CIVIL AERONAUTICS BOARD

WASHINGTON, D. C.

CIVIL AIR REGULATIONS

PART 60.—AIR TRAFFIC RULES

As Amended To October 4, 1940

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FOREWORD

In this edition, the designation of control airports, control zones of intersection, radio fixes and airway traffic control areas appear in the Appendix. In addition, in accordance with a recent amendment to this Part, the civil airways have been removed. The civil airways have been redesignated by the Administrator of Civil Aeronautics and appear in a separate publication.

CIVIL AIR REGULATIONS

PART 60—AIR TRAFFIC RULES

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60.0 Provision for issuance. Pursuant to the provisions of the Civil Aeronautics Act of 1938, as amended, empowering the Administrator of Civil Aeronautics to issue certificates for airmen, aircraft, air carriers, air navigation facilities and air agencies, and requiring the Board to prescribe air traffic rules governing the flight of, and for the navigation, protection, and identification of aircraft, including rules as to safe altitudes of flight and rules for the prevention of collisions between aircraft and between aircraft and land or water vehicles and prohibiting the operation or navigation of aircraft in violation

thereof, the following air traffic rules relating thereto, in addition to those prescribed elsewhere in the Civil Air Regulations, are hereby prescribed.

60.1 **Definitions.**

60.109 (Unassigned.)

60.101 (Unassigned.)

60.102 (Unassigned.)

60.103 **Control zone.** A control zone is the air space above that area on the surface of the earth within 3 miles of the center of an airport designated by the Board as a control airport, and within one-half mile of a line extended from the center of such airport to the radio range station established for the purpose of directing air traffic to such airport. (See § 60.21 for a list of control airports.)

60.104 **Zone of intersection.** A zone of intersection is that part of a civil airway which overlaps and lies within any part of any other civil airway.

60.105 **Control zone of intersection.** A control zone of intersection is the air space above that area on the surface of the earth within a radius of 25 miles of a radio range station designated by the Board as the center of such intersection. (See § 60.22 for such designation.)

60.106 (Unassigned.)

60.107 **Green zone of intersection.** A green zone of intersection is a zone of intersection of a green civil airway in which through traffic on a green civil airway continues through such zone at a constant altitude, and in which zone traffic on the intersected amber, red, or blue civil airway shall proceed as outlined in §§ 60.58410, 60.58420, and 60.5843.

60.108 **Amber zone of intersection.** An amber zone of intersection is a zone of intersection on an amber civil airway in which through traffic on an amber civil airway continues through such zone at a constant altitude and in which zone traffic on the intersected red, or blue civil airway shall proceed as outlined in §§ 60.58420 and 60.5843.

60.109 **Red zone of intersection.** A red zone of intersection is a zone of intersection on a red civil airway in which traffic on a red civil airway continues through such zone at a constant altitude and traffic on a blue civil airway shall proceed as outlined in § 60.5843.

60.110 **Zone of intersection priority.** That part of an amber, red, or blue zone of intersection which may overlap and lie within a green zone of intersection shall be considered as the green zone of intersection, and that part of a red or blue zone of intersection which may overlap or lie within an amber zone of intersection shall be considered as the amber zone of intersection, and that part of a blue civil airway which may overlap or lie within a red zone of intersection shall be considered as the red zone of intersection.

60.111 **Alternate airport.** An alternate airport is an airport, other than the point of first intended landing, specified in the flight plan, and to which the flight may be directed in case of emergency.

60.112 **Radio fix.** A radio fix is a geographical location on a civil airway, above which the position of an aircraft in flight can be accu-

rately determined by means of radio only. (Such as a cone of silence marker, Z type marker, fan type marker, or intersection of radio range "on course" signals.) (For a list of designated radio fixes, see § 60.23.)

60.113. Check point. A check point is a geographical location on the surface of the land or water, above which the position of an aircraft in flight can be accurately determined by means of visual reference. (Such as a river, highway, mountain, bridge, lightship, etc.)

60.114 Radio range station. A radio range station is that point in a radio station from which radio signals are emitted for the purpose of assisting an aircraft to maintain a course.

60.115 (Unassigned.)
60.116 (Unassigned.)
60.117 (Unassigned.)
60.118 (Unassigned.)
60.119 (Unassigned.)

60.120 Airway traffic control center. An airway traffic control center is a station operated by the Administrator for the purpose of controlling air traffic on civil airways. (For a list of airway traffic control centers, see Appendix D.)

60.121 Airway traffic control area. An airway traffic control area is an area designated by the Board over which an airway traffic control center of the Administrator exercises control of air traffic. (For a list of susch designations, see § 60.24.)

60.122 Airway communications station. An airway communications station is an airway radio, teletype, or other communications station operated by the Administrator.

60.123 Airport control tower. An airport control tower is an establishment properly situated and equipped to allow an operator thereof to adequately control air traffic in the immediate vicinity of the airport on or adjacent to which such airport control tower is located.

60.124 (Unassigned.)
60.125 (Unassigned.)
60.126 (Unassigned.)
60.127 (Unassigned.)
60.128 (Unassigned.)
60.129 (Unassigned.)

60.130 Contact flight. Contact flight is flight of aircraft in which the attitude of the aircraft and its flight path can at all times be controlled by means of visual reference to the ground or water.

60.131 Instrument flight. Instrument flight is flight of aircraft in which the visual reference in § 60.130 is not continuously available and the attitude of the aircraft and its flight path can be controlled in part or in whole by reference to instruments only.

60.132 Over-the-top flight. Over-the-top flight is flight of aircraft made above an overcast, usually a cloud formation.

60.133 Flight plan. A flight plan means a plan of flight which shall contain the following information:

(*a*) The aircraft identification mark, or the name of the governmental service in which the aircraft is employed, if so employed, or the name of the air carrier operator and the trip number, if engaged in scheduled air transportation service.

(*b*) The type of aircraft involved and the number of aircraft making the flight, if the aircraft are in formation.

(*c*) The name of the pilot, or of the flight commander if the aircraft are in formation.

(*d*) The point of departure of the particular flight for which such plan is being filed.

(*e*) The proposed cruising altitude or altitudes.

(*f*) The point of first intended landing.

(*g*) The proposed cruising airspeed.

(*h*) The radio equipment carried in the aircraft. (If no radio—NORDO; if radio receiver only—RONLY; if two-way radio, statement of transmitter frequency to be used.)

(*i*) The proposed time of departure. (The time of departure shall be considered as the time when the aircraft leaves the ground.)

(*j*) The estimated elapsed time until arrival on the ground at the point of first intended landing. (For scheduled operation, the first stop to be made, together with additional stops if requested by an airway traffic control center.)

(*k*) The alternate airport, if the flight is to involve instrument flight.

(*l*) The route, if other than a direct course, and any other pertinent information which the pilot deems useful for control purposes or which may be requested by an airway traffic control center.

60.134 Approved flight plan. An approved flight plan is a plan of flight, containing the information required by § 60.133, which has been approved solely with respect to known air traffic conditions by the airway traffic control center of the Administrator into the control area of which the flight will first enter. (For a list of airway traffic control areas, see § 60.24.)

NOTE.—Approval of a flight plan is an authorization for an aircraft to proceed in accordance with the provisions of such flight plan only insofar as known air traffic conditions are concerned and does *not* constitute authority to violate any provision or provisions of the Civil Air Regulations.

60.1340 Traffic control instructions issued to the pilot before departure or enroute shall be considered to be a part of the approved flight plan.

60.135 Cruising altitude. A cruising altitude is a flight altitude, measured in feet above sea level, proposed for that part of a flight from point to point during which a constant altitude will be maintained.

60.136 (Unassigned.)

60.137 (Unassigned.)

60.138 (Unassigned.)

60.139 (Unassigned.)

60.140 Ceiling. Ceiling is the distance from the cloud base to the ground. (The reports of the U. S. Weather Bureau, when available to the pilot, shall govern.)

60.141 Unlimited ceiling. A ceiling is considered unlimited when clouds cover less than one-half of the sky or when the base of the clouds is more than 9,750 feet above the point of observation. (The reports of the U. S. Weather Bureau, when available to the pilot, shall govern.)

60.142 Daylight, hours of. (Day flight, daylight hours, day.) The hours of daylight as used in these rules are those hours between the mean solar times of sunrise and sunset, as published in the Nautical Almanac, converted to local standard time for the locality concerned.

NOTE.—The "Nautical Almanac," price 50 cents, containing sunshine tables, may be obtained from the Supt. of Documents, Government Printing Office, Washington, D. C. Information is available from the "Sunshine Tables," in the offices of Officials in Charge, Airport Station, U. S. Weather Bureau, at:

Newark, N. J.
Washington Airport, Washington, D. C.
Atlanta, Ga.
Cleveland, Ohio.
Chicago, Ill.
Kansas City, Mo.
Fort Worth, Tex.
Salt Lake City, Utah.
Portland, Oreg.
Oakland, Calif.

These "Sunshine Tables" are not available for distribution.

60.143 Darkness, hours of. (Night flight, hours of darkness, night.) The hours of darkness as used in these rules are those hours between the mean solar times of sunset and sunrise, as published in the Nautical Almanac, converted to local standard time for the locality concerned.

NOTE.—See note under § 60.142.

60.144 Visibility. Visibility is the greatest distance toward the horizon at which conspicuous objects can be seen and identified.

60.145 Weather minimums. Weather minimums are ceiling, visibility and other minimums provided for specified types of flight operation, and below which flight operation is not permitted, unless specifically authorized elsewhere in these regulations or by the Administrator.

NOTE.—The local United States Weather Bureau reporting station for each control airport will classify existing weather conditions for such airport by one of the following symbols:

Class C—*Contact:* Weather equal to or better than the minimums specified for the particular airport for flight in accordance with contact flight rules. (Satisfactory for contact flight.)

Class N—*Instrument:* Weather less than the minimums specified for the particular airport for contact flight (Class C above) and down to the minimums prescribed for the particular airport for suspension of flight operations. (Requiring observance of instrument flight rules, unless flight in accordance with contact flight rules has been authorized as provided for in §§ 60.440 and 60.441.)

Class X—*Closed:* Weather below the minimums specified for the particular airport, wherein any landing or take-off, other than a flight of public aircraft or scheduled aircarrier aircraft if otherwise authorized, is suspended. (Take-off and landing of nonscheduled civil aircraft suspended, unless authorized as provided for in § 60.540.)

60.146 (Unassigned.)
60.147 (Unassigned.)
60.148 (Unassigned.)
60.149 (Unassigned.)

60.150 Military aircraft. Military aircraft are public aircraft operated in the service of the United States Army, National Guard, Navy, Marine Corps, or Coast Guard.

60.151 Public aircraft. A public aircraft is an aircraft used exclusively in the governmental service.

60.152 Acrobatics (acrobatic flight). Acrobatics are unnecessary flight evolutions voluntarily performed with an aircraft requiring or resulting in an abrupt change in its attitude, an abnormal attitude, or operations in excess of the aircraft's design level flight speed (placard value). A normal bank not in excess of 70 degrees will not be considered as an abrupt change in the aircraft's attitude or as an abnormal attitude.

60.2 Control airport and other designations.

60.20 (Unassigned.)

60.21 Control airport designation. (*In this edition of Part 60 of the Civil Air Regulations this section is set forth in Appendix E.*)

60.22 Control zones of intersection designation. (*In this edition of Part 60 of the Civil Air Regulations this section is set forth in Appendix F.*)

60.23 Radio fix designation. (*In this edition of Part 60 of the Civil Air Regulations this section is set forth in Appendix G.*)

60.24 Airway traffic control area designation. (*In this edition of Part 60 of the Civil Air Regulations this section is set forth in Appendix H. In addition, the airway traffic control areas are indicated on a map of the civil airways accompanying this Part.*)

60.3 Flight rules (general).

60.30 Pilot certificates. No person shall pilot a civil aircraft within the limits of a civil airway or control zone of intersection, or elsewhere in interstate, overseas, or foreign air commerce—

(*a*) unless possessed of a valid pilot certificate of competency, or

(*b*) unless possessed, if an alien, of such certificate or a similar pilot certificate issued or validated according to the provisions of Part 65, or

(*c*) in violation of any term, specification, or limitation of such certificate.

60.31 Aircraft certificate. No flight of civil aircraft, other than of a foreign aircraft, shall be made or authorized to be made—

(*a*) within the limits of a civil airway or control zone of intersection whatever the purpose or nature of the flight may be, unless such aircraft is possessed of valid aircraft registration and airworthiness or experimental certificates, or

(*b*) elsewhere in the navigable airspace over the lands and waters of the United States if engaged in interstate, overseas, or foreign air commerce, unless such aircraft is possessed of such valid aircraft certificates, or

(*c*) in violation of any term, specification, or limitation of such certificates.

60.310 No foreign aircraft shall engage in interstate or intrastate commerce; nor shall it be otherwise navigated in the United States except in compliance with these air traffic rules and the provisions of Part 65.

60.32 Identification mark. No aircraft (except a foreign aircraft provided for in section 6 of the Air Commerce Act of 1926, as amended) shall be operated within the United States unless it displays an identification mark assigned thereto by the Administrator: *Provided*, That aircraft of the national defense forces of the United States shall be identified by the agency having jurisdiction over such

aircraft, in a manner satisfactory to the Board. The identification marks assigned by the Administrator shall be as follows:

(*a*) A certificated aircraft which has fully complied with the minimum airworthiness requirements specified in the Civil Air Regulations, shall display the Roman capital letters NC followed by the registration number.

(*b*) A certificated aircraft which has not demonstrated compliance with the airworthiness requirements specified in the Civil Air Regulations but which, in the opinion of the Administrator, is in condition for safe operation for particular activities, shall display the Roman capital letters NR followed by the registration number.

(*c*) A certificated aircraft which has not demonstrated compliance with the airworthiness requirements specified in the Civil Air Regulations but which, in the opinion of the Administrator, is in condition for safe operation for experimental purposes shall display the Roman capital letters NX followed by the registration number.

(*d*) An uncertificated aircraft shall display the registration number only.

(*e*) A certificated aircraft manufactured in the United States for delivery to a foreign purchaser may display such marks or insignia as the appropriate foreign government shall designate. Such aircraft may only be operated for the purpose of test flights and demonstration for a limited time in the immediate vicinity of the manufacturer's airport or for the sole purpose of delivery to a foreign purchaser.

60.320 Location for display. The identification mark on conventional aircraft shall be displayed, in the case of a biplane, on the lower surface of the lower left wing and on the upper surface of the upper right wing and, in the case of a monoplane, on the lower surface of the left wing and the upper surface of the right wing: *Provided*, That if the length of the lower left wing of a biplane is less than one-half the length of the upper left wing, the identification mark shall be displayed on the lower surface of the upper left wing as far to the left as possible. The top of the letters and figures shall be toward the leading edge. The height shall be at least four-fifths of the mean chord but need not exceed 30 inches. The mark shall also be located on both sides of the vertical tail surface of all conventional airplanes, of a size as large as a 2-inch marking will permit. On gliders the letters and figures shall be displayed in the same manner and place prescribed for conventional airplanes except the minimum height shall be 15 inches. On aircraft other than conventional airplanes or gliders the identification mark shall be displayed in such manner as may be prescribed by the Administrator upon examination of a three-view drawing to scale of the aircraft.

60.321 Lettering. The width of the letters and figures (except the figure 1) shall be at least two-thirds of their height. The width of each stroke shall be at least one-sixth of the height of the letters and figures, which shall be of uniform size. The space between such letters and figures shall be not less than one-sixth of the height. Such letters and figures shall be painted on the aircraft in a solid color and on a clearly contrasting background. Such identification mark shall be kept clean and clearly visible. No other design, mark,

or symbol which might modify or confuse the assigned mark shall be placed on the aircraft except with the approval of a duly authorized inspector of the Administrator.

