
CIVIL AIR REGULATIONS

PARTS 20 43 AND 60

AIR ASSOCIATES INCORPORATED

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PART 20 - PILOT CERTIFICATES

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| 20.0 Student pilot certificate. | 20.4 Aircraft, flight instructor, |
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Airline transport pilot certificates and lighter-than-air pilot certificates are provided for in Parts 21 and 22.

20.0 STUDENT PILOT CERTIFICATE

20.00 Issuance. A student pilot certificate will be issued by the Administrator to an applicant who meets the following applicable requirements:

20.01 Age.

- (a) Powered aircraft - 16 years.
- (b) Glider - 14 years.

If an applicant is less than 21 years of age at the time of making application, he shall submit with his application the written consent of either parent or legal or natural guardian.

20.02 Citizenship. Applicant shall be a loyal citizen of the United States or of a friendly foreign government not under the domination of or associated with any government with which the United States is at war. (Wartime regulation to be revised when conditions permit.)

20.03 Education. Applicant shall be able to read, write, speak, and understand the English language or an appropriate operation limitation will be placed on the student pilot certificate.

20.04 Physical standards.

- (a) Powered aircraft. Applicant shall meet the physical standards of the third class prescribed in Part 29.
- (b) Glider. Applicant shall have no known physical defect which renders him incompetent to pilot a glider, and shall so certify.

20.05 Aeronautical knowledge. None.

20.1 PILOT CERTIFICATE AND RATINGS

20.10 Issuance. A pilot certificate will be issued to an applicant who meets the minimum requirements prescribed herein. Private and commercial pilot, aircraft type and class, instrument, flight instructor, and any necessary

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special ratings for which the pilot has been found qualified will be issued in connection with a pilot certificate.

20.11 Graduates of certificated flying schools. A graduate of a certificated flying school will be deemed to have met the aeronautical experience requirements of this Part, if he presents an appropriate certificate of graduation within 60 days after graduation date.

20.2 PRIVATE PILOT RATING20.20 Age.

- (a) Powered aircraft - 17 years.
- (b) Glider - 14 years.

20.21 Citizenship. Applicant shall be a loyal citizen of the United States or of a friendly foreign government not under the domination of or associated with any government with which the United States is at war. (Wartime regulation to be revised when conditions permit.)

20.22 Education. Applicant shall be able to read, write, speak, and understand the English language or an appropriate operation limitation will be placed on the pilot certificate.

20.23 Physical standards.

- (a) Powered aircraft. Applicant shall meet the physical standards of the third class prescribed in Part 29.
- (b) Glider. Applicant shall have no known physical defect which renders him incompetent to pilot a glider, and shall so certify.

20.24 Aeronautical knowledge. Applicant for a powered aircraft or glider rating shall have passed the written examination prescribed in § 43.52 (b) within the preceding 24 calendar months.

20.25 Aeronautical experience.

(a) Powered aircraft. Applicant shall have had at least 10 hours of dual flight time given by a rated flight instructor of which at least 2 hours shall have been after solo, including instruction in recovery from spins, and 30 hours of solo flight time; or 7 hours of dual flight time given by a rated flight instructor of which at least 2 hours shall have been after solo and 20 hours of solo flight time in nonspinnable aircraft. As part of the foregoing requirements the applicant shall have had at least 3 hours of solo cross-country flying including one flight to a point not less than 50 miles distant from the point of departure with at least 2 full-stop landings at different points along the course.

Not more than 50 per cent of the above required solo flight time may be had in gliders, provided that the applicant is the holder of a pilot certificate with a private or commercial glider rating.

(b) Glider. Applicant for a glider rating shall have had at least 100 gliding flights, 25 of which must have included a 360° turn.

20.26 Aeronautical skill. Applicant shall competently perform the

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following maneuvers:

(a) Powered aircraft.

- (1) A series of 3 landings from an altitude not to exceed 1,000 feet with engine throttled and a 180° change in direction, the aircraft touching the ground in normal landing attitude beyond and within 300 feet of a designated line or point. At least one landing must be accomplished from a forward slip;
- (2) 3 moderately banked around-pylon figure eights, variation in altitude not to exceed 200 feet;
- (3) a 720° power turn in each direction in a banked attitude of more than 45° variation in altitude not to exceed 200 feet;
- (4) climbing and gliding turns at minimum controllable speeds;
- (5) recovery from power-on and power-off stalls entered from straight flight and turns;
- (6) recovery from a right and left spin of at least one turn accompanied by an inspector or a flight examiner.

Any of the above required maneuvers may be modified or eliminated if such action is appropriate to the characteristics of the aircraft used in the test and appropriate operation limitations are entered on the rating record.

(b) Glider.

- (1) One flight with a 180° turn and down-wind landing;
- (2) Two flights with a 360° turn to right and left, respectively, landing each time at a point beyond and within 200 feet of a designated line or point;
- (3) Two flights with right and left turns in each flight.

(c) Aircraft limitation. When the applicant's medical certificate shows a structural defect or limitation, such additional maneuvers and tests as may be necessary to demonstrate the competency of the applicant to pilot aircraft safely shall be required. A pilot certificate issued under these circumstances may be limited to the operation of a particular aircraft or model of aircraft and to the type of operation.

20.3 COMMERCIAL PILOT RATING

20.30 Age. 18 years.

20.31 Citizenship. Applicant shall be a loyal citizen of the United States or of a friendly foreign government not under the domination of or associated with any government with which the United States is at war and which government grants reciprocal commercial pilot privileges to citizens of the United States on equal terms and conditions with citizens of such foreign government. A certificate may be issued to an applicant who is a citizen of a friendly foreign government which does not grant reciprocal privileges but the effectiveness of such certificate shall in any event terminate 6 months after the war and may be terminated by the Administrator at any time without notice.

20.32 Education. Applicant shall be able to read, write, speak, and understand the English language.

20.33 Physical standards.

(a) Powered aircraft. Applicant for a powered aircraft rating shall meet the physical standards of the second class prescribed in Part 29.

(b) Glider. Applicant shall have no known physical defect which

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renders him incompetent to pilot a glider, and shall so certify.

