pilot, #212234521, has satisfactorily completed a flight review of § 61.56(a) on (10/13/2008). <i>Rod Machado</i> 10/13/08, Rod Machado 123456 CFI, Exp. 4/30/09		6
		6-14B

61.57 Recent Flight Experience: Pilot In Command

- To fly with passengers, you must have recent experience in the particular category and class of aircraft you intend to fly
- To act as PIC while carrying passengers, you must have made, within the preceding 90 days, at least three takeoffs and three landings as the sole manipulator of the flight controls in the same category, class and type (if a type rating is required) of aircraft you intend to fly
- Touch-and-go landings in a tricycle gear airplane are acceptable for meeting the daytime recent experience requirements
- If flying a tailwheel airplane the landings must be made to a full stop

61.57 Recent Flight Experience: PIC Night

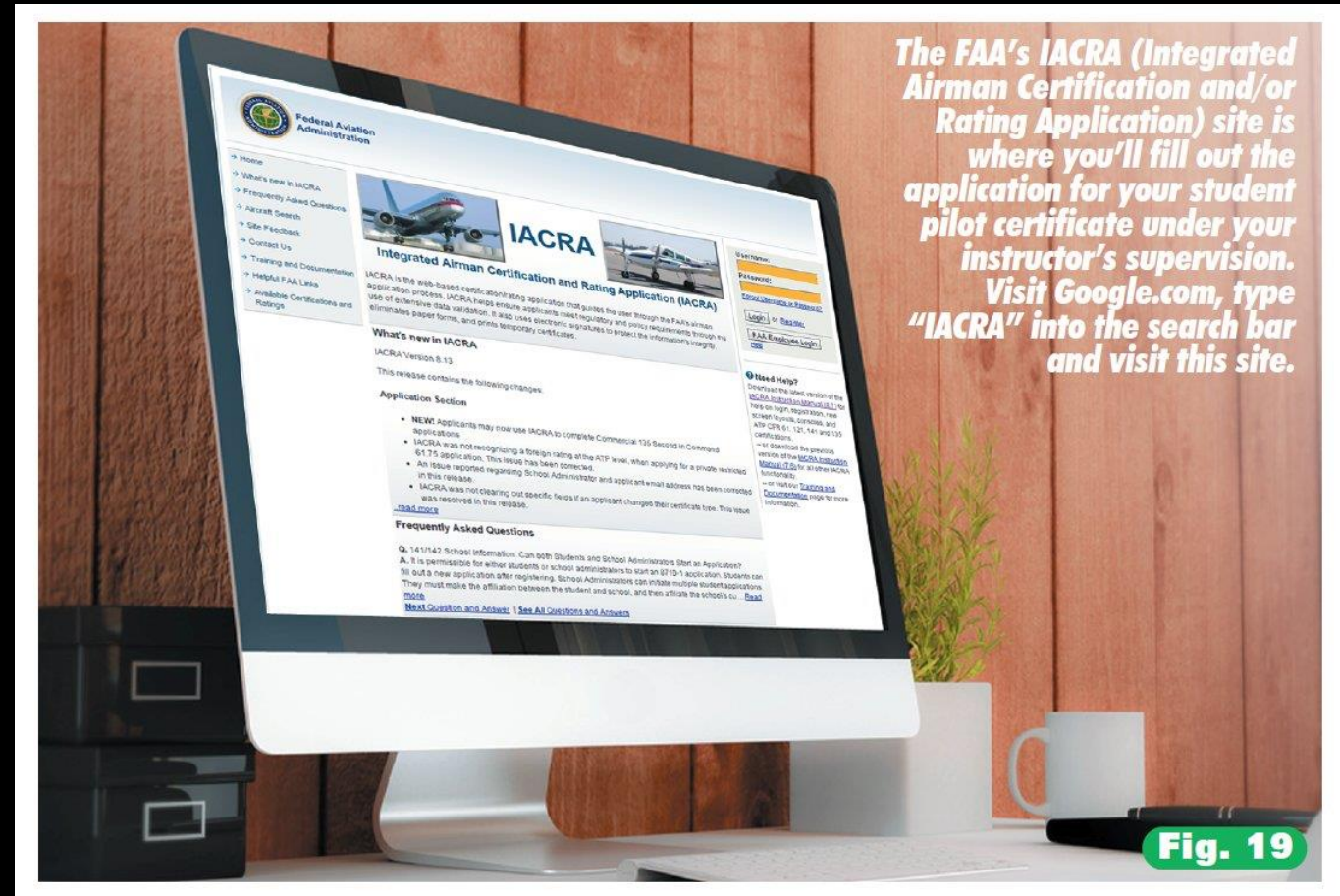
- Night time, for the purpose of passenger currency, begins one hour after sunset and ends one hour before sunrise
- To carry passengers during this time, you must have made three night takeoffs and three night landings within the preceding 90 days as sole manipulator of the flight controls
- All landings for night currency must be done to a full stop
- This must be done in the same category and class of aircraft in which you intend to carry passengers

61.60 Change of Address

- Must notify the FAA within 30 days of changing your permanent address

FAA IACRA

- Apply for this certificate through your flight instructor, a designated pilot examiner or directly at your local FAA office
- Your instructor will help you fill out the web-based IACRA (Integrated Airman Certification and/or Rating Application) form



61.69 Glider Towing

- To tow a glider or UPUV (unpowered ultralight vehicle) you need at least a private pilot certificate with a category rating for powered aircraft
- To act as PIC towing a glider or UPUV, you must have logged at least 100 hours of PIC time in the aircraft category, class, and type used to do the towing
- Must have logged at least three flights as the sole manipulator of the controls of an aircraft towing a glider or simulating glider-towing flight procedures while accompanied by a qualified pilot

FAR 61.87 Solo Requirements For Student Pilots

- You must have been given all the instruction required by the appropriate parts of FAR 61.87
- This is the basic knowledge required to competently handle a single-engine airplane in solo flight
- You must also take a pre-solo written test to determine your understanding of the airplane and pertinent regulations

FAR 61.87 Solo Requirements For Student Pilots

- Your logbook must be endorsed for the specific make and model of airplane you'll solo
- Instructors are also required to endorse your logbook for solo every 90 days

REMARKS, PROCEDURES, MANEUVERS	NO. INSTR APP.	NO. LDG.
<p>I certify that Mr. James T. Kirk has received the required training to qualify for solo flying. I have determined he (or she) meets the applicable requirements of section § 61.87(p) and is proficient to make solo flights in a Cessna 150 Enterprise.</p> <p><i>Rod Machado</i> 10/13/15, Rod Machado 123456 CFI, Exp. 4/30/16</p>		

REMARKS, PROCEDURES, MANEUVERS	NO. INSTR APP.	NO. LDG.
<p>I certify that Mr. James T. Kirk has received the required presolo training in a Cessna 150 Enterprise. I have determined he has demonstrated the proficiency of § 61.87(o) and is proficient to make solo flights at night in a Cessna 150 Enterprise.</p> <p><i>Rod Machado</i> 10/13/15, Rod Machado 123456 CFI, Exp. 4/30/16</p>		

FAR 61.87 Solo Requirements For Student Pilots

- To fly solo at night, your instructor must provide you with the flight training listed in FAR 61.87
- He or she must also endorse your logbook as per the appropriate parts of FAR 61.87

REMARKS, PROCEDURES, MANEUVERS	NO. INSTR APP.	NO. LDG.
<p>I certify that Mr. James T. Kirk has received the required training to qualify for solo flying. I have determined he (or she) meets the applicable requirements of section § 61.87(p) and is proficient to make solo flights in a Cessna 150 Enterprise.</p> <p><i>Rod Machado</i> 10/13/15, Rod Machado 123456 CFI, Exp. 4/30/16</p>		

REMARKS, PROCEDURES, MANEUVERS	NO. INSTR APP.	NO. LDG.
<p>I certify that Mr. James T. Kirk has received the required presolo training in a Cessna 150 Enterprise. I have determined he has demonstrated the proficiency of § 61.87(o) and is proficient to make solo flights at night in a Cessna 150 Enterprise.</p> <p><i>Rod Machado</i> 10/13/15, Rod Machado 123456 CFI, Exp. 4/30/16</p>		

FAR 61.89 General Limitations - Student Pilots

- Can not carry passengers, fly for hire, or you use an airplane in any business pursuit
- Not allowed to fly when flight or surface visibilities are less than 3 miles during the day or 5 miles at night
- May not fly without visual reference to the surface

FAR 61.89 General Limitations - Student Pilots

- Required by the regulations to adhere to any limitations their instructor places in their logbook

REMARKS, PROCEDURES, MANEUVERS	NO. INSTR APP.	NO. LDG.
<p style="text-align: center;">Requirements for solo flight:</p> <ol style="list-style-type: none">1. Student must notify CFI at least 24 hours before any solo flight.2. Solo flight to be conducted only in flying club's airplanes.3. No solo flight if 90 degree crosswind component exceeds 7 knots (based on x-wind chart placed at end of this logbook).4. No solo flight between sunset and sunrise.5. No solo flight if wind gusts exceed 15 knots.6. No solo flight if visibility less than 5 miles.7. Airplane will have full fuel tanks before every solo flight.8. No solo flight unless student has obtained an abbreviated weather briefing (even for pattern work). (800) WX-BRIEF9. Student must follow additional requirements listed at the back of this logbook pertaining to X-C flying, night flight, practice area, etc.		
		PAGE TOTAL

FAR 61.93 Solo Cross Country Flight Requirements

- Student pilots must remain within 25 miles of the departure airport
- That's the farthest you can go without obtaining an endorsement for cross country flight
- You are also required to land at the airport where you took off
- Cross country endorsements require additional training

FAR 61.93 Solo Cross Country Flight Requirements

- Provision allowing a student pilot to practice solo takeoffs and landings at another airport without having a cross country endorsement
- If the airport is within 25 nautical miles of the departure airport at which instruction is received, the instructor can endorse your logbook for these solo landings
- The only requirement is that the instructor must determine that you are competent and proficient to make takeoffs and landings at that airport

FAR 61.93 Solo Cross Country Flight Requirements

ARRIVAL	REMARKS, PROCEDURES, MANEUVERS	NO. INSTR APP.	NO. LDG.
	<p>I certify that Mr. Ubee Hy has received the required training of § 61.93(b)(1). I have determined that he/she is proficient to practice solo takeoffs and landings at Oceanside airport. The takeoffs and landings at Oceanside airport are subject to the following conditions: (listed at end of logbook).</p>		
	<p><i>Rod Machado</i> 10/13/08, Rod Machado 123456 CFI, Exp. 4/30/09</p>		
	PAGE TOTAL		

- The instructor must give you training in both directions over the route and endorse your logbook for that operation

FAR 61.93 Solo Cross Country Flight Requirements

- A cross country endorsement in your logbook allows you to make repeated solo cross-country flights to an airport within 50 nautical miles from the point of departure
- You must have been given instruction in both directions over the route, including takeoffs and landings at the away from home airport

Solo cross-country flight: § 61.93(c)(1) and 61.93(c)(2)
 I certify that Mr. Hue Gottalan Sumtime has received the required solo cross-country training. I find he has met the applicable requirements of § 61.93, and is proficient to make solo cross-country flights in a Cessna 172, airplane.
 Rocket Rod 987654321 CFI Exp. 04-31-18

An endorsement for cross country flight made by your flight instructor allows you to fly beyond the 25 nautical mile limit.

Fig. 21

FAR 61.93 Solo Cross Country Flight Requirements

- Before any cross country flight you must have your flight planning checked by an instructor
- This can be any flight instructor, not just the one from whom you're taking flight instruction
- Then the instructor will endorse your logbook for that specific flight

AL	REMARKS, PROCEDURES, MANEUVERS	NO. INSTR APP.	NO. LDG.
	<p>I have reviewed the cross country planning of Mr. Paul Gofar. I find the planning and preparation to be correct to make the solo flight from Palomar airport to Chino airport via CRQ direct OCN VOR direct Chino with landings at Chino in a Cessna 152.</p> <p><i>Rod Machado</i> 10/13/08, Rod Machado 123456 CFI, Exp. 4/30/09</p>		
	PAGE TOTAL		

FAR 61.103 Private Pilot Requirements

- A minimum age of 16 is required to solo an airplane
- Private pilot certificates require a minimum age of 17
- Must be able to read, speak, write and understand the English language
- Must pass a knowledge examination before you can take a flight check for the private pilot certificate
- A grade of 70% is the minimum to pass

FAR 61.107 Flight proficiency

- A person who applies for a private pilot certificate must receive and log ground and flight training from an authorized instructor on the areas of operation of this section that apply to the aircraft category and class rating sought
- Areas of operation for an airplane category rating with a single-engine class rating:
 - Preflight preparation;
 - Preflight procedures;
 - Airport operations;
 - Takeoffs, landings, and go-arounds;
 - Performance maneuvers;
 - Ground reference maneuvers;
 - Navigation;
 - Slow flight and stalls;
 - Basic instrument maneuvers;
 - Emergency operations;
 - Night operations; and
 - Postflight procedures

FAR 61.109 Flight Experience

- Must meet the basic aviation knowledge requirements found in FAR 61.107
- Minimum of 40 (35 Part 141) hours total flight time with a minimum of 20 hours of flight training (dual instruction) and 10 hours of solo flight training in preparation for the private pilot certificate
- Average total time is from 60 to 80 hours

FAR 61.109 Flight Experience

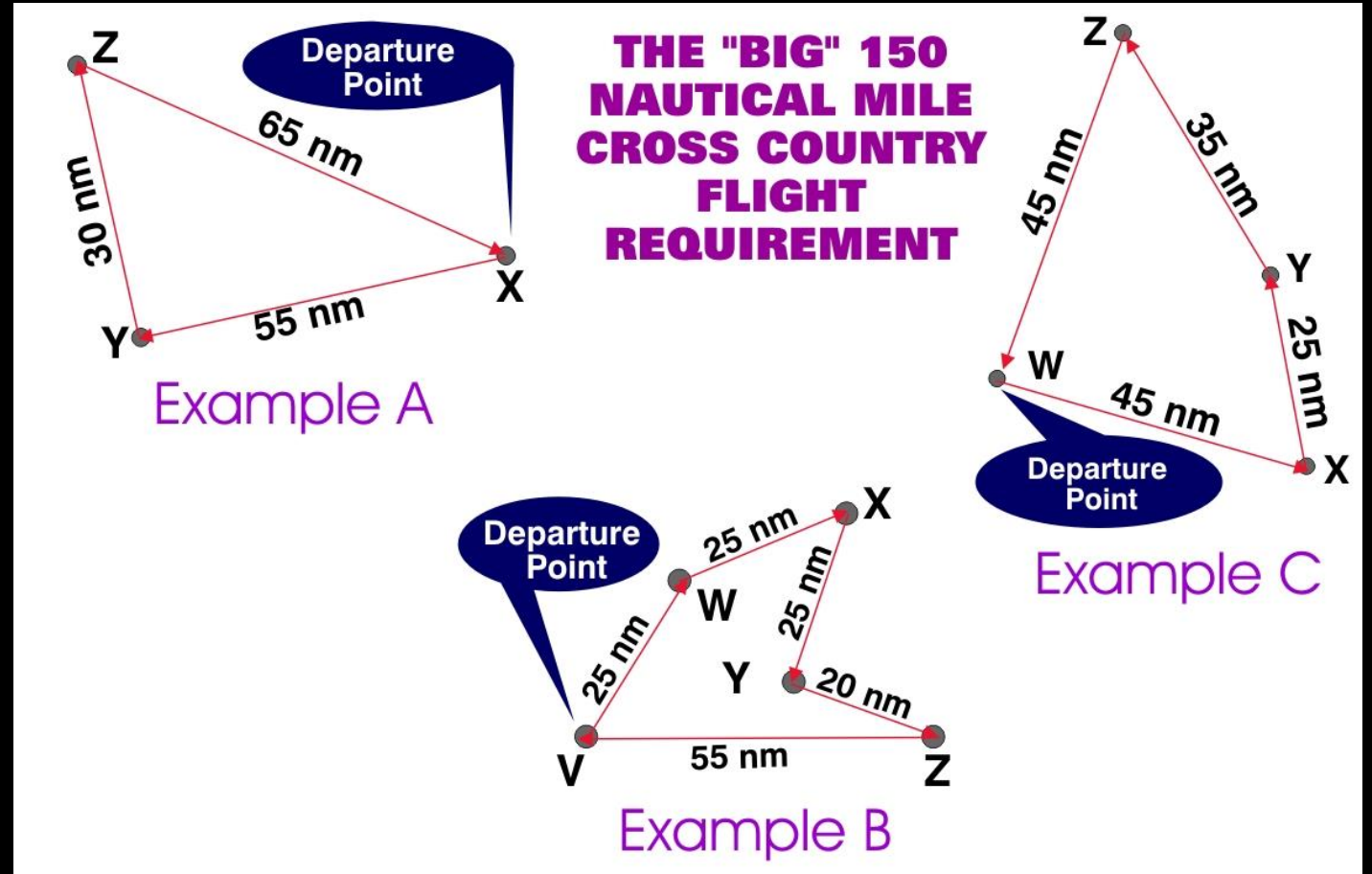
- The dual flight time must include 3 hours of cross country instruction and 3 hours of night instruction with 10 takeoffs and landings and one night cross country flight of over 100 nm total distance
- At least 3 of the 20 hours of dual time must be used in preparing you for the flight test within 60 days prior to that test
- Additionally, you'll need 3 hours of instrument instruction
- The 10 hours of solo time must include at least 3 solo takeoffs and landings to a full stop at an airport with an operating control tower

