

Part 103

Title 14—AERONAUTICS AND SPACE

Chapter I—Federal Aviation Agency

[Special Civil Air Regulations SR 422A, SR 422B, SR 424C, SR 425C, SR 437, SR 442A, SR 444, SR 447]

[Reg. Docket No. 1580; Reg. Docket No. 1580, Amdt. 1-1]

AIR TRAFFIC AND GENERAL OPERATING RULES; DEFINITIONS AND ABBREVIATIONS

This amendment adds to Subchapter F—Air Traffic and General Operating Rules [New] of Chapter I of Title 14 of the Code of Federal Regulations Parts 91 [New], 93 [New], 95 [New], 97 [New], 99 [New], 101 [New], and 103 [New]. It also adds several definitions to, and deletes one definition from, Part 1 [New]. The amendment is a part of the program of the Federal Aviation Agency to recodify its regulatory material into a new series of regulations called the "Federal Aviation Regulations" to replace the present "Civil Air Regulations" and "Regulations of the Administrator".

During the life of the recodification project, Chapter I of Title 14 may contain more than one part bearing the same number. To differentiate between the two, the recodified parts, such as the ones in this subchapter, will be labeled "[New]". The label will of course be dropped at the completion of the project as all of the regulations will be new.

This action was published as a notice of proposed rule making in the FEDERAL REGISTER on February 1, 1963 (28 F.R. 1003), and as Draft Release 63-3.

Some of the comments received recommended specific substantive changes to the regulations. Although some of the recommendations might, upon further study, appear to be meritorious, they cannot be adopted as a part of the recodification program. The purpose

of the program is simply to streamline and clarify present regulatory language and to delete obsolete or redundant provisions. To attempt substantive changes in the recodification of these regulations (other than minor, relaxatory ones that are completely noncontroversial) would delay the project and would be contrary to the ground rules specified for it in the FEDERAL REGISTER on November 15, 1961 (26 F.R. 10698) and Draft Release 61-25. However, all comments of this nature will be preserved and considered in any later substantive revision of the affected parts.

As a result of other comments received, several changes have been made in Subchapter F.

Sections 91.33 and 91.35 have been added to include the instrument and equipment requirements for general aviation aircraft that were contained in Part 43. Section 91.33 incorporates the instrument and equipment requirements for standard category aircraft from former § 43.30 and the DME provisions from former § 43.33. Section 91.35 incorporates the flight recorder requirements from former § 43.32. These changes have been made in recognition of the greater user convenience that results from combining these rules with the general operation provisions of Part 91 [New].

A new § 91.37 has been included in Part 91 [New] to cover weight limitations for transport category aircraft. This section is based upon former §§ 43.11, and 43T.11 of SR 422A and SR 422B. These provisions were omitted from DR 63-3 as surplus, but comments correctly pointed out the need for their inclusion in Part 91 [New].

Section 91.59 as proposed in DR 63-3 required compliance with the applicable marine rules of the road when operating an aircraft on water but it did not specifically spell out those rules. In order to avoid any misunderstanding as to the rules that must be complied with, that section has been revised to state those rules in detail and it now appears as § 91.69.

A number of changes have been made in proposed § 91.75. As proposed in DR 63-3, that section contained the air traffic rules for operating on or in the vicinity of airports, including specific provisions for controlled and uncontrolled airports. Because of the undue length of the section it has been broken down into three separate sections which now appear as §§ 91.85, 91.87, and 91.89. Paragraph (a) of proposed § 91.75 defined, for the purpose of that section, the terms "airport traffic area," "controlled airport," and "uncontrolled airport". The latter two terms were distinguished on the basis of whether or not the airport had a control tower. One comment

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received pointed out that under the present rules even an airport without a control tower becomes a "controlled airport" if it is located in a control zone and the weather in that zone goes below basic VFR minimums. Therefore, §§ 91.87 and 91.89 have been revised to eliminate those terms and to execute their definitions. In addition because of its general applicability, the definition of "airport traffic area" has been transferred to part 1 [New].

Two other changes have been made in proposed § 91.75. First, the word "arriving" has been inserted in the first sentence of paragraph (c) of § 91.85 so that it correctly reflects the scope of the rule on which it is based. Secondly, paragraph (d) of § 91.87 has been revised to apply only to aircraft "operating to" an airport. As this provision appeared in the draft release it would apply to aircraft operating "to, from, or on" an airport. While this language properly reflected the applicability of former § 60.18 (b), one comment pointed out its incorrect applicability and this opportunity is being taken to correct it.

One comment noted that proposed § 91.73 relaxed the requirement of § 60.20 by permitting a pilot to notify the nearest "ATC facility" upon cancelling or completing flight under a flight plan rather than the nearest "control tower". This relaxatory change in the rule was intended, and it has been retained in § 91.83(a). In addition, the requirement for indicating aircraft color in a flight plan has been deleted from that paragraph, since it was not contained in § 60.41.

Certain changes, not contained in Draft Release 63-3, reflect amendments to the Parts revised herein that became effective after the Draft Release was published. Each of these amendments, when published, contained a statement that they would be included in the final draft of the recodified Parts affected and, in addition, Draft Release 63-3 stated that such amendments would be included in the final draft of the revised subchapter. Amendments 43-16, 43-17, 48-1, 60-31, 60-32, and 619-1 are therefore reflected in the new subchapter.

Other minor changes of a technical clarifying nature or relaxatory nature have been made. They are not substantive and do not impose any burden on regulated persons.

Of the comments received on Draft Release 63-3, several suggested changes in style, format, or technical wording. These comments have been carefully considered and, where consistent with the style, format, and terminology of the recodification project, were adopted.

Comments received regarding proposed § 91.77 indicated a misunderstanding of the provisions of that section. Under § 60.24, on which proposed § 91.77 was based, there were two types of flight test areas, "approved" areas and "designated" areas. Since the Administrator has never "designated" flight test areas, § 60.24(a)(2) has been dropped as obsolete. The remaining flight test area provisions are now included in § 91.93.

A number of comments received regarding proposed § 91.35 indicated that

many persons were not aware that under Part 190 of the Civil Air Regulations a person operating a foreign civil aircraft in the United States under VFR rules had to file a VFR flight plan. As proposed, § 91.35 simply restated that provision and it has been retained without change in § 91.43.

It should be noted that CAMs and information notes that are still current but which have been deleted as part of this amendment, will be republished in the Agency's Advisory Circular System.

The recodification of the air traffic and general operating rules in Subchapter F does not change the applicability of those rules, nor does it affect those rules governing special operations that prevail over the general rules contained in that subchapter. In addition, a certificate of waiver or an exemption that involves a regulation recodified herein that is outstanding on the effective date of this amendment will continue to be effective according to its terms and conditions even though it refers to part or section numbers no longer in existence. For example, an exemption from the VFR cruising altitude provisions of former § 60.32 would continue under the terms and conditions of that exemption, to allow deviation from those altitudes, even though § 60.32 has been superseded by § 91.109. At such time as a certificate of waiver or an exemption is renewed, section references will be revised to reflect the new section number. In view of this, it is not necessary for persons who hold certificates of waiver or exemptions to take any action due to the recodification and renumbering of the air traffic and general operating rules.

The definitions, abbreviations, and rules of construction contained in Part 1 [New] of the Federal Aviation Regulations apply to Subchapter F. When Part 1 [New] was adopted its preamble stated that it would be amended as necessary in order to apply to specific regulations as they were recodified. As part of this action Part 1 [New] is being amended to incorporate definitions found to be necessary because of the adoption of subsequently issued FARs, including Subchapter F. The definitions of "air traffic clearance," "air traffic control," and "airport traffic area" have been incorporated from Part 60. The definitions of "kite" and "rocket" have been incorporated from Part 48. The definitions of "air commerce," "foreign air commerce," "interstate air commerce," and "overseas air commerce" have been incorporated from § 101 of the Federal Aviation Act of 1958. In addition to these definitions, Part 1 [New] is being amended to include definitions of "category," "class," and "type" and to delete the definition of "pilot".

Interested persons have been afforded an opportunity to participate in the making of this regulation, and due consideration has been given to all relevant matter presented. The Agency appreciates the cooperative spirit in which the public's comments were submitted.

In consideration of the foregoing Chapters I and III of Title 14 of the

Code of Federal Regulations are amended as follows, effective September 30, 1963:

1. By deleting §§ 8.31, 8.32, 8.33; Parts 43, 48, 60, 190, 603, 609, 610, 619, 620; §§ 43T.11 of SR 422A, 43T.11 of SR 422B, and 13 of SR 425C; and SRs 424C, 437, 442A, 444, 445, and 447.

2. By striking out the definition of the term "pilot" from § 1.1 of Part 1 [New].

3. By inserting in the proper alphabetical order the following definitions in § 1.1 of Part 1 [New]:

"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.

"Airport traffic area" means, unless otherwise specifically designated in Part 93 [New], 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.

"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.

"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.

"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.

"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.

"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.

"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.

"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.

"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.

"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.

4. By inserting in the proper alphabetical order the following symbols in § 1.2 of Part 1 [New]:

"MOCA" means minimum obstruction clearance altitude.

"MCA" means minimum crossing altitude.

"MRA" means minimum reception altitude.

5. By adding to Subchapter F Parts 91 [New], 93 [New], 95 [New], 97 [New], 99 [New], 101 [New], and 103 [New] reading as hereinafter set forth.

This amendment is made under the authority of sections 307, 313(a), 402, 601, 602, 603, 902, 1110, and 1202 of the Federal Aviation Act of 1958 (49 U.S.C. 1348, 1354(a), 1372, 1421, 1442, 1443, 1472, 1510, and 1522).

Issued in Washington, D.C., on June 24, 1963.

N. E. HALASY,
Administrator.

PART 91—GENERAL OPERATING AND FLIGHT RULES [NEW]

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AUTHORITY: §§ 91.71 to 91.175 issued under secs. 307, 313(a), 402, 601, 602, 603, 902, 1110, and 1202 of the Federal Aviation Act of 1958; 49 U.S.C. 1348, 1354(a), 1372, 1421, 1442, 1443, 1472, 1510, and 1522.

Subpart A—General

§ 91.1 Applicability.

(a) Except as provided in paragraph (b), this part prescribes rules governing the operation of aircraft (other than moored balloons, kites, and unmanned rockets) within the United States.

(b) Each person operating an aircraft of U.S. registry in air commerce over the high seas shall comply with Annex 2 (Rules of the Air) to the Convention on International Civil Aviation.

§ 91.3 Responsibility and authority of the pilot in command.

(a) The pilot in command of an aircraft is directly responsible for, and is the final authority as to, the operation of that aircraft.

(b) In an emergency requiring immediate action, the pilot in command may deviate from any rule of this subpart or of Subpart B to the extent required to meet that emergency.

(c) Each pilot in command who deviates from a rule under paragraph (b) of this section shall, upon the request of the Administrator, send a written report of that deviation to the Administrator.

§ 91.5 Preflight action.

Each pilot in command shall, before beginning a flight, familiarize himself with all available information concerning that flight. This information must include, for a flight under IFR or a flight not in the vicinity of an airport, available weather reports and forecasts, fuel requirements, alternatives available if the planned flight cannot be completed, and any known traffic delays of which he has been advised by ATC.

§ 91.7 Flight crewmembers at stations.

During takeoff and landing, and while en route, each required flight crewmember shall—

(a) Be at his station unless his absence is necessary in the performance of his duties in connection with the operation of the aircraft; and

(b) Keep his seat belt fastened while at his station.

§ 91.9 Careless or reckless operation.

No person may operate an aircraft in a careless or reckless manner so as to endanger the life or property of another.

§ 91.11 Liquor and drugs.

(a) No person may act as a crewmember of a civil aircraft while—

(1) Under the influence of intoxicating liquor; or

(2) Using any drug that affects his faculties in any way contrary to safety.

(b) Except in an emergency, no pilot of a civil aircraft may allow a person who is obviously under the influence of intoxicating liquors or drugs (except a medical patient under proper care) to be carried in that aircraft.

§ 91.13 Dropping objects.

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

§ 91.15 Parachutes and parachuting.

(a) No pilot of a civil aircraft may allow a parachute that is available for emergency use to be carried in that aircraft unless it is an approved type and—

(1) If a chair type (canopy in back), it has been packed by an appropriately rated parachute rigger within the preceding 120 days; or

(2) If any other type, it has been packed by an appropriately rated parachute rigger within the preceding 60 days.

(b) Except in an emergency, no pilot in command may allow, and no person may make, a parachute jump from an aircraft except in accordance with Part 105 [New] of this chapter.

§ 91.17 Towing.

(a) No pilot of a civil aircraft may tow anything with that aircraft except in accordance with the terms of a certificate of waiver issued by the Administrator.

(b) An application for a certificate of waiver under this section is made on a form and in a manner prescribed by the Administrator and must be submitted to the nearest Flight Standards District Office.

§ 91.19 Portable FM radio receivers.

No person may operate, nor may any operator or pilot in command of an aircraft allow the operation of, a portable frequency modulation (FM) radio receiver on any of the following U.S. registered civil aircraft:

(a) Aircraft operated by an air carrier or commercial operator.

(b) Any other aircraft equipped with VHF omnirange (VOR) navigational equipment while such VOR equipment is being used for navigational purposes.

§ 91.21 Flight instruction and simulated instrument flight.

(a) No person may operate a civil aircraft that is being used for flight instruction unless that aircraft has fully functioning dual controls.

(b) No person may operate a civil aircraft in simulated instrument flight unless—

(1) An appropriately rated pilot occupies the other control seat as safety pilot;

(2) The safety pilot has adequate vision forward and to each side of the

aircraft; or a competent observer in the aircraft adequately supplements the vision of the safety pilot; and

(3) Except in the case of a lighter-than-air aircraft, that aircraft is equipped with functioning dual controls.

§ 91.23 Fuel requirements for flight in IFR conditions.

No person may operate a civil aircraft in IFR conditions unless it carries enough fuel (considering weather reports and forecasts, and weather conditions) to complete the flight to the first intended point of landing, to fly from that point to the alternate airport, and to fly thereafter for 45 minutes at normal cruising speed.

§ 91.25 VOR equipment check for IFR operations.

(a) No person may operate a civil aircraft under IFR using the VOR system of radio navigation unless the VOR equipment of that aircraft—

(1) Is maintained, checked, and inspected under an approved procedure; or

(2) Has been operationally checked within the preceding ten hours of flight time and within ten days before flight, and was found to be within the limits of the permissible indicated bearing error set forth in paragraph (b) or (c) of this section.

(b) Except as provided in paragraph (c) of this section, each person conducting a VOR check under paragraph (a)(2) of this section, shall—

(1) Use an FAA operated or approved test signal at the airport of intended departure, to check the VOR equipment (the maximum permissible indicated bearing error is plus or minus 4 degrees);

(2) If an FAA operated or approved test signal is not available at the airport of intended departure, use a point on an airport surface designated by the Administrator as a VOR system check point (the maximum permissible bearing error is plus or minus 6 degrees); or

(3) If neither an FAA operated or approved test signal nor a designated check point on the surface is available, use an airborne check point designated by the Administrator (the maximum permissible bearing error is plus or minus 6 degrees); or

(4) If no check signal or point is available, while in flight—

(i) Select a VOR radial that lies along the centerline of an established VOR airway;

(ii) Select a prominent ground point along the selected radial preferably more than 20 miles from the VOR ground facility and maneuver the aircraft directly over the point at a reasonably low altitude; and

(iii) Note the VOR bearing indicated by the receiver when over the ground point (the maximum permissible variation between the published radial and the indicated bearing is 6 degrees).

(c) If dual system VOR (units independent of each other except for the antenna) is installed in the aircraft, the person checking the equipment may check one system against the other in place of the check procedures specified

in paragraph (b) of this section. He shall tune both systems to the same VOR ground facility and note the indicated bearings to that station. The maximum permissible variation between the two indicated bearings is 4 degrees.

(d) Each person making the VOR operational check as specified in paragraph (b) or (c) of this section shall enter the date, place, bearing error, and his signature in the aircraft log or other permanent record.

§ 91.27 Civil aircraft certificates required.

No person may operate a civil aircraft unless it has within it—

(a) An appropriate and current airworthiness certificate or special flight permit; and

(b) A registration certificate issued to its owner.

§ 91.29 Civil aircraft airworthiness.

(a) No person may operate a civil aircraft unless it is in an airworthy condition.

(b) The pilot in command of a civil aircraft is responsible for determining whether that aircraft is in condition for safe flight. He shall discontinue the flight when unairworthy mechanical or structural conditions occur.

§ 91.31 Civil aircraft operating limitations and marking requirements.

(a) Each person operating a civil aircraft shall comply with the operating limitations for that aircraft prescribed by the certifying authority of the country of registry.

(b) No person may operate a U.S. registered civil aircraft unless there is available in the aircraft a current FAA approved Aircraft Flight Manual for that aircraft, placards, listings, instrument markings, or any combination thereof, containing each operating limitation prescribed for that aircraft by the Administrator, including the following:

(1) Power plant (e.g., r.p.m., manifold pressure, gas temperature, etc.).

(2) Airspeeds (e.g., normal operating speed, flaps extended speed, etc.).

(3) Aircraft weight, center of gravity, and weight distribution, including the composition of the useful load in those combinations and ranges intended to insure that the weight and center of gravity position will remain within approved limits (e.g., combinations and ranges of crew, oil, fuel, and baggage).