60.33 **Take-off and landing.**

60.330 **Method of taking off and landing.** The following rules shall govern the method by which aircraft shall take off and land:

60.3300 (*a*) Aircraft, when taking off or landing, shall observe the local field traffic rules issued for the protection of interstate, overseas, and foreign air commerce, as approved by the Board.

60.3301 (*b*) A take-off shall not be commenced until there is no risk of collision with other aircraft during such take-off.

60.3302 (*c*) Aircraft approaching for a landing shall circle the airport or other landing area sufficiently to observe other traffic, unless the pilot receives other instructions from the air-traffic control-tower operator. Such circles shall be made to the left unless the pilot receives other instructions from the air-traffic control-tower operator, or unless local traffic rules approved by the Board provide otherwise.

60.3303 (*d*) Aircraft approaching for a landing shall, unless impracticable, maintain a straight approach course for the last 1,000 feet before crossing the airport boundary.

60.3304 (*e*) Aircraft making contact flights within 3 miles horizontally of the center of an airport or landing area shall conform to the circuit rule provided in § 60.3302 unless flying at an altitude in excess of 3,000 feet above the ground or water.

60.3305 (*f*) Air traffic departing from, or arriving at, a control airport shall take precedence over other air traffic within the control zone of such airport when required in the interests of safety, and all traffic will be governed by special traffic rules approved by the Board.

60.331 **Running motors, supervision of.** No aircraft engine shall be started or run unless a competent operator is in the aircraft attending the engine controls. Blocks, equipped with ropes or other suitable means of pulling them, shall always be placed in front of the wheels before starting the engine, or engines, unless the aircraft is provided with adequate parking brakes and the same are fully on.

60.332 **Air meet landing.** In approaching a landing area where there is a congestion of aircraft or an assembly of persons or automobiles in the vicinity of aircraft, pilots shall proceed with caution and ascertain before landing, or before flying at low altitude over the landing area, whether or not an air meet or aeronautical demonstration is in progress. (See § 60.8911.)

60.333 **Certified high explosive areas.** Aircraft, when taking off or landing over any certified high explosive danger area, shall be flown in such a manner as to permit at all times an emergency landing outside of such area in the event of complete power failure.

60.34 **Flight enroute.**

60.340 **Right-of-way.** The following rules will govern aircraft right-of-way.

60.3400 (*a*) **Order.** Aircraft in flight shall have right-of-way in the following order (1) Balloons, fixed or free (an airship not

under control is classed as a free balloon), (2) gliders, (3) airships, and (4) airplanes, including rotorplanes.

60.3401 (*b*) **Crossing.** When two aircraft are on crossing courses at approximately the same altitude, the aircraft which has the other on its left shall have right-of-way, and the other aircraft shall give way.

60.3402 (*c*) **Approaching head-on.** When two aircraft are approaching head-on, or approximately so, and there is danger of collision, each shall alter its course to the right so that they will pass each other at a distance of at least 500 feet.

60.3403 (*d*) **Overtaking.** An overtaken aircraft shall have right-of-way and the overtaking aircraft shall keep clear of the overtaken aircraft by altering its own course to the right.

60.3404 (*e*) **Landing.** An aircraft landing in the manner prescribed in § 60.3303 (*d*) shall have right-of-way over other aircraft in flight or on the ground or water, except aircraft landing in distress.

60.3405 (*f*) **Distress landing.** An aircraft in distress shall have right-of-way in attempting to land.

60.341 **Duty to give way.** When landing or maneuvering in preparation to land, it shall be the duty of the aircraft at the higher altitude to avoid the aircraft at the lower altitude.

60.342 **Right-side traffic.** Aircraft making a contact flight along a civil airway in accordance with the provisions of § 60.4, except when impracticable for reasons of safety, shall keep to the right side of such radio range course as is projected along the airway. Except when otherwise specified in a flight plan, and except when impracticable because of any natural or other obstruction, aircraft making a flight along a civil airway in accordance with the provisions of § 60.5 shall keep to the right side of, and close to, such radio range course as is projected along the airway: *Provided*, That in-bound aircraft may fly along the on-course signal.

60.343 **Proximity in flight.** No aircraft, other than military aircraft of the United States engaged in military maneuvers, shall be flown closer than 500 feet to any other aircraft in flight, except that by prearrangement two or more civil aircraft may be flown in formation closer than 500 feet to each other.

60.344 **Transport of prohibited articles.** No explosives, arms, or munitions of war or other materials deemed by the Administrator to be dangerous goods shall be carried by or in any aircraft other than public aircraft or aircraft in which mail is being transported or arms are required, provided that the provisions of this rule shall not apply to persons lawfully carrying arms and ammunition for legitimate purposes, proper signalling or safety equipment (such as a Very pistol or landing flares) nor to the aircraft fuel, nor to materials for industrial and agricultural spraying (dusting).

60.345 **Liquor, narcotics, and drugs.** No pilot or other member of the crew of an aircraft in flight shall be under the influence of, or use intoxicating liquor, cocaine, or other habit-forming drugs, nor shall such person carry any other person who is obviously under the influence of intoxicating liquor, cocaine, or other habit-forming drugs, except a medical patient under proper care, or in case of emergency.

60.346 **Towing by aircraft.** The towing of aircraft by other aircraft or the towing of any device or object by aircraft is prohibited, unless permission therefor has been granted by the Administrator in accordance with the provisions of § 60.91: *Provided, however*, Such restriction shall not apply to military aircraft previously authorized by the appropriate governmental agency to make such flights in the public interest.

60.347 **Dropping objects or things.** No object or thing, other than fine sand, fine (#7 or smaller) lead shot, fuel, or water (all unconfined), shall be dropped or released from an aircraft in flight by any person on board the aircraft, unless permission therefor has been granted by the Administrator in accordance with the provisions of § 60.91: *Provided, however*, Such restriction shall not apply to military aircraft previously authorized by the appropriate governmental agency to make such flights in the public interest: *And provided further*, That such exemption shall not include bombing and aerial gunnery within the limits of a civil airway. The pilot or person in charge of the aircraft shall be responsible for the observance of this rule by all persons in the aircraft.

60.348 **Airspace reservations.** No flight of aircraft shall be made within any airspace reservation set apart by order of the President of the United States, any authorized Federal agency, or by any of the several States, pursuant to the provisions of the Air Commerce Act, as amended, or other applicable law: *Provided, however*, That such restriction of flight shall not apply to public aircraft previously authorized by the appropriate governmental agency to make such flights. (See Appendix A for a list of airspace reservations.)

60.35 **Minimum safe altitudes.** Exclusive of taking off from or landing upon an airport or other landing area, aircraft shall not be flown below the following minimum safe altitudes of flight:

60.350 (*a*) An altitude over the congested parts of cities, towns, or settlements, sufficient to permit at all times an emergency landing outside of such areas in the event of complete power failure, but in no case less than 1,000 feet above the ground.

60.351 (*b*) An altitude over certified high explosive danger areas other than airspace reservations, sufficient to permit at all times an emergency landing outside of such certified danger area in the event of complete power failure, but in no case less than 1,000 feet above the ground: *Provided, however*, That the restrictions of this subparagraph shall not apply to public aircraft, previously authorized by the appropriate governmental agency, to make specific flights below such minimums in the public interest.

63.352 (*c*) 1,000 feet above the ground over any Federal penal institution or any open air assembly of persons.

60.353 (*d*) 500 feet above the ground or water elsewhere than as specified in §§ 60.350, 60.351, and 60.352, or within 500 feet from any mountain, hill or other obstruction to flight, except as may be specifically approved by the Administrator: *Provided, however*, That seaplanes and amphibians may be flown below 500 feet, but not below 300 feet, if making a contact flight during daylight hours over open water and where an emergency landing may, at all times, be made, without the aid of power, into the wind and without danger of col-

lision with craft on the surface or other obstructions: *And provided, further*, That the restrictions of this subparagraph shall not apply to public aircraft, previously authorized by the appropriate governmental agency, to make specific flights below such minimums in the public interest.

60.354 (*e*) 1,000 feet above the ground or water, or within 1,000 feet of any mountain, hill, or other obstruction to flight, if an aircraft is making an instrument flight as defined in § 60.131.

60.355 (*f*) Any maneuver required in student instruction or solo practice under the supervision of a certificated flight instructor, the Army, Navy, Marine Corps, or Coast Guard, or in flight tests given by an inspector of the Administrator, may be conducted at the altitude above the ground or water necessary for the proper execution of such maneuver in places other than as specified in §§ 60.350, 60.351, and 60.352.

60.36 Parachutes. No parachute shall be carried, available for immediate use as such, in any aircraft in flight unless it has been packed within the preceding 60 days by a person authorized by the provisions of § 25.40.[1]

NOTE.—§ 60.36 does not apply to military personnel when flying, or flying in, military aircraft.

60.37 Landing flares. No aircraft shall be flown for hire at night beyond an area within a circle with a radius of 3 miles drawn from the center of the airport of take-off unless equipped with certificated landing flares as required in § 04.512 (*c*).

60.38 Air traffic control procedures and phraseologies. Airmen shall observe air traffic control procedures and phraseologies which shall provide adequately for safety in the operation of aircraft in air commerce and which are best adapted to ready understanding by the flying public.

60.4 Flight rules (contact). In addition to general or special air traffic rules which apply, the following rules shall govern a contact flight in weather conditions equal to or better than those described in § 60.44, within the limits of a civil airway or control zone of intersection, or elsewhere in interstate, overseas, or foreign air commerce. For flight in weather conditions worse than those described in § 60.44 and for flight in closer proximity to cloud formations than the distances prescribed in § 60.44, see § 60.5.

NOTE.—The rules prescribed under § 60.4 will apply to scheduled air carrier operations unless otherwise specifically indicated.

60.40 Pilot. No instrument rating required. (See Parts 40 and 61 for provisions applicable to scheduled air carriers.)

60.41 Equipment. Aircraft shall be certificated as to equipment as provided for in §§ 04.510, 04.511, 04.512 or 04.515, depending upon whether the flight is visual contact day within 100 miles of a fixed base, visual-contact day unlimited distance or visual-contact night for landplanes, or either of the same for seaplanes or amphibians. (See §§ 04.530 and 04.531 for provisions applicable to scheduled air carriers.)

[1] By recent amendment Part 25 of the Civil Air Regulations was deleted. The provisions governing the packing of parachutes now appear in Part 24.

60.42 Fuel requirements. No aircraft shall take off without sufficient fuel and oil, taking into account wind and other weather conditions to be encountered during the course of the flight, to arrive at its point of first intended landing and effect a safe landing thereat. (See § 61.7020 for provisions applicable to scheduled air carriers.)

60.43 Flight plan. No flight plan is required.

NOTE.—If a pilot desires that any information concerning his proposed flight be transmitted by a communications facility of the Administrator to the point of destination, a complete flight plan as defined in § 60.133 shall be submitted to such facility. Such flight plan will, if possible, be transmitted by communications facilities of the Administrator to such point of destination as soon as practicable.

60.430 Notification of arrival. If the pilot of an aircraft has submitted, or authorized the submission of, a flight plan for transmission to destination, he shall, immediately upon landing or upon completion of the flight, file an arrival message for transmission to the point of departure.

60.44 Weather minimums. The following weather minimums shall govern flight made in accordance with contact flight rules: *Provided, however,* That an airway traffic control center of the Administrator may, for reasons of safety, restrict or suspend contact flight operation within the airway traffic control area of such center: *And provided further,* That, in the interest of safety, the Administrator may require higher minimums at any particular control airport, and that such minimums shall govern the control zone in which such control airport lies.

60.440 Within control zones (day). Flight of aircraft shall not be made during the hours of daylight within a control zone unless the ceiling is at least 800 feet (1,000 feet if precipitation is occurring in any form) and the visibility is at least 3 miles: *Provided, however,*

(*a*) that a certificated air-traffic control-tower operator on duty in a radio-equipped airport control tower in operation at the control airport may authorize flight, in accordance with §§ 60.442 and 60.443, at or below 1,000 feet above the ground or water in the control zone of such control airport when the visibility is less than 3 miles but not less than 1 mile, and

(*b*) that such operator shall suspend contact flight operations within the control zone whenever in his opinion safety requires such action.

60.441 Within control zones (night). Flight of aircraft shall not be made during the hours of darkness within a control zone unless the ceiling is at least 1,000 feet and the visibility is at least 3 miles: *Provided, however,*

(*a*) that a certificated air-traffic control-tower operator on duty in a radio-equipped airport control tower in operation at the control airport may authorize flight, in accordance with §§ 60.442 and 60.443, at or below 1,000 feet above the ground in the control zone for such control airport when the visibility is less than 3 miles but not less than 2 miles, and

(*b*) that such operator shall suspend contact flight operations within the control zone whenever in his opinion safety requires such action.

60.442 Within control zones (day or night below overcast). No flight of aircraft shall be made during daylight within a control zone

closer than 300 feet vertically to the base of an overcast or cloud formation within such zone, nor closer than 500 feet vertically if precipitation is occurring in any form. No flight of aircraft shall be made at night within a control zone closer than 500 feet vertically to the base of an overcast or cloud formation within such zone.

60.443 Within control zones (day or night above overcast or through cloud level). No flight of aircraft shall be made during daylight within a control zone closer than 300 feet vertically to the top of an overcast or cloud formation within such zone, nor closer than 500 feet vertically if precipitation is occurring in any form. No flight of aircraft shall be made at night within a control zone closer than 500 feet vertically to the top of an overcast or cloud formation within such zone. At no time during ascent, descent, or level flight within the cloud level shall the aircraft be flown closer than 2,000 feet horizontally to the cloud formation or overcast.

60.444 Outside of control zones (day flight at or below 1,000 feet above the ground or water). No flight of aircraft shall be made during daylight outside of a control zone at or below 1,000 feet above the ground or water, unless the ceiling is sufficient to permit flight at the minimum altitudes prescribed in § 60.35 and unless the visibility is at least 1 mile.

60.445 Outside of control zones (day flight above 1,000 feet above the ground or water). No flight of aircraft shall be made during daylight outside of a control zone above 1,000 feet above the ground or water, unless the ceiling is sufficient to permit flight at the minimum altitudes prescribed in § 60.35 and unless the visibility is at least 3 miles at the flight altitude, except as provided in §§ 60.443 and 60.449.

60.446 Outside of control zones (night flight at or below 1,000 feet above the ground or water). No flight of aircraft shall be made at night outside of a control zone at or below 1,000 feet above the ground or water, unless the ceiling is sufficient to permit flight at the minimum altitudes prescribed in § 60.35 and unless the visibility is at least 2 miles.

60.447 Outside of control zones (night flight above 1,000 feet above the ground or water). No flight of aircraft shall be made at night outside of a control zone above 1,000 feet above the ground or water, unless the ceiling is sufficient to permit flight at the minimum altitudes prescribed in § 60.35 and unless the visibility is at least 3 miles at the flight altitude, except as provided in §§ 60.443 and 60.449.

60.448 Outside of control zones (day or night below overcast). No flight of aircraft shall be made during daylight outside of a control zone closer than 300 feet vertically to the base of an overcast or cloud formation, nor closer than 500 feet vertically if precipitation is occurring in any form. No flight of aircraft shall be made during darkness outside of a control zone closer than 500 feet vertically to the base of an overcast or cloud formation.