20.34 Aeronautical knowledge.

(a) Powered aircraft. Applicant shall pass a written examination covering such of the provisions of Parts 43 and 60 as are pertinent; meteorology as applied to the recognition of weather conditions while flying, the analyzing of weather maps and sequence reports furnished by the United States Weather Bureau; practical air navigation problems including the use of maps, navigation by terrain and dead reckoning, and the use of navigational instruments and aids; the theory and practice of flight; the maintenance of aircraft and the maintenance and use of aircraft powerplants in common use.

(b) Glider. Applicant shall pass a written examination on such of the provisions of Parts 43 and 60 as are pertinent or hold a powered aircraft rating.

20.35 Aeronautical experience.

(a) Powered aircraft. Applicant shall have had at least 200 hours of solo flight time of which at least 5 hours must have been had within 60 days immediately preceding the date of application. As part of the foregoing requirements the applicant shall have had at least 20 hours solo cross-country flying, including at least one flight to a point not less than 150 miles distant from the point of departure with at least 3 full-stop landings at different points on the course.

Not more than 25 per cent of the above required solo flight time may be had in gliders, provided that the applicant is the holder of a pilot certificate with a private or commercial glider rating.

(b) Glider. Applicant shall have had at least 250 gliding flights or 150 gliding flights and 5 hours of soaring. At least 5 of such flights must have been made within 60 days preceding the date of application. Applicant also shall have had at least one hour of flight instruction in recovery from stalls and spins. An applicant who is the holder of a private or commercial rating for powered aircraft who has had not less than 100 gliding flights or 50 gliding flights and 5 hours of solo soaring time will be deemed to have met the requirements of this section.

20.36 Aeronautical skill. Applicant shall competently perform the following maneuvers:

(a) Powered aircraft.

(1) A series of 3 landings from an altitude not to exceed 1,000 feet with engine throttled and a 180° change in direction, the aircraft touching the ground in normal landing attitude beyond and within 200 feet of a designated line or point. At least one landing shall be accomplished from a forward slip;

(2) a spiral in each direction of not less than 3 full turns in a banked attitude of not less than 60°, with engine throttled;

(3) 3 shallow on-pylon figure eights, 3 steep on-pylon figure eights, and one 720° power turn in each direction in a banked attitude of at least 60°. During each of these maneuvers the total variation in altitude shall not exceed 100 feet;

(4) a two-turn spin in each direction starting the recovery with an error of not more than plus or minus 10°

(5) straight climbs, climbing turns, slips, maneuvers at minimum controllable speeds, and emergency maneuvers such as simulated forced

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landings and recovery from stalls entered from both level and steeply banked attitudes.

Any of the above required maneuvers may be modified or eliminated if such action is appropriate to the characteristics of the aircraft used in the test and appropriate operation limitations are entered on the rating record.

(b) Glider.

- (1) one flight with a 180° turn and down-wind landing;
- (2) two flights with a 360° turn to right and left, respectively, landing each time beyond and within 100 feet of a designated line or point;
- (3) two flights with right and left turns in each flight.

20.4 AIRCRAFT; FLIGHT INSTRUCTOR; AND INSTRUMENT RATINGS

20.40 Aircraft rating competence. Applicant for additional aircraft ratings subsequent to the original issuance of a pilot certificate shall demonstrate competence appropriate to the pilot rating held in aircraft of the type and class for which a rating is sought. A pilot limited by his rating to non-spinnable airplanes, when applying for removal of this restriction, shall have had at least 30 solo hours, and shall have had at least 3 hours of certified dual instruction on spinnable airplanes. A pilot limited by his rating to gliders, when applying for powered aircraft ratings, shall meet the aeronautical knowledge, experience, and skill requirements for powered aircraft applicable to the pilot rating sought.

20.400 Aircraft type ratings. The following aircraft type ratings are issued:

- (a) airplane,
- (b) glider,
- (c) autogiro,
- (d) helicopter.

20.401 Airplane class ratings. The following airplane class ratings are issued:

- (a) single engine land,
- (b) single engine sea,
- (c) multiengine land,
- (d) multiengine sea.

20.41 Flight instructor rating for powered aircraft.

20.410 Age. 18 years.

20.411 Knowledge. Applicant shall pass a theoretical and practical examination on his competency to instruct students in flight.

20.412 Experience. Applicant shall be a commercial pilot or a private pilot who meets the requirements of § 20.35 (a).

20.413 Skill. Applicant shall demonstrate his ability to perform with precision and to teach such flight maneuvers as are necessary and appropriate for instruction in the safe piloting of aircraft.

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20.42 Instrument rating.

20.420 Knowledge. Applicant shall pass a written examination demonstrating his familiarity with the use of such instruments and other navigational aids, both in the aircraft and on the ground, as are necessary for the navigation of aircraft by instruments. In addition, an applicant who is a private pilot shall meet the knowledge requirements of § 20.34 (a) except those pertinent to the maintenance of aircraft and aircraft engines.

20.421 Experience. Applicant shall be a commercial pilot or private pilot who meets the requirements of § 20.35 (a). As part of the experience requirements he shall have had at least 40 hours of instrument time under actual or simulated instrument flight conditions, not less than 20 hours of which must have been in actual flight.

20.422 Aeronautical skill. Applicant shall competently perform the following maneuvers solely by reference to instruments:

- (a) straight and level flight,
- (b) moderately banked 180° and 360° turns in both directions,
- (c) straight and level flight at minimum safe speeds, minimum glides, maximum climbs, and approaches to stalled attitudes of flight,
- (d) climbing turns,
- (e) stalls, skids, slips, spirals, banks in excess of 45°, and recovery from unusual positions,
- (f) a demonstration of estimating arrival time, taking into account speed, wind, and drift.

20.423 Radio skill. Applicant shall demonstrate his competence while flying solely by reference to instruments with respect to the following items:

- (a) tuning radio,
- (b) orientation,
- (c) operation along a radio range leg,
- (d) locating cone of silence,
- (e) letdown using approved instrument approach procedure for the particular airport.