(4) Minimum flight crew.

(5) Kinds of operation.

(6) Maximum operating altitude.

(7) Maneuvering flight load factors.

(8) Rotor speed (for rotorcraft).

(9) Limiting height-speed envelope (for rotorcraft).

(c) No person may operate a U.S. registered civil aircraft unless that aircraft is identified in accordance with Part—(present Part 1).

§ 91.33 Powered civil aircraft with standard category U.S. airworthiness certificates; instrument and equipment requirements.

(a) *General.* No person may operate a powered civil aircraft with a standard category U.S. airworthiness certificate in

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any operation described in paragraphs (b)-(e) of this section unless that aircraft contains the instruments and equipment specified therein for that type of operation or FAA approved equivalents thereof.

(b) *Visual flight rules (day)*. For VFR flight during the day the following instruments and equipment are required.

- (1) Airspeed indicator.
- (2) Altimeter.
- (3) Magnetic direction indicator.
- (4) Tachometer for each engine.
- (5) Oil pressure gauge for each engine using pressure system.
- (6) Temperature gauge for each liquid-cooled engine.
- (7) Oil temperature gauge for each air-cooled engine.
- (8) Manifold pressure gauge for each altitude engine.
- (9) Fuel gauge indicating the quantity of fuel in each tank.
- (10) Landing gear position indicator, if the aircraft has a retractable landing gear.

(11) If the aircraft is operated for hire over water and beyond power-off gliding distance from shore, a Very pistol, and approved flotation gear readily available to each occupant.

(12) Approved safety belts for all occupants. The rated strength of each safety belt shall not be less than that corresponding with the ultimate load factors specified in the current applicable aircraft airworthiness requirements considering the dimensional characteristics of the safety belt installation for the specific seat or berth arrangement. The webbing of each safety belt shall be replaced as required by the Administrator.

(c) *Visual flight rules (night)*. For VFR flight at night the following instruments and equipment are required:

- (1) Instruments and equipment specified in paragraph (b) of this section.
- (2) Approved position lights.
- (3) On large aircraft or when required by the aircraft's airworthiness certificate, an approved anti-collision light system. In the event of failure of any light of the anti-collision light system, operations with the aircraft may be continued to a stop where repairs or replacement can be made without undue delay.

(4) If the aircraft is operated for hire, one electric landing light.

(5) An adequate source of electrical energy for all installed electrical and radio equipment.

(6) One spare set of fuses, or three spare fuses of each kind required.

(d) *Instrument flight rules*. For IFR flight the following instruments and equipment are required:

(1) Instruments and equipment specified in paragraph (b) of this section and for night flight, instruments and equipment specified in paragraph (c) of this section.

(2) Two-way radio communications system and navigational equipment appropriate to the ground facilities to be used.

- (3) Gyroscopic rate-of-turn indicator.
- (4) Bank indicator.
- (5) Sensitive altimeter adjustable for barometric pressure.

- (6) Clock with sweep-second hand.
- (7) Generator of adequate capacity.
- (8) Gyroscopic bank and pitch indicator (artificial horizon).
- (9) Gyroscopic direction indicator (directional gyro or equivalent).

(e) *Flight at and above 24,000 feet MSL*. If VOR navigational equipment is required under paragraph (d)(2) of this section, no person may operate a U.S. registered civil aircraft in the 48 contiguous States or in the District of Columbia, at and above 24,000 feet MSL, unless that aircraft is equipped with an approved distance measuring equipment (DME). When DME required by this paragraph fails at and above 24,000 feet MSL, each pilot shall notify ATC immediately, and may then continue operations at and above 24,000 feet MSL to the next airport of intended landing at which repairs or replacement of the equipment can be made.

§ 91.35 Flight recorders.

(a) Except as provided in paragraph (e) of this section, no holder of an air carrier or commercial operator certificate may operate any of the following airplanes unless there is installed on that airplane an approved flight recorder meeting the requirements of paragraph (b) and that flight recorder is operated in accordance with paragraph (c):

- (1) Large turbine-powered airplanes.
- (2) Large airplanes certificated for operations above 25,000 feet MSL.

(b) Each flight recorder must record at least the following information:

- (1) Time.
- (2) Altitude.
- (3) Airspeed.
- (4) Vertical acceleration.
- (5) Heading.

(c) Each flight recorder must be operated continuously from the beginning of each takeoff roll to the end of each landing roll. However, flight may be conducted without an operating flight recorder in order to—

(1) Ferry an aircraft with an inoperative flight recorder from a place where repair or replacement cannot be made to a place where they can be made;

(2) Continue a flight as originally planned, if the flight recorder becomes inoperative after the airplane has taken off; or

(3) Conduct an airworthiness flight test, during which the flight recorder is turned off to test it or to test any communications or electrical equipment installed in the aircraft.

(d) Each person subject to this section shall retain all recorded information for at least 60 days or if requested by the Administrator, for a longer period.

(e) This section does not apply to a ferry flight of a newly acquired airplane from the place where possession of it was taken to a base where the flight recorder is to be installed.

§ 91.37 Transport category civil airplane weight limitations.

(a) No person may takeoff any transport category airplane (other than an airplane certificated in accordance with the performance requirements of SR ---- or SR ---- [present SR 422A or SR 422B]) unless—

(1) The takeoff weight does not exceed the authorized maximum takeoff weight for the elevation of the airport of takeoff;

(2) The elevation of the airport of takeoff is within the altitude range for which maximum takeoff weights have been determined;

(3) Normal consumption of fuel and oil in flight to the airport of intended landing will leave a weight on arrival not in excess of the authorized maximum landing weight for the elevation of that airport; and

(4) The elevations of the airport of intended landing and of all specified alternate airports are within the altitude range for which maximum landing weights have been determined.

(b) No person may operate a turbine-powered transport category airplane certificated in accordance with the performance requirements of SR ---- or SR ---- (present SR 422A or SR 422B) contrary to the Airplane Flight Manual, nor takeoff that airplane unless—

(1) The takeoff weight does not exceed the takeoff weight specified in the Airplane Flight Manual for the elevation of the airport and for the ambient temperature existing at the time of takeoff;

(2) Normal consumption of fuel and oil in flight to the airport of intended landing and to the alternate airports will leave a weight on arrival not in excess of the landing weight specified in the Airplane Flight Manual for the elevation of each of the airports involved and for the ambient temperatures expected at the time of landing;

(3) The takeoff weight does not exceed the weight shown in the Airplane Flight Manual to correspond with the minimum distances required for takeoff considering the elevation of the airport, the runway to be used, the effective runway gradient, and the ambient temperature and wind component existing at the time of takeoff; and

(4) Where the takeoff distance includes a clearway, the clearway distance is not greater than one-half of—

(i) The takeoff run, in the case of airplane certificated in accordance with the performance requirements of SR ---- (present SR 422A); or

(ii) The runway length, in the case of airplanes certificated in accordance with the performance requirements of SR ---- (present SR 422B).

(c) No person may takeoff a turbine-powered transport category airplane certificated in accordance with the performance requirements of SR ---- (present SR 422B) unless, in addition to the requirements of paragraph (b) of this section—

(1) The accelerate-stop distance is no greater than the length of the runway plus the length of the stopway (if present);

(2) The takeoff distance is no greater than the length of the runway plus the length of the clearway (if present); and

(3) The takeoff run is no greater than the length of the runway.

(d) As applied to the operation of turbine-powered transport category airplanes—

(1) Certificated in accordance with the performance requirements of SR ---- (present SR 422A), "clearway" means an area beyond the takeoff runway extending no less than 300 feet on either side of the extended center line 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; and

(2) Certificated in accordance with the performance requirements of SR ---- (present SR 422B)—

(i) "Clearway" means an area expressed in terms of a clearway plane which is considered to be the takeoff surface, extending beyond the takeoff runway, extending no less than 250 feet on either side of the extended center line of the runway, with an upward slope not exceeding 1.25 percent, having no higher terrain or objects thereon (except threshold lights no higher than 26 inches and placed at the sides of the runway), and under the control of the airport authorities; and

(ii) "Stopway" means an area beyond the takeoff runway, no less wide than the runway and centered upon the extended centerline of the runway, capable of supporting 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.

§ 91.39 Restricted category civil aircraft; operating limitations.

(a) No person may operate a restricted category civil aircraft carrying persons or property for compensation or hire. For the purposes of this section a special purpose operation such as crop dusting, seeding, spraying, and banner towing (including the carrying of required persons or materials to the location of that operation) is not considered to be the carrying of persons or property for compensation or hire.

(b) No person operating a restricted category civil aircraft in a special purpose operation may carry any person in that aircraft except the minimum crew required for that operation and crew trainees.

(c) Except when operating in accordance with the terms and conditions of a certificate of waiver or special operating limitations issued by the Administrator, no person may operate a restricted category civil aircraft in a special purpose operation—

- (1) Over a densely populated area;
 - (2) In a congested airway; or
 - (3) Near a busy airport where passenger transport operations are conducted.
- (d) An application for a certificate of waiver under this section is made on a form and in a manner prescribed by the Administrator and must be submitted to the Flight Standards District Office having jurisdiction over the area in which the applicant is located.

§ 91.41 Provisionally certificated civil aircraft; operating limitations.

(a) No person may operate a provisionally certificated civil aircraft unless

he is eligible for a provisional airworthiness certificate under § ---- of this chapter (present section 2 of SR 425C).

(b) No person may operate a provisionally certificated civil aircraft outside the United States unless he has specific authority to do so from the Administrator and each foreign country involved.

(c) Unless otherwise authorized by the Director, Flight Standards Service, no person may operate a provisionally certificated civil aircraft in air transportation.

(d) Unless otherwise authorized by the Administrator, no person may operate a provisionally certificated civil aircraft except—

(1) In direct conjunction with the type of supplemental type certification of that aircraft;

(2) For training flight crews, including simulated air carrier operations;

(3) Demonstration flights by the manufacturer for prospective purchasers;

(4) Market surveys by the manufacturer;

(5) Flight checking of instruments, accessories, and equipment, that do not affect the basic airworthiness of the aircraft; or

(6) Service testing of the aircraft.

(e) Each person operating a provisionally certificated civil aircraft shall operate within the prescribed limitations displayed in the aircraft or set forth in the provisional aircraft flight manual or other appropriate document. However, when operating in direct conjunction with the type or supplemental type certification of the aircraft, he shall operate under the experimental aircraft limitations of § ---- of this chapter—(present § 1.74) and when flight testing, shall operate under the requirements of § 91.93 of this chapter.

(f) Each person operating a provisionally certificated civil aircraft shall establish approved procedures for—

(1) The use and guidance of flight and ground personnel in operating under this section; and

(2) Operating in and out of airports where takeoffs or approaches over populated areas are necessary.

No person may operate that aircraft except in compliance with the approved procedures.

(g) Each person operating a provisionally certificated civil aircraft shall ensure that each flight crewmember is properly certificated and has adequate knowledge of, and familiarity with, the aircraft and procedures to be used by that crewmember.

(h) Each person operating a provisionally certificated civil aircraft shall maintain it as required by applicable regulations and as may be specially prescribed by the Administrator.

(i) Whenever the manufacturer, or the Administrator, determines that a change in design, construction or operation is necessary to ensure safe operation, no person may operate a provisionally certificated civil aircraft until that change has been made and approved. Section ---- of this chapter (present § 1.24) applies to operations under this section.

(j) Each person operating a provisionally certificated civil aircraft—

(1) May carry in that aircraft only persons who have a proper interest in the operations allowed by this section or who are specifically authorized by both the manufacturer and the Administrator; and

(2) Shall advise each person carried that the aircraft is provisionally certificated.

(k) The Administrator may prescribe additional limitations or procedures that he considers necessary, including limitations on the number of persons who may be carried in the aircraft.

§ 91.43 Special rules for foreign civil aircraft.

(a) *General.* In addition to the other applicable regulations of this part, each person operating a foreign civil aircraft within the United States shall comply with this section.

(b) *VFR.* No person may operate a foreign civil aircraft under VFR unless a VFR flight plan has been filed with an FAA communications station.

(c) *IFR.* No person may operate a foreign civil aircraft under IFR unless—

(1) That aircraft is equipped with—
(i) Radio equipment allowing two-way radio communication with ATC when it is operated in a control zone or control area; and

(ii) Radio navigational equipment appropriate to the navigational facilities to be used;

(2) Each person piloting the aircraft—

(i) Holds a current United States instrument rating or is authorized by his foreign airman certificate to pilot under IFR; and

(ii) Is thoroughly familiar with the United States en route, holding, and letdown procedures; and

(3) At least one crewmember of that aircraft is able to conduct two-way radiotelephone communications in the English language and that crewmember is on duty while the aircraft is approaching, operating within, or leaving the United States.

(d) *Overwater.* Each person operating a foreign civil aircraft overwater off the shores of the United States shall give flight notification or file a flight plan, in accordance with the Supplementary Procedures for the ICAO region concerned.

Subpart B—Flight Rules

GENERAL

§ 91.61 Applicability.

This subpart prescribes flight rules governing the operation of aircraft within the United States.

§ 91.63 Waivers.

(a) The Administrator may issue a certificate of waiver authorizing the operation of aircraft in deviation of any rule of this subpart if he finds that the proposed operation can be safely conducted under the terms of that certificate of waiver.

(b) An application for a certificate of waiver under this section is made on a form and in a manner prescribed by the

Administrator and may be submitted to any FAA office.

(c) A certificate of waiver is effective as specified in that certificate.

§ 91.65 Operating near other aircraft.

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

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

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

§ 91.67 Right-of-way rules; except water operations.

(a) *General.* Except when, because of restrictions to visibility beyond the pilot's control, another aircraft cannot be seen, each person operating an aircraft shall comply with this section. When a rule of this section gives another aircraft the right of way, he shall give way to that aircraft and may not pass over, under, or ahead of it, unless well clear.

(b) *In distress.* An aircraft in distress has the right of way over all other aircraft.

(c) *Converging.* When aircraft of the same category are converging at approximately the same altitude (except head-on, or nearly so) the aircraft to the other's right has the right of way. If the aircraft are of different categories—

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

(2) A glider has the right of way over an airship, airplane or rotorcraft; and

(3) An airship has the right of way over an airplane or rotorcraft.

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

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

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

(f) *Landing.* Aircraft, while on final approach to land, or while landing, have the right of way over other aircraft in flight or operating on the surface. When two or more aircraft are approaching an airport for the purpose of landing, the aircraft at the lower altitude has the right of way, but it shall not take advantage of this rule to cut in front of another which is on final approach to land, or to overtake that aircraft.

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

§ 91.69 Right-of-way rules; water operations.

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

(b) *Crossing.* When aircraft, or an aircraft and a vessel are on crossing courses, the aircraft or vessel to the others right has the right of way.

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

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

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

§ 91.71 Acrobatic flight.

(a) No person may operate an aircraft in acrobatic flight—

(1) Over any congested area of a city, town, or settlement;

(2) Over an open air assembly of persons;

(3) Within a control zone or Federal airway;

(4) Below an altitude of 1,500 feet above the surface; or

(5) When flight visibility is less than three miles.

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

(b) Unless each occupant of the aircraft is wearing an approved parachute, no pilot of a civil aircraft, carrying any person (other than a crewmember) may execute any intentional maneuver that exceeds—

(1) A bank of 60 degrees relative to the horizon; or

(2) A nose up or nose down attitude of 30 degrees relative to the horizon.

§ 91.73 Aircraft lights.

No person may, during the period from sunset to sunrise (or, in Alaska, during the period a prominent unlighted object cannot be seen from a distance of three statute miles or the sun is more than six degrees below the horizon)—

(a) Operate an aircraft unless it has lighted position lights;

(b) Park or move an aircraft in, or in dangerous proximity to, a night flight operations area of an airport unless the aircraft—

(1) Is clearly illuminated;

(2) Has lighted position lights; or

(3) Is in an area which is marked by obstruction lights; or

(c) Anchor an aircraft unless the aircraft—

(1) Has lighted anchor lights; or

(2) Is in an area where anchor lights are not required on vessels.

§ 91.75 Compliance with ATC clearances and instructions.

(a) When an ATC clearance has been obtained, no pilot in command may deviate from that clearance, except in an emergency, unless he obtains an

amended clearance. However, except in positive controlled airspace, this paragraph does not prohibit him from cancelling an IFR flight plan if he is operating in VFR weather conditions.

(b) Except in an emergency, no person may, in an area in which air traffic control is exercised, operate an aircraft contrary to an ATC instruction.

(c) Each pilot in command who deviates, in an emergency, from an ATC clearance or instruction shall notify ATC of that deviation as soon as possible.

(d) Each pilot in command who (though not deviating from a rule of this subpart) is given priority by ATC in an emergency, shall submit, within 48 hours after the emergency, a detailed report of the emergency to the nearest FAA Regional Office.

§ 91.77 ATC light signals.

ATC light signals have the meaning shown in the following table.

Color and type of signal	Meaning with respect to aircraft on the surface	Meaning with respect to aircraft in flight
Steady green.....	Cleared for take-off.	Cleared to land.
Flashing green..	Cleared to taxi..	Return for landing (to be followed by steady green at proper time). Give way to other aircraft and continue circling.
Steady red.....	Stop.....	Airport unsafe—do not land. Not applicable.
Flashing red.....	Taxi clear of runway in use.	Airport unsafe—do not land. Not applicable.
Flashing white..	Return to starting point on airport.	Exercise extreme caution.
Alternating red and green.	Exercise extreme caution.	Exercise extreme caution.