60.449 Outside of control zones (day or night above overcast or through cloud level). No flight of aircraft shall be made during daylight outside of a control zone closer than 300 feet vertically to the top of an overcast or cloud formation, nor closer than 500

feet vertically if precipitation is occurring in any form. No flight of aircraft shall be made at night outside of a control zone closer than 500 feet vertically to the top of an overcast or cloud formation. At no time during ascent, descent, or level flight within the cloud level shall the aircraft be flown closer than 2,000 feet horizontally to the cloud formation or overcast.

60.45 Alternate airport. No requirement.

60.46 Over-the-top flight. No flight of aircraft shall be made over broken clouds or stretches of solid overcast unless the attitude of the aircraft and its flight path can at all times be controlled by visual reference to the ground or water and ascent and descent can be made in accordance with the provisions of §§ 60.443 or 60.449. (For scheduled air carrier operations, see Parts 40 and 61.)

60.47 Flight enroute.

60.470 Weather changes. If weather conditions below the minimums prescribed in § 60.44 are anticipated or are actually encountered enroute, a landing shall be made at the nearest airport at which weather conditions are equal to or better than those prescribed in § 60.44, or the flight shall be altered so that it may be made in weather conditions as good as, or better than, such minimums, unless such flight can and does proceed in accordance with the instrument flight rules prescribed in § 60.5.

60.471 Communication contacts. No communication contacts required.

NOTE.—If the aircraft is possessed of two-way radio, it is recommended that the procedure provided for in § 60.571 be followed.

60.472 Flight plan changes. No notice of any change in flight plan is required. See, however, § 60.430.

NOTE.—If a flight plan has been submitted and the aircraft is possessed of two-way radio, it is recommended that the procedure provided for in § 60.573 be followed.

60.48 Flight altitudes. None required.

NOTE.—It is recommended that cruising altitudes shall conform to those provided for in § 60.58 if the flight is made above 1,000 feet above the ground or water.

60.5 Flight rules (instrument). In addition to general or special air traffic rules which apply, the following rules shall govern instrument flight, flight in closer proximity to cloud formation than the distances prescribed in § 60.44, and flight in weather conditions worse than those described in § 60.44, within or approaching the limits of a civil airway or control zone of intersection, or elsewhere in interstate, overseas, or foreign air commerce.

NOTE.—The rules prescribed under § 60.5 will apply to scheduled air carrier operations unless otherwise specifically indicated.

60.50 Pilot. No flight shall be made in civil aircraft unless the pilot in charge—

(*a*) holds a valid instrument rating; or

(*b*) holds a valid airline transport pilot certificate; or

(*c*) is an active member of the Regular Army, Navy, Marine Corps, or Coast Guard, or a reserve member of any such service on extended active duty for at least 1 year, and who holds at least a private pilot certificate issued by the Administrator and a military instrument flying rating, or equivalent, issued by his service.

60.51 Equipment. Aircraft shall be properly certificated as to equipment according to the provisions of §§ 04.513, 04.514, and

04.515. (Scheduled air carrier aircraft shall be certificated as provided in §§ 04.532, 04.533, and 04.534.)

60.52 Fuel requirements. No aircraft shall take off without fuel and oil sufficient, considering the wind and other weather conditions forecast for the flight, at least

(*a*) to complete such flight to the point of the first intended landing and thereafter

(*b*) to fly to and land at the alternate airport designated in the approved flight plan, and thereafter

(*c*) to fly, at normal cruising consumption, for a period of 45 minutes.

(For scheduled air carrier operations, see § 61.7021.)

60.53 Flight plan. Prior to take-off from any point within an airway traffic control area, and prior to entering such an area, an approved flight plan as prescribed in § 60.134 is required. No flight plan shall be submitted until after the pilot has made a careful study of available current weather reports and forecasts and believes the flight can be made with safety. (For a list of airway traffic control areas, see § 60.24.)

60.530 Traffic control instructions. Traffic control instructions from an airway traffic control center of the Administrator issued to the pilot before departure or enroute are a part of the approved flight plan, and the pilot shall comply with the same in all respects.

60.531 Control zone of intersection. No control zone of intersection served by a radio voice communication station of the Administrator shall be entered without first establishing communication with such station, directly or through other communication channels, and forwarding the expected time of arrival over the center of such zone, the altitude to be flown through such zone, and the course or courses to be followed while within such zone, and thereafter observing such traffic instructions as may be issued by such station: *Provided*, That such procedure shall not be required within an airway traffic control area if the flight plan has been approved by an airway traffic control center of the Administrator prior to entering such zone.

NOTE.—For a list of control zones of intersection, see § 60.22. For further information concerning aids to air navigation, see "Tabulation of Air Navigation Radio Aids" published periodically by the Administrator of Civil Aeronautics.

60.532 Notification of arrival. If the pilot of an aircraft has submitted, or authorized the submission of, a flight plan for transmission to destination as provided for in § 60.53, he shall, immediately upon landing or upon completion of the flight, file an arrival message for transmission to the point of departure.

60.54 Weather minimums. The following weather minimums shall govern landings and take-offs made in accordance with instrument flight rules: *Provided, however*, That, in the interest of safety, the Administrator may require higher minimums at any airport: *And provided further*, That such minimums, if for a control airport, shall govern the control zone in which such airport lies.

60.540 Airports within control zones. No flight, other than by a public aircraft or by a scheduled air carrier aircraft from or to a regular terminal or scheduled intermediate stop on the regular route, shall be made to or from a control airport nor to or from any other

airport within a control zone, when the ceiling is less than 500 feet or the visibility is less than 1 mile: *Provided, however*, That if the control airport is equipped with a radio directional aid to air navigation designed to direct aircraft to that airport by the aid of instruments, a certificated air-traffic control-tower operator on duty in a radio-equipped airport control tower in operation at such airport may authorize departure from such control airport when the ceiling is not less than 300 feet and the visibility is not less than one-half mile. (For scheduled air carrier operation at terminals and scheduled intermediate stops, see §§ 40.290, 40.390, 61.7109, and 61.730.)

60.541 Airports outside a control zone. No flight, other than by a public aircraft or by a scheduled air carrier aircraft, shall be made to or from an airport outside of a control zone when the ceiling is less than 500 feet or the visibility is less than 1 mile. (For scheduled air carrier operation, see §§ 40.290, 40.390, 61.7109, and 61.730.)

60.55 Alternate airport. No take-off of aircraft shall be made unless:

(*a*) the flight plan as submitted includes an alternate airport having a landing area suitable for the equipment to be used, and

(*b*) weather reports and forecasts indicate that the weather conditions at the alternate airport will remain at or above the minimums specified in (*c*) or (*d*) below until the arrival of the aircraft thereat, and

(*c*) if the alternate airport is equipped with a radio directional aid to air navigation in operation and there is at such alternate airport a ceiling of at least 2,000 feet and a visibility of at least 3 miles if an overcast exists, or a ceiling of at least 1,500 feet and a visibility of at least 3 miles if broken clouds exist, or

(*d*) if the alternate airport is not equipped with a radio directional aid to air navigation, there is at such alternate airport an unlimited ceiling and a visibility of at least 3 miles. (For scheduled air carrier operation see §§ 61.23 and 61.7109.)

60.56 Over-the-top flight. Over-the-top flight shall be governed by instrument flight rules whenever the attitude of the aircraft and its flight path cannot be controlled at all times by visual reference to the ground or water.

60.57 Flight enroute.

60.570 Weather changes. If weather reports available to the pilot enroute indicate that the weather conditions will be below the minimums allowing operation into the airport of destination at the expected time of arrival, the pilot shall not attempt a landing at the airport of destination but shall either proceed to the appropriate alternate airport as provided for in § 60.55, or proceed to an airport where weather conditions are at such time equal to or better than the weather minimums described in § 60.54. For scheduled air carrier operation, see § 61.7106.)

60.571 Communications contacts. The pilot shall maintain a continuous listening watch on the appropriate radio frequency and shall, by radio, contact and report as soon as possible to the appropriate communication station the time and altitude of passing each radio fix or other check point designated by the Board or specified

in the flight plan together with unanticipated weather conditions being encountered and any other information pertinent to the aircraft movement and, further, if not within an airway traffic control area, shall, prior to entering a control zone of intersection, served by a radio voice communication station of the Administrator, establish communication with such station, directly or through other communication channels, forwarding the expected time of arrival over the center of such zone, the altitude to be flown through such zone, and the course or courses proposed to be followed while within such zone.

60.5710 Aircraft utilizing air carrier communication facilities shall transmit information as required in this paragraph through such facilities, or such information may be transmitted directly by radio, to the appropriate agency of the Administrator.

NOTE.—For further information concerning aids to air navigation, see "Tabulation of Air Navigation Radio Aids," published periodically by the Administrator of Civil Aeronautics.

60.572 Communications failure. In the event of mechanical failure of aircraft two-way communication equipment or in the event that the pilot does not receive radio signals sufficient to permit his maintaining an instrument flight on course (see § 60.342), one of the following procedures shall be observed.

60.5720 (*a*) **Continue flight in accordance with contact flight rules.** The pilot may proceed provided that the flight may be made in accordance with contact flight rules as provided for in §60.4.

60.5721 (*b*) **Effect a landing.** The pilot may effect a landing at the nearest suitable airport at which favorable weather conditions exist and where no airway traffic control center is located.

60.5722 (*c*) **Continue flight in accordance with flight plan.** In the event weather conditions do not permit the procedures provided for in § 60.5720 or § 60.5721, the pilot may, when sufficient radio signals are received, proceed according to his flight plan, including any amending instructions issued and acknowledged enroute, with particular attention to maintaining his last acknowledged assigned altitude until the approach time last authorized for, and acknowledged by, the pilot of such aircraft, after which landing may be made.

NOTE.—Normal traffic will resume as soon as the aircraft has landed or been accounted for, but in any event in not more than 30 minutes after the approach time last authorized for the aircraft and acknowledged by the pilot of such aircraft.

60.573 Flight plan changes. No change shall be made enroute in any approved flight plan until approval has first been obtained from the airway traffic-control center of the Administrator for the area in which the flight is progressing, unless an emergency situation arises which requires immediate decision and action, in which case as soon as possible after such emergency authority is exercised the pilot shall inform the proper control center of the new flight plan and obtain approval therefor.

60.58 Flight altitudes. Unless different altitudes are assigned by an airway traffic-control center of the Administrator, the following flight altitudes shall govern flights made in accordance with instrument flight rules. (See § 60.354.)

60.580 Flight altitudes along green civil airways. The following rules will govern the altitude at which aircraft shall fly when making flights along green civil airways:

60.5800 **Eastbound flights.** Aircraft making good a true course of from 0° (or 360°) to, but not including, 180° along a green civil airway shall fly at an ODD thousand-foot level above sea level (such as 3,000, 5,000, or 7,000 feet).

60.5801 **Westbound flights.** Aircraft making good a true course of from 180° to, but not including, 360° (or 0°) along a green civil airway shall fly at an EVEN thousand-foot level above sea level (such as 2,000, 4,000, or 6,000 feet).

60.581 **Flight altitudes along amber civil airways.** The following rules will govern the altitude at which aircraft shall fly when making flights along amber civil airways:

60.5810 **Northbound flights.** Aircraft making good a true course of from 270° to, but not including, 90° along an amber civil airway shall fly at an ODD thousand-foot level above sea level (such as 3,000, 5,000, or 7,000 feet).

60.5811 **Southbound flights.** Aircraft making good a true course of from 90° to, but not including, 270° along an amber civil airway shall fly at an EVEN thousand-foot level above sea level (such as 2,000, 4,000, or 6,000 feet).

60.582 **Flight altitudes along red civil airways.** The following rules will govern the altitude at which aircraft shall fly when making flights along red civil airways:

60.5820 **Eastbound flights.** Aircraft making good a true course of 0° (or 360°) to, but not including, 180° along a red civil airway shall fly at an ODD thousand-foot level above sea level (such as 3,000, 5,000, or 7,000 feet).

60.5821 **Westbound flights.** Aircraft making good a true course of 180° to, but not including, 360° (or 0°) along a red civil airway shall fly at an EVEN thousand-foot level above sea level (such as 2,000, 4,000, or 6,000 feet).

60.583 **Flight altitudes along blue civil airways.** The following rules will govern the altitude at which aircraft shall fly when making flights along blue civil airways:

60.5830 **Northbound flights.** Aircraft making good a true course of from 270° to, but not including, 90° along a blue civil airway shall fly at an ODD thousand-foot level above sea level (such as 3,000, 5,000, or 7,000 feet).

60.5831 **Southbound flights.** Aircraft making good a true course of from 90° to, but not including, 270° along a blue civil airway shall fly at an EVEN thousand-foot level above sea level (such as 2,000, 4,000, or 6,000 feet).

60.584 **Flight altitudes on airway intersections.** The following flight procedure and altitude rules will govern aircraft making flights on the civil airways where two or more such airways intersect.

60.5840 **Flight on green civil airway.** An aircraft flying along a green civil airway and continuing the flight through a green zone of intersection shall, while within a green zone of intersection, maintain the altitude approved for flight on the green civil airway being followed and, upon leaving a green zone of intersection, shall assume an altitude prescribed for the airway to be followed.

60.5841 **Flight on amber civil airway.**

60.58410 Through green zone of intersection. An aircraft flying along an amber civil airway and continuing flight through a green zone of intersection shall, while within a green zone of intersection, maintain an altitude 500 feet higher than the altitude approved for flight on the amber civil airway being followed and, upon leaving a green zone of intersection, shall assume an altitude prescribed for the airway to be followed.

60.58411 Through amber zone of intersection. An aircraft flying along an amber civil airway and continuing the flight through an amber zone of intersection shall, while within an amber zone of intersection, maintain the altitude approved for flight on the amber civil airway being followed and, upon leaving an amber zone of intersection, shall assume an altitude prescribed for the airway to be followed.

60.5842 Flight on red civil airway.

60.58420 Through green zone of intersection. An aircraft flying along a red civil airway and continuing flight through a green zone of intersection shall, while within a green zone of intersection, maintain an altitude 500 feet higher than the altitude approved for flight on the red civil airway being followed and, upon leaving a green zone of intersection, shall assume an altitude prescribed for the airway to be followed.

60.58421 Through amber zone of intersection. An aircraft flying along a red civil airway and continuing flight through an amber zone of intersection shall, while within an amber zone of intersection, maintain an altitude 500 feet higher than the altitude approved for flight on the red civil airway being followed and, upon leaving an amber zone of intersection, shall assume an altitude prescribed for the airway to be followed.

60.58422 Through red zone of intersection. An aircraft flying along a red civil airway and continuing flight through a red zone of intersection shall, while within a red zone of intersection, maintain an altitude approved for flight on the red civil airway being followed and, upon leaving the red zone of intersection, shall assume an altitude prescribed for the airway to be followed.

60.5843 Flight on blue civil airway.

60.58430 Through a green, amber, or red zone of intersection. An aircraft flying along a blue civil airway and continuing flight through a green, amber, or red zone of intersection shall, while within such zone of intersection, maintain an altitude 500 feet higher than the altitude approved for flight on the blue civil airway being followed and, upon leaving such zone of intersection, shall assume an altitude prescribed for the airway to be followed.

60.585 Flight altitudes on off-airway flights. The following rules will govern the altitudes of aircraft making instrument flights when approaching for crossing a civil airway not at a control zone of intersection:

60.5850 (*a*) **Eastbound flights.** Aircraft making good a true course of 0° (or 360°) to, but not including, 180° shall fly at an ODD thousand-foot level plus 500 feet, above sea level (such as 3,500, 5,500, or 7,500 feet); and

60.5851 (*b*) **Westbound flights.** Aircraft making good a true course of 180° to, but not including, 360° (or 0°) shall fly at an EVEN thousand-foot level plus 500 feet, above sea level (such as 2,500, 4,500, or 6,500 feet).

