

FARs

**You need to be aware of ALL Federal Aviation Regulations including:**

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- FAR Part 43
  - 43.3 Authorized Maintenance
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**WHAT FARs ARE IMPORTANT FOR YOUR AERONAUTICAL KNOWLEDGE TEST**

**FAR PAR 1.1 General Definitions**

- 1. Light-Sport Aircraft (LSA)** means an aircraft, other than a helicopter or powered-lift that, since its original certification, has continued to meet the following:
  - a. A maximum takeoff weight of not more than 1320 pounds (600 kg) for aircraft not intended for operation on water; 1,430 pounds (650 kg) for aircraft intended for operation on water.
  - b. A maximum airspeed in level flight with maximum continuous power ( $V_{LO}$ ) of not more than 120 knots CAS.
  - c. A single reciprocal engine, if powered.
  - d. Is classified as either an Airplane, Gyroplane, Glider, Lighter-than-air, Powered Parachutes, or Weight-shift-control aircraft.
- 2. Night** means the time between the end of evening civil twilight and the beginning of morning civil twilight, as published in the American Air Almanac converted to local time.
  - a. A sport pilot may not operate an aircraft at night.
- 3. Aircraft categories** (for certification of airmen); broad classification of aircraft
  - a. Airplane, b. Rotorcraft, c. Glider, and d. Lighter-than-air.
- 4. Airplane classes** (for certification of airmen)
  - a. Single-engine land, b. Multiengine land, c. Single-engine sea, and d. Multiengine sea.
- 5. Rotorcraft classes** (for certification of airmen)
  - a. Helicopter, and b. Gyrocopter.
- 6. Lighter-than-air classes** (for certification of airmen)
  - a. Airship, b. Free Balloon, c. Hot air balloon, and d. Gas balloon.

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**FAR PAR 1.1 General Definitions continued -**

7. Note the above (6) category and class definitions are for certification of airmen purposes. For certification of aircraft, there are different definitions:
  - a. **Category** (for certification of aircraft purposes) is based on intended use or operating limitations.
    - 1) Transportation, 2) Normal, 3) Utility, 4) Limited, 5) Restricted, 6) Acrobatic, and 7) Provisional.
  - b. **Classes** as used for certification of aircraft are the same as, or very similar to, categories for certification of airmen, e.g., airplane, rotorcraft, glider and lighter-than-air
- 8. Air Traffic Control (ATC) clearance** means an authorization to proceed under specific traffic conditions in controlled airspace.
- FAR Part 21**
- 21.171 **Duration of Airworthiness Certificates**
8. Airworthiness certificates remain in force as long as maintenance and alteration of the aircraft are performed per FARs.
- FAR Part 23
- 23.3 Airplane Categories
1. The utility operational category of an airplane permits limited aerobatics, including spins (if approved for that particular type or airplane).
- FAR Part 39**
- 39.1 **Applicability**
8. Airworthiness Directives (Ads) are issued under FAR Part 39 by the FAA to require correction of unsafe conditions found in an airplane, an airplane engine, a propeller, or an appliance when such conditions exist and are likely to exist or develop in other products of the same design.
  - a. Since Ads are issued under FAR Part 39, they are regulatory and must be complied with, unless a specific exemption is granted.

Commercial Operations(4.1)

- 4.1 FAR Part 1
  - 1.1 General Definitions
- [COMMERCIAL]**
  1. Commercial Operations engage in carriage by aircraft in air commerce of persons or compensation or hire "other than" as an air carrier.
  2. An operator is a person who causes the aircraft to be used or authorizes its use.
  3. Operational control of a flight means exercising authority over initiating, conducting or terminating a flight.
- All Operations
- 1.2 **Abbreviations and Symbols**
- AFM means airplane flight manual.
- AGL means above ground level.
- ALS means approach light system.
- APU means auxiliary power unit.
- ASR means airport surveillance radar.
- ATC means air traffic control.
- ATS means Air Traffic Service.
- CAMP means continuous airworthiness maintenance program.
- CAS means calibrated airspeed.
- CAT II means Category II.
- CHDO means an FAA Flight Standards certificate holding district office.
- CMP means configuration, maintenance, and procedures.
- CONSOL or CONSOLAN means a kind of low or medium frequency long range navigational aid.
- DH means decision height.
- DME means distance measuring equipment compatible with TACAN.

**EAS means equivalent airspeed.**

Equal-Time Point means a point on the route of flight where the flight time, considering wind, to each of two selected airports is equal.

ETOPS means extended operations.

EWIS , as defined by §25.1701 of this chapter, means electrical wiring interconnection system.

**FAA means Federal Aviation Administration.**

FFS means full flight simulator.

FM means fan marker.

FSTD means flight simulation training device.

FTD means flight training device.

GS means glide slope.

HIRL means high-intensity runway light system.

IAS means indicated airspeed.

**IFR means instrument flight rules.**

IFSD means in-flight shutdown.

ILS means instrument landing system.

IM means ILS inner marker.

INT means intersection.

LDA means localizer-type directional aid.

LFR means low-frequency radio range.

LMM means compass locator at middle marker.

LOC means ILS localizer.

LOM means compass locator at outer marker.

**M means mach number.**

MAA means maximum authorized IFR altitude.

MALS means medium intensity approach light system.

MALSFR means medium intensity approach light system with runway alignment indicator lights.

MCA means minimum crossing altitude.

MDA means minimum descent altitude.

MEA means minimum en route IFR altitude.

MEL means minimum equipment

MM means ILS middle marker.

**MCCA means minimum obstruction clearance altitude.**

MRA means minimum reception altitude.

MSL means mean sea level.

**NDB (ADF) means nondirectional beacon (automatic direction finder).**

**NM means nautical mile.**

NOPAC means North Pacific area of operation.

NOPT means no procedure turn required.

OEI means one engine inoperative.

OM means ILS outer marker.

OPSPCS means operations specifications.

PACOTS means Pacific Organized Track System.

PAR means precision approach radar.

PMA means parts manufacturer approval.

PTRS means Performance Tracking and Reporting System.

RAI means runway alignment indicator light system.

**RBN means radio beacon.**

RCLM means runway centerline marking.

RCLS means runway centerline light system.

**REL means runway end identification lights.**

RFS means rescue and firefighting services.

**RNAV means area navigation.**

RR means low or medium frequency radio range station.

RVR means runway visual range as measured in the touchdown zone area.

SALS means short approach light system.

SATCOM means satellite communications.

SSALS means simplified short approach light system.

TACAN means ultra-high frequency tactical air navigational aid.

**TAS means true airspeed.**

**TAS means a traffic alert and collision avoidance system.**

TDZL means touchdown zone lights.

**TSO means technical standard order.**

TVOR means very high frequency terminal omnirange station.

**SPEEDS (V-Velocity)**

**V A means design maneuvering speed.**

**V B means design speed for maximum gust intensity.**

**V C means design cruising speed.**

**V D means design diving speed.**

**V Df/ M Df. means demonstrated flight diving speed.**

**V EF means the speed at which the critical engine is assumed to fail during takeoff.**

**V F means design flap speed.**

**V Fc/ M Fc. means maximum speed for stability characteristics.**

**V FE means maximum flap extended speed.**

**V FT0 means final takeoff speed.**

**V H means maximum speed in level flight with maximum continuous power.**

**V LE means maximum landing gear extended speed.**

**V LO means maximum landing gear operating speed.**

**V LOF means lift-off speed.**

**V MC means minimum control speed with the critical engine inoperative.**

**V MCH/ M MC means maximum operating limit speed.**

**V MU means minimum unstick speed.**

**V NE means never-exceed speed.**

**V NO means maximum structural cruising speed.**

**V R means rotation speed.**

**V REF means reference landing speed.**

**V S means the stalling speed or the minimum steady flight speed at which the airplane is controllable.**

**V SO means the stalling speed or the minimum steady flight speed in the landing configuration.**

**V S1 means the stalling speed or the minimum steady flight speed obtained in a specific configuration.**

**V SR means reference stall speed.**

**V SRO means reference stall speed in the landing configuration.**

**V SRI means reference stall speed in a specific configuration.**

**V SW means speed at which onset of natural or artificial stall warning occurs.**

**V TOS means takeoff safety speed for Category A rotorcraft.**

**V X means speed for best angle of climb.**

**V Y means speed for best rate of climb.**

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**WHAT FARs ARE IMPORTANT FOR YOUR AERONAUTICAL KNOWLEDGE TEST**

**FAR Part 38 continued...**

**39.3 General**

No person may operate a product to which an AD applies except in accordance with the requirements of that AD.

a. Thus, you may operate an airplane that is not in compliance with an AD, if such operation is allowed by the AD.

**FAR PART 43**

**43.3 Persons Authorized to Perform Maintenance, Preventive Maintenance, Rebuilding, and Alteration.**

1. A person who holds a sport pilot certificate may perform preventive maintenance on any airplane owned or operated by that pilot an is issued a special air-worthiness certificate in the light-sport category.

**43.7 Persons Authorized to Approve Aircraft Airframes, Aircraft Engines, Propellers, Appliances, or Component Parts for Return to Service after Maintenance, Preventive Maintenance, Rebuilding or Alteration.**

1. To approve a light-sport category airplane for return to service after preventive maintenance was done by a pilot, the pilot must hold at least a sport pilot certificate.

**43.9 Maintenance Records**

1. After preventative maintenance has been performed, the signature, certificate number, kind of certificate held by the person approving the work, and a description of the work must be entered in the aircraft maintenance records.

**FARs**

**WHAT FARs ARE IMPORTANT FOR YOUR AERONAUTICAL KNOWLEDGE TEST**

**FAR Part 43 continued...**

**43 Appendix A. Major Alterations and Repairs and Preventive Maintenance**

Preventive maintenance means simple or minor preservation operations and the replacement of small standard parts not involving complex assembly operations. Examples include (a) Replenishing hydraulic fluid, and (b) Servicing landing gear wheel bearings.

**FAR PART 61.**

**61.3 Requirements for Certificates, Ratings, and Authorizations**

When acting as pilot in command or as required pilot flight crewmember, you must have a valid pilot certificate and a current and appropriate medical certificate (or driver's license, if appropriate) in your personal possession or readily accessible in the airplane

You must present your pilot certificate or medical certificate (or driver's license, if appropriate) upon the request of the Administrator of the FAA or his/her representative, or the NTSB, or any federal, state, or local law enforcement officer.

**61.15 Offenses Involving Alcohol or Drugs**

A pilot convicted of operating a motor vehicle while either intoxicated by, impaired by, or under the influence of alcohol or a drug is required to provide a written report to the FAA Civil Aviation Security Division (AMC-700) no later than 60 days after the conviction.

2. A pilot convicted for the violation of any Federal or State statute related to the process, manufacture, transportation, distribution, or sale of narcotic drugs is grounds for suspension or revocation of any certificate, rating, or authorization issued under Part 61.