§ 91.79 Minimum safe altitudes; general.

Except when necessary for takeoff or landing, no person may operate an aircraft below the following altitudes:

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

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

(c) *Over other than congested areas.* An altitude of 500 feet above the surface, except over open water or sparsely populated areas. In that case, the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure.

(d) *Helicopters.* Helicopters may be operated at less than the minimums prescribed in paragraph (b) or (c) of this section if the operation is conducted without hazard to persons or property on the surface. In addition, each person operating a helicopter shall comply with routes or altitudes specifically prescribed for helicopters by the Administrator.

§ 91.81 Altimeter settings.

(a) Each person operating an aircraft shall maintain that aircraft's cruising altitude or flight level, as the case may be, by reference to an altimeter that is set, when operating—

- (1) At or below 23,500 feet MSL, to—
 - (i) The current reported altimeter setting of a station along the route and within 100 nautical miles of the aircraft;
 - (ii) If there is no station within the area prescribed in subdivision (i) of this subparagraph, the current reported altimeter setting of an appropriate available station; or
 - (iii) In the case of an aircraft not equipped with a radio, the elevation of the departure airport or an appropriate altimeter setting available before departure; or

(2) At or above 24,000 feet MSL, to 29.92" Hg.

(b) The lowest usable flight level is determined by the atmospheric pressure in the area of operation, as shown in the following table:

Altimeter setting (current reported):	Lowest usable flight level
29.92 or higher.....	240
29.91 to 29.92.....	245
29.91 to 28.92.....	250
28.91 to 28.42.....	255
28.41 to 27.92.....	260
27.91 to 27.42.....	265

§ 91.83 Flight plan; information required.

- (a) Unless otherwise authorized by ATC, each person filing an IFR or VFR flight plan shall include in it the following information:
 - (1) The aircraft identification number and, if necessary, its radio call sign.
 - (2) The type of the aircraft or, in the case of a formation flight, the type of each aircraft and the number of aircraft, in the formation.
 - (3) The full name and address of the pilot in command or, in the case of a formation flight, the formation commander.
 - (4) The point and proposed time of departure.
 - (5) The proposed route, cruising altitude (or flight level), and true air speed at that altitude.
 - (6) The point of first intended landing and the estimated elapsed time until over that point.
 - (7) The radio frequencies to be used.
 - (8) The amount of fuel on board (in hours).
 - (9) In the case of an IFR flight plan, an alternate airport.
 - (10) In the case of an international flight, the number of persons in the aircraft.
 - (11) Any other information the pilot in command or ATC believes is necessary for ATC purposes.

When a flight plan has been filed, the pilot in command, upon cancelling or completing the flight under the flight plan, shall notify the nearest FAA Flight Service Station or ATC facility.

(b) *IFR alternate airport weather minimums.* Unless otherwise authorized by the Administrator, no person may list an alternate airport in an IFR flight plan unless current weather reports and forecasts indicate that, at the time of arrival, the ceiling and visibility at that airport will be at or above the alternate airport weather minimums prescribed for that airport in Part 97 [New] of this chapter or, if no minimums are so pre-

scribed, the following weather minimums:

- (1) At an airport served by a radio directional facility—
 - (i) Ceiling 1,000 feet and visibility one statute mile;
 - (ii) Ceiling 900 feet and visibility one and one-half statute miles; or
 - (iii) Ceiling 800 feet and visibility two statute miles.
- (2) At an airport not served by a radio directional facility, a ceiling of 1,000 feet with broken clouds (or better) and visibility two statute miles.

§ 91.85 Operating on or in the vicinity of an airport; general rules.

(a) Unless otherwise required by Part 93 [New] of this chapter, each person operating an aircraft on or in the vicinity of an airport shall comply with the requirements of this section and of §§ 91.87 and 91.89.

(b) Unless otherwise authorized or required by ATC, no person may operate an aircraft within an airport traffic area except for the purpose of landing at, or taking off from, an airport within that area. ATC authorizations may be given as individual approval of specific operations or may be contained in written agreements between airport users and the tower concerned.

- (c) No person may operate—
 - (1) An arriving aircraft below 10,000 feet MSL within 30 nautical miles of an airport of intended landing (or an airport where a simulated approach is to be made) at an indicated airspeed of more than 250 knots (288 m.p.h.); or
 - (2) Unless otherwise authorized or required by ATC, any aircraft within an airport traffic area at an indicated airspeed of more than—
 - (i) In the case of a reciprocating engine aircraft, 156 knots (180 m.p.h.); or
 - (ii) In the case of a turbine-powered aircraft, 200 knots (230 m.p.h.).

However, if the minimum airspeed required by the operating limitations of an aircraft or by military normal operating procedures is greater than the maximum speed prescribed in this paragraph, the aircraft may be operated at that minimum airspeed.

§ 91.87 Operation at airports with operating control towers.

(a) *General.* Unless otherwise authorized or required by ATC, each person operating an aircraft to, from, or on an airport with an operating control tower shall comply with the applicable provisions of this section.

(b) *Communications with control towers operated by the United States.* No person may, within an airport traffic area, operate an aircraft to, from, or on an airport having a control tower operated by the United States unless two-way radio communications are maintained between that aircraft and the control tower. However, if the aircraft radio fails in flight, he may operate that aircraft and land if weather conditions are at or above basic VFR weather minimums, he maintains visual contact with the tower, and he receives a clearance to land. If the aircraft radio fails while

in flight under IFR, he must comply with § 91.127.

(c) *Communications with other control towers.* No person may, within an airport traffic area, operate an aircraft to, from, or on an airport having a control tower that is operated by any person other than the United States unless—

- (1) If that aircraft's radio equipment so allows, two-way radio communications are maintained between the aircraft and the tower; or
- (2) If that aircraft's radio equipment allows only reception from the tower, the pilot has the tower's frequency monitored.

(d) *Minimum altitudes.* When operating to an airport with an operating control tower, each pilot of—

- (1) A turbine-powered airplane, shall, unless otherwise required by terrain, obstacles, or applicable distance from clouds criteria, maintain within the airport traffic area an altitude of at least 1,500 feet above the surface of the airport until further descent is required for a safe landing;
- (2) A large airplane approaching to land on a runway being served by an ILS, shall, if the airplane is ILS equipped, fly that airplane at an altitude at or above the glide slope between the outer marker (or the point of interception with the glide slope, if compliance with applicable distance from clouds criteria requires interception closer in) and the middle marker; and
- (3) An airplane approaching to land on a runway served by a visual approach slope indicator, shall maintain an altitude at or above the glide slope until a lower altitude is necessary for a safe landing.

However, subparagraphs (2) and (3) of this paragraph do not prohibit normal bracketing maneuvers above or below the glide slope that are conducted for the purpose of remaining on the glide slope.

- (e) *Approaches.* When approaching to land at an airport with an operating control tower, each pilot of—
 - (1) An airplane, shall circle the airport to the left; and
 - (2) A helicopter, shall avoid the flow of fixed-wing aircraft.

(f) *Departures.* No person may operate an aircraft taking off from an airport with an operating control tower except in compliance with the following:

- (1) Each pilot shall comply with any departure procedures established for that airport by the FAA.
- (2) Unless otherwise required by the departure procedures or applicable distance from clouds criteria, each pilot of a large airplane shall climb to an altitude of 1,500 feet above the surface as rapidly as practicable.

(g) *Preferential runway system.* When landing or taking off from an airport with an operating control tower and for which a preferential runway system has been established by the FAA, each pilot of a large airplane, assigned a preferential runway by ATC, shall use that runway. However, each pilot has final authority and responsibility for the safe operation of his airplane and if he determines that another runway should be used, ATC will assign that runway

(air traffic and other conditions permitting). Each pilot not using the preferential runway assigned shall, if requested by ATC, submit within 48 hours of that request a written report of the reasons therefor to the Chief Airport Traffic Controller of the airport at which the deviation occurred.

(h) *Clearances required.* No pilot may, at an airport with an operating control tower, taxi an aircraft on a runway, or takeoff or land an aircraft, unless he has received an appropriate clearance from ATC. A clearance to "taxi to" the runway is a clearance to cross all intersecting runways but is not a clearance to "taxi on" the assigned runway.

§ 91.89 Operation at airports without control towers.

(a) *Operation at airports without control towers.* Each person operating an aircraft to or from an airport not described in § 91.87 shall comply with the applicable provisions of this section.

(b) *Communications with FAA Flight Service Stations.* If an operative FAA Flight Service Station is located at the airport (and is so depicted on the current appropriate Sectional Aeronautical Chart of the U.S. Coast and Geodetic Survey or, in the case of an area not so charted, on the current World Aeronautical Chart), each pilot shall, unless otherwise authorized or required by ATC, while within a 5-statute mile radius of that airport—

(1) If the aircraft's radio equipment so allows, maintain two-way radio communications between the aircraft and the station; or

(2) If the aircraft's radio equipment allows only reception from the station, monitor the station's frequency.

A pilot operating under IFR may satisfy the requirements of this paragraph by maintaining a listening watch on the last assigned pilot-controller frequency until otherwise specified by ATC.

(c) *Departures and approaches.* Each pilot of—

(1) An airplane approaching to land, shall make all turns of that airplane to the left unless the airport displays approved light signals or visual markings indicating that turns should be made to the right, in which case the pilot shall make all turns to the right;

(2) A helicopter approaching to land, shall avoid the flow of fixed-wing aircraft; and

(3) An aircraft departing the airport, shall comply with any FAA traffic pattern for that airport.

§ 91.91 Avoidance of disaster areas.

(a) Designated disaster areas consist of that airspace below 2,000 feet above the surface within five statute miles of an aircraft or train accident, forest fire, earthquake, flood, or other disaster of substantial magnitude. The designation of a disaster area is made in a Notice to Airmen.

(b) No person may operate an aircraft within a designated disaster area unless—

(1) That aircraft is participating in airborne relief activities under the di-

rection of the Agency responsible for relief activities;

(2) That aircraft is being operated to or from an airport within the area, if that operation does not hamper or endanger relief activities;

(3) Flight around or above the area is impractical due to weather, terrain, or other considerations, if that en route operation through the area does not hamper or endanger relief activities and prior notice is given to the Air Traffic Service facility specified in the Notice to Airmen;

(4) It is specifically authorized under an IFR ATC clearance; or

(5) That aircraft is carrying properly accredited news representatives or persons on official business concerning the disaster is operated in accordance with § 91.79 and, unless otherwise authorized by the Agency responsible for relief activities, it is operated above altitudes used by relief aircraft and the operator has filed with the Air Traffic Service facility specified in the Notice to Airmen a flight plan that includes the following information:

(i) Aircraft identification, type, and color.

(ii) Radio communications frequencies to be used.

(iii) Proposed times of entry and exit of the disaster area.

(iv) Name of news media or purpose of flight.

(v) Any other information deemed necessary by ATC.

§ 91.93 Flight test areas.

(a) No person may flight test an aircraft except over open water or sparsely populated areas having light air traffic and within a flight test area approved by the Administrator.

(b) For the purposes of this section, a "flight test" means flight—

(1) To investigate or check the operational capabilities of a new type aircraft engine or propeller, the airworthiness of which has not been determined by appropriate military or civil authority;

(2) Of a production aircraft before the basic airworthiness of the aircraft, engine, or propeller concerned is determined by the pilot; or

(3) After a major alteration to the aircraft, engine, or propeller before its basic airworthiness has been determined by the pilot.

However, the operation of a production aircraft (or an aircraft that has undergone a major alteration) necessary to go to and from an approved flight test area, is not considered to be a part of a flight test.

(c) For the purposes of this section, "basic airworthiness" means the structural integrity and controllability of an aircraft as determined by the pilot in normal flight maneuvering such that there is no reasonable probability of failure which would endanger persons or property.

(d) An application for approval of a flight test area is made by letter, in triplicate, to the Chief, Air Traffic Division of the FAA Region within which the proposed flight test area is located. The application must contain—

(1) An aeronautical chart showing the geographical boundaries of the proposed flight test area by longitude and latitude or by landmarks that can be readily seen from aircraft operating altitudes;

(2) The hours of the day during which the flight test is to be conducted;

(3) The conditions under which the flight test is to be conducted (such as VFR, ceiling, visibility, altitudes); and

(4) The nature of the flight test (such as production, experimental or prototype).

(e) An approval of a flight test area is effective as stated therein but not for more than 24 months. However, the Administrator may cancel the approval at any time if he finds that changed conditions exist that would not have justified an original approval.

(f) An application for the renewal of an approval of a flight test area is made in the manner prescribed in paragraph (d) of this section. However, it need contain only changes that have occurred since the filing of the original application for approval and may incorporate, by reference, material contained in the original application.

§ 91.95 Restricted and prohibited areas.

(a) No person may operate an aircraft within a restricted area (designated in Part 73 [New]) contrary to the restrictions imposed, or within a prohibited area, unless he has the permission of the using or controlling agency, as appropriate.

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

§ 91.97 Positive control areas and route segments.

(a) Except as provided in paragraph (b) of this section, no person may operate an aircraft within a positive control area or positive control route segment, designated in Part 71 [New] of this chapter, unless that aircraft is—

(1) Operated under IFR at a specific altitude assigned by ATC;

(2) Equipped with instruments and equipment required for IFR operations and is flown by a pilot rated for instrument flight; and

(3) In the case of a positive control area, equipped with—

(i) A coded radar beacon transponder, having a Mode A (military Mode 3) 64 code capability, replying to Mode 3/A interrogation with the code specified by ATC; and

(ii) A radio providing direct pilot/controller communication on the frequency specified by ATC for the area concerned.

(b) ATC may authorize deviations from the requirements of paragraph (a) of this section for operation in a positive control area. In the case of in-flight failure of a radar beacon transponder, ATC may immediately approve operation within a positive control area. In all other cases, requests for an authorization to deviate must be submitted

at least four days before the proposed operation, in writing, to the ATC center having jurisdiction over the positive control area concerned. ATC may authorize deviations on a continuing basis or for an individual flight, as appropriate.

§ 91.99 Jet advisory areas.

(a) No person may operate an aircraft within a radar jet advisory area designated in Part 75 [New] of this chapter unless—

(1) That aircraft is operated under IFR at a specific altitude assigned by ATC; or

(2) If the aircraft is not so operated and—

(i) That aircraft is equipped with a functioning coded radar beacon transponder having a Mode A (military Mode 3) 64 code capability, that transponder is operated to reply to Mode 3/A interrogation with the code specified by ATC;

(ii) If that aircraft is not so equipped, it is operated under specific authorization from ATC; or

(iii) If radio failure prevents the receiving of that authorization, he maintains an appropriate VFR cruising flight level.

(b) No person may pilot an aircraft within a nonradar jet advisory area designated in Part 75 [New] of this chapter unless that aircraft is operated under—

(1) IFR at a specific altitude assigned by ATC; or

(2) Specific authorization from ATC.

§ 91.101 Operations to, or over, Cuba.

No person may operate a civil aircraft from the United States to, or over, Cuba unless—

(a) Departure is from an international airport of entry designated in § 6.13 of the Air Commerce Regulations of the Bureau of Commerce (19 CFR 6.13); and

(b) In the case of departure from any of the 48 contiguous States or the District of Columbia, the pilot in command of the aircraft has filed—

(1) A DVFR or IFR flight plan as prescribed in § 99.11 or 99.13 of this chapter; and

(2) A written statement, within one hour before departure, with the office of Immigration and Naturalization Service at the airport of departure, containing—

(i) All information in the flight plan;

(ii) The name of each occupant of the aircraft;

(iii) The number of occupants of the aircraft; and

(iv) A description of the cargo, if any.

This section does not apply to the operation of aircraft by a scheduled air carrier over routes authorized in operations specifications issued by the Administrator.

VISUAL FLIGHT RULES

§ 91.105 Basic VFR weather minimums.

(a) *Distance from clouds.* Except as provided in § 91.107, no person may operate an aircraft under VFR—

(1) Within the continental control area at a distance less than 1,000 feet

vertically and one statute mile horizontally from any cloud formation;

(2) Within any other controlled airspace at a distance less than 500 feet below or 1,000 feet above, and 2,000 feet horizontally from, any cloud formation;

(3) Within a control zone, beneath the ceiling when the ceiling is less than 1,000 feet;

(4) Outside controlled airspace at an altitude of more than 1,200 feet above the surface, at a distance less than 500 feet below or 1,000 feet above, and 2,000 feet horizontally from, any cloud formation; or

(5) Outside controlled airspace at an altitude of 1,200 feet or less above the surface, unless the aircraft is clear of clouds.

(b) *Flight visibility.* Except as provided in § 91.107, no person may operate an aircraft under VFR—

(1) In the continental control area unless flight visibility is at least five statute miles;

(2) In any other controlled airspace unless flight visibility is at least three statute miles; or

(3) Outside controlled airspace, unless flight visibility is at least one statute mile.

However, subparagraph (3) of this paragraph does not apply to the operation of a helicopter at or below 1,200 feet above the surface at a speed that allows the pilot adequate opportunity to see any air traffic or other obstruction in time to avoid a collision.