FAR 61.109 Flight Experience

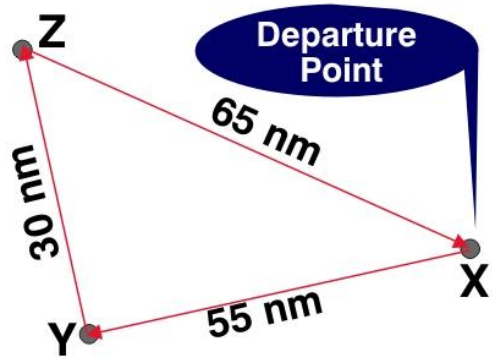
- A minimum of 5 hours of solo cross country flight time is required for the private pilot certificate
- Must be a landing at an airport that's at least a straight-line distance of more than 50 nm away from the original departure airport
- There can be numerous stops between these two airports, but the distance between them must be more than 50 nm
- Must make one solo cross-country flight that's at least 150 nm in total length
- Full stop landings are required at a minimum of 3 points, and 1 segment of the flight must consist of a straight-line distance of more than 50 nm between the takeoff and landing locations

Solo XC Flight 150 nm Total Length

- A shows a flight with landings at three different airports having a total distance of 150 nm
- This flight meets the “long cross country” requirement since one segment (X to Y), has a straight-line distance of more than 50 nm

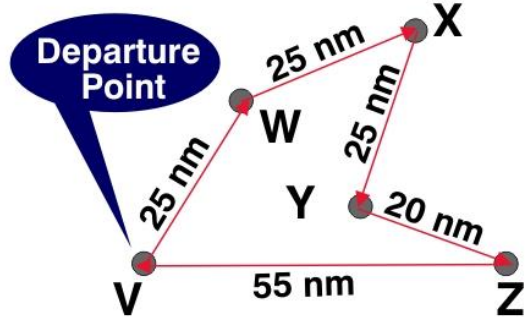


Solo XC Flight 150 nm Total Length

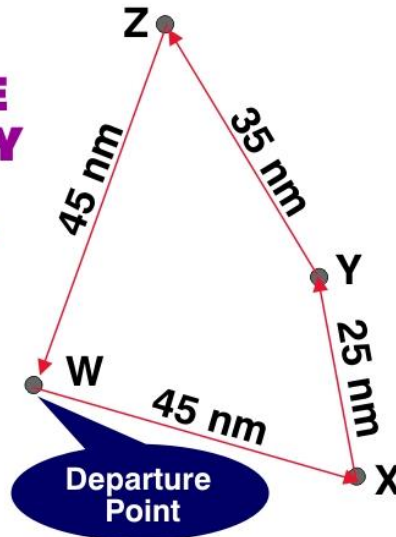


Example A

**THE "BIG" 150
NAUTICAL MILE
CROSS COUNTRY
FLIGHT
REQUIREMENT**



Example B

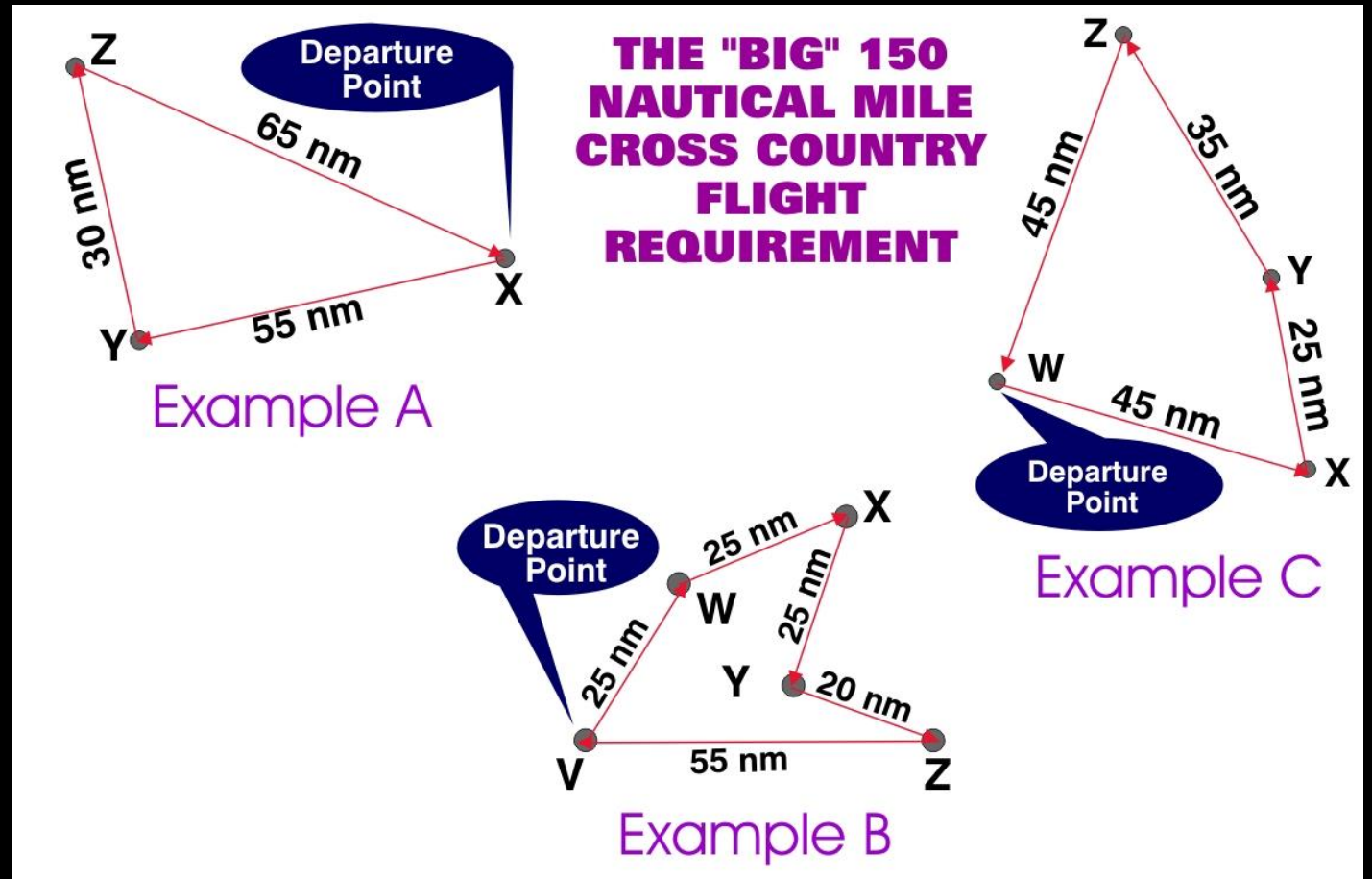


Example C

- B meets these requirements despite having more than three stops

Solo XC Flight 150 nm Total Length

- C depicts a flight not meeting the requirements of this section
- Although it has a total distance of 150 nautical miles, there is no straight-line segment more than 50 nm in length



FAR 61.113 Private Pilot Privileges And Limitations: Pilot in Command

- A private pilot certificate allows you to do two things: fly without supervision and carry passengers
- You may not act as PIC of an aircraft carrying passengers or property for compensation or hire

FAR 61.113 Private Pilot Privileges And Limitations: Pilot in Command

- One exception allows a private pilot to act as PIC while carrying passengers who exchange money for the flight
- If the flight is sponsored by a charitable organization and the FAA is notified at least 7 days before the event, then passengers may make a donation to the organization for the flight
- This private pilot must have logged 500 hours of flight time, no aerobatic or formation flights are allowed, and the flight must be made under VFR conditions during the day

FAR 61.113 Private Pilot Privileges And Limitations: Pilot in Command

- Private pilots may, for compensation or hire, act as pilot in command of an aircraft in connection with any business or employment if the flight is only incidental to that business or employment and the aircraft does not carry passengers or property for compensation or hire
- If you cannot conduct your business without the use of your airplane, then it's possible flying is fundamental to your livelihood

FAR 61.113 Private Pilot Privileges And Limitations: Pilot in Command

- Flying cargo (property) for compensation or hire is specifically prohibited as a private pilot
- Private pilots are allowed to share the operating expenses of the flight with their passengers
- A private pilot may not pay less than the pro rata share of the operating expenses of a flight with the passengers, providing the expenses involve only fuel, oil, airport expenditures or rental fees

FAR Part 91: General Operating and Flight Rules

Federal Aviation Regulations (FARs) / AIM

FAR 91.3 Responsibility And Authority of the Pilot In Command

- The PIC is directly responsible for, and is the final authority as to the operation of the aircraft
- When experiencing an emergency requiring immediate action, this regulation allows you to deviate from any rule to the extent required to meet that emergency
- The only time you must send in a written report is when requested to by the administrator

FAR 91.7 Civil Aircraft Airworthiness

- The PIC is responsible for determining whether the airplane is in a safe condition for flight
- May not operate an aircraft unless it's in an airworthy condition
- Is responsible for terminating a flight any time he believes the airplane is not airworthy due to the failure of a mechanical, electrical, or structural component

FAR 91.9 Civil Aircraft Flight Manual, Markings And Placard Requirements

- Airplane operating limitations come in the form of color codes, placards, and approved Airplane Flight Manuals
- The PIC is required to comply with all the operating limitations specified in any of these ways

FAR 91.9

- Color codes are operating limitations
- Placards list operating limitations
- Approved Flight Manuals list operating limitations

MARKINGS, PLACARDS & MANUALS



FAR 91.15 Dropping Objects

- The PIC may not drop any object in flight if it creates a hazard to persons or property

FAR 91.17 Alcohol or Drugs

- Prohibits you from acting as a crewmember of any aircraft within 8 hours after consuming any alcoholic beverages
- Also prohibits you from acting while under the influence of alcohol
- An alcohol concentration of .04 or greater in blood or breath specimen is prohibited

FAR 91.17 Alcohol or Drugs

- If the FAA suspects that someone acting as PIC or a required crewmember might be under the influence of alcohol, then that person must furnish to the FAA the results of an alcohol-blood concentration test taken within 4 hours of attempting to act as PIC or as a required crewmember
- Except in an emergency, you may not carry a person who appears to be intoxicated or under the influence of drugs or alcohol on your airplane

91.103 Preflight Action

- Before any flight you are required to become familiar with all the available information concerning that flight
- For a flight not in the vicinity (more than 5 miles) of the departure airport, you must check the weather reports and forecasts, fuel requirements, alternatives available if the flight cannot be completed, and any known traffic delays advised by ATC
- You are also required to check the runway lengths at the airport you'll use

FAR 91.105 Flight Crewmembers at Stations

- During takeoff, landing, and while enroute the pilot in command shall be in his/her seat
- You are required to keep your safety belt fastened while seated, and if your airplane is equipped with a shoulder harness and wearing it doesn't interfere with your duties, it must be kept fastened during takeoff and landing

FAR 91.107 Use of Safety Belts

- Prior to takeoff, the PIC is required to brief each passenger on how to fasten and unfasten their seatbelt and shoulder harness
- You are also required to notify the passengers prior to moving (taxiing), takeoff, and landing to fasten their safety belts and shoulder harnesses (if installed).
- If the passenger has not yet reached his or her second birthday, that person may be held by an adult who is occupying an approved seat or berth
- Parachutists are the second exception

FAR 91.111 Operating Near Other Aircraft

- No person may operate an aircraft so close to another aircraft as to create a collision hazard
- No person may operate an aircraft in formation flight except by prior arrangement with the PIC of each aircraft in the formation
- No person may operate an aircraft carrying passengers for hire in formation flight

FAR 91.113 Right of Way Rules

- It is your responsibility above all else to see and avoid airplanes and obstacles
- Aircraft in distress have the right of way over all other air traffic

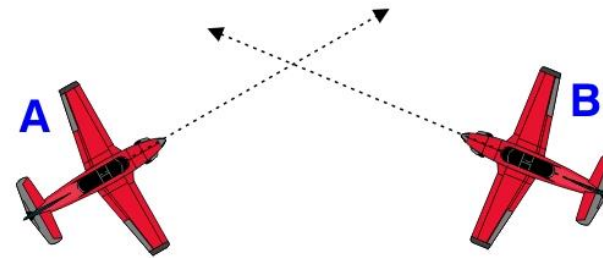
FAR 91.113 Right of Way Rules - Aircraft Categories

- The right of way usually belongs to the least maneuverable category of aircraft
- A balloon has the right of way over any other category of aircraft
- A glider has the right of way over an airship, airplane, rotorcraft, powered parachute, and weight-shift control aircraft
- An airship (blimp) has the right of way over an airplane, rotorcraft, powered parachute and weight-shift-control aircraft
- Aircraft towing or refueling other aircraft has the right of way over all other engine driven aircraft

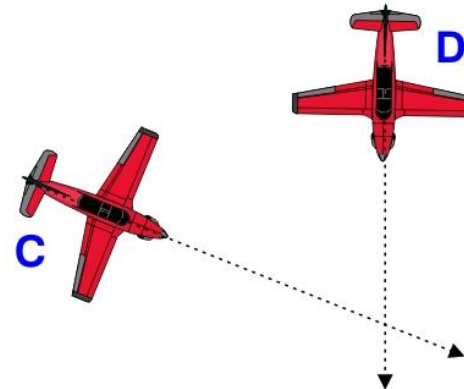
FAR 91.113 Converging

- When aircraft of the same category are converging at approximately the same altitude, except head on or nearly so, the aircraft to the other's right has the right of way

CONVERGING AT THE SAME ALTITUDE



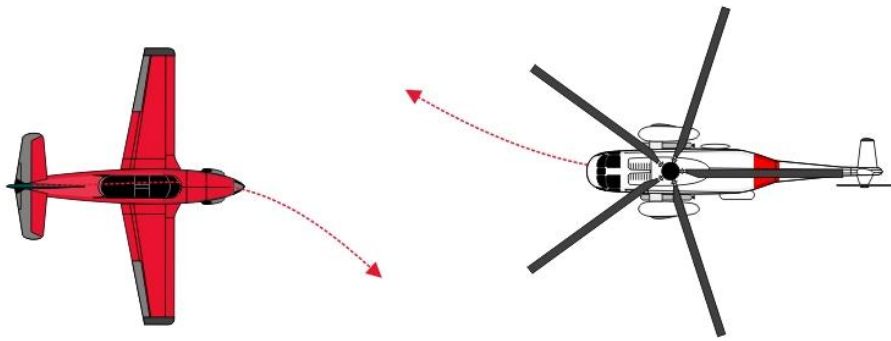
Airplane B has the right-of-way since it's to the right of airplane A.



Airplane C has the right-of-way since it's to the right of airplane D.

FAR 91.113 Converging

AIRCRAFT CONVERGING HEAD ON OR NEARLY SO



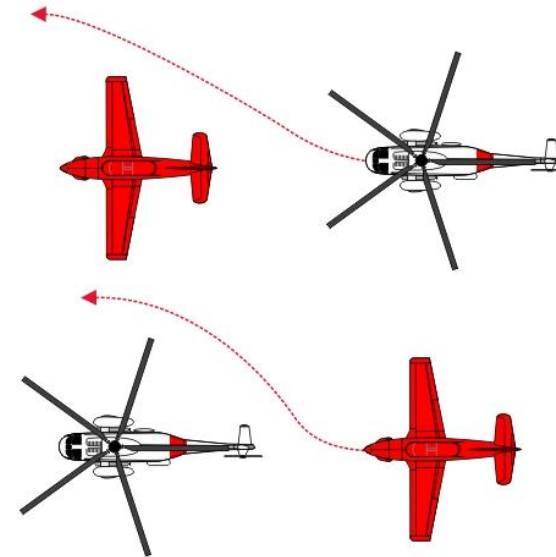
Since both aircraft are approaching each other head on, or nearly so, each shall alter their course to the right and pass well clear.

