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Part 1	Changes 1 through 10
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2 hours

70 90 needed.

Subchapter A—Definitions

Part 1—Definitions and Abbreviations

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§ 1.1 General definitions.

[As used in Subchapters A through K of this chapter:]

“Accelerate-stop distance” means the distance required to accelerate an airplane to a specified speed and, assuming failure of the critical engine at the instant that speed (V_1) is attained, to bring the airplane to a stop.

“Administrator” means the Administrator of the Federal Aviation Agency or any person to whom he has delegated his authority in the matter concerned.

“Aerodynamic coefficients” means nondimensional coefficients for aerodynamic forces and moments.

“Air carrier” means a person who undertakes directly by lease, or other arrangement, to engage in air transportation.

“Air commerce” means interstate, overseas, or foreign air commerce or the transportation of mail by aircraft or any operation or navigation of aircraft within the limits of any Federal airway or any operation or navigation of aircraft which directly affects, or which may endanger safety in, interstate, overseas, or foreign air commerce.

“Aircraft” means a device that is used or intended to be used for flight in the air.

“Aircraft engine” means an engine that is used or intended to be used in propelling aircraft. It includes engine appurtenances and accessories necessary for its functioning, but does not include propellers.

“Airframe” means the fuselage, booms, nacelles, cowlings, fairings, airfoil surfaces (including rotors) but excluding propellers and

rotating airfoils of engines), and landing gear of an aircraft and their accessories and controls.

“Airplane” means an engine-driven fixed-wing aircraft heavier than air, that is supported in flight by the dynamic reaction of the air against its wings.

“Airport” means an area of land or water that is used or intended to be used for the landing and takeoff of aircraft, and includes its buildings and facilities, if any.

“Airport traffic area” means, unless otherwise specifically designated in Part 93 that airspace within a horizontal radius of 5 statute miles from the geographical center of any airport at which a control tower is operating, extending from the surface up to, but not including, 2,000 feet above the surface.

“Airship” means an engine-driven lighter-than-air aircraft that can be steered.

“Air traffic” means aircraft operating in the air or on an airport surface, exclusive of loading ramps and parking areas.

“Air traffic clearance” means an authorization by air traffic control, for the purpose of preventing collision between known aircraft, for an aircraft to proceed under specified traffic conditions within controlled airspace.

“Air traffic control” means a service operated by appropriate authority to promote the safe, orderly, and expeditious flow of air traffic.

“Air transportation” means interstate, overseas, or foreign air transportation or the transportation of mail by aircraft.

“Alternate airport” means an airport at which an aircraft may land if a landing at the intended airport becomes inadvisable.

“Appliance” means any instrument, mechanism, equipment, part, apparatus, appurte-

nance, or accessory, including communications equipment, that is used or intended to be used in operating or controlling an aircraft in flight, is installed in or attached to the aircraft, and is not part of an airframe, engine, or propeller.

"Approved", unless used with reference to another person, means approved by the Administrator.

"Armed Forces" means the Army, Navy, Air Force, Marine Corps, and Coast Guard, including their regular and reserve components and members serving without component status.

"Autorotation" means a rotorcraft flight condition in which the lifting rotor is driven entirely by action of the air when the rotorcraft is in motion.

"Auxiliary rotor" means a rotor that serves either to counteract the effect of the main rotor torque on a rotorcraft or to maneuver the rotorcraft about one or more of its three principal axes.

"Balloon" means a lighter-than-air aircraft that is not engine driven.

"Brake horsepower" means the power delivered at the propeller shaft (main drive or main output) of an aircraft engine.

"Calibrated airspeed" means indicated airspeed of an aircraft, corrected for position and instrument error. Calibrated airspeed is equal to true airspeed in standard atmosphere at sea level.

["Category"—

(1) As used with respect to the certification, ratings, privileges, and limitations of airmen, means a broad classification of aircraft. Examples include: airplane; rotorcraft; glider; and lighter-than-air; and

(2) As used with respect to the certification of aircraft, means a grouping of aircraft based upon intended use or operating limitations. Examples include: transport; normal; utility; acrobatic; limited; restricted; and provisional.

"Ceiling" means the height above the earth's surface of the lowest layer of clouds or obscuring phenomena that is reported as "broken", "overcast", or "obscuration", and not classified as "thin" or "partial".

"Civil aircraft" means aircraft other than public aircraft.

["Class"—

(1) As used with respect to the certification, ratings, privileges, and limitations of airmen, means a classification of aircraft within a category having similar operating characteristics. Examples include: single engine; multiengine; land; water; gyroplane; helicopter; airship; and free balloon; and

(2) As used with respect to the certification of aircraft, means a broad grouping of aircraft having similar characteristics of propulsion, flight, or landing. Examples include: airplane; rotorcraft; glider; balloon; landplane; and seaplane.

"Clearway" means:

(1) For turbine engine powered airplanes certificated after August 29, 1959, an area beyond the runway, not less than 500 feet wide, centrally located about the extended centerline of the runway, and under the control of the airport authorities. The clearway is expressed in terms of a clearway plane, extending from the end of the runway with an upward slope not exceeding 1.25 percent, above which no object nor any terrain protrudes. However, threshold lights may protrude above the plane if their height above the end of the runway is 26 inches or less and if they are located to each side of the runway.

(2) For turbine engine powered airplanes certificated after September 30, 1958 but before August 30, 1959, an area beyond the takeoff runway extending no less than 300 feet on either side of the extended centerline of the runway, at an elevation no higher than the elevation of the end of the runway, clear of all fixed obstacles, and under the control of the airport authorities.

["Commercial operator" means a person who, for compensation or hire, engages in the carriage by aircraft in air commerce of persons or property, other than as an air carrier or foreign air carrier or under the authority of Part 375 of this Title. Where it is doubtful that an operation is for "compensation or hire", the test applied is whether the carriage

by air is merely incidental to the person's other business or is, in itself, a major enterprise for profit.]

["Controlled airspace" means airspace, designated as continental control area, control area, control zone, or transition area, within which some or all aircraft may be subject to air traffic control.

"Crewmember" means a person assigned to perform duty in an aircraft during flight time.

"Critical altitude" means the maximum altitude at which, in standard atmosphere, it is possible to maintain, at a specified rotational speed, a specified power or a specified manifold pressure. Unless otherwise stated, the critical altitude is the maximum altitude at which it is possible to maintain, at the maximum continuous rotational speed, one of the following:

(1) The maximum continuous power, in the case of engines for which this power rating is the same at sea level and at the rated altitude.

(2) The maximum continuous rated manifold pressure, in the case of engines, the maximum continuous power of which, is governed by a constant manifold pressure.

"Critical engine" means the engine whose failure would most adversely affect the performance or handling qualities of an aircraft.

["Dual instruction—Deleted"]

"Equivalent airspeed" means the calibrated airspeed of an aircraft corrected for adiabatic compressible flow for the particular altitude. Equivalent airspeed is equal to calibrated airspeed in standard atmosphere at sea level.

"Extended over-water operation" means an operation over water at a horizontal distance of more than 50 nautical miles from the nearest shore line.

"External load" means a load that is carried, or extends, outside of the aircraft fuselage.

"External-load attaching means" means the structural components used to attach an external load to an aircraft, including external-load containers, the backup structure at the attachment points, and any quick-release device used to jettison the external load.

"Fireproof"—

(1) With respect to materials and parts used to confine fire in a designated fire zone, means the capacity to withstand heat at least as well as steel, in dimensions appropriate for the purpose for which they are used, under the most severe conditions of fire and duration likely to occur in that zone; and

(2) With respect to other materials and parts, means the capacity to withstand heat at least as well as steel in dimensions appropriate for the purpose for which they are used.

"Fire resistant"—

(1) With respect to sheet or structural members, means the capacity to withstand heat at least as well as aluminum alloy in dimensions appropriate for the purpose for which they are used; and

(2) With respect to fluid-carrying lines, other flammable fluid system parts, wiring, air ducts, fittings, and powerplant controls, means the capacity to perform the intended functions under the heat and other conditions likely to occur at the place concerned.

"Flame resistant" means not susceptible to combustion to the point of propagating a flame, beyond safe limits, after the ignition source is removed.

"Flammable", with respect to a fluid or gas, means susceptible to igniting readily or to exploding.

"Flap extended speed" means the highest speed permissible with wing flaps in a prescribed extended position.

"Flash resistant" means not susceptible to burning violently when ignited.

"Flight crewmember" means a pilot, flight engineer, or flight navigator assigned to duty in an aircraft during flight time.

"Flight level" means a level of constant atmospheric pressure related to a reference datum of 29.92 inches of mercury. Each is stated in three digits that represent hundreds of feet. For example, flight level 250 represents a barometric altimeter indication of 25,000 feet; flight level 255, an indication of 25,500 feet.

"Flight plan" means specified information, relating to the intended flight of an aircraft, that is filed orally or in writing with air traffic control.

["Flight time" means the time from the moment the aircraft first moves under its own power for the purpose of flight until the moment it comes to rest at the next point of landing. ("Block-to-block" time.)

["Flight visibility" means the average forward horizontal distance, from the cockpit of an aircraft in flight, at which prominent unlighted objects may be seen and identified by day and prominent lighted objects may be seen and identified by night.

"Foreign air carrier" means any person other than a citizen of the United States, who undertakes directly, by lease or other arrangement, to engage in air transportation.

"Foreign air commerce" means the carriage by aircraft of persons or property for compensation or hire, or the carriage of mail by aircraft, or the operation or navigation of aircraft in the conduct or furtherance of a business or vocation, in commerce between a place in the United States and any place outside thereof; whether such commerce moves wholly by aircraft or partly by aircraft and partly by other forms of transportation.

"Foreign air transportation" means the carriage by aircraft of persons or property as a common carrier for compensation or hire, or the carriage of mail by aircraft, in commerce between a place in the United States and any place outside of the United States, whether that commerce moves wholly by aircraft or partly by aircraft and partly by other forms of transportation.

"Glider" means a heavier-than-air aircraft, that is supported in flight by the dynamic reaction of the air against its lifting surfaces and whose free flight does not depend principally on an engine.

["Ground visibility" means prevailing horizontal visibility near the earth's surface as reported by the United States Weather Bureau or an accredited observer.

"Gyrodyne" means a rotorcraft whose rotors are normally engine-driven for takeoff, hover-

ing, and landing, and for forward flight through part of its speed range, and whose means of propulsion, consisting usually of conventional propellers, is independent of the rotor system.

"Gyroplane" means a rotorcraft whose rotors are not engine-driven except for initial starting, but are made to rotate by action of the air when the rotorcraft is moving; and whose means of propulsion, consisting usually of conventional propellers, is independent of the rotor system.

"Helicopter" means a rotorcraft that, for its horizontal motion, depends principally on its engine-driven rotors.

"Heliport" means an area of land, water, or structure used or intended to be used for the landing and takeoff of helicopters.

"IFR conditions" means weather conditions below the minimum for flight under visual flight rules.

"IFR over-the-top", with respect to the operation of aircraft, means the operation of an aircraft over-the-top on an IFR flight plan when cleared by air traffic control to maintain "VFR conditions" or "VFR conditions on top".

"Indicated airspeed" means the speed of an aircraft as shown on its pitot static airspeed indicator calibrated to reflect standard atmosphere adiabatic compressible flow at sea level uncorrected for airspeed system errors.

"Instrument" means a device using an internal mechanism to show visually or aurally the attitude, altitude, or operation of an aircraft or aircraft part. It includes electronic devices for automatically controlling an aircraft in flight.

"Interstate air commerce" means the carriage by aircraft of persons or property for compensation or hire, or the carriage of mail by aircraft, or the operation or navigation of aircraft in the conduct or furtherance of a business or vocation, in commerce between a place in any State of the United States, or the District of Columbia, and a place in any other State of the United States, or the District of Columbia; or between places in the same State of the United States through the airspace over

any place outside thereof; or between places in the same territory or possession of the United States, or the District of Columbia.

"Interstate air transportation" means the carriage by aircraft of persons or property as a common carrier for compensation or hire, or the carriage of mail by aircraft, in commerce—

(1) Between a place in a State or the District of Columbia and another place in another State or the District of Columbia;

(2) Between places in the same State through the airspace of any place outside that State; or

(3) Between places in the same possession of the United States;

whether that commerce moves wholly by aircraft or partly by aircraft and partly by other forms of transportation.

"Kite" means a framework, covered with paper, cloth, metal, or other material, intended to be flown at the end of a rope or cable, and having as its only support the force of the wind moving past its surfaces.

"Landing gear extended speed" means the maximum speed at which an aircraft can be safely flown with the landing gear extended.

"Landing gear operating speed" means the maximum speed at which the landing gear can be safely extended or retracted.

"Large aircraft" means aircraft of more than 12,500 pounds, maximum certificated takeoff weight.

"Lighter-than-air aircraft" means aircraft that can rise and remain suspended by using contained gas weighing less than the air that is displaced by the gas.

["Load factor" means the ratio of a specified load to the total weight of the aircraft. The specified load is expressed in terms of any of the following: aerodynamic forces, inertia forces, or ground or water reactions.]

"Mach number" means the ratio of true airspeed to the speed of sound.

"Main rotor" means the rotor that supplies the principal lift to a rotorcraft.

"Maintenance" means inspection, overhaul, repair, preservation, and the replacement of parts, but excludes preventive maintenance.