(c) *Ground visibility.* Except as provided in § 91.107, no person may takeoff or land an aircraft, or enter the traffic pattern of an airport, under VFR, within a control zone unless ground visibility is at least three statute miles.

(d) For the purposes of this section, an aircraft operated in accordance with § 91.109 at the base altitude of a transition area, a control area, or the continental control area, is considered to be within the airspace directly below that area.

§ 91.107 Special VFR weather minimums in a control zone.

(a) When a person has received an appropriate ATC clearance, the special weather minimums of this section (instead of those contained in § 91.105) apply to the operation of an aircraft by that person in a control zone under VFR.

(b) No person may operate an aircraft in a control zone under VFR except clear of clouds.

(c) No person may operate an aircraft (other than a helicopter) in a control zone under VFR unless flight visibility is at least one statute mile.

(d) No person may takeoff or land an aircraft (other than a helicopter) in a control zone under VFR unless ground visibility is at least one statute mile.

§ 91.109 VFR cruising altitude or flight level.

Except while holding in a holding pattern of two minutes or less, or while turning, each person operating an aircraft under VFR in level cruising flight at or above 3,000 feet above the surface,

shall maintain the appropriate altitude prescribed below:

(a) When operating at or below 23,500 feet MSL and—

(1) On a magnetic course of zero degrees through 179 degrees, any odd thousand foot MSL altitude +500 feet (such as 3,500, 5,500, or 7,500); or

(2) On a magnetic course of 180 degrees through 359 degrees, any even thousand foot MSL altitude +500 feet (such as 4,500, 6,500, or 8,500).

(b) When operating above 23,500 feet MSL to flight level 290 (inclusive), and—

(1) On a magnetic course of zero degrees through 179 degrees, either flight level 255 or 275; or

(2) On a magnetic course of 180 degrees through 359 degrees, flight level 245, 265, or 285.

(c) When operating above flight level 290 and—

(1) On a magnetic course of zero degrees through 179 degrees, any flight level, at 4,000-foot intervals, beginning at and including flight level 300 (such as flight level 300, 340, or 380); or

(2) On a magnetic course of 180 degrees through 359 degrees, any flight level, at 4,000-foot intervals, beginning at and including flight level 320 (such as flight level 320, 360, or 400).

INSTRUMENT FLIGHT RULES

§ 91.115 ATC clearance and flight plan required.

No person may operate an aircraft in controlled airspace under IFR unless—

(a) He has filed an IFR flight plan; and

(b) He has received an appropriate ATC clearance.

§ 91.117 Takeoff and landing under IFR.

(a) *Instrument approaches to civil airports.* Unless otherwise authorized by the Administrator (including ATC), each person operating an aircraft shall, when an instrument letdown to an airport is necessary, use a standard instrument approach procedure prescribed for that airport in Part 97 [New] of this chapter.

(b) *Use of low or medium frequency simultaneous radio ranges requiring flight check.* When a flight check of a low or medium frequency (200 through 415 KCS) simultaneous radio range is required, a Notice to Airmen will be issued advising that the range is "ground checked only, awaiting flight check" and the range may be used as a homing facility and in addition may be used as an ADF instrument approach aid if an ADF procedure for the airport concerned is prescribed by the Administrator or if an approach is conducted using the same courses and altitudes for the ADF approach as those specified in the approved range procedure.

(c) *Landing minimums.* Unless otherwise authorized by the Administrator, no person operating an aircraft (except a military aircraft of the United States) may land that aircraft using a standard instrument approach procedure prescribed in Part 97 [New] of this chapter unless weather conditions are at or above the landing weather minimums pre-

scribed in that Part for the procedure used.

(d) *Civil airport takeoff minimums.* Unless otherwise authorized by the Administrator, no person operating an aircraft under Part 97 of this chapter (present Parts 40, 41, 42, 44, or 45) may take off from a civil airport under IFR unless weather conditions are at or above the weather minimums for IFR takeoff prescribed for that airport in Part 97 [New] of this chapter.

(e) *Military airports.* Unless otherwise prescribed by the Administrator, each person operating a civil aircraft under IFR into, or out of, a military airport shall comply with the instrument approach procedure and the takeoff and landing minimums prescribed by the military authority having jurisdiction on that airport.

(f) *Use of radar in any instrument approach procedure.* When radar is approved at certain locations for ATC purposes, it may be used not only for surveillance and precision radar approaches, as applicable, but also may be used in conjunction with instrument approach procedures predicated on other types of radio navigational aids. Radar transitions may be authorized from established holding fixes to final approach positions in relation to the ILS or other types of radio navigational aids upon which instrument approach procedures are predicated. Upon reaching a final approach position in relation to these facilities, the pilot will either continue a surveillance or precision approach to a landing or complete his instrument approach in accordance with the procedure approved for the facility in question.

(g) *Limitations on procedure turns.* In the case of a radar initial approach to a final approach position or a timed approach from a holding fix, no pilot may make a procedure turn unless, when he receives his final approach clearance, he so advises ATC.

(h) *Descent below IFR landing minimums.* No person may operate an aircraft below the applicable minimum landing altitude unless clear of clouds. In addition, no person may operate an aircraft more than 50 feet below that minimum altitude unless—

(1) The landing minimums are at least ceiling 1,000 feet and visibility two statute miles;

(2) The aircraft is in a position from which a normal approach can be made to the runway of intended landing and the approach threshold of that runway or the approach lights or other markings identifiable with that runway are clearly visible to the pilot.

If, after descent below the minimum altitude, the pilot cannot maintain visual reference to the ground or ground lights, he shall immediately execute the appropriate prescribed missed approach procedure.

(i) *Inoperative ILS components.* The components of a complete ILS are localizer, glide slope, outer marker, middle marker, and approach lights. However, a compass locator at an outer or middle marker site may be substituted for the outer or middle marker, respectively.

Unless otherwise specified in Part 97 [New] of this chapter, no person may begin an ILS approach when any component of the ILS is inoperative, or the related airborne equipment is inoperative or not utilized, except as follows:

(1) When only one component (other than the localizer) is inoperative and all other components are in normal operation, a straight-in approach may be made if the ceiling and visibility at the airport are at least equal to 300 feet and $\frac{1}{4}$ statute mile, respectively.

(2) When the localizer and the outer marker are the only components in normal operation—

(i) A circling approach may be made if the ceiling and visibility are equal to or higher than the minimums prescribed for a circling approach; or

(ii) A straight-in approach may be made if the ceiling and visibility at the airport are at least equal to 300 feet and one statute mile, respectively.

(3) In the case of an alternate airport, when only one component (other than the localizer) is inoperative and all other components are in normal operation, a person may make an approach if the ceiling and visibility at the airport are at least equal to the minimums prescribed for use of the airport as an alternate airport.

§ 91.119 Minimum altitudes for IFR operations.

(a) Except when necessary for takeoff or landing, or unless otherwise authorized by the Administrator, no person may operate an aircraft under IFR below—

(1) The applicable minimum altitudes prescribed in Parts 95 [New] and 97 [New] of this chapter; or

(2) If no applicable minimum altitude is prescribed in those parts—

(i) In the case of operations over an area designated as a mountainous area in Part 95 [New], an altitude of 2,000 feet above the highest obstacle within a horizontal distance of five statute miles from the course to be flown; or

(ii) In any other case, an altitude of 1,000 feet above the highest obstacle within a horizontal distance of five statute miles from the course to be flown.

However, if both a MEA and a MOCA are prescribed for a particular route or route segment, a person may operate an aircraft below the MEA down to, but not below, the MOCA, when within 25 statute miles of the VOR concerned (based on the pilot's reasonable estimate of that distance).

(b) *Climb.* Climb to a higher minimum IFR altitude shall begin immediately after passing the point beyond which that minimum altitude applies, except that, when ground obstructions intervene, the point beyond which the higher minimum altitude applies shall be crossed at or above the applicable MCA.

§ 91.121 IFR cruising altitude or flight level.

(a) *In controlled airspace.* Each person operating an aircraft under IFR in level cruising flight in controlled airspace shall maintain the altitude or

flight level assigned that aircraft by ATC. However, if the ATC clearance assigns "VFR conditions-on-top," he shall maintain an altitude or flight level as prescribed by § 91.109 of this part.

(b) *In uncontrolled airspace.* Except while holding in a pattern of two minutes or less, or while turning, each person operating an aircraft, under IFR, in level cruising flight in uncontrolled airspace, shall maintain an appropriate altitude as follows:

(1) When operating at or below 23,500 feet MSL and—

(i) On a magnetic course of zero degrees through 179 degrees, any odd thousand foot MSL altitude (such as 3,000, 5,000, or 7,000); or

(ii) On a magnetic course of 180 degrees through 359 degrees, any even thousand foot MSL altitude (such as 2,000, 4,000, or 6,000).

(2) When operating above 23,500 feet MSL, but below flight level 290, and—

(i) On a magnetic course of zero degrees through 179 degrees, either flight level 250 or 270; or

(ii) On a magnetic course of 180 degrees through 359 degrees, flight level 240, 260, or 280.

(3) When operating at flight level 290 and above, and—

(i) On a magnetic course of zero degrees through 179 degrees, any flight level, at 4,000-foot intervals, beginning at and including flight level 290 (such as flight level 290, 330, or 370); or

(ii) On a magnetic course of 180 degrees through 359 degrees, any flight level, at 4,000-foot intervals, beginning at and including flight level 310 (such as flight level 310, 350, or 390).

§ 91.123 Course to be flown.

Unless otherwise authorized by ATC, no person may operate an aircraft within controlled airspace, under IFR, except as follows:

(a) On a Federal airway, along the centerline of that airway.

(b) On any other route, along the direct course between the navigational aids or fixes defining that route.

However, this section does not prohibit maneuvering the aircraft to pass well clear of other air traffic or the maneuvering of the aircraft, in VFR conditions, to clear the intended flight path both before and during climb or descent.

§ 91.125 IFR, radio communications.

The pilot in command of each aircraft operated under IFR in controlled airspace shall have a continuous watch maintained on the appropriate frequency and shall report by radio as soon as possible—

(a) The time and altitude of passing each designated reporting point, or the reporting points specified by ATC;

(b) Any unforecast weather conditions encountered; and

(c) Any other information relating to the safety of flight.

§ 91.127 IFR operations; two-way radio communications failure.

(a) *General.* Unless otherwise authorized by ATC, each pilot who has two-way radio communications failure when

operating under IFR shall comply with the rules of this section.

(b) *VFR conditions.* If the failure occurs in VFR conditions, or if VFR conditions are encountered after the failure, each pilot shall continue the flight under VFR and land as soon as practicable.

(c) *IFR conditions.* If the failure occurs in IFR conditions, or if paragraph (b) of this section cannot be complied with, each pilot shall continue the flight to the original destination and shall—

(1) Continue the flight along the route specified in the last ATC clearance received, or, if no route has been specified, along the planned route;

(2) Continue the flight at the highest of the following altitudes or flight levels:

(i) The altitude or flight level specified in the last ATC clearance received;

(ii) The minimum safe altitude; or

(iii) The lowest cardinal altitude or flight level at or above the MEA of the highest planned route structure;

(3) When climb to a higher altitude is required by subparagraph (2) (iii) of this section, begin that climb 10 minutes after passing the first compulsory reporting point over which the failure prevented communications with ATC;

(4) If holding instructions have been received, depart the holding fix at the expected further clearance time received, or, if an expected approach clearance time has been received, depart the holding fix so as to arrive over the radio facility to be used for the approach at the destination as close as possible to the expected approach clearance time; and

(5) Begin descent from the en route altitude or flight level at the radio facility to be used for the approach at the destination at the latest of the following times:

(i) The expected approach clearance time (if received).

(ii) The estimated time of arrival shown on the flight plan, as amended with ATC.

(iii) The actual time of arrival over the facility.

§ 91.129 Operation under IFR in controlled airspace; malfunction reports.

(a) The pilot in command of each aircraft operated in controlled airspace under IFR, shall report immediately to ATC any of the following malfunctions of equipment occurring in flight:

(1) Loss of VOR, TACAN, ADF, or low frequency navigation receiver capability.

(2) Complete or partial loss of ILS receiver capability.

(3) Impairment of air/ground communications capability.

(b) In each report required by paragraph (a) of this section, the pilot in command shall include the—

(1) Aircraft identification;

(2) Equipment affected;

(3) Degree to which the capability of the pilot to operate under IFR in the ATC system is impaired; and

(4) Nature and extent of assistance he desires from ATC.

Subpart C—Maintenance

§ 91.161 Applicability.

(a) This subpart prescribes rules governing the maintenance of U.S. regis-

tered civil aircraft operating in the United States.

(b) Sections 165, 169, 171, and 173 of this subpart do not apply to—

(1) An aircraft operated in accordance with Part ____ of this chapter (present Part 40, 41, or 46); or

(2) A large aircraft operated in accordance with Part ____ of this chapter (present Part 42).

§ 91.163 General.

(a) The owner or operator of an aircraft is primarily responsible for maintaining that aircraft in an airworthy condition.

(b) No person may maintain an aircraft other than as prescribed in this subpart and other applicable regulations, including Part ____ (present Part 18).

§ 91.165 Maintenance required.

Each owner or operator of an aircraft shall have that aircraft inspected as prescribed in § 91.169 of this chapter and shall, between required inspections, have defects repaired as prescribed in Part ____ of this chapter (present Part 18). In addition, he shall ensure that maintenance personnel make appropriate entries in the aircraft and maintenance records indicating the aircraft has been released to service.

§ 91.167 Carrying persons other than crewmembers after repairs or alterations.

(a) No person may carry any person (other than a crewmember) in an aircraft that has been repaired or altered in a manner that may have appreciably changed its flight characteristics, or substantially affected its operation in flight, until an appropriately rated pilot, with at least a private pilot's certificate, test flies the aircraft and logs the test flight in the aircraft records.

(b) Paragraph (a) of this section does not require a test flight if ground tests or inspections, or both, show conclusively that the repair or alteration has not appreciably changed the flight characteristics, or substantially affected the flight operation of the aircraft.

§ 91.169 Inspections.

(a) Except as provided in paragraph (c) of this section, no person may operate an aircraft unless, within the preceding 12 calendar months, it has had—

(1) A periodic inspection in accordance with Part ____ of this chapter (present Part 18) and has been approved for return to service by a person authorized by § ____ (present § 18.12(b)); or

(2) An inspection for the issue of an airworthiness certificate.

(b) Except as provided in paragraph (c) of this section, no person may operate an aircraft carrying any person (other than a crewmember) for hire or to give flight instruction for hire unless, within the preceding 100 hours time in service, it has been—

(1) Inspected in accordance with Part ____ of this chapter (present Part 18) and approved for return to service by a person authorized by § ____ (present § 18.12); or

(2) Inspected as prescribed in paragraph (a) of this section.

The 100-hour limitation may be exceeded by not more than 10 hours if necessary to reach a place at which the inspection can be done. The excess time, however, is included in computing the next 100 hours of time in service.

(c) Paragraphs (a) and (b) of this section do not apply to—

(1) Any aircraft for which its registered owner or operator complies with the progressive inspection requirements of § 91.171 and Part ____ of this chapter (present Part 18); or

(2) An aircraft that carries a special flight permit or a current experimental or provisional certificate.

§ 91.171 Progressive inspection.

(a) Each registered owner or operator of an aircraft desiring to use the progressive inspection must submit a written request to the Flight Standards District Office having jurisdiction over the area in which the applicant is located, and shall provide—

(1) A certificated mechanic holding an inspection authorization, a certificated airframe repair station, or the manufacturer of the aircraft, to supervise or conduct the progressive inspection;

(2) A current inspection procedures manual available and readily understandable to pilot and maintenance personnel containing, in detail—

(i) An explanation of the progressive inspection, including the continuity of inspection responsibility, the making of reports, and the keeping of records and technical reference material;

(ii) An inspection schedule, including instructions for exceeding an inspection interval by not more than 10 hours while en route and for changing an inspection interval because of service experience;

(iii) Sample routine and detailed inspection forms and instructions for their use; and

(iv) Sample reports and records, and instructions for their use;

(3) Enough housing and equipment for necessary disassembly and proper inspection of the aircraft; and

(4) Appropriate current technical information for the aircraft.

(b) If the progressive inspection is discontinued, the owner or operator shall immediately notify the local General Aviation District Office, in writing, of the discontinuance.

§ 91.173 Maintenance records.

(a) Each registered owner or operator of an aircraft shall keep a separate, current, and permanent maintenance record for the aircraft and each engine and shall identify each record as to make, model, serial number, and, if applicable, registration number of the aircraft or engine concerned.

(b) Each registered owner or operator shall use a record of sufficient size and shall include in it the following information:

(1) The kind and extent of maintenance and alteration, and the time in service and date when the work is done. However, major repairs or major alterations may be logged by making reference to the FAA Form ACA-337 by date, or to the work order (by number) and the approving agency.

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(2) A chronological listing of compliance with mandatory service bulletins, airworthiness directives, and the method of compliance.

(3) The current empty weight, empty center of gravity, and useful load.

(4) The addition or removal of optional equipment.

(5) The addition or removal of required equipment in exchange for optional equipment.

(6) The total time in service and history of each engine overhauled, repaired, or reassembled to standards other than those for rebuilt engines as defined in § 91.175.

(7) The total time in service of the aircraft.