- Aircraft approaching head on, or nearly so, shall alter their course to the right to avoid a collision

FAR 91.113 Overtaking

- The pilot of the overtaking aircraft must alter her course to the right to pass well clear of the slower aircraft

AIRCRAFT OVERTAKING EACH OTHER

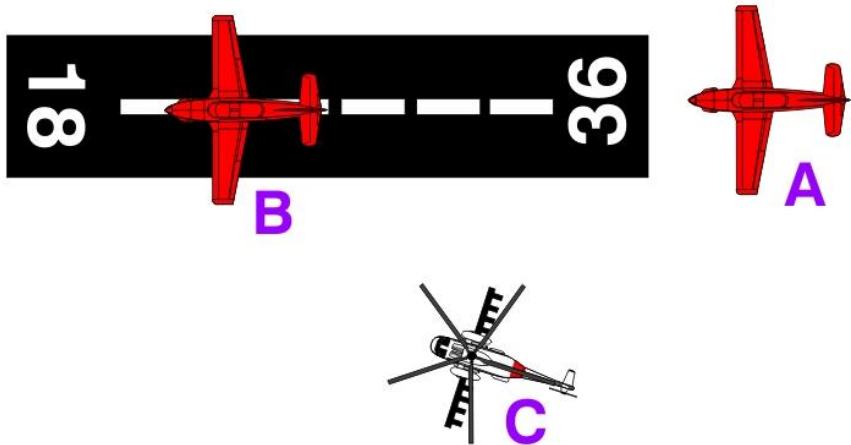


Each aircraft that is being overtaken (regardless of its category) has the right-of-way. The pilot of the overtaking aircraft shall alter his course to the right and pass well clear.

FAR 91.113

Landing

RIGHT-OF-WAY DURING LANDING



Airplane A has the right-of-way over airplane B (which has already landed), and helicopter C, which is crop dusting next to the runway.

6-30

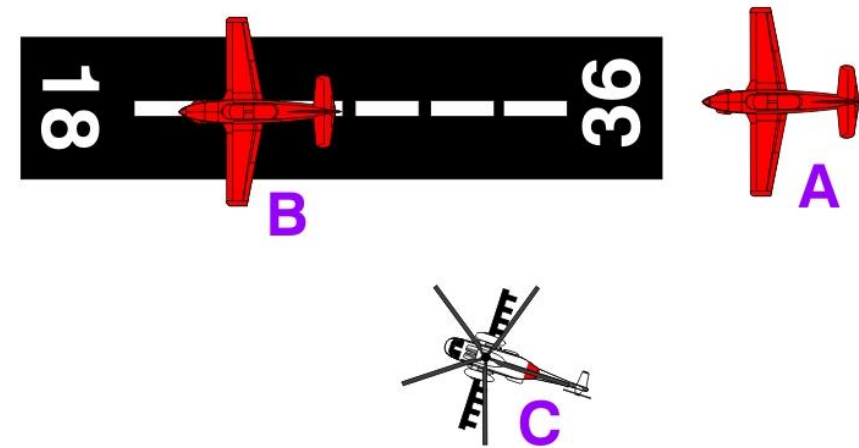
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- Aircraft, while on final approach to land or while landing, have the right of way over other aircraft in flight or operating on the surface
- Airplane B has just taxied onto the runway
- Therefore, airplane A has the right of way

FAR 91.113 Landing

- Airplane A also has the right of way over helicopter C that's performing crop dusting short of the runway

RIGHT-OF-WAY DURING LANDING



Airplane A has the right-of-way over airplane B (which has already landed), and helicopter C, which is crop dusting next to the runway.

6-30

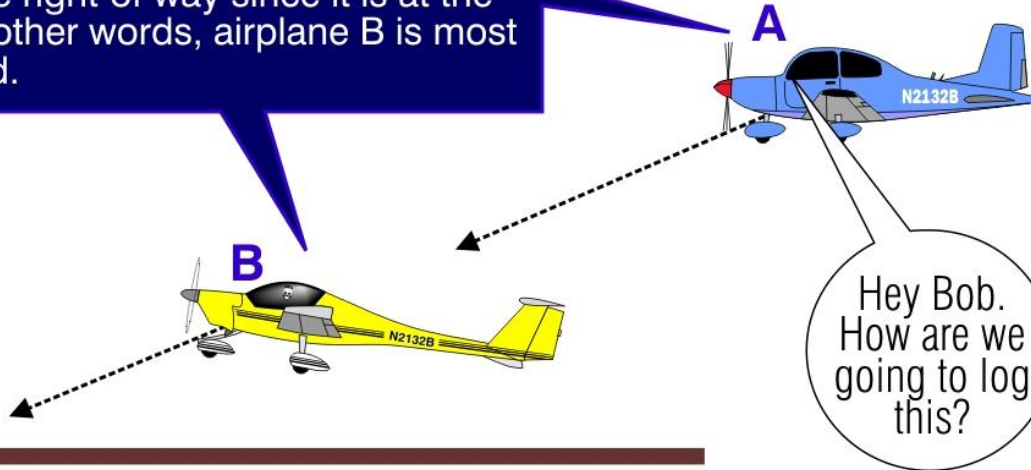
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FAR 91.113

Landing

RIGHT OF WAY DURING LANDING

Airplane B has the right-of-way since it is at the lower altitude. In other words, airplane B is most committed to land.



- When two or more aircraft are approaching an airport for the purpose of landing, the aircraft at the lower altitude has the right of way

FAR 91.117 Aircraft Speed

- No person may operate an aircraft below 10,000 feet MSL at an indicated airspeed of more than 250 knots

FAR 91.117 Aircraft Speed

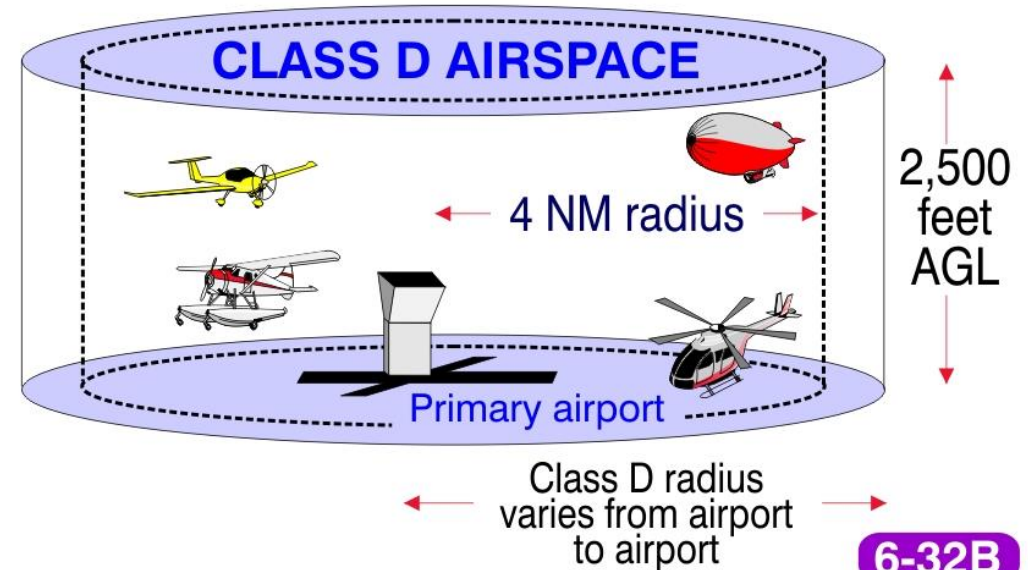
- No person may operate an aircraft at or below 2,500 feet above the surface within 4 nm of the primary airport in Class D airspace at an indicated airspeed of more than 200 knots

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FAR 91.117 AIRCRAFT SPEED RESTRICTIONS

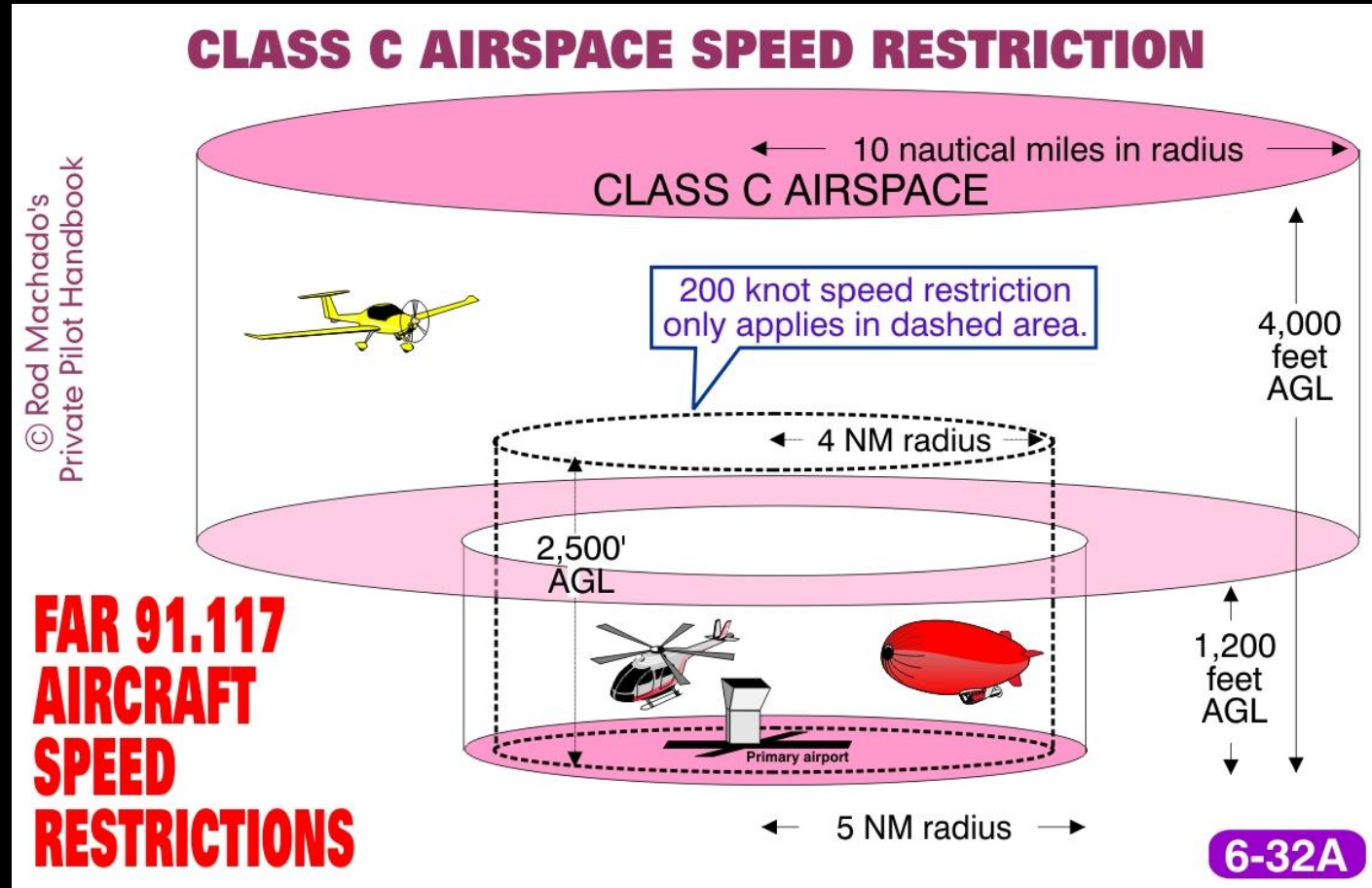
CLASS D AIRSPACE SPEED RESTRICTION

No person may operate an aircraft at or below 2,500 feet above the surface within 4 nautical miles of the primary airport in a Class D (see above) at an indicated airspeed of more than 200 knots.



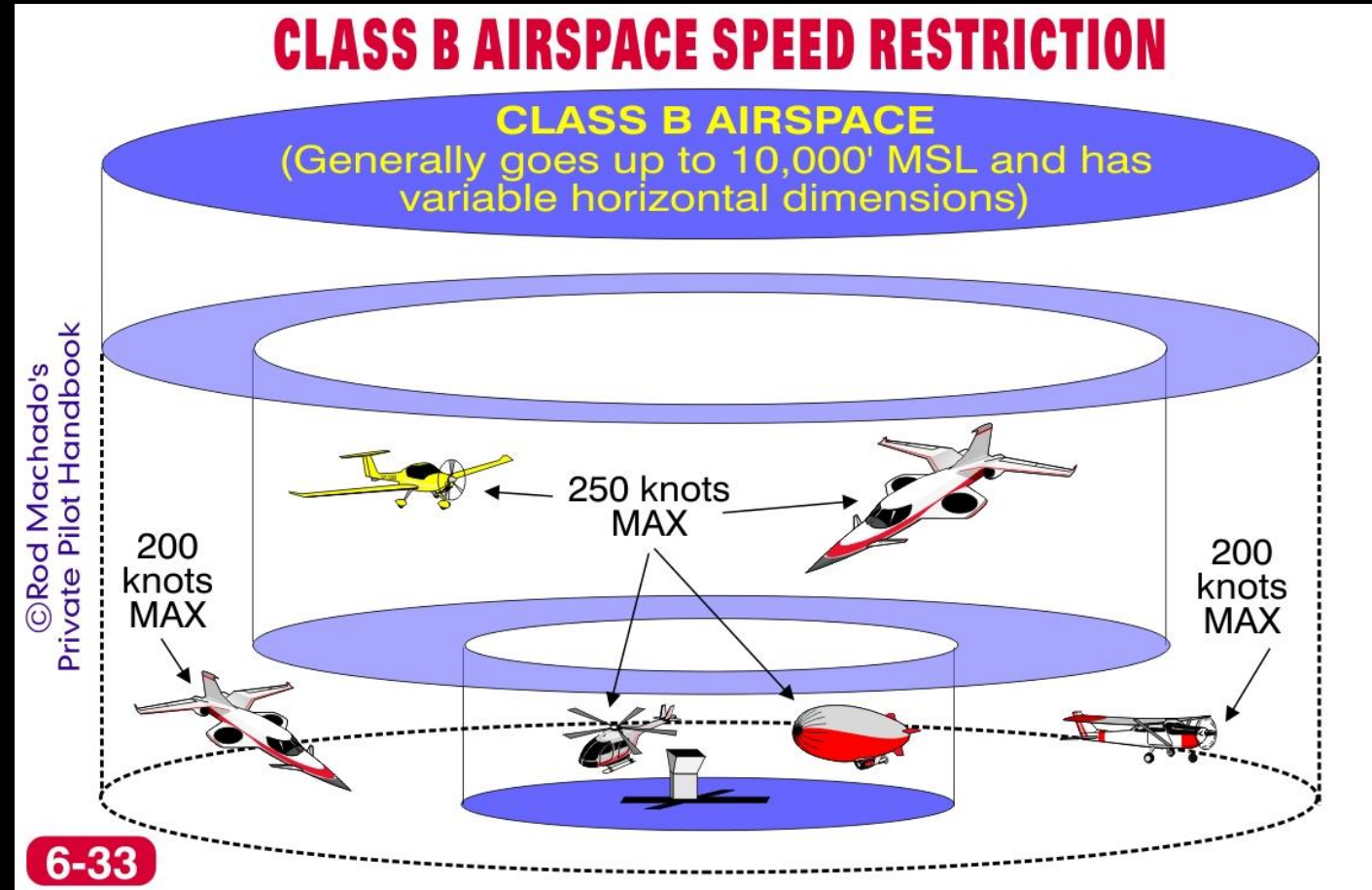
FAR 91.117 Aircraft Speed

- No person may operate an aircraft at or below 2,500 feet above the surface within 4 nm of the primary airport in Class C airspace at an indicated airspeed of more than 200 knots



FAR 91.117 Aircraft Speed

- Within Class B airspace the speed limit is 250 knots
- Underneath the lateral limits of this airspace the speed limit is 200 knots