"Major alteration" means an alteration not listed in the aircraft, aircraft engine, or propeller specifications—

(1) That might appreciably affect weight, balance, structural strength, performance, powerplant operation, flight characteristics, or other qualities affecting airworthiness; or

(2) That is not done according to accepted practices or cannot be done by elementary operations.

"Major repair" means a repair—

(1) That, if improperly done, might appreciably affect weight, balance, structural strength, performance, powerplant operation, flight characteristics, or other qualities affecting airworthiness; or

(2) That is not done according to accepted practices or cannot be done by elementary operations.

"Manifold pressure" means absolute pressure as measured at the appropriate point in the induction system and usually expressed in inches of mercury.

"Maximum continuous power"—

(1) With respect to reciprocating engines, means the brake horsepower that is developed (i) in standard atmosphere at a specified altitude and (ii) under the maximum conditions of crankshaft rotational speed and engine manifold pressure that are approved for use of unrestricted duration; and

(2) With respect to turbine engines, means the brake horsepower that is developed (i) at a specified altitude, atmospheric temperature, and flight speed and (ii) under the maximum conditions of rotorshaft rotational speed and gas temperature that are approved for use of unrestricted duration.

"Maximum continuous thrust", with respect to turbine engines, means the jet thrust that is developed (1) at a specified altitude, atmospheric temperature, and flight speed and (2) under the maximum conditions of rotorshaft rotational speed and gas temperature that are approved for use of unrestricted duration.

"Medical certificate" means acceptable evidence of physical fitness on a form prescribed by the Administrator.

"Minor alteration" means an alteration other than a major alteration.

"Minor repair" means a repair other than a major repair.

"Navigable airspace" means airspace at and above the minimum flight altitudes prescribed by or under this chapter, including airspace needed for safe takeoff and landing.

["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.

"Operate", with respect to aircraft, means use, cause to use, or authorize to use aircraft for the purpose of air navigation, including the piloting of aircraft, with or without the right of legal control (as owner, lessee, or otherwise).

"Operational control", with respect to a flight, means the exercise of authority over initiating, conducting, or terminating a flight.

"Overseas air commerce" means the carriage by aircraft of persons or property for compensation or hire, or the carriage of mail by aircraft, or the operation or navigation of aircraft in the conduct or furtherance of a business or vocation, in commerce between a place in any State of the United States, or the District of Columbia, and any place in a territory or possession of the United States; or between a place in a territory or possession of the United States, and a place in any other territory or possession of the United States.

"Overseas air transportation" means the carriage by aircraft of persons or property as a common carrier for compensation or hire, or the carriage of mail by aircraft, in commerce—

(1) Between a place in a State or the District of Columbia and a place in a possession of the United States; or

(2) Between a place in a possession of the United States and a place in another possession of the United States; whether that commerce moves wholly by air-

craft or partly by aircraft and partly by other forms of transportation.

"Over-the-top" means above the layer of clouds or other obscuring phenomena forming the ceiling.

"Parachute" means a device used or intended to be used to retard the fall of a body or object through the air.

"Person" means an individual, firm, partnership, corporation, company, association, joint-stock association, or governmental entity. It includes a trustee, receiver, assignee, or similar representative of any of them.

"Pilotage" means navigation by visual reference to landmarks.

"Pilot in command" means the pilot responsible for the operation and safety of an aircraft during flight time.

"Pitch setting" means the propeller blade setting as determined by the blade angle measured in a manner, and at a radius, specified by the instruction manual for the propeller.

"Positive control" means control of all air traffic, within designated airspace, by air traffic control.

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

"Prohibited area" means designated airspace within which the flight of aircraft is prohibited.

"Propeller" means a device for propelling an aircraft that has blades on an engine-driven shaft and that, when rotated, produces by its action on the air, a thrust approximately perpendicular to its plane of rotation. It includes control components normally supplied by its manufacturer, but does not include main and auxiliary rotors or rotating airfoils of engines.

"Public aircraft" means aircraft used only in the service of a government, or a political subdivision. It does not include any government-owned aircraft engaged in carrying persons or property for commercial purposes.

"Rating" means a statement that, as a part of a certificate, sets forth special conditions, privileges, or limitations.

"Reporting point" means a geographical location in relation to which the position of an aircraft is reported.

"Restricted area" means airspace designated under Part 73 of this chapter within which the flight of aircraft, while not wholly prohibited, is subject to restriction.

"Rocket" means an aircraft propelled by ejected expanding gases generated in the engine from self-contained propellants and not dependent on the intake of outside substances. It includes any part which becomes separated during the operation.

"Rotorcraft" means a heavier-than-air aircraft that depends principally for its support in flight on the lift generated by one or more rotors.

"Rotorcraft-load combination" means the combination of a rotorcraft and an external load, including the external load attaching means. Rotorcraft-load combinations are designated as Class A, Class B, and Class C, as follows:

(1) "Class A rotorcraft-load combination" means one in which the external load cannot move freely, cannot be jettisoned, and does not extend below the landing gear.

(2) "Class B rotorcraft-load combination" means one in which the external load is jettisonable and is lifted free of land or water during the rotorcraft operation.

(3) "Class C rotorcraft-load combination" means one in which the external load is jettisonable and remains in contact with land or water during the rotorcraft operation.

"Route segment" means a part of a route. Each end of that part is identified by—

(1) a continental or insular geographical location; or

(2) a point at which a definite radio fix can be established.

"Second in command" means a pilot who is designated to be second in command of an aircraft during flight time.

["Show", unless the context otherwise re-

quires, means to show to the satisfaction of the of the Administrator.]"¹

"Small aircraft" means aircraft of 12,500 pounds or less, maximum certificated takeoff weight.

"Standard atmosphere" means atmosphere in which—

(1) the air is a dry perfect gas;

(2) the temperature at sea level is 59 degrees Fahrenheit;

(3) the pressure at sea level is 29.92 inches Hg.;

(4) the temperature gradient from sea level to the altitude at which the temperature is -69.7 degrees Fahrenheit is -0.003566 Fahrenheit per foot and zero above that altitude; and

(5) the density ρ_0 at sea level under the conditions described in subparagraphs (1) through (4) is 0.002377 lb. sec.²/ft.⁴.

["Stopway" means an area beyond the takeoff runway, no less wide than the runway and centered upon the extended centerline of the runway, able to support the airplane during an aborted takeoff, without causing structural damage to the airplane, and designated by the airport authorities for use in decelerating the airplane during an aborted takeoff.]"¹

"Takeoff power"—

(1) With respect to reciprocating engines, means the brake horsepower that is developed under standard sea level conditions, and under the maximum conditions of crankshaft rotational speed and engine manifold pressure approved for the normal takeoff, and limited in continuous use to the period of time shown in the approved engine specification; and

(2) With respect to turbine engines, means the brake horsepower that is developed under static conditions at a specified altitude and atmospheric temperature, and under the maximum conditions of rotorshaft rotational speed and gas temperature approved for the normal takeoff, and limited in continuous use to the period of time shown in the approved engine specification.

"Takeoff thrust", with respect to turbine engines, means the jet thrust that is developed under static conditions at a specific altitude and atmospheric temperature under the maximum conditions of rotorshaft rotational speed and gas temperature approved for the normal takeoff, and limited in continuous use to the period of time shown in the approved engine specification.

"30-minute power", with respect to helicopter turbine engines, means the maximum brake horsepower, developed under static conditions at specified altitudes and atmospheric temperatures, under the maximum conditions of rotor shaft rotational speed and gas temperature, and limited in use to periods of not over 30 minutes as shown on the engine data sheet.

"Time in service", with respect to maintenance time records, means the time from the moment an aircraft leaves the surface of the earth until it touches it at the next point of landing.

"Traffic pattern" means the traffic flow that is prescribed for aircraft landing at, taxiing on, or taking off from, an airport.

"True airspeed" means the airspeed of an aircraft relative to undisturbed air. True airspeed is equal to equivalent airspeed multiplied by $(p_0/p)^{1/2}$.

"2½-minute power", with respect to helicopter turbine engines, means the brake horsepower, developed statically in standard atmosphere at sea level, or at a specified altitude, for one-engine-out operation of multiengine helicopters for 2½ minutes at rotor shaft rotation speed and gas temperature established for this rating.

"Type"—

(1) As used with respect to the certification, ratings, privileges, and limitations of airmen, means a specific make and basic model of aircraft, including modifications thereto that do not change its handling or flight characteristics. Examples include: DC-7, 1049, and F-27; and

(2) As used with respect to the certification of aircraft, means those aircraft which are similar in design. Examples include: DC-7 and DC-7C; 1049G and 1049H; and F-27 and F-27F.

"United States", in a geographical sense, means (1) the States, the District of Columbia, Puerto Rico, and the possessions, including the territorial waters, and (2) the airspace of those areas.

"United States air carrier" means a citizen of the United States who undertakes directly by lease, or other arrangement, to engage in air transportation.

"VFR over-the-top", with respect to the operation of aircraft, means the operation of an aircraft over-the-top under VFR when it is not being operated on an IFR flight plan.

§ 1.2 Abbreviations and symbols.

[In Subchapters A through K of this chapter:]

"ATC" means air traffic control.

"CAS" means calibrated airspeed.

"CONSOL or CONSOLAN" means a kind of low or medium frequency long range navigational aid.

"DME" means distance measuring equipment compatible with TACAN.

"EAS" means equivalent airspeed.

"FAA" means Federal Aviation Agency.

"FM" means fan marker.

"IAS" means indicated airspeed.

"ICAO" means International Civil Aviation Organization.

"IFR" means instrument flight rules.

"ILS" means instrument landing system.

"INT" means intersection.

"LMM" means compass locator at middle marker.

"LOM" means compass locator at outer marker.

"M" means mach number.

"MAA" means maximum authorized IFR altitude.

"MCA" means minimum crossing altitude.

"MEA" means minimum en route IFR altitude.

"MM" means ILS middle marker.

"MOCA" means minimum obstruction clearance altitude.

"MRA" means minimum reception altitude.

"MSL" means mean sea level.

"OM" means ILS outer marker.

"PAR" means precision approach radar.

"RBN" means radio beacon.

"RR" means low or medium frequency radio range station.

"TACAN" means ultra-high frequency tactical air navigational aid.

"TAS" means true airspeed.

"TVOR" means very high frequency terminal omnirange station.

" 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_F " means design flap speed.

" V_{FC}/M_{FC} " means maximum speed for stability characteristics.

" V_{FE} " means maximum flap extended speed.

"VFR" means visual flight rules.

" V_H " means maximum speed in level flight with rated r.p.m. and power.

"VHF" means very high frequency.

" 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_{MO}/M_{MO} " means maximum operating limit speed.

" V_{MU} " means minimum unstick speed.

" V_{NE} " means never-exceed speed.

"VOR" means very high frequency omnirange station.

"VORTAC" means collocated VOR and TACAN.

" V_R " means rotation 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_{SI} " means the stalling speed or the minimum steady flight speed obtained in a specified configuration.

" V_X " means speed for best angle of climb.

" V_Y " means speed for best rate of climb.

" V_I " means critical-engine-failure speed.

" V_z " means takeoff safety speed.

" $V_{z\min}$ " means minimum takeoff safety speed.

§ 1.3 Rules of construction.

(a) [In Subchapters A through K of this chapter, unless the context requires otherwise:]

(1) Words importing the singular include the plural;

(2) Words importing the plural include the singular; and

(3) Words importing the masculine gender include the feminine.

(b) [In Subchapters A through K of this chapter, the word:]

(1) "Shall" is used in an imperative sense;

(2) "May" is used in a permissive sense to state authority or permission to do the act prescribed, and the words "no person may . . ." or "a person may not . . ." mean that no person is required, authorized, or permitted to do the act prescribed; and

(3) "Includes" means "includes but is not limited to".

(AUTHORITY: §§ 1.1 to 1.3 issued under sec. 313(a) of the Federal Aviation Act of 1958 (49 U.S.C. 1354(a)).

Title 14—Aeronautics and Space
Chapter I—Federal Aviation Administration,
Department of Transportation
Subchapter D—Airmen
Part 61—Certification: Pilots and Flight Instructors

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Part 61—Certification: Pilots and Flight Instructors

Subpart A—General

§ 61.1 Applicability.

This Part prescribes the requirements for issuing the following certificates and ratings, the conditions under which those certificates or ratings are necessary, and the general operating rules for the holders of those certificates and ratings:

- (a) Student, private, and commercial pilot (airplane, rotorcraft, glider, and lighter-than-air aircraft) certificates.
- (b) Airline transport pilot certificates.
- (c) Special purpose pilot certificates.
- (d) Flight instructor certificates.
- (e) Aircraft and instrument ratings.

§ 61.3 Certificates and ratings required.

(a) *Pilot certificate.* No person may act as a pilot in command or in any other capacity as a required pilot flight crewmember of a civil aircraft of United States registry unless he has in his personal possession a current pilot certificate issued to him under this Part. However, when the aircraft is operated within a foreign country a current pilot certificate issued by the country in which the aircraft is operated may be used.

(b) *Pilot certificate; foreign aircraft.* No person may, within the United States, act as pilot in command or in any other capacity as a required pilot flight crewmember of a civil aircraft of foreign registry that is eligible to operate in the United States, unless he has in his personal possession a current pilot certificate issued to him under this Part or issued to him or validated for him by the country in which the aircraft is registered.