3. A pilot convicted of operating an aircraft as a crewmember under the influence of alcohol, or using drugs that affect the person's faculties (act which are prohibited by Sec. 91.17), is grounds for denial of an application for a certificate, rating, or authorization issued under Part 61 for a period of one year after the date of the act.

## FARS

### WHAT FARS ARE IMPORTANT FOR YOUR AERONAUTICAL KNOWLEDGE TEST FAR Part 61 continued...

#### **61.23 Medical Certificates: Requirement and Duration**

- When exercising the privileges of either a sport pilot or student sport pilot certificate in a light-sport aircraft other than a balloon or glider, a person must hold or possess either a valid FAA medical certificate or a current and valid U.S. drivers license.
- For operations requiring a third-class medical certificate, the certificate will expire
  - 5 years after the date of examination shown on the certificate, if you have not reached your 40<sup>th</sup> birthday on or before the date of examination or
  - 2 years after the date of examination shown on the certificate, if you have reached your 40<sup>th</sup> birthday on or before the date of examination.

#### **61.56 Flight Review**

- A flight review must have been satisfactorily completed within the previous 24 calendar months to act as pilot in command of an aircraft.
  - A proficiency check or flight test for a pilot certificate, rating or other operating privileges will also satisfy this requirement.
  - Satisfactory completion of the review or flight test must be endorsed in the pilot's logbook by the reviewer.
- The expiration of the 24-month period for the flight review falls on the last day of the 24<sup>th</sup> month after the month of the examination date (i.e., 24 calendar months).

This page is reserved for Commercial Pilot Knowledge only.

#### **61.31 Type Rating Requirements, Additional Training, and Authorization Requirements**

- For flights carrying passengers, the pilot must hold a category and class rating appropriate to the aircraft being flown.
- A type rating is required when operating any turbojet-powered airplane or an airplane having a gross weight of more than 12,500 lb.
- To act as pilot in command of a complex airplane (an airplane that has retractable landing gear, flaps, and a controllable pitch propeller), the pilot must receive and log ground and flight training in such an airplane and obtain a logbook endorsement of competence.
- To act as pilot in command of a high-performance airplane (an airplane with an engine of more than 200 horsepower), the pilot must receive and log ground and flight training from an authorized instructor in such an airplane.
- To act as a pilot in command of a tailwheel airplane, without prior experience, a pilot must receive and log flight training from an authorized instructor in a tailwheel airplane and receive a one-time logbook endorsement.

#### **61.51 Pilot Logbooks**

- Pilots may log as second-in-command time all flight time when qualified and occupying a crewmember station in an aircraft that requires more than one pilot.
- The aeronautical training and experience used to meet the requirements for a certificate, rating, or flight review and recent flight experience must be documented and recorded in a manner acceptable to the FAA, e.g., a logbook.

#### **61.55 Second-in-Command Qualifications**

- To serve as second in command of an airplane type certificated for more than one pilot crewmember and operated under Part 91, (in part) a person, within the last 12 months, must have become familiar with the required information (systems operations, performance, limitations, etc.) and must have logged pilot time in the type of airplane for which privileges are requested.

## FARS

### WHAT FARS ARE IMPORTANT FOR YOUR AERONAUTICAL KNOWLEDGE TEST FAR Part 61 continued...

#### **61.57 Recent Flight Experience: Pilot in Command**

- To carry passengers, you must have made three(3) landings and three(3) takeoffs within the preceding 90 days.
  - All three landings must be made in aircraft of the same category, class, and, if a type rating is required, the same type as the one in which passengers are to be carried.
    - The categories are airplane, rotorcraft, glider, and lighter-than-air.
    - The classes are single-engine land, single-engine sea, multiengine land, and multiengine sea.
  - The landings must be to a full stop if the airplane is tailwheel (conventional) rather than nose wheel.

#### **[COMMERCIAL]**

If a pilot does not meet the recent night experience requirements, (s)he may not carry passengers during the periods from 1 hour after sunset to 1 hour before sunrise.

Prior to carrying passengers, the pilot in command must accomplish required takeoffs and landings in the same category, class, and type of aircraft (if a type rating is required). To act as pilot in command under IFR or in weather conditions that are less than the minimums prescribed for VFR, a pilot must have, within the preceding 6 months, performed and logged (under actual or simulated instrument conditions) at least 6 instrument approaches, holding procedures, and intercept and tracking courses through the use of navigation.

a. Alternately, the pilot must have passed an instrument proficiency check in the appropriate category of aircraft within the preceding 6 months.

#### **Pilot-in-Command Proficiency Check: Operation of aircraft Requiring More than One Pilot Flight Crewmember**

To serve as PIC of an airplane that is certified for more than 1 pilot crewmember and operated under Part 91, a person must have completed a PIC proficiency check within the preceding 12 calendar months in an airplane that is certified for more than 1 pilot.

## FARS

### WHAT FARS ARE IMPORTANT FOR YOUR AERONAUTICAL KNOWLEDGE TEST FAR Part 61 continued...

#### **61.315 Sport Pilot Privileges and Limitations: Pilot in Command**

- Sport pilots may not act as pilot in command of a light-sport aircraft while carrying more than one passenger.
  - As a sport pilot, you must pay at least half of the operating expenses of a flight. The operating expenses may be shared with a passenger involve only fuel, oil, airport expenses, or aircraft rental fees.
  - A sport pilot may not act as pilot in command if that person knows or has reason to know of any medical condition that would make that person unable to operate a light-sport aircraft in a safe manner.
    - If advice is needed concerning possible flight with an illness, a pilot should contact an Aviation Medical Examiner.
- Sport pilots may not operate
  - Above 1,000 feet MSL
  - Without visual reference to the surface.
  - In less than 3 statute mile visibility
  - At night
  - Contrary to any aircraft, flight instructor, or other limitations
  - While towing any object.
  - In aircraft with V<sub>1</sub> above 120 KCAS without CFII training and logbook endorsement.
  - Outside the USA.
  - In aircraft requiring more than one pilot.

## FARS

### WHAT FARS ARE IMPORTANT FOR YOUR AERONAUTICAL KNOWLEDGE TEST FAR Part 61 continued...

#### **61.325 Required Endorsements for Class B,C, and D Airspaces.**

1.A sport pilot must receive and log ground and flight training to operate a light-sport aircraft at an airport within, or in airspace within, Class B, C, and D airspace, or in other airspaces with an airport having an operational

#### **61.133 Commercial Pilot Privileges and Limitations**

- Commercial pilots without an instrument rating cannot carry passengers for hire on cross-country flights during the day beyond a radius of 50 NM.
  - Carrying passengers for hire at night is prohibited without an instrument rating.
- A person who holds a commercial pilot certificate may act as pilot in command of an airplane that
  - Carries persons or property for compensation or hire, provided the person is qualified in accordance with Part 61 and any other FAR Parts that apply to the operation
  - Operates for compensation or hire, provided the person is qualified in accordance with Part 61 and any other FAR Parts that apply to the operation

#### **FAR PART 71**

#### **71.75 Extent of Federal Airways**

- Federal airways include that Class E airspace
  - Extending upward from 1,200 feet AGL to and including 17,999 feet MSL.
  - Within parallel boundary lines 4 NM each side of the airway's centerline.

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PART 91: GENERAL OPERATING AND FLIGHT RULES

FARs

§ 91.3 Responsibility and authority of the pilot in command.

- (a) The pilot in command of an aircraft is directly responsible for, and is the final authority as to, the operation of that aircraft.
- (b) In an in-flight emergency requiring immediate action, the pilot in command may deviate from any rule of this part to the extent required to meet that emergency.
- (c) Each pilot in command who deviates from a rule under paragraph (b) of this section shall, upon the request of the Administrator, send a written report of that deviation to the Administrator.

§ 91.7 Civil aircraft airworthiness.

- (a) No person may operate a civil aircraft unless it is in an airworthy condition.
- (b) The pilot in command of a civil aircraft is responsible for determining whether that aircraft is in condition for safe flight. The pilot in command shall discontinue the flight when unairworthy mechanical, electrical, or structural conditions occur.

- § 91.9 Civil aircraft flight manual, marking, and placard requirements.
- (a) Except as provided in paragraph (d) of this section, no person may operate a civil aircraft without complying with the operating limitations specified in the approved Airplane or Rotorcraft Flight Manual, markings, and placards, or as otherwise prescribed by the certificating authority of the country of registry.

- § 91.11 Prohibition on interference with crewmembers.
- No person may assault, threaten, intimidate, or interfere with a crewmember in the performance of the crewmember's duties aboard an aircraft being operated.

- § 91.13 Careless or reckless operation.
- (a) Aircraft operations for the purpose of air navigation. No person may operate an aircraft in a careless or reckless manner so as to endanger the life or property of another.
- (b) Aircraft operations other than for the purpose of air navigation. No person may operate an aircraft, other than for the purpose of air navigation, on any part of the surface of an airport used by aircraft for air commerce (including areas used by those aircraft for receiving or discharging persons or cargo), in a careless or reckless manner so as to endanger the life or property of another.

- § 91.15 Dropping objects.
- No pilot in command of a civil aircraft may allow any object to be dropped from that aircraft in flight that creates a hazard to persons or property. However, this section does not prohibit the dropping of any object if reasonable precautions are taken to avoid injury or damage to persons or property.

§ 91.17 Alcohol or drugs.

- (a) No person may act or attempt to act as a crewmember of a civil aircraft—
  - (1) Within 8 hours after the consumption of any alcoholic beverage;
  - (2) While under the influence of alcohol;
  - (3) While using any drug that affects the person's faculties in any way contrary to safety; or
  - (4) While having an alcohol concentration of 0.04 or greater in a blood or breath specimen. Alcohol concentration means grams of alcohol per deciliter of blood or grams of alcohol per 210 liters of breath.
- (b) Except in an emergency, no pilot of a civil aircraft may allow a person who appears to be intoxicated or who demonstrates by manner or physical indications that the individual is under the influence of drugs (except a medical patient under proper care) to be carried in that aircraft.
- (c) A crewmember shall do the following:
  - (1) On request of a law enforcement officer, submit to a test to indicate the alcohol concentration in the blood or breath, when—
    - (i) The law enforcement officer is authorized under State or local law to conduct the test or to have the test conducted; and
    - (ii) The law enforcement officer is requesting submission to the test to investigate a suspected violation of State or local law governing the same or substantially similar conduct prohibited by paragraph (a)(1), (a)(2), or (a)(4) of this section.
  - (2) Whenever the FAA has a reasonable basis to believe that a person may have violated paragraph (a)(1), (a)(2), or (a)(4) of this section, on request of the FAA, that person must furnish to the FAA the results, or authorize any clinic, hospital, or doctor, or other person to release to the FAA, the results of each test taken within 4 hours after acting or attempting to act as a crewmember that indicates an alcohol concentration in the blood or breath specimen.
  - (3) Whenever the Administrator has a reasonable basis to believe that a person may have violated paragraph (a)(3) of this section, that person shall, upon request by the Administrator, furnish the Administrator, or authorize any clinic, hospital, doctor, or other person to release to the Administrator, the results of each test taken within 4 hours after acting or attempting to act as a crewmember that indicates the presence of any drugs in the body.