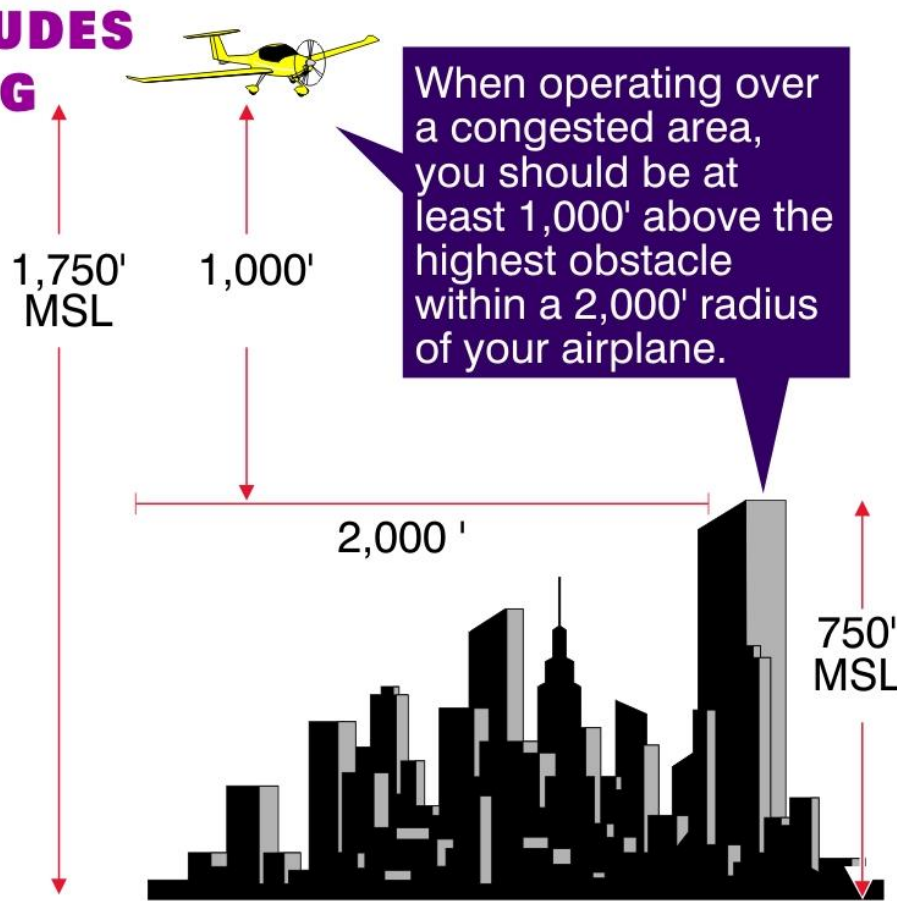


FAR 91.119 Minimum Safe Altitudes

- The rules designate certain minimum altitudes that you must maintain under given circumstances
- These altitudes are designed to protect people on the surface as well as the pilot and passengers on the aircraft
- None of the following minimum altitude rules pertain to takeoff or landing at an airport
- No person may operate an aircraft below an altitude allowing an emergency landing to be made without undue hazard to persons or property on the surface in the event of an engine failure

FAR 91.119 Minimum Safe Altitudes

MINIMUM ALTITUDES WHEN OPERATING OVER A CONGESTED AREA



6-34

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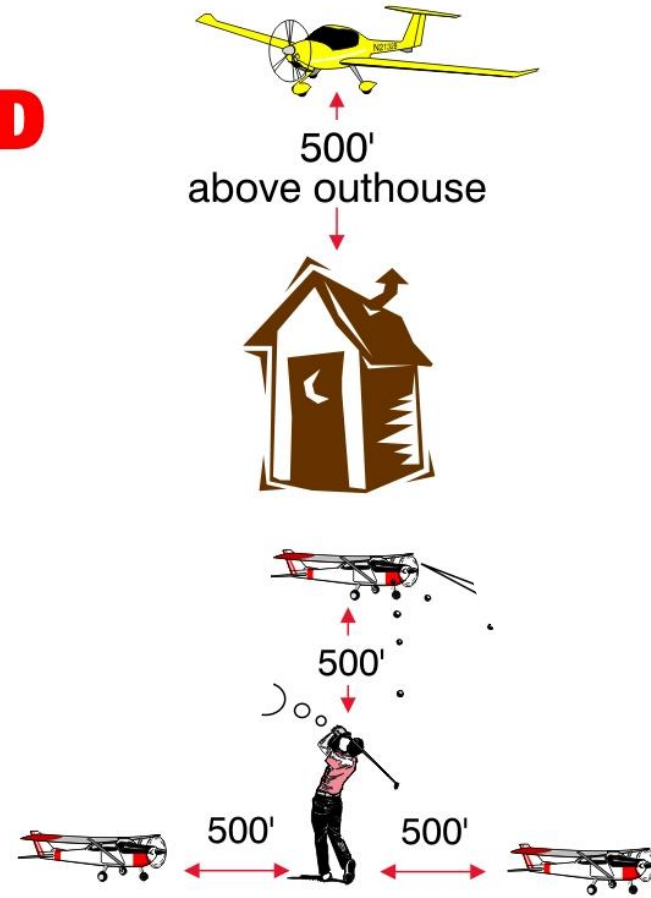
- When flying over any congested area of a city, town or settlement or over any open air assembly of persons, the aircraft must be operated at an altitude of 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet of the aircraft

FAR 91.119 Minimum Safe Altitudes

- When operating an aircraft over other than a congested area, no person may operate below an altitude of 500 feet above the surface, except over open water or sparsely populated areas
- In those cases, the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle or structure

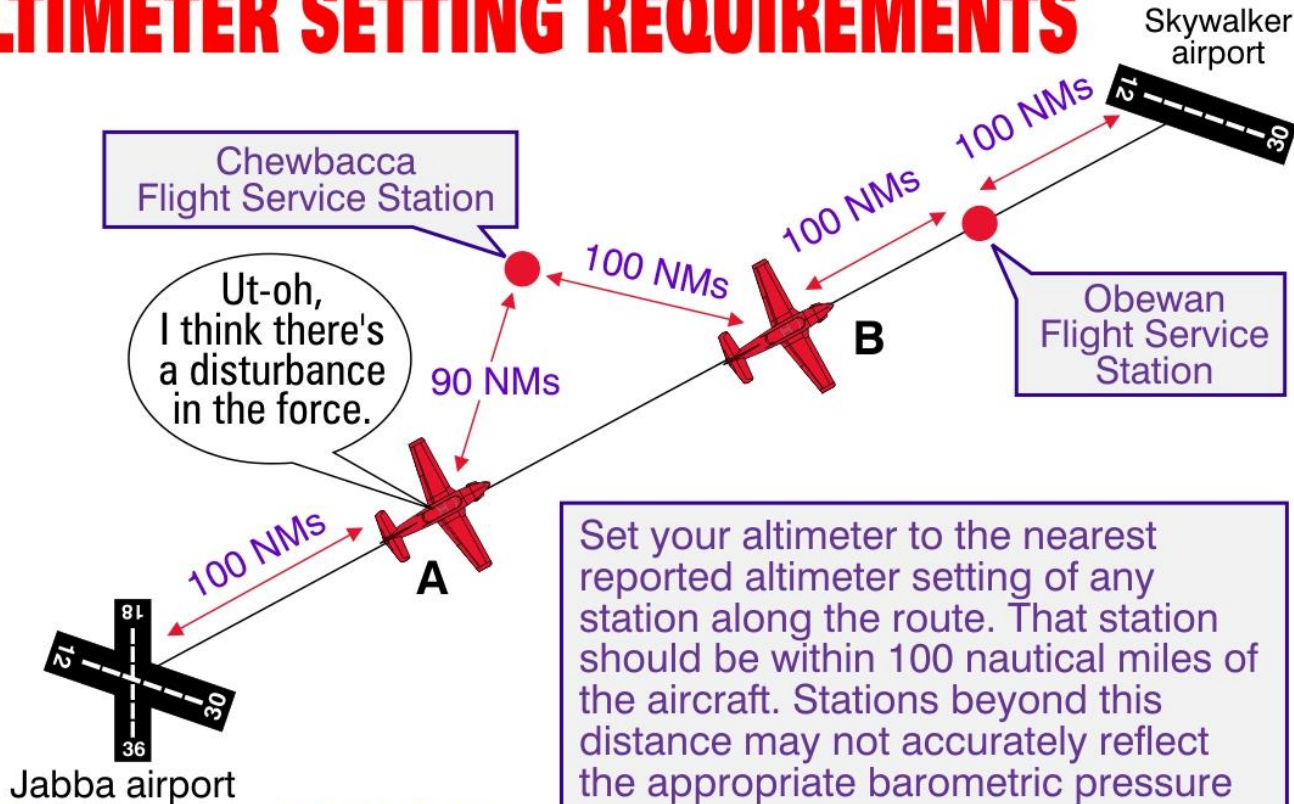
SPARSELY POPULATED AREAS

Over sparsely populated areas the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle or structure.



FAR 91.121 Altimeter Settings

ALTIMETER SETTING REQUIREMENTS



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- Must maintain a cruising altitude by reference to an altimeter that is set to the current reported altimeter setting of a station along the route and within 100 nm of the aircraft
- Aircraft operating at or above 18,000 feet MSL set their altimeters to 29.92" Hg

FAR 91.123 Compliance with ATC Clearances and Instructions

- When an ATC clearance has been obtained, no PIC may deviate from that clearance unless an amended clearance is obtained, an emergency exists, or in response to a traffic alert and collision avoidance system resolution advisory
- If a pilot is uncertain of the meaning of an ATC clearance, the pilot shall immediately request clarification from ATC
- No person operating an aircraft may operate that aircraft according to any clearance or instruction that has been issued to another aircraft for radar air control purposes

FAR 91.123 Compliance with ATC Clearances and Instructions

- Except in an emergency, no person may operate an aircraft contrary to an ATC instruction in an area in which air traffic control is exercised
- Each PIC who, in an emergency, deviates from an ATC clearance or instruction is obligated to notify ATC of that deviation as soon as possible

FAR 91.125 ATC Light Signals

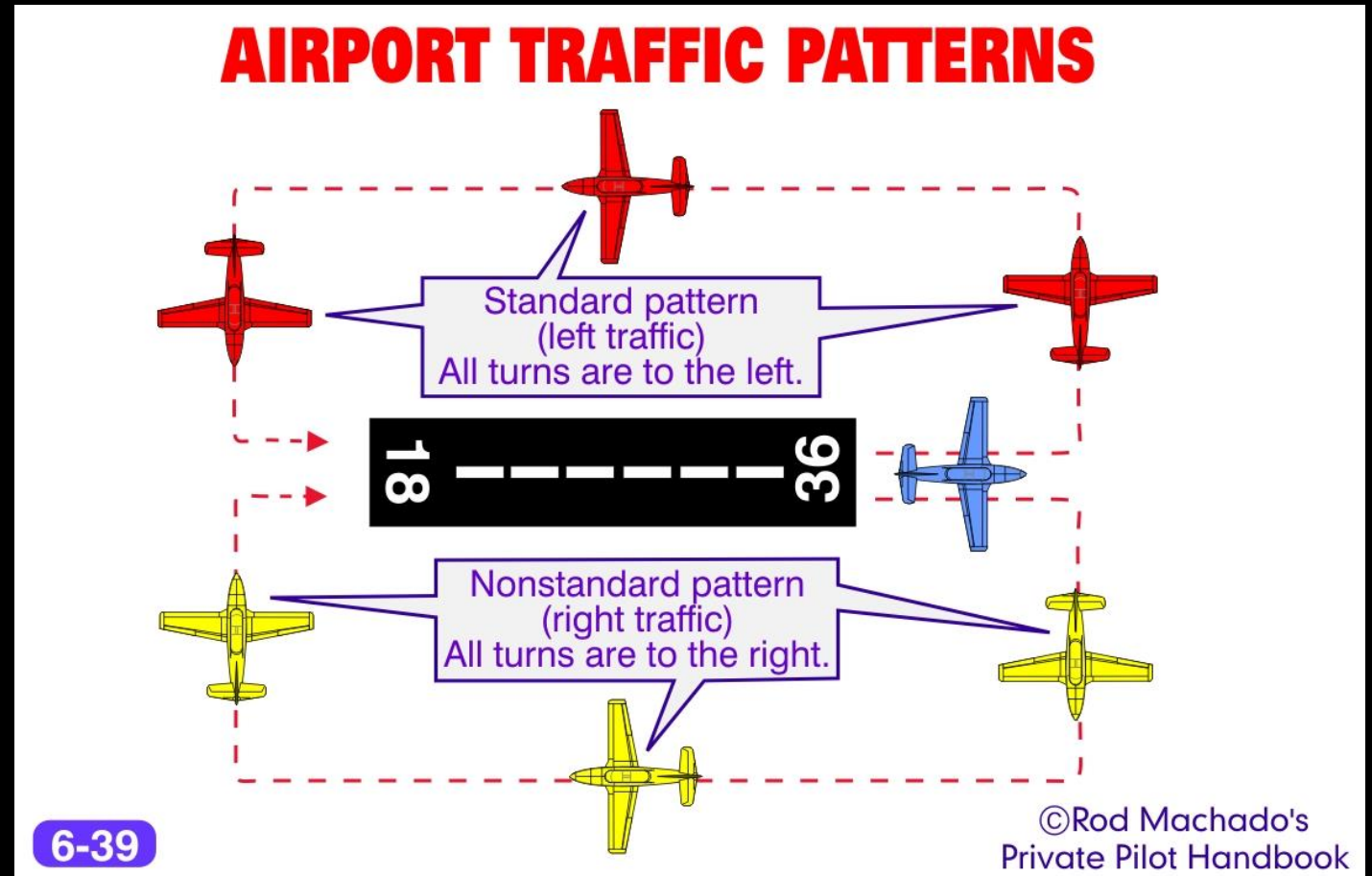
- When radios fail, tower controllers use light signals to control traffic in the landing pattern
- Controllers can direct a concentrated beam of light (red, green, or white) directly at your aircraft
- If your radio fails in the air under VFR conditions, enter the traffic pattern at a tower-controlled field after observing the flow of traffic

LIGHT GUN SIGNALS FROM THE TOWER

Color & Type Of Signal	Meaning With Respect To Aircraft on The Surface	Meaning With Respect To Aircraft in Flight
Steady green	Cleared for takeoff	Cleared to land
Flashing green	Cleared to taxi	Return for landing (to be followed by steady green at proper time)
Steady red	Stop	Give way to other aircraft and continue circling
Flashing red	Taxi clear of runway in use	Airport unsafe, do not land
Flashing white	Return to starting point on airport	Not applicable
Alternating red & green	Exercise extreme caution	Exercise extreme caution

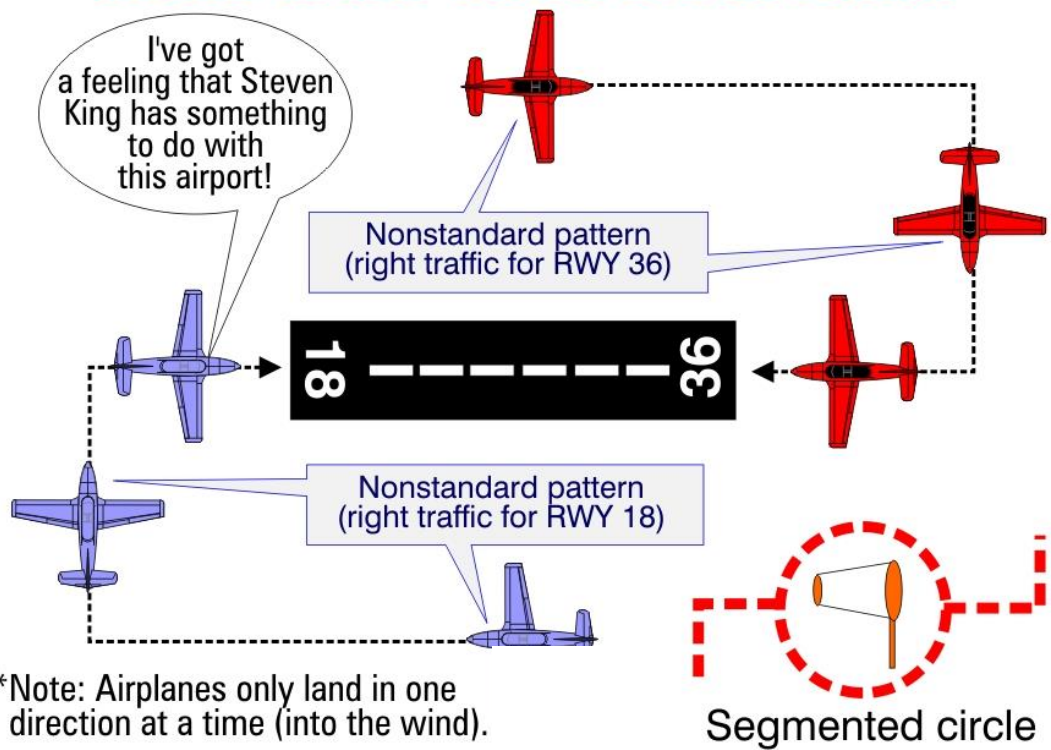
FAR 91.126 Operating on Or In the Vicinity of an Airport In Class G Airspace