20.424 Modified tests. Any of the maneuvers or procedures required in §§ 20.422 and 20.423 may be modified or eliminated if such action is appropriate to the characteristics of the aircraft or equipment used in the test and appropriate operation limitations are noted.

20.5 CERTIFICATION RULES

20.50 Application. Application for a student pilot certificate, pilot certificate, or any rating shall be made on a form furnished by the Administrator.

20.51 Duration. A student pilot certificate or a pilot certificate with a private or commercial rating shall expire 24 calendar months* after the month of issuance. However, the Administrator or his authorized representative may issue a temporary pilot certificate with a private or commercial rating for a period not to exceed 90 days subject to the terms and conditions specified therein by the administrator.

*For example, a certificate issued any time in April 1945 will expire on the last day of April 1947.

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20.52 Renewals. Application for renewal of pilot certificates with private or commercial ratings shall be made on a form furnished by the Administrator and may be mailed or presented to any inspector within 60 days prior to the month of expiration.

20.53 Reinstatement. An expired pilot certificate with private or commercial ratings may be reinstated upon application and presentation of a statement from a rated flight instructor that he flight checked the applicant and found him competent to exercise the privileges of a holder of a pilot certificate and any appropriate aircraft type and class ratings previously held.

20.54 Surrender. Any pilot shall, upon request, deliver his certificate or rating to the Administrator, if it has been suspended or revoked.

20.55 Exchange of certificates. An existing private or commercial pilot certificate which was effective on or after January 1, 1942, may be exchanged at any time prior to July 1, 1947, for a pilot certificate and appropriate ratings as provided for in this Part.

20.56 Military competence.

20.560 Pilot certificate. Applicant who is, or was within the preceding 12 calendar months, a member of the armed forces of the United States and has served on solo flying status for a period of 6 consecutive months will be deemed to have met the aeronautical knowledge, experience, and skill requirements of the Civil Air Regulations for the issuance of a pilot certificate with ratings appropriate to the military pilot rating held: Provided, That he passes a written examination on Parts 43 and 60 of the Civil Air Regulations and submits reliable documentary evidence showing:

- (a) that he is a member of the armed forces or that he has been honorably discharged or returned to inactive status,
- (b) that he is, or was, a rated military pilot, and
- (c) his total solo flying time.

20.561 Ratings. Ratings will be issued in connection with such a pilot certificate or in connection with an effective private or commercial pilot certificate held if the applicant meets the following requirements:

(a) Aircraft type and class ratings. These ratings will be issued to an applicant who presents reliable documentary evidence showing that within the preceding 12 calendar months he has had at least 10 hours of flying time during which he was the sole manipulator of the controls of an aircraft of the type and class for which a rating is sought.

(b) Instrument rating. This rating will be issued to an applicant who holds an effective military instrument rating if the requirements for the issuance of such rating and the privileges authorized by it are not less than the requirements of the Civil Air Regulations for the issuance of an instrument rating and the privileges authorized by such rating increa.com.

20.6 EXAMINATIONS AND TESTS

20.60 General. The prescribed examinations and tests shall be given by a person designated by the Administrator.

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20.61 Physical examination. Prior to taking examinations or tests for a rating the applicant for

(a) private rating shall have met the appropriate physical requirements prescribed for the issuance of his certificate within the preceding 24 calendar months,

(b) commercial rating shall have met the appropriate physical requirements prescribed for the issuance of his certificate within the preceding 12 calendar months.

20.62 Aircraft used in flight tests.

(a) Powered aircraft. Applicant shall furnish a certificated aircraft which must be equipped with complete dual controls and accommodate the applicant and examiner and parachutes for both. In addition, aircraft used for instrument flight tests shall be equipped as specified in § 43.30 (c).

(b) Glider. Applicant shall furnish a certificated glider.

20.63 Time and place. All examinations and tests will be held at such times and places as the Administrator may designate.

20.64 Reapplication after failure. Applicants who have failed in any examination will be subject to the following rules in making application for re-examination:

(a) An applicant for a pilot certificate with a powered aircraft rating or for an additional rating who fails to pass any prescribed theoretical examination may reapply after the expiration of 30 days from the date of such failure or after he has received not less than 5 hours of instruction from a certificated ground instructor in each subject failed.

(b) An applicant who has failed to pass any prescribed practical examination or test on powered aircraft may reapply only after an appropriately rated flight instructor has checked his competency and certified in the applicant's logbook that he considers such applicant qualified for the certificate or rating sought, or after the expiration of 30 days from the date of such failure.

(c) An applicant for a glider rating who has failed to pass any prescribed theoretical examination may reapply at any time after the expiration of 30 days or after he has received not less than 5 hours of instruction on each subject failed from a certificated ground instructor.

(d) An applicant for a glider rating who has failed to pass any prescribed practical examination or test may reapply only after he has made at least 20 additional gliding flights.

CIVIL AERONAUTICS BOARD

WASHINGTON, D. C.

CIVIL AIR REGULATIONS AMENDMENT 43-0

Effective: July 1, 1945

Adopted: April 26, 1945

PART 43 - GENERAL OPERATION RULES

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43.0 GENERAL

43.00 Scope. The following rules govern the operation of civil aircraft in the United States:

43.1 AIRCRAFT CERTIFICATION AND IDENTIFICATION

43.10 Certificates and identification marks. Aircraft, except foreign aircraft authorized by the Administrator to be flown in the United States, shall not be operated unless the following requirements are met:

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43.100 Registration certificate. A registration certificate issued to the owner of the aircraft shall be carried in the aircraft at all times.

Note: The owner of an aircraft is required to give immediate notice to the Administrator of any change of address. For other rules governing the registration and recordation of aircraft ownership see Administrator's Regulations 501 and 503.

43.101 Airworthiness certificate. An airworthiness certificate or special authorization issued by the Administrator, approving its operation shall be carried in the aircraft at all times during flight.

Note: Usually the manufacturer obtains the airworthiness certificate which thereafter remains with the aircraft. If no airworthiness certificate has been issued for the aircraft, or if it has expired, the owner shall obtain this certificate.