- (e) Any test information obtained by the Administrator under paragraph (c) or (d) of this section may be evaluated in determining a person's qualifications for any airman certificate or possible violations of this chapter and may be used as evidence in any legal proceeding under section 602, 603, or 901 of the Federal Aviation Act of 1958.

§ 91.19 Carriage of narcotic drugs, marijuana, and depressant or stimulant drugs or substances.

- (a) Except as provided in paragraph (b) of this section, no person may operate a civil aircraft within the United States with knowledge that narcotic drugs, marijuana, and depressant or stimulant drugs or substances as defined in Federal or State statutes are carried in the aircraft.
- (b) Paragraph (a) of this section does not apply to any carriage of narcotic drugs, marijuana, and depressant or stimulant drugs or substances authorized by or under any Federal or State statute or by any Federal or State agency.

§ 91.21 Portable electronic devices.

- (a) Except as provided in paragraph (b) of this section, no person may operate, nor may any operator or pilot in command of an aircraft allow the operation of, any portable electronic device on any of the following U.S.-registered civil aircraft:
  - (1) Aircraft operated by a holder of an air carrier operating certificate or an operating certificate; or
  - (2) Any other aircraft while it is operated under IFR.
- (b) Paragraph (a) of this section does not apply to—
  - (1) Portable voice recorders;
  - (2) Hearing aids;
  - (3) Heart pacemakers;
  - (4) Electric shavers; or
  - (5) Any other portable electronic device that the operator of the aircraft has determined will not cause interference with the navigation or communication system of the aircraft on which it is to be used.
- (c) In the case of an aircraft operated by a holder of an air carrier operating certificate or an operating certificate, the determination required by paragraph (b)(5) of this section shall be made by that operator of the aircraft on which the particular device is to be used. In the case of other aircraft, the determination may be made by the pilot in command or other operator of the aircraft.

Commercial Knowledge Information on this page.

§ 91.103 Preflight action.

Each pilot in command shall, before beginning a flight, become familiar with all available information concerning that flight. This information must include—

- (a) For a flight under IFR or a flight not in the vicinity of an airport, weather reports and forecasts, fuel requirements, alternatives available if the planned flight cannot be completed, and any known traffic delays of which the pilot in command has been advised by ATIS;
- (b) For any flight, runway lengths at airports of intended use, and the following takeoff and landing distance information:
  - (1) For civil aircraft for which an approved Airplane or Rotorcraft Flight Manual containing takeoff and landing distance data is required, the takeoff and landing distance data contained therein; and
  - (2) For civil aircraft other than those specified in paragraph (b)(1) of this section, other reliable information appropriate to the aircraft, relating to aircraft performance under expected values of airport elevation and runway slope, aircraft gross weight, and wind and temperature.

§ 91.105 Flight crewmembers at stations.

- (a) During takeoff and landing, and while en route, each required flight crewmember shall—
  - (1) Be at the crewmember station unless the absence is necessary to perform duties in connection with the operation of the aircraft or in connection with physiological needs; and
  - (2) Keep the safety belt fastened while at the crewmember station.
- (b) Each required flight crewmember of a U.S.-registered civil aircraft shall, during takeoff and landing, keep his or her shoulder harness fastened while at his or her assigned duty station. This paragraph does not apply if—
  - (1) The seat at the crewmember's station is not equipped with a shoulder harness; or
  - (2) The crewmember would be unable to perform required duties with the shoulder harness.

§ 91.107 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 (except a free balloon that incorporates a basket or gondola, or an airship type certificated before November 2, 1967) 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 (except a free balloon that incorporates a basket or gondola, or an airship type certificated before November 2, 1967) 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.

(3) Except as provided in this paragraph, each person on board a U.S.-registered civil aircraft (except a free balloon that incorporates a basket or gondola or an airship type certificated before November 2, 1967) must occupy an approved seat or berth with a safety belt and, if installed, shoulder harness, properly secured about him or her during movement on the surface, takeoff, and landing. For seaplane and float equipped rotorcraft operations during movement on the surface, the person pushing off the seaplane or rotorcraft from the dock and the person mooring the seaplane or rotorcraft at the dock are excepted from the preceding seating and safety belt requirements. Notwithstanding the preceding requirements of this paragraph, a person may:

(i) Be held by an adult who is occupying an approved seat or berth, provided that the person being held has not reached his or her second birthday and does not occupy or use any restraining device;

(ii) Use the floor of the aircraft as a seat, provided that the person is on board for the purpose of engaging in sport parachuting; or

(iii) Notwithstanding any other requirement of this chapter, occupy an approved child restraint system furnished by the operator or one of the persons described in paragraph (a)(3)(iii)(A) of this section provided that:

(A) The child is accompanied by a parent, guardian, or attendant designated by the child's parent or guardian to attend to the safety of the child during the flight;

(B) Except as provided in paragraph (a)(3)(iii)(B)(4) of this section, the approved child restraint system bears one or more labels as follows:

(1) Seats manufactured to U.S. standards between January 1, 1981, and February 25, 1985, must bear the label: "This child restraint system conforms to all applicable Federal motor vehicle safety standards";

(2) Seats manufactured to U.S. standards on or after February 26, 1985, must bear two labels:

(i) "This child restraint system conforms to all applicable Federal motor vehicle safety standards"; and

(ii) "THIS RESTRAINT IS CERTIFIED FOR USE IN MOTOR VEHICLES AND AIRCRAFT" in red lettering;

§ 91.111 Operating near other aircraft.

(a) No person may operate an aircraft so close to another aircraft as to create a collision hazard.

(b) No person may operate an aircraft in formation flight except by arrangement with the pilot in command of each aircraft in the formation.

(c) No person may operate an aircraft, carrying passengers for hire, in formation flight.

§ 91.113 Right-of-way rules: Except water operations.

(a) Inapplicability. This section does not apply to the operation of an aircraft on water.

(b) General. When weather conditions permit, regardless of whether an operation is conducted under instrument flight rules or visual flight rules, vigilance shall be maintained by each person operating an aircraft so as to see and avoid other aircraft. When a rule of this section gives another aircraft the right-of-way, the pilot shall give way to that aircraft and may not pass over, under, or ahead of it unless well clear.

(c) In distress. An aircraft in distress has the right-of-way over all other air traffic.

(d) 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. If the aircraft are of different categories—

(1) A balloon has the right-of-way over any other category of aircraft;

(2) A glider has the right-of-way over an airship, powered parachute, weight-shift-control aircraft, airplane, or rotorcraft.

(3) An airship has the right-of-way over a powered parachute, weight-shift-control aircraft, airplane, or rotorcraft.

However, an aircraft towing or refueling other aircraft has the right-of-way over all other engine-driven aircraft.

(e) Approaching head-on. When aircraft are approaching each other head-on, or nearly so, each pilot of each aircraft shall alter course to the right.

(f) Overtaking. Each aircraft that is being overtaken has the right-of-way and each pilot of an overtaking aircraft shall alter course to the right to pass well clear.

(g) Landing. 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, except that they shall not take advantage of this rule to force an aircraft off the runway surface which has already landed and is attempting to make way for an aircraft on final approach. 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, but it shall not take advantage of this rule to cut in front of another which is on final approach to land or to overtake that aircraft.

§ 91.115 Right-of-way rules: Water operations.

(a) General. Each person operating an aircraft on the water shall, insofar as possible, keep clear of all vessels and avoid impeding their navigation, and shall give way to any vessel or other aircraft that is given the right-of-way by any rule of this section.

(b) Crossing. When aircraft, or an aircraft and a vessel, are on crossing courses, the aircraft or vessel to the other's right has the right-of-way.

(c) Approaching head-on. When aircraft, or an aircraft and a vessel, are approaching head-on, or nearly so, each shall alter its course to the right to keep well clear.

(d) Overtaking. Each aircraft or vessel that is being overtaken has the right-of-way, and the one overtaking shall alter course to keep well clear.

(e) Special circumstances. When aircraft, or an aircraft and a vessel, approach so as to involve risk of collision, each aircraft or vessel shall proceed with careful regard to existing circumstances, including the limitations of the respective craft.

§ 91.117 Aircraft speed.

(a) Unless otherwise authorized by the Administrator, no person may operate an aircraft below 10,000 feet MSL at an indicated airspeed of more than 250 knots (288 m.p.h.).

(b) Unless otherwise authorized or required by ATC, no person may operate an aircraft at or below 2,500 feet above the surface within 4 nautical miles of the primary airport of a Class C or Class D airspace area at an indicated airspeed of more than 200 knots (230 mph.). This paragraph (b) does not apply to any operations within a Class B airspace area. Such operations shall comply with paragraph (a) of this section.

(c) No person may operate an aircraft in the airspace underlying a Class B airspace area designated for an airport or in a VFR corridor designated through such a Class B airspace area, at an indicated airspeed of more than 200 knots (230 mph.).

(d) If the minimum safe airspeed for any particular operation is greater than the maximum speed prescribed in this section, the aircraft may be operated at that minimum speed.

§ 91.119 Minimum safe altitudes: General. When necessary for takeoff or landing, no person may operate an aircraft below the following altitudes:

(a) Anywhere. An altitude allowing, if a power unit fails, an emergency landing without undue hazard to persons or property on the surface.

(b) Over congested areas. Over any congested area of a city, town, or settlement, or over any open air assembly of persons, an altitude of 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet of the aircraft.

(c) Over other than congested areas. 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.

(d) Helicopters, powered parachutes, and weight-shift-control aircraft. If the operation is conducted without hazard to persons or property on the surface—

(1) A helicopter may be operated at less than the minimums prescribed in paragraph (b) or (c) of this section, provided each person operating the helicopter complies with any routes or altitudes specifically prescribed for helicopters by the FAA; and

(2) A powered parachute or weight-shift-control aircraft may be operated at less than the minimums prescribed in paragraph (c) of this section.

§ 91.121 Altimeter settings.

- (a) Each person operating an aircraft shall maintain the cruising altitude or flight level of that aircraft, as the case may be, by reference to an altimeter that is set, when operating—
- (1) Below 18,000 feet MSL, to—
    - (i) The current reported altimeter setting of a station along the route and within 100 nautical miles of the aircraft;
    - (ii) If there is no station within the area prescribed in paragraph (a)(1)(i) of this section, the current reported altimeter setting of an appropriate available station; or
    - (iii) In the case of an aircraft not equipped with a radio, the elevation of the departure airport or an appropriate altimeter setting available before departure; or
  - (2) At or above 18,000 feet MSL, to 29.92" Hg.

§ 91.123 Compliance with ATC clearances and instructions.

- (a) When an ATC clearance has been obtained, no pilot in command may deviate from that clearance unless an amended clearance is obtained, an emergency exists, or the deviation is in response to a traffic alert and collision avoidance system resolution advisory. However, except in Class A airspace, a pilot may cancel an IFR flight plan if the operation is being conducted in VFR weather conditions. When a pilot is uncertain of an ATC clearance, that pilot shall immediately request clarification from ATC.