(c) *Medical certificate.* Except for glider pilots piloting gliders, no person may act as pilot in command or in any other capacity

as a required pilot flight crewmember of an aircraft under a certificate issued to him under this Part unless he has in his personal possession an appropriate current medical certificate issued under Part 67 of this chapter. However, in the case of a pilot certificate issued under § 61.33, evidence of current medical qualification accepted for the issue of that certificate is used in place of a medical certificate.

(d) *Flight instructor certificates.* Except in the case of lighter-than-air flight instruction or as otherwise specifically provided, no person other than the holder of a flight instructor certificate issued by the Administrator with an appropriate rating on that certificate may—

(1) Give any of the flight instruction required to qualify for a solo flight, solo cross-country flight, or for the issue of a pilot or flight instructor certificate or rating;

(2) Endorse a pilot logbook to show that he has given any flight instruction; or

[(3) Endorse a student pilot certificate.]

(e) *Inspection of certificate.* Each person who holds a pilot certificate or medical certificate shall present either or both for inspection upon the request of the Administrator or an authorized representative of the National Transportation Safety Board, or of any Federal, State, or local law enforcement officer.

(f) *Instrument rating.* No person may act as pilot in command of a civil aircraft under instrument flight rules or in weather conditions less than the minimums prescribed for VFR flight unless—

(1) In the case of a helicopter, he holds a helicopter instrument rating, or an airline transport pilot certificate with a rotorcraft category and helicopter class rating not limited to VFR;

(2) In the case of an airship, he holds a commercial pilot certificate with lighter-

than-air category and airship class ratings; or

(3) In the case of an aircraft other than a helicopter or airship, he holds an instrument rating or an airline transport pilot certificate.

[(g) Category II pilot authorization.]

[(1) No person may act as pilot in command of a civil aircraft in a Category II operation unless he holds a current Category II pilot authorization for that type aircraft or, in the case of a civil aircraft of foreign registry, he is authorized by the country of registry to act as pilot in command of that aircraft in Category II operations.]

[(2) No person may act as second in command of a civil aircraft in a Category II operation unless he holds a current instrument rating or an airline transport pilot certificate or, in the case of a civil aircraft of foreign registry, he is authorized by the country of registry to act as second in command of that aircraft in Category II operations.]

[(3) This paragraph does not apply to operations conducted by the holder of a certificate issued under Part 121 of this chapter.]

§ 61.5 Application and issue.

(a) An application for a certificate and rating, or for an additional rating, under this Part is made on a form and in a manner prescribed by the Administrator.

(b) An applicant who meets the requirements of this Part is entitled to an appropriate pilot or flight instructor certificate with appropriate aircraft ratings. Additional aircraft category, class, and type ratings, and instrument ratings for which the applicant is qualified, are added to his certificate.

(c) An applicant who cannot comply with all of the skill requirements prescribed by or under this Part for a particular certificate because special characteristics of the aircraft used in the flight test prohibit the required procedures or maneuvers, but who meets all other requirements for the certificate concerned, is entitled to a pilot certificate with appropriate limitations.

(d) An applicant for a pilot certificate who holds a medical certificate under § 67.19 with

special limitations on it and who meets all other requirements for that pilot certificate, is entitled to a pilot certificate containing such operating limitations as the Administrator determines are necessary because of the applicant's physical deficiency.

[(e) A Category II pilot authorization is issued as a part of the applicant's instrument rating or airline transport pilot certificate. Upon original issue the authorization contains a limitation for Category II operations of 1600 feet RVR and a 150 foot decision height. This limitation is removed when the holder shows that since the beginning of the sixth preceding calendar month he has made three Category II ILS approaches to a landing under actual or simulated instrument conditions with a 150 foot decision height.]

[(f)] Unless authorized by the Administrator—

(1) A person whose pilot certificate is suspended may not apply for any pilot or flight instructor certificate or rating during the period of suspension; and

(2) A person whose flight instructor certificate only is suspended may not apply for any rating to be added to that certificate during the period of suspension.

[(g)] Unless the order of revocation provides otherwise—

(1) A person whose pilot certificate is revoked may not apply for any pilot or flight instructor certificate or rating for one year after the date of revocation; and

(2) A person whose flight instructor certificate only is revoked may not apply for any flight instructor certificate for one year after the date of revocation.

§ 61.7 Temporary certificate.

A pilot certificate or rating effective for a period of not more than 90 days may be issued to a qualified applicant, pending the issue of the certificate or rating for which he applied.

§ 61.9 Duration of certificates.

(a) *Student pilot certificate.* A student pilot certificate expires at the end of the 24th month after the month in which it is issued.

(b) *Flight instructor certificates.*

(1) A limited flight instructor certificate expires at the end of the 24th month after

the month in which it was issued, but the holder of an expired limited flight instructor certificate may obtain a flight instructor certificate under § 61.176.

(2) A flight instructor certificate issued before September 26, 1965, expires at the end of the holder's next birth month following September 1966, but the holder thereof may obtain another certificate under § 61.177.

(3) A flight instructor certificate issued or renewed after September 25, 1965, expires at the end of the 24th month after the month in which it was issued or renewed, but the holder thereof may obtain another certificate under § 61.177.

(4) A flight instructor certificate is effective only while the holder has a current pilot certificate as prescribed in § 61.172.

(c) **[Deleted].**

(d) *Special purpose pilot certificate.* A pilot certificate, with any amendment thereto, issued under § 61.33, expires at the end of the 24th month after the month in which the certificate was issued or renewed. However, the holder may exercise the privileges of that certificate only while the foreign pilot license on which that certificate is based is effective.

(e) *Other pilot certificates.* Any pilot certificate issued under this Part and not covered by paragraphs (a) through (d) of this section is issued without a specific expiration date.

(f) *Surrender, suspension, revocation.* Any pilot certificate issued under this Part ceases to be effective if it is surrendered, suspended, or revoked.

(g) *Return of certificate.* The holder of any certificate issued under this Part that is suspended or revoked shall, upon the Administrator's request, return it to the Administrator.

§ 61.9a Reissuance: Expired certificates-airline transport pilot and lighter-than-air category rating.

[(a) An airline transport pilot certificate or pilot certificate with a lighter-than-air category rating bearing an expiration date and issued after September 26, 1950, to a person who was not a citizen of the United States may be reissued to that person without an expiration date.

[(b) The holder of a certificate with an expiration date may not after that date exercise

the privileges of the certificate without obtaining its reissuance.]

§ 61.10 Duration of Category II pilot authorization.

A Category II pilot authorization expires at the end of the sixth calendar month after it was issued or renewed. Upon passing a practical test it is renewed for each type airplane for which an authorization is held. However, an authorization for a particular type airplane will not be renewed to extend beyond the end of the twelfth calendar month after the practical test was passed in that type airplane. If the holder of the authorization passes the practical test for a renewal in the calendar month before the authorization expires, he is considered to have passed it during the calendar month the authorization expired.

§ 61.11 Exchange of certificate.

The holder of a pilot certificate issued under this Part may apply for a pilot certificate of a lower grade. If he so applies, he must include the following statement or its equivalent:

"This request is made for my own reasons, with full knowledge that my [insert name of certificate] may not be reissued to me unless I again pass the tests prescribed for its issue."

§ 61.13 Change of name; replacement of lost or destroyed certificate.

(a) An application for a change of name on a certificate issued under this Part must be accompanied by the applicant's current certificate and the marriage license, court order, or other document verifying the change. The documents are returned to the applicant after inspection.

(b) An application for a replacement of a lost or destroyed certificate is made by letter to the FAA, Airman Certification Branch, Federal Aviation Administration, Oklahoma City, Oklahoma. The letter must—

(1) Contain any available information regarding the grade, number, and date of issue of the certificate, the name in which it was issued, and the ratings on it; and

(2) Be accompanied by a check or money order for \$2.00, payable to the Federal Aviation Administration.

(c) An application for replacement of a lost or destroyed medical certificate is made by

letter to the Aeromedical Certification Branch, Civil Aeromedical Institute, Federal Aviation Administration, Post Office Box 1082, Oklahoma City, Oklahoma, 73101, accompanied by a check or money order for \$2.00.

(d) A person whose certificate issued under this Part or medical certificate, or both, has been lost may obtain a telegram from the FAA confirming that it was issued. The telegram may be carried as a certificate pending his receiving a duplicate certificate under paragraph (b) or (c) of this section, unless he has been notified that the certificate has been suspended or revoked. The request for such a telegram may be made by prepaid telegram, stating the date upon which a duplicate certificate was requested, or including the request for a duplicate and a money order for the necessary amount. The request for a telegraphic certificate should be sent to the office prescribed in paragraph (b) or (c) of this section, as appropriate. However, a request for both at the same time should be sent to the office prescribed in paragraph (b) of this section.

§ 61.15 Aircraft ratings.

(a) The category ratings to be placed on private, commercial, and airline transport pilot certificates are—

- (1) Airplane;
- (2) Rotorcraft;
- (3) Glider; and
- (4) Lighter-than-air.

(b) When applicable, the airplane class ratings to be placed on private, commercial, and airline transport pilot certificates are—

- (1) Single-engine land;
- (2) Multiengine land;
- (3) Single-engine sea; and
- (4) Multiengine sea.

(c) Where applicable, the rotorcraft class ratings to be placed on pilot certificates are—

- (1) Gyroplane; and
- (2) Helicopter.

(d) When applicable, the lighter-than-air class ratings to be placed on pilot certificates are—

- (1) Airship; and
- (2) Free balloon.

[(e) Subject to § 61.16, the holder of a lighter-than-air pilot certificate, a pilot certifi-

cate with a lighter-than-air category rating, or a free balloon pilot certificate may continue to exercise the privileges of that certificate or rating. However, if he exchanges his pilot certificate—

(1) The holder of a private pilot certificate with a lighter-than-air category rating is issued—

(i) A private pilot certificate with a lighter-than-air category rating and an airship class rating; and

(ii) A commercial pilot certificate with a lighter-than-air category rating and a free balloon class rating;

(2) The holder of a commercial pilot certificate with a lighter-than-air category rating is issued a commercial pilot certificate with a lighter-than-air category rating and an airship and free balloon class rating; and

[(3) The holder of a free balloon pilot certificate is issued a commercial pilot certificate with a lighter-than-air category rating and free balloon class rating, and if appropriate, with the limitation provided in § 61.130(c) or § 61.130(d).]

(f) In addition to the category and class ratings in paragraphs (a), (b), and (c) of this section, the name of each type of large aircraft and each turbojet powered airplane for which a pilot is rated is placed on his certificate if that type of aircraft is certificated by the Administrator for civil operations. In the case of airline transport pilots, a helicopter type rating is issued for each type of helicopter. Type ratings are not issued for lighter-than-air aircraft.

(g) The holder of a pilot certificate with a rotorcraft category rating issued before July 12, 1962, may not continue to exercise the privileges of that rating, but may, without a further showing of competence, exchange his rotorcraft category rating for a rotorcraft category rating with a class rating determined by the class of rotorcraft in which he originally qualified for a rotorcraft rating, whether by flight test or on the basis of military competence.

(h) The holder of a current pilot certificate with a helicopter or autogiro category rating may not continue to exercise the privileges of that rating, but may, without a further

showing of competence, exchange his helicopter rating for a rotorcraft category rating with a helicopter class rating, and his autogiro category rating for a rotorcraft category rating with a gyroplane class rating, by presenting his certificate for exchange.

(i) Notwithstanding paragraph (g) or (h) of this section, the holder of an airline transport pilot certificate with—

- (1) A helicopter category rating;
- (2) An autogiro category rating; or
- (3) A rotorcraft category rating without

a helicopter or gyroplane class rating; may continue to exercise the privileges of that rating until June 30, 1966.

(j) The holder of an airline transport pilot certificate with a rating specified in paragraph (i) of this section may not exercise the privileges of that rating after June 30, 1966, unless he has, without a further showing of competence, exchanged his—

(1) Helicopter category rating for a rotorcraft category rating with a helicopter class and type rating;

(2) Autogiro category rating for a rotorcraft category rating with gyroplane class rating; or

(3) Rotorcraft category rating without a class rating for a rating in accordance with paragraph (g) or (h) of this section, as applicable.

If he qualified originally in a helicopter, he may, until December 31, 1966, obtain a gyroplane class rating without a further showing if he has had at least 10 hours as pilot in command of a gyroplane within the 12-month period before he applies.

(k) The holder of a certificate named in paragraph (g), (h), or (j) need not have a current medical certificate to make the exchange of ratings specified in those paragraphs.

(l) At any time before October 17, 1968, the holder of a pilot certificate that permits him to operate helicopters under instrument flight conditions on the basis of an exemption granted by the Administrator may obtain a helicopter instrument rating or the removal of the VFR only restriction from

his airline transport pilot certificate, as the case may be, without a further showing of instrument competency in a helicopter.

§ 61.16 General limitations.

(a) *Type ratings required.* No person may act as pilot in command of any of the following aircraft unless he holds a type rating for that aircraft:

(1) A large aircraft (except lighter-than-air).

(2) A helicopter, for operations requiring an airline transport pilot certificate.

(3) After March 31, 1966, a turbojet powered airplane.

However, subparagraphs (1) and (3) of this paragraph do not apply to an aircraft operated under an authorization issued by a Flight Standards District Office.

(b) *Small aircraft: carrying another person or operating for compensation, or hire.* Unless he holds a category and class rating for that aircraft, a person may not act as pilot in command of a small aircraft that is carrying another person or is operated for compensation or hire. In addition, he may not act as pilot in command of that aircraft for compensation or hire.