43.1010 Aircraft operation record. An aircraft for which an airworthiness certificate is currently in effect shall not be operated unless there is attached to such airworthiness certificate an appropriate aircraft operation record prescribed and issued by the Administrator, nor shall such aircraft be operated other than in accordance with the limitations prescribed and set forth by the Administrator in such record. Any change made to the aircraft which affects these limitations shall be made under the supervision of an appropriately rated mechanic or other person authorized by the Administrator and such change shall be noted in the aircraft operation record.

43.1011 Duration. An airworthiness certificate shall remain in effect until a termination date is fixed by the Board, unless it is suspended or revoked.

43.1012 Transferability. The airworthiness certificate and the attached currently effective aircraft operation record, upon transfer of ownership shall remain with the aircraft for which they were issued.

43.1013 Surrender. Upon the cancellation, suspension, or revocation of an airworthiness certificate the owner of the aircraft must, upon request, surrender such certificate to an authorized representative of the Administrator.

43.102 Identification marks. Aircraft identification marks shall be displayed on aircraft in the manner prescribed by the Administrator. Aircraft identification marks are as follows:

(a) NC Roman capital letters NC followed by the registration symbols shall be displayed on aircraft which fully comply with the minimum airworthiness requirements specified in the Civil Air Regulations.

(b) NR Roman capital letters NR followed by the registration symbols shall be displayed on aircraft which fully comply with airworthiness requirements of the Civil Air Regulations, except those rendered inapplicable by the nature of a special purpose for which the aircraft is to be used, and the airworthiness requirements not met are compensated by suitable operating restrictions imposed by the Administrator after making a finding that the aircraft, when operated for the special purpose in accordance with the restrictions placed thereon and carrying only the crew necessary for this special operation, provides a level of safety equivalent to that of an aircraft which fully meets

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the provisions of the airworthiness requirements of the Civil Air Regulations

(c) NX. Roman capital letters NX followed by the registration symbols shall be displayed on aircraft which have not fully complied with the airworthiness requirements specified in the Civil Air Regulations and are to be operated only for experimental purposes when, in the opinion of the Administrator, such aircraft can be operated with appropriate restrictions without endangering public safety. In addition, the word "experimental" shall be prominently displayed near the entrance to the cabin or cockpit of any aircraft holding an experimental certificate.

(d) Other marks or symbols.

(1) No design, mark, or symbol which modifies the identification mark shall be placed on aircraft, except with the approval of the Administrator.

(2) No design, mark, or symbol which confuses the identification mark shall be placed on the aircraft.

43.1020 Export aircraft. An aircraft manufactured in the United States for delivery outside the United States or its possessions shall display such identification marks or insignia as are approved by the Administrator. Such aircraft shall be operated only for the purpose of test and demonstration flights for a limited period of time or while in necessary transit to the purchaser.

43.2 MAINTENANCE

43.20 General. An aircraft shall not be flown unless it is in airworthy condition. Mechanical work other than routine maintenance must be performed in accordance with § 18.50.

43.21 Flight tests. When an aircraft has undergone any repair or alteration which may have appreciably changed its flight characteristics or substantially affected its operation in flight, such aircraft, prior to carrying passengers, shall be test flown by at least a private pilot appropriately rated for the aircraft, and a notation to that effect shall be entered by such pilot in the aircraft log.

43.22 Annual inspection. An aircraft shall not be flown, except for airworthiness flight tests, unless within the preceding 12 calendar months it has been given an annual inspection as prescribed by the Administrator and has been found to be airworthy by a person designated by the Administrator. A copy of the last inspection report shall be attached to the aircraft operation record and a copy filed with the Administrator.

43.23 Periodic inspection. An aircraft shall not be flown for hire unless within the preceding 100 hours of flight time it has been given a periodic inspection by an appropriately rated mechanic and has been found to be airworthy and a notation to that effect has been entered by such mechanic in the aircraft log. The annual inspection required by § 43.22 will be accepted as one such periodic inspection.

43.24 Aircraft and engine logs. The registered owner shall keep accurate current, permanent records of the total flight time of the aircraft and the running time of each engine. Such records shall be kept in logbooks or other

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suitable systems readily available for transfer with the aircraft or individual engine and, upon request, must be presented to an authorized representative of the Administrator or Board. A mechanical device which records the total amount of operation or the total number of engine revolutions may be used in lieu of such aircraft and engine records.

43.25 Rebuilt engine logs. A new record without previous operating history may be used for an aircraft engine rebuilt by the manufacturer or any agency approved by the manufacturer for such work, provided such new record contains a signed statement by such manufacturer or agency giving the date the engine was rebuilt and such other information as the Administrator may require.

43.3 AIRCRAFT INSTRUMENTS AND EQUIPMENT

43.30 NC powered aircraft instruments and equipment. The following instruments and equipment, or instruments and equipment which the Administrator has found to be the equivalent, are required for the particular type of operation specified:

(a) Contact flight rules (day).

- (1) airspeed indicator,
- (2) altimeter,
- (3) magnetic direction indicator,
- (4) tachometer for each engine,
- (5) oil pressure gauge for each engine using pressure system,
- (6) temperature gauge for each liquid-cooled engine,
- (7) oil temperature gauge for each air-cooled engine,
- (8) manifold pressure gauge, or equivalent, for each altitude

engine.

- (9) fuel gauge indicating the quantity of fuel in each tank,
- (10) position indicator, if aircraft has retractable landing

gear,

(11) approved flotation gear readily available for each occupant and a Very pistol or equivalent signal device, if the aircraft is operated for hire over water beyond gliding distance from shore without the aid of power,

(12) certificated safety belts for all passengers and members of the crew.

(b) Contact flight rules (night).

- (1) equipment specified in § 43.30 (a),
- (2) set of certificated forward and rear position lights,
- (3) one electric landing light, if the aircraft is operated for

hire,

(4) certificated landing flares as follows, if the aircraft is operated for hire beyond a 3-mile radius from the center of the airport of take-off:

Maximum authorized weight of aircraftFlares

3,500 pounds or less

5 class-three or
3 class-two

3,500 pounds to 5,000 pounds

4 class-two

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<u>Maximum authorized weight of aircraft</u>	<u>Flares</u> (cont'd)
above 5,000 pounds	2 class-one or 3 class-two and 1 class-one

If desired, flare equipment specified for heavier aircraft may be used.