- (b) 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.

- (c) Each pilot in command who, in an emergency, or in response to a traffic alert and collision avoidance system resolution advisory, deviates from an ATC clearance or instruction shall notify ATC of that deviation as soon as possible.

- (d) Each pilot in command who (though not deviating from a rule of this subpart) is given priority by ATC in an emergency, shall submit a detailed report of that emergency within 48 hours to the manager of that ATC facility, if requested by ATC.

- (e) Unless otherwise authorized by ATC, no person operating an aircraft may operate that aircraft according to any clearance or instruction that has been issued to the pilot of another aircraft for radar air traffic control purposes.

§ 91.125 ATC light signals.

GROUND	Light Gun Signals	AIR
Cleared for Takeoff		Cleared to Land
STOP		Give Way Continue Circling
Cleared to Taxi		Return for Landing
Taxi Clear of Runway		Airport Unsafe DO NOT LAND
Return to Starting Point on Airport		Not Applicable
Exercise EXTREME CAUTION		Exercise EXTREME CAUTION

§ 91.126 Operating on or in the vicinity of an airport in Class G airspace.

- (a) General. Unless otherwise authorized or required, each person operating an aircraft on or in the vicinity of an airport in a Class G airspace area must comply with the requirements of this section.
- (b) Direction of turns. When approaching to land at an airport without an operating control tower in Class G airspace—
- (1) Each pilot of an airplane must make all turns of that airplane to the left unless the airport displays approved light signals or visual markings indicating that turns should be made to the right, in which case the pilot must make all turns to the right; and
  - (2) Each pilot of a helicopter or a powered parachute must avoid the flow of fixed-wing aircraft.
- (c) Flap settings. Except when necessary for training or certification, the pilot in command of a civil turbojet-powered aircraft must use, as a final flap setting, the minimum certificated landing flap setting set forth in the approved performance information in the Airplane Flight Manual for the applicable conditions. However, each pilot in command has the final authority and responsibility for the safe operation of the pilot's airplane, and may use a different flap setting for that airplane if the pilot determines that it is necessary in the interest of safety.
- (d) Communications with control towers. Unless otherwise authorized or required by ATC, no person may operate an aircraft to, from, through, or on an airport having an operational control tower unless two-way radio communications are maintained between that aircraft and the control tower. Communications must be established prior to 4 nautical miles from the airport, up to and including 2,500 feet AGL. However, if the aircraft radio fails in flight, the pilot in command may operate that aircraft and land if weather conditions are at or above basic VFR weather minimums, visual contact with the tower is maintained, and a clearance to land is received. If the aircraft radio fails while in flight under IFR, the pilot must comply with § 91.185.

§ 91.127 Operating on or in the vicinity of an airport in Class E airspace.

- (a) Unless otherwise required by part 93 of this chapter or unless otherwise authorized or required by the ATC facility having jurisdiction over the Class E airspace area, each person operating an aircraft on or in the vicinity of an airport in a Class E airspace area must comply with the requirements of § 91.126.
- (b) Departures. Each pilot of an aircraft must comply with any traffic patterns established for that airport in part 93 of this chapter.
- (c) Communications with control towers. Unless otherwise authorized or required by ATC, no person may operate an aircraft to, from, through, or on an airport having an operational control tower unless two-way radio communications are maintained between that aircraft and the control tower. Communications must be established prior to 4 nautical miles from the airport, up to and including 2,500 feet AGL. However, if the aircraft radio fails in flight, the pilot in command may operate that aircraft and land if weather conditions are at or above basic VFR weather minimums, visual contact with the tower is maintained, and a clearance to land is received. If the aircraft radio fails while in flight under IFR, the pilot must comply with § 91.185.

§ 91.129 Operations in Class D airspace.

- (a) General. Unless otherwise authorized or required by the ATC facility having jurisdiction over the Class D airspace area, each person operating an aircraft in Class D airspace must comply with the applicable provisions of this section. In addition, each person must comply with §§ 91.126 and 91.127. For the purpose of this section, the primary airport is the airport for which the Class D airspace area is designated. A satellite airport is any other airport within the Class D airspace area.
- (b) Deviations. An operator may deviate from any provision of this section under the provisions of an ATC authorization issued by the ATC facility having jurisdiction over the airspace concerned. ATC may authorize a deviation on a continuing basis or for an individual flight, as appropriate.
- (c) Communications. Each person operating an aircraft in Class D airspace must meet the following two-way radio communications requirements:
- (1) Arrival or through flight. Each person must establish two-way radio communications with the ATC facility (including foreign ATC in the case of foreign airspace designated in the United States) providing air traffic services prior to entering that airspace and thereafter maintain those communications while within that airspace.
  - (2) Departing flight. Each person—
    - (i) From the primary airport or satellite airport with an operating control tower must establish and maintain two-way radio communications with the control tower, and thereafter as instructed by ATC while operating in the Class D airspace area; or
    - (ii) From a satellite airport without an operating control tower, must establish and maintain two-way radio communications with the ATC facility having jurisdiction over the Class D airspace area as soon as practicable after departing.
- (d) Communications failure. Each person who operates an aircraft in a Class D airspace area must maintain two-way radio communications with the ATC facility having jurisdiction over that area.
- (1) If the aircraft radio fails in flight under IFR, the pilot must comply with § 91.185 of the part.
  - (2) If the aircraft radio fails in flight under VFR, the pilot in command may operate that aircraft and land if—
    - (i) Weather conditions are at or above basic VFR weather minimums;
    - (ii) Visual contact with the tower is maintained; and
    - (iii) A clearance to land is received.

(e) Minimum altitudes when operating to an airport in Class D airspace.

- Unless required by the applicable distance-from-cloud criteria, each pilot operating a large or turbine-powered airplane must enter the traffic pattern at an altitude of at least 1,500 feet above the elevation of the airport and maintain at least 1,500 feet until further descent is required for a safe landing.
- Each pilot operating a large or turbine-powered airplane approaching to land on a runway served by an instrument approach procedure with vertical guidance, if the airplane is so equipped, must:
  - Operate that airplane at an altitude at or above the glide path between the published final approach fix and the decision altitude (DA), or decision height (DH), as applicable; or
  - If compliance with the applicable distance-from-cloud criteria requires glide path interception closer in, operate that airplane at or above the glide path, between the point of interception of glide path and the DA or the DH.
- Each pilot operating an airplane approaching to land on a runway served by a visual approach slope indicator must maintain an altitude at or above the glide path until a lower altitude is necessary for a safe landing.
- Paragraphs (e)(2) and (e)(3) of this section do not prohibit normal bracketing maneuvers above or below the glide path that are conducted for the purpose of remaining on the glide path.

(f) Approaches. Except when conducting a circling approach under part 97 of this chapter or unless otherwise required by ATC, each pilot must—

- Circle the airport to the left, if operating an airplane; or
- Avoid the flow of fixed-wing aircraft, if operating a helicopter.

(g) Departures. No person may operate an aircraft departing from an airport except in compliance with the following:

- Each pilot must comply with any departure procedures established for that airport by the FAA.
- Unless otherwise required by the prescribed departure procedure for that airport or the applicable distance from clouds criteria, each pilot of a turbine-powered airplane and each pilot of a large airplane must climb to an altitude of 1,500 feet above the surface as rapidly as practicable.
- Noise abatement. Where a formal runway use program has been established by the FAA, each pilot of a large or turbine-powered airplane assigned a noise abatement runway by ATC must use that runway. However, consistent with the final authority of the pilot in command concerning the safe operation of the aircraft as prescribed in §91.3(a), ATC may assign a different runway if requested by the pilot in the interest of safety.
- (Takeoff, landing, taxi clearance. No person may, at any 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 ATC. A clearance to "taxi" to the takeoff runway assigned to the aircraft is not a clearance to cross that assigned takeoff runway, or to taxi on that runway at any point, but is a clearance to cross other runways that intersect the taxi route to that assigned takeoff runway. A clearance to "taxi" to any point other than an assigned takeoff runway is clearance to cross all runways that intersect the taxi route to that point.

**§ 91.130 Operations in Class C airspace.**

(a) General. Unless otherwise authorized by ATC, each aircraft operation in Class C airspace must be conducted in compliance with this section and §91.129. For the purpose of this section, the primary airport is the airport for which the Class C airspace area is designated. A satellite airport is any other airport within the Class C airspace area.

(b) Traffic patterns. No person may take off or land an aircraft at a satellite airport within a Class C airspace area except in compliance with FAA arrival and departure traffic patterns.

(c) Communications. Each person operating an aircraft in Class C airspace must meet the following two-way radio communications requirements:

- Arrival or through flight. Each person must establish two-way radio communications with the ATC facility (including foreign ATC in the case of foreign airspace designated in the United States) providing air traffic services prior to entering that airspace and thereafter maintain those communications while within that airspace.
- Departing flight. Each person—
  - From the primary airport or satellite airport with an operating control tower must establish and maintain two-way radio communications with the control tower, and thereafter as instructed by ATC while operating in the Class C airspace area; or
  - From a satellite airport without an operating control tower, must establish and maintain two-way radio communications with the ATC facility having jurisdiction over the Class C airspace area as soon as practicable after departing.

(d) Equipment requirements. Unless otherwise authorized by the ATC having jurisdiction over the Class C airspace area, no person may operate an aircraft within a Class C airspace area designated for an airport unless that aircraft is equipped with the applicable equipment specified in §91.215, and after January 1, 2020, §91.225.

(e) Deviations. An operator may deviate from any provision of this section under the provisions of an ATC authorization issued by the ATC facility having jurisdiction over the airspace concerned. ATC may authorize a deviation on a continuing basis or for an individual flight, as appropriate.

**§ 91.131 Operations in Class B airspace.**

(a) Operating rules. No person may operate an aircraft within a Class B airspace area except in compliance with §91.129 and the following rules:

- The operator must receive an ATC clearance from the ATC facility having jurisdiction for that area before operating an aircraft in that area.
- Unless otherwise authorized by ATC, each person operating a large turbine engine-powered airplane to or from a primary airport for which a Class B airspace area is designated must operate at or above the designated floors of the Class B airspace area while within the lateral limits of that area.
- Any person conducting pilot training operations at an airport within a Class B airspace area must comply with any procedures established by ATC for such operations in that area.

(b) Pilot requirements. (1) No person may take off or land a civil aircraft at an airport within a Class B airspace area or operate a civil aircraft within a Class B airspace area unless—

- The pilot in command holds at least a private pilot certificate;
- The pilot in command holds a recreational pilot certificate and has met—
  - The requirements of §61.101(d) of this chapter; or
  - The requirements of §61.325 of this chapter; or
  - The requirements of §61.325 of this chapter; or
- The pilot in command holds a sport pilot certificate and has met—
  - The requirements of §61.325 of this chapter; or
  - The requirements for a student pilot seeking a recreational pilot certificate in §61.34 of this chapter; or
  - The aircraft is operated by a student pilot who has met the requirements of §61.34 or §61.50 of this chapter, as applicable.
- Notwithstanding the provisions of paragraphs (b)(1)(i), (b)(1)(ii) and (b)(1)(iv) of this section, no person may take off or land a civil aircraft at those airports listed in section D of appendix D to this part unless the pilot in command holds at least a private pilot certificate.

