



FEDERAL AVIATION REGULATIONS

4.1 FAR PART 1

1.1 General Definitions

1. **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. Note that for “recency of experience” (FAR 61.57), night is defined as from 1 hr. after sunset to 1 hr. before sunrise.
 - b. Be careful; there are questions on both definitions.
2. **Aircraft categories**(for certification of airmen); broad classifications of aircraft
 - a. Airplane
 - b. Rotorcraft
 - c. Glider
 - d. Lighter-than-air
3. **Airplane classes** (for certification of airmen)
 - a. Single-engine land
 - b. Multi-engine land
 - c. Single-engine sea
 - d. Multi-engine sea
4. **Rotorcraft classes** (for certification of airmen)
 - a. Helicopter
 - b. Gyrocopter
5. **Lighter-than-air classes** (for certification of airmen)
 - a. Airship
 - b. Free balloon
 - c. Hot air balloon
 - d. Gas balloon
6. Note the previous 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) Transport
 - 2) Normal
 - 3) Utility
 - 4) Limited
 - 5) Restricted
 - 6) Acrobatic
 - 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, lighter-than-air.
7. **Air traffic control (ATC) clearance** means an authorization to proceed under specific traffic conditions in controlled airspace.

1.2 Abbreviations and Symbols

1. V_{FE} means maximum flapextended speed.



2. V_{LE} means maximum landing gear extended speed.
3. V_{NO} means maximum structural cruising speed.
4. V_A means design maneuvering speed.
5. V_{SO} means the stalling speed or the minimum steady flight speed in the landing configuration.
6. V_X means speed for best angle of climb.
7. V_Y means speed for best rate of climb.

4.2 FAR PART 21

21.181 Duration of Airworthiness Certificates

1. Airworthiness certificates remain in force as long as maintenance and alteration of the aircraft are performed per FARs.

4.3 FAR PART 39

39.1 Applicability

1. 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.

39.3 General

1. 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.

4.4 FAR PART 43

43.3 Persons Authorized to Perform Maintenance, Preventive Maintenance, Rebuilding, and Alterations

1. A person who holds a pilot certificate (e.g., private pilot) may perform preventive maintenance on any airplane owned or operated by that pilot that is not used in air carrier services.

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 the airplane for return to service, after preventive maintenance was done by a pilot, the pilot must hold at least a private pilot certificate.

43.9 Maintenance Records

1. After preventive maintenance has been performed, the signature, certificate number, and kind of certificate held by the person approving the work, the date, and a description of



the work must be entered in the aircraft maintenance records.

43 Appendix A. Major Alterations and Repairs and Preventive Maintenance

1. Preventive maintenance means simple or minor preservation operations and the replacement of small standard parts not involving complex assembly operations. Examples include replenishing hydraulic fluid and servicing landing gear wheel bearings.

4.5 FAR PART 61

61.3 Requirements for Certificates, Ratings, and Authorizations

1. When acting as a pilot in command or as a required pilot flight crewmember, you must have a valid pilot certificate and a current and appropriate medical certificate in your personal possession or readily accessible in the airplane.
2. You must present your pilot certificate or medical certificate upon the request of the Administrator of the FAA or his or her representative; the NTSB; or any federal, state, or local law enforcement officer.

61.15 Offenses Involving Alcohol or Drugs

1. Each person holding a certificate under Part 61 shall provide a written report of each motor vehicle action involving alcohol or drugs to the FAA, Civil Aviation Security Division, no later than 60 days after the motor vehicle action.

61.23 Medical Certificates: Requirement and Duration

1. For operations requiring a private, recreational, or student pilot certificate, a first-, second-, or third-class medical certificate
 - a. At the end of the 60th month after the date of examination shown on the certificate, if you have not reached your 40th birthday on or before the date of examination or
 - b. At the end of the 24th month after the date of examination shown on the certificate, if you have reached your 40th birthday on or before the date of examination.