(5) inadequate source of electrical energy for such electrical and radio*equipment as is installed,

(6) one spare set of fuses or 3 spare fuses of each magnitude.

(c) Instrument flight rules.

(1) equipment specified for contact flight rules in § 43.30 (a) and, for night flight, equipment specified in § 43.30 (b),

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

(3) gyroscopic rate-of-turn indicator,

(4) bank indicator,

(5) sensitive altimeter adjustable for change in barometric pressure,

(6) clock with a sweep-second hand,

(7) generator of adequate capacity.

43.4 PILOTING RULES (GENERAL)

43.400 Pilot certificate. Any person piloting an aircraft in the United States shall hold a valid pilot certificate issued by the Administrator or a foreign pilot certificate validated by the Administrator.

43.401 Identification card. An identification card shall be kept in the personal possession of the pilot when piloting aircraft. Such a card will be issued by the Administrator and will contain the pilot's fingerprints, picture, and signature, or it may be a document issued by the Army, Navy, Marine Corps, or Coast Guard identifying the pilot as a member thereof.

Note: This requirement will be deleted after the war.

43.402 Medical certificate and renewal. Any person piloting an aircraft shall have in his possession a medical certificate or other evidence satisfactory to the Administrator showing that he has met the physical requirements appropriate to his rating within the following time limits:

(a) student or private pilot - 24 calendar months,

(b) commercial pilot - 12 calendar months.

43.403 Operation during physical deficiency. A person shall not pilot any aircraft during a period of any known physical deficiency or increase in physical deficiency which would render him unable to meet the physical requirements prescribed for the issuance of his currently effective medical certificate.

43.404 Pilot logbooks. A record of the flight time used to substantiate recent experience or qualification for certificates or ratings shall be kept in a bound logbook. The logging of other flight time is not required. Such

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record shall show:

- (a) date of flight, duration of flight, and the points between which such flight was made,
- (b) type and make of the aircraft flown, the airplane class and engine horsepower,
- (c) aircraft identification mark,
- (d) dual instruction endorsed by a rated instructor, solo, instrument, and night flying time.

43.405 Logging of flight time.

- (a) Student. A student pilot may log as solo only that time during which he is the sole occupant of the aircraft in flight.
- (b) Private and commercial. A private or commercial pilot may log as solo that portion of any flight during which he is the sole manipulator of the controls of an aircraft for which he is rated or any flight during which he is the sole occupant of the aircraft. A flight instructor may log as solo that flight time during which he is serving as flight instructor.
- (c) Instrument time. Instrument flight time may be logged as such by the pilot actually manipulating the controls only when the aircraft is flown solely by reference to instruments either under actual or simulated instrument flight conditions.

43.406 Use of liquor, narcotics, and drugs. No person shall pilot an aircraft or serve as a member of the crew while under the influence of intoxicating liquor or use any drug which affects his faculties in any manner contrary to safety. A pilot shall not permit any person to be carried in the aircraft who is obviously under the influence of intoxicating liquor or drugs, except a medical patient under proper care or in case of emergency.

43.407 Towing by aircraft. No pilot shall tow anything by aircraft unless authority for such operation has been issued by the Administrator.

43.408 Dropping objects. No person piloting an aircraft shall permit anything to be dropped from an aircraft in flight which might create any hazard to persons or property.

43.409 Aerobatic flight. No pilot shall intentionally fly an aircraft in aerobatic flight carrying passengers unless all occupants are equipped with approved parachutes.

43.410 Parachutes. No person piloting an aircraft shall permit other than an approved parachute which has been packed within the preceding 60 days by a certificated parachute rigger to be carried in the aircraft in a manner available for emergency use.

43.411 Transportation of explosives and other dangerous articles. No person piloting an aircraft shall permit explosives or other dangerous articles such as inflammable liquids or solids, oxidizing material, corrosive liquid, inflammable or noninflammable compressed gas, poison gas or liquid, poisonous liquid or solid, or tear gas to be carried in aircraft, except as provided for in Part 49 of the Civil Air Regulations. Small arms ammunition for personal use, necessary aircraft signaling devices, and equipment necessary to safe operation of the aircraft are permitted.

PART 43 - GENERAL OPERATION RULES

43.5 STUDENT PILOT LIMITATIONS

43.50 General limitations. A student shall not pilot an aircraft carrying a passenger and shall not pilot aircraft for hire or reward or in furtherance of a business.

43.51 Requirement for first solo. A first solo flight in powered aircraft shall not be made until the student has been found competent by a flight instructor to make such flight and authority therefor has been endorsed by such instructor on the student pilot certificate. Prior to the first solo in spinnable powered aircraft the student shall be given instruction in recovery from stalls and spins.

43.52 Flight area limitations. A student shall not pilot an aircraft outside a local flying area designated by his flight instructor until:

- (a) he has had at least 10 solo flight hours,
- (b) he has passed a written examination on the pertinent provisions of Part 43 and those of Part 60 dealing with contact flight rules,
- (c) his student pilot certificate has been appropriately endorsed by a flight instructor.

43.53 Aircraft limitations. A student shall not pilot an aircraft other than that of the type, class, and model which has been endorsed on his student pilot certificate by a flight instructor.

43.54 Recent experience. A student who has not piloted a powered aircraft within 90 days shall not pilot such aircraft in solo flight until he has passed a flight check given by a flight instructor and that fact has been endorsed by such instructor in the student pilot logbook.

43.6 PRIVATE AND COMMERCIAL PILOT PRIVILEGES AND LIMITATIONS

43.60 Private pilot. A private pilot shall not pilot aircraft for hire.

Note: This rule permits sharing the expenses of a flight or piloting aircraft in furtherance of a business when the flight is made solely for the personal transportation of the pilot.

43.61 Commercial pilot. A commercial pilot may pilot aircraft for hire.

43.62 Airline transport pilot. An airline transport pilot may exercise the privileges of a commercial pilot with an instrument rating.