- Landing at any airport requires a minimum flight visibility and distance from any clouds
- When approaching to land at an airport without an operating control tower in Class G airspace, each pilot of an airplane must make all turns to the left



FAR 91.126 Operating on Or In the Vicinity of an Airport In Class G Airspace

SEGMENTED CIRCLES SHOWING NONSTANDARD RIGHT-HAND TRAFFIC PATTERNS



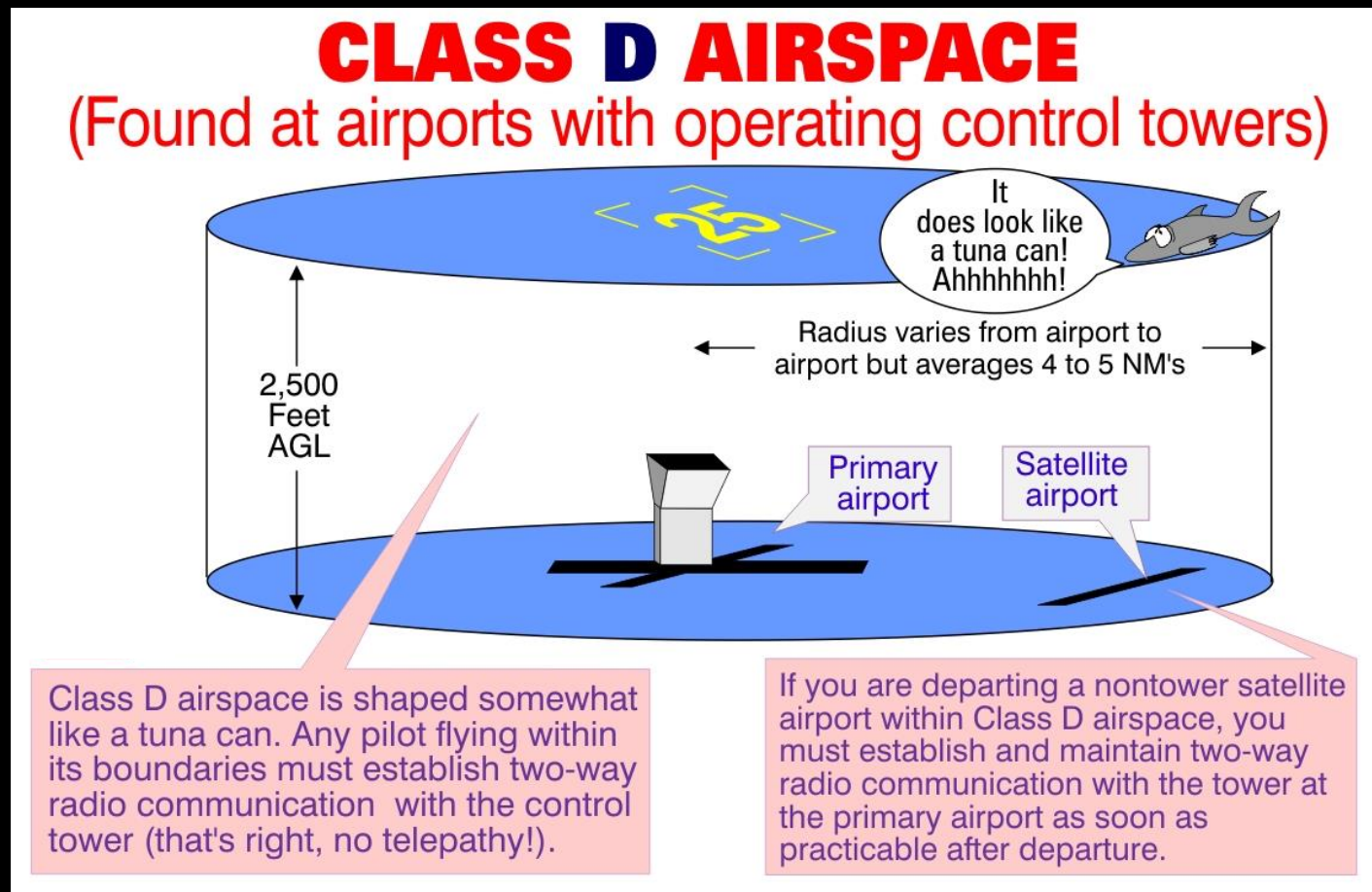
- The exception to this is when the airport displays visual markings (at/on the segmented circle) indicating turns should be made to the right
- Mountains, towers, or noise sensitive areas often dictate that a pattern be flown on the opposite side of the field

FAR 91.127 Operations on or in The Vicinity of an Airport in Class E Airspace

- This regulation is the same as FAR 91.126 for Class G airspace

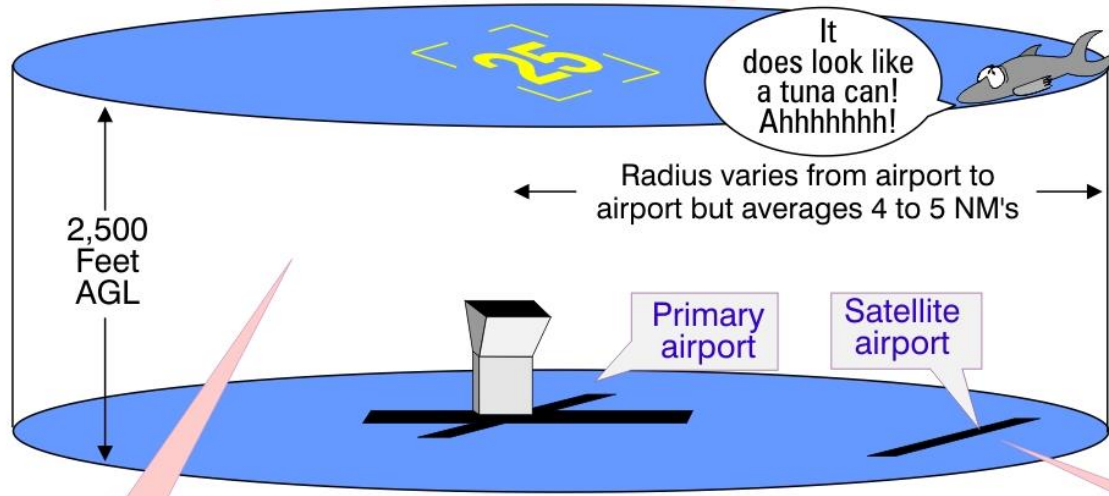
FAR 91.129 Operations in Class D Airspace

- Airports in Class D airspace have an operating control tower
- The purpose of a control tower is to provide information and instructions to airplanes taking off or landing at the primary airport within that airspace



FAR 91.129 Operations in Class D Airspace

CLASS D AIRSPACE (Found at airports with operating control towers)



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Class D airspace is shaped somewhat like a tuna can. Any pilot flying within its boundaries must establish two-way radio communication with the control tower (that's right, no telepathy!).

If you are departing a nontower satellite airport within Class D airspace, you must establish and maintain two-way radio communication with the tower at the primary airport as soon as practicable after departure.

- The primary airport is the airport for which that airspace (Class D) is designated
- It's possible to have one or more additional airports lying within Class D airspace
- These are called "satellite" airports

FAR 91.129 Operations in Class D Airspace

- The minimum equipment required to operate within Class D airspace is a two-way radio
- You can request permission from ATC to fly into or out of this airspace without a radio

FAR 91.129 Operations in Class D Airspace

- If you want to fly through this airspace or land at the primary airport, you must establish two-way radio communication with the
- ATC facility responsible for that Class D airspace
- Once established, you must maintain communication with the control tower while in this airspace
- You've established communications anytime ATC acknowledges your aircraft call sign

FAR 91.129 Operations in Class D Airspace

- On your initial call, while outside or above the class D airspace, you give the tower your position, altitude, destination and any requests you have
- They will call you back using your aircraft call sign and give you directions for entering the traffic flow around the airport
- If the controller says, " N2132B, stand by," you've technically established communications and may continue into the Class D toward the airport

FAR 91.129 Operations in Class D Airspace

- If the controller says, "Aircraft calling Lancaster Tower, standby", then you have not established communications and should remain outside or above the Class D airspace
- If the controller says, "N67730, remain clear of Class D airspace" then you must follow their instructions even though two-way communication has been established
- These communication requirements are in force even if you are landing at one of the satellite airports within Class D airspace

FAR 91.129 Operations in Class D Airspace

- If departing from the primary airport, you must establish and maintain two-way radio communication with ATC within Class D airspace
- If taking off from a non-tower satellite airport within Class D airspace, you must establish and maintain two-way radio communication as soon as practical after departing

FAR 91.129 Operations in Class D Airspace

- You must stay at or above the glideslope (until a lower altitude is necessary) when approaching to land on a runway served by a visual approach slope indicator (VASI or PAPI)

FAR 91.129 Operations in Class D Airspace

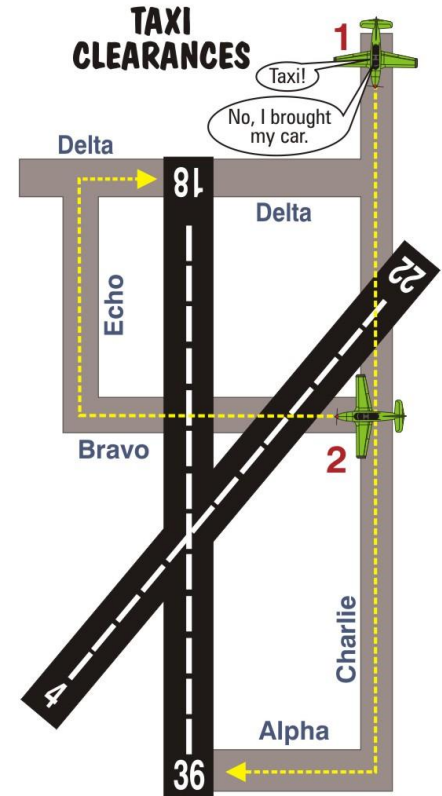
- No person may, at an airport with an operating control tower, operate an aircraft on a runway or taxiway, or take off or land an aircraft, unless an appropriate clearance is received from tower

FAR 91.129

- If ATC clearance is to a runway via a specific taxi route, and if a runway (closed, active or inactive) intersects your path along the way, then the controller must also issue a clearance to cross that runway before proceeding
- Since ATC is required to obtain a readback of all runway hold short instructions, ATC will consider your readback of those instructions containing runway assignments as confirmation of those runway assignments

TAXI CLEARANCES

If Airplane 1 is cleared to taxi to Runway 36, it needs a clearance to cross Runway 22. With this, the pilot may taxi to but not onto Runway 36. If Airplane 2 is cleared to Runway 18, it needs a clearance to cross Runway 22 and Runway 18, as it taxis to, but not onto, Runway 18 at Delta.

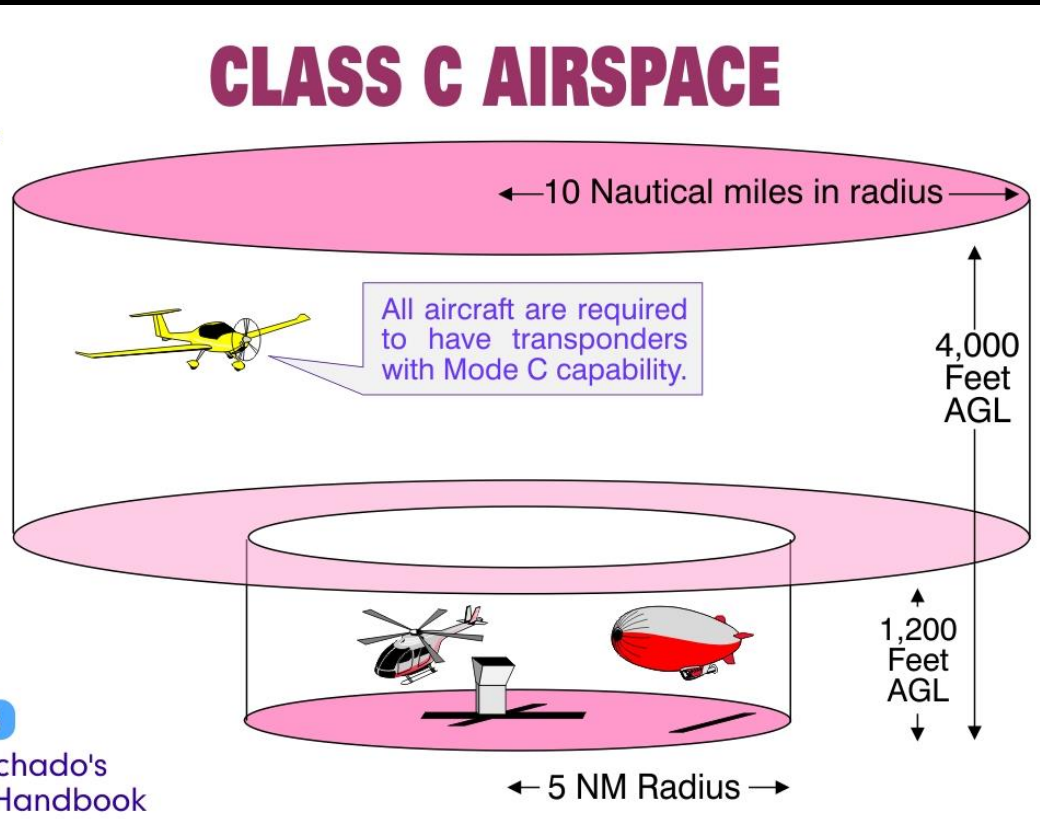


FAR 91.130 Operations In Class C Airspace

Class C airspace exists at those airports having operating control towers and a large amount of IFR traffic or passenger activities. Class C airports are normally serviced by a radar approach control facility.

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- All operations must comply with FAR 91.129 (Class D airspace)
- To land at the primary airport in Class C airspace, or to fly through that airspace, you must establish and maintain two-way radio communication with the facility providing air traffic services prior to entering that airspace

FAR 91.130 Operations In Class C Airspace

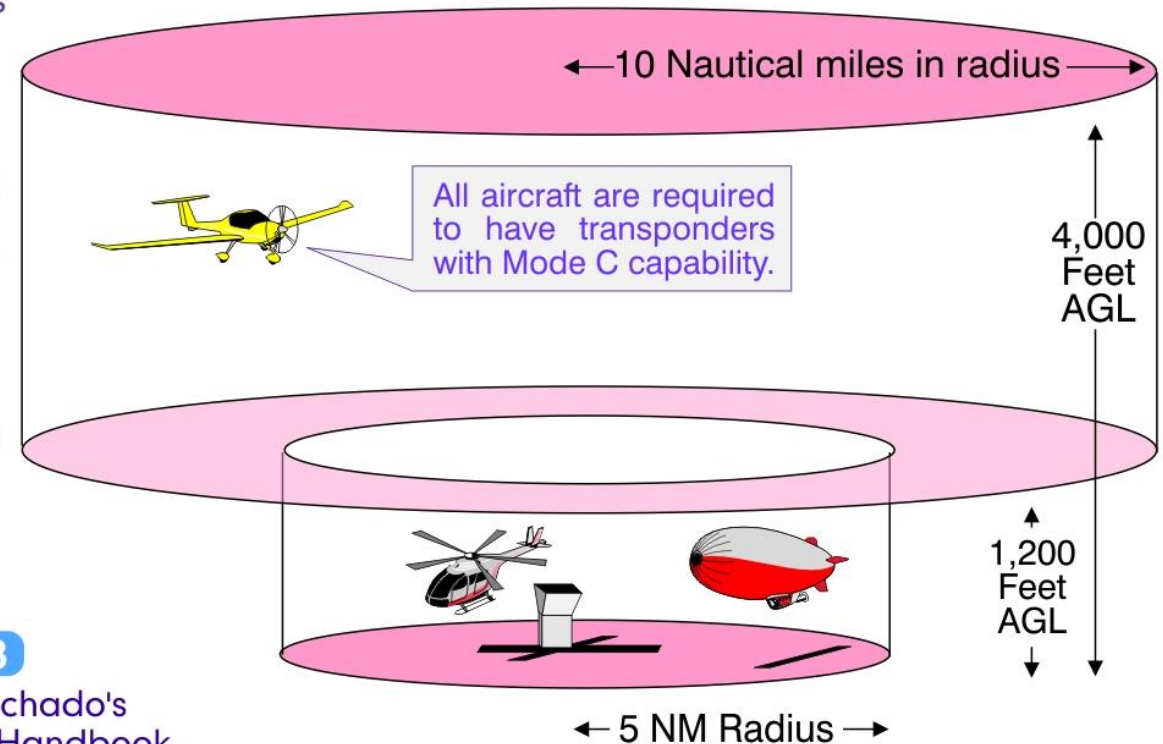
- If departing the primary airport within Class C, you must establish and maintain two-way radio communications with the tower prior to departure
- If departing a nontowered satellite airport lying within the surface boundaries of Class C airspace, you must establish and maintain two-way radio communications with the facility having jurisdiction over that airspace as soon as practicable after departure

Class C airspace exists at those airports having operating control towers and a large amount of IFR traffic or passenger activities. Class C airports are normally serviced by a radar approach control facility.