(c) Communications and navigation equipment requirements. Unless otherwise authorized by ATC, no person may operate an aircraft within a Class B airspace area unless that aircraft is equipped with—

- For IFR operation, an operable VOR or TACAN receiver or an operable and suitable RNAV system; and
- For all operations, an operable two-way radio capable of communications with ATC on appropriate frequencies for that Class B airspace area.

(d) Other equipment requirements. No person may operate an aircraft in a Class B airspace area unless the aircraft is equipped with—

- The applicable reporting transponder and automatic altitude reporting equipment specified in §91.215 (a), except as provided in §91.215 (a), and
- After January 1, 2020, the applicable Automatic Dependent Surveillance-Broadcast Out equipment specified in §91.225.

**§ 91.133 Restricted and prohibited areas.**

(a) No person may operate an aircraft within a restricted area (designated in part 73) contrary to the restrictions imposed, or within a prohibited area, unless that person has the permission of the issuing or controlling agency, as appropriate.

(b) Each person conducting operations within a restricted area, an aircraft operation approved by the issuing agency that creates the same hazard as the operations for which the restricted area was designated may deviate from the rules of this part that are not compatible with the operation of the aircraft.

**§ 91.141 Flight restrictions in the proximity of the Presidential and other parties.**

No person may operate an aircraft over or in the vicinity of any area to be visited or traveled by the President, the Vice President, or other public figures contrary to the restrictions established by the Administrator and published in a Notice to Airmen (NOTAM).

**§ 91.143 Flight limitation in the proximity of space flight operations.**

When a Notice to Airmen (NOTAM) is issued in accordance with this section, no person may operate any aircraft in U.S. registry, or pilot any aircraft under the authority of an airman certificate issued by the Federal Aviation Administration, within areas designated in a NOTAM for space flight operation except when authorized by this section.

**§ 91.144 Temporary restriction on flight operations during abnormally high barometric pressure conditions.**

(a) Special flight restrictions. When any information indicates that barometric pressure on the route of flight currently exceeds or will exceed 31 inches of mercury, no person may operate an aircraft or initiate a flight contrary to the requirements established by the Administrator and published in a Notice to Airmen issued under this section.

(b) Waivers. The Administrator is authorized to waive any restriction issued under paragraph (a) of this section to permit emergency supply, transport, or medical services to be delivered to isolated communities, where the operation can be conducted with an acceptable level of safety.

except as provided in paragraph (d) of this section, each person operating an aircraft in Class A airspace must conduct that operation under instrument flight rules (IFR) and in compliance with the following:

(a) Clearance. Operations may be conducted only under an ATC clearance received prior to entering the airspace.

(b) Communications. Unless otherwise authorized by ATC, each aircraft operating in Class A airspace must be equipped with a two-way radio capable of communicating with ATC on a frequency assigned by ATC. Each pilot must maintain two-way radio communications with ATC while operating in Class A airspace.

(c) Equipment requirements. Unless otherwise authorized by ATC, no person may operate an aircraft within Class A airspace unless that aircraft is equipped with the applicable equipment specified in §91.215, and after January 1, 2020, §91.225.

(d) ATC authorizations. An operator may deviate from any provision of this section under the provisions of an ATC authorization issued by the ATC facility having jurisdiction of the airspace concerned. In the case of an instrument transponder, ATC may immediately approve an operation within a Class A airspace area above flight to continue, if desired, to the airport of ultimate destination, including any intermediate stops, or to prevent a place where suitable repairs can be made, or both. Requests for deviation from any provision of this section must be submitted in writing, at least 48 days before the proposed operation. ATC may authorize a deviation on a continuing basis or for an individual flight.

**§ 91.137 Temporary flight restrictions in the vicinity of disaster/hazard areas.**

(a) The Administrator will issue a Notice to Airmen (NOTAM) designating an area within which temporary flight restrictions apply and specifying the hazard or condition requiring their imposition. However, he determines it is necessary in order to—

- Protect persons and property on the surface or in the air from a hazard associated with an incident on the surface;
- Prevent a safe environment for the operation of disaster relief aircraft; or
- Prevent an unsafe combination of sightseeing and other aircraft above an incident or event which may generate a high degree of public interest.

(b) No Notice to Airmen will specify the hazard or condition that requires the imposition of temporary flight restrictions.

(c) When a NOTAM has been issued under paragraph (a) of this section, no person may operate an aircraft within the designated area unless that aircraft is participating in the hazard relief activities and is being operated under the direction of the official in charge of on-scene emergency response activities.

(d) When a NOTAM has been issued under paragraph (a) of this section, no person may operate an aircraft within the designated area unless at least one of the following conditions are met:

- The aircraft is participating in hazard relief activities and is being operated under the direction of the official in charge of on-scene emergency response activities;
- The aircraft is carrying law enforcement officials;
- The aircraft is operating under an approved IFR flight plan;
- 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; notification given to the Flight Service Station (FSS) or ATC facility specified in the NOTAM to receive advance notice concerning disaster relief aircraft operations; and the operation does not transport or transport relief activities and is not conducted for the purpose of observing the disaster;
- The aircraft is carrying properly accredited news representatives and, prior to entering that area, a flight plan is filed with the appropriate FAA or ATC facility specified in the Notice to Airmen and the operation is conducted above the altitudes used by the disaster relief aircraft, unless otherwise authorized by the official in charge of on-scene emergency response activities;
- When a NOTAM has been issued under paragraph (a) of this section, no person may operate an aircraft within the designated area unless at least one of the following conditions is met:
  - 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 disaster;
  - The aircraft is operating under an ATC approved IFR flight plan;
  - The aircraft is carrying properly accredited news representatives and, prior to entering that area, a flight plan is filed with the appropriate FSS or ATC facility specified in the NOTAM.

(e) Flight plans filed and notifications made with an FSS or ATC facility under this section shall include the following information:

- Aircraft identification, type and color;
- Radio communications frequencies to be used;
- Proposed times of entry of, and exit from, the designated area;
- Name of news media or organization and purpose of flight;
- Any other information requested by ATC.

**§ 91.141 Flight restrictions in the proximity of the Presidential and other parties.**

No person may operate an aircraft over or in the vicinity of any area to be visited or traveled by the President, the Vice President, or other public figures contrary to the restrictions established by the Administrator and published in a Notice to Airmen (NOTAM).

**§ 91.143 Flight limitation in the proximity of space flight operations.**

When a Notice to Airmen (NOTAM) is issued in accordance with this section, no person may operate any aircraft in U.S. registry, or pilot any aircraft under the authority of an airman certificate issued by the Federal Aviation Administration, within areas designated in a NOTAM for space flight operation except when authorized by this section.

**§ 91.144 Temporary restriction on flight operations during abnormally high barometric pressure conditions.**

(a) Special flight restrictions. When any information indicates that barometric pressure on the route of flight currently exceeds or will exceed 31 inches of mercury, no person may operate an aircraft or initiate a flight contrary to the requirements established by the Administrator and published in a Notice to Airmen issued under this section.

(b) Waivers. The Administrator is authorized to waive any restriction issued under paragraph (a) of this section to permit emergency supply, transport, or medical services to be delivered to isolated communities, where the operation can be conducted with an acceptable level of safety.

**§ 91.145 Passenger-carrying flights for the benefit of a charitable, nonprofit, or community event.**

(a) Definitions. For purposes of this section, the following definitions apply.

Charitable event means an event that raises funds for the benefit of a charitable organization recognized by the Department of the Treasury whose donors may deduct contributions under section 170 of the Internal Revenue Code (26 U.S.C. Section 170).

Community event means an event that raises funds for the benefit of any local or community cause that is not a charitable event or non-profit event.

Non-profit event means an event that raises funds for the benefit of a non-profit organization recognized under State or Federal law, as long as one of the organization's purposes is the promotion of aviation safety.

(b) Passenger carrying flights for the benefit of a charitable, nonprofit, or community event identified in paragraph (c) of this section are not subject to the certification requirements of part 135 or the drug and alcohol testing requirements in part 120 of this chapter, provided the following conditions are satisfied and the limitations in paragraphs (c) and (d) are not exceeded:

- The flight is nonstop and begins and ends at the same airport and is conducted within a 25-statute mile radius of that airport;
- The flight is conducted from a public airport that is adequate for the airplane or helicopter used, or from another location the FAA approves for the operation;
- The airplane or helicopter has a maximum of 30 seats, excluding each crewmember seat, and a maximum payload capacity of 7,500 pounds;
- The flight is not an aerobatic or a formation flight;
- Each airplane or helicopter holds a standard airworthiness certificate, its airworthiness, and it is operated in compliance with the applicable requirements of subpart E of this part;
- Each flight is made during day VFR conditions;
- Reimbursement of the operator of the airplane or helicopter is limited to that portion of the passenger payment for the flight that does not exceed the pro rata cost of owning, operating, and maintaining the aircraft for that flight, which may include fuel, oil, airport expenditures, and rental fees;
- The beneficiary of the funds raised is not in the business of transportation air.

(c) A private pilot acting as pilot in command has at least 500 hours of flight time;

(d) Each flight is conducted in accordance with the safety provisions of part 135, subpart A of this chapter; and

(e) Flights are not conducted over a national park, unit of a national park, or abutting tribal lands, unless the operator has secured a letter of agreement from the FAA, as specified under subpart B of part 135 of this chapter, and is operating in accordance with that agreement during the flights.

(f) (1) Passenger-carrying flights or series of flights are limited to a total of four charitable events or non-profit events per year, with no event lasting more than three consecutive days.

(2) Passenger-carrying flights or series of flights are limited to one community event per year, with no event lasting more than three consecutive days.

(g) Pilots and sponsors of events described in this section are limited to no more than 4 events per calendar year.

(h) At least seven days before the event, each sponsor of an event described in this section must furnish to the FAA Flight Standards District Office with jurisdiction over the geographical area where the event is scheduled:

- A signed letter detailing the name of the sponsor, the purpose of the event, the date and time of the event, the location of the event, all prior events under this section participated in by the sponsor in the current calendar year;
- A photograph of each pilot in command's pilot certificate, medical certificate, and logbook entries that show the pilot is current in accordance with §§61.56 and 61.57 of this chapter and that any private pilot has at least 500 hours of flight time; and
- A signed statement from each pilot that lists all prior events under this section in which the pilot has participated during the current calendar year.