61.31 Type Rating Requirements, Additional Training, and Authorization Requirements

1. To act as pilot in command of a complex airplane, you must receive and log ground and flight training and receive a logbook endorsement.
 - a. A complex airplane is defined as an airplane with retractable landing gear, flaps, and a controllable pitch propeller.
2. To act as pilot in command of a high-performance airplane, you must receive and log ground and flight training and receive a logbook endorsement.
 - a. A high-performance airplane is defined as an airplane with an engine of more than 200 horsepower.
3. A person may not act as pilot in command of any of the following aircraft unless (s)he holds a type rating for that aircraft:
 - a. A large aircraft (i.e., over 12,500 lb. gross weight)
 - b. A turbojet-powered airplane
 - c. Other aircraft specified by the FAA through aircraft type certification procedures



61.56 Flight Review

1. A flight review must have been satisfactorily completed within the previous 24 calendar months to act as pilot in command of an aircraft for which that pilot is rated. A flight review consists of a minimum of 1 hour of flight training by an authorized instructor and 1 hour of ground training.
2. The expiration of the 24-month period for the flight review falls on the last day of the 24th month after the month of the examination date (i.e., 24 calendar months).

61.57 Recent Flight Experience: Pilot in Command

1. To carry passengers, you must have made three landings and three takeoffs within the preceding 90 days.
 - a. All three landings must be made in aircraft of the same category, class, and, if a type rating is required, type as the one in which passengers are to be carried.
 - 1) The categories are airplane, rotorcraft, glider, and lighter-than-air.
 - 2) The classes are single-engine land, single-engine sea, multi-engine land, and multi-engine sea.
 - b. The landings must be to a full stop if the airplane is tailwheel (conventional) rather than nosewheel.
2. To carry passengers at night, you must, within the last 90 days, have made three takeoffs and three landings to a full stop at night in an aircraft of the same category, class, and type, if required.
 - a. Night in this case is defined as the period beginning 1 hr. after sunset and ending 1 hr. before sunrise.

61.60 Change of Address

1. You must notify the FAA Airmen Certification Branch in writing of any change in your permanent mailing address.
2. You may not exercise the privileges of your pilot certificate after 30 days from moving unless you make this notification.

61.69 Glider Towing: Experience and Training Requirements

1. Any person may tow a glider if that person has
 - a. At least a private pilot certificate
 - b. 100 hr. of pilot in command time in the aircraft category, class, and type, if required, that the pilot is using to tow a glider
 - c. A logbook endorsement from an authorized instructor certifying that the person has received ground and flight training in gliders
 - d. Within the preceding 24 months
 - 1) Made at least three actual or simulated glider tows while accompanied by a qualified pilot or
 - 2) Made at least three flights as pilot in command of a glider towed by an aircraft

61.113 Private Pilot Privileges and Limitations: Pilot in Command

1. Private pilots may not pay less than an equal (pro rata) share of the operating expenses of a flight with the passengers.
 - a. These operating expenses may involve only fuel, oil, airport expenditures, or



rental fees.

2. Private pilots may operate an aircraft carrying passengers on business only if the flight is incidental to that business or employment and the pilot is not paid as a pilot.
 - a. For example, a CPA who is a private pilot might fly an aircraft carrying CPAs to a client. Such flight is incidental to the CPA's professional duties or business.
3. A pilot may act as a pilot in command of an aircraft used in a passenger-carrying airlift sponsored by a charitable organization for which passengers make donations to the organization if
 - a. The local FSDO (FAA Flight Standards District Office) is notified at least 7 days before the flight;
 - b. The flight is conducted from an adequate public airport;
 - c. The pilot has logged at least 500 hours;
 - d. No acrobatic or formation flights are performed;
 - e. The aircraft holds a standard airworthiness certificate and is airworthy;
 - f. The flight is day-VFR; and
 - g. The flight is non-stop, begins and ends at the same airport, and is conducted within a 25-NM radius of that airport.

4.7 FAR PART 71

71.71 Extent of Federal Airways

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

4.8 FAR PART 91: 91.3 – 91.151

91.3 Responsibility and Authority of the Pilot in Command

1. In emergencies, a pilot may deviate from the FARs to the extent needed to maintain the safety of the airplane and passengers.
2. The pilot in command of an aircraft is directly responsible for, and is the final authority as to, the operation of that aircraft.
3. A written report of any deviations from FARs should be filed with the FAA upon request.

91.7 Civil Aircraft Airworthiness

1. The pilot in command is responsible for determining that the airplane is airworthy prior to every flight.
 - a. The pilot in command shall discontinue the flight when unairworthy conditions (whether electrical, mechanical, or structural) occur.