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CLASS C AIRSPACE

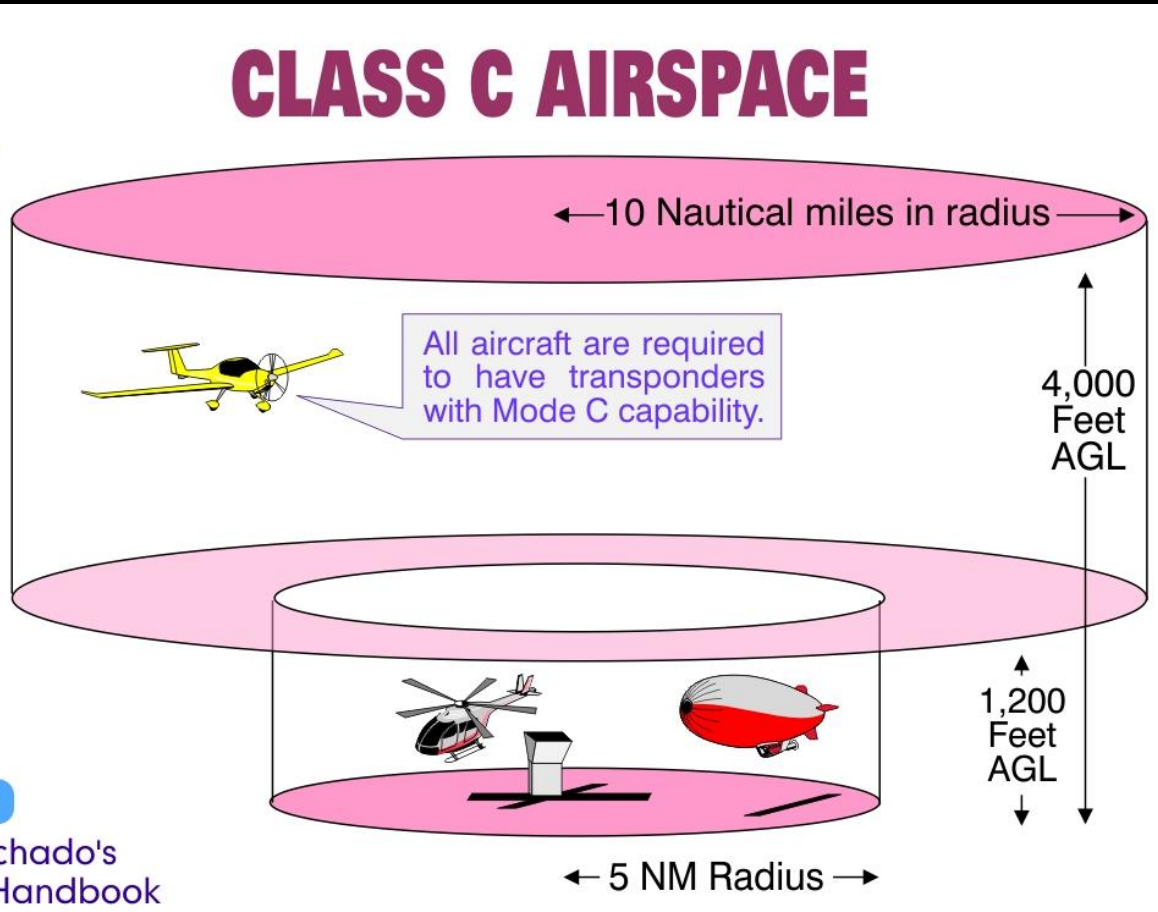


FAR 91.130 Operations In Class C Airspace

Class C airspace exists at those airports having operating control towers and a large amount of IFR traffic or passenger activities. Class C airports are normally serviced by a radar approach control facility.

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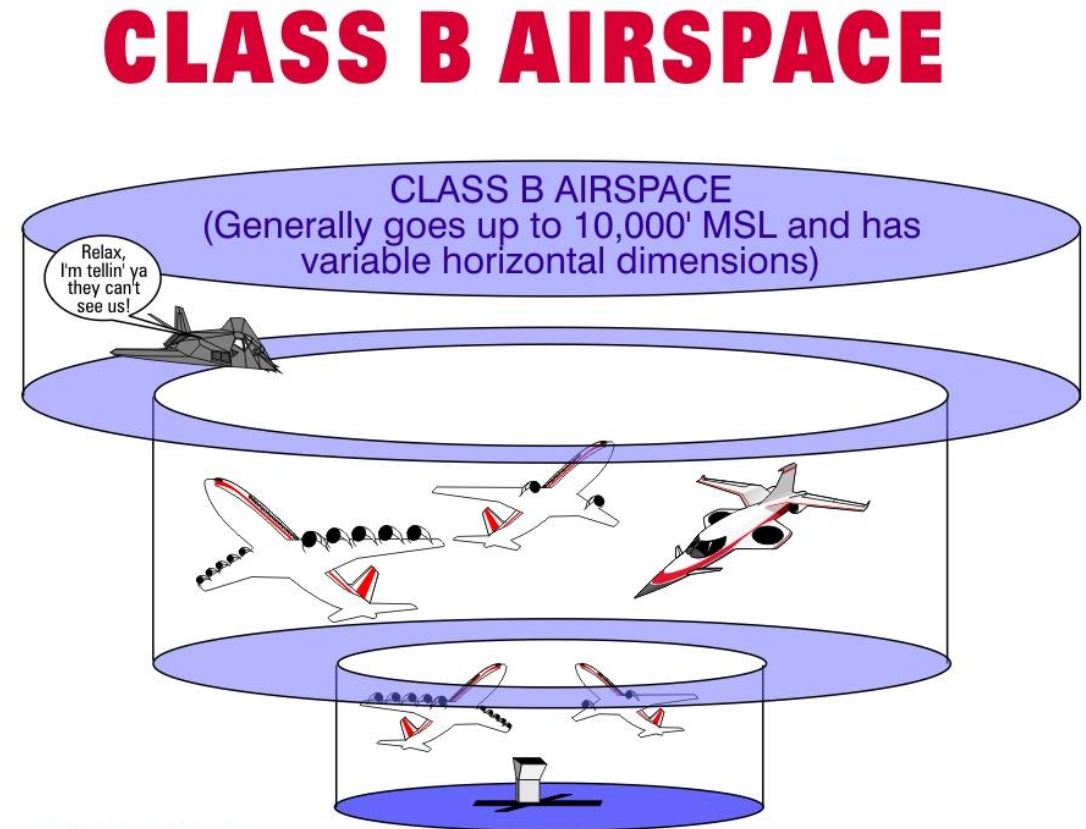


- The minimum equipment required to operate within Class C airspace is a two-way radio, a transponder with altitude reporting capability, and ADS-B (out) capability

FAR 91.131 Operations In Class B Airspace

- Must follow all the rules of FAR 91.129 (Class D airspace)
- Before you can enter Class B airspace, you'll must have a clearance from the ATC facility having jurisdiction over that airspace

Exists at some of the nation's busiest airports. Its shape and size are customized to accommodate the arrival and departure paths of the many airplanes using this airport. Because the airport is so busy, Class B airspace almost always exists on a 24 hour basis.



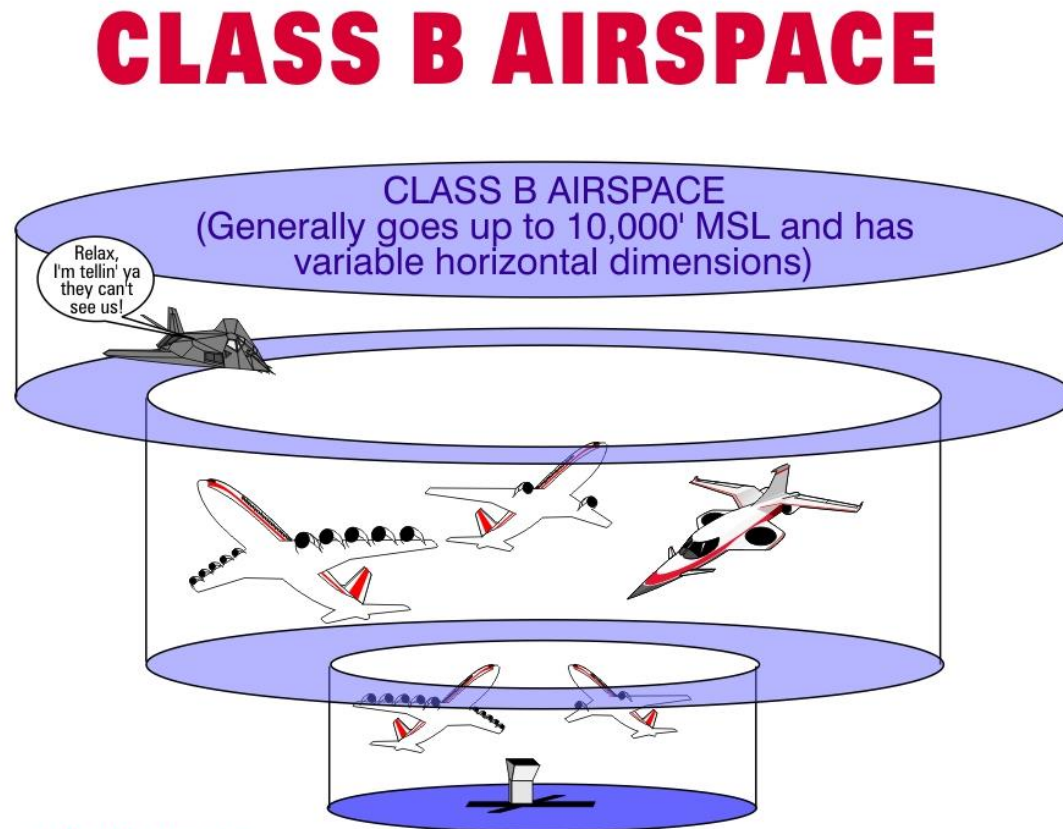
CLASS B AIRSPACE

CLASS B AIRSPACE
(Generally goes up to 10,000' MSL and has variable horizontal dimensions)

Relax,
I'm tellin' ya
they can't
see us!

FAR 91.131 Operations In Class B Airspace

Exists at some of the nation's busiest airports. Its shape and size are customized to accommodate the arrival and departure paths of the many airplanes using this airport. Because the airport is so busy, Class B airspace almost always exists on a 24 hour basis.



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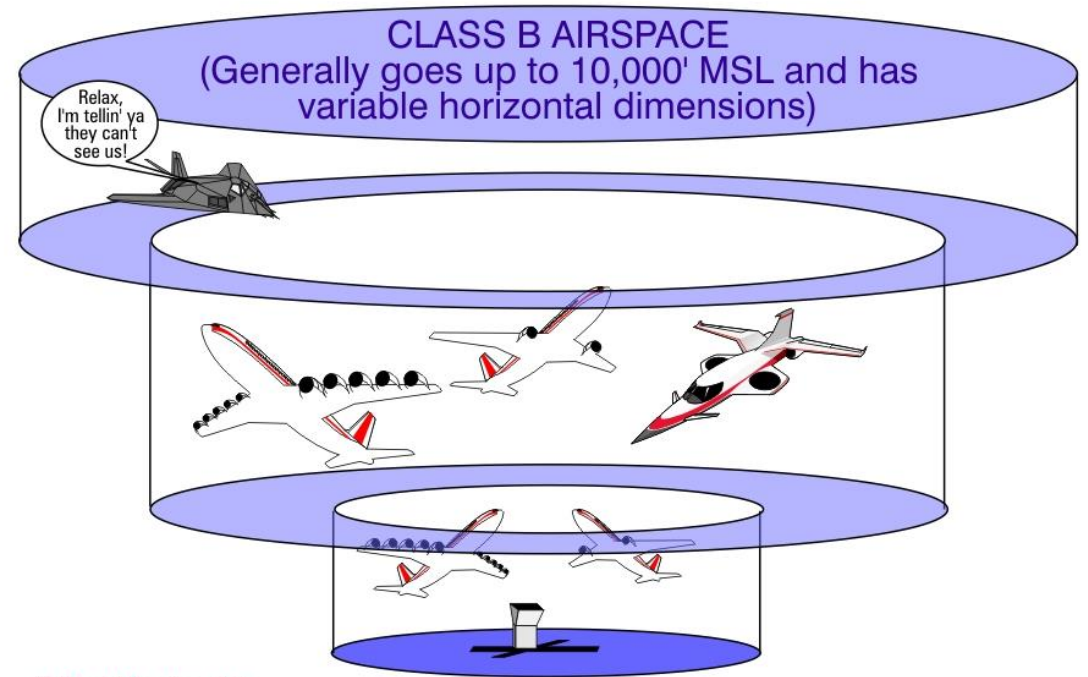
- Must be at least a private pilot to take off or land at any airport within Class B airspace
- If you are a student pilot seeking private pilot certification and have met the requirements of FAR 61.95, then you may take off or land as well as fly in Class B airspace

FAR 91.131 Operations In Class B Airspace

- The minimum equipment required to is a two-way radio with all the frequencies needed for ATC communication, a transponder with altitude encoding capability, ADS-B (out) capability, and for IFR operations, a functioning VOR receiver or RNAV system

Exists at some of the nation's busiest airports. Its shape and size are customized to accommodate the arrival and departure paths of the many airplanes using this airport. Because the airport is so busy, Class B airspace almost always exists on a 24 hour basis.