**§ 91.151 Fuel requirements for flight in VFR conditions.**

a) 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—  
 1) During the day, to fly after that for at least 30 minutes; or  
 2) At night, to fly after that for at least 45 minutes.

b) No person may begin a flight in a rotorcraft 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, to fly after that for at least 30 minutes.

**§ 91.153 VFR flight plan: Information required.**

a) Information required. Unless otherwise authorized by ATC, each person filing a VFR flight plan shall include in it the following information:  
 1) The aircraft identification number and, if necessary, its radio call sign.  
 2) The type of the aircraft or, in the case of a formation flight, the type of each aircraft and the number of aircraft in the formation.  
 3) The full name and address of the pilot in command or, in the case of a formation flight, the formation commander.  
 4) The point and proposed time of departure.  
 5) The proposed route, cruising altitude (or flight level), and true airspeed at that altitude.  
 6) The point of first intended landing and the estimated elapsed time until over that point.  
 7) The amount of fuel on board (in hours).  
 8) The number of persons in the aircraft, except where that information is otherwise readily available to the FAA.  
 9) Any other information the pilot in command or ATC believes is necessary for ATC purposes.

b) Cancellation. When a flight plan has been filed, the pilot in command, upon canceling or completing the flight under the flight plan, shall notify an FAA Flight Service Station or ATC facility.

**FARs**

**91.155 BASIC VFR WEATHER MINIMUMS**

- Minimum flight visibility for sports pilots is 3 SM.
- Pilots must maintain 500 ft. below, 1000 ft. above, and 2,000 ft. horizontally from clouds. Memory aid: 500 is less and below, 1000 is more and above. EXCEPTION: Pilots need only remain "clear of clouds in Class B airspace AND when below 1,200 ft. AGL in Class G airspace.
- Also note 61.315 precludes sport pilots from flying above 10,000 ft MSL and flying without visual reference to the surface.
- Sport rules on minimums are easy: ignore all the other complicated rules and exceptions.

[http://44rf.com/airspace/asf\\_airspace\\_chart.pdf](http://44rf.com/airspace/asf_airspace_chart.pdf)

**FARs**

**91.155 Basic VFR Weather Minimums (Questions 126-140)**

**Cloud Clearance and Visibility Required for VFR**

Class	Altitude	Flight Visibility	Distance from Clouds
Class A	Not applicable	Not applicable	Not applicable
Class B	500 ft. below, 1,000 ft. above, 2,000 ft. horiz.	3 SM	Clear of clouds
Class C	500 ft. below, 1,000 ft. above, 2,000 ft. horiz.	3 SM	Clear of clouds
Class D	500 ft. below, 1,000 ft. above, 2,000 ft. horiz.	3 SM	Clear of clouds
Class E	Less than 10,000 ft. MSL	3 SM	500 ft. below, 1,000 ft. above, 2,000 ft. horiz.
	At or above 10,000 ft. MSL	5 SM	1,000 ft. below, 1,000 ft. above, 1 SM horiz.

Class	Altitude	Flight Visibility	Distance from Clouds
Class G	1,200 ft. or less above the surface (regardless of MSL altitude)	Day: 3 SM Night: 3 SM	Clear of clouds
	More than 1,200 ft. above the surface but less than 10,000 ft. MSL	Day: 3 SM Night: 3 SM	500 ft. below, 1,000 ft. above, 2,000 ft. horiz.
	More than 1,200 ft. above the surface and at or above 10,000 ft. MSL	Day: 5 SM Night: 5 SM	1,000 ft. below, 1,000 ft. above, 1 SM horiz.

**§ 91.157 Special VFR weather minimums.**

a) Except as provided in appendix D, section 3, of this part, special VFR operations may be conducted under the weather minimums and requirements of this section, instead of those contained in § 91.155, below 10,000 feet MSL within the airspace contained by the upward extension of the lateral boundaries of the controlled airspace designated to the surface for an airport.

b) Special VFR operations may only be conducted—  
 (1) With an ATC clearance;  
 (2) Clear of clouds;  
 (3) Except for helicopters, when flight visibility is at least 1 statute mile; and  
 (4) Except for helicopters, between sunrise and sunset (or in Alaska, when the sun is 6 degrees or more below the horizon) unless—  
 (i) The person being granted the ATC clearance meets the applicable requirements for instrument flight under part 61 of this chapter; and  
 (ii) The aircraft is equipped as required in § 91.205(g).

c) No person may take off or land an aircraft (other than a helicopter) under special VFR—  
 (1) Unless ground visibility is at least 1 statute mile; or  
 (2) If ground visibility is not reported, unless flight visibility is at least 1 statute mile. For the purposes of this paragraph, the term flight visibility includes the visibility from the cockpit of an aircraft in takeoff position.  
 (i) The flight is conducted under this part 91; and  
 (ii) The airport at which the aircraft is located is a satellite airport that does not have weather reporting capabilities.

d) The determination of visibility by a pilot in accordance with paragraph (c)(2) of this section is not an official weather report or an official ground visibility report.

**§ 91.159 VFR cruising altitude or flight level.**

Except while holding in a holding pattern of 2 minutes or less, or while turning, each person operating an aircraft under VFR in level cruising flight more than 3,000 feet above the surface shall maintain the appropriate altitude or flight level prescribed below, unless otherwise authorized by ATC:

a) When operating below 18,000 feet MSL and—  
 (1) On a magnetic course of zero degrees through 179 degrees, any odd thousand foot MSL altitude +500 feet (such as 3,500, 5,500, or 7,500); or  
 (2) On a magnetic course of 180 degrees through 359 degrees, any even thousand foot MSL altitude +500 feet (such as 4,500, 6,500, or 8,500).

b) When operating above 18,000 feet MSL, maintain the altitude or flight level assigned by ATC.

**§ 91.203 Civil aircraft: Certifications required.**

a) Except as provided in § 91.715, no person may operate a civil aircraft unless it has within it the following:  
 (1) An appropriate and current airworthiness certificate. Each U.S. airworthiness certificate used to comply with this subparagraph (except a special flight permit, a copy of the applicable operations specifications issued under § 21.197(c) of this chapter, appropriate sections of the air carrier manual required by parts 121 and 135 of this chapter containing that portion of the operations specifications issued under § 21.197(c), or an authorization under § 91.611) must have on it the registration number assigned to the aircraft under part 47 of this chapter. However, the airworthiness certificate need not have on it an assigned special identification number before 10 days after that number is first affixed to the aircraft. A revised airworthiness certificate having on it an assigned special identification number, that has been affixed to an aircraft, may only be obtained upon application to an FAA Flight Standards district office.  
 (2) An effective U.S. registration certificate issued to its owner or, for operation within the United States, the second copy of the Aircraft Registration Application as provided for in § 47.31(c), or a registration certification issued under the laws of a foreign country.

b) No person may operate a civil aircraft unless the airworthiness certificate required by paragraph (a) of this section or a special flight authorization issued under § 91.715 is displayed at the cabin or cockpit entrance so that it is legible to passengers or crew.

c) No person may operate an aircraft with a fuel tank installed within the passenger compartment or a baggage compartment unless the installation was accomplished pursuant to part 43 of this chapter, and a copy of FAA Form 337 authorizing that installation is on board the aircraft.

d) No person may operate a civil airplane (domestic or foreign) into or out of an airport in the United States unless it complies with the fuel venting and exhaust emissions requirements of part 34 of this chapter.

**§ 91.209 Aircraft lights.**

No person may:  
 (a) During the period from sunset to sunrise (or, in Alaska, during the period a prominent unlighted object cannot be seen from a distance of 3 statute miles or the sun is more than 6 degrees below the horizon)—  
 (1) Operate an aircraft unless it has lighted position lights;  
 (2) Park or move an aircraft in, or in dangerous proximity to, a night flight operations area of an airport unless the aircraft—  
 (i) Is clearly illuminated;  
 (ii) Has lighted position lights; or  
 (iii) Is in an area that is marked by obstruction lights;  
 (3) Anchor an aircraft unless the aircraft—  
 (i) Has lighted anchor lights; or  
 (ii) Is in an area where anchor lights are not required on vessels; or  
 (b) Operate an aircraft that is equipped with an anticollision light system, unless it has lighted anticollision lights. However, the anticollision lights need not be lighted when the pilot-in-command determines that, because of operating conditions, it would be in the interest of safety to turn the lights off.

**§ 91.207 Emergency locator transmitters.**

a) Except as provided in paragraphs (e) and (f) of this section, no person may operate a U.S.-registered civil airplane unless—  
 (1) There is attached to the airplane an approved automatic type emergency locator transmitter that is in operable condition for the following operations, except that after June 21, 1995, an emergency locator transmitter that meets the requirements of TSO-C91 may not be used for new installations;  
 (i) Those operations governed by the supplemental air carrier and commercial operator rules of parts 121 and 125;  
 (ii) Charter flights governed by the domestic and flag air carrier rules of part 121 of this chapter; and  
 (iii) Operations governed by part 135 of this chapter; or  
 (2) For operations other than those specified in paragraph (a)(1) of this section, there must be attached to the airplane an approved personal type or an approved automatic type emergency locator transmitter that is in operable condition, except that after June 21, 1995, an emergency locator transmitter that meets the requirements of TSO-C91 may not be used for new installations.

b) Each emergency locator transmitter required by paragraph (a) of this section must be attached to the airplane in such a manner that the probability of damage to the transmitter in the event of crash impact is minimized. Fixed and deployable automatic type transmitters must be attached to the airplane as far aft as practicable.

c) Batteries used in the emergency locator transmitters required by paragraphs (a) and (b) of this section must be replaced (or recharged, if the batteries are rechargeable)—  
 (1) When the transmitter has been in use for more than 1 cumulative hour; or  
 (2) When 50 percent of their useful life (or, for rechargeable batteries, 50 percent of their useful life of charge) has expired, as established by the transmitter manufacturer under its approval.

d) The new expiration date for replacing (or recharging) the battery must be legibly marked on the outside of the transmitter and entered in the aircraft maintenance record. Paragraph (c)(2) of this section does not apply to batteries (such as water-activated batteries) that are essentially unafflicted during probable storage intervals.

e) Each emergency locator transmitter required by paragraph (a) of this section must be inspected within 12 calendar months after the last inspection by—  
 (1) Proper installation;  
 (2) Battery corrosion;  
 (3) Operation of the controls and crash sensor; and  
 (4) The presence of a sufficient signal radiated from its antenna.

f) Notwithstanding paragraph (a) of this section, a person may—  
 (1) Ferry a newly acquired airplane from the place where possession of it was taken to a place where the emergency locator transmitter is to be installed; and  
 (2) Ferry an airplane with an inoperative emergency locator transmitter from a place where repairs or replacements cannot be made to a place where they can be made.

~~g) No person other than the pilot-in-command may be carried aboard an airplane having a transmitter installed under paragraph (a) of this section.~~

§ 91.211 Supplemental oxygen.