91.9 Civil Aircraft Flight Manual, Marking, and Placard Requirements

1. The airworthiness certificate, the FAA registration certificate, and the aircraft flight manual or operating limitations must be aboard.
2. The acronym ARROW can be used as a memory aid. The FCC (Federal Communications Commission), not the FAA, requires the radio station license. As of January 1, 1997, the radio station license is required only for international flights.

Airworthiness certificate



- R** egistration certificate
- R** adio station license (FCC requirement for international flight)
- O** perating limitations, including
- W** eight and balance data

3. The operating limitations of an airplane may be found in the current FAA-approved flight manual, approved manual material, markings, and placards, or any combination thereof.
 - a. An exception exists in the case of aircraft issued an experimental airworthiness certificate or a special light-sport airworthiness certificate.
 - 1) The operating limitations for these aircraft are attached to the airworthiness certificate, which is carried on board the aircraft.

91.15 Dropping Objects

1. 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.
 - a. 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

1. No person may act as a crewmember of a civil airplane while having .04 percent by weight or more alcohol in the blood or if any alcoholic beverages have been consumed within the preceding 8 hours.
2. No person may act as a crewmember of a civil airplane if using any drug that affects the person's faculties in any way contrary to safety.
3. Operating or attempting to operate an aircraft as a crewmember while under the influence of drugs or alcohol is grounds for the denial of an application for a certificate, rating, or authorization issued under 14 CFR Part 91.

91.103 Preflight Action

1. Pilots are required to familiarize themselves with all available information concerning the flight prior to every flight, and specifically to determine,
 - a. For any flight, runway lengths at airports of intended use and the airplane's takeoff and landing requirements, and
 - b. For IFR flights or those not in the vicinity of an airport,
 - 1) Weather reports and forecasts,
 - 2) Fuel requirements,
 - 3) Alternatives available if the planned flight cannot be completed, and
 - 4) Any known traffic delays.

91.105 Flight Crewmembers at Stations

1. During takeoff and landing, and while en route, each required flight crewmember shall keep his or her safety belt fastened while at his or her station.
 - a. If shoulder harnesses are available, they must be used for takeoff and landing.

91.107 Use of Safety Belts, Shoulder Harnesses, and Child Restraint Systems

1. Pilots must ensure that each occupant is briefed on how to use the safety belts and, if installed, shoulder harnesses.



2. Pilots must notify all occupants to fasten their safety belts before taxiing, taking off, or landing.
3. All passengers of airplanes must wear their safety belts during taxi, takeoffs, and landings.
 - a. A passenger who has not reached his or her second birthday may be held by an adult.
 - b. Sport parachutists may use the floor of the aircraft as a seat (but still must use safety belts).

91.111 Operating near Other Aircraft

1. No person may operate an aircraft in formation flight except by prior arrangement with the pilot in command of each aircraft in the formation.

91.113 Right-of-Way Rules: Except Water Operations

1. Aircraft in distress have the right-of-way over all other aircraft.
2. When two aircraft are approaching head on or nearly so, the pilot of each aircraft should turn to his or her right, regardless of category.
3. When two aircraft of different categories are converging, the right-of-way depends upon who has the least maneuverability. Thus, the right-of-way belongs to
 - a. Balloons over
 - b. Gliders over
 - c. Airships over
 - d. Airplanes or rotorcraft
4. 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.
 - a. If an airplane of the same category as yours is approaching from your right side, it has the right-of-way.
5. 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.
 - a. This rule shall not be abused by cutting in front of or overtaking another aircraft.
6. An aircraft towing or refueling another aircraft has the right-of-way over all engine-driven aircraft.

91.115 Right-of-Way Rules: Water Operations

1. 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.

91.117 Aircraft Speed

1. The speed limit is 250 kt. (288 MPH) when flying below 10,000 ft. MSL and in Class B airspace.
2. When flying under Class B airspace or in VFR corridors through Class B airspace, the speed limit is 200 kt. (230 MPH).
3. When at or below 2,500 ft. AGL and within 4 NM of the primary airport of Class C or Class D airspace, the speed limit is 200 kt. (230 MPH).