CLASS B AIRSPACE



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FAR 91.133 Restricted And Prohibited Areas

- Restricted areas, while not prohibited, subject flights to certain restrictions based on time, altitude, or other requirements
- Operations within a restricted area assume that pilots have the permission of the controlling agency responsible for that area
- Requires pilots follow whatever restrictions are imposed by the agency
- Prohibited areas are certain areas of the country where flight is prohibited

FAR 91.135 Operations In Class A Airspace

- Class A airspace is airspace starting at or above 18,000 feet MSL
- Must be instrument rated on an instrument flight plan

FAR 91.137 Temporary Flight Restrictions (TFRs) In Disaster/Hazard Areas

- In the event of either a disaster or a hazard, the FAA might find it necessary to restrict aviation activities to protect persons or property on the ground, to provide safety for those involved in the disaster relief or to prevent sightseeing congestion due to intense public interest
- A NOTAM will describe the TFR restriction
- You may not operate within the TFR without meeting one of the specific exceptions in this regulation
- You may not enter a TFR involving disasters or hazards unless the operation is conducted directly to or from an airport within the area, or is necessitated by the impracticability of VFR flight above or around the area due to weather or terrain, and the operation is not conducted for the purpose of observing the incident or event that generated the TFR

FAR 91.141 Presidential TFRs

- You may not operate an aircraft in the vicinity of any area to be visited by the president, vice president, or other public figures contrary to the limitations in the TFR NOTAMs
- UNLESS special procedures are followed

FAR 91.145 TFRs Covering Aerial Demonstrations and Sporting Events

- To protect persons or property on the surface, help maintain safety, and prevent congestion in the vicinity of these events
- When TFR NOTAMs are issued for aerial demonstrations, the restricted airspace will usually be limited to a five nautical mile radius of the event and less than 17,000 feet MSL (or 13,000 feet AGL for parachute operations)
- For sporting events, the TFR-restricted airspace is usually limited to a 3 nm radius from the center of the event and 2,500 feet above the surface

FAR 91.151 Fuel Requirements for Flight In VFR Conditions

- No person may begin a flight in an airplane under VFR conditions unless (considering wind and forecast weather conditions) there is enough fuel to fly to the first point of intended landing and, assuming normal cruising speed, during the day, to fly for at least an additional 30 minutes
- During night flight, the required fuel reserve is increased to 45 minutes

FAR 91.155 Basic VFR Weather Minimums

- VFR pilots must always maintain a minimum visibility and clearance from any clouds while flying
- Requirements vary depending on the particular class of airspace in which you are flying

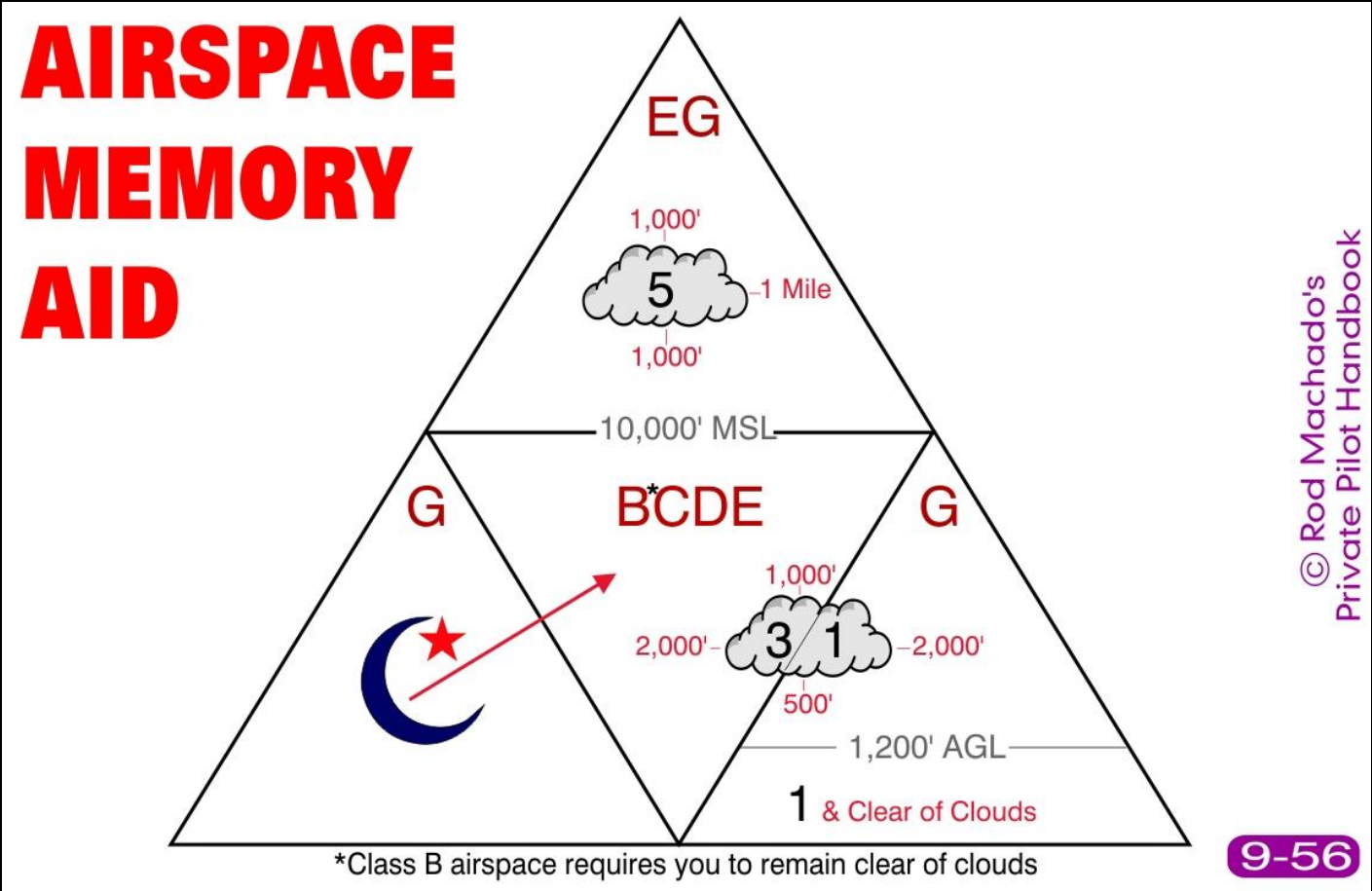
BASIC VFR WEATHER MINIMUMS IN CONTROLLED AIRSPACE

Altitude or Airspace	Flight Visibility	Distance From Clouds
Class A	not applicable	not applicable
Class B	3 statute miles	clear of clouds
Class C	3 statute miles	500' below 1,000' above 2,000' horizontal
Class D	3 statute miles	500' below 1,000' above 2,000' horizontal
Class E		
Less than 10,000' MSL.....	3 statute miles	500' below 1,000' above 2,000' horizontal
At or above 10,000' MSL...	5 statute miles	1,000' above 1,000' below 1 statute mile horizontal

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Airspace Memory Aid



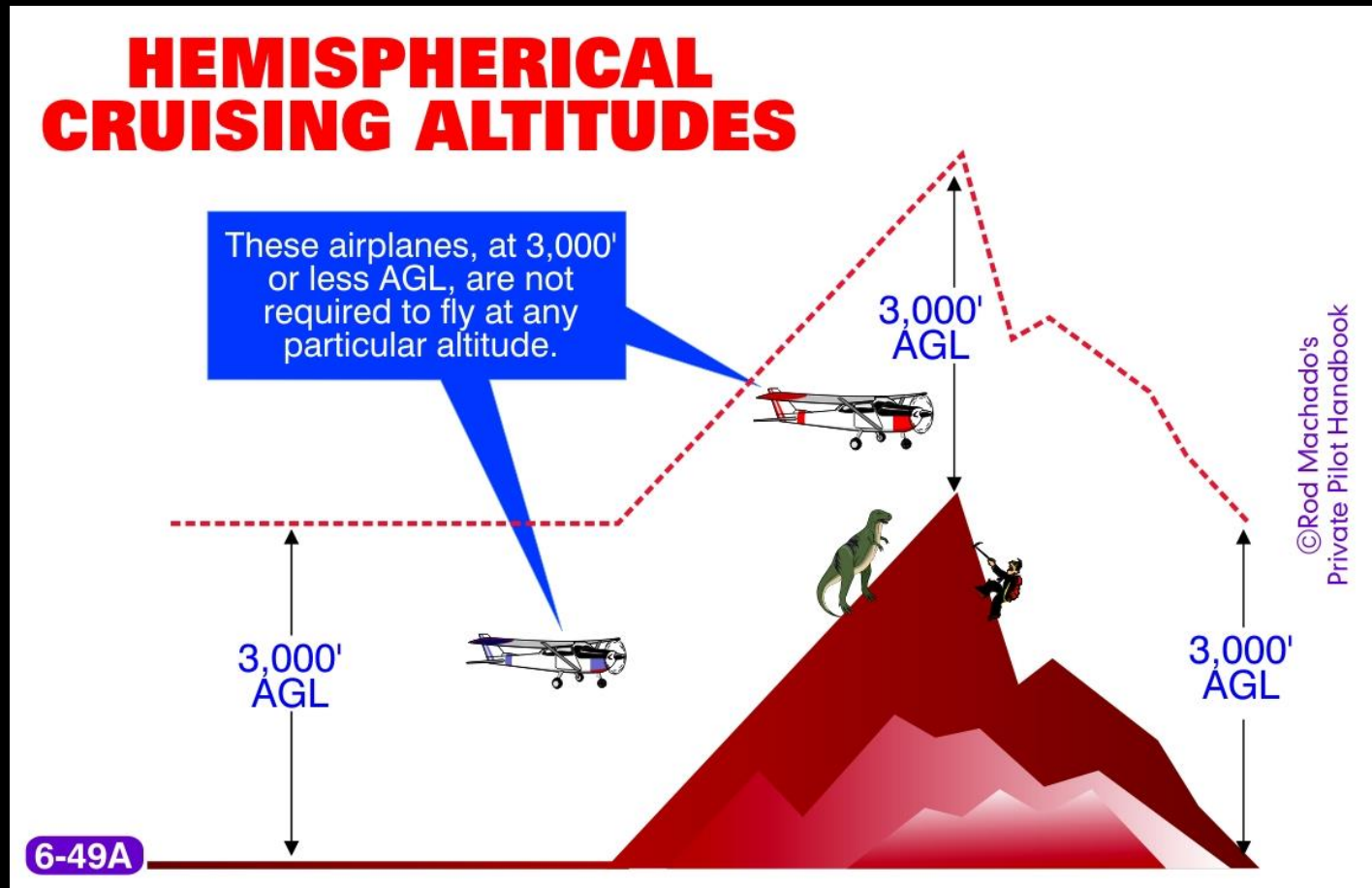
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FAR 91.157 Special VFR Weather Minimums

- Pertain to the airspace defined by the upward extension of the lateral boundaries of a class B, C, D or E surface area around an airport, only up to 10,000 MSL
- Requires ATC clearance, clear of clouds, with flight visibility of at least one statute mile
- A special VFR clearance at night requires that you be instrument rated, current to fly IFR, and that the aircraft be equipped for flight under IFR

FAR 91.159 VFR Cruising Altitude or Flight Level

- The altitudes you're allowed to fly will keep aircraft separated vertically by 1,000 feet and they are based on the aircraft's direction of flight







FAR 91.159 VFR Cruising Altitude or Flight Level

- During VFR flight, when operating more than 3,000 feet above the surface (AGL), you are to fly at an altitude appropriate for your direction of flight
- Depends on Magnetic Course ... *NOT* Magnetic Heading!

HEMISPHERICAL CRUISING ALTITUDES

EASTERLY
Flying on a magnetic course between 0 and 179 degrees, these aircraft must fly odd thousand altitudes + 500'.
3,500'
5,500'
7,500'
up to 17,500'



WESTERLY
Flying on a magnetic course between 180 and 359 degrees, these aircraft must fly even thousand altitudes + 500'.
4,500'
6,500'
8,500'
up to 16,500'

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FAR 91.203 Civil Aircraft: Certifications Required

- There are four items that must be on board the aircraft at all times when it's being operated
- Two are certification documents: the airworthiness certificate and the registration certificate
- The other two items are the airplane's operating limitations and its weight and balance information
- These last two items may be found in the approved Airplane Flight Manual (AFM) or in approved manual materials, markings and placards, or any combination thereof in the airplane

FAR 91.207 Emergency Locator Transmitters

- All U.S. registered civil airplanes must be equipped with an automatic-type emergency locator transmitter (ELT)
- Are impact-activated devices that send out transmissions on the emergency frequency (121.5 MHz & 243 MHz)
- Newer type of ELT known as a 406 MHz ELT

FAR 91.207 Emergency Locator Transmitters

- The batteries must be replaced or recharged if the device has been in use for more than one cumulative hour, or when 50% of their useful life (or life of charge) has expired
- Must be inspected within 12 calendar months after the last inspection for proper installation, operation, battery corrosion and for the presence of a sufficient signal radiated from its antenna

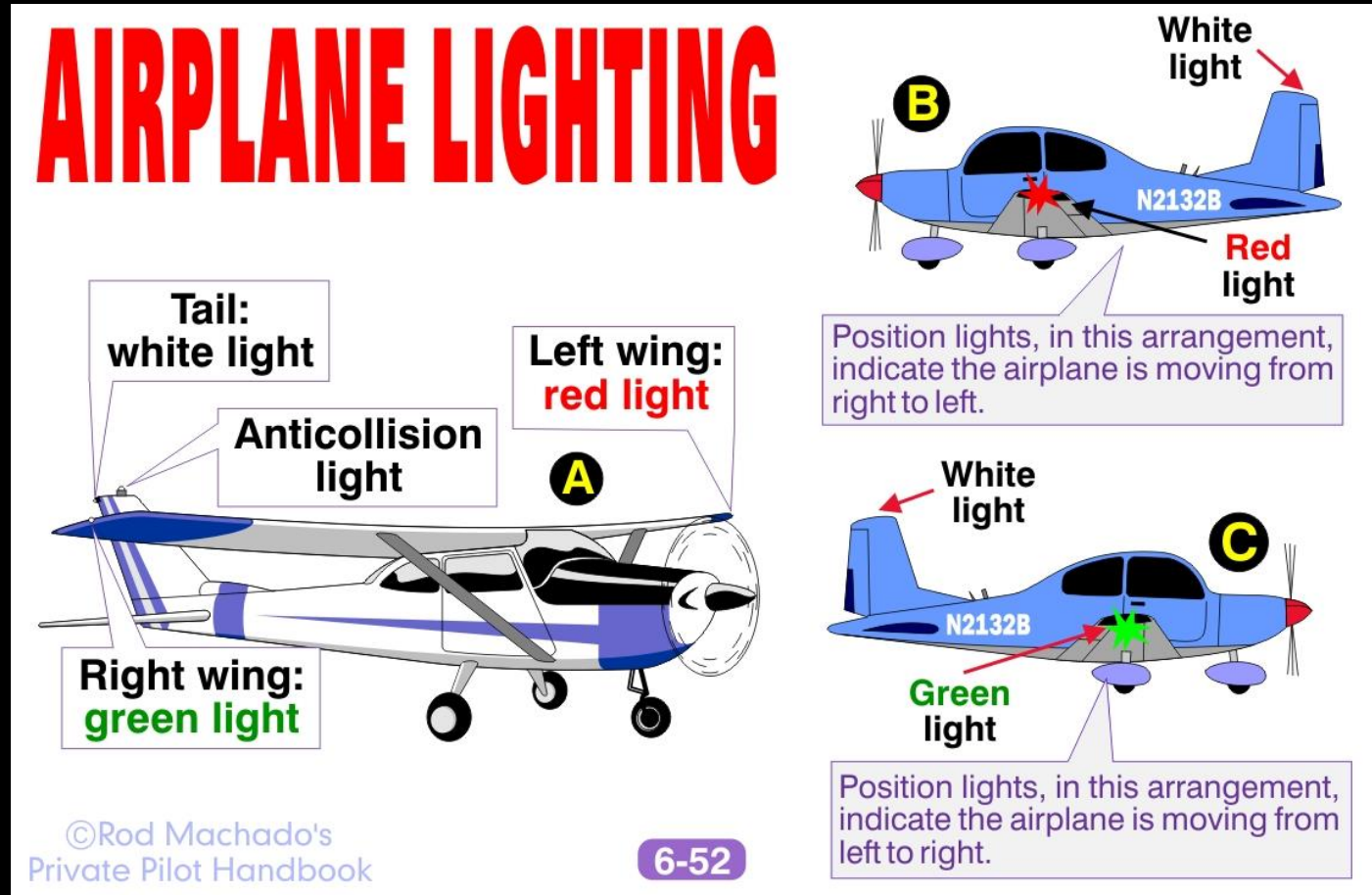
FAR 91.207 Emergency Locator Transmitters

- To manually test the airplane's ELT on the ground you may do so during the first 5 minutes past the hour (limited to three audible sweeps during the test)



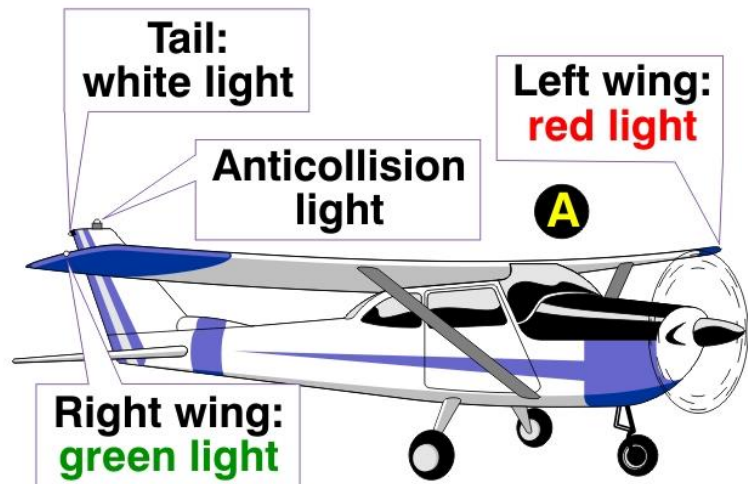
FAR 91.209 Aircraft Lights

- Official night time for airplanes is from sunset to sunrise
- No person may operate an aircraft during this period unless it has lighted position lights



FAR 91.209 Aircraft Lights

AIRPLANE LIGHTING

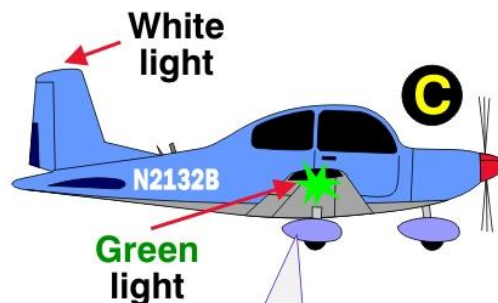


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Position lights, in this arrangement, indicate the airplane is moving from right to left.