(c) *Small aircraft: soloing not for compensation or hire.* No person may act as pilot in command of a small aircraft in operations conducted other than under paragraph (b) of this section unless he meets at least one of the following conditions:

(1) He holds a category and class rating appropriate to that aircraft.

(2) He has soloed and logged that flight time in that category and class of aircraft before December 16, 1965.

(3) He has made and logged at least three takeoffs and landings to a full stop in that category and class of aircraft, as the sole manipulator of the controls, while accompanied by a pilot who is entitled to carry passengers in that aircraft.

(4) He has made and logged at least three takeoffs and landings to a full stop while operating under an authorization issued by a Flight Standards District Office. However, the holder of a pilot certificate with an airplane category rating may solo gliders without complying with this paragraph.

(d) *Exception.* This section does not require a class rating for gliders. In addition, the rating limitations of this section do not apply to—

(1) The holder of a student pilot certificate;

(2) The holder of a pilot certificate when operating an aircraft under the authority of an experimental or provisional type certificate;

(3) The holder of a pilot certificate when taking a flight test given by the Administrator; or

[(4) The holder of a lighter-than-air pilot certificate, a pilot certificate with a lighter-than-air category rating, or a free balloon pilot certificate, when operating a hot air balloon without an airborne heater.]

§ 61.17 Type ratings and additional aircraft ratings (other than airline transport and lighter-than-air).

(a) *General.* To be eligible for an additional aircraft rating (other than a type rating) after his certificate is issued to him, an applicant must meet the requirements of paragraphs (b) through (i) of this section, as appropriate to the rating sought. Each applicant must perform the procedures and maneuvers specified in those paragraphs, as applicable, that are not required for the certificates and ratings that he already holds. An applicant for an original or additional type rating must meet the requirements of paragraph (j) of this section. However, if he is applying for a type rating and will receive a category rating or original issue of a pilot certificate based on that type of aircraft, he must also meet the other requirements for that rating or certificate, as the case may be.

(b) *Rotorcraft.* A pilot holding an airplane rating who applies for a rotorcraft rating must pass an appropriate flight test, and—

(1) In the case of gyroplanes, have had a total of at least 15 hours of flight time in gyroplanes consisting of (i) flight instruction from an appropriately rated flight instructor and (ii) at least 5 hours of solo flight time; and

(2) In the case of helicopters, have had a total of at least 25 hours of flight time in helicopters consisting of (i) flight instruction from an appropriately rated flight instructor and (ii) at least 5 hours of solo flight time.

(c) *Glider.* A pilot holding an airplane or rotorcraft rating who applies for a glider rating must have a total of at least 2 hours of flight instruction (from an appropriately rated flight instructor) and solo flight time in gliders, including at least 10 solo glider flights in which he made a 360° turn, and must pass an appropriate flight test.

(d) *Airplane or rotorcraft.* A pilot holding a glider rating who applies for an airplane or rotorcraft rating must meet the requirements for the original issue of a certificate with an airplane or rotorcraft rating, including the flight test.

(e) *Airplane.* A pilot holding a rotorcraft rating who applies for an airplane rating must have the flight time required for the original issue of a certificate with an airplane rating, including at least 5 hours of solo flight time in airplanes and must pass an appropriate flight test.

(f) *Lighter-than-air.* A pilot holding an aircraft rating for a heavier-than-air aircraft who applies for a lighter-than-air category rating must meet the requirements for the original issue of a certificate with a lighter-than-air category rating and a free balloon or airship class rating, as the case may be.

(g) *Heavier-than-air.* A pilot holding a lighter-than-air category rating who applies for a category rating in a heavier-than-air aircraft must meet the requirements for the

original issue of a certificate with that category rating.

(h) *Additional class.* An applicant for an additional class rating must—

(1) Have made at least five takeoffs and landings in an aircraft of the class for which he seeks a rating, in solo flight or as the only manipulator of the controls accompanied by a pilot rated to carry passengers in that aircraft, or, for an aircraft that required more than one pilot, as pilot in command or as second in command performing the duties of a pilot in command while the instructor or check pilot performed the duties of a second in command; and

(2) Pass an appropriate flight test.

(i) *Additional airship or free balloon class.* A pilot holding a lighter-than-air category rating with a free balloon class rating who applies for an airship class rating must meet the requirements for the original issue of a certificate with an airship class rating. A pilot who is issued a pilot certificate with an airship class rating is also issued a commercial pilot certificate with a free-balloon class rating.

(j) *Type.*

(1) An applicant for an original or additional type rating must—

(i) Hold or concurrently obtain an instrument rating;

(ii) Meet the requirements of paragraph (h) of this section in the type of aircraft for which the type rating is sought; and

(iii) Demonstrate proficiency during the flight test for that rating solely by reference to instruments under the requirements of § 61.37(c) (2), (3) (iii), (iv), and (v).

(2) An applicant who does not meet the requirements of subparagraphs (1) (i) and (iii) of this paragraph may obtain a type rating limited to "VFR Only." Upon meeting these instrument requirements or the requirements of § 61.31(b) (2), the "VFR Only" limitation may be removed for the particular type of aircraft in which proficiency is demonstrated.

(3) When an instrument rating is issued after October 21, 1963, to the holder of one or more type ratings, the amended certificate bears the limitation "VFR Only" for each

type rating held for aircraft in which he has not demonstrated his instrument proficiency under this section.

(k) *Airline transport pilot certificate.* This section does not authorize a rating to be placed on an airline transport pilot certificate unless that rating is limited to commercial privileges.

§ 61.19 Tests: general procedure.

(a) Tests prescribed by or under this Part are given at times and places, and by persons, designated by the Administrator.

(b) The minimum passing grade for each written test is 70 percent.

§ 61.20 Written tests: cheating or other unauthorized conduct.

(a) Except as authorized by the Administrator, no person may—

(1) Copy, or intentionally remove, a written test under this Part;

(2) Give to another, or receive from another, any part or copy of that test;

(3) Give help on that test to, or receive help on that test from, any person during the period that test is being given;

(4) Take any part of that test in behalf of another person;

(5) Use any material or aid during the period that test is being given; or

(6) Intentionally cause, assist, or participate in any act prohibited by this paragraph.

(b) No person who commits an act prohibited by paragraph (a) of this section is eligible for any airman or ground instructor certificate or rating under this chapter for a period of one year after the date of that act. In addition, the commission of that act is a basis for suspending or revoking any airman or ground instructor certificate or rating held by that person.

§ 61.21 Prerequisites for flight tests.

(a) To be eligible for a flight test for a certificate, or an aircraft or instrument rating issued under this part, the applicant must—

(1) Have passed the written test (if required) within the 24 months before the date he takes the flight test;

(2) Have the applicable aeronautical experience prescribed in this part;

(3) Hold a medical certificate appropriate to the certificate he seeks; and

[(4) Have a written statement made not more than 60 days before applying for the flight test, from a flight instructor whose flight instructor certificate bears the category rating of the aircraft to be used in the flight test (or an instrument rating if that rating is sought), certifying that he has given the applicant flight instruction in preparation for the flight test and considers him ready to take the test. However, an applicant need not have this written statement if he—

[(i) Holds a foreign pilot license issued by a contracting State to the Convention on International Civil Aviation that authorizes at least the pilot privileges of the airman certificate sought by him;

[(ii) Is a member of an Armed Force of the United States applying for an airline transport pilot certificate, and in a program for training military pilots has passed an official military flight test (including instrument flight test) as pilot in command of the type of aircraft to be used in the flight test; or

[(iii) Is applying for a type rating only.]

(b) Notwithstanding subparagraphs (1) and (4) of paragraph (a) of this section, an applicant for an airline transport pilot certificate who has been continuously employed as a pilot or as a pilot assigned to flight engineer duties by, and has continuously participated in an approved pilot training program of, a United States air carrier or commercial operator since no later than 24 months after passing the written test, or has been continuously employed as a pilot by, and has continuously participated in a pilot training program of, a United States scheduled military air transportation service after passing the written test, may take the flight test for that certificate as long as he continues in that employment and pilot training program. In addition, subparagraph (4) of paragraph (a) of this section does not apply to an applicant for a pilot certificate with a lighter-than-air category or associated class rating.

§ 61.22 Flight instruction received from flight instructors not certificated by FAA.

[Flight instruction received to satisfy the

requirements for the certificate or rating sought by the applicant may be credited toward a pilot certificate or rating under §§ 61.17(b) or (c), 61.35(c), 61.85(a), 61.89(a), 61.93(a) or (b), 61.115(a), 61.119 (a), or 61.123(b) if it is received from—

[(a) An Armed Force of either the United States or a foreign contracting State to the Convention on International Civil Aviation in a program for training military pilots; or

[(b) A flight instructor who is authorized to give that flight instruction by the licensing authority of a foreign contracting State to the Convention on International Civil Aviation and the flight instruction is given outside the United States.]

§ 61.23 Flight tests: general procedures.

(a) The examiner of an applicant for a private or commercial pilot certificate or an instrument rating judges the applicant's performance of the procedures and maneuvers on the flight test on the basis of judgment, knowledge, smoothness, and accuracy. For this purpose, competent performance of a procedure or maneuver requires the pilot to be the obvious master of the aircraft, with the successful outcome of the maneuver never seriously in doubt.

(b) If an applicant fails any required item in a phase of the flight test he fails that phase and the entire test, and must pass that phase (as well as any other phases that he has not passed) in any later retesting.

(c) The examiner or the applicant may discontinue the test at any time when the failure of a required item makes passing the test impossible. In such a case, the applicant is entitled to credit for only those entire phases that he passed.

(d) This section does not apply to an applicant for an airline transport pilot certificate or a pilot certificate with a lighter-than-air category rating.

§ 61.25 Flight tests: required aircraft.

(a) *General.* An applicant for a certificate or rating under this Part must furnish, for each flight test that he is required to take, an appropriate aircraft of United States registry. However, the applicant may, in the examiner's discretion, furnish an aircraft of foreign registry that is properly certificated by the country

of registry, or a military aircraft in an operational status if its use is allowed by an appropriate military authority.

(b) *Dual controls.* An aircraft furnished under paragraph (a) of this section for any flight test (other than an airline transport pilot certificate or a pilot certificate with a lighter-than-air category rating) must have functioning dual controls, unless, after considering all of the factors, the examiner determines that the flight test can be conducted safely without them.

(c) *Airline transport.* An aircraft furnished under paragraph (a) of this section for an airline transport pilot test must have a suitable hood that excludes the applicant from outside forward vision but does not unduly restrict the examiner's vision, must have functioning dual controls, and must accommodate the applicant and the examiner. For the purposes of this paragraph, an aircraft that has only one elevator and aileron control for two seats or is so arranged that all flight and engine controls cannot be handled in a normal manner from either seat, is not considered to have dual controls. If the applicant is employed by an air carrier, the air carrier may have a check pilot on the aircraft during a flight test under this paragraph. In such a case, the aircraft must provide adequate vision for the pilot and the check pilot.

(d) *Instrument rating.* An aircraft furnished under paragraph (a) of this section for a flight test for an instrument rating must—

- (1) Be one in which instrument flight is authorized by this chapter and by its equipment and operating limitations;
- (2) Have functioning dual controls; and
- (3) Have a hood, slats, polarized material, or other effective means (satisfactory to the examiner) of excluding outside visual reference by the pilot taking the test.

§ 61.26 Flight tests: status of FAA inspectors and other authorized flight examiners.

An FAA inspector or other authorized flight examiner conducts the flight test of an applicant for a pilot certificate or rating for the purpose of observing the applicant's ability to perform satisfactorily the procedures and maneuvers on the flight test. The inspector or other examiner is not pilot in command of the aircraft during the flight test unless he acts in

that capacity for the flight, or portion of the flight, by prior arrangement with the applicant or other person who would otherwise act as pilot in command of the flight, or portion of the flight. Notwithstanding the type of aircraft used during a flight test, the applicant and the inspector or other examiner are not, with respect to each other (or other occupants authorized by the inspector or other examiner), subject to the requirements or limitations for the carriage of passengers specified in this chapter.

§ 61.27 Retesting after failure.

(a) *Written test.* An applicant for a certificate or rating under this Part who fails a written test for that certificate or rating may apply for retesting—

(1) After 30 days after the date he failed that test; or

(2) Upon presenting a statement from whichever of the following is applicable, certifying that he has given additional instruction to the applicant and considers him ready for retesting:

(i) For a private or commercial pilot certificate or associated rating—a certificated flight instructor with an appropriate category rating or a certificated ground instructor with an appropriate rating.

(ii) For an instrument rating—a certificated flight instructor with an instrument rating on his flight instructor certificate or a certificated ground instructor with an appropriate rating.

(iii) For a flight instructor certificate—a certificated flight instructor with an appropriate category or instrument rating on his flight instructor certificate.

(iv) For an airline transport pilot certificate—a person employed by an airline to instruct in airline transport pilot subjects, a certificated airline transport pilot, a certificated ground instructor with an appropriate rating, or a person qualified to instruct in instrument flight theory.

(b) *Flight test.* An applicant for a certificate or rating under this Part (other than an applicant for a type rating only, an airline transport pilot certificate or associated rating, or a pilot certificate with a lighter-than-air category or associated class rating) who fails

a flight test for that certificate or rating may apply for retesting upon presenting a statement from a certificated flight instructor with an appropriate rating on his flight instructor certificate that he has given additional instruction to the applicant and now considers the applicant ready for retesting. [However, an applicant who qualified for flight testing under § 61.21(a)(4)(i) need not present this statement if he shows that he has received at least 5 additional hours of flight instruction in procedures and maneuvers required for the flight test from an Armed Force of either the United States or a foreign contracting State to the Convention on International Civil Aviation in a program for training military pilots, or from a flight instructor who is authorized to give that flight instruction by the licensing authority of such a foreign contracting State and that flight instruction was given outside the United States.]