- (a) General. No person may operate a civil aircraft of U.S. registry—
- 1) At cabin pressure altitudes above 12,500 feet (MSL) up to and including 14,000 feet (MSL) unless the required minimum flight crew is provided with and uses supplemental oxygen for that part of the flight at those altitudes that is of more than 30 minutes duration;
  - 2) At cabin pressure altitudes above 14,000 feet (MSL) unless the required minimum flight crew is provided with and uses supplemental oxygen during the entire flight time at those altitudes; and
  - 3) At cabin pressure altitudes above 15,000 feet (MSL) unless each occupant of the aircraft is provided with supplemental oxygen.
- (b) Pressurized cabin aircraft. (1) No person may operate a civil aircraft of U.S. registry with a pressurized cabin—
- 1) At flight altitudes above flight level 250 unless at least a 10-minute supply of supplemental oxygen, in addition to any oxygen required to satisfy paragraph (a) of this section, is available for each occupant of the aircraft for use in the event that a descent is necessitated by loss of cabin pressurization; and
  - 2) At flight altitudes above flight level 350 unless one pilot at the controls of the airplane is wearing and using an oxygen mask that is secured and sealed and that either supplies oxygen at all times or automatically supplies oxygen whenever the cabin pressure altitude of the airplane exceeds 14,000 feet (MSL), except that the one pilot need not wear and use an oxygen mask while at or below flight level 410 if there are two pilots at the controls and each pilot has a quick-donning type of oxygen mask that can be placed on the face with one hand from the ready position within 5 seconds, supplying oxygen and properly secured and sealed.
- (2) Notwithstanding paragraph (b)(1)(i) of this section, if for any reason at any time it is necessary for one pilot to leave the controls of the aircraft when operating at flight altitudes above flight level 350, the remaining pilot at the controls shall put on and use an oxygen mask until the other pilot has returned to that crewmember's station.

§ 91.303 Aerobic flight.

No person may operate an aircraft in aerobic flight—

- 1) Over any congested area of a city, town, or settlement;
- 2) Over an open air assembly of persons;
- 3) Within the lateral boundaries of the surface areas of Class B, Class C, Class D, or Class E airspace designated for an airport;
- 4) Within 4 nautical miles of the center line of any Federal airway;
- 5) Below an altitude of 1,500 feet above the surface; or
- 6) When flight visibility is less than 3 statute miles.

For the purposes of this section, aerobic flight means an intentional maneuver involving an abrupt change in an aircraft's altitude, an abnormal attitude, or abnormal acceleration, not necessary for normal flight.

§ 91.307 Parachutes and parachuting.

- (a) No pilot of a civil aircraft may allow a parachute that is available for emergency use to be carried in that aircraft unless it is an approved type and has been packed by a certificated and appropriately rated parachute rigger—
- 1) Within the preceding 180 days, if its canopy, shrouds, and harness are composed exclusively of nylon, rayon, or other similar synthetic fiber or materials that are substantially resistant to damage from mold, mildew, or other fungi and other rotting agents propagated in a moist environment; or
  - 2) Within the preceding 60 days, if any part of the parachute is composed of silk, pongee, or other natural fiber or materials not specified in paragraph (a)(1) of this section.
- (b) Except in an emergency, no pilot in command may allow, and no person may conduct, a parachute operation from an aircraft within the United States except in accordance with part 105 of this chapter.
- (c) Unless each occupant of the aircraft is wearing an approved parachute, no pilot of a civil aircraft carrying any person (other than a crewmember) may execute any intentional maneuver that exceeds—
- 1) A bank of 60 degrees relative to the horizon; or
  - 2) A nose-up or nose-down attitude of 30 degrees relative to the horizon.
- (d) Paragraph (c) of this section does not apply to—
- 1) Flight tests for pilot certification or rating; or
  - 2) Spins and other flight maneuvers required by the regulations for any certificate or rating when given by—
    - A) A certificated flight instructor; or
    - B) An airline transport pilot instructing in accordance with § 61.67 of this chapter.
- (e) For the purposes of this section, approved parachute means—
- 1) A parachute manufactured under a type certificate or a technical standard order (C-23 series); or
  - 2) A personnel-carrying military parachute identified by an NAF, AAF, or AN drawing number, an AAF order number, or any other military designation or specification number.

§ 91.313 Restricted category civil aircraft: Operating limitations.

- (a) No person may operate a restricted category civil aircraft—
- 1) For other than the special purpose for which it is certificated; or
  - 2) In an operation other than one necessary to accomplish the work activity directly associated with that special purpose.
- (b) For the purpose of paragraph (a) of this section, operating a restricted category civil aircraft to provide flight crewmember training in a special purpose operation for which the aircraft is certificated is considered to be an operation for that special purpose.
- (c) No person may operate a restricted category civil aircraft carrying persons or property for compensation or hire. For the purposes of this paragraph, a special purpose operation involving the carriage of persons or material necessary to accomplish that operation, such as crop dusting, seeding, spraying, and banner towing (including the carrying of required persons or material to the location of that operation), and operation for the purpose of providing flight crewmember training in a special purpose operation, are not considered to be the carriage of persons or property for compensation or hire.
- (d) No person may be carried on a restricted category civil aircraft unless that person—
- 1) Is a flight crewmember;
  - 2) Is a flight crewmember trainee;
  - 3) Performs an essential function in connection with a special purpose operation for which the aircraft is certificated; or
  - 4) Is necessary to accomplish the work activity directly associated with that special purpose.
- (e) Except when operating in accordance with the terms and conditions of a certificate of waiver or special operating limitations issued by the Administrator, no person may operate a restricted category civil aircraft within the United States—
- 1) Over a densely populated area;
  - 2) In a congested airway; or
  - 3) Near a busy airport where passenger transport operations are conducted.
- (f) This section does not apply to nonpassenger-carrying civil aircraft external-load operations conducted under part 133 of this chapter.
- (g) No person may operate a small restricted-category civil airplane manufactured after July 18, 1978, unless an approved shoulder harness is installed for each front seat. The shoulder harness must be designed to protect each occupant from serious head injury when the occupant experiences the ultimate inertia forces specified in § 23.561(b)(2) of this chapter. The shoulder harness installation at each flight crewmember station must permit the crewmember, when seated and with the safety belt and shoulder harness fastened, to perform all functions necessary for flight operation. For purposes of this paragraph—
- 1) The date of manufacture of an airplane is the date the inspection acceptance records reflect that the airplane is complete and meets the FAA-approved type design data; and
  - 2) A front seat is a seat located at a flight crewmember station or any seat located alongside such a seat.

§ 91.319 Aircraft having experimental certificates: Operating limitations.

- (a) No person may operate an aircraft that has an experimental certificate—
- 1) For other than the purpose for which the certificate was issued; or
  - 2) Carrying persons or property for compensation or hire.
- (b) No person may operate an aircraft that has an experimental certificate outside of an area assigned by the Administrator until it is shown that—
- 1) The aircraft is controllable throughout its normal range of speeds and throughout all the maneuvers to be executed; and
  - 2) The aircraft has no hazardous operating characteristics or design features.
- (c) Unless otherwise authorized by the Administrator in special operating limitations, no person may operate an aircraft that has an experimental certificate over a densely populated area or in a congested airway. The Administrator may issue special operating limitations for particular aircraft to permit takeoffs and landings to be conducted over a densely populated area or in a congested airway, in accordance with terms and conditions specified in the authorization in the interest of safety in air commerce.
- (d) Each person operating an aircraft that has an experimental certificate shall—
- 1) Advise each person carried of the experimental nature of the aircraft;
  - 2) Operate under VFR, day only, unless otherwise specifically authorized by the Administrator; and
  - 3) Notify the control tower of the experimental nature of the aircraft when operating the aircraft into or out of airports with operating control towers.
- (e) No person may operate an aircraft that is issued an experimental certificate under § 21.191(f) of this chapter for compensation or hire, except a person may operate an aircraft issued an experimental certificate under § 21.191(f)(1) for compensation or hire to—
- 1) Tow a glider that is a light-sport aircraft or unpowered ultralight vehicle in accordance with § 91.309; or
  - 2) Conduct flight training in an aircraft which that person provides prior to January 31, 2010.
- (f) No person may lease an aircraft that is issued an experimental certificate under § 21.191(f) of this chapter, except in accordance with paragraph (e)(1) of this section.
- (g) No person may operate an aircraft issued an experimental certificate under § 21.191(f)(1) of this chapter to tow a glider that is a light-sport aircraft or unpowered ultralight vehicle for compensation or hire or to conduct flight training for compensation or hire in an aircraft which that person provides services within the preceding 100 hours of time in service the aircraft has—
- 1) Been inspected by a certificated repairman (light-sport aircraft) with a maintenance rating, an appropriately rated mechanic, or an appropriately rated repair station in accordance with inspection procedures developed by the aircraft manufacturer or a person acceptable to the FAA; or
  - 2) Received an inspection for the issuance of an airworthiness certificate in accordance with part 21 of this chapter.
- (h) The FAA may issue deviation authority providing relief from the provisions of paragraph (a) of this section for the purpose of conducting flight training. The FAA will issue this deviation authority as a letter of deviation authority.
- 1) The FAA may cancel or amend a letter of deviation authority at any time.
  - 2) An applicant must submit a request for deviation authority to the FAA at least 60 days before the date of intended operations. A request for deviation authority must contain a complete description of the proposed operation and justification that establishes a level of safety equivalent to that provided under the regulations for the deviation requested.
  - 3) The Administrator may prescribe additional limitations that the Administrator considers necessary, including limitations on the persons that may be carried in the aircraft.

Subpart E—Maintenance, Preventive Maintenance, and Alterations

§ 91.403 General.

- (a) The owner or operator of an aircraft is primarily responsible for maintaining that aircraft in an airworthy condition, including compliance with part 39 of this chapter.
- (b) No person may perform maintenance, preventive maintenance, or alterations on an aircraft other than as prescribed in this subpart and other applicable regulations, including part 43 of this chapter.
- (c) No person may operate an aircraft for which a manufacturer's maintenance manual or instructions for continued airworthiness has been issued that contains an airworthiness limitations section unless the mandatory replacement times, inspection intervals, and related procedures specified in that section or alternative inspection intervals and related procedures set forth in an operations specification approved by the Administrator under part 121 or 135 of this chapter or in accordance with an inspection program approved under § 91.409(e) have been completed with.
- (d) A person must not alter an aircraft based on a supplemental type certificate unless the owner or operator of the aircraft is the holder of the supplemental type certificate, or has written permission from the holder.
- § 91.405 Maintenance required.
- Each owner or operator of an aircraft—
- a) Shall have that aircraft inspected as prescribed in subpart E of this part and shall between required inspections, except as provided in paragraph (c) of this section, have discrepancies repaired as prescribed in part 43 of this chapter;
  - b) Shall ensure that maintenance personnel make appropriate entries in the aircraft maintenance records indicating the aircraft has been approved for return to service;
  - c) Shall have any inoperative instrument or item of equipment, permitted to be inoperative by § 91.213(d)(2) of this part, repaired, replaced, removed, or inspected at the next required inspection; and
  - d) When listed discrepancies include inoperative instruments or equipment, shall ensure that a placard has been installed as required by § 43.11 of this chapter.