91.119 Minimum Safe Altitudes: General

1. Over congested areas (cities, towns, settlements, or open-air assemblies), a pilot must maintain an altitude of 1,000 ft. above the highest obstacle within a horizontal radius of 2,000 ft. of the airplane.
2. The minimum altitude over other than congested areas is 500 ft. AGL.
 - a. Over open water or sparsely populated areas, an airplane may not be operated closer than 500 ft. to any person, vessel, vehicle, or structure.
3. Altitude in all areas must be sufficient to permit an emergency landing without undue hazard to persons or property on the surface if a power unit fails.

91.121 Altimeter Settings

1. Prior to takeoff, the altimeter should be set to the current local altimeter setting. If the current local altimeter setting is not available, use the departure airport elevation.
2. The altimeter of an airplane is required to be set to 29.92 at or above 18,000 ft. MSL to guarantee vertical separation of airplanes above 18,000 ft. MSL.

91.123 Compliance with ATC Clearances and Instructions

1. When an ATC clearance is obtained, no pilot may deviate from that clearance, except in an emergency, unless an amended clearance is obtained, or the deviation is in response to a traffic alert and collision avoidance system resolution advisory. If you feel a rule deviation will occur, you should immediately advise ATC.
2. If you receive priority from ATC in an emergency, you must, upon request, file a detailed report within 48 hr. to the chief of that ATC facility even if no rule has been violated.
3. During an in-flight emergency, the pilot in command may deviate from the FARs to the extent necessary to handle the emergency.
 - a. The pilot should notify ATC about the deviation as soon as possible.
 - b. If priority is given, a written report (if requested) must be submitted in 48 hours.

91.130 Operations in Class C Airspace

1. Class C airspace is controlled airspace that requires radio communication with ATC.
 - a. A pilot must establish two-way radio communication prior to entering Class C airspace and maintain it while within Class C airspace, regardless of weather conditions.

91.131 Operations in Class B Airspace

1. Class B airspace is controlled airspace found at larger airports with high volumes of traffic.
2. Requirements for operating within Class B airspace:
 - a. A pilot must hold at least a private pilot certificate or a student pilot certificate with the appropriate logbook endorsements.
 - b. Authorization must be received from ATC, regardless of weather conditions.
 - c. The airplane must have a two-way communications radio and a transponder equipped with Mode C that permits ATC to obtain an altitude readout on its radar screen.
 - 1) A VOR receiver is required only when operating IFR.



3. Student pilot operations in Class B airspace are only permitted with appropriate logbook endorsements.
 - a. For flight through Class B airspace, the student pilot must
 - 1) Receive ground and flight instructions pertaining to that specific Class B airspace area
 - 2) Have a CFI logbook endorsement within 90 days for solo flight in that specific Class B airspace area
 - b. For takeoffs and landings at an airport within Class B airspace, the student pilot must
 - 1) Receive ground and flight instructions pertaining to that specific Class B airspace area
 - 2) Have a CFI logbook endorsement within 90 days for solo flight at that specific airport
 - c. No student pilot may take off or land at the following airports:

Andrews AFB	Miami International
Atlanta Hartsfield	Newark International
Boston Logan	New York Kennedy
Chicago O'Hare International	New York La Guardia
Dallas/Fort Worth International	San Francisco
International Los Angeles International	Washington National
4. With certain exceptions, all aircraft within a 30-NM radius of a Class B primary airport and from the surface up to 10,000 ft. MSL must have an operable transponder with Mode C.

91.133 Restricted and Prohibited Areas

1. Restricted areas are a type of special use airspace within which your right to fly is limited.
 - a. Restricted areas have unusual and often invisible hazards to aircraft (e.g., balloons, military operations, etc.).
 - b. Although restricted areas are not always in use during the times posted in the legend of sectional charts, permission to fly in that airspace must be obtained from the controlling agency. The controlling agency is listed for each restricted area at the bottom of sectional charts.

91.135 Operations in Class A Airspace

1. Since Class A airspace requires operation under IFR at specific flight levels assigned by ATC, VFR flights are prohibited.

91.151 Fuel Requirements for Flight in VFR Conditions

1. During the day, FARs require fuel sufficient to fly to the first point of intended landing and then for an additional 30 min., assuming normal cruise speed.
2. At night, sufficient fuel to fly an additional 45 min. is required.