(c) Deleted.

[(d) *Airline transport; flight test.* An applicant for an airline transport pilot certificate or associated rating who fails a flight test under this Part may apply for retesting in the following manner:

[(1) If he qualified for flight testing other than under § 61.21(a)(4)(ii), he may apply upon presenting a statement from his instructor (as to required instruction) certifying that he has given the additional instruction to the applicant and considers the applicant ready for retesting, and presenting satisfactory evidence that he has—

[(i) Logged at least 5 additional hours of flying solely by instruments and at least 5 additional hours of flight instruction from an appropriately rated flight instructor or an airline transport pilot; or

[(ii) Received additional practice or instruction (flight, synthetic trainer, or ground training, or any combination thereof) that is necessary, in the opinion of the Administrator or the applicant's instructor (if the Administrator has authorized him to determine the additional instruction necessary) to prepare the applicant for retesting.

[(2) If he qualified for flight testing under § 61.21(a)(4)(ii), he may apply either upon presenting the statement and evidence

described in subparagraph (1) of this paragraph, or upon presenting satisfactory evidence that he has—

[(i) Logged at least 5 additional hours of flying solely by instruments and at least 5 additional hours of flight instruction from an Armed Force of the United States in a program for training military pilots; or

[(ii) Received additional practice or instruction (flight, synthetic trainer, or ground training, or any combination thereof) that is necessary, in the opinion of the Administrator, to prepare the applicant for retesting.

[In retesting, the maneuvers failed, and any other maneuvers the FAA inspector or designated examiner finds to be necessary to determine the competency of the applicant, must be repeated. An applicant who meets the requirements of subparagraph (1) or (2) of this paragraph is considered to meet the 5-hour flight time requirements of § 61.145(b)(2)(i).]

(e) Deleted.

(f) Deleted.

(g) *Lighter-than-air; flight test.* An applicant for a private or commercial pilot certificate with a lighter-than-air category rating (airship or free balloon class) who fails a flight test under this Part may apply for retesting after he has logged at least three additional hours of flight time.

§ 61.29 Graduates of certificated flying schools: special rules.

(a) A graduate of a flying school that is certificated under Part 141 of this chapter is considered to meet the applicable aeronautical experience requirements of this Part if he presents an appropriate graduation certificate within 60 days after the date he is graduated. However, if he applies for a flight test for an instrument rating or a flight instructor certificate, he must hold a commercial pilot certificate, or hold a private pilot certificate and meet the requirements of § 61.115 (except paragraphs (a)(3) and (4) thereof).

(b) An applicant for a certificate or rating under this Part may be considered to meet the aeronautical knowledge or skill requirements, or both, applicable to that certificate or rating, if he applies within 90 days after being graduated from an appropriate course of a flying

school that is certificated under Part 141 of this chapter and is authorized by the Administrator to test applicants on aeronautical knowledge or skill, or both.

§ 61.31 Military pilots or former military pilots: special rules.

(a) *Written test and evidence.* An applicant for a private or commercial pilot certificate is entitled to that certificate if he passes a written test on the Parts of this chapter relating to pilot privileges and limitations, general operating, air traffic, and accident reporting rules, and presents satisfactory documents showing that—

(1) He is a member of an Armed Force of the United States and is either on solo flying status as a rated pilot or the equivalent (or, in the case of an applicant for a pilot certificate with a lighter-than-air category rating, has been in that status for a period of at least six consecutive months before the date he applies), or has, within the 12 months before the date he applies, been graduated from, and rated as a pilot by, a military flying school;

(2) He is a member of an Armed Force of the United States and has been removed from solo flying status as a rated pilot or the equivalent for reasons other than lack of flying proficiency;

[(3) He has been honorably discharged or released from such an Armed Force and was, at the time of the discharge or release, on solo flying status as a rated pilot or the equivalent (or, in the case of an applicant for a pilot certificate with a lighter-than-air category rating, has been in such a status for a period of at least 6 consecutive months):]

(4) He has been honorably discharged or released from such an Armed Force and was, before that discharge or release, removed from solo flying status as a rated pilot or the equivalent for reasons other than lack of flying proficiency[; or]

[(5) He holds a current civil pilot license issued by a foreign contracting State to the Convention on International Civil Aviation authorizing at least the pilot privileges of the airman certificate he seeks, and—

[(i) He is a member of an Armed Force of that contracting State on duty with an Armed Force of the United States with solo flying status as a rated pilot; or

[(ii) He was, at any time since the beginning of the twelfth calendar month before he applies, a member of an Armed Force of that contracting State on duty with an Armed Force of the United States with solo flying status as a rated pilot, and was not removed from that duty or status, or from solo flying status with an Armed Force of that contracting State, for lack of flying proficiency.]

However, a person covered by subparagraph (2), (3), or (4) of this paragraph who was discharged or released more than 12 months before the date he applies, or who has not been on solo flying status as a rated pilot or the equivalent within that 12-month period, must also pass the written examination prescribed for the aeronautical knowledge requirements appropriate to the certificate sought, meet the prescribed physical standards, and pass the appropriate flight test, or in the case of an applicant for a private lighter-than-air certificate, have had at least 10 hours of flight time as pilot in command in military lighter-than-air aircraft within that 12-month period.

(b) *Category, class, or type ratings.*

(1) A person who applies for a particular category, class, or type rating is entitled to an appropriate rating on the pilot certificate that he holds or for which he has applied, if he presents satisfactory documentary evidence that, within the 12 months before the date he applies, he has had at least 10 hours of flight time as pilot in command in [United States] military aircraft of a category, class, or type for which he seeks a rating or has passed either an official [United States] military checkout as pilot in command, or the equivalent, in the aircraft concerned or the appropriate FAA flight test. A type rating is issued only for aircraft types that the Administrator has certificated for civil operations. This paragraph does not authorize a rating to be placed on an airline transport pilot certificate unless that rating is limited to commercial privileges.

(2) An applicant for a type rating issued under subparagraph (1) of this paragraph must hold an instrument rating [on his United States pilot certificate], or concurrently obtain one under the provisions of paragraph (c) of this section, and he must present reliable evidence of a [United States] military instrument flight check in the type of aircraft for which a type rating is sought.

(3) An applicant for a type rating who does not meet the instrument requirements of subparagraph (2) of this paragraph may obtain a type rating limited to "VFR Only." Upon meeting the instrument requirements of this paragraph, or of § 61.17 (j) (1) (i) and (iii), the "VFR Only" limitation may be removed for the particular type of aircraft in which the instrument proficiency is shown.

(c) Instrument rating.

(1) A private or commercial pilot who holds a current [United States] military instrument rating or card for an aircraft other than a helicopter is entitled to an instrument rating under this Part for an aircraft other than a helicopter. If he holds a [United States] military instrument rating or card for a helicopter he is entitled to a helicopter instrument rating under this Part.

(2) At any time before October 17, 1968, the holder of a pilot certificate who has held a [United States] military instrument rating or card for a helicopter is entitled to a helicopter instrument rating under this Part without a showing of instrument competency in a helicopter. However, in the case of an instrument rating issued to the holder of an airline transport pilot certificate, the rating is limited to commercial pilot privileges.

(3) No person may obtain the issuance of an instrument rating under this paragraph unless his [United States] military instrument rating or card authorizes him to serve as pilot in command in IFR operations in controlled airspace.

(d) For the purposes of this section—

(1) An official identification card issued by the Armed Force concerned showing that

the holder is a member is satisfactory evidence of membership;

(2) An official order to solo flight status, an appropriate [United States] Air Force form or [United States] Navy flight logbook endorsed to show solo flight status, official order showing graduation from, and rating as a pilot by, a [United States] military flying school, or a copy of orders showing duty involving flying as a [United States] rated pilot, is satisfactory evidence of flight status;

(3) An appropriate [United States] Air Force form or a summary of it, or a certified [United States] military logbook, is satisfactory evidence of pilot flight time, but pilot-in-command flight time in an aircraft normally having two pilots must be substantiated by official [United States] check-out records; and

(4) An original or photostatic copy of a certificate of discharge or release [from a United States Armed Force] is satisfactory evidence of discharge or release.

However, a person who was discharged from an Armed Force or removed from flight status because of flight deficiency is not eligible for a pilot certificate under this section.

§ 61.33 Special purpose pilot certificate other than airline transport.

(a) *Purpose.* The holder of a current foreign pilot license issued by a contracting State to the Convention on International Civil Aviation, who meets the requirements of this section, may have a pilot certificate issued to him for the operation of civil aircraft of U.S. registry. Each pilot certificate issued under this section specifies the number and State of issuance of the foreign pilot license on which it is based.

(b) *Tests.* An applicant for a pilot certificate with an instrument rating must pass a test on the instrument flight rules in Subpart B of Part 91 of this chapter, including the related procedures necessary for the operation of the aircraft under instrument flight rules.

(c) *Medical standards and certification.* An applicant must submit evidence that he currently meets the medical standards for the

foreign pilot license on which the application for a certificate under this section is based. A current medical certificate issued under Part 67 of this chapter will be accepted as evidence that the applicant meets those standards. However, a medical certificate issued under Part 67 is not evidence that the applicant meets those standards outside the United States unless the State that issued the applicant's foreign pilot license also accepts that medical certificate as evidence of the applicant's physical fitness for his foreign pilot license.

(d) *Certificates issued.* An applicant who holds a current foreign pilot license that authorizes private pilot privileges is issued a pilot certificate with the same privileges. An applicant who holds a current foreign pilot license that authorizes commercial pilot privileges may obtain a certificate with either private or commercial pilot privileges. If the applicant cannot read, speak, and understand the English language, the Administrator may place any limitation on the certificate that he considers necessary for safety. This section does not authorize the issue of airline transport pilot certificates.

(e) *Ratings issued.* Aircraft and instrument ratings listed on the applicant's foreign pilot license, in addition to any issued to him after testing under the provisions of this Part, are placed on the applicant's pilot certificate.

(f) *Privileges and limitations.* The holder of a pilot certificate issued under this section may act as a pilot of a civil aircraft of U.S. registry subject to the limitations of this Part and any additional limitations placed on his certificate by the Administrator. He is subject to these limitations while he is acting as

a pilot of the aircraft within or outside the United States. However, he may not act as pilot in command, or in any other capacity as a required pilot flight crewmember, of a civil aircraft of U.S. registry that is carrying persons or property for compensation or hire.

(g) *Renewal of certificate and ratings.* The holder of a certificate issued under this section may have that certificate and the ratings placed thereon renewed if, at the time of application for renewal, the foreign pilot license on which that certificate is based is in effect. Application for the renewal of the certificate and ratings thereon must be made before the expiration of the certificate.

§ 61.35 Instrument rating: knowledge and experience requirements.

(a) An applicant for an instrument rating must hold at least—

(1) A commercial pilot certificate; or

(2) A private pilot certificate and meet the requirements of § 61.115(a) except subparagraphs (3) and (4) thereof. However, in the case of a helicopter instrument rating the applicant must hold at least a private pilot certificate and meet the requirements of § 61.119 in a helicopter.

(b) An applicant for an instrument rating must pass a written test on—

(1) This subchapter as it applies to flight under IFR conditions;

(2) Radio navigation systems and procedures, instrument landing systems and procedures, and radio communications procedures; and

(3) Meteorology, including the characteristics of air masses and fronts and the

weather associated with them, elementary principles of forecasting, and the availability, evaluation, and utilization of meteorological reports.

(c) An applicant for an instrument rating must have at least 40 hours of instrument time under actual or simulated conditions including time acquired in a synthetic trainer. That time must include at least 20 hours of flight time of which at least 15 hours must be instrument flight instruction given by a flight instructor with an appropriate instrument rating on his flight instructor certificate. In the case of an applicant for an instrument rating for an aircraft other than a helicopter, at least 10 hours of the required 20 hours of flight time and at least 5 hours of the required 15 hours of instrument flight instruction must be accomplished in an aircraft other than a helicopter. In the case of an applicant for a helicopter instrument rating, at least 10 hours of the required 20 hours of flight and at least 5 hours of the required 15 hours of instrument flight instruction must be accomplished in a helicopter. The required instrument flight instruction must include at least—

(1) An instrument approach down to the published minimums at two different locations, at least one of which must have a VOR or ILS facility that is used for the approach;

(2) Two instrument approaches made in accordance with a clearance from air traffic control and including transition from en route airways instrument flight to the approach fix or facility from which the approach will begin; and

(3) One flight with an aircraft other than a helicopter of at least 200 nautical miles on Federal airways while operating in accordance with an approved IFR flight plan except that in the case of an applicant for a helicopter instrument rating that flight must be accomplished with a helicopter for a distance of at least 50 nautical miles.

The flight required by subparagraph (3) of this paragraph must include at least two compulsory reporting points and use VHF navigation facilities for at least one leg of the course. During the flight at least one instrument approach must be made down to the published

minimums, at a place where the trainee has not previously made an instrument approach.

§ 61.36 Category II pilot authorization: experience requirements.

[(a) An applicant for a Category II pilot authorization must hold—

[(1) A pilot certificate with an instrument rating or an airline transport pilot certificate; and

[(2) A type rating for the airplane type if the authorization is requested for a large airplane or a small turbojet airplane.