(c) Each registered owner or operator shall—

(1) Present the maintenance record for required entries each time inspection or maintenance is done on the aircraft or engine;

(2) Upon disposing of the aircraft or engine, give the maintenance record to the new registered owner or operator; and

(3) Make the maintenance record available for inspection by the Administrator or any authorized representative of the Civil Aeronautics Board.

§ 91.175 Rebuilt engine maintenance records.

(a) The owner or operator may use a new maintenance record, without previous operating history, for an aircraft engine rebuilt by the manufacturer or by an agency approved by the manufacturer.

(b) Each manufacturer or agency that grants zero time to an engine rebuilt by it shall enter, in the new record—

(1) A signed statement of the date the engine was rebuilt;

(2) Each change made as required by Airworthiness Directives; and

(3) Each change made in compliance with manufacturer's service bulletins, if the entry is specifically requested in that bulletin.

(c) For the purposes of this section, a rebuilt engine is a used engine that has been completely disassembled, inspected, repaired as necessary, reassembled, tested, and approved in the same manner and to the same tolerances and limits as a new engine with either new or used parts. However, all parts used in it must conform to the production drawing tolerances and limits for new parts or be of approved oversize or undersized dimensions for a new engine.

PART 91—DISTRIBUTION TABLE

Former section	Revised section
1.68 (less last sentence)	91.39
8.31	91.39
8.31-1	(¹)
8.32	91.39
8.33	91.39
43.1	91.1
43.10 (less (a), (b), and (d))	(²)
43.10(a)	91.27
43.10 (less (a))	91.31
43.11	91.37
43.20 (1st sentence)	91.29
43.20 (less 1st sentence)	91.163
43.20-1(a) (1st sentence)	91.163

See footnotes at end of table.

PART 91—DISTRIBUTION TABLE—Continued

Former section	Revised section
43.20-1(a) (2d and last sentences)	91.165
43.20-1(a) (less 1st, 2d, and last sentences)	(¹)
43.20-1(b) (1st sentence)	91.29
43.20-1(b) (less 1st sentence)	(¹)
43.21	91.167
43.21-1(a)	91.167
43.22	91.167
43.22-2	91.171
43.23	91.178
43.23-1	91.178
43.23-2	91.178
43.24	91.175
43.24-1	91.175
43.24-2	91.175
43.30	91.33
43.31	91.25
43.32	91.35
43.33	91.33
43.45	91.11
43.46	91.17
43.46-1	91.17
43.46-2	(¹)
43.46-3	(¹)
43.47, 47 (less (b))	91.13
43.47(b)	91.15
43.48	91.71
43.48-1	91.71
43.49	91.15
43.50	(²)
43.51	91.23
43.54(a)	91.21
43.57	91.21
43.70	(⁴)
60.1 (introductory paragraph)	91.1
60.1(a)	(²)
60.1 (less (a) and introductory paragraph)	91.63
60.1-1	(¹)
60.1-2	(¹)
60.1-3	(¹)
60.1a	91.1
60.2 (last sentence)	91.75
60.2 (less last sentence)	91.3
60.2-1	91.3
60.10	(²)
60.11	91.5
60.12	91.9
60.13	91.95
60.14	91.67
60.15	91.65
60.16	91.71
60.16-1	(²)
60.17 (less (d))	91.79
60.17(d)	91.110
60.17-1	91.75
60.18(a)	91.85
60.18(b)	91.87
60.18(c)	91.89
60.18-2	(¹)
60.18-3	91.77
60.18-5	(¹)
60.18-6	(¹)
60.19	91.75
60.20	91.83
60.21	91.75
60.21-1	(¹)
60.21-2	(¹)
60.22	91.69
60.23	91.73
60.23-1	91.65
60.23-2	(¹)
60.24	91.93
60.24-1	91.93
60.24-2	91.93
60.24-3	91.93
60.24-4	91.93
60.24-5	91.93
60.25	91.81
60.26	91.7
60.27	91.85(c) (1)
60.28	91.91
60.30	91.105
60.30-1	91.107
60.31	91.107
60.32	91.109
60.33	91.83
60.33-1	(¹)
60.40	(²)

PART 91—DISTRIBUTION TABLE—Continued

Former section	Revised section
60.41 (1st sentence)	91.115
60.41 (less 1st sentence)	91.83
60.42	91.83
60.43	91.115
60.44	91.121
60.45	91.123
60.46	91.117
60.46-1	91.117
60.46-2	(¹)
60.47	91.125
60.47-1	(¹)
60.49	91.127
60.50	(¹)
SR 422A (4ST.11)	91.37
SR 422B (4ST.11)	91.37
SR 424C	91.97
SR 425C (13)	91.41
SR 437	91.101
SR 444	91.99
SR 445	91.129
SR 446B	91.19
Part 190	91.43
610.6	91.119
609.2	91.117
609.4 (d) (2), (e), and (g)	91.117
609.5(b)	91.117

- ¹ Not a rule.
- ² Surplusage.
- ³ Transferred to Part 105 [New].
- ⁴ Transferred to Part 1 [New] or executed.
- ⁵ In § 307(f) of the Federal Aviation Act of 1958.
- ⁶ Less (c) (1).
- ⁷ Transferred to Part 93.

CURRENT DISTRIBUTION OF FORMER SECTIONS OF PART 43

Former section	Revised section
43.40	61.3
43.41 (less 1st sentence)	61.43
43.41 (1st sentence)	61.3
43.41-1	61.43
43.42	61.45
43.52	61.73
43.55	61.73
43.56	61.73
43.60	61.101
43.61	61.131
43.62	61.165
43.63 (as applicable to private pilots)	61.101
43.63 (as applicable to commercial pilots)	61.131
43.64 (b), (c), and (d)	61.177
43.65	61.3
43.68(c)	61.179
43.68 (less (c))	61.47

PART 93—SPECIAL AIR TRAFFIC RULES AND AIRPORT TRAFFIC PATTERNS [NEW]

- Subpart A—General**
- Sec. 93.1 Applicability.
- Subpart B—New York International Airport Traffic Area**
- 93.31 Applicability.
- 93.33 New York International Airport traffic.
- 93.35 Landings on runway 19 or 24 of the Floyd Bennett Naval Air Station.
- Subpart C—Washington National Airport Traffic Area**
- 93.41 Applicability.
- 93.43 Washington National Airport traffic.
- 93.45 Washington-Virginia Airport traffic.
- Subpart D—Anchorage, Alaska, Terminal Area**
- 93.51 Applicability.
- 93.53 Description of area.
- 93.55 Subdivisions of area.
- 93.57 General rules: All segments.
- 93.59 General rules: International segment.
- 93.61 General rules: Lake Hood segment.
- 93.63 General rules: Merrill segment.

Sec.
93.65 General rules: Elmendorf segment.
93.67 General rules: Bryant segment.
93.69 Lake Campbell and Sixmile Lake Airports.

Subpart E—Victor Airway No. 16

93.71 Applicability.
93.73 Crossing Victor Airway No. 16; jet training operations.
93.75 Crossing and operating along Victor Airway No. 16.

AUTHORITY: §§ 93.1 to 93.75 issued under secs. 307, 313(a), 402, 601, 602, 603, 902, 1110, and 1202 of the Federal Aviation Act of 1958; 49 U.S.C. 1348, 1354(a), 1372, 1421, 1442, 1443, 1472, 1510, and 1522.

Subpart A—General

§ 93.1 Applicability.

(a) This part prescribes special airport traffic patterns and airport traffic areas. It also prescribes special air traffic rules for operating aircraft in those traffic patterns and traffic areas and in the vicinity of airports described in this Part.

(b) Unless otherwise authorized by ATC, each person operating an aircraft shall do so in accordance with the special air traffic rules in this Part in addition to other applicable rules in Part 91.

(c) Subpart E prescribes special air traffic rules for operating in the vicinity of Phoenix, Arizona, on Victor Airway No. 16.

Subpart B—New York International Airport Traffic Area

§ 93.31 Applicability.

This subpart prescribes special air traffic rules for the New York International Airport traffic area.

§ 93.33 New York International Airport traffic.

Except when the VFR clearance-from-clouds rules of Part 91 require otherwise, when landing at New York International Airport, each person piloting—

(a) A large airplane shall enter the New York International Airport traffic area at an altitude of at least 1,500 feet above the surface and maintain that altitude so long as practicable before landing; and

(b) A small airplane shall enter the New York International Airport traffic area at an altitude of at least 1,200 feet above the surface and shall maintain an altitude of at least 1,000, but not more than 1,200, feet above the surface so long as practicable before landing.

§ 93.35 Landings on runway 19 or 24 of the Floyd Bennett Naval Air Station.

Each person piloting an airplane landing on runway 19 or 24 of Floyd Bennett Naval Air Station shall operate at or below an altitude of 800 feet above the surface in that portion of the Floyd Bennett Naval Air Station traffic pattern that extends into the New York International Airport traffic area.

Subpart C—Washington National Airport Traffic Area

§ 93.41 Applicability.

This subpart prescribes special air traffic rules for the Washington National Airport traffic area.

§ 93.43 Washington National Airport traffic.

(a) Except when the VFR clearance-from-clouds rules of Part 91 require otherwise, each person piloting an airplane landing at Washington National Airport shall enter the traffic area at an altitude of at least 1,500 feet MSL and maintain that altitude so long as practicable before landing.

(b) Except when the VFR clearance-from-clouds rules of Part 91 [New] require otherwise, each person piloting a helicopter landing at Washington National Airport shall enter the traffic area at an altitude of at least 800, but not more than 1,000, feet MSL and maintain an altitude of at least 800 feet MSL so long as practicable before landing.

§ 93.45 Washington-Virginia Airport traffic.

Each person piloting an airplane landing or taking off at Washington-Virginia Airport—

(a) Shall operate at or below an altitude of 1,200 feet MSL in the Washington National Airport traffic area;

(b) Shall enter and leave the Washington National Airport traffic area west of a north-south line extended through the center of Washington-Virginia Airport; and

(c) May not operate more than one statute mile from the Washington-Virginia Airport boundary when operating east of the imaginary north-south line.

Subpart D—Anchorage, Alaska, Terminal Area

§ 93.51 Applicability.

This subpart prescribes the Anchorage, Alaska, Airport traffic area and special traffic patterns for that airport and other airports in the vicinity of Anchorage. It prescribes special air traffic rules for that area and those patterns. In addition, it prescribes rules governing the operation of aircraft in the vicinity of the airports described herein.

§ 93.53 Description of area.

The Anchorage Airport traffic area is designated as that airspace extending upward from the surface to, but not including, 2,700 feet MSL. It is bounded by a line beginning at Point MacKenzie extending westerly along the bank of Knik Arm to a point intersecting an arc of a five-statute-mile radius circle centered on the geographical center of Anchorage International Airport; thence counterclockwise along that arc to its intersection with Seward Highway; thence northerly along Seward Highway to its intersection with Tudor Road; thence easterly along Tudor Road to its intersection with Muldoon Road; thence northerly along Muldoon Road to a point one-half statute mile south of Palmer Highway; thence northeasterly along a line one-half statute mile east of and parallel to Palmer Highway to its intersection with a line one-half statute mile east of and parallel to Bryant Airport runway 16/34; thence northeastward along this line to its intersection with the south boundary of Restricted Area R-2203; thence west and north along the south and west boundary of R-2203 to

its intersection with an arc of a five-statute-mile radius circle centered on the geographical center of Elmendorf Air Force Base Airport; thence counterclockwise along this arc to its intersection with the west bank of Knik Arm; thence southerly along the west bank of Knik Arm to the point of beginning. However, it does not include the following:

(a) That airspace at and below 600 feet MSL, north of a line beginning at the intersection of Farrell Road and the northeast boundary of the airport traffic area extending westerly along Farrell Road to the east end of Sixmile Lake; thence along a line bearing on the middle of Lake Lorraine to the boundary of the airport traffic area.

(b) That airspace at and below 600 feet MSL, south of a line beginning at the intersection of Seward Highway and Sand Lake Road, extending westerly along Sand Lake Road to the shoreline of Turnagain Arm; thence due west to the boundary of the airport traffic area.

(c) That airspace at and below 300 feet MSL, overlying the waters and tidal flats of Knik Arm and Turnagain Arm.

§ 93.55 Subdivision of area.

The Anchorage Airport traffic area is subdivided as follows:

(a) *International segment.* That area lying within a line beginning at the International Airport terminal building, extending northwesterly along a line one-fourth statute mile east of, and parallel to, runway 13/31 to the airport traffic area boundary; thence counterclockwise along the airport traffic area boundary to its intersection with International Airport Road; thence westerly along International Airport Road to the point of beginning.

(b) *Merrill segment.* That area lying within a line beginning at Point MacKenzie extending directly to the mouth of Fish Creek; thence along Fish Creek to Northern Lights Boulevard; thence easterly along Northern Lights Boulevard to Seward Highway; thence southerly along Seward Highway to the airport traffic area boundary; thence east and north along the airport traffic area boundary to a point directly east of Mile 4, Palmer Highway; thence due west on a direct line through Mile 4, Palmer Highway to Ship Creek; thence along Ship Creek to its mouth; thence on a direct line toward the center of Lake Lorraine to the airport traffic area boundary; thence counterclockwise along the airport traffic area boundary to the point of beginning.

(c) *Lake Hood segment.* That area lying between the International segment and the Merrill segment.

(d) *Elmendorf segment.* That area lying within a line beginning at the intersection of the airport traffic area boundary with Loop Road, extending southerly along Loop Road to Davis Highway; thence due south to the north boundary of the Merrill segment; thence westward along the north boundary of the Merrill segment to the airport traffic area boundary; thence clockwise along the airport traffic area boundary to the point of beginning.

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(e) *Bryant segment.* That area lying east of the Elmendorf segment.

§ 93.57 General rules: All segments.

(a) Each person piloting an aircraft to, from or on an airport within the airport traffic area shall operate it according to the rules set forth in this section, or § 93.59, 93.61, 93.63, 93.65, 93.67, or 93.69, as applicable, unless otherwise authorized or required by ATC.

(b) Each person piloting an airplane shall conform to the flow of traffic shown on the appropriate diagram in Appendix A.

(c) Each person piloting a helicopter shall operate it in a manner avoiding the flow of airplanes.

(d) Except as provided in § 93.65 (d) and (e), each person piloting an aircraft in the airport traffic area shall operate it only within the designated segment containing the airport of landing or takeoff.

(e) Each person piloting an aircraft shall maintain two-way radio communications with the control tower serving the airport of landing or takeoff.

§ 93.59 General rules: International segment.

(a) No person may pilot an aircraft at an altitude between 1,200 feet MSL and 2,000 feet MSL in that part of the segment lying north of the midchannel of Knik Arm.

(b) Each person piloting an airplane at a speed of more than 105 knots within the segment (except that part described in paragraph (a) of this section) shall operate it at an altitude of at least 1,600 feet MSL until maneuvering for a safe landing requires further descent.

(c) Each person piloting an airplane at a speed of 105 knots or less within the segment (except that part described in paragraph (a) of this section) shall operate it at an altitude of at least 900 feet MSL until maneuvering for a safe landing requires further descent.

§ 93.61 General rules: Lake Hood segment.

(a) No person may pilot an aircraft at an altitude between 1,200 feet MSL and 2,000 feet MSL in that part of the segment lying north of the midchannel of Knik Arm.

(b) Each person piloting an airplane within the segment (except that part described in paragraph (a) of this section) shall operate it at an altitude of at least 600 feet MSL until maneuvering for a safe landing requires further descent.

(c) Whenever the Lake Hood control tower is not operating, each person piloting an aircraft within the segment shall maintain two-way radio communication with the Anchorage International Airport control tower.

§ 93.63 General rules: Merrill segment.

(a) No person may pilot an aircraft at an altitude between 600 feet MSL and 2,000 feet MSL in that part of the segment lying north of the midchannel of Knik Arm.

(b) Each person piloting an airplane at a speed of more than 105 knots within

the segment (except that part described in paragraph (a) of this section) shall operate it at an altitude of at least 1,200 feet MSL until maneuvering for a safe landing requires further descent.

(c) Each person piloting an airplane at a speed of 105 knots or less within the segment (except that part described in paragraph (a) of this section) shall operate it at an altitude of at least 900 feet MSL until maneuvering for a safe landing requires further descent.

§ 93.65 General rules: Elmendorf segment.

(a) Each person piloting a turbine-powered airplane within the segment shall operate it at an altitude of at least 1,700 feet MSL until maneuvering for a safe landing requires further descent.

(b) Each person piloting an airplane (other than turbine powered) at a speed of more than 105 knots within the segment shall operate it at an altitude of at least 1,200 feet MSL until maneuvering for a safe landing requires further descent.

(c) Each person piloting an airplane (other than turbine powered) at a speed of 105 knots or less within the segment shall operate it at an altitude of at least 700 feet MSL until maneuvering for a safe landing requires further descent.

(d) A person landing or taking off an aircraft from Elmendorf Airport may operate it at an altitude between 1,500 feet MSL and 1,700 feet MSL within those parts of the International and Lake Hood segments lying north of the midchannel of Knik Arm.

(e) A person landing or taking off an aircraft from Elmendorf Airport may operate it at an altitude between 900 feet MSL and 1,700 feet MSL within that part of the Merrill segment lying north of the midchannel of Knik Arm.

§ 93.67 General rules: Bryant segment.

(a) Each person piloting an airplane within the segment shall operate it at an altitude of at least 1,000 feet MSL until maneuvering for a safe landing requires further descent.