4.9 FAR PART 91: 91.155 – 91.519

91.155 Basic VFR Weather Minimums



Airspace	Flight Visibility	Distance from Clouds
Class A	Not Applicable	Not applicable
Class B	3 SM	Clear of Clouds
Class C	3 SM	500 ft. below 1,000 ft. above 2,000 ft. horiz.
Class D	3 SM	500 ft. below 1,000 ft. above 2,000 ft. horiz.
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.

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

1. An airplane may be operated clear of clouds in Class G airspace at night below 1,200 ft. AGL when the visibility is less than 3 SM but more than 1 SM in an airport traffic pattern and within 1/2 NM of the runway.
2. Except when operating under a special VFR clearance,
 - a. You may not operate your airplane beneath the ceiling under VFR within the lateral boundaries of the surface areas of Class B, Class C, Class D, or Class E airspace designated for an airport when the ceiling is less than 1,000 feet.
 - b. You may not take off, land, or enter the traffic pattern of an airport in Class B, Class C, Class D, or Class E airspace unless the ground visibility is at least 3 SM. If ground visibility is not reported, flight visibility must be at least 3 statute miles.

91.157 Special VFR Weather Minimums

1. With some exceptions, special VFR clearances can be requested in Class B, Class C, Class D, or Class E airspace areas. You must remain clear of clouds and have visibility of at least 1 statute mile.
2. Flight under special VFR clearance at night is only permitted if the pilot has an instrument rating and the aircraft is IFR equipped.
3. Special VFR is an ATC clearance obtained from the control tower. If there is no control tower, obtain the clearance from the appropriate air traffic control facility.

91.159 VFR Cruising Altitude or Flight Level

1. Specified altitudes are required for VFR cruising flight at more than 3,000 ft. AGL and below 18,000 ft. MSL.
 - a. The altitude prescribed is based upon the magnetic course (not magnetic heading).
 - b. The altitude is prescribed in ft. above mean sea level (MSL).



- c. Use an odd thousand-foot MSL altitude plus 500 ft. for magnetic courses of 0° to 179°, e.g., 3,500, 5,500, 7,500 feet.
- d. Use an even thousand-foot MSL altitude plus 500 ft. for magnetic courses of 180° to 359°, e.g., 4,500, 6,500, or 8,500 feet.
- e. As a memory aid, “East is odd; west is even odder.”

91.203 Civil Aircraft: Certifications Required

1. No person may operate a civil aircraft unless the aircraft has a U.S. airworthiness certificate displayed in a manner that makes it legible to passengers and crew.
2. To operate a civil aircraft, a valid U.S. registration issued to the owner of the aircraft must be on board.

91.207 Emergency Locator Transmitters

1. ELT batteries must be replaced (or recharged, if rechargeable) after 1 cumulative hr. of use or after 50% of their useful life expires.
2. ELTs may only be tested on the ground during the first 5 min. after the hour. No airborne checks are allowed.

91.209 Aircraft Lights

1. Airplanes operating (on the ground or in the air) between sunset and sunrise must display lighted position (navigation) lights, except in Alaska.

91.211 Supplemental Oxygen

1. All occupants must be provided with oxygen in an airplane operated at cabin pressure altitudes above 15,000 ft. MSL.
 - a. Pilots and crewmembers may not operate an airplane at cabin pressure altitudes above 12,500 ft. MSL up to and including 14,000 ft. MSL for more than 30 min. without supplemental oxygen.
 - b. Pilots and crewmembers must use supplemental oxygen at cabin pressure altitudes above 14,000 ft. MSL.

91.215 ATC Transponder and Altitude Reporting Equipment and Use

1. All aircraft must have and use an altitude-encoding transponder when operating
 - a. Within Class A airspace
 - b. Within Class B airspace
 - c. Within 30 NM of the Class B airspace primary airport
 - d. Within and above Class C airspace
 - e. Above 10,000 ft. MSL except at and below 2,500 ft. AGL

91.303 Aerobatic Flight

1. Aerobatic flight includes all intentional maneuvers that
 - a. Are not necessary for normal flight and
 - b. Involve an abrupt change in the airplane's attitude.
2. Aerobatic flight is prohibited
 - a. When flight visibility is less than 3 SM;
 - b. When altitude is less than 1,500 ft. above the ground;



- c. Within the lateral boundaries of the surface areas of Class B, Class C, Class D, or Class E airspace designated for an airport;
- d. Within 4 NM of the centerline of any federal airway; or
- e. Over any congested area or over an open-air assembly of people.