[(b) Except for the holder of an airline transport pilot certificate, an applicant for a Category II authorization must have at least—

[(1) 50 hours of night flight time under VFR conditions as pilot in command;

[(2) 75 hours of instrument time under actual or simulated conditions, that may include 25 hours in a synthetic trainer; and

[(3) 250 hours of cross-country flight time as pilot in command.

[Night flight and instrument flight time used to meet the requirements of subparagraphs (1) and (2) of this paragraph may also be used to meet the requirements of subparagraph (3) of this paragraph.]

§ 61.37 Instrument rating: skill requirements.

(a) An applicant for an instrument rating must pass a practical test on the procedures and maneuvers listed in paragraph (c) of this section. The test is given in three phases, an oral operational test, an instrument flying test, and a radio navigation and approach procedures test. The applicant must perform the flight maneuvers solely by reference to instruments.

(b) Any significant error of a dangerous nature is disqualifying. Any error that makes it necessary for the examiner to take over the controls to avoid violating the aircraft's operating limitations, a loss of control, or a collision with the ground is disqualifying.

(c) The applicant must perform the following procedures and maneuvers competently:

(1) *Phase I—oral operational test:*

(i) Instrument flight planning.

(ii) Preparing and filing an instrument flight plan.

(iii) Aircraft performance, range, and fuel requirements.

(iv) Required instruments and equipment, and their proper use.

(2) *Phase II—instrument flying test:*

(i) Straight and level flight, using needle, ball, and airspeed only.

(ii) Turns, climbs, and descents, using needle, ball, and airspeed only.

(iii) Stalls and maneuvering at approach speeds, except that stalls are not required for helicopters.

(iv) Steep turns.

(v) Recovery from unusual attitudes, using needle, ball, and airspeed only.

(vi) Engine-out procedures, if test is in multiengine aircraft.

(3) *Phase III—radio navigation and approach procedures test:*

(i) Radio navigation, including orientation using LF, OMNI range, or ADF.

(ii) Using radio for voice communication.

(iii) Standard instrument approach to authorized IFR weather minimums (not more than 500 feet and 1 mile), including holding procedures.

(iv) Missed approach procedures.

(v) Emergencies, such as radio or instrument malfunctions.

(vi) Compliance with air traffic control instructions and procedures.

§ 61.37A Category II pilot authorization: practical test.

[(a) *Test required.* The practical test must be passed by—

[(1) An applicant for issue or renewal of an authorization.

[(2) An applicant for the addition of another type airplane to his authorization.

[(b) *Eligibility.* To be eligible for the practical test an applicant under paragraph (a) must meet the requirements of § 61.36 and, if he has not passed a practical test since the beginning of the twelfth calendar month before the test, must meet the following recent experience requirements:

[(1) The requirements of § 61.47(d) or (e) appropriate to the pilot certificate held by the applicant.

[(2) At least six ILS approaches since the beginning of the sixth calendar month before the test. These approaches must be

under actual or simulated instrument flight conditions down to the minimum landing altitude for the ILS approach in the type airplane in which the flight test is to be conducted. However, the approaches need not be conducted down to the decision heights authorized for Category II operations. At least three of these approaches must have been conducted manually, without the use of an approach coupler.

[(The flight time acquired in meeting the requirements of subparagraph (2) of this paragraph may be used to meet the requirements of subparagraph (1) of this paragraph.

[(c) *Practical test.* The practical test consists of two phases:

[(1) *Phase I—oral operational test.*

[(The applicant must demonstrate his knowledge of the following:

[(i) Required landing distance.

[(ii) Recognition of the decision height.

[(iii) Missed approach procedures and techniques utilizing computed or fixed attitude guidance displays.

[(iv) RVR, its use and limitations.

[(v) Use of visual clues, their availability or limitations, and altitude at which they are normally discernible at reduced RVR readings.

[(vi) Procedures and techniques related to transition from nonvisual to visual flight during a final approach under reduced RVR.

[(vii) Effects of vertical and horizontal wind shear.

[(viii) Characteristics and limitations of the ILS and runway lighting systems.

[(ix) Characteristics and limitations of the flight director system, auto approach coupler (including split axis type if equipped), auto throttle system (if equipped), and other required Category II equipment.

[(x) Assigned duties of the second in command during Category II approaches.

[(xi) Instrument and equipment failure warning systems.

[(2) *Phase II—flight test.*

[(The flight test must be taken in an airplane that meets the requirements of Part 91 of this chapter for Category II operations. The test consists of at least two

ILS approaches to 100 feet including at least one landing and one missed approach. All approaches must be made with the approved flight control guidance system except that, if an approved automatic approach coupler is installed, at least one approach must be made manually. In the case of a multiengine airplane that has performance capability to execute a missed approach with an engine out, the missed approach must be executed with one engine set in idle or zero thrust position before reaching the middle marker. The required flight maneuvers must be performed solely by reference to instruments and in coordination with a second in command who holds a class rating and, in the case of a large airplane or a small turbojet airplane, a type rating for that airplane.

§ 61.38 Glider towing: experience and instruction requirements.

No person may act as pilot in command of an aircraft towing a glider unless he meets the following requirements:

(a) He holds a current pilot certificate (other than a student pilot certificate) issued under this Part.

(b) He has—

(1) An endorsement in his pilot logbook from a person authorized to give flight instruction in gliders stating that, on the ground or in a glider, he has been given instruction in, and found to be familiar with, the techniques and procedures essential to the safe towing of gliders, including airspeed limitations, emergency procedures, signals used, and maximum angles of bank; and

(2) Made and entered in his pilot logbook one of the following series of flights:

(i) At least three flights as sole manipulator of the controls of an aircraft towing a glider, while accompanied by a pilot who has made and logged at least 10 flights as pilot in command of an aircraft towing a glider (each flight pursuant to a certificate of waiver or after he has otherwise qualified under this paragraph); or

(ii) At least three flights as sole manipulator of the controls of an aircraft,

simulating glider towing flight procedures, while accompanied by a pilot with the qualifications required of an accompanying pilot in subdivision (i) of this subparagraph, and in addition at least three flights as pilot or observer in a glider being towed by an aircraft.

However, any person who, before May 17, 1967, made, and entered in his pilot logbook, 10 or more flights as pilot in command of an aircraft towing a glider in accordance with a certificate of waiver need not comply with subparagraphs (1) and (2) of this paragraph.

(c) If he holds a private pilot certificate he must have had, and entered in his pilot logbook at least—

(1) 100 hours of pilot flight time in powered aircraft; or

(2) 200 total hours of pilot flight time in powered or other aircraft.

§ 61.39 Pilot logbooks: except airline transport pilots.

(a) *General.* The flight time used to meet the experience requirements for any pilot certificate or rating, or to meet the recent flight experience requirements of § 61.47, must be shown by a reliable record. The logging of other flight time is not required. The instructor of a lighter-than-air pilot shall certify each entry on flight instruction that he gave to that pilot. Each pilot who keeps a logbook under this section shall enter into it the following information as to each flight:

(1) *General.*

(i) Date;

(ii) Duration;

(iii) Points of departure and arrival; and

(iv) Identification mark of the aircraft.

(2) *Type of piloting time.*

(i) Pilot in command or solo;

(ii) Second in command;

(iii) Synthetic trainer; or

[(iv) Flight instruction from an appropriately rated flight instructor, in the case of airplanes, gliders, or rotorcraft; from an appropriately rated commercial pilot, in the case of airships; or from an appropriately rated private (airship class) or

commercial pilot, in the case of free balloons.]

(3) *Conditions of flight.*

- (i) Day or night;
- (ii) Actual instrument flight; or
- (iii) Simulated instrument flight.

(4) If, in the case of a lighter-than-air pilot, the flight resulted in serious damage to the aircraft, an entry to that effect.

(b) *Solo flight time.* A student, private, or commercial pilot may log as solo only that flight time during which he is the only occupant of the aircraft.

(c) *Pilot-in-command time.* A private or commercial pilot may log as pilot in command only the flight time during which he is the only manipulator of the controls of an aircraft for which he is rated or the flight time during which he is the only occupant of the aircraft. A flight instructor may log as pilot-in-command time all flight time during which he is serving as a flight instructor.

(d) *Second-in-command time.* A private or commercial pilot may log as second in command that flight time during which he is performing the duties of a second in command. He may be credited with not more than 50 percent of that kind of flight time toward the total flight time required for a higher certificate or rating. However, a private pilot may not be credited with more than 50 hours of flight time under this paragraph.

(e) *Instrument time.* The pilot manipulating the controls of an aircraft during the time it is flown solely by reference to instruments under instrument weather conditions or simulated instrument flight conditions may log only that time as instrument flight time.

(f) *Inspection of pilot logbooks.* A pilot who keeps a logbook under this section shall present it for inspection upon the request of, and after reasonable notice by, the Administrator, an authorized representative of the National Transportation Safety Board, or any State or local law enforcement officer.

(g) *Inapplicability.* This section does not apply to airline transport pilots.

§ 61.41 Pilot logbooks: airline transport pilots.

(a) Each airline transport pilot shall keep an accurate and legible record, in ink or indel-

ible pencil, of his flying time in a bound logbook that is arranged for easy reference. Such a pilot must certify his solo flying time entries and the entries on instruction must be certified to by his instructor.

(b) Each person who is required to keep a logbook under this section shall enter into it the following information as to each flight:

- (1) The date.
- (2) The category, class, and type of the aircraft he flew.
- (3) The aircraft certificate number.
- (4) The type of piloting time—pilot in command, flight instruction (from an appropriately rated flight instructor or an airline transport pilot), on instruments, or night flying time.
- (5) The duration.
- (6) The points of arrival and departure.
- (7) If the flight resulted in serious damage to the aircraft, a statement to that effect.

The person giving the flight instruction must make complete entries in the logbook of his student showing the nature of each maneuver in which instruction was given and the time spent thereon. The instructor must attest each entry with his initials, pilot certificate number, and pertinent rating. The pilot shall present the logbook for inspection upon the demand and reasonable notice of the Administrator or an authorized representative of the National Transportation Safety Board, or of any State or local law enforcement officer.

(c) An airline transport pilot may log all flight time during which he acts as pilot in command or second in command.

(d) An airline transport pilot may log instrument flight time as such only when he flies the aircraft solely by reference to instruments under instrument weather conditions or simulated instrument flight conditions. He may not log over-the-top flying as instrument flight time.

(e) Each airline transport pilot shall furnish to the authorized airline medical examiner at the time of each physical examination a report of the amount and type of his aeronautical experience and any other information the Administrator may require covering the period since the last report of that pilot.

§ 61.43 Medical certificates: duration.

(a) A first-class medical certificate expires at the end of the last day of—

(1) The sixth month after the month in which it is issued, for operations requiring an airline transport pilot certificate;

(2) The 12th month after the month in which it is issued, for operations requiring only a commercial pilot certificate; and

(3) The 24th month after the month in which it is issued, for operations requiring only a private or student pilot certificate or a free balloon class rating.

(b) A second-class medical certificate expires at the end of the last day of—

(1) The 12th month after the month in which it is issued, for operations requiring a commercial pilot certificate; and

(2) The 24th month after the month in which it is issued, for operations requiring only a private or student pilot certificate or a free balloon class rating.

(c) A third-class medical certificate expires at the end of the last day of the 24th month after the month in which it is issued for operations requiring a private or student pilot certificate or a free balloon class rating.

§ 61.45 Operations during physical deficiency.

No person may act as pilot in command, or in any other capacity as a required pilot flight crewmember while he has a known physical deficiency, or increase of known physical deficiency, that would make him unable to meet the physical requirements for his current medical certificate.

§ 61.47 Recent flight experience.

(a) *General.* No person may act as pilot in command of an aircraft carrying passengers unless, within the preceding 90 days, he has made at least five takeoffs and five landings to a full stop in an aircraft of the same category, class, and type. This section does not apply to operations requiring an airline transport pilot certificate, or to operations conducted under Part 135.

(b) *Night experience.* No person may act as pilot in command of an aircraft carrying passengers during the period beginning 1 hour after sunset and ending 1 hour before sunrise (as published in the American Air Almanac) unless, within the preceding 90 days, he has made at least five takeoffs and five landings to

a full stop during that period of the day. This paragraph does not apply to operations requiring an airline transport pilot certificate.

(c) *Airline transport and Part 135 operations.* Neither an airline transport pilot nor a pilot in operations under Part 135 may pilot an aircraft in operations for which an airline transport pilot certificate is required or in operations under Part 135, if it carries any person other than members of its crew, certificated airmen on board in furtherance of their duties, or certificated instructors rated for that aircraft, unless, within the preceding 90 days, he has made at least three takeoffs, and three landings to a full stop, in an aircraft of the same category, class, and type.

(d) *Instrument.* A pilot may not act as pilot in command of an aircraft under IFR or in weather conditions less than prescribed VFR minimums unless, within the preceding 6 calendar months, he has had at least 6 hours of instrument time under actual or simulated instrument conditions. Not more than 3 hours in a synthetic instrument trainer acceptable to the Administrator may be included in the 6 hours of required instrument time. In the case of an aircraft other than a helicopter, at least 3 hours of that instrument time must have been accomplished in flight in an aircraft other than a helicopter. In the case of a helicopter, at least 3 hours of that instrument time must have been accomplished in flight in a helicopter. This paragraph does not apply to operations requiring an airline transport pilot certificate.