(b) Whenever the Bryant control tower is not operating, each person piloting an aircraft within the segment shall maintain two-way radio communication with the Elmendorf control tower.

§ 93.69 Lake Campbell and Sixmile Lake Airports.

Each person piloting an aircraft to or from Lake Campbell or Sixmile Lake Airport shall conform to the flow of traffic for the Lake operations that are shown on the appropriate diagram in Appendix A.

Subpart E—Victor Airway No. 16

§ 93.71 Applicability.

(a) This subpart applies to aircraft operated under VFR conditions within Victor Airway No. 16 between longitudes 112°10' W. and 112°35' W. Monday through Friday from 0600 to 1800 MST.

(b) For the purposes of this subpart, "ceiling" is the ceiling reported by the

U.S. Navy Aerology Station at Litchfield Park NAF, Arizona.

§ 93.73 Crossing Victor Airway No. 16; jet training operations.

Each pilot in command of a Luke Air Force Base jet aircraft engaged in training operations that cross Victor Airway No. 16 shall—

(a) Except during takeoff from Luke Air Force Base—

(1) Cross between longitudes 112°10' W. and 112°28' W. at 8,000 feet MSL; or

(2) When the ceiling is less than 8,000 feet (9,000 feet MSL), cross between longitudes 112°16' W. and 112°28' W. at 3,000 feet MSL; or

(b) Cross between longitudes 112°28' W. and 112°35' W. between 700 feet above the surface and 4,000 feet MSL.

§ 93.75 Crossing and operating along Victor Airway No. 16.

Unless ATC authorizes otherwise, each pilot in command of an aircraft (other than an Aircraft to which § 93.73 applies) crossing or operating en route along Victor Airway No. 16 between longitudes 112°10' W. and 112°35' W. shall—

(a) When the ceiling is at least 8,000 feet (9,000 feet MSL) and when operating between longitudes 112°10' W. and 112°28' W., operate the aircraft at 9,000 feet MSL or higher, or at 7,000 feet MSL or lower;

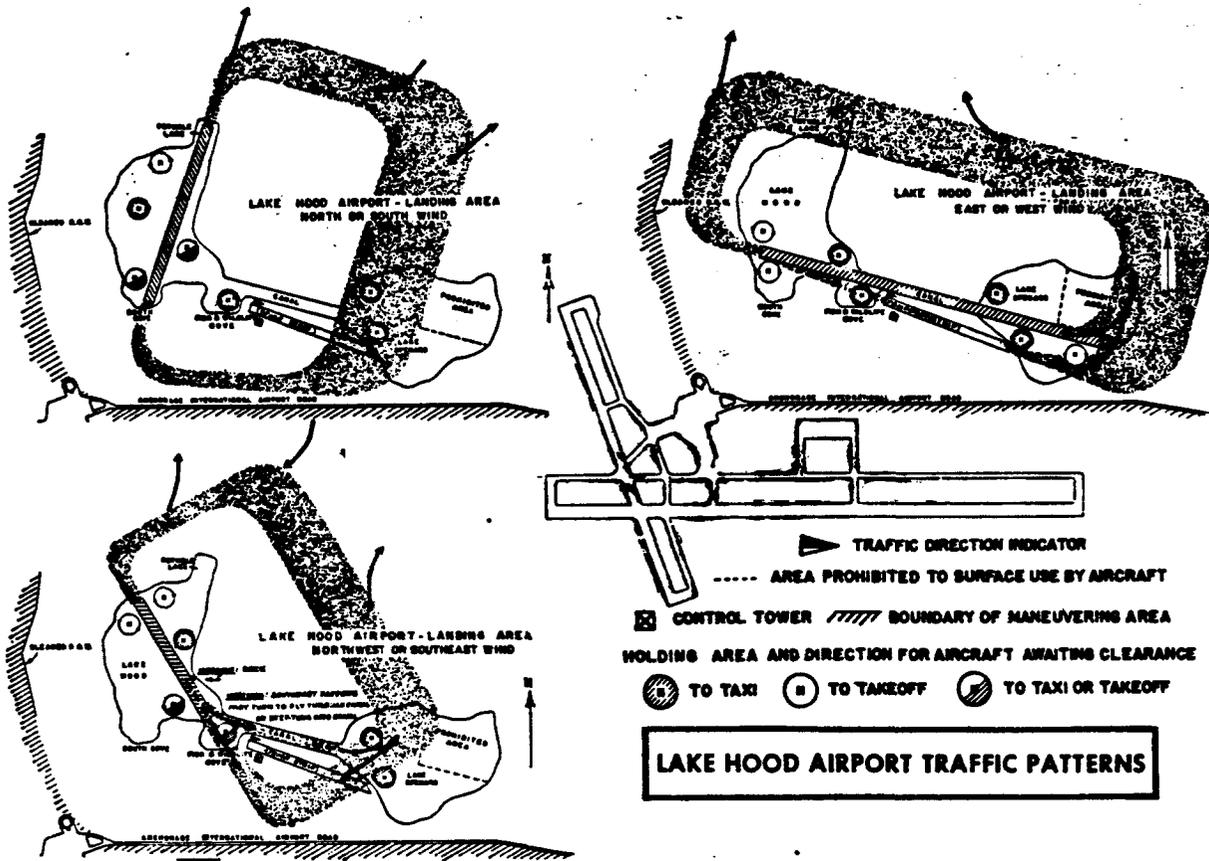
(b) When the ceiling is less than 8,000 feet (9,000 feet MSL) and when operating between longitudes 112°16' W. and 112°28' W., operate the aircraft at 4,000 feet MSL or higher, or at 2,000 feet MSL or lower; and

(c) When operating between longitudes 112°28' W. and 112°35' W., operate that aircraft at 5,000 feet MSL or higher.

PART 93—DISTRIBUTION TABLE

Former section	Revised section
SR 442 (1st sentence).....	93.31
SR 442(a).....	(1)
SR 442(b).....	93.33
SR 442(c).....	(1)
SR 442(d).....	(1)
SR 442(e).....	(1)
SR 442(f).....	(1)
SR 442(g) (1st sentence).....	93.35
603.1(a) (1).....	93.73
603.1 (a) (2) and (b).....	93.75
603.1 (less (a) and (b)).....	93.71
619.1.....	93.1
619.10 (1st paragraph).....	(1)
619.10(a).....	(1)
619.10(b) (1).....	(1)
619.10(b) (2).....	93.43
619.10(b) (3).....	93.45
619.10(c).....	93.43
619.10(d) (4).....	93.45
619.10(e) (1).....	93.43
619.15(a) (less (2)).....	93.53
619.15(a) (2).....	93.55
619.15(b) (less (4)-(8)).....	93.57
619.15(b) (4).....	93.59
619.15(b) (5).....	93.61
619.15(b) (6).....	93.63
619.15(b) (7).....	93.65
619.15(b) (8).....	93.67
619.15(c).....	93.69
619 (diagrams—Washington National).....	(2)
619 (diagrams—Anchorage).....	(2)

¹ Surplusage.
² Obsolete.
³ Appendix A.



LAKE HOOD AIRPORT TRAFFIC PATTERNS

PART 95—IFR ALTITUDES [NEW]

Subpart A—General

- Sec. 95.1 Applicability.
- 95.3 Symbols.

Subpart B—Designated Mountainous Areas

- 95.11 General.
- 95.13 Eastern United States Mountainous Area.
- 95.15 Western United States Mountainous Area.
- 95.17 Alaska Mountainous Area.
- 95.19 Hawaii Mountainous Area.
- 95.21 Puerto Rico Mountainous Area.

Subpart C—En Route IFR Altitudes Over Particular Routes and Intersections

- 95.31 General.
- 95.41–95.50 Green Federal Airways Nos. 1 to 10.
- 95.101–95.119 Amber Federal Airways Nos. 1 to 19.
- 95.201–95.313 Red Federal Airways Nos. 1 to 113.
- 95.601–95.687 Blue Federal Airways Nos. 1 to 87.
- 95.1001 Direct Routes, U.S.
- 95.1502–95.1764 VOR Federal Airways Nos. 1502 to 1764.
- 95.6001–95.6314 VOR Federal Airways Nos. 1 to 314.
- 95.6401–95.6415 Hawaii VOR Federal Airways Nos. 1 to 15.
- 95.6421–95.6530 VOR Federal Airways Nos. 421 to 530.
- 95.6642 VOR Federal Airway No. 1542.
- 95.6809–95.6887 VOR Federal Airways Nos. 809 to 887.

AUTHORITY: §§ 95.1 to 95.6887 issued under secs. 307, 313(a), 402, 601, 602, 603, 902, 1110, and 1202 of the Federal Aviation Act of 1958;

49 U.S.C. 1348, 1354(a), 1372, 1421, 1442, 1443, 1472, 1510, and 1522.

Subpart A—General

§ 95.1 Applicability.

(a) This part prescribes altitudes governing the operation of aircraft under IFR on specified routes and route segments and over specified intersections and radio fixes. In addition, it designates mountainous areas.

(b) The MAA is the highest altitude, on an intermediate altitude VOR Federal airway, at which adequate reception of navigation aid signals is assured.

(c) The MCA applies to the operation of an aircraft proceeding to a higher minimum en route altitude when crossing specified radio fixes.

(d) The MEA prescribed for a Federal airway or segment thereof, applies to the entire width of that airway or segment between the radio fixes defining that airway or segment. An MEA prescribed for an off-airway route or route segment applies to the airspace five statute miles on each side of a direct course between radio fixes defining that route or route segment.

(e) The MOCA applies to the operation of an aircraft within 25 statute miles of the VOR station concerned. The MOCA assures obstruction clearance between the fixes specified but adequate reception of navigational signals is assured only within 25 miles of the VOR station concerned.

(f) The MRA applies to the operation of an aircraft over an intersection used

in the navigation of that aircraft. The MRA is the lowest altitude at which the intersection can be determined.

§ 95.3 Symbols.

- For the purposes of this part—
- (a) "L" means compass locator;
- (b) "LF/MF" means low frequency, medium frequency;
- (c) "LFR" means low frequency radio range;
- (d) "VOR-E" means VOR and distance measuring equipment; and
- (e) "Z" means a very high frequency location marker.

Subpart B—Designated Mountainous Areas

§ 95.11 General.

The areas described in this subpart are designated mountainous areas.

§ 95.13 Eastern United States Mountainous Area.

Section 610.8(a) of the regulations of the Administrator is hereby designated as § 95.13.

§ 95.15 Western United States Mountainous Area.

Section 610.8(b) of the regulations of the Administrator is hereby designated as § 95.15.

§ 95.17 Alaska Mountainous Area.

Section 610.8(c) of the regulations of the Administrator is hereby designated as § 95.17.

§ 95.19 Hawaii Mountainous Area.

Section 610.8(d) of the regulations of the Administrator is hereby designated as § 95.19.

§ 95.21 Puerto Rico Mountainous Area.

Section 610.8(e) of the regulations of the Administrator is hereby designated as § 95.21.

Subpart C—En Route IFR Altitudes Over Particular Routes and Intersections

§ 95.31 General.

This subpart prescribes IFR altitudes for flights along particular routes or route segments and over additional intersections not listed as a part of a route or route segment.

§§ 95.41–95.50 Green Federal Airways Nos. 1 to 10.

Sections 610.11 through 610.20 of the regulations of the Administrator are hereby designated as §§ 95.41 through 95.50, respectively.

§§ 95.101–95.119 Amber Federal Airways Nos. 1 to 19.

Sections 610.101 through 610.119 of the regulations of the Administrator are hereby designated as §§ 95.101 through 95.119, respectively.

§§ 95.201–95.313 Red Federal Airway Nos. 1 to 113.

Sections 610.201 through 610.313 of the regulations of the Administrator are hereby designated as §§ 95.201 through 95.313, respectively.

§§ 95.601–95.687 Blue Federal Airways Nos. 1 to 87.

Sections 610.601 through 610.687 of the regulations of the Administrator are hereby designated as §§ 95.601 through 95.687, respectively.

§ 95.1001 Direct Routes, U.S.

Section 610.1001 of the regulations of the Administrator is hereby designated as § 95.1001.

§§ 95.1502–95.1764 VOR Federal Airways Nos. 1502 to 1764.

Sections 610.1502 through 610.1764 of the regulations of the Administrator are hereby designated as §§ 95.1502 through 95.1764, respectively.

§§ 95.6001–95.6314 VOR Federal Airways Nos. 1 to 314.

Sections 610.6001 through 610.6314 of the regulations of the Administrator are hereby designated as §§ 95.6001 through 95.6314, respectively.

§§ 95.6401–95.6415 Hawaii VOR Federal Airways Nos. 1 to 15.

Sections 610.6401 through 610.6415 of the regulations of the Administrator are hereby designated as §§ 95.6401 through 95.6415, respectively.

§§ 95.6421–95.6530 VOR Federal Airways Nos. 421 to 530.

Sections 610.6421 through 610.6530 of the regulations of the Administrator are hereby designated as §§ 95.6421 through 95.6530, respectively.

§ 95.6642 VOR Federal Airway No. 1542.

Section 610.6642 of the regulations of the Administrator is hereby designated as § 95.6642.

§§ 95.6809–95.6887 VOR Federal Airways Nos. 809 to 887.

Sections 610.6809 through 610.6887 of the regulations of the Administrator are hereby designated as §§ 95.6809 through 95.6887, respectively.

PART 95—DISTRIBUTION TABLE

Former section	Revised section
610.1	95.1
610.2 (6th, 7th, 8th, 19th, 22d, and 23d paragraphs)	95.3
610.2 (11th, 12th, 13th, 15th, and 16th paragraphs)	95.1
610.2 (less 6th through 8th, 11th through 13th, 15th, 16th, 19th, 22d, and 23d paragraphs)	(¹)
610.3	(²)
610.6	(³)
610.8(a)	95.11
610.8(b)	95.13
610.8(c)	95.15
610.8(d)	95.17
610.8 (less (a)–(d))	95.19
610 (Subpart E)	(⁴)

- ¹ Transferred to Part 1 [New].
- ² Not a rule.
- ³ Transferred to Part 91.
- ⁴ Subpart C.

PART 97—STANDARD INSTRUMENT APPROACH PROCEDURES [NEW]

Subpart A—General

Sec.	
97.1	Applicability.
97.3	Symbols and terms used in procedures.
97.5	Bearings; courses; headings; radials; miles.

Subpart B—Procedures

97.11	Low or medium frequency range, automatic direction finding, and very high frequency omnirange procedures.
97.13	Terminal very high frequency omnirange procedures.
97.15	Very high frequency omnirange-distance measuring equipment procedures.
97.17	Instrument landing system procedures.
97.19	Radar procedures.

Authority: §§ 97.1 to 97.19 issued under secs. 307, 313(a), 402, 601, 602, 603, 902, 1110, and 1202 of the Federal Aviation Act of 1958; 49 U.S.C. 1348, 1354(a), 1372, 1421, 1442, 1443, 1472, 1510 and 1522.

Subpart A—General

§ 97.1 Applicability.

This part prescribes standard instrument approach procedures for instrument letdown to airports in the United States and the weather minimums that apply to takeoffs and landings under IFR at those airports.

§ 97.3 Symbols and terms used in procedures.

The following symbols and terms appear in standard instrument approach procedures prescribed in this part:

- (a) "A" means alternate minimum. This applies when the airport is being used as an alternate airport.
- (b) "T" means takeoff minimum.
- (c) "C" means circling landing minimum.

(d) "S" means straight-in landing minimum. The number appearing below the S indicates the runway to which it applies. If a straight-in minimum is not prescribed, the circling landing minimum applies to a straight-in landing.

- (e) "d" means day.
- (f) "n" means night.
- (g) "BCOB" means broken clouds or better.
- (h) "NA" means not authorized.
- (i) "65 knots or less" means an aircraft that has a stalling speed (as established in an approved flight manual) of 65 knots or less at maximum certificated landing weight with full flaps, landing gear extended, and power off.
- (j) "More than 65 knots" means an aircraft that has an approved stalling speed (as established in an approved flight manual) of more than 65 knots at maximum certificated landing weight with full flaps, landing gear extended, and power off.

§ 97.5 Bearings; courses; headings; radials; miles.

- (a) All bearings, courses, headings, and radials in this part are magnetic.
- (b) Unless otherwise stated in this part, all mileages in this part are stated as nautical miles.

Subpart B—Procedures

§ 97.11 Low or medium frequency range, automatic direction finding, and very high frequency omnirange procedures.

Section 609.100 of the regulations of the Administrator is hereby designated as § 97.11.

§ 97.13 Terminal very high frequency omnirange procedures.

Section 609.200 of the regulations of the Administrator is hereby designated as § 97.13.

§ 97.15 Very high frequency omnirange-distance measuring equipment procedures.

Section 609.300 of the regulations of the Administrator is hereby designated as § 97.15.

§ 97.17 Instrument landing system procedures.

Section 609.400 of the regulations of the Administrator is hereby designated as § 97.17.

§ 97.19 Radar procedures.

Section 609.500 of the regulations of the Administrator is hereby designated as § 97.19.