43.63 Rating requirements. A private or commercial pilot shall not pilot an aircraft carrying passengers other than an aircraft of the type and class for which he is rated, but may pilot other aircraft without passengers unless limitations placed on his certificate prohibit him from doing so.

43.64 Flight instruction limitations. The following rules govern flight instruction:

43.640 Aircraft. Aircraft shall be equipped with fully functioning dual controls.

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43.641 Flight time. A flight instructor shall not give more than 8 hours of dual flight instruction in any one day and not more than 36 hours of dual flight instruction in any 7-day period.

43.642 Endorsement of student pilot certificates. A flight instructor shall not endorse the certificate of any student pilot for solo flight, cross-country flight, or flight in different models of aircraft, unless he has determined that the student is competent to exercise such privileges with safety.

43.65 Instrument flight limitations. A pilot shall not pilot aircraft under instrument flight rules, unless he holds a valid instrument rating issued by the Administrator.

43.66 Instrument flight instruction. Instrument flight instruction may be given only by a person holding an effective instrument rating. A flight instructor rating is not required.

43.67 Simulated instrument flight. Aircraft shall not be flown under simulated instrument flight conditions unless:

- (a) fully functioning dual controls are installed in the aircraft
- (b) an appropriately rated pilot occupies the other control seat as safety pilot, and
- (c) such safety pilot at all times has adequate vision forward and to either side of the aircraft, or a competent observer occupies a position in the aircraft so that his field of vision adequately supplements that of the safety pilot.

43.68 Recent flight experience. The following rules govern recent flight experience:

43.680 General. No person shall pilot an aircraft carrying passengers unless within the preceding 90 days he has made at least 5 take-offs and landings to a full stop in aircraft of the same type and class, and of a rated horsepower within 50 per cent of the horsepower of the aircraft to be flown.

43.681 Night flight. No person shall pilot an aircraft carrying passengers during the period from one hour after sunset to one hour before sunrise, unless he has made at least 5 take-offs and landings to a full stop during such period within the preceding 90 days.

43.682 Instruction flight. A flight instructor shall not exercise the privileges of the instructor rating unless within the preceding 12 calendar months he has either:

- (a) given at least 10 hours of flight instruction while appropriately rated, or
- (b) demonstrated his continued proficiency to the Administrator

43.683 Instrument flight. A pilot shall not pilot an aircraft under instrument flight rules unless he has had at least 6 hours of instrument flight under actual or simulated flight conditions during the preceding 6 calendar months or until he has had 6 hours of such flight time under:

- (a) actual instrument conditions, accompanied by a pilot of at least

PART 43 - GENERAL OPERATION RULES

private rating holding an appropriate aircraft and instrument rating, or
 (b) simulated instrument conditions in an aircraft, accompanied by a pilot of at least private rating holding an appropriate aircraft rating, or
 (c) simulated instrument conditions in equipment approved by the Administrator, except that at least 3 hours must have been had in accordance with paragraph (a) or (b)

43.9 Definitions.

(a) Pilot is a person holding a valid pilot certificate issued by the Administrator.
 (b) To pilot means to be in command of the aircraft during take-off, in flight, or landing.
 (c) Passenger is an occupant of the aircraft in flight other than a crew member.
 (d) Flight instructor means a private or commercial pilot who possesses a valid flight instructor rating.
 (e) Routine maintenance is defined as simple or minor preservation operations, including but not limited to the adjustment of rigging and clearances, and the replacement of small standard parts not involving complex assembly operations.

PART 60 - AIR TRAFFIC RULES

60.0	General.		
60.00	Scope.	60.2	Instrument flight rules (IFR).
60.1	Contact flight rules (CFR).	60.20	Application.
60.100	Authority of pilot.	60.21	Preflight action.
60.101	Careless or reckless operation.	60.22	Right-side traffic.
60.102	Airspace restrictions.	60.23	Minimum altitudes.
60.103	Right-of-way and proximity.	60.24	Cruising altitudes.
60.104	Aerobatic flight.	60.25	Flight in control areas, airport approach zones, and airport traffic zones.
60.105	Minimum safe altitudes.	60.250	Flight plan.
60.106	Operation on and in the vicinity of airports.	60.251	Fuel requirements.
60.107	Traffic control instructions.	60.252	Traffic clearance.
60.108	Aircraft lights.	60.253	Communication contacts.
60.109	Notification of arrival.	60.254	Communication failure.
60.110	Visibility and proximity-to-cloud minimums.	60.9	Definitions.

60.0 GENERAL

60.00 Scope. The following air traffic rules apply to aircraft operated anywhere in the United States except:

- (a) military aircraft of the armed forces when appropriate military authority determines that noncompliance with these rules is required and notice thereof is given to the Administrator, or
 (b) aircraft when operated under the authority of and in compliance with the terms of a certificate of waiver issued by the Administrator.

60.1 CONTACT FLIGHT RULES (CFR)

60.100 Authority of pilot. The pilot in command of an aircraft shall be directly responsible for its safe operation.

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

60.102 Airspace restrictions. Aircraft shall not be operated within restricted airspace areas contrary to the restrictions prescribed by the agency having jurisdiction over such areas.

60.103 Right-of-way and proximity.

(a) Distress. An aircraft in distress has the right-of-way over all other traffic.

(b) Order. Aircraft in flight, except in emergencies, 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, (4) airplanes towing gliders, and (5) airplanes and rotorplanes.

(c) Right-of-way of similar type aircraft.

(1) Converging. When two aircraft are on crossing courses at approximately the same altitude, the aircraft on the left shall give way.

(2) 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.

(3) Overtaking. An overtaken aircraft has the right-of-way and the overtaking aircraft, whether climbing, descending, or in level flight, shall alter its course to the right.

(4) Landing. Aircraft while landing or maneuvering for a landing have the right-of-way over other aircraft in flight or on the surface.

(d) Proximity. Aircraft shall be flown at least 500 feet apart except by prearrangement of the pilots in command of the aircraft.