60.586 **Crossing an airway.** Unless otherwise instructed by an airway traffic control center of the Administrator, a civil airway shall not be crossed at an angle of less than 45° to such airway, and the appropriate altitude as prescribed in § 60.585, shall be maintained throughout the entire crossing of such airway: *Provided, however*, That if such crossing is through any part of a zone of intersection the pertinent provisions of § 60.584 shall govern, and if such crossing is through any part of a control zone of intersection the pertinent provisions of §§ 60.571 and 60.584 shall govern.

60.59 **Approach and departure procedures.** (To be issued.)

60.6 **Light and signal rules.**

60.60 **Angular limits.** The angular limits prescribed in the following rules relating to lights will be determined with the aircraft in normal flying position.

60.61 **Airplane lights.** Between sunset and sunrise, all airplanes in flight shall show the following lights.

60.610 (*a*) On the right (starboard) side a green light and on the left (port) side a red light, each showing unbroken light between 2 vertical planes whose dihedral angle is 110 degrees when measured to the left and right, respectively, from dead ahead. These lights shall be visible at least 2 miles.

60.611 (*b*) At the rear, and as far aft as possible, a white light shining rearward, visible for at least 3 miles in a dihedral angle of 140 degrees bisected by a vertical plane through the longitudinal axis of the aircraft.

60.62 **Airship lights.** Between sunset and sunrise, airships shall carry and display the same lights that are prescribed for airplanes, except that the side lights shall be doubled horizontally in a fore-and-aft position and the rear light shall be doubled vertically. Lights in a pair shall be at least 7 feet apart.

60.63 **Balloon lights.** Between sunset and sunrise a free balloon shall display one steady white light and one flashing red light, both lights to be visible all around the horizon at a distance of at least 2 miles. The white light shall be located not less than 20 feet below the car and the red light shall be located not less than 7, nor more than 10, feet below the white light. Between sunset and sunrise a fixed balloon, or airship, shall carry 3 lights—red, white, and red—in a vertical line, one over the other, visible at least 2 miles. The top light shall not be less than 20 feet below the car, and the lights shall be not less than 7, nor more than 10, feet apart.

60.64 **Lights on stationary aircraft.** Between sunset and sunrise, all aircraft which are on the surface of water and not under way, or which are moored or anchored in navigation lanes, shall show a white light visible for at least 2 miles in all directions. Between sunset and sunrise balloon and airship mooring cables shall show groups of 3 red lights at intervals of at least every 100 feet, measured from the car. The first light in the first group shall

be approximately 20 feet from the lower red balloon light. The object to which the balloon is moored on the ground shall have an adequate group of lights to mark its position.

60.65 Signals on stationary aircraft. By day, balloon and airship mooring cables shall be marked with chrome yellow colored conical streamers not less than 10 inches in diameter at the mouth and 7 feet long. The object to which the balloon or airship is moored on the ground shall have the same kind of streamers, which must be in the same position as the lights specified in § 60.64.

60.66 Distress signals. The following signals, separately or together shall, where practicable, be used in case of distress:

60.660 (*a*) The international signal, S O S by radio: In radiotelephony, the spoken expression MAYDAY (corresponding to the French pronunciation of the expression "m'aider"). When, owing to the rapidity of the maneuvers to be accomplished, an aircraft is unable to transmit the intended message, the signal P A N not followed by a message retains such meaning.

60.661 (*b*) The international code flag signal of Distress, NC.

60.662 (*c*) A square flag having either above or below it a ball, or anything resembling a ball.

60.67 Forced landing signals.—When an aircraft is forced to land at night at an airport, it shall signal its forced landing by making a series of short flashes with its navigation lights, if practicable to do so.

60.68 Fog signals. In fog, mist, or heavy weather, an aircraft on the water in navigation lanes shall signal its presence by a sound device emitting a signal for about 5 seconds at one-minute intervals.

60.7 Acrobatic flight rules.

60.70 Prohibited zones. No person shall acrobatically fly an aircraft—

60.700 (*a*) at any height whatsoever over a congested area of any city, town, or settlement, or over any open air assembly of persons, or over any airport or landing area or within 1,000 feet horizontally thereof, or within any control zone unless under the supervision of an inspector of the Administrator observing flight tests and then only between 2,000 and 5,000 feet above the ground or water.

60.701 (*b*) at any height less than 1,500 feet over any place over which flight is not otherwise restricted.

60.702 (*c*) at any place unless the visibility is at least 3 miles and the ceiling at least 3,000 feet, and unless the pilot has first ascertained that there is no danger of collision with other aircraft.

60.71 Acrobatics while carrying persons. No person shall acrobatically fly an aircraft while carrying any other person or persons for hire: *Provided, however*, That this provision shall not apply to the giving of instruction in acrobatic flying to a person receiving dual instruction.

60.72 Equipment for acrobatics. Each person in an aircraft flown acrobatically shall be properly equipped with a parachute manufactured under a valid type certificate and maintained in accordance with the provisions of the Civil Air Regulations.

60.73 Parachute jump. No person shall make any exhibition, test, training, or demonstration parachute jump, unless wearing a certificated and properly maintained auxiliary parachute so arranged that it can be operated if the first parachute should fail to function or become fouled. Whenever an auxiliary parachute is required, it shall consist of a single-harness pack.

60.730 Altitude before jump. No person shall make any exhibition, training, or demonstration parachute jump from an altitude of less than 2,000 feet above the surface of the ground or water.

60.731 Delayed jump. No person shall delay opening his parachute more than is necessary to properly and safely clear the aircraft, which in no case, except in an emergency jump, shall be less than 1,500 feet above the surface of the ground.

60.732 Jump in high wind. No person shall make any exhibition, test, training, or demonstration parachute jump from any aircraft when the surface wind is more than 15 miles per hour.

60.733 Jump near open water. No person shall make any exhibition, test, training, or demonstration parachute jump from any aircraft within 2 miles horizontally from any body of water, unless the jumper wears a flotation device approved by the Administrator and unless motor-powered marine rescue equipment is available.

NOTE.—§§ 60.71, 60.72, and 60.73 do not apply to military personnel when flying, or flying in, military aircraft.

60.8 Air-meet rules.

60.80 Classification. Air meets will be classified as follows:

60.800 Class 1 air meets. Meaning those meets which will receive wide publicity, large crowds and large numbers of visiting aircraft and in which any one or all of the following events are included:

60.8000 (*a*) Races in which "NC," "NR" or "NX" aircraft are permitted to enter. (See § 02.11.)

60.8001 (*b*) Acrobatic flights over the airport at or below 1,500 feet.

60.8002 (*c*) Formation flying over the airport at or below 1,500 feet.

60.8003 (*d*) So called "crazy flying" over the airport.

60.8004 (*e*) Parachute jumping for a spot.

60.801 Class 2 air meets. Meaning those meets which are locally sponsored amateur meets and which may combine passenger-carrying activities with one or more of the following events:

60.8010 (*a*) Races for "NC" aircraft.

60.8011 (*b*) Simulated bomb dropping contests.

60.8012 (*c*) Acrobatic flights over the airport above 1,500 feet.

60.8013 (*d*) Formation flights over the airport above 1,500 feet.

60.8014 (*e*) Paper-cutting over the airport above 1,500 feet.

60.8015 (*f*) Balloon-bursting over the airport above 1,500 feet.

60.8016 (*g*) Spot landing contests (switches not cut).

60.8017 (*h*) Parachute jumping (not for spot).

60.81 Certificate of waiver required. No air meet shall be held or conducted, or authorized to be held or conducted, on a civil airway or elsewhere within the United States where the operation or navigation of aircraft engaged in such air meet directly affects, or may endanger safety in interstate, overseas, or foreign air commerce, unless a certificate of waiver covering the activities of such meet is issued by the Administrator.

NOTE.—Application for a certificate of waiver for an air meet should be made in accordance with § 60.91 at least 15 days prior to the proposed air meet in the case of a class 1 air meet and at least 5 days prior to the proposed air meet in the case of a class 2 air meet.

60.82 (Unassigned.)
60.83 (Unassigned.)
60.84 (Unassigned.)
60.85 (Unassigned.)
60.86 (Unassigned.)
60.87 (Unassigned.)
60.88 (Unassigned.)

60.89 Air meet rules. The following rules shall apply to, and govern the conduct of, all Class 1 and Class 2 air meets for which a permit may be issued by the Administrator.

60.8900 (*a*) No person shall be permitted to take part in any air meet until he has furnished the air-meet officials a signed statement to the effect that he has read the rules and regulations governing such meets, and which obligates him to abide by all local and Civil Aeronautics Board rules and regulations and orders.

60.8901 (*b*) No person shall be permitted on the operations area of an airport or flying field during any air meet held thereon, except the operating personnel, contestants and their crews, police, State and Federal aeronautics officials and inspectors, and authorized press, radio, and photographer personnel.

60.8902 (*c*) A white dead line paralleling the area reserved for spectators and at least 200 feet in front of such area shall be provided by the air-meet officials and the crossing by any aircraft of this dead line in the direction of the spectators will result in the suspension of the certificate of the operator of such aircraft.

60.8903 (*d*) The air-meet management shall be held responsible for the proper policing of the air-meet area within the airport and for other suitable provisions to insure that all spectators and unauthorized persons are kept off prohibited areas.

60.8904 (*e*) No air meet event shall be conducted unless the operations area of the airport or flying field is clear, the operating personnel are present, sufficient police or guards are on duty and at their posts, no other air operations are going on and scheduled air carrier aircraft are not flying in the vicinity.

60.8905 (*f*) Participants in racing events shall not come in closer proximity to other participating aircraft than 50 feet, and a participant must be not less than 150 feet in the lead before cutting into the same lane of plane or planes just passed.

60.8906 (*g*) No aircraft shall be flown toward, over, nor within 200 feet horizontally of, the grandstand or spectators.

60.8907 (*h*) No aircraft performing acrobatics shall be flown toward or over the grandstands or spectators nor within 500 feet thereof.

60.8908 (*i*) No object shall be dropped or released from aircraft in connection with an air meet which will fall over, toward, nor within 500 feet of the grandstands or spectators.

60.8909 (*j*) Race-horse starts shall be prohibited except when such starts provide for minimum spacing from wing tip to wing tip of at least 100 feet between participating aircraft and then only in case the take-off area is suitable for such starts and a scattering pylon is used for the first pylon, which scattering pylon must be located beyond the boundaries of the airport at least a sufficient distance to permit all aircraft participating to attain their normal speed before reaching it. For races in which aircraft capable of 200 miles per hour or over participate, this pylon and race course pylons shall be so located that no continuous turn of over 100 degrees is required.

60.8910 (*k*) The home pylon shall be located at least 800 feet from the grandstands or spectators, and racing aircraft shall not be flown toward, over, or within a minimum distance of 500 feet horizontally of the grandstands or spectators. The home stretches of all race courses shall be parallel to the grandstands and other sections provided for spectators.

60.8911 (*l*) For purposes of controlling traffic at, and in the vicinity of, an airport or other landing area used for an air meet, signals shall be located either near the announcer's stand or near the home pylon and shall consist either of a large white letter "O" indicating open, and a large white letter "X" indicating closed, or by the words spelled in large white letters on the ground, "OPEN" or "CLOSED", as the case may be. Such signals shall be so constructed as to be easily legible from 2,000 feet altitude and these signals shall be properly operated during the period of the air meet to indicate whether the airport is open for landing to nonparticipants in the meet, or whether it is closed. For the safety and convenience of nonparticipating aircraft, the airport or landing area shall be declared open for landing and take-off purposes for a period of 5 minutes at not more than 30-minute intervals during the air meet.

60.8912 (*m*) A physician and ambulance and a fully equipped emergency truck shall be available at the air meet for emergency use. This provision is mandatory for Class 1 Air Meets only.

60.9 **Miscellaneous air traffic rules.**

60.90 **Nonapplication of air traffic rules.** The air traffic rules, or any particular air traffic rule, shall not apply in the following cases:

60.900 (*a*) When special circumstances render nonobservance necessary to avoid immediate danger, or when such nonobservance is required because of stress of weather conditions which could not reasonably have been foreseen, or other unavoidable causes. Such nonobservance shall be reported within 24 hours in full detail by letter to the Administrator, including the emergency making such nonobservance necessary, the results accomplished by nonobservance, and when regular observance was resumed after the emergency had

passed. In such case of nonobservance if, after investigation by the Administrator, nonobservance is deemed to have been necessary in the interests of safety, no infraction of these rules will have been incurred.

60.91 Certificate of waiver. When, in the opinion of the Administrator, the public safety, the safety of those engaged in aeronautics, or the encouragement and development of civil aeronautics requires a nonobservance of the air traffic rules, or any part thereof, a certificate of waiver of the air traffic rules, or any part thereof, may be issued by the Administrator.

60.910 Application. Application for a certificate of waiver shall be made upon the applicable form prescribed and furnished by the Administrator.

60.911 Duration. The duration of a certificate of waiver shall be limited to the period prescribed on such certificate, except that it shall immediately expire at any time an authorized inspector of the Administrator shall demand the surrender of such certificate after inspection or examination.

60.912 Surrender. Upon the suspension, revocation, or expiration of a certificate of waiver, the holder thereof shall, upon request, surrender such certificate to any officer or employee of the Administrator.

60.92 Aircraft on water. Seaplanes on the water shall navigate according to the laws and regulations of the United States governing the navigation and operation of watercraft, except as otherwise provided in these regulations.

60.93 Aircraft model flying activities, supervision of. No model aircraft shall be flown from, or over, any airport or landing field unless permission therefor, in writing, has been secured from the airport manager or his duly authorized representative. The airport manager shall designate the portion of the field to be used and shall take all necessary precautions to assure the safety of the public on the ground and of aircraft in the air. Rules governing the conduct of such activity shall be drawn and shall include:

60.930 (*a*) The definite boundaries of the area to be utilized.

60.931 (*b*) The periods of suspensions of activity before, during, and after any scheduled or other aircraft operations.

60.932 (*c*) The limitation of duration of flight of the models.

60.933 (*d*) Procedure for the retrieving of models.

60.934 (*e*) Notification, by the airport manager to all model operators so engaged, of the rules as drawn.

60.94 Authorization required. No person shall operate or attempt to operate any civil aircraft of the United States from any State, Territory or possession of the United States or the District of Columbia to or over any foreign country, over the high seas, or within or away from any foreign country, unless a Foreign Flight Authorization for such operation has been issued by the Administrator prior to each such operation or attempt to operate; nor shall such operation be conducted otherwise than in accordance with the terms, conditions, and limitations prescribed and set forth in such Authorization: *Provided*, That no Authorization is required for the operation of civil aircraft in overseas or foreign air transportation conducted pursuant

to the terms of an Air Carrier Operating Certificate issued by the Administrator, nor for the operation of civil aircraft within any of the following areas:

1. Those portions of the Dominion of Canada which lie within 250 miles of the territorial limits of the United States, provided that such aircraft are operated by and carry only United States or Canadian citizens or both;

2. The Republic of Cuba;

3. That portion of the Republic of Mexico which lies within 100 miles of the territorial limits of the United States; and

4. That portion of the high seas or international waters which lie within 100 miles of the territorial limits of the United States.