(e) *Instrument: airline transport.* An airline transport pilot may not act as pilot in command of an aircraft other than a helicopter under instrument flight conditions in operations for which an airline transport pilot certificate is required unless he has had at least 2 hours of instrument flight time under instrument weather conditions or simulated instrument weather conditions in an aircraft other than a helicopter within the preceding 6 months, or until he has had at least 2 hours of flight time under those conditions, accompanied by a pilot with at least a private pilot certificate who holds an appropriate category, class, and type rating (if applicable) for the aircraft concerned and an instrument rating. He may not act as pilot in command of a

helicopter under instrument flight conditions in operations for which an airline transport pilot certificate is required unless he has had at least 6 hours of instrument flight time under instrument weather conditions or simulated instrument weather conditions in a helicopter within the preceding 6 months, or until he has had at least 6 hours of flight time under those conditions accompanied by a pilot with at least a private pilot certificate who holds an appropriate category, class, and type rating (if applicable) for the helicopter concerned and a helicopter instrument rating.

(f) *Glider aero-tow flights.* No person may act as pilot in command of a glider carrying passengers in aero-tow flight unless, within the preceding 12 months, he has made at least six aero-tow flights totaling at least 1 hour, during which he met the requirements of paragraph (a) of this section.

(g) *Credit given for flight tests or checks.* A pilot who successfully passes a flight test required for a category, class, type, or instrument rating is considered to meet the recency of experience requirement of the paragraph of this section that is appropriate to the flight test.

[(h) *Instrument: Category II operation.* No person may act as pilot in command of a civil aircraft during a Category II operation unless, since the beginning of the sixth preceding calendar month, he has made at least three ILS approaches with the make and basic model flight control guidance system used in that operation. The approaches must have been made under actual or simulated instrument flight conditions to the minimum landing altitude for the ILS approach. However, the approaches need not be conducted down to the decision heights authorized for Category II operations.]

§ 61.48 Applications, certificates, logbooks, reports, and records: falsification, reproduction, or alteration.

(a) No person may make or cause to be made—

(1) Any fraudulent or intentionally false statement on any application for a certificate or rating under this Part;

(2) Any fraudulent or intentionally false entry in any logbook, record, or report that is required to be kept, made, or used, to show compliance with any requirement for any certificate or rating under this Part;

(3) Any reproduction, for fraudulent purpose, of any certificate or rating under this Part; or

(4) Any alteration of any certificate or rating under this Part.

(b) The commission by any person of an act prohibited under paragraph (a) of this section is a basis for suspending or revoking any airman or ground instructor certificate or rating held by that person.

§ 61.49 [Deleted].

§ 61.51 Change of address.

Within 30 days after any change in his permanent mailing address, the holder of a pilot or instructor certificate shall notify the FAA Airman Certification Branch, Oklahoma City, Okla., in writing, of his new address.

Subpart B—Student Pilots

§ 61.61 Eligibility requirements: general.

(a) To be eligible for a student pilot certificate, a person must—

(1) Be at least 14 years of age for a certificate authorizing him to pilot a glider, or at least 16 years of age for a certificate authorizing him to pilot any other aircraft;

(2) Be able to read, speak, and understand the English language, or have such operating limitations on his student pilot certificate as are necessary for the safe operation of aircraft, to be removed when he shows that he can read, speak, and understand the English language; and

(3) Hold at least a third-class medical certificate issued under Part 67 of this chapter within the preceding 24 months, or, in the case of glider operations, certify that he has no known physical defect that makes him unable to pilot a glider.

[(b) Student pilot certificates are issued by the following:

[(1) FAA inspectors.

[(2) Designated pilot examiners.

[(3) Aviation medical examiners, when requested by persons being examined by them for medical certificates under Part 67 of this chapter.]

[However, an aviation medical examiner may not issue a student pilot certificate if operating limitations are required under subparagraph (a) (2) of this section.]

[(c) [Deleted].]

§ 61.63 Requirements for solo flight.

(a) A student pilot may not operate an aircraft in solo flight until—

(1) He is familiar with the general and visual flight rules of §§ 91.1 through 91.9 and Subpart B of Part 91 of this chapter;

(2) He has had—

(i) In the case of an airplane category, flight instruction from a holder of a flight instructor certificate with an airplane rating in preparatory and flight procedures such as preflight inspection, starting, warming up, and operating and stopping the engine; in taxiing, takeoff, landing, and parking; in traffic pattern procedures; in level flight, turns, climbs, and glides; and in stalls and emergency landings;

(ii) In the case of a rotorcraft category, flight instruction (from an appropriately rated flight instructor) in preparatory and flight procedures such as preflight inspection, starting, warming up, and operating and stopping the engine; taxiing, takeoff, hovering (helicopter class only), landing, and parking; in traffic pattern procedures; and in emergency procedures including engine failure; or

(iii) In the case of a glider category, flight instruction (from an appropriately rated flight instructor) in takeoff, landing, glide, and gliding turns; and in recovery from stalls entered into from all normally anticipated attitudes; and

(3) An appropriately rated flight instructor finds that the student has complied

with this section and is otherwise able to make solo flights, and had endorsed his student certificate to that effect.】

(b) In the case of a single-place gyroplane, the holder of a student pilot certificate meets the requirements of paragraphs (a)(2)(ii) and (a)(3) of this section if—

(1) He receives instruction in the ground operating procedures specified in paragraph (a)(2)(ii) from the holder of a flight instructor certificate with either an airplane or rotorcraft category rating on that certificate; and

(2) That flight instructor—

(i) Certifies in the student pilot's logbook that he has observed him competently make at least three landings and takeoffs to a full stop in a gyroplane or gyroglider towed by a line attached to a vehicle on the surface; and

(ii) Determines that the student has complied with this section, is otherwise able to make solo flights, and endorses the student pilot's certificate for solo flight in that make and model of aircraft.

(c) This section does not apply to student lighter-than-air pilots.

§ 61.65 Airplane operations: flight area limitations.

A student pilot may not operate an airplane in solo flight outside of a local area designated by his flight instructor until—

(a) He is familiar with flight-planning elements such as plotting courses, estimating time en route and fuel required, and obtaining and evaluating weather reports;

(b) He has received flight instruction (from a holder of a flight instructor certificate with an airplane rating) in—

(1) Crosswind and simulated soft field takeoffs and landings;

(2) Climbing and gliding turns at minimum safe speeds;

(3) Cross-country navigation by reference to aeronautical charts;

(4) Safe operating procedures in simulated emergencies such as engine failure, loss of flying speed, marginal visibility, deteri-

orating weather, getting lost, and similar critical situations;

(5) Conforming with air traffic control instructions by radio and lights;

【(6) The proper use of two-way radio communications and VFR navigational procedures and techniques;】

(7) Level flight, turns, climbs, and glides by referring solely to flight instruments; and

【(8) The use of the magnetic compass; and】

(c) His student pilot certificate is endorsed by an appropriately rated flight instructor who finds that the student has complied with this section and is otherwise able to make solo cross-country flights.

If ground electronic equipment and navigation aids are not available within 100 miles of the base of operations, a synthetic trainer may be used for training in air traffic procedures, phraseology, and radio navigation.

The instrument flight instruction required by paragraph (b)(7) of this section shall be given in an airplane equipped with at least a sensitive altimeter, turn and bank indicator, and a means of simulating instrument flight.

§ 61.67 Rotorcraft operations: flight area limitations.

A student pilot may not operate a rotorcraft in solo flight outside of a local area designated by his flight instructor until—

(a) He is familiar with flight-planning elements such as plotting courses, estimating time en route and fuel required, and obtaining and evaluating weather reports;

(b) He has received flight instruction (from an appropriately rated flight instructor) in—

(1) Pilotage by reference to aeronautical charts;

【(2) Conforming to air traffic control instructions furnished by radio or lights, as appropriate;】

(3) Safe operating practice in simulated emergencies that might occur due to engine failure, deteriorating weather, getting lost, and similar situations; and

【(4) The use of the magnetic compass; and】

(c) His student pilot certificate is endorsed by an appropriately rated flight instructor who

finds that the student has complied with this section and is otherwise able to make solo cross-country flights.

§ 61.69 Glider operations: flight area limitations.

A student pilot may not operate a glider in solo flight outside of a local area designated by his flight instructor until—

(a) He is familiar with obtaining and evaluating weather reports;

(b) He has received flight instruction (from a certificated flight instructor with an appropriate rating on his flight instructor certificate) in cross-country navigation by reference to aeronautical charts and the magnetic compass; and

(c) His student pilot certificate is endorsed by an appropriately rated flight instructor who finds that the student has complied with this section and is otherwise able to make solo cross-country flights.

§ 61.71 Lighter-than-air operations: flight limitations.

(a) A student pilot (lighter-than-air) may not pilot an airship in solo flight until—

(1) He is familiar with, and passes a written test on as much of Part 91 of this chapter as relates to VFR flying, as certified to on his pilot certificate by his instructor;

(2) He has had 6 instruction flights, totaling at least 6 hours, in free balloons and has logged at least 1 hour of solo flight in a free balloon, as certified to on his certificate by his instructor; and

(3) He has had at least 35 hours of flight instruction in an airship, including level flight, right and left turns, landings and takeoffs, and is able to make a flight as pilot in command, as certified to on his certificate by his instructor.

[Subparagraph (2) of this paragraph does not apply to a student pilot who holds a free balloon class rating, unless that rating bears a limitation named in § 61.130(d).]

(b) A student pilot (lighter-than-air) may not pilot a lighter-than-air aircraft carrying any person other than a commercial lighter-than-air pilot, a crewmember, or another student lighter-than-air pilot whose presence in the aircraft is authorized by the instructor under whose direction the flight is being made.

[(c) A student pilot (lighter-than-air) may not operate a free balloon as pilot in command until his instructor certifies on his certificate that he is familiar with the general and visual flight rules of §§ 91.1 through 91.9 (except § 91.6) and Subpart B of Part 91 of this chapter.

[(d) A student pilot (lighter-than-air) may not operate a free balloon, other than a hot air balloon without an airborne heater, as pilot in command until his instructor certifies on his certificate that he has had at least 6 instruction flights, totalling at least 6 hours, in free balloons.]

§ 61.73 General limitations.

(a) Except as provided in paragraph (b) of this section, a student pilot may not act as pilot in command of an aircraft—

(1) That is carrying a passenger;

(2) That is on an international flight;

(3) For compensation or hire;

(4) In furtherance of a business; or

(5) Other than the make and model endorsed on his certificate by his certificated flight instructor.

(b) Notwithstanding paragraph (a)(2) of this section, a student pilot may make international flights for the purpose of solo cross-country training from the Haines, Gustavus, or Juneau Airports, Alaska, to White Horse, Yukon Territory, over the Province of British Columbia, and return.

(c) A student pilot who has not acted as pilot in command of a powered aircraft within the preceding 90 days, may not pilot such an aircraft in solo flight until he has passed a flight check given by a certificated flight instructor who so endorses his student pilot logbook.

(d) A student pilot may not operate an airplane or rotorcraft in solo flight unless within the preceding 90 days—

(1) He has received flight instruction in that category of aircraft from a certificated flight instructor with an appropriate rating on his flight instructor certificate;

(2) He has demonstrated to that flight instructor that he is competent to solo that category of aircraft; and

(3) That flight instructor has endorsed in the student pilot's logbook that he has

given that flight instruction and found the student competent for solo flight.

However, this paragraph does not apply if the student pilot meets the requirements of paragraph (c) of this section, has acquired the aeronautical experience required for a private pilot certificate, and obtains an endorsement by a flight instructor that the student pilot is considered competent to make solo flights without mandatory periodic flight checks.

(e) A student pilot may not operate an airplane or rotorcraft in solo cross-country flight until a certificated flight instructor with an appropriate rating on his flight instructor certificate has reviewed the student's preflight preparation and planning, determined that the student is competent to make the flight, and has so endorsed the student's pilot logbook. The student must carry that logbook on each solo cross-country flight. However, a student pilot may perform repeated solo cross-country flights over a specified course of not more than 50 miles in length, without an endorsement for each flight, if a certificated flight instructor with an appropriate rating on his flight instructor certificate has—

(1) Given him flight instruction over the course in both directions, and in takeoffs and landings at both landing areas involved; and

(2) Found that the student is competent to make flights over the course without an authorization for each flight and has so endorsed the student's pilot logbook.

However, this paragraph does not apply if the student pilot has acquired the aeronautical experience required for a private pilot certificate and obtains an endorsement by a certificated flight instructor that the student pilot is considered competent to exercise solo cross-country privileges without a flight instructor's supervision.

Subpart C—Private Pilots

§ 61.81 Eligibility requirements: general.

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

(a) Be at least 16 years of age for a glider rating, at least 18 years of age for a lighter-than-air rating of the airship class, and at least 17 years of age for any other rating;

(b) Be able to read, speak, and understand the English language, or have such operating

limitations placed on his pilot certificate as are necessary for the safe operation of aircraft, to be removed when he shows that he can read, speak, and understand the English language;

(c) Hold at least a third-class medical certificate issued under Part 67 of this chapter within the preceding 24 months, or, in the case of a glider rating, certify that he has no known physical defect that makes him unable to pilot a glider; and

(d) Comply with the sections of this Part that apply to the rating he seeks.

§ 61.83 Aeronautical knowledge.