60.104 Aerobatic flight. An aircraft shall not be aerobatically flown:

(a) so as to endanger air traffic, or

(b) over the congested areas of cities, towns, settlements, or open-air assemblies of persons.

60.105 Minimum safe altitudes. Except when necessary for taking off and landing, aircraft shall be flown:

(a) when over the congested areas of cities, towns, settlements, or open-air assemblies of persons, at altitudes sufficient to permit emergency landings outside such areas and in no case less than 1,000 feet above such areas, and

(b) when elsewhere than as specified in paragraph (a), at an altitude of not less than 500 feet, except over water or areas where flying at a lower altitude will not involve hazard to persons or property on the surface.

60.106 Operation on and in the vicinity of airports. Aircraft shall be operated on and in the vicinity of airports in accordance with the following rules:

PART 60 - AIR TRAFFIC RULES

(a) Prior to and during taxiing, taking off, and landing, a pilot shall:

- (1) observe other traffic and take precaution to avoid collision
- (2) conform to the flow of traffic, and
- (3) if a control tower is in operation, maintain contact with such tower, either visually or by radio, to receive any traffic control instructions which may be issued.

(b) After taking off or when approaching for landing, all turns shall be made to the left unless a different procedure has been authorized by the Administrator for the particular airport or unless otherwise instructed by a control tower.

(c) If a landing is not intended, aircraft shall be flown so as to avoid or conform to the traffic pattern formed by aircraft landing and taking off.

60.107 Traffic control instructions. Aircraft shall not be operated in control areas, airport approach zones, or airport traffic zones contrary to traffic control instructions received from a control center or control tower.

60.108 Aircraft lights. During the hours of darkness:

- (a) All aircraft in flight shall display position lights.
- (b) All aircraft parked or moved within or in dangerous proximity to the usable portion of any airport used for, or available to, night flight operations shall be clearly illuminated or lighted, unless the parking area is marked with obstruction lights.
- (c) All aircraft on the water and not under way or which are moored in navigational lanes shall display a white anchor light or position lights.

60.109 Notification of arrival. If a flight plan has been filed, the pilot in command of the flight, upon landing or completion of the flight, shall file an arrival or completion notice with the nearest Civil Aeronautics Administration communications station or control tower.

60.110 Visibility and proximity-to-cloud minimums. Aircraft shall not be flown when visibility is less, or in closer proximity to clouds, than the minimums specified below, unless operated in accordance with instrument flight rules:

- (a) Flight at altitudes of more than 700 feet above the surface.
 - (1) Visibility
 - (i) inside airport traffic zone - 3 miles*,
 - (ii) outside airport traffic zone but inside control area - 3 miles or 1 mile with traffic clearance,
 - (iii) elsewhere - 1 mile;
 - (2) Proximity to clouds
 - (i) inside airport traffic zone - 500 feet vertically and 2,000 feet horizontally*,
 - (ii) elsewhere - 500 feet vertically and 2,000 feet horizontally.

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(b) Flight at altitudes of 700 feet or less above the surface.

(1) Visibility

(i) inside an airport traffic zone - 3 miles*

(ii) elsewhere - 1 mile;

(2) Proximity to clouds

(i) inside airport traffic zone or airport approach zone - 500 feet vertically and 2,000 feet horizontally*,

(ii) elsewhere - clear of clouds.

*If traffic conditions permit, a control tower or control center will issue a traffic clearance when the minimums are less than those specified, but under this provision the flight must remain clear of clouds.

CHART OF VISIBILITY AND PROXIMITY-TO-CLOUD MINIMUMS

		Inside airport traffic zone	Outside airport traffic zone but inside control area	Elsewhere
Flight at altitudes of more than 700 feet above surface	Visibility	3 miles*	3 miles or 1 mile with traffic clearance	1 mile
	Proximity to clouds	500 feet vertically,* 2,000 feet horizontally*	500 feet vertically, 2,000 feet horizontally	500 feet vertically, 2,000 feet horizontally
Flight at altitudes of 700 feet or less above surface	Visibility	3 miles*	1 mile	1 mile
	Proximity to clouds	500 feet vertically,* 2,000 feet horizontally*	In approach zone 500 feet vertically,* 2,000 feet horizontally* Outside approach zone clear of clouds	Clear of clouds

*If traffic conditions permit, a control tower or control center will issue a traffic clearance when the minimums are less than those specified, but under this provision the flight must remain clear of clouds.

PART 60 - AIR TRAFFIC RULES

60.2 INSTRUMENT FLIGHT RULES (IFR)

60.20 Application. In addition to the applicable contact flight rules, aircraft shall be flown in accordance with the following rules whenever the flight cannot be conducted in accordance with the visibility and proximity-to-cloud minimums specified in § 60.110:

60.21 Preflight action. Prior to starting a flight the pilot in command shall have determined that the flight can be made with safety, taking into consideration available weather reports and forecasts, pertinent notices and information to airmen, fuel requirements, and an alternate course of action.

60.22 Right-side traffic. Aircraft operating along a designated airway shall be flown to the right of the center line of such airway, unless otherwise authorized by a control center or control tower.

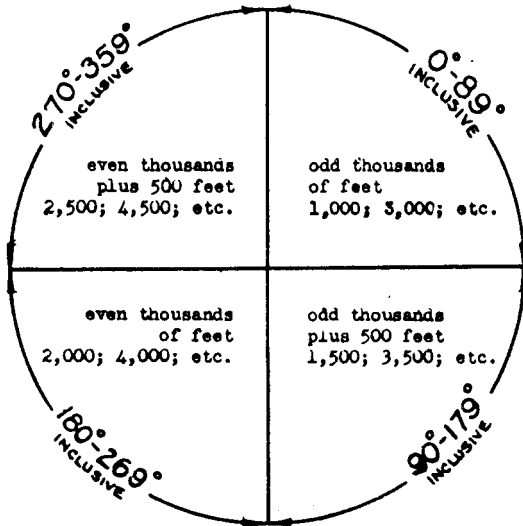
60.23 Minimum altitudes. Except when necessary for taking off or landing, aircraft shall be flown not less than 1,000 feet above the surface.