60.940 General requirements. No Foreign Flight Authorization will be issued unless the Administrator, or his representative, shall determine that:

1. The aircraft and aircraft equipment to be used for the proposed flight are adequate to insure the safe operation of such flight;

2. The airmen and other personnel are qualified for the type of flight contemplated;

3. The foreign countries through which the flight will proceed do not prohibit the entry of the passengers and goods to be carried;

4. The aircraft is not to be employed as a part of the military or naval forces of any foreign country, or any political subdivision thereof, or of any belligerent faction therein;

5. The purpose of the flight is lawful and consistent with the policies of the United States Government;

6. Each foreign country through which the flight will proceed, has or will accord permission to operate the aircraft therein;

NOTE.—After receipt by the Administrator of application for foreign flight, the Administrator will, if he perceives no objection, request the Secretary of State to obtain permission through the usual diplomatic channels from each of the foreign governments which requires special permission for flight by United States registered aircraft therein, except in respect to countries from which the pilot is permitted to obtain his own permit directly.

7. The airman who will be in command of the aircraft is familiar with all applicable provisions of International Conventions and Arrangements, and of the laws and regulations of the foreign countries through which the proposed flight will take place.

NOTE.—For a list of such conventions and arrangements in force on June 1, 1940, as furnished by the Department of State, see Appendix I. Copies of such conventions and arrangements may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., for five cents per copy. Information concerning air traffic rules, prohibited articles, prohibited areas, ports of entry, customs and public health matters, etc., may be obtained from the Administrator of Civil Aeronautics, or from the Department of State, or from the respective foreign consulates.

60.941 Application. Application for a Foreign Flight Authorization shall be made in duplicate upon the applicable form prescribed and furnished by the Administrator.

NOTE.—Applicant is advised to file application as far in advance as possible of the date of contemplated departure from the United States. Three weeks to two months are required to secure permission from certain foreign countries which require special permission for flight of United States registered aircraft therein, and generally the more extensive the proposed flight and the greater the number of countries through which the flight is to proceed, the more time is required to secure permissions from each foreign country. Applications involving unusual circumstances, such as long distance over-water flights, should be made several months before the contemplated departure.

60.942 Display. The Foreign Flight Authorization shall be kept in the personal possession of the pilot in command at all times during

operation pursuant to the Authorization, and shall be presented for inspection upon the request of any authorized representative of the Administrator, or when the aircraft is within any foreign country, upon the request of any authorized representative of such government, or political subdivision thereof.

60.943 Duration. The duration of a Foreign Flight Authorization shall be limited to the period prescribed on such Authorization.

60.944 Surrender. Upon the suspension, revocation, or expiration of a Foreign Flight Authorization, the holder of such Authorization shall, upon request, surrender such Authorization to any officer or employee of the Administrator.

APPENDIX A

Presidential Airspace Reservations

The following airspace reservation has been set apart by order of the President, by Executive Order No. 5211, October 19, 1929:

Aberdeen Proving Ground, portions of the Fort Hoyle and the Edgewood Arsenal Military Reservations, and portions of Bush River, Gunpowder River, and Chesapeake Bay, all in the State of Maryland, as more particularly shown by the designation of said areas on official aeronautical charts.

The following airspace reservations have been set apart by order of the President, by Executive Order No. 7138, August 12, 1935:

Picatinny Arsenal, Dover, New Jersey.
Savanna Ordnance Depot, Savanna, Illinois.
Nansemond Ordnance Depot, Portsmouth, Virginia.
Wingate Ordnance Depot, Gallup, New Mexico.
Camp Stanley Ordnance Reservations, Leon Springs, Texas.
Fort Hancock, Sandy Hook, New Jersey.
Fort Saulsbury, about 4 miles east of Milford, Delaware.
Fort Pickens, western portion of Santa Rose Island, Pensacola Bay, Florida.
Fort Barry, near Point Bonita Lighthouse, San Francisco Bay, California.
Fort Canby, near Cape Disappointment Lighthouse, Washington.
Fort Casey, near Admiralty Head Lighthouse, Washington.
Naval Ammunition Depot, Hingham, Massachusetts.
Naval Ammunition Depot, Fort Lafayette, New York.
Naval Ammunition Depot, Lake Denmark, New Jersey.
Naval Ammunition Depot, St. Juliens Creek, Virginia.
Naval Ammunition Depot, Hawthorne, Nevada.
Naval Ammunition Depot, Mare Island, California.
Naval Ammunition Depot, Puget Sound, Washington.
Naval Mine Depot, Yorktown, Virginia.
Naval Torpedo Station, Newport, Rhode Island.
Naval Torpedo Station, Keyport, Washington.
Naval Ordnance Plant, Baldwin, Long Island, New York.
Naval Fuel Depot, San Diego, California.

That part of the Aleutian Islands, Alaska, with their territorial waters, lying west of the 167th meridian.

The following airspace reservation has been set apart by order of the President, by Executive Order No. 8378, March 18, 1940:

The metropolitan district of the City of Washington, District of Columbia, as more particularly shown by the designation of said area on official aeronautical charts and in Special Notice to Airmen, No. 3 of 1940, issued March 26, 1940.

The following harbors were declared to be reserved areas by Executive Order No. 5281, dated February 17, 1930, and navigation of aircraft within the airspace above the same was put under the authority of the United States Navy Department:

Tortugas, Florida.
Great Harbor, Culebra, Canal Zone.
Guantanamo Naval Station, Cuba.
Pearl Harbor, Hawaii.
Guam.
Subic Bay, Philippine Islands.
Kiska, Aleutian Islands.

APPENDIX B

State Airspace Reservations

None at present.

APPENDIX C

Restricted Areas Under Other Federal Agencies

The following areas are under the administrative control of the United States Navy Department, and application should be made thereto for information as to aeronautical regulations:

Samoa (including Tutuila and various smaller islands).
Midway Island.
Wake Island (with a few adjacent small islands).

APPENDIX D

Airway Traffic Control Centers

The following is a list of Airway Traffic Control Centers of the Administrator: Atlanta, Ga.; Burbank, Calif.; Chicago, Ill.; Cleveland Ohio; Detroit, Mich.; Fort Worth, Tex.; Newark, N. J.; Oakland, Calif.; Pittsburgh, Pa.; Salt Lake City, Utah; St. Louis, Mo.; Washington, D. C.

APPENDIX E

Control Airports

60.21 Control airport designation. The following airports are designated as Control Airports:

City	Name of airport
Akron, Ohio	Akron Airport.
Albany, N. Y	Albany Airport.
Albuquerque, N. Mex	T & WA, Inc., Airport.
Amarillo, Tex	English Field.
Atlanta, Ga	Atlanta Airport.
Baltimore, Md	Baltimore Airport.
Billings, Mont	Billings Airport.
Birmingham, Ala	Birmingham Airport.
Bismarck, N. Dak	Bismarck Airport.
Boston, Mass	Boston Airport.
Buffalo, N. Y	Buffalo Airport.
Butte, Mont	Butte Airport.
Charleston, S. C	Charleston Airport.
Cheyenne, Wyo	Cheyenne Airport.
Chicago, Ill	Chicago Airport.
Cincinnati, Ohio	Cincinnati Airport.
Cleveland, Ohio	Cleveland Airport.
Columbus, Ohio	Port Columbus.
Dallas, Tex	Love Field.
Dayton, Ohio	Dayton Airport.
Denver, Colo	Denver Airport.
Detroit, Mich	Detroit City Airport.
Do	Detroit Wayne County Airport.
El Paso, Tex	El Paso Airport.
Fargo, N. Dak	Hector Field.
Fort Wayne, Ind	Fort Wayne Airport.
Fort Worth, Tex	Meacham Field.
Galveston, Tex	Galveston Airport.
Grand Rapids, Mich	Kent County Airport.
Harrisburg, Pa	Harrisburg Airport.
Hartford, Conn	Brainard Field.
Houston, Tex	Houston Airport.
Indianapolis, Ind	Indianapolis Airport.
Jackson, Miss	Jackson Airport.
Jacksonville, Fla	Jacksonville Airport.
Kansas City, Mo	Kansas City Airport.

City	Name of airport
Lansing, Mich	Capitol City Airport.
Long Beach, Calif	Long Beach Airport.
Los Angeles, Calif	Los Angeles Municipal Airport.
Los Angeles, Calif. (Burbank, Calif.)	Union Air Terminal.
Los Angeles, Calif. (Glendale, Calif.)	Grand Central Air Terminal.
Louisville, Ky	Bowman Field.
Memphis, Tenn	Memphis Airport.
Miami, Fla	Miami Airport.
Do	Pan American Airport.
Milwaukee, Wis	Milwaukee County Airport.
Minneapolis, Minn	Wold-Chamberlain Field.
Montgomery, Ala	Montgomery Airport.
Nashville, Tenn	Nashville Airport.
Newark, N. J	Newark Metropolitan Airport.
New York, N. Y	New York Municipal Airport, Floyd Bennett Field.
Do	New York Municipal Airport, LaGuardia Field.
New Orleans, La	Shushan Airport.
Oakland, Calif	Oakland Airport.
Oklahoma City, Okla	Oklahoma City Air Terminal.
Omaha, Nebr	Omaha Airport.
Pensacola, Fla	Pensacola Airport.
Philadelphia, Pa	Philadelphia Airport.
Pittsburgh, Pa	Pittsburgh-Allegheny County Airport.
Portland, Oreg	Portland Airport (Swan Island).
Providence, R. I	Rhode Island State Airport.
Richmond, Va	Richard E. Byrd Field.
Rochester, N. Y	Rochester Airport.
St. Louis, Mo	Lambert-St. Louis Airport.
St. Paul, Minn	Holman Municipal Airport.
Sacramento, Calif	Sacramento Airport.
Salt Lake City, Utah	Salt Lake City Airport.
San Antonio, Tex	Stinson Field.
San Diego, Calif	Lindbergh Field.
San Francisco, Calif	San Francisco Airport.
Santa Monica, Calif	Clover Field
Seattle, Wash	Boeing Field.
South Bend, Ind	St. Joseph County Airport.
Spokane, Wash	Felts Field.
Toledo, Ohio	Toledo Airport.
Troy, N. Y	Troy Airport.
Tulsa, Okla	Tulsa Airport.
Washington, D. C	Washington Airport.
Wichita, Kans	Wichita Airport.

APPENDIX F

Control Zones of Intersection

60.22 **Control zones of intersection designation.** The radio range section of the Administrator of Civil Aeronautics located at each of the following cities is designated as the center of a control zone of intersection: Albany, N. Y.; Albuquerque, N. Mex.; Amarillo, Tex.; Belgrade, Mont.; Boston, Mass.; Billings, Mont.; Bismarck, N. Dak.; Burlington, Vt.; Charleston, S. C.; Cheyenne, Wyo.; Concord, N. H.; Corpus Christi, Tex.; Daytona Beach, Fla.; Denver, Colo.; Ellensburg, Wash.; El Paso, Tex.; Fargo, N. Dak.; Helena, Mont.; Houston, Tex.; Huron, S. Dak.; Jackson, Miss.; Jacksonville, Fla.; Laramie, Wyo.; Memphis, Tenn.; Miami, Fla.; Millinocket, Maine; Minneapolis, Minn.; Nashville, Tenn.; Mobile, Ala.; New Orleans, La.; Northdalles, Oreg.; Oklahoma City, Okla.; Omaha, Nebr.; Pendleton, Oreg.; San Antonio, Tex.; Seattle, Wash.; Spokane, Wash.; Portland, Oreg.; Tallahassee, Fla.; Tampa, Fla.; Tulsa, Okla.; White Hall, Mont.; Wichita, Kans.

APPENDIX G

Radio Fixes

60.23 Radio fix designation. *The following locations are designated as radio fixes:*

60.23000 Green civil airway No. 1 (Seattle, Wash., to Boston, Mass.). Seattle, Wash., radio range station; Easton, Wash., radio marker station; Ellensburg, Wash., radio range station; Ephrata, Wash., radio range station; Spokane, Wash., radio range station; Mullan Pass, Idaho, radio range station; Missoula, Mont., radio range station; Helena, Mont., radio range station; Belgrade, Mont., radio range station; Livingston, Mont., radio range station; Billings, Mont., radio range station; Custer, Mont., radio range station; Miles City, Mont., radio range station; Golva, N. Dak., radio range station; Dickinson, N. Dak., radio range station; Bismarck, N. Dak., radio range station; Jamestown, N. Dak., radio range station; Fargo, N. Dak., radio range station; Alexandria, Minn., radio range station; Minneapolis, Minn., radio range station; La Crosse, Wis., radio range station; Lone Rock, Wis., radio range station; Milwaukee, Wis., radio range station; Grand Rapids, Mich., radio range station; Lansing, Mich., radio range station; the intersection of the center lines of the on course signals of the north leg of the Detroit, Mich. (Wayne County Airport), radio range and the east leg of the Lansing, Mich., radio range; Detroit, Mich. (Wayne County Airport), radio range station; Buffalo, N. Y., radio range station; the intersection of the center lines of the on course signals of the east leg of the Buffalo, N. Y., radio range and the southwest leg of the Rochester, N. Y., radio range; Syracuse, N. Y., radio range station; Utica, N. Y., radio range station; Albany, N. Y., radio range station; Springfield, Mass., radio range station; the intersection of the center lines of the on course signals of the east leg of the Springfield, Mass., radio range and the southwest leg of the Boston, Mass., radio range; Boston, Mass., radio range station.

60.23001 Green civil airway No. 2 (San Francisco, Calif., to New York, N. Y.). Oakland, Calif., radio range station; Sacramento, Calif., radio range station; Donner Summit, Calif., radio range station; Reno, Nev., radio range station; Humboldt, Nev., radio range station; Buffalo Valley, Nev., radio range station; Elko, Nev., radio range station; Wendover, Utah, radio range station; Salt Lake City, Utah, radio range station; Fort Bridger, Wyo., radio range station; Rock Springs, Wyo., radio range station; Parco, Wyo., radio range station; Cheyenne, Wyo., radio range station; Sidney, Nebr., radio range station; North Platte, Nebr., radio range station; Grand Island, Nebr., radio range station; Omaha, Nebr., radio range station; Des Moines, Iowa, radio range station; Moline, Ill., radio range station; the intersection of the center lines of the on course signals of the east leg of the Moline, Ill., radio range and the north leg of the Morse, Ill., radio range; Newark, Ill., fan type radio marker station, or the intersection of the center lines of the on course signals of the southwest leg of the Chicago, Ill., radio range and the east leg of the Moline, Ill., radio range; Chicago, Ill., radio range station; Lansing, Ill., fan type radio marker station, or the intersection of the center lines of the on course signals of the southeast leg of the Chicago, Ill., radio range and the west leg of the Goshen, Ind., radio range; Goshen, Ind., radio range station; Toledo, Ohio, radio range station; Cleveland, Ohio, radio range station; the intersection of the center lines of the on course signals of the east leg of the Cleveland, Ohio, radio range and the northeast leg of the Akron, Ohio, radio range; Mercer, Pa., radio range station; Bellefonte, Pa., radio range station; the intersection of the center lines of the on course signals of the north leg of the Harrisburg, Pa., radio range and the east leg of the Bellefonte, Pa., radio range; Allentown, Pa., radio range station; New Brunswick, Pa., fan type radio marker station, or the intersection of the center lines of the on course signals of the southeast leg of the Allentown, Pa., radio range and the southwest leg of the Newark, N. J. radio range; the intersection of the center lines of the on course signals of the southeast leg of the Allentown, Pa., radio range and the south leg of the New York, N. Y. (New York Municipal Airport, LaGuardia Field) radio range; New York, N. Y. (New York Municipal Airport, LaGuardia Field), radio range station.