PART 97—DISTRIBUTION TABLE

Former section	Revised section
609.1	97.1
609.2	(¹)
609.3 (a) and (b)	(²)
609.3 (c) and (d)	97.5
609.3 (e) and (f)	97.3
609.4(d) (2), (e), and (g)	(¹)
609.4 (less (d) (2), (e), and (g))	(²)
609.5(a)	(³)
609.5 (less (a))	(¹)
609.10 through 609.57	(⁴)

- ¹ Transferred to Part 91.
- ² Transferred to Part 1 [New].
- ³ Not a rule.
- ⁴ Not rules.

PART 97—DISTRIBUTION TABLE—Continued

Former section	Revised section
609.100-----	97.11
609.200-----	97.13
609.300-----	97.15
609.400-----	97.17
609.500-----	97.19

PART 99—SECURITY CONTROL OF AIR TRAFFIC [NEW]

Subpart A—General

Sec.	
99.1	Applicability.
99.3	General.
99.5	Emergency situations.
99.7	Special security instructions.
99.9	Radio requirements.
99.11	Flight plan requirements; Coastal or Domestic ADIZ.
99.13	Flight plan requirements; DEWIZ.
99.15	Arrival or completion notice.
99.17	Position reports; aircraft operating in or penetrating a Domestic ADIZ; IFR.
99.19	Position reports; aircraft operating in or penetrating a Domestic ADIZ; DVFR.
99.21	Position reports; aircraft entering the U.S. through a Coastal ADIZ; United States aircraft.
99.23	Position reports; aircraft entering the U.S. through a Coastal ADIZ; foreign aircraft.
99.25	Position reports; aircraft entering the U.S. through a DEWIZ.
99.27	Deviation from flight plans and ATC clearances and instructions.
99.29	Radio failure; DVFR.
99.31	Radio failure; IFR.
Subpart B—Designated Air Defense Identification Zones	
99.41	General.
99.43	Domestic ADIZ's.
99.45	Coastal ADIZ's.
99.47	Alaskan DEWIZ.
99.49	Defense area.

AUTHORITY: §§ 99.1 to 99.49 issued under secs. 307, 313(a), 402, 601, 602, 902, 1110, and 1202 of the Federal Aviation Act of 1958; 49 U.S.C. 1348, 1354(a), 1372, 1421, 1442, 1443, 1472, 1510, and 1522.

Subpart A—General

§ 99.1 Applicability.

(a) This subpart prescribes rules for operating civil aircraft in a defense area, or into, within, or out of the United States through an Air Defense Identification Zone (ADIZ), designated in Subpart B.

(b) Except for § 99.7, this subpart does not apply to the operation of an aircraft—

(1) In a Coastal or Domestic ADIZ north of 28 degrees north latitude or west of 85 degrees west longitude at a true air speed of less than 180 knots;

(2) In the Alaskan DEWIZ at a true air speed of less than 180 knots while the pilot maintains a continuous listening watch on the appropriate frequency;

(3) From any point in the 48 contiguous States on an outbound track through the Southern Border ADIZ that does not penetrate a Coastal ADIZ;

(4) Within the 48 contiguous States and the District of Columbia, or within the State of Alaska, which remains within 10 nautical miles of the point of departure; or

(5) Over any island, or within three nautical miles of the coastline of any island, in the Hawaiian ADIZ.

(c) Except as provided in § 99.7, the radio and position reporting requirements of this subpart do not apply to the operation of an aircraft within the 48 contiguous States and the District of Columbia, or within the State of Alaska, if that aircraft does not have two-way radio and is operated in accordance with a filed DVFR flight plan containing the time and point of Domestic or Coastal ADIZ penetration and that aircraft departs within five minutes of the estimated departure time contained in the flight plan.

(d) An FAA ATC center may exempt the following operations from this subpart (except § 99.7), on a local basis only, with the concurrence of the military commanders concerned:

(1) Aircraft operations that are conducted wholly within the boundaries of an ADIZ and are not currently significant to the air defense system.

(2) Aircraft operations conducted in accordance with special procedures prescribed by the military authorities concerned.

§ 99.3 General

(a) Air defense identification zones (ADIZ's) are areas of airspace over land or water in which the ready identification, location, and control of civil aircraft is required in the interest of national security. They are classified as—

(1) Coastal air defense identification zones (Coastal ADIZ's);

(2) Domestic air defense identification zones (Domestic ADIZ's); and

(3) Distant early warning identification zones (DEWIZ's).

(b) A defense area is any airspace of the United States (other than that designated as an ADIZ) in which the control of aircraft is required for national security during an air defense emergency or defense emergency.

(c) For the purposes of this part, a Defense Visual Flight Rules (DVFR) flight is a flight within an ADIZ conducted under the visual flight rules in Part 91 [New].

§ 99.5 Emergency situations.

In an emergency that requires immediate decision and action for the safety of the flight, the pilot in command of an aircraft may deviate from the rules in this part to the extent required by that emergency. He shall report the reasons for the deviation to the communications facility where flight plans or position reports are normally filed (referred to in this part as "an appropriate aeronautical facility") as soon as possible.

§ 99.7 Special security instructions.

Each person operating an aircraft in an ADIZ or Defense Area during an air defense emergency or defense emergency shall operate the aircraft in accordance with any special security instructions issued by the Administrator. For the purposes of this part an air defense emergency or defense emergency is any state of events that indicates to the re-

sponsible commander-in-chief of a command under the Secretary of Defense or higher authority that hostile action is in progress, is imminent, or is of sufficient probability to require, in the interest of national security, the implementation of any part of approved plans and agreements for the defense of the United States. The special security instructions are consistent with the provisions of the "Plan for the Security Control of Air Traffic and Electromagnetic Radiations During an Air Defense Emergency" (SCATER).

§ 99.9 Radio requirements.

No person may operate an aircraft in an ADIZ unless the aircraft has a functioning two-way radio.

§ 99.11 Flight plan requirements; Coastal or Domestic ADIZ.

(a) No person may operate an aircraft in or penetrating a Coastal or Domestic ADIZ unless he has filed a flight plan with an appropriate aeronautical facility.

(b) Unless ATC authorizes an abbreviated flight plan—

(1) A flight plan for IFR flight must contain the information specified in § 91.83; and

(2) A flight plan for VFR flight must contain the information specified in § 91.83(a)(1) through (7).

(c) The pilot shall designate a flight plan for VFR flight as a DVFR flight plan.

§ 99.13 Flight plan requirements; DEWIZ.

(a) No person may operate an aircraft in or penetrating a DEWIZ unless he has filed a flight plan before takeoff with an appropriate aeronautical facility. If there is no facility for filing a DVFR flight plan, the pilot must comply with § 99.25(a)(2) and proceed according to the instructions issued by the appropriate aeronautical facility. These instructions normally require the flight to proceed to a specific area for visual identification or to land at a stated location.

(b) Unless ATC authorizes an abbreviated flight plan—

(1) A flight plan for IFR flight must contain the information specified in § 91.83 and the estimated time and point of DEWIZ penetration (ETDP); and

(2) A flight plan for VFR flight must contain the information on § 91.83(a)(1) through (7) and the estimated time and point of DEWIZ penetration (ETDP).

(c) The pilot shall designate a flight plan for VFR flight as a DVFR flight plan.

§ 99.15 Arrival or completion notice.

The pilot in command of an aircraft for which a flight plan has been filed shall file an arrival or completion notice with an appropriate aeronautical facility, unless the flight plan states that no notice will be filed.

§ 99.17 Position reports; aircraft operating in or penetrating a Domestic ADIZ; IFR.

The pilot of an aircraft operating in or penetrating a Domestic ADIZ under IFR—

(a) In controlled airspace, shall make the position reports required in § 91.25; and

(b) In uncontrolled airspace, shall make the position reports required in § 99.19.

§ 99.19 Position reports; aircraft operating in or penetrating a Domestic ADIZ; DVFR.

No pilot may penetrate a Domestic ADIZ under DVFR unless—

(a) He reports to an appropriate aeronautical facility before penetration: The time, position, and altitude at which the aircraft passed the last reporting point before penetration and the estimated time of arrival over the next appropriate reporting point along the flight route;

(b) If there is no appropriate reporting point along the flight route, he reports at least 15 minutes before penetration: The estimated time, position, and altitude at which he will penetrate; or

(c) If the airport of departure is so close to the Domestic ADIZ boundary that it prevents his complying with paragraphs (a) or (b) of this section, he has reported immediately after taking off: The time of departure, altitude, and estimated time of arrival over the first reporting point along the flight route.

§ 99.21 Position reports; aircraft entering the United States through a coastal ADIZ; United States aircraft.

The pilot of an aircraft entering the United States through a Coastal ADIZ shall make the reports required in § 99.17 or 99.19 to an appropriate aeronautical facility.

§ 99.23 Position reports; aircraft entering the United States through a Coastal ADIZ; foreign aircraft.

In addition to such other reports as ATC may require, no pilot in command of a foreign civil aircraft may enter the United States through a Coastal ADIZ unless he makes the reports required in § 99.17 or 99.19 or reports the position of the aircraft when it is not less than one hour and not more than two hours average direct cruising distance from the United States.

§ 99.25 Position reports; aircraft entering the United States through a DEWIZ.

(a) The pilot of an aircraft entering the United States through a DEWIZ—

(1) If under IFR, shall report his position as required by § 91.125; or

(2) If under DVFR, shall report when within radio range of an appropriate aeronautical facility but before penetration: The time, altitude, and position at which he passed the last reporting point and the estimated time, altitude, and point of penetration.

(b) If requested, the pilot of an aircraft entering the United States through a DEWIZ shall advise an appropriate aeronautical facility of the difference between the actual time and point of penetration and the same data recorded in the original ground filed flight plan.

§ 99.27 Deviation from flight plans and ATC clearances and instructions.

(a) No pilot may deviate from the provisions of an ATC clearance or ATC instruction except in accordance with § 91.75 of this chapter.

(b) No pilot may deviate from his filed IFR flight plan when operating an aircraft in uncontrolled airspace unless he notifies an appropriate aeronautical facility before deviating.

(c) No pilot may deviate from his filed DVFR flight plan unless he notifies an appropriate aeronautical facility before deviating.

§ 99.29 Radio failure; DVFR.

If the pilot operating an aircraft under DVFR in an ADIZ cannot maintain two-way radio communications, he may proceed in accordance with his original DVFR flight plan or land as soon as practicable. The pilot shall report the radio failure to an appropriate aeronautical facility as soon as possible.

§ 99.31 Radio failure; IFR.

If a pilot operating an aircraft under IFR in an ADIZ cannot maintain two-way radio communications, he shall proceed in accordance with § 91.127 of this chapter.

Subpart B—Designated Air Defense Identification Zones

§ 99.41 General.

The airspace above the areas described in this subpart is established as a Domestic ADIZ, Coastal ADIZ, DEWIZ, or Defense Area. The lines between points described in this subpart are great circles except that the lines joining adjacent points on the same parallel of latitude are rhumb lines.

§ 99.43 Domestic ADIZ's.

Section 620.21 of the regulations of the Administrator is hereby designated as § 99.43.

§ 99.45 Coastal ADIZ's.

Section 620.22 of the regulations of the Administrator is hereby designated as § 99.45.

§ 99.47 Alaskan DEWIZ.

Section 620.23 of the regulations of the Administrator is hereby designated as § 99.47.

§ 99.49 Defense area.

All airspace of the United States is designated as Defense Area except that airspace already designated as Air Defense Identification Zones.

PART 99—DISTRIBUTION TABLE

Former section	Revised section
620.1	99.1
620.2	99.1
620.3 (1st definition)	99.7
620.3 (2d definition)	99.3
620.3 (3d definition)	99.5
620.3 (4th definition)	99.3
620.3 (5th definition)	99.11
620.3 (6th-9th definitions)	(¹)
620.10	(²)
620.11 (a)(1), (b), and (d)	99.11

¹ Transferred to Part 1 [New].
² Surplusage.

PART 99—DISTRIBUTION TABLE—Continued

Former section	Revised section
620.11 (a)(2), (c), and (e)	99.13
620.4(f)	99.15
620.12(a)(1)	99.17
620.12(a)(2)	99.19
620.12(b)(1)	99.21
620.12(b)(2)	99.23
620.12(c)	99.25
620.13	99.1
620.14 (less 2d and 3d sentences of (c))	99.27
620.14(c) (2d and 3d sentences)	99.13
620.15	99.5
620.16(a)	99.31
620.16(b)	99.29
620.17	99.7
620.20	99.41
620.21	99.43
620.22	99.45
620.23	99.47
620.24 (note)	99.41
620.24 (less note)	99.49
Appendix A	(^a)
Appendix B	(^a)

^a Not a rule.

PART 101—MOORED BALLOONS, KITES, AND UNMANNED ROCKETS

Subpart A—General

Sec.	
101.1	Applicability.
101.3	Waivers.
101.5	Operations in prohibited or restricted areas.

Subpart B—Moored Balloons and Kites

101.11	Applicability.
101.13	Operating limitations.
101.15	Notice requirements.
101.17	Lighting and marking requirements.
101.19	Rapid deflation device.

Subpart C—Unmanned Rockets

101.21	Applicability.
101.23	Operating limitations.
101.25	Notice requirements.

AUTHORITY: §§ 101.1 to 101.25 issued under secs. 307, 313 (a), 402, 601, 602, 603, 902, 1110, and 1202 of the Federal Aviation Act of 1958; 49 U.S.C. 1348, 1354(a), 1372, 1421, 1442, 1443, 1472, 1510, and 1522.

Subpart A—General

§ 101.1 Applicability.

(a) This part prescribes rules governing the operation, in the United States, of—

(1) Any balloon that is moored to the surface of the earth or an object thereon and that has a diameter of more than six feet or a gas capacity of more than 115 cubic feet;

(2) Any kite that weighs more than five pounds and is intended to be flown at the end of a rope or cable; and

(3) Any unmanned rocket except—

(i) Aerial fireworks displays; and

(ii) model rockets—

(a) Using not more than four ounces of propellant;

(b) Using a slow-burning propellant;

(c) Made of paper, wood, or breakable plastic, containing no substantial metal parts and weighing not more than 16 ounces, including the propellant; and

(d) Operated in a manner that does not create a hazard to persons, property, or other aircraft.

(b) For the purposes of this part, a "gyroglider" attached to a vehicle on the surface of the earth is considered to be a kite.

§ 101.3 Waivers.

No person may conduct operations that require a deviation from this part except under a certificate of waiver issued by the Administrator.

§ 101.5 Operations in prohibited or restricted areas.

No person may operate a moored balloon, kite, or unmanned rocket in a prohibited or restricted area unless he has permission from the using or controlling agency, as appropriate.

Subpart B—Moored Balloons and Kites**§ 101.11 Applicability.**

This subpart applies to the operation of moored balloons and kites. However, a person operating a moored balloon or kite within a restricted area must comply only with § 101.19 and with additional limitations imposed by the using or controlling agency, as appropriate.

§ 101.13 Operating limitations.

(a) Except as provided in paragraph (b) of this section, no person may operate a moored balloon or kite—

- (1) Less than 500 feet from the base of any cloud;
- (2) More than 500 feet above the surface of the earth;
- (3) From an area where the ground visibility is less than three miles; or
- (4) Within five miles of the boundary of any airport.

(b) Paragraph (a) of this section does not apply to the operation of a balloon or kite below the top of any structure and within 250 feet of it, if that shielded operation does not obscure any lighting on the structure.

§ 101.15 Notice requirements.

No person may operate an unshielded moored balloon or kite more than 150 feet above the surface of the earth unless, at least 24 hours before beginning the operation, he gives the following information to the FAA ATC facility that is nearest to the place of intended operation:

- (a) The names and addresses of the owners and operators.
- (b) The size of the balloon or the size and weight of the kite.
- (c) The location of the operation.
- (d) The height above the surface of the earth at which the balloon or kite is to be operated.
- (e) The date, time, and duration of the operation.

§ 101.17 Lighting and marking requirements.

(a) No person may operate a moored balloon or kite during the night unless the balloon or kite, and its mooring lines, are lighted so as to give a visual warning equal to that required for obstructions to air navigation in the FAA publication "Obstruction Marking and Lighting".

(b) No person may operate a moored balloon or kite by day unless its mooring lines have colored pennants or streamers attached at not more than 50 foot intervals beginning at 150 feet above the sur-

face of the earth and visible for at least one mile.

§ 101.19 Rapid deflation device.

No person may operate a moored balloon unless it has a device that will automatically and rapidly deflate the balloon if it escapes from its moorings. If the device does not function properly, the operator shall immediately notify the nearest ATC facility of the location and time of the escape and the estimated flight path of the balloon.

Subpart C—Unmanned Rockets**§ 101.21 Applicability.**

This subpart applies to the operation of unmanned rockets. However, a person operating an unmanned rocket within a restricted area must comply only with § 101.23(g) and with additional limitations imposed by the using or controlling agency, as appropriate.

§ 101.23 Operating limitations.

No person may operate an unmanned rocket—

- (a) In a manner that creates a collision hazard with other aircraft;
- (b) In controlled airspace;
- (c) Within five miles of the boundary of any airport;
- (d) At any altitude where clouds or obscuring phenomena of more than five-tenths coverage prevails;
- (e) At any altitude where the horizontal visibility is less than five miles;
- (f) Into any cloud;
- (g) Within 1,500 feet of any person or property that is not associated with the operations; or
- (h) At night.

§ 101.25 Notice requirements.