60.24 Cruising altitudes. Aircraft shall be flown at the following cruising altitudes:

- (a) Inside a control area, an airport approach zone, or an airport traffic zone. At altitudes authorized by the center or tower.
- (b) Elsewhere. Except for necessary ascent or descent, at altitudes corresponding to the direction of the flight as indicated below:

<u>Magnetic Heading</u>	<u>Indicated altitude</u> (feet above sea level)
0° - 89° inclusive	Odd thousands (1,000; 3,000; etc.)
90° - 179° inclusive	Odd thousands plus 500 (1,500; 3,500; etc.)
180° - 269° inclusive	Even thousands (2,000; 4,000; etc.)
270° - 359° inclusive	Even thousands plus 500 (2,500; 4,500; etc.)

CIVIL AIR REGULATIONS

CHART OF CRUISING ALTITUDES OUTSIDE OF CONTROL AREAS60.25 Flight in control areas; airport approach zones; and airport traffic zones.

60.250 Flight plan. Prior to flying in a control area, an airport approach zone, or an airport traffic zone, a flight plan shall be filed with the appropriate control center or control tower, unless otherwise authorized by such center or tower. Such flight plan shall contain at least the following information:

- (a) aircraft identification and radio call sign if different,
- (b) type of aircraft involved and the number of aircraft making the flight, if the aircraft are in formation and on the same flight plan,
- (c) name of the pilot in command of the aircraft or, if in formation, the name of the flight commander,
- (d) point of departure,
- (e) cruising altitude (above sea level) and the route to be followed,
- (f) point of first intended landing,
- (g) indicated airspeed,
- (h) transmitting and receiving frequency or frequencies available,
- (i) time of departure,
- (j) estimated elapsed time until arrival over the point of first intended landing,
- (k) alternate airport,
- (l) amount of fuel on board (in hours of normal cruising consumption)
- (m) any other pertinent information which the pilot deems useful for control purposes or which may be requested by the control center or control tower.

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60.251 Fuel requirements. Sufficient fuel and oil, considering the wind and other weather conditions forecast, shall be carried:

- (a) to complete the flight to the point of first intended landing, and thereafter,
- (b) to fly to the alternate airport, and thereafter,
- (c) to fly at normal cruising consumption for a period of 45 minutes.

60.252 Traffic clearance. Prior to making a flight in a control area, an airport approach zone, or an airport traffic zone, a traffic clearance shall be obtained from the appropriate control center or control tower. No deviation shall be made from the requirements of a traffic clearance unless an amended clearance is obtained or 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 or control tower of the deviation and, if necessary, obtain an amended clearance.

60.253 Communication contacts. The pilot in command shall insure that a continuous listening watch is maintained on the appropriate radio frequency and report by radio as soon as possible to the appropriate communications station the time and altitude of passing over each designated reporting point together with unanticipated or unusual weather conditions being encountered.

60.254 Communication failure. If unable to maintain two-way radio communication, the pilot in command shall observe one of the following procedures in the order listed:

- (a) proceed according to current flight plan, maintaining the minimum safe altitude or the last acknowledged assigned altitude, whichever is higher, to the airport of intended landing, and commence descent at approach time last authorized or, if not received and acknowledged, at the estimated time of arrival specified in the flight plan; or
- (b) if weather conditions permit, proceed in accordance with contact flight rules; or
- (c) land as soon as practicable.

60.9 DEFINITIONS

(a) Aerobatics. The performance of any intentional and unnecessary maneuvers involving an abrupt change in the attitude of an aircraft, an abnormal attitude, or an abnormal speed.

(b) Airport. An established landing area, either on land or water, which is used or intended to be used for the taking off and landing of aircraft.

(c) Airport approach zone. A zone designated by the Administrator to include the airspace above that area on the surface within 10 miles of an airport where adequate radio facilities are provided for instrument approach procedures, unless other dimensions are specified by the Administrator.

(d) Airport traffic zone. A zone designated by the Administrator to include the airspace above that area on the surface of the earth within 3 miles of the center of an airport, unless other dimensions are specified by the Administrator.

PART 60 - AIR TRAFFIC RULES

(e) Airspace reservation. Areas in which the flight of aircraft is prohibited or restricted. These areas are marked on aeronautical charts and published in Weekly Notice to Airmen.

(f) Air traffic. Aircraft in motion on the usable surface of an airport and in the airspace.

(g) Airway communications station. An airway radio, teletype, or other communications station operated by the Administrator.

(h) Alternate airport. An airport to which a flight may proceed when a landing at the intended destination becomes inadvisable.

(i) Anchor light. A white light so installed as to be visible in all directions for at least 2 miles at night under clear atmospheric conditions.

(j) Civil airway. A path through the navigable airspace of the United States, identified by an area on the surface of the earth, designated or approved by the Administrator as suitable for interstate, overseas, or foreign air commerce.

(k) Control area. A specified area within which a control center provides for supervision of air traffic.

(l) Control center. A facility operated by the Administrator to provide supervision of air traffic within a specified control area.

(m) Control tower. A facility to provide for the supervision of air traffic directed by personnel holding an air-traffic control-tower operator certificate.

(n) Cruising altitude. The height in feet above sea level maintained during a flight or portion thereof.

(o) Designated reporting point. A geographical location designated by the Administrator above which the position of an aircraft can be determined.

(p) Hours of darkness (night). Those hours during which conspicuous unlighted objects cannot readily be seen beyond a distance of one mile and in any case shall extend from one hour after sunset to one hour before sunrise.

(q) Radio range. A form of radio facility the emissions of which are controlled to provide definite track guidance to aircraft in flight.

(r) Traffic clearance. An approval of a flight or portion thereof by a control center or control tower with regard only to prevention of collision between known aircraft.

(s) United States means the several States, the District of Columbia, and the several Territories and possessions of the United States, excepting the Philippine Islands, including the Territorial waters and the overlying airspace thereof.

(t) Visibility. The official visibility reported by the United States Weather Bureau, when available, for a particular location; otherwise the average range of vision toward at least one-half the horizon at which conspicuous objects can be readily identified.

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