60.23002 Green civil airway No. 3 (Los Angeles, Calif., to Philadelphia, Pa.). Los Angeles, Calif., radio range station; the intersection of the center lines of the on course signals of the north leg of the Los Angeles, Calif., radio

range and the southwest leg of the Palmdale, Calif., radio range, or the Newhall, Calif., radio range station; Palmdale, Calif., radio range station; the intersection of the center lines of the on course signals of the west leg of the Daggett, Calif., radio range and the north leg of the Riverside, Calif., radio range; Daggett, Calif., radio range station; Kingman, Ariz., radio range station; the intersection of the center lines of the on course signals of the east leg of the Kingman, Ariz., radio range and the southeast leg of the Ashfork, Ariz., radio range; Winslow, Ariz., radio range station; El Morro, N. Mex., radio range station; Albuquerque, N. Mex., radio range station; Otto, N. Mex., radio range station; Tucumcari, N. Mex., radio range station; Amarillo, Tex., radio range station; Gage, Okla., radio range station; Wichita, Kans., radio range station; Lebo, Kans., radio range station; Kansas City, Mo., radio range station; Columbia, Mo., radio range station; New Florence, Mo., radio marker station; the intersection of the center lines of the on course signals of the west leg of the St. Louis, Mo., radio range and the southwest leg of the Springfield, Ill., radio range; St. Louis, Mo., radio range station; Effingham, Ill., radio range station; Terre Haute, Ind., radio range station; Indianapolis, Ind., radio range station; Columbus, Ohio, radio range station; Cambridge, Ohio, radio marker station; Hickory, Pa., fan type radio marker station, or the intersection of the center lines of the on course signals of the west leg of the Pittsburgh, Pa., radio range and the southeast leg of the Akron, Ohio, radio range; Pittsburgh, Pa., radio range station; New Alexandria, Pa., fan type radio marker station, or the intersection of the center lines of the on course signals of the northeast leg of the Pittsburgh, Pa., radio range and the west leg of the Cove Valley, Pa., radio range; Cove Valley, Pa., radio range station; Harrisburg, Pa., radio range station; Philadelphia, Pa., radio range station.

60.23003 **Green civil airway No. 4 (Los Angeles, Calif., to Washington, D. C.).** Los Angeles, Calif., radio range station; Riverside, Calif., radio range station; the intersection of the center lines of the on course signals of the east leg of the Riverside, Calif., radio range and the north leg of the Indio, Calif., radio range; Blythe, Calif., radio range station; Phoenix, Ariz., radio range station; Tucson, Ariz., radio range station; Cochise, N. Mex., radio range station; Columbus, N. Mex., radio range station; El Paso, Tex., radio range station; Guadalupe Pass, Tex., radio range station; Wink, Tex., radio range station; Big Spring, Tex., radio range station; Abilene, Tex., radio range station; the intersection of the center lines of the on course signals of the west leg of the Fort Worth, Tex., radio range and the northwest leg of the Waco, Tex., radio range; Fort Worth, Tex., radio range station; the intersection of the center lines of the on course signals of the northeast leg of the Fort Worth, Tex., radio range and the north leg of the Dallas, Tex., radio range; the intersection of the center lines of the on course signals of the north leg of the Tyler, Tex., radio range and the west leg of the Texarkana, Tex., radio range; Texarkana, Tex., radio range station; Little Rock, Ark., radio range station; Memphis, Tenn., radio range station; Jacks Creek, Tenn., radio range station; Nashville, Tenn., radio range station; Smithville, Tenn., radio range station; Knoxville, Tenn., radio range station; Bristol, Va., radio range station; Roanoke, Va., radio range station; Gordonsville, Va., radio range station; Mason Springs, Md., fan type radio marker station, or the intersection of the center lines of the on course signals of the northeast leg of the Gordonsville, Va., radio range and the south leg of the Washington, D. C., radio range; Washington, D. C., radio range station.

60.23004 **Green civil airway No. 5 (Corpus Christi, Tex., to Richmond, Va.).** Corpus Christi, Tex., radio range station; Houston, Tex., radio range station; Beaumont, Tex., radio range station; Lake Charles, La., radio range station; New Orleans, La., radio range station; Mobile, Ala., radio range station; the intersection of the center lines of the on course signals of the east leg of the Birmingham, Ala., radio range and the southwest leg of the Atlanta, Ga., radio range; Atlanta, Ga., radio range station; the intersection of the center lines of the on course signals of the northeast leg of the Atlanta, Ga., radio range and the northwest leg of the Augusta, Ga., radio range; Spartanburg, S. C., radio range station; the intersection of the center lines of the on course signals of the southwest leg of the Greensboro, N. C., radio range and the north leg of the Charlotte, N. C., radio range; Greensboro, N. C., radio range station; Richmond, Va., radio range station.

60.23100 **Amber civil airway No. 1 (San Diego, Calif., to United States-Canadian Border).** San Diego, Calif., radio range station; Oceanside, Calif.,

radio marker station; Santa Ana, Calif., radio range station; the intersection of the center lines of the on course signals of the north leg of the Santa Ana, Calif., radio range and the east leg of the Los Angeles, Calif., radio range; Los Angeles, Calif., radio range station; Newhall, Calif., radio range station; Bakersfield, Calif., radio range station; Fresno, Calif., radio range station; Modesto, Calif., radio range station; Oakland, Calif., radio range station; Potrero Hills, Calif., radio marker station; Williams, Calif., radio range station; Red Bluff, Calif., radio range station; Fort Jones, Calif., radio range station; Medford, Oreg., radio range station; Eugene, Oreg., radio range station; Portland, Oreg., radio range station; Ethel, Wash., radio range station; Seattle, Wash., radio range station; Everett, Wash., radio range station; Bellingham, Wash., radio range station.

60.23101 Amber civil airway No. 2 (Daggett, Calif., to Great Falls, Mont.). Daggett, Calif., radio range station; Silver Lake, Calif., radio range station; Las Vegas, Nev., radio range station; Mormon Mesa, Nev., radio range station; Enterprise, Nev., radio range station; Milford, Utah, radio range station; Delta, Utah, radio range station; Tintic, Utah, radio range station; Salt Lake City, Utah, radio range station; Plymouth, Utah, radio range station; Pocatello, Idaho, radio range station; Idaho Falls, Idaho, radio range station; Dubois, Idaho, radio range station; Dillon, Mont., radio range station; Whitehall, Mont., radio range station; Helena, Mont., radio range station; Great Falls, Mont., radio range station.

60.23102 Amber civil airway No. 3 (El Paso, Tex., to Great Falls, Mont.). The intersection of the center lines of the on course signals of the west leg of the El Paso, Tex., radio range and the south leg of the Engle, N. Mex., radio range; Engle, N. Mex., radio range station; Albuquerque, N. Mex., radio range station; Las Vegas, N. Mex., radio range station; Trinidad, Colo., radio range station; Pueblo, Colo., radio range station; Denver, Colo., radio range station; Cheyenne, Wyo., radio range station; the intersection of the center lines of the on course signals of the north leg of the Cheyenne, Wyo., radio range and the southeast leg of the Douglas, Wyo., radio range; Douglas, Wyo., radio range station; the intersection of the center lines of the on course signals of the northwest leg of the Douglas, Wyo., radio range and the east leg of the Casper, Wyo., radio range; Casper, Wyo., radio range station; the intersection of the center lines of the on course signals of the north leg of the Casper, Wyo., radio range and the southeast leg of the Sheridan, Wyo., radio range; Sheridan, Wyo., radio range station; Billings, Mont., radio range station; the intersection of the center lines of the on course signals of the northwest leg of the Billings, Mont., radio range and the southeast leg of the Lewistown, Mont., radio range; Lewistown, Mont., radio range station; Great Falls, Mont., radio range station.

60.23103 Amber civil airway No. 4 (Brownsville, Tex., to Bismarck, N. Dak.). Brownsville, Tex., radio range station; Corpus Christi, Tex., radio range station; San Antonio, Tex., radio range station; Austin, Tex., radio range station; Waco, Tex., radio range station; the intersection of the center lines of the on course signals of the northwest leg of the Waco, Tex., radio range and the south leg of the Fort Worth, Tex., radio range; Fort Worth, Tex., radio range station; the intersection of the center lines of the on course signals of the north leg of the Fort Worth, Tex., radio range and the southeast leg of the Wichita Falls, Tex., radio range; Gainesville, Tex., radio marker station; Oklahoma City, Okla., radio range station; Tulsa, Okla., radio range station; Chanute, Kans., radio range station; Kansas City, Mo., radio range station; Omaha, Nebr., radio range station; Sioux City, Iowa, radio range station; Sioux Falls, S. Dak., radio range station; Huron, S. Dak., radio range station; Aberdeen, S. Dak., radio range station; the intersection of the center lines of the on course signals of the northwest leg of the Aberdeen, S. Dak., radio range and the southeast leg of the Bismarck, N. Dak., radio range; Bismarck, N. Dak., radio range station.

60.23104 Amber civil airway No. 5 (New Orleans, La., to Milwaukee, Wis.). New Orleans, La., radio range station; Tylertown, Miss., radio range station; Jackson, Miss., radio range station; Memphis, Tenn., radio range station; Advance, Mo., radio range station; St. Louis, Mo., radio range station; the intersection of the center lines of the on course signals of the north leg of the St. Louis, Mo., radio range and the southwest leg of the Springfield, Ill., radio range; Springfield, Ill., radio range station; Joliet, Ill., radio range station; Chicago, Ill., radio range station; Milwaukee, Wis., radio range station.

60.23105 Amber civil airway No. 6 (Jacksonville, Fla., to Buffalo, N. Y.). Jacksonville, Fla., radio range station; Alma, Ga., radio range station; Macon,

Ga., radio range station; Atlanta, Ga., radio range station; Chattanooga, Tenn., radio range station; Nashville, Tenn., radio range station; Smith's Grove, Ky., radio range station; Louisville, Ky., radio range station; Cincinnati, Ohio, radio range station; Columbus, Ohio, radio range station; Hayesville, Ohio, radio marker station; Cleveland, Ohio, radio range station; Erie, Pa., radio range station; Buffalo, N. Y., radio range station.

60.23106 **Amber civil airway No. 7 (Key West, Fla., to Caribou, Maine).** Key West, Fla., radio range station; Miami, Fla., radio range station; Melbourne, Fla., radio range station; Daytona Beach, Fla., radio range station; Jacksonville, Fla., radio range station; Savannah, Ga., radio range station; Charleston, S. C., radio range station; Florence, S. C., radio range station; Raleigh, N. C., radio range station; Richmond, Va., radio range station; Mason Springs, Md., fan type radio marker station, or the intersection of the center lines of the on course signals of the northeast leg of the Gordonsville, Va., radio range and the south leg of the Washington, D. C., radio range; Washington, D. C., radio range station; Baltimore, Md., radio range station; Philadelphia, Pa., radio range station; New Brunswick, N. J., radio fan type marker station, or the intersection of the center lines of the on course signals of the east leg of the Allentown, Pa., radio range and the southwest leg of the Newark, N. J., radio range; Newark, N. J., radio range station; Yonkers, N. Y., fan type radio marker station, or the intersection of the center lines of the on course signals of the south leg of the New Hackensack, N. Y., radio range and the northeast leg of the Newark, N. J., radio range; Hartford, Conn., radio range station; Boston, Mass., radio range station; Portland, Maine, radio range station; Augusta, Maine, radio range station; Bangor, Maine, radio range station; Millinocket, Maine, radio range station; Caribou, Maine, radio range station.

60.23200 **Red civil airway No. 1 (Portland, Oreg., to Salt Lake City, Utah).** Portland, Oreg., radio range station; the intersection of the center lines of the on course signals of the northeast leg of the North Dalles, Wash., radio range and the west leg of the Arlington, Oreg., radio range; Arlington, Oreg., radio range station; Pendleton, Oreg., radio range station; Baker, Oreg., radio range station; Boise, Idaho, radio range station, Burley, Idaho, radio range station; Locomotive Springs, Utah, radio range station; Salt Lake City, Utah, radio range station.

60.23201 **Red civil airway No. 2 (Whitehall, Mont., to Belgrade, Mont.).** Whitehall, Mont., radio range station; Belgrade, Mont., radio range station.

60.23202 **Red civil airway No. 3 (Philadelphia, Pa., to New York, N. Y.).** Philadelphia, Pa., radio range station; the intersection of the center lines of the on course signals of the east leg of the Allentown, Pa., radio range and the south leg of the New York, N. Y. (New York Municipal Airport, LaGuardia Field), radio range; New York, N. Y.

60.23203 **Red civil airway No. 4 (Dallas, Tex., to Shreveport, La.).** The intersection of the center lines of the on course signals of the east leg of the Dallas, Tex., radio range and the northwest leg of the Tyler, Tex., radio range; Tyler, Tex., radio range station; the intersection of the center lines of the on course signals of the north leg of the Tyler, Tex., radio range and the west leg of the Shreveport, La., radio range.

60.23204 **Red civil airway No. 5 (United States-Canadian Border to Danforth, Maine).** Millinocket, Maine, radio range station.

60.23205 **Red civil airway No. 6 (Parco, Wyo., to Grand Island, Nebr.).** Laramie, Wyo., radio range station: Denver, Colo., radio range station; Akron, Colo., radio range station, Hayes Center, Nebr., radio range station; Grand Island, Nebr., radio range station.

60.23206 **Red civil airway No. 7 (Spartanburg, S. C., to Greensboro, N. C.).** The intersection of the center lines of the on course signals of the north leg of the Charlotte, N. C., radio range and the southwest leg of the Greensboro, N. C., radio range; Charlotte, N. C., radio range station.

60.23207 **Red civil airway No. 8 (Concord, N. H., to Portland, Maine).** Concord, N. H., radio range station; Portland, Maine, radio range station.

60.23208 **Red civil airway No. 9 (Fargo, N. Dak., to Pembina, N. Dak.).** Fargo, N. Dak., radio range station; Grand Forks, N. Dak., radio range station; Pembina, N. Dak., radio range station.

60.23209 Red civil airway No. 10 (Amarillo, Tex., to Charleston, S. C.). Amarillo, Tex., radio range station; Clarendon, Tex., radio range station; Wichita Falls, Tex., radio range station; the intersection of the center lines of the on course signals of the north leg of the Fort Worth, Tex., radio range and the southeast leg of the Wichita Falls, Tex., radio range; Fort Worth, Tex., radio range station; Dallas, Tex., radio range station; the intersection of the center lines of the on course signals of the east leg of the Dallas, Tex., radio range and the northwest leg of the Tyler, Tex., radio range; the intersection of the center lines of the on course signals of the north leg of the Tyler, Tex., radio range and the west leg of the Shreveport, La., radio range; Shreveport, La., radio range station; Monroe, La., radio range station; Jackson, Miss., radio range station; Meridian, Miss., radio range station; Birmingham, Ala., radio range station; the intersection of the center lines of the on course signals of the east leg of the Birmingham, Ala., radio range and the southwest leg of the Atlanta, Ga., radio range; Atlanta, Ga., radio range station; the intersection of the center lines of the on course signals of the northeast leg of the Atlanta, Ga., radio range and the northwest leg of the Augusta, Ga., radio range; Augusta, Ga., radio range station; Charleston, S. C., radio range station.

60.23210 Red civil airway No. 11 (Tulsa, Okla., to St. Louis, Mo.). Tulsa, Okla., radio range station; Neosho, Mo., radio range station; Springfield, Mo., radio range station; Spring Bluff, Mo., radio range station; St. Louis, Mo., radio range station.

60.23211 Red civil airway No. 12 (Kansas City, Mo., to Detroit, Mich.). Kansas City, Mo., radio range station; Kirksville, Mo., radio range station; Burlington, Iowa, radio range station; Morse, Ill., radio range station; Newark, Ill., fan type radio marker station, or the intersection of the center lines of the on course signals of the southwest leg of the Chicago, Ill., radio range and the east leg of the Moline, Ill., radio range; Chicago, Ill., radio range station; South Bend, Ind., radio range station; the intersection of the center lines of the on course signals of the south leg of the Lansing, Mich., radio range and the west leg of the Detroit, Mich. (Wayne County Airport), radio range; Detroit, Mich. (Wayne County Airport), radio range station.