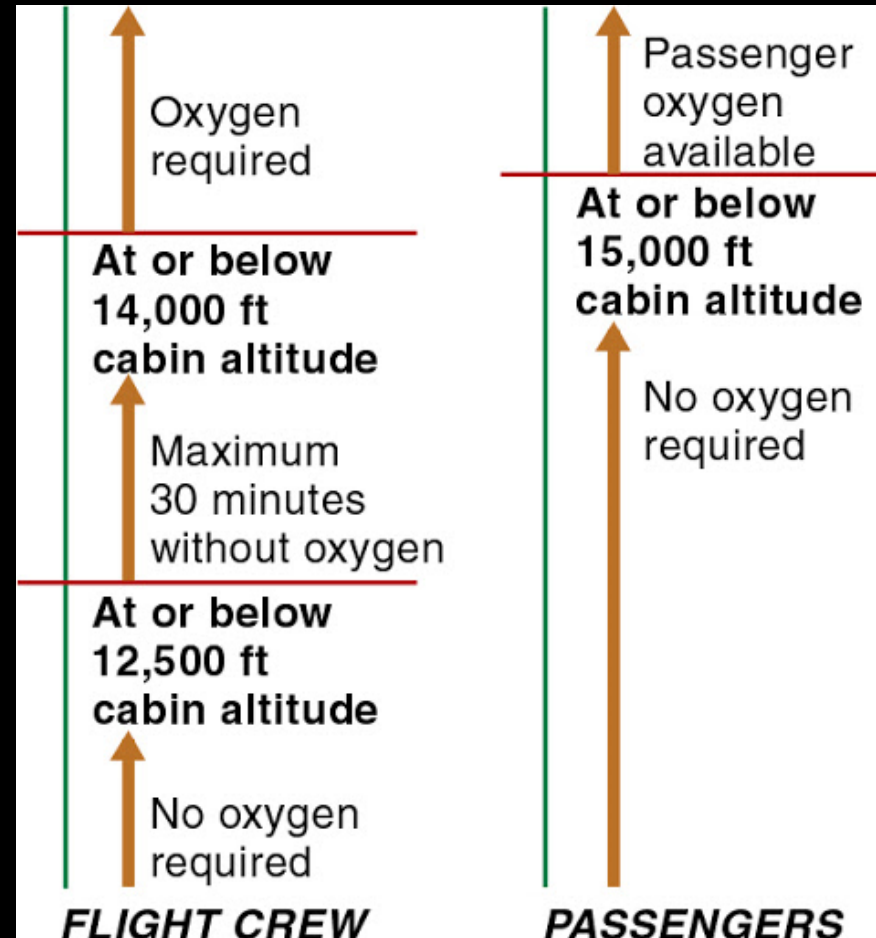
Position lights, in this arrangement, indicate the airplane is moving from left to right.

- Airplanes with an anticollision light system must have these lights on at all times when the airplane is in operation
- Consists of white strobe lights or a red rotating beacon
- Pilots are allowed to turn off the anticollision lighting system if they determine, because of the operating conditions, it is unsafe

FAR 91.211 Use of Supplemental Oxygen

- Sea Level up to 12,500 MSL - Not required
- Above 12,500 up to and including 14,000 MSL - Pilot and crew when more than 30 minutes
- Above 14,000 MSL - Pilot and crew at all times
- Above 15,000 MSL - Passengers must be provided

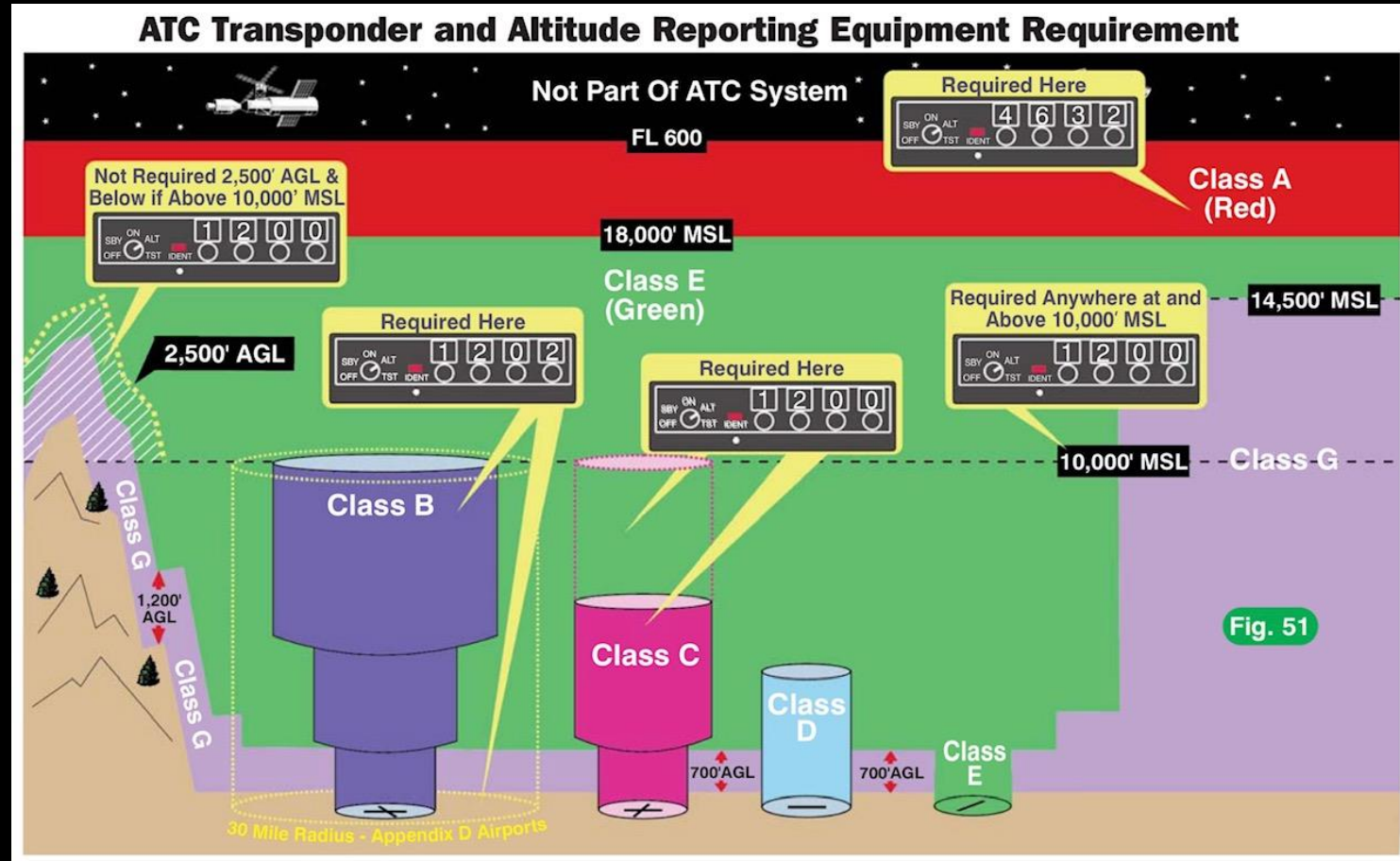
FAR 91.211 Use of Supplemental Oxygen



FAR 91.215 ATC Transponder And Altitude Reporting Equipment and Use

- Transponders with Mode C capability (ALT mode) are required if operating in any of the following:
- Class A, Class B and Class C airspace areas as well as in all airspace above the ceiling and within the lateral boundaries of a Class B or Class C airspace upward to 10,000 feet MSL
- All airspace within 30 nautical miles of certain airports, from the surface upward to 10,000 feet MSL
- All airspace of the 48 contiguous states and the District of Columbia at and above 10,000 feet MSL, excluding the airspace at and below 2,500 feet above the surface

FAR 91.215 ATC Transponder And Altitude Reporting Equipment and Use



FAR 91.215 ATC Transponder And Altitude Reporting Equipment and Use

- Must keep your transponder turned on (ALT mode) while in the airspace listed above, or in any controlled airspace, as well as prior to movement on the airport surface
- ATC can waive the transponder requirements, regardless of the airspace in which you're flying
- Call the Center or approach controller with your request
- If you don't have a transponder, ATC wants at least a one-hour notice before they approve a flight in an area requiring a transponder

FAR 91.303 Aerobatic Flight

- Defined as an intentional maneuver involving an abrupt change in an aircraft's altitude, an abnormal attitude, or abnormal acceleration, not necessary for normal flight
- You may not conduct aerobatic flight:
 - Over a congested area of a city, town or settlement
 - Over an open-air assembly of persons or when less than 1,500 feet above the surface or when the flight visibility is less than 3 statute miles
 - Within the lateral boundaries of the surface areas of Class B, C, D or E airspace designated for an airport
 - Within 4 nm of the centerline of a Federal Airway

FAR 91.307 Parachutes And Parachuting

- Unless each occupant of the aircraft is wearing an approved parachute, no pilot carrying any person, other than a crewmember, may execute any intentional maneuver that exceeds a bank of 60° relative to the horizon or a nose-up or nose-down attitude of 30° relative to the horizon
- If you are by yourself in an aircraft, parachutes are never required regardless of the aircraft's pitch and bank
- Parachutes are not required when on flight tests for pilot certification, when practicing spins, or other flight maneuvers required by regulations when given by a certified flight instructor
- Parachutes must be an approved type and have been packed by a certificated and appropriately rated parachute rigger within 180 days

FAR 91.313 Restricted Category Civil Aircraft: Operating Limitations

- Most airplanes are certified as standard category, but some are committed to special or restricted category
- This means they are to be used for one purpose only
- A restricted category aircraft can only be used for the special purpose for which it was certificated

FAR 91.319 Aircraft Having Experimental Certificates: Operating Limitations

- Airplane was constructed according to rules different than those under which a standard production airplane is built
- Amateur-built aircraft (kit planes) fall into this category
- Until it's proven to the FAA that an Amateur-built aircraft is safe to fly, no person can operate that aircraft outside a designated area Passengers may be carried but passengers and property can't be carried for compensation or hire
- The pilot is required to advise each person carried of the nature of the aircraft

NTSB Part 830

Federal Aviation Regulations (FARs) / AIM

National Transportation Safety Board Regulations

- NTSB is the agency responsible for aircraft accidents, incidents and overdue aircraft
- Under certain conditions, you may have to notify them or file a report if you are involved in an aircraft accident in which any person receives serious injury, or the aircraft receives substantial damage
- Part 830 of the Board's regulations governs the reporting of accidents, incidents, and damage to aircraft, cargo, mail, or injury to required crewmembers

NTSB 830.2 Definitions: Serious Injury

- A serious injury is any injury that:
 - Requires hospitalization for more than 48 hours, commencing within 7 days from the date the injury was received.
 - Results in the fracture of a bone, except simple fractures of the fingers, toes or nose
 - Causes severe hemorrhages, nerve, muscle, or tendon damage
 - Involves any internal organ
 - Involves second- or third-degree burns, or any burns affecting more than 5 percent of the body surface

NTSB 830.2 Definitions: Substantial Damage

- Damage or failure that adversely affects the structural strength, performance, or flight characteristics of the aircraft and which would normally require major repair or replacement of the affected component
- The following are NOT considered to be substantial damage for the purposes of this part:
 - Engine failure or damage limited to an engine if only one engine fails or is damaged.
 - Bent fairings or cowling, dented skin, small puncture holes in the skin or fabric
 - Ground damage to rotor or propeller blades and damage to landing gear, wheels, tires, flaps, engine accessories, brakes, or wingtips.

NTSB 830.5 Definitions

- An *accident* is an occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight and all such persons have disembarked, and in which *any person suffers death or serious injury, or in which the aircraft receives substantial damage*
- An *incident* means an occurrence *other* than an accident, associated with the operation of an aircraft, which affects or could affect the safety of operations

NTSB 830.5 Immediate Notification

- The operator of an aircraft must immediately and by the most expeditious means available notify the nearest NTSB field office when an aircraft accident or any of the following listed incidents occur ...

NTSB 830.5 Immediate Notification

- Flight control system malfunction or failure
- Inability of any required flight crewmember to perform his or her normal flight duties as a result of injury or illness
- Failure of structural components of a turbine engine excluding compressor and turbine blades and vanes
- In-flight fire
- Aircraft collide in flight

NTSB 830.5 Immediate Notification

- Damage to property, other than the aircraft, estimated to exceed \$25,000 for repair or fair market value in the event of total loss
- Release of all or a portion of a propeller blade from an aircraft, excluding release caused solely by ground contact
- A complete loss of information, excluding flickering, from more than 50% of an aircraft's cockpit displays (PFD, MFD, EFIS)
- An aircraft is overdue and believed to have been involved in an accident

NTSB 830.10 Preservation Of Aircraft Wreckage, Mail, Cargo and Records

- The operator of an aircraft involved in an accident or incident must protect the wreckage and everything associated with that wreckage until the NTSB arrives and assumes responsibility
- Avoid disturbing the wreckage. Do so only if it's necessary to help persons injured or trapped, to protect the wreckage from further damage, or protect the public from injury
- If wreckage or anything associated with it has to be moved, make notes, take photographs, or draw sketches to detail its original condition

NTSB 830.15 Reports And Statements to Be Filed

- The operator of an aircraft must file a report 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 shall be filed only as requested by an authorized representative of the NTSB

Knowledge Check

What is the maximum speed below 10,000' feet MSL?

- A. 200 Knots
- B. 210 Knots
- C. 250 Knots
- D. Mach 1.0

Knowledge Check

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- B. ~~210 Knots~~
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- D. ~~Mach 1.0~~

Knowledge Check

Which of the following situations require the use of supplemental oxygen?

- A. At 12,500' for 3 hours
- B. >12,500' and <14,000' for more than 30 minutes
- C. >12,500' and <14,000' for more than 15 minutes
- D. Anytime above 12,500'

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Knowledge Check

What airplane does not require a logbook endorsement to fly?

- A. Multi-Engine Airplane
- B. Tailwheel Airplane
- C. High Performance Airplane
- D. Complex Airplane

Knowledge Check

What airplane does not require a logbook endorsement to fly?

- A. Multi-Engine Airplane
- B. ~~Tailwheel Airplane~~
- C. ~~High Performance Airplane~~
- D. ~~Complex Airplane~~

Knowledge Check

What is the minimum visibility to fly Special VFR?

- A. 3 SM
- B. 5 SM
- C. ½ SM
- D. 1 SM

Knowledge Check

What is the minimum visibility to fly Special VFR?

- A. ~~3 SM~~
- B. ~~5 SM~~
- C. ~~1/2 SM~~
- D. 1 SM

Knowledge Check

What is the minimum safe altitude over all terrain?

- A. 1,000 feet above any obstacle within 2,000'
- B. 500' from any person, vehicle, or structure
- C. 1 mile from any person, vehicle, or structure
- D. If the power unit fails, a safe landing can be made without undo harm to persons or property.

Knowledge Check

What is the minimum safe altitude over all terrain?

- A. ~~1,000 feet above any obstacle within 2,000'~~
- B. ~~500' from any person, vehicle, or structure~~
- C. ~~1 mile from any person, vehicle, or structure~~
- D. If the power unit fails, a safe landing can be made without undo harm to persons or property.

Knowledge Check

When two aircraft are converging head-on, the proper actions is to?

- A. Climb
- B. Descend
- C. Turn Left
- D. Turn Right

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Knowledge Check

Which of the following is an NTSB reportable incident?

- A. Loss of flight controls
- B. 10% of cockpit flight instrument displays fail
- C. Damage to the propeller resulting in \$10,000 of repairs
- D. Gear-Up Landing

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