91.409 Inspections

1. Annual inspections expire on the last day of the 12<sup>th</sup> calendar month after the previous annual inspection.

91.417 Maintenance Records

1. An airplane may not be flown unless it has been given an annual inspection within the preceding 12 calendar months.
  - a. The annual inspection expires after 1 year on the last day of the month of issuance.
  2. The completion of the annual inspection and the airplane's return to service should be appropriately documented in the airplane maintenance records.
    - a. The documentation should include the current status of airworthiness directives and the method of compliance.
  3. The airworthiness of an airplane can be determined by a preflight inspection and a review of the maintenance records.

FARs

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FARs

NTSB PART 830:  
NOTIFICATION AND REPORTING OF  
ACCIDENTS OR INCIDENTS AND  
OVERDUE AIRCRAFT

FARs

4.8 NTSB PART 830

830.5 Immediate Notification (Questions 185-188)

- Even when no injuries occur to occupants, an airplane accident resulting in substantial damage must be reported to the nearest National Transportation Safety Board (NTSB) field office immediately.
- The following incidents must also be reported immediately to the NTSB:
  - Inability of any required crewmember to perform normal flight duties because of in-flight injury or illness
  - In-flight fire
  - Flight control system malfunction or failure
  - An overdue airplane that is believed to be involved in an accident
  - An airplane collision in flight
  - Turbine (jet) engine failures

830.10 Preservation of Aircraft Wreckage, Mail, Cargo, and Records (Question 189)

- 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 remove persons injured or trapped.
  - To protect the wreckage from further damage, or
  - To protect the public from injury.

830.15 Reports and Statements to Be Filed (Questions 190-191)

- The operator of an aircraft shall file a report on Board Form 8120.1/2 within 10 days after an accident.
  - A report must be filed within 7 days if an overdue aircraft is still missing.
- A report on an incident for which immediate notification is required (830.5) shall be filed only when requested by an authorized representative of the Board.

End Sport/Private – remaining commercial

91.167 Fuel Requirements for Flight in IFR Conditions

- When an alternate airport is required on an IFR flight plan, you must have sufficient fuel to complete the flight to the first airport of intended landing, fly to the alternate, and thereafter fly for 45 min. at normal cruising speed.

91.169 IFR Flight Plan: Information Required

- For an airport with an approved instrument approach procedure to be listed as an alternate airport on an IFR flight plan, the forecast weather conditions at the time of arrival must be at or above the following alternate airport weather minimums:
  - Nonprecision approach -- ceiling 800 ft. and visibility 2 SM
  - Precision approach -- ceiling 600 ft. and visibility 2 SM
- For an airport with no instrument approach procedure to be listed as an alternate airport, the forecast weather conditions at the time of arrival must have a ceiling and visibility that allow descent from the MEA, approach, and landing under basic VFR.

91.171 VOR Equipment Check for IFR Operations

- To operate an airplane under IFR using the VOR, you must ensure that the VOR equipment has been operationally checked within the preceding 30 days and found to be within prescribed limits.
- The maximum bearing error allowed for an operational VOR equipment check when using an FAA-approved ground test signal (such as a VOT) is ±4°.
- Each person making the VOR operational check must enter the date, place, and bearing error and sign the aircraft log or other record.

91.175 Takeoff and Landing under IFR

- One requirement for a pilot on an instrument approach to operate below the MDA or DH, or to continue the approach, is that the airplane continuously be in a position from which a descent to landing on the intended runway can be made at a normal rate using normal maneuvers.
- A pilot is not authorized to land an airplane from an instrument approach unless the flight visibility is at, or exceeds, the visibility prescribed in the approach procedure being used.
- In the case of a radar vector to a final approach course or fix, a timed approach from a holding fix, or an approach for which the procedure specifies "No PT," a pilot may not make a procedure turn unless cleared to do so by ATC.

91.177 Minimum Altitudes for IFR Operations

- Except during takeoff or landing, the minimum altitude for IFR flight, within a horizontal distance of 4 NM from the course to be flown, is 2,000 ft. above the highest obstacle over designated mountainous terrain or 1,000 ft. above the highest obstacle over terrain elsewhere.

91.183 IFR Radio Communications

- The pilot in command of an airplane operated under IFR in controlled airspace, and not in radar contact, shall report by radio as soon as possible the time and altitude of passing each designated reporting point.

91.187 Operation under IFR in Controlled Airspace: Malfunction Reports

- The pilot in command of an airplane operated under IFR in controlled airspace shall report ATC, as soon as practicable, any malfunctions of navigational, approach, or communication equipment occurring in flight.

91.205 Powered Civil Aircraft with Standard Category U.S. Airworthiness Certificates: Instruments and Equipment Requirements

- For a flight for hire over water beyond power-off gliding distance from shore, approved flotation gear must be readily available to each occupant.
- An anticollision light system is required for powered aircraft during VFR night flights.
- An electric landing light is required for VFR night flights when operated for hire.

91.207 Emergency Locator Transmitters

- ELT batteries must be replaced (or recharged, if rechargeable batteries) after 1 cumulative hour of use or after 50% of their useful life expires.

91.209 Aircraft Lights

- Airplanes operating between sunset and sunrise must display lighted position (navigation) lights.
- If an airplane is not equipped with an anticollision light system, no one may operate that airplane after sunset.

91.211 Supplemental Oxygen

- At cabin pressure altitudes above 15,000 ft. MSL, each passenger of the aircraft must be provided with supplemental oxygen.
  - At cabin pressure altitudes above 14,000 ft. MSL, each required crewmember must be provided and must use supplemental oxygen.
- If a flight is conducted at cabin pressure altitudes above 12,500 ft. MSL to and including 14,000 ft. MSL, oxygen must be used by required crewmembers for the time in excess of 30 min. at that altitude.

91.215 ATC Transponder and Altitude Reporting Equipment and Use

- A transponder with altitude encoding (Mode C) equipment is required in all airspace above 10,000 ft. MSL, excluding airspace at or below 2,500 ft. AGL.
- A transponder with altitude encoding equipment is also required in Class A, Class B, and Class C airspace.

91.303 Aerobatic Flight

- Aerobatic flight is prohibited
  - With visibility of less than 3 SM
  - Below 1,500 ft. AGL

91.311 Towing: Other Than Under Sec. 91.309

- In order to operate an aircraft towing an advertising banner, the pilot must obtain a certificate of waiver from the administrator of the FAA.

<p><b>91.313 Restricted Category Civil Aircraft: Operating Limitations</b></p> <ol style="list-style-type: none"> <li>Persons or property cannot be transported for compensation or hire in a restricted category airplane.</li> </ol> <p><b>91.315 Limited Category Civil Aircraft: Operating Limitations</b></p> <ol style="list-style-type: none"> <li>Persons or property cannot be transported for compensation or hire in a limited category aircraft.</li> </ol> <p><b>91.319 Aircraft Having Experimental Certificates: Operating Limitations</b></p> <ol style="list-style-type: none"> <li>Persons or property cannot be transported for compensation or hire in an airplane that has an experimental certificate.</li> </ol> <p><b>91.325 Primary Category Aircraft: Operating Limitations</b></p> <ol style="list-style-type: none"> <li>Persons or property cannot be transported for compensation or hire in a primary category aircraft.</li> </ol> <p><b>91.403 General</b></p> <ol style="list-style-type: none"> <li>The owner or operator of an aircraft is primarily responsible for       <ol style="list-style-type: none"> <li>Maintaining that aircraft in an airworthy condition</li> <li>Assuring compliance with all Airworthiness Directives</li> </ol> </li> <li>An operator is a person who uses, causes to use, or authorizes to use an aircraft for the purpose of air navigation, including the piloting of an aircraft, with or without the right of legal control (i.e., owner, lessee, or otherwise).       <ol style="list-style-type: none"> <li>Thus, the pilot in command is also responsible for maintaining the aircraft in an airworthy condition and for complying with all Airworthiness Directives.</li> </ol> </li> </ol>
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<p><b>91.405 Maintenance Required</b></p> <ol style="list-style-type: none"> <li>After an annual inspection has been completed and the aircraft has been returned to service, an appropriate notation must be made in the aircraft maintenance records.</li> <li>A standard airworthiness certificate remains in effect as long as the airplane receives required maintenance and inspections.</li> </ol> <p><b>91.407 Operation after Maintenance, Preventive Maintenance, Rebuilding, or Alteration</b></p> <ol style="list-style-type: none"> <li>When aircraft alterations or repairs substantially change the flight characteristics, the aircraft documents must show that it was test flown and approved for return to service prior to carrying passengers.       <ol style="list-style-type: none"> <li>The pilot test flying the aircraft must be at least a private pilot and rated for the type of aircraft being tested.</li> </ol> </li> </ol> <p><b>91.409 Inspections</b></p> <ol style="list-style-type: none"> <li>For commercial operations, an inspection is required every 100 hr.       <ol style="list-style-type: none"> <li>The 100 hr. may be exceeded by no more than 10 hr. if necessary to reach a place at which an inspection can be performed.</li> <li>An annual inspection may be substituted for a 100-hr. inspection but not vice versa.</li> </ol> </li> </ol> <p><b>91.413 ATC Transponder Tests and Inspections</b></p> <ol style="list-style-type: none"> <li>An ATC transponder may not be used unless, within the preceding 24 calendar months, that transponder has been tested, inspected, and found to comply with appropriate regulations.</li> </ol>
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<p><b>91.417 Maintenance Records</b></p> <ol style="list-style-type: none"> <li>Each owner or operator must keep maintenance records for each airplane. The records must include       <ol style="list-style-type: none"> <li>Current status of life-limited parts of the airframe and each engine, propeller, rotor, and appliance</li> <li>Current status of each Airworthiness Directive (AD)</li> <li>Preventive maintenance accomplished by a pilot</li> </ol> </li> </ol> <p><b>91.421 Rebuilt Engine Maintenance Records</b></p> <ol style="list-style-type: none"> <li>A new maintenance record may be used for a rebuilt (zero-time) engine, but the new record must include the status of previous Airworthiness Directives.</li> </ol> <p><b>4.5 FAR PART 119</b></p> <p><b>119.1 Applicability</b></p> <ol style="list-style-type: none"> <li>A commercial pilot may act as pilot in command of the following operations, which are not regulated by 14 CFR Part 119 (FAR Part 119):       <ol style="list-style-type: none"> <li>Nonstop flights within a 25 SM radius of an airport for the purpose of carrying persons for intentional parachute jumps</li> <li>Crop dusting, spraying, and bird chasing</li> </ol> </li> </ol>
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<h1>WHEW !!</h1>
<p>NEXT: THE LAST TRAINING SESSION COVERING THE "AERONAUTICAL INFORMATION MANUAL", AIRPORT / FACILITIES DIRECTORY AND OTHER SOURCES OF AERONAUTICAL INFORMATION.</p>