60.23212 Red civil airway No. 13 (Springfield, Mass., to Boston, Mass.). Springfield, Mass., radio range station; Hartford, Conn., radio range station; Boston, Mass., radio range station.

60.23213 Red civil airway No. 14 (Lone Rock, Wis., to Louisville, Ky.). Lone Rock, Wis., radio range station; Rockford, Ill., radio range station; Chicago, Ill., radio range station; Lansing, Ill., fan type radio marker station, or the intersection of the center lines of the on course signals of the southeast leg of the Chicago, Ill., radio range and the west leg of the Goshen, Ind., radio range; Lafayette, Ind., radio range station; Indianapolis, Ind., radio range station; Louisville, Ky., radio range station.

60.23214 Red civil airway No. 15 (Las Vegas, Nev., to Phoenix, Ariz.). Las Vegas, Nev., radio range station; Kingman, Ariz., radio range station; the intersection of the center lines of the on course signals of the east leg of the Kingman, Ariz., radio range and the southeast leg of the Ashfork, Ariz., radio range; Phoenix, Ariz., radio range station.

60.23215 Red civil airway No. 16 (Augusta, Ga., to Charleston, S. C.). Augusta, Ga., radio range station; Columbia, S. C., radio range station; Charleston, S. C., radio range station.

60.23216 Red civil airway No. 17 (Martinsburg, W. Va., to Baltimore, Md.). Martinsburg, W. Va., radio range station; Baltimore, Md., radio range station.

60.23217 Red civil airway No. 18 (Indianapolis, Ind., to Washington, D. C.). Indianapolis, Ind., radio range station; Cincinnati, Ohio, radio range station; Huntington, W. Va., radio range station; Charleston, W. Va., radio range station; Elkins, W. Va., radio range station; Front Royal, Va., radio range station; Herndon, Va., fan type radio marker station, or the intersection of the center lines of the on course signals of the east leg of the Front Royal, Va., radio range and the northwest leg of the Washington, D. C., radio range; Washington, D. C., radio range station.

60.23218 Red civil airway No. 19 (Dayton, Ohio, to Grand Rapids, Mich.). Fort Wayne, Ind., radio range station; Goshen, Ind., radio range station; Grand Rapids, Mich., radio range station.

60.23219 Red civil airway No. 20 (Detroit, Mich., to Washington, D. C.). Detroit, Mich. (Wayne County Airport), radio range station; Cleveland, Ohio,

radio range station; Akron, Ohio, radio range station; Hickory, Pa., fan type radio marker station, or the intersection of the center lines of the on course signals of the southeast leg of the Akron, Ohio, radio range and the west leg of the Pittsburgh, Pa., radio range; Pittsburgh, Pa., radio range station; Scottdale, Pa., fan type radio marker station, or the intersection of the center lines of the on course signals of the west leg of the Buckstown, Pa., radio range, and the southeast leg of the Pittsburgh, Pa., radio range; the intersection of the center lines of the on course signals of the south leg of the Buckstown, Pa., radio range and the southeast leg of the Pittsburgh, Pa., radio range; Martinsburg, W. Va., radio range station; Herndon, Va., fan type radio marker station, or the intersection of the center lines of the on course signals of the east leg of the Front Royal, Va., radio range and the northwest leg of the Washington, D. C., radio range; Washington, D. C., radio range station.

60.23220 **Red civil airway No. 21 (Detroit, Mich., to Woodward, Pa.).** Detroit, Mich. (Wayne County Airport), radio range station; the intersection of the center lines of the on course signals of the southeast leg of the Detroit, Mich. (Wayne County Airport), radio range and the west leg of the Cleveland, Ohio, radio range; the intersection of the center lines of the on course signals of the west leg of the Cleveland, Ohio, radio range and the northwest leg of the Akron, Ohio, radio range; Akron, Ohio, radio range station; Pittsburgh, Pa., radio range station; the intersection of the center lines of the on course signals of the northeast leg of the Pittsburgh, Pa., radio range and the north leg of the Cove Valley, Pa., radio range.

60.23221 **Red civil airway No. 22 (Roanoke, Va., to Gordonsville, Va.).** Roanoke, Va., radio range station; Lynchburg, Va., radio range station; Gordonsville, Va., radio range station.

60.23222 **Red civil airway No. 23 (Buffalo, N. Y., to Newark, N. J.).** Buffalo, N. Y., radio range station; Elmira, N. Y., radio range station; the intersection of the center lines of the on course signals of the northeast leg of the Allentown, Pa., radio range and the northwest leg of the Newark, N. J., radio range; Newark, N. J., radio range station.

60.23223 **Red civil airway No. 24 (Amarillo, Tex., to Oklahoma City, Okla.).** Amarillo, Tex., radio range station; Oklahoma City., Okla., radio range station.

60.23224 **Red civil airway No. 25 (Daytona Beach, Fla., to Miami, Fla.).** Daytona Beach, Fla., radio range station; Orlando, Fla., radio range station; Tampa, Fla., radio range station; Fort Myers, Fla., radio range station; Miami, Fla., radio range station.

60.23225 **Red civil airway No. 26 (Newark, N. J., to Burlington, Vt.).** Newark, N. J., radio range station; Yonkers, N. Y., fan-type radio marker station, or the intersection of the center lines of the on course signals of the southeast leg of the New Hackensack, N. Y., radio range and the northeast leg of the Newark, N. J., radio range; New Hackensack, N. Y., radio range station; Albany, N. Y., radio range station; Burlington, Vt., radio range station.

60.23226 **Red civil airway No. 27 (Dayton, Ohio, to Detroit, Mich.).** Toledo, Ohio, radio range station; Detroit, Mich. (Wayne County Airport), radio range station.

60.23227 **Red civil airway No. 28 (Chicago, Ill., to Grand Rapids, Mich.).** Chicago, Ill., radio range station; the intersection of the center lines of the on course signals of the northeast leg of the Chicago, Ill., radio range and the southwest leg of the Grand Rapids, Mich., radio range; Grand Rapidss, Mich., radio range station.

60.23228 **Red civil airway No. 29 (Baltimore, Md., to Elmira, N. Y.).** Baltimore, Md., radio range station; Harrisburg, Pa., radio range station; Williamsport, Pa., radio range station; Elmira, N. Y., radio range station.

60.23229 **Red civil airway No. 30 (Mobile, Ala., to Jacksonville, Fla.).** Mobile, Ala., radio range station; Crestview, Fla., radio range station; the intersection of the center lines of the on course signals of the east leg of the Crestview, Fla., radio range and the northwest leg of the Tallahassee, Fla., radio range; Tallahassee, Fla., radio range station; Jacksonville, Fla., radio range station.

60.23230 **Red civil airway No. 31 (Huron, S. Dak., to Minneapolis, Minn.).** Huron, S. Dak., radio range station; Watertown, S. Dak., radio range station; Willmar, Minn., radio range station; the intersection of the center lines of the

on course signals of the west leg of the Willmar, Minn., radio range and the northwest leg of the Minneapolis, Minn., radio range; Minneapolis, Minn., radio range station.

60.23231 **Red civil airway No. 32 (San Antonio, Tex., to Houston, Tex.).** The intersection of the center lines of the on course signals of the southeast leg of the San Antonio, Tex., radio range and the west leg of the Yoakum, Tex., radio range; Yoakum, Tex., radio range station; the intersection of the center lines of the on course signals of the east leg of the Yoakum, Tex., radio range and the southwest leg of the Houston, Tex., radio range.

60.23232 **Red civil airway No. 33 (Harrisburg, Pa., to New York, N. Y., Municipal Airport, La Guardia Field).** The intersection of the center lines of the on course signals of the southeast leg of the Harrisburg, Pa., radio range and the southwest leg of the Allentown, Pa., radio range; Allentown, Pa., radio range station; the intersection of the center lines of the on course signals of the northeast leg of the Allentown, Pa., and the northwest leg of the New York, N. Y. (La Guardia Field), radio range; New York, N. Y. (La Guardia Field), radio range station.

60.23300 **Blue civil airway No. 1 (Pendleton, Oreg., to Spokane, Wash.).** Pendleton, Oreg., radio range station; Spokane, Wash., radio range station.

60.23301 **Blue civil airway No. 2 (Pittsburgh, Pa., to Erie, Pa.).** Pittsburgh, Pa., radio range station; Mercer, Pa., radio range station; Erie, Pa., radio range station.

60.23302 **Blue civil airway No. 3 (Memphis, Tenn., to Tampa, Fla.).** Memphis, Tenn., radio range station; the intersection of the center lines of the on course signals of the northeast leg of the Memphis, Tenn., radio range and the northwest leg of the Muscle Shoals, Ala., radio range; Muscle Shoals, Ala., radio range station; the intersection of the center lines of the on course signals of the southeast leg of the Muscle Shoals, Ala., radio range and the north leg of the Birmingham, Ala., radio range; Birmingham, Ala., radio range station; Dothan, Ala., radio range station; the intersection of the center lines of the on course signals of the southeast leg of the Dothan, Ala., radio range and the northwest leg of the Tallahassee, Fla., radio range; Tallahassee, Fla., radio range station; the intersection of the center lines of the on course signals of the east leg of the Tallahassee, Fla., radio range and the northwest leg of the Cross City, Fla., radio range; Cross City, Fla., radio range station; the intersection of the center lines of the on course signals of the southeast leg of the Cross City, Fla., radio range and the north leg of the Tampa, Fla., radio range; Tampa, Fla., radio range station.

60.23303 **Blue civil airway No. 4 (Boston, Mass., to Rouses Point, N. Y.).** Boston, Mass., radio range station; Concord, N. H., radio range station; Burlington, Vt., radio range station.

60.23304 **Blue civil airway No. 5 (Galveston, Tex., to Wichita, Kans.).** Galveston, Tex., radio range station; Houston, Tex., radio range station; Navasota, Tex., radio range station; Waco, Tex., radio range station, the intersection of the center lines of the on course signals of the northeast leg of the Waco, Tex., radio range and the south leg of the Dallas, Tex., radio range; Dallas, Tex., radio range station; Gainesville, Tex., radio marker station; Oklahoma City, Okla., radio range station; Wichita, Kans., radio range station.

60.23305 **Blue civil airway No. 6 (Abilene, Tex., to Oklahoma City, Okla.).** Abilene, Tex., radio range station; Wichita Falls, Tex., radio range station; Oklahoma City, Okla., radio range station.

60.23306 **Blue civil airway No. 7 (Springfield, Ill., to Morse, Ill.).** Springfield, Ill., radio range section; Peoria, Ill., radio range station; Morse, Ill., radio range station.

60.23307 **Blue civil airway No. 8.** No designation.

60.23308 **Blue civil airway No. 9.** No designation.

60.23309 **Blue civil airway No. 10 (Modesto, Calif., to Williams, Calif.).** Modesto, Calif., radio range station; Sacramento, Calif., radio range station; Williams, Calif., radio range station.

60.23310 **Blue civil airway No. 11.** No designation.

60.23311 **Blue civil airway No. 12 (North Dalles, Wash., to Ellensburg, Wash.).** North Dalles, Wash., radio range station; the intersection of the center lines of the on course signals of the northeast leg of the North Dalles, Wash., radio range and the south leg of the Ellensburg, Wash., radio range; Ellensburg, Wash., radio range station.

60.23312 **Blue civil airway No. 13.** No designation.

60.23313 **Blue civil airway No. 14 (Riverside, Calif., to Bakersfield, Calif.).** Riverside, Calif., radio range station; the intersection of the center lines of the on course signals of the north leg of the Riverside, Calif., radio range and the southeast leg of the Palmdale, Calif., radio range; Palmdale, Calif., radio range station; the intersection of the center lines of the on-course signals of the northwest leg of the Palmdale, Calif., radio range and the south leg of the Bakersfield, Calif., radio range.

60.23314 **Blue civil airway No. 15 (Columbus, Ohio, to Erie, Pa.).** Akron, Ohio, radio range station; the intersection of the center lines of the on course signals of the northeast leg of the Akron, Ohio, radio range and the southwest leg of the Erie, Pa., radio range; Erie, Pa., radio range station.

60.23315 **Blue civil airway No. 16 (Dillon, Mont., to Helena, Mont.).** Dillon, Mont., radio range station; Butte, Mont., radio range station; Helena, Mont., radio range station.

60.23316 **Blue civil airway No. 17 (Blythe, Calif., to Kingman, Ariz.).** Blythe, Calif., radio range station; Needles, Calif., radio range station.

60.23317 **Blue civil airway No. 18 (Newark, N. J., to Syracuse, N. Y.).** The intersection of the center lines of the on-course signals of the southeast leg of the Elmira, N. Y., radio range and the south leg of the Syracuse, N. Y., radio range; Syracuse, N. Y., radio range station.

APPENDIX H

Airway Traffic Control Areas

60.24 **Airway traffic control area designation.** The following part, or parts, of the civil airways are designated as airway traffic control areas:

60.240 **Extent of area.** Wherever a point hereinafter prescribed for the purpose of the designating of an airway traffic control area coincides with a point specified by the Administrator in designating the center line of an airway, such airway traffic control area shall include all of the airway within a 10-mile radius of such point.

60.2400 **Green civil airway No. 1 airway traffic control areas (Seattle, Wash., to Boston, Mass.).** Those portions of green civil airway No. 1: From a line extended at right angles across such airway through a point on the center line thereof 25 miles southeast of the La Crosse, Wis., radio range station, to the intersection of the center line of the on-course signal of the east leg of the Detroit, Mich. (Wayne County Airport), radio range and the U. S.-Canadian Border: from the intersection of the center line of the on-course signal of the west leg of the Buffalo, N. Y., radio range and the U. S.-Canadian Border, to a line extended at right angles across such airway through a point on the center line thereof 25 miles east of the Syracuse, N. Y., radio range station.

60.2401 **Green civil airway No. 2 airway traffic control areas (San Francisco, Calif., to New York, N. Y.).** Those portions of green civil airway No. 2: From the San Francisco Municipal Airport, to a line extended at right angles across such airway through a point on the center line thereof 25 miles west of the Parco, Wyo., radio range station; from a line extended at right angles across such airway through a point on the center line thereof 25 miles east of the Des Moines, Iowa, radio range station, to the New York Municipal Airport, LaGuardia Field.

60.2402 **Green civil airway No. 3 airway traffic control areas (Los Angeles, Calif., to Philadelphia, Pa.).** Those portions of green civil airway No. 3: From the Municipal Airport, Los Angeles, Calif., to a line extended at right angles across such airway through a point on the center line thereof 25 miles east of the Ashfork, Ariz., radio range station; from a line extended at right angles across such airway through a point on the center line thereof 25 miles northeast of the Wichita, Kans., radio range station to the Philadelphia, Pa., Municipal Airport.

60.2403 **Green civil airway No. 4 airway traffic control areas (Los Angeles, Calif., to Washington, D. C.).** Those portions of green civil airway No. 4: From the Los Angeles, Calif., radio range station, to a line extended at right angles across such airway through a point on the center line thereof 25 miles south of the Phoenix, Ariz., radio range station; from a line extended at right angles across such airway through a point on the center line thereof 25 miles east of

the Big Spring, Tex., radio range station, to a line extended at right angles across such airway through a point on the center line thereof 25 miles southwest of the Little Rock, Ark., radio range station; from a line extended at right angles across such airway through a point on the center line thereof 25 miles southwest of the Roanoke, Va., radio range station, to the Washington Airport, Arlington, Va.