An applicant for a private pilot certificate must pass a written test on—

(a) The regulations of this chapter governing private pilot privileges and limitations, the general operating and air traffic rules, and the rules of the National Transportation Safety Board governing accident reporting;

(b) Practical aspects of cross-country flying including, for an airplane or rotorcraft rating, flight planning, map reading, pilotage, the use of radio aids to VFR navigation, radio communication procedures, and emergency procedures;

(c) Recognizing dangerous weather conditions and evaluating weather reports; and

(d) General safety practices in operating airplanes, rotorcraft, or gliders, as the case may be.

§ 61.85 Airplane rating: aeronautical experience.

(a) An applicant for a private pilot certificate (airplane) must have had—

(1) A total of at least 40 hours of flight instruction (from an appropriately rated flight instructor) and solo flight time;

(2) At least 20 hours of solo flight time of which at least 15 were in an airplane;

[(3) Except as provided in paragraph (b) of this section, at least 10 hours of solo cross-country flight time, during which each flight included a landing at a place more than 25 miles from the place of departure, and during which at least one flight included a landing at a place more than 100 miles from the place of departure; and]

(4) At least 3 hours of flight instruction,

from a holder of a flight instructor certificate with an airplane rating, after his first solo cross-country flight, including a review of procedures and maneuvers previously learned, additional instruction in procedures and maneuvers required for the private pilot flight test, and flight instruction in primary flight maneuvers in controlling the airplane solely by reference to flight instruments.

The instrument instruction required by subparagraph (4) of this paragraph shall be given in an airplane equipped with at least a sensitive altimeter, turn and bank indicator, and a means of simulating instrument flight.

[(b) An applicant who shows that he is located on an island from which the required flights cannot be accomplished without flying over water more than 10 miles from the nearest shoreline need not comply with paragraph (a) (3) of this section. However, if other airports that permit civil operations are available to which a flight may be made without flying over water more than 10 miles from the nearest shoreline, he must show that he has completed two round trip solo flights between those two airports that are farthest apart, including a landing at each airport on both flights.

[(c) The pilot certificate issued to a person under paragraph (b) of this section must contain the following limitation:

[Passenger carrying prohibited on flights more than 10 miles from (appropriate island).

[The above limitation may be amended to include another island if the applicant complies with paragraph (b) of this section with respect to that island.

[(d) If an applicant for a private pilot certificate under paragraph (b) of this section does not have at least 3 hours of solo cross-country flight time including a round trip flight to an airport at least 50 nautical miles from the place of departure with at least two full stop landings at different points along the route, his pilot certificate will be endorsed as follows:

[Holder does not meet the cross-country flight requirements of ICAO.

[(e) The holder of a private pilot certifi-

cate with the limitation or endorsement prescribed in paragraph (c) or (d) of this section, or in paragraph (b) of this section before April 11, 1968, is entitled to removal thereof as follows:

[(1) Removal of the limitation prescribed in paragraph (c), or in paragraph (b) before April 11, 1968, if he passes the test prescribed by § 61.87(b) (3) and presents satisfactory evidence to an FAA inspector that he has complied with the solo cross-country flight requirements of paragraph (a) (3) of this section.

[(2) Removal of the endorsement prescribed in paragraph (d) if he presents satisfactory evidence to an FAA inspector that he has met the ICAO cross-country flight requirements stated in paragraph (d).]

§ 61.87 Airplane rating: aeronautical skill.

(a) *General.* An applicant for a private pilot certificate (airplane) must pass a practical test on the procedures and maneuvers listed in paragraph (b) of this section. The test is given in three phases, an oral operation test, a basic piloting technique test, and a cross-country test.

(b) *Procedures and maneuvers.* The applicant must perform the following procedures and maneuvers competently:

(1) *Phase I—oral operational test:*

(i) Airplane registration, airworthiness, and equipment documents.

(ii) Airplane logbooks and airworthiness inspection reports.

(iii) Airplane performance, range, and operation.

(iv) Airplane loading, including fuel, oil, and baggage capacities.

(v) Airplane line check.

(vi) Use of radio for voice communication.

(2) *Phase II—basic piloting technique test.*

(i) Preflight operations.

(ii) Taxiing or sailing and docking.

(iii) Normal and crosswind takeoffs and landings.

(iv) Climbs, level flight, and descents at normal speeds and at minimum controllable speeds.

(v) Stalls from all normally antici-

pated flight attitudes, with and without power.

(vi) 720° steep turns about a point.

(vii) Wheel landings in tailwheel-type airplanes, and full stall landings in tri-cycle-type airplanes.

(viii) Short field takeoff and power approach and landing.

(ix) Soft field takeoff and landing.

(x) Slips and a slip to a landing (if a three control airplane is used).

(xi) Emergency operation of airplane equipment.

(xii) Engine-out emergencies, if a multi-engine airplane is used, including—

(a) Maneuvering with one engine out (feathered if possible);

(b) Engine-out minimum control speed demonstration;

(c) Use of engine-out best rate-of-climb speed;

(d) Effect on engine-out performance of failing to feather, extension of gear and flaps, and combinations of them; and

(e) Approach and landing with an engine set for zero thrust, or the drag of a feathered propeller, as applicable.

(8) *Phase III—cross-country test:*

(i) Cross-country flight planning.

(ii) Cross-country flying.

(iii) Cross-country emergencies (lost, weather, over-heating engine, power failure, etc.).

(iv) Use of radio aids to VFR navigation.

(c) *Instrument flight.* In addition, during Phase III of the practical test, the applicant must demonstrate, in simulated instrument flight, his ability to safely control an aircraft manually solely by reference to instruments, including the following:

(1) Recovery from the start of a power-on spiral.

(2) Recovery from the approach to a climbing stall.

(3) Normal turns of at least 180° left and right to within $\pm 20^\circ$ of a preselected heading.

(4) Shallow climbing turns to a predetermined altitude.

(5) Shallow descending turns at reduced power to a predetermined altitude.

(6) Straight and level flight.

§ 61.89 Rotorcraft rating: aeronautical experience.

An applicant for a private pilot certificate (rotorcraft) must have had at least—

(a) A total of 40 hours of flight instruction (from an appropriately rated flight instructor) and solo flight time;

(b) 15 hours of solo flight time in rotorcraft; and

(c) 3 hours of solo cross-country flying, including a landing at an airport that is more than 25 miles from the place of departure.

§ 61.91 Rotorcraft rating: aeronautical skill.

(a) An applicant for a private pilot certificate (rotorcraft) must pass the applicable practical test on the procedures and maneuvers listed in paragraph (b) or (c) of this section. The test for a helicopter class rating is given in two phases, basic techniques, and precision maneuvers. The test for a gyroplane class rating is given in three phases; oral operational test, basic techniques, and cross-country.

(b) The applicant for a helicopter class rating must perform the following procedures and maneuvers competently:

(1) *Phase I—basic techniques:*

(i) Preflight check and oral equipment test.

(ii) Preflight operations.

(iii) Taxiing (if helicopter equipped to taxi on the surface).

(iv) Normal and crosswind takeoffs and landings.

(v) High altitude takeoffs and roll-on landings.

(vi) Climbs and descents.

(vii) Emergencies, including autorotative approaches.

(2) *Phase II—precision maneuvers:*

(i) Hovering—upwind, downwind, and crosswind.

(ii) Hovering turns—180° and 360°, right and left.

(iii) Turns with medium banks.

(iv) S turns.

- (v) Pattern flying with constant heading.
- (vi) Rapid flying decelerations (quick stops).
- (c) The applicant for a gyroplane class rating must perform the following procedures and maneuvers competently:

(1) *Phase I—oral operational test:*

- (i) Gyroplane registration, airworthiness, and equipment documents.
- (ii) Gyroplane logbooks and airworthiness inspection records.
- (iii) Gyroplane performance, range, and operation (from Gyroplane Flight Manual).
- (iv) Gyroplane loading, including fuel, oil, and baggage capacities.
- (v) Gyroplane line check.
- (vi) Use of radio for voice communication (may be simulated when necessary).

(2) *Phase II—basic techniques:*

- (i) Preflight operations.
- (ii) Taxiing or sailing and docking.
- (iii) Normal and crosswind takeoffs and landings.
- (iv) Climbs, level flight, and descents at normal speeds and at minimum level flight speeds.
- (v) Entry and recovery from high rates of descent with and without power (recovery to be completed not lower than 300 feet above the surface).
- (vi) 720° steep turns about a point (bank not more than 45° at steepest point).
- (vii) Roll-on landing and full flare landing.
- (viii) Short field takeoff and power approach and landing.
- (ix) Soft field takeoff and landing (jump takeoff, if the gyroplane has this capability).
- (x) Emergency operation of gyroplane equipment.

(3) *Phase III—cross-country flight:*

- (i) Cross-country flight planning.
- (ii) Cross-country flying.
- (iii) Cross-country emergencies (lost, weather, overheating engine, power failure, etc.).
- (iv) Use of radio aids to VFR navigation.

§ 61.93 Glider rating: aeronautical experience.

An applicant for a private pilot certificate (glider) must have had at least—

(a) 1 hour of flight instruction in a powered airplane or a glider in recovery from stalls entered into from all normally anticipated flight attitudes; and

(b) At least one of the following:

- (1) 100 glider flights, including 25 flights during which a 360° turn was made;
- (2) 10 hours of glider flight time, including 50 glider flights, or 30 glider flights in which aero-tows were used; or
- (3) 3 hours of instruction from an appropriately rated flight instructor in light airplanes directed toward glider training and seven hours of glider flight time including 50 gliding flights.

If the instruction required by paragraph (a) of this section was received in a powered airplane, it must have been given by a flight instructor with an airplane instructor rating. If received in a glider, it must have been given by an appropriately rated flight instructor or a commercial glider pilot.

§ 61.95 Glider rating: aeronautical skill.

(a) *General.* An applicant for a private pilot certificate (glider) must pass a practical test on the procedures and maneuvers listed in paragraph (b) of this section. The test is in two phases, basic techniques and special maneuvers.

(b) *Procedures and maneuvers.* The applicant must perform the following procedures and maneuvers competently:

(1) *Phase I—basic techniques:*

- (i) Preflight check and oral equipment test.
- (ii) Preflight operations.
- (iii) Auto, pulley, or winch tow; or airplane tow.
- (iv) 180° approaches to landings in the direction of the prescribed traffic pattern flow, landing within 200 feet beyond a designated mark.

(2) *Phase II—stalls and slow flight in a glider.*

§ 61.97 Lighter-than-air rating (airship class): aeronautical experience.

An applicant for a private pilot certificate (lighter-than-air, airship class) must have at least 50 hours of flight time at the controls of an airship, including at least 5 hours as pilot in command, at least 5 hours of cross-country flight, and at least 5 hours of flight time at the controls of an airship within the 60 days before the date he applies.

§ 61.99 Lighter-than-air rating (airship class): aeronautical skill.

An applicant for a private pilot certificate (lighter-than-air, airship class) must—

(a) Exercise smoothness in required flight maneuvers and exercise reasonable judgment in them by complying with §§ 91.1 through 91.9 and Subpart B of Part 91 of this chapter, avoiding critical situations that require corrective action by the person giving the test to maintain safe operations, and observing accepted good operating practices for flight conditions encountered; and

(b) Pass a flight test on the following maneuvers:

- (1) Ground handling and mooring.
- (2) Preflight checks.
- (3) Runups.
- (4) Takeoffs.
- (5) Ascents.
- (6) Turns (right and left) and figure eights.
- (7) Straight and level flight.
- (8) Descents.
- (9) Landings (positive static balance).
- (10) Landings (negative static balance).

§ 61.101 General privileges and limitations.

(a) *Compensation or hire.* Except as provided in subparagraphs (1) through (5) of this paragraph, a private pilot may not act as pilot in command of an aircraft that is carrying passengers or property for compensation or hire; nor may he, for compensation or hire, act as pilot in command of an aircraft.

(1) A private pilot may, for compensation or hire, act as pilot in command of an aircraft in connection with any business or employment if the flight is only incidental to that business or employment and the aircraft does not carry passengers or property for compensation or hire.

(2) A private pilot may share the operating expenses of a flight with his passengers.

(3) A private pilot who is an aircraft salesman and who has at least 200 hours of logged flight time may demonstrate an aircraft in flight to a prospective buyer.

(4) A private pilot may act as pilot in command of an aircraft used in a passenger-carrying airlift sponsored by a charitable organization, and for which the passengers make a donation to the organization, if—

(i) The sponsor of the airlift notifies the FAA General Aviation District Office having jurisdiction over the area concerned, at least 7 days before the flight, and furnishes any essential information that the office requests;

(ii) The flight is conducted from a public airport adequate for the aircraft used, or from another airport that has been approved for the operation by an FAA inspector;

(iii) He has logged at least 200 hours of flight time;

(iv) No acrobatic or formation flights are conducted;

(v) Each aircraft used is certificated in the standard category and complies with the 100-hour inspection requirement of § 91.169 of this chapter; and

(vi) The flight is made under VFR during the day.

For the purpose of this subparagraph (4), a "charitable organization" means an organization listed in Publication No. 78 of the Department of the Treasury called the "Cumulative List, Organizations Described in section 170(c) of the Internal Revenue Code of 1954," as amended from time to time by published supplemental lists.

(5) A private pilot [(lighter-than-air, airship class)] may act as pilot in command of a free balloon that is carrying passengers or property for compensation or hire and he may, for compensation or hire, act as pilot in command of a free balloon.

(b) *Lighter-than-air.* A private pilot [(lighter-than-air, airship class)] may give flight instruction in a free balloon but he may not give flight or instrument instruction in an airship.