No person may operate an unmanned rocket unless, within 24 to 48 hours before beginning the operation, he gives the following information to the FAA ATC facility that is nearest to the place of intended operation:

- (a) The names and addresses of the operators.
- (b) The number of rockets to be operated.
- (c) The size and weight of each rocket.
- (d) The maximum altitude to which each rocket will be operated.
- (e) The location of the operation.
- (f) The date, time, and duration of the operation.
- (g) Any other pertinent information requested by the ATC facility.

PART 101—DISTRIBUTION TABLE

Former section	Revised section
48.1.....	101.1
48.2.....	101.3
48.3 (4th paragraph).....	101.1
48.3 (less 4th paragraph).....	(¹)
48.4.....	101.5
48.10.....	101.11
48.11.....	101.13
48.12.....	101.15
48.13.....	101.17
48.14.....	101.19
48.20.....	101.21
48.21.....	101.1
48.22.....	101.23
48.23.....	101.25

¹ Transferred to Part 1 [New].

PART 103—TRANSPORTATION OF DANGEROUS ARTICLES AND MAGNETIZED MATERIALS (NEW)

Sec.	Applicability.
103.1	Certification requirements.
103.3	Authority to deviate.
103.5	Passenger-carrying aircraft.
103.7	Cargo aircraft.
103.9	Packing and marking requirements.
103.11	Labeling requirements.
103.13	Containers for liquids.
103.15	Quantity equivalents.
103.17	Quantity limitations.
103.19	Shipments by the Atomic Energy Commission; exemption from quantity limitations.
103.21	Special requirements for radioactive materials.
103.23	Notification of pilot in command.
103.25	Damage to dangerous articles.
103.27	Magnetized materials; packing and marking requirements.
103.29	Cargo location.
103.31	Transportation of gasoline in Alaska; aircraft operated in other than scheduled passenger-carrying operations.

AUTHORITY: §§ 103.1 to 103.33 issued under secs. 307, 313(a), 402, 601, 602, 603, 902, 1110, and 1202 of the Federal Aviation Act of 1958; 49 U.S.C. 1848, 1854(a), 1372, 1421, 1442, 1443, 1472, 1510, and 1522.

§ 103.1 Applicability.

(a) This part prescribes rules for loading and carrying dangerous articles and magnetized materials in any civil aircraft in the United States and in civil aircraft of United States registry anywhere in air commerce.

(b) For the purposes of this part "dangerous articles" are those articles defined and regulated in Parts 72 through 78 of the Interstate Commerce Commission Regulations for Transportation of Explosives and Other Dangerous Articles (49 CFR Parts 72-78), in this part referred to as the "ICC Regulations", and includes:

- (1) Explosives.
- (2) Flammable liquids and solids.
- (3) Oxidizing materials.
- (4) Corrosive liquids.
- (5) Compressed gases.
- (6) Poisonous articles.

(c) This part does not apply to—

(1) Aviation fuel and oil in tanks that comply with installation provisions of this chapter, small arms ammunition for personal use, aircraft equipment such as signaling devices, or aircraft equipment and materials necessary for safe operation of the aircraft on which they are carried;

(2) Material carried in hoppers or tanks of aircraft certificated for use in aerial seeding, dusting, spraying, fertilizing, crop improvement, or pest control, to be dispensed during such an operation;

(3) Radioactive materials that meet those requirements of Parts 72 and 73 of the ICC Regulations that exempt them from the packing, marking, and labeling requirements for shipment by rail express; and

(4) Radioactive materials that are shipped by the Atomic Energy Commission or under its direction or supervision, under special arrangement with the Administrator, and are escorted by

persons specially designated by the Atomic Energy Commission.

§ 103.3 Certification requirements.

(a) No shipper may offer, and no person operating an aircraft may knowingly accept, any dangerous article for shipment in an aircraft unless there is accompanying the shipment a clear and visible statement that the shipment complies with the requirements of this part. In the case of shipments in passenger-carrying aircraft, the shipper shall also state that the shipment complies with the requirements in this part for carrying dangerous articles in passenger-carrying aircraft. The shipper or his authorized agent shall sign the statement or stamp it with a facsimile of his signature. The person operating an aircraft may rely on the shipper's statement as prima facie evidence that the shipment complies with the requirements of this part.

(b) If there is provision on the face of the label for the statement, the shipper shall make the statement of compliance with this part on the ICC label attached to each package containing dangerous articles. If there is no provision on the label for the statement, the shipper shall make the statement in duplicate and sign it or stamp it with a facsimile of his signature. One signed or stamped copy accompanies the shipment and the originating air carrier retains the other signed or stamped copy. The person operating the aircraft may require the shipper to have the statement certified by an authority approved by the person operating the aircraft.

(c) For the purposes of this part, a passenger-carrying aircraft is an aircraft that carries any person other than a crewmember, company employee, an authorized representative of the United States, or a person accompanying the shipment.

§ 103.5 Authority to deviate.

(a) When other forms of transportation are impracticable, or in an emergency, the Administrator may authorize deviations from the provisions of this Part for one or more flights of a particular operation, subject to the following:

(1) Only the minimum flight crew necessary for safe flight, and such other persons as are necessary for handling the shipment en route, are carried in the aircraft.

(2) The shipper certifies that the shipment can be handled with a reasonable degree of safety to persons and cargo in the aircraft.

(3) The shipper provides full instructions on special handling procedures and precautions necessary for safe shipment.

(4) The crew of the aircraft is thoroughly briefed on the characteristics and handling of the cargo.

(5) Whenever any crew change occurs during the flight, the new crew is briefed under a hand-to-hand signature service furnished by the carrier.

(6) If the dangerous article can create destructive forces or have lethal or injurious effects over an appreciable area as a result of accident to the aircraft or shipment, the aircraft is located

on airports for loading and unloading, and is operated in takeoff, en route, and in landing, at a safe distance from heavily populated areas and from any place of human abode or assembly.

(7) The authorization is limited to the particular operation and to the articles for which the authorization is requested.

(8) The authorization specifies the points of origin where the articles are to be loaded in the aircraft and the points of destination where the articles are to be removed from the aircraft.

(9) The shipment is loaded, unloaded, packed, marked, stowed, and secured in the aircraft in accordance with the rules or special instructions of the ICC applicable to the articles for which deviation is requested.

(10) The holder of the authorization has advance permission from the operators or managers of the airports concerned.

(11) The authorization is limited to civil aircraft in the United States.

(b) Application for authority to deviate from this Part is made on Form FAA ---- (Form ACA-400).

(c) In an emergency requiring immediate transportation of articles for which authority to deviate is necessary, the applicant may apply by telephone or telegraph to the appropriate Flight Standards District Office.

(d) Upon applying for authority for deviation under this section, the applicant must arrange with the appropriate Flight Standards inspector to inspect the aircraft and loading arrangement and to ascertain the safety precautions necessary for safe flight.

§ 103.7 Passenger-carrying aircraft.

No person may carry any dangerous article in passenger-carrying aircraft, except—

(a) Those exempted from the specification, packing, marking, and labeling requirements of Parts 72, 73, and 78 of the ICC Regulations (49 CFR Parts 72, 73, and 78) applicable to rail express;

(b) Class C explosives that are packed, marked, and labeled in accordance with the requirements of Parts 72 and 73 of the ICC Regulations (49 CFR Parts 72 and 73) for shipment by rail express, except that the maximum that may be packed in one outside container is 50 pounds;

(c) Subject to § 103.19(a), nonflammable compressed gases that are in ICC approved cylinders and at pressures not greater than the pressure allowed by ICC Regulations for shipment by rail express, but not including anhydrous ammonia, boron trifluoride, chlorine, hydrogen bromide, hydrogen chloride, nitrosyl chloride, and sulfur dioxide;

(d) Motion picture film and X-ray film (nitrocellulose base), both exposed and unexposed, that is packed, marked, and labeled in accordance with the requirements of Parts 72 and 73 of the ICC Regulations (49 CFR Parts 72, and 73) for shipment by rail express;

(e) Pyroxylin plastics containing nitrocellulose in sheets, rolls, rods, or tubes that are packed, marked, and labeled in accordance with the requirements of Parts 72 and 73 of the ICC Regulations

(49 CFR Parts 72, and 73) for shipment by rail express; and

(f) Subject to § 103.19(b), radioactive materials (Groups I, II, and III), that are packed, marked, and labeled in accordance with the requirements of Parts 72 and 73 of the ICC Regulations (49 CFR Parts 72, and 73) for shipment by rail express.

§ 103.9 Cargo aircraft.

(a) The operator of a cargo aircraft may carry any of the dangerous articles allowed in § 103.7 and in addition, may carry—

(1) Any dangerous article certified by the shipper as acceptable under ICC Regulations for transportation by rail express, but the maximum quantity in any one outside package or container may not be more than that prescribed for railway express in the commodity list of Part 72 of the ICC Regulations (49 CFR Part 72); and

(2) Radioactive materials of low activity packed in strong, tight containers.

(b) The materials covered by subparagraph (a)(2) of this section are exempt from the packing and labeling requirements of this Part for shipment in plane load lots, if the per-plane load radiation intensity at one meter from the outside surface of the load in the aircraft does not exceed 10 milliroentgens per hour of gamma radiation or equivalent. There must be no loose radioactive material in the aircraft, and the shipment must be braced and lashed to prevent leaking or shifting in normal flight. The consignor and consignee are responsible for supervising the loading and unloading and for monitoring each person involved so as not to exceed accepted limits of personnel radiation exposure.

(c) For the purposes of this Part, a cargo aircraft is any aircraft that is not a passenger-carrying aircraft and that is used for the carriage of goods.

§ 103.11 Packing and marking requirements.

Except as otherwise provided in this Part, each shipper who packs or marks a dangerous article for shipment under this Part shall pack or mark that article in accordance with Parts 72, 73, and 78 of the ICC Regulations (49 CFR Parts 72, 73, and 78) applicable to rail express.

§ 103.13 Labeling requirements.

Except as otherwise provided in this part, the shipper shall label each dangerous article, that is acceptable under this part for transportation in air commerce, with the appropriate label required by ICC Regulations, even though that article is exempt from ICC labeling requirements because of ICC quantity and packing limitations.

§ 103.15 Containers for liquids.

(a) Each shipper who packs liquids for shipment under this part shall pack the liquids in securely closed inside containers that are strong enough to prevent leakage or distortion of the containers from temperature or pressure change during shipment, and must have them filled in a manner that provides adequate outage.

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(b) In the case of quantities of one quart or less in each inside container, the shipper must pack each inside container in a strong outside container with cushioning and absorbent material to prevent breakage or leakage. However, inside containers of a combined capacity of not more than one quart may be packed within one such outside container.

§ 103.17 Quantity equivalents.

Quantities measured by the metric system or the imperial system may be substituted on the basis of one liter or one imperial quart per quart specified, and 500 grams per pound specified, up to one gallon for liquids or 10 pounds for solids.

§ 103.19 Quantity limitations.

(a) No person may carry more than 150 pounds net weight of nonflammable compressed gas in any single cargo pit or bin on passenger-carrying aircraft or in any inaccessible cargo pit or bin on any aircraft.

(b) No person may carry more than 40 units of radioactive material (Group I or II) in any aircraft.

(c) No person may carry more than 50 pounds net weight of any article (other than an article specified in paragraphs (a) and (b) of this section) that is subject to this part in a cargo pit or bin on passenger-carrying aircraft, or in an inaccessible cargo pit or bin on any aircraft.

§ 103.21 Shipments by the Atomic Energy Commission; exemption from quantity limitations.

When other forms of transportation are impracticable, or in an emergency, shipments by the Atomic Energy Commission are exempt from the quantity limitations prescribed for the shipment of radioactive materials by rail express in the ICC Regulations, if the shipments are otherwise in accordance with the ICC Regulations. The Atomic Energy Commission shall give advance notice of each shipment in a form and manner prescribed by the Administrator.

§ 103.23 Special requirements for radioactive materials.

(a) If the pilot in command or the operator of an aircraft discovers that a shipment of radioactive material is damaged, the operator of the aircraft shall remove the radioactive material from the aircraft and keep it from human contact. The operator of the aircraft shall immediately request the shipper to furnish disposal instructions and shall notify the Administrator of the incident.

(b) In any case that radioactive material spills to such an extent that it is no longer contained in its inner container, no person may attempt to remove or clean up the material until instructions are received from the shipper or other qualified person, protective measures have been taken, and qualified persons are present to supervise the handling.

(c) No person may place a container or group of containers of radioactive material closer to an area that may be continuously occupied by crewmembers or passengers than the distance specified in the distance table in this paragraph. If there is more than one container, the distance is computed by adding the number of units shown on the label of each package.

TABLE FOR PERSONNEL SEPARATION

Total number of units:	Minimum distance to crewmembers and passengers (feet)
0-2	1
3-5	2
6-10	3
11-20	4
21-30	5
31-40	6

This table is designed to afford maximum protection to human beings from the effects of radiation and will not protect X-ray film from such effects under all conditions of exposure. Distance separation required by this table for Groups I and II (red label) radioactive materials is not required for Group III (blue label) radioactive materials. Total number of units refers to the number found on the red label of a single package entered on the line reading, "Radiation Units from Package: No. . . ." For two or more packages stored together, the total of the numbers of all such packages is meant. Distance means the number of feet from the nearest edge of the nearest radioactive container.

(d) If an aircraft is frequently used to carry radioactive materials, the shipper and the operator of the aircraft are jointly responsible for monitoring all persons involved so that the accepted limits of personnel radiation exposure are not exceeded.

§ 103.25 Notification of pilot in command.

Whenever articles subject to the provisions of this Part are carried in an aircraft, the operator of the aircraft shall inform the pilot in command of the name, type of label, quantity and location of the dangerous article. The person marking the cargo load manifest shall mark it conspicuously to indicate the dangerous articles.

§ 103.27 Damage to dangerous articles.

Except as provided in §103.23, the pilot in command or operator of the aircraft shall remove from the aircraft any package subject to this part that appears to be damaged or leaking and may not carry it in the aircraft until it has been determined that the damaged or leaking article meets the requirements of this part. The operator of the aircraft shall promptly report the incident to the Administrator.

§ 103.29 Magnetized materials; packing and marking requirements.

Each shipper offering magnetized materials (which might cause an erroneous

aircraft magnetic compass reading) for shipment by air shall—

(a) Plainly mark the outside of the package "Magnetized Materials";

(b) Pack magnets or magnetized devices such as magnetrons and light meters so that the polarities of each unit oppose one another; and

(c) Install keeper bars on permanent magnets or shield them to prevent the magnetic field from affecting that magnetic compass.

§ 103.31 Cargo location.

(a) No person may carry articles that are subject to the requirements of this Part in a cabin of a passenger-carrying aircraft.

(b) Each person carrying articles acceptable only for cargo aircraft shall carry those articles in a location accessible to a crewmember in flight.

(c) No person may place yellow label material and white label material side by side in cabins or in cargo pits or bins.

(d) No person may load magnetized material (which might cause an erroneous magnetic compass reading) on an aircraft in the vicinity of a magnetic compass or compass master unit that is a part of the instrument equipment of the aircraft in a manner that affects its operation. If this requirement cannot be met, a special aircraft swing and compass calibration may be made. No person loading magnetized materials may obscure the warning labels.

§ 103.33 Transportation of gasoline in Alaska; aircraft operated in other than scheduled passenger-carrying operations.

Any person operating a small aircraft may carry not more than 20 gallons of gasoline (in other than one-quart containers) in aircraft operated entirely within the State of Alaska in other than scheduled passenger-carrying operations subject to the following:

(a) Before engaging in the operation, he must notify the Chief, Flight Standards Division, Alaska Region, of the type aircraft, registration number, and area of operation, state that the deviation is necessary to meet the needs of the passengers, and state that air transportation is the only practical means of transportation.

(b) The gasoline must be packed in airtight and leakproof inside containers of at least 28 gauge metal and of not more than ten gallons capacity each, and each inside container must be packed in an outside wooden box of at least one-half inch thickness.

(c) The compartment in which the gasoline is loaded must be ventilated so as to prevent the accumulation of fumes.

(d) Before each flight, the pilot in command must orally inform each passenger of the location of the gasoline, the hazards involved, and prohibit smoking, lighting matches, or carrying any flame or lighted cigar, pipe, or cigarette, and the use of anything that might cause an open flame or spark while loading or unloading or in flight.

DISTRIBUTION TABLE

<i>Former section</i>	<i>Revised section</i>
49.1-----	103.1
49.2 (less (a) (3) and (b))-----	103.5
49.2(a) (2)-----	103.21
49.2(b)-----	103.1
49.2-1-----	(1)
49.2-2 (less last sentence of (h))-----	103.5
49.2-2(h) (last sentence)-----	(2)
49.2-3-----	103.5
49.5 (1st paragraph)-----	103.9
49.5 (less 1st and 6th-9th paragraphs)-----	(3)
49.5 (6th, 8th, and 9th paragraphs)-----	(4)
49.5 (7th paragraph)-----	103.3
49.11-----	103.11
49.12-----	103.13
49.13-----	103.3
49.14-----	103.17
49.15-----	103.15
49.16-----	103.29
49.21-----	103.31
49.22-----	103.25
49.23-----	103.27
49.24-----	103.19
49.25-----	103.23
49.31-----	103.7
49.41-----	103.9
SR 447-----	103.33
49.50-----	103.1

¹ Omitted.

² Not a rule.

³ Transferred to Part 1 [New].

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8:45 a.m.]