60.2404 Green civil airway No. 5 airway traffic control areas (Corpus Christi, Tex., to Richmond, Va.). That portion of green civil airway No. 5: From a line extended at right angles across such airway through a point on the center line thereof 25 miles northeast of the Mobile, Ala., radio range station, to the Municipal Airport, Richmond, Va.

60.2410 Amber civil airway No. 1 airway traffic control areas (San Diego, Calif., to Blaine, Wash.). Those portions of amber civil airway No. 1: From the Municipal Airport, San Diego, Calif., to a line extended at right angles across such airway through a point on the center line thereof 25 miles south of the Medford, Oreg., radio range station.

60.2411 Amber civil airway No. 2 airway traffic control areas (Daggett, Calif., to Great Falls, Mont.). That portion of amber civil airway No. 2: From the Daggett, Calif., radio range station, to a line extended at right angles across such airway through a point on the center line thereof 25 miles south of the Dillon, Mont., radio range station.

60.2412 Amber civil airway No. 3 airway traffic control areas (El Paso, Tex., to Cheyenne, Wyo.). No designation.

60.2413 Amber civil airway No. 4 airway traffic control areas (Brownsville, Tex., to Bismarck, N. Dak.). Those portions of amber civil airway No. 4: From a line extended at right angles across such airway through a point on the center line thereof 25 miles north of the Austin, Tex., radio range station, to a line extended at right angles across such airway, through a point on the center line thereof 25 miles south of the Oklahoma City, Okla., radio range station; from a line extended at right angles across such airway through a point on the center line thereof 25 miles north of the Chanute, Kans., radio range station, to a line extended at right angles across such airway through a point on the center line thereof 25 miles southeast of the Omaha, Nebr., radio range station.

60.2414 Amber civil airway No. 5 airway traffic control areas (New Orleans, La., to Milwaukee, Wis.). Those portions of amber civil airway No. 5: From a line extended at right angles across such airway through a point on the center line thereof 25 miles north of the Memphis, Tenn., radio range station to the Milwaukee, Wis., radio range station.

60.2415 Amber civil airway No. 6 airway traffic control areas (Jacksonville, Fla., to Buffalo, N. Y.). Those portions of amber civil airway No. 6: From a line extended at right angles across such airway through a point on the center line thereof 25 miles northwest of the Alma, Ga., radio range station, to a line extended at right angles across such airway through a point on the center line thereof 25 miles southeast of the Nashville, Tenn., radio range station; from a line extended at right angles across such airway through a point on the center line thereof 25 miles northeast of the Nashville, Tenn., radio range station to the Buffalo, N. Y., radio range station.

60.2416 Amber civil airway No. 7 airway traffic control areas (Key West, Fla., to Caribou, Maine). Those portions of amber civil airway No. 7: From a line extended at right angles across such airway through a point on the center line thereof 25 miles north of the Raleigh, N. C., radio range station, to a line extended at right angles across such airway through a point on the center line thereof 25 miles northeast of the Hartford, Conn., radio range station.

60.24200 Red civil airway No. 1 airway traffic control areas (Portland, Oreg., to Salt Lake City, Utah). That portion of red civil airway No. 1: From a line extended at right angles across such airway through a point on the center line thereof 25 miles northwest of the Boise, Idaho, radio range station, to the Salt Lake City, Utah, radio range station.

60.24201 Red civil airway No. 2 airway traffic control areas (Whitehall, Mont., to Belgrade, Mont.). No designation.

60.24202 Red civil airway No. 3 airway traffic control areas (Philadelphia, Pa., to New York, N. Y., LaGuardia Field). All of red civil airway No. 3.

60.24203 Red civil airway No. 4 airway traffic control areas (Dallas, Tex., to Shreveport, La.). All of red civil airway No. 4.

60.24204 Red civil airway No. 5 airway traffic control areas (United States-Canadian Border to Danforth, Maine). No designation.

60.24205 Red civil airway No. 6 airway traffic control areas (Parco, Wyo., to Grand Island, Nebr.). No designation.

60.24206 Red civil airway No. 7 airway traffic control areas (Spartanburg, S. C., to Greensboro, N. C.). All of red civil airway No. 7.

60.24207 Red civil airway No. 8 airway traffic control areas (Concord, N. H., to Portland, Maine). No designation.

60.24208 Red civil airway No. 9 airway traffic control areas (Fargo, N. Dak., to Pembina, N. Dak.). No designation.

60.24209 Red civil airway No. 10 airway traffic control areas (Amarillo, Tex., to Charleston, S. C.). Those portions of red civil airway No. 10: From a line extended at right angles across such airway through a point on the center line thereof 25 miles southeast of the Amarillo, Tex., radio range station, to a line extended at right angles across such airway through a point on the center line thereof 25 miles west of the Shreveport, La., radio range station; from a line extended at right angles across such airway through a point on the center line thereof 25 miles east of the Jackson, Miss., radio range station, to a line extended at right angles across such airway through a point on the center line thereof 25 miles west of the Charleston, S. C., radio range station.

60.24210 Red civil airway No. 11 airway traffic control areas (Tulsa, Okla., to St. Louis, Mo.). That portion of red civil airway No. 11: From a line extended at right angles across such airway through a point on the center line thereof 25 miles northeast of the Tulsa, Okla., radio range station, to the St. Louis, Mo., radio range station.

60.24211 Red civil airway No. 12 airway traffic control areas (Kansas City, Mo., to Detroit, Mich.). All of red civil airway No. 12.

60.24212 Red civil airway No. 13 airway traffic control areas (Springfield, Mass., to Boston, Mass.). That portion of red civil airway No. 13: From a line extended at right angles across such airway through a point on the center line thereof 25 miles northwest of the Hartford, Conn., radio range station, to a line extended at right angles across such airway through a point on the center line thereof 25 miles east of the Hartford, Conn., radio range station.

60.24213 Red civil airway No. 14 airway traffic control areas (Lone Rock, Wis., to Louisville, Ky.). All of red civil airway No. 14.

60.24214 Red civil airway No. 15 airway traffic control areas (Las Vegas, Nev., to Phoenix, Ariz.). All portions of red civil airway No. 15.

60.24215 Red civil airway No. 16 airway traffic control areas (Augusta, Ga., to Charleston, S. C.). That portion of red civil airway No. 16: From the Augusta, Ga., radio range station, to a line extended at right angles across such airway through a point on the center line thereof 25 miles northwest of the Charleston, S. C., radio range station.

60.24216 Red civil airway No. 17 airway traffic control areas (Martinsburg, W. Va., to Baltimore, Md.). All of red civil airway No. 17.

60.24217 Red civil airway No. 18 airway traffic control areas (Indianapolis, Ind., to Washington, D. C.). All of red civil airway No. 18.

60.24218 Red civil airway No. 19 airway traffic control areas (Dayton, Ohio, to Grand Rapids, Mich.). All of red civil airway No. 19.

60.24219 Red civil airway No. 20 airway traffic control areas (Detroit, Mich., to Washington, D. C.). All portions of red civil airway No. 20.

60.24220 Red civil airway No. 21 airway traffic control areas (Detroit, Mich., to Woodward, Pa.). All portions of red civil airway No. 21.

60.24221 Red civil airway No. 22 airway traffic control areas (Roanoke, Va., to Gordonsville, Va.). All of red civil airway No. 22.

60.24222 Red civil airway No. 23 airway traffic control areas (Buffalo, N. Y., to Newark, N. J.). All of red civil airway No. 23.

60.24223 Red civil airway No. 24 airway traffic control areas (Amarillo, Tex., to Oklahoma City, Okla.). No designation.

60.24224 Red civil airway No. 25 airway traffic control areas (Daytona Beach, Fla., to Miami, Fla.). No designation.

60.24225 Red civil airway No. 26 airway traffic control areas (Newark, N. J., to Burlington, Vt.). That portion of red civil airway No. 26: From the intersection of the center lines of the on course signals of the northeast leg of the Newark, N. J., radio range and the south leg of the New Hackensack, N. Y., radio

range, to a line extended at right angles across such airway through a point on the center line thereof 25 miles south of the Albany, N. Y., radio range station.

60.24226 **Red civil airway No. 27 airway traffic control areas (Dayton, Ohio, to Detroit, Mich.).** All of red civil airway No. 27.

60.24227 **Red civil airway No. 28 airway traffic control areas (Chicago, Ill., to Grand Rapids, Mich.).** All of red civil airway No. 28.

60.24228 **Red civil airway No. 29 airway traffic control areas (Baltimore, Md., to Elmira, N. Y.).** All of red civil airway No. 29.

60.24229 **Red civil airway No. 30 airway traffic control areas (Mobile, Ala., to Jacksonville, Fla.).** No destination.

60.24230 **Red civil airway No. 31 airway traffic control areas (Huron, S. Dak., to Minneapolis, Minn.).** No designation.

60.24231 **Red civil airway No. 32 airway traffic control areas (San Antonio, Tex., to Houston, Tex.).** No designation.

60.24232 **Red civil airway No. 33 airway traffic control areas (Harrisburg, Pa., to New York, N. Y., Municipal Airport (La Guardia Field.).** All of red civil airway No. 33.

60.24300 **Blue civil airway No. 1 airway traffic control areas (Pendleton, Oreg., to Spokane, Wash.).** No designation.

60.24301 **Blue civil airway No. 2 airway traffic control areas (Pittsburgh, Pa., to Erie, Pa.).** All of blue civil airway No. 2.

60.24302 **Blue civil airway No. 3 airway traffic control areas (Memphis, Tenn., to Tampa, Fla.).** Those portions of the blue civil airway No. 3: From a line extended at right angles across such airway through a point on the center line thereof 25 miles southeast of the Muscle Shoals, Ala., radio range station, to a line extended at right angles across such airway through a point on the center line thereof 25 miles northwest of the Dothan, Ala., radio range station.

60.24303 **Blue civil airway No. 4 airway traffic control areas (Boston, Mass., to Rouses Point, N. Y.).** No designation.

60.24304 **Blue civil airway No. 5 airway traffic control areas (Galveston, Tex., to Wichita, Kans.).** That portion of blue civil airway No. 5: From a line extended at right angles across such airway through a point on the center line thereof 25 miles northwest of the Navasota, Tex., radio range station, to the intersection of the center lines of the on course signals of the north leg of the Fort Worth, Tex., radio range and the south leg of the Oklahoma City, Okla., radio range.

60.24305 **Blue civil airway No. 6 airway traffic control areas (Abilene, Tex., to Oklahoma City, Okla.).** All of blue civil airway No. 6.

60.24306 **Blue civil airway No. 7 airway traffic control areas (Springfield, Ill., to Morse, Ill.).** All of blue civil airway No. 7.

60.24307 **Blue civil airway No. 8 airway traffic control areas.** No designation.

60.24308 **Blue civil airway No. 9 airway traffic control areas.** No designation.

60.24309 **Blue civil airway No. 10 airway traffic control areas (Modesto, Calif., to Williams, Calif.).** All of blue civil airway No. 10.

60.24310 **Blue civil airway No. 11 airway traffic control areas.** No designation.

60.24311 **Blue civil airway No. 12 airway traffic control areas (Portland, Oreg., to Ellensburg, Wash.).** No designation.

60.24312 **Blue civil airway No. 13.** No designation.

60.24313 **Blue civil airway No. 14 airway traffic control areas (Riverside, Calif., to Bakersfield, Calif.).** All of blue civil airway No. 14.

60.24314 **Blue civil airway No. 15 airway traffic control areas (Columbus, Ohio, to Erie, Pa.).** All of blue civil airway No. 15.

60.24315 **Blue civil airway No. 16 airway traffic control areas (Dillon, Mont., to Helena, Mont.).** No designation.

60.24316 **Blue civil airway No. 17 airway traffic control areas (Blythe, Calif., to Kingman, Ariz.).** All of blue civil airway No. 17.

60.24317 **Blue civil airway No. 18 airway traffic control areas (Newark, N. J., to Syracuse, N. Y.).** All of blue civil airway No. 18.

APPENDIX I

Civil Aviation Conventions and Arrangements in Force Between the United States and Other Countries, as of June 1, 1940

Mutilateral Conventions

Treaty Series No.	Title	Effective date
840	*Habana convention* on commercial aviation between the United States of America and other American republics, signed at Habana, Feb. 20, 1928.	June 13, 1929, as to U. S.: Aug. 26, 1931.
876	*Warsaw convention*, international air transportation convention, and additional protocol, between the United States of America and other powers, concluded at Warsaw, Oct. 12, 1929.	Feb. 13, 1933, as to U. S.: Oct. 29, 1934.
901	*Sanitary aerial navigation convention* between the United States of America and other powers, concluded at The Hague, Apr. 12, 1933.	Aug. 1, 1935, as to U. S.: Nov. 22, 1935.

Bilateral Executive Arrangements

Executive Agreement Series No.	Country	Subject	Effective date
(1)	Colombia	Air navigation	Feb. 23, 1929
24	Italy	Air navigation, pilot licenses and certificates of airworthiness for export.	Oct. 31, 1931
28	Union of South Africa.	Certificates of airworthiness for imported aircraft.	Dec. 1, 1931
38	Germany	Air navigation	June 1, 1932
39	do	Certificates of airworthiness for imported aircraft.	Do.
43	Belgium	do	Nov. 21, 1932
(1)	Netherlands	Air navigation	May 24, 1933
47	Sweden	do	Oct. 9, 1933
48	do	Pilot licenses to operate civil aircraft.	Do.
49	do	Certificates of airworthiness for imported aircraft.	Do.
50	Norway	Air navigation	Nov. 15, 1933
51	do	Pilot licenses to operate civil aircraft.	Do.
52	do	Certificates of airworthiness for imported aircraft.	Do.
54	Union of South Africa.	Air navigation	Sept. 20, 1933
55	do	Pilot licenses to operate civil aircraft.	Do.
58	Denmark	Air navigation	Apr. 16, 1934
59	do	Pilot licenses to operate civil aircraft.	Do.

[1] Press release of Department of State.

Bilateral Executive Arrangements—*Continued*

Executive Agreement Series No.	Country	Subject	Effective date
60	Denmark	Certificates of airworthiness for imported aircraft.	Apr. 16, 1934
69	Great Britain	do	Oct. 17, 1934
76	do	Air navigation	May 5, 1935
77	do	Pilot licenses to operate civil aircraft.	Do.
110	Ireland	Air navigation	Dec. 4, 1937
129	Canada	do	Aug. 1, 1938
130	do	Certificates of competency or licenses for piloting of civil aircraft.	Do.
131	do	Certificates of airworthiness for export.	Do.
143	do	Use of radio for civil aeronautical services.	Feb. 20, 1939
152	France	Air navigation	Aug. 15, 1939
153	do	Air transport services	Do.
159	Canada	do	Aug. 18, 1939
166	Liberia	Air navigation	June 15, 1939
167	New Zealand	Validation of United States certificate of airworthiness for exported aircraft.	Mar. 1, 1940

The above list includes only the aviation conventions and arrangements that have been published in the Treaty Series and Executive Agreement Series (except the press releases above noted) and does not include certain agreements concluded by an exchange of diplomatic notes which have not been made public, or reduced to the form of a single document. Furthermore, the list does not include agreements, permits, and authorizations concluded by foreign governments with United States air transport enterprises, or vice versa.

The above listed documents published in the Treaty Series and Executive Agreement Series may be obtained from the Superintendent of Documents, Washington, D. C., for 5 cents a copy. Copies of the above mentioned Press Releases of the Department of State may be obtained by application to the Department of State, Washington, D. C.