91.307 Parachutes and Parachuting

1. With certain exceptions, each occupant of an aircraft must wear an approved parachute during any intentional maneuver exceeding
 - a. 60° bank or
 - b. A nose-up or nose-down attitude of 30°.
2. Parachutes that are available for emergency use must be packed within a specific time period, based on the materials from which they are constructed.
 - a. Parachutes that include a canopy, shrouds, and harness that are composed exclusively of nylon, rayon, or other similar synthetic fibers must have been repacked by a certificated and appropriately rated parachute rigger within the preceding 180 days.
 - b. Parachutes that include any part that is composed of silk, pongee, or other natural fiber or materials must be repacked by a certificated and appropriately rated parachute rigger within the preceding 60 days.

91.313 Restricted Category Civil Aircraft: Operating Limitations

1. Restricted category civil aircraft may not normally be operated
 - a. Over densely populated areas,
 - b. In congested airways, or
 - c. Near a busy airport where passenger transport is conducted.

91.319 Aircraft Having Experimental Certificates: Operating Limitations

1. No person may operate an aircraft that has an experimental or restricted certificate over a densely populated area or in a congested airway unless authorized by the FAA.

91.403 General

1. The owner or operator of an aircraft is primarily responsible for maintaining that aircraft in an airworthy condition and for complying with all Airworthiness Directives (ADs).
2. An operator is a person who uses, or 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).
 - a. Thus, the pilot in command is also responsible for ensuring that the aircraft is maintained in an airworthy condition and that there is compliance with all ADs.

91.405 Maintenance Required

1. Each owner or operator of an aircraft shall ensure that maintenance personnel make the appropriate entries in the aircraft maintenance records indicating the aircraft has been approved for return to service.

91.407 Operation after Maintenance, Preventive Maintenance, Rebuilding, or Alteration

1. When aircraft alterations or repairs change the flight characteristics, the aircraft must be test flown and approved for return to service prior to carrying passengers.



- a. The pilot test flying the aircraft must be at least a private pilot and rated for the type of aircraft being tested.

91.409 Inspections

1. Annual inspections expire on the last day of the 12th calendar month after the previous annual inspection.
2. All aircraft that are used for compensation or hire, including flight instruction, must be inspected on a 100-hr. basis in addition to the annual inspection.
 - a. 100-hr. inspections are due every 100 hr. from the prior due time, regardless of when the inspection was actually performed.

91.413 ATC Transponder Tests and Inspections

1. No person may use an ATC transponder unless it has been tested and inspected within the preceding 24 calendar months.

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.

91.519 Passenger Briefings

1. The pilot in command is responsible for ensuring that all passengers have been orally briefed prior to takeoff. The areas that should constitute this briefing are
 - a. Smoking,
 - b. Use of safety belts and shoulder harnesses,
 - c. Location and means of opening the passenger entry door and emergency exits,
 - d. Location of survival equipment,
 - e. Ditching procedures and the use of flotation equipment, and
 - f. Normal and emergency use of oxygen equipment if installed in the airplane.

4.10 NTSB PART 830

830.5 Immediate Notification

1. 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.
2. The following incidents must also be reported immediately to the NTSB:
 - a. Inability of any required crewmember to perform normal flight duties because of in-flight injury or illness
 - b. In-flight fire
 - c. Flight control system malfunction or failure



- d. An overdue airplane that is believed to be involved in an accident
- e. An airplane collision in flight
- f. Turbine (jet) engine failures

830.10 Preservation of Aircraft Wreckage, Mail, Cargo, and Records

- 1. 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
 - a. Remove persons injured or trapped,
 - b. Protect the wreckage from further damage, or
 - c. Protect the public from injury.

830.15 Reports and Statements to Be Filed

- 1. The operator of an aircraft shall file a report on Board Form 6120.1/2 within 10 days after an accident.
 - a. A report must be filed within 7 days if an overdue aircraft is still missing.
- 2. 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.