



**REPUBLIC OF INDONESIA MINISTRY
OF TRANSPORTATION**

CIVIL AVIATION SAFETY REGULATIONS (CASR)

PART 141

**CERTIFICATION AND OPERATING REQUIREMENTS
FOR PILOT SCHOOLS**

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CIVIL AVIATION SAFETY REGULATIONS (C.A.S.R.)

PART 141

Amendment 4

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MINISTRY OF TRANSPORTATION**

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Subpart A – General

141.1 Applicability

This Part prescribes the requirements for issuing pilot school certificates, provisional pilot school certificates, and associated ratings, and the general operating rules applicable to a holder of a certificate or rating issued under this Part. This part will generally apply to those training requirements necessary for airmen as specified in Parts 61 and 63.

141.3 Certificate required

- (a) No person may operate as a certificated pilot school without, or in violation of, a pilot school certificate or provisional pilot school certificate issued under this Part.
- (b) Approved training shall provide a level of competency at least equal to that provided by the minimum experience requirements for personnel not receiving such approved training.

141.5 Requirements for a pilot school certificate

The DGCA may issue a pilot school certificate with the appropriate ratings if, within the 24 calendar months before the date application is made, the applicant--

- (a) Completes the application for a pilot school certificate on the form and in the manner prescribed by the DGCA;
- (b) Has held a provisional pilot school certificate;
- (c) Meets the applicable requirements under Subparts A through C of this Part for the school certificate and associated ratings sought;
- (d) Has trained and recommended at least 10 different people for a knowledge test or a practical test, or any combination thereof, and at least 80 percent of those persons passed their tests on the first attempt; and
- (e) Has graduated at least 10 different people from the school's approved training courses;
- (f) Through (o) [Reserved];
- (p) Each applicant for the original issue of a pilot school certificate who intends to conduct training under this Part must submit the following financial information:
 - (1) A balance sheet that shows assets, liabilities, and net worth, as of a date not more than 60 days before the date of application.
 - (2) An itemization of liabilities more than 60 days past due on the balance sheet date, if any, showing each creditor's name and address, a description of the liability, and the amount and due date of the liability.
 - (3) An itemization of claims in litigation, if any, against the applicant as of the date of application showing each claimant's name and address and a description and the amount of the claim.
 - (4) A detailed projection of the proposed operation covering 6 complete

- months after the month in which the certificate is expected to be issued including—
- (i) Estimated amount and source of both operating and non-operating revenue, including identification of its existing and anticipated income producing contracts and estimated revenue per mile or hour of operation by aircraft type;
 - (ii) Estimated amount of operating and nonoperating expenses by expense objective classification; and
 - (iii) Estimated net profit or loss for the period.
- (5) An estimate of the cash that will be needed for the proposed operations during the first 6 months after the month in which the certificate is expected to be issued, including a full explanation on the following;
- (i) Acquisition of property and equipment
 - (ii) Retirement of debt ;
 - (iii) Additional working capital ;
 - (iv) Operating losses other than depreciation and amortization ; and
 - (v) Other subjects as considered significant by the Director General.
- (6) An estimate of the cash that will be available during the first 6 months after the month in which the certificate is expected to be issued, giving full explanation of;
- (i) Sale of property or flight equipment ;
 - (ii) New debt;
 - (iii) New equity;
 - (iv) Working capital reduction;
 - (v) Operations (profits);
 - (vi) Depreciation and amortization; and
 - (vii) Other.
- (7) A schedule of insurance coverage in effect on the balance sheet date showing insurance companies; policy numbers; types, amounts, and period of coverage; and special conditions, exclusions, and limitations.
- (8) Any other financial information that the DGCA requires to enable him or her to determine that the applicant has sufficient financial resources to conduct his or her operations with the degree of safety required in the public interest.
- (q) Each holder of an air operator certificate shall submit a financial report for the first 6 months of each fiscal year and another financial report for each complete fiscal year;
- (r) Each financial report containing financial information required by paragraph (q) of this section must be based on accounts prepared and maintained on an accrual basis in accordance with generally accepted accounting principles applied on a consistent basis, and must contain the name and address of the applicant's public accounting firm, if any. Information submitted must be signed by an officer, owner, or partner of the applicant or certificate holder.

141.7 Provisional pilot school certificate

An applicant that meets the applicable requirements of subparts A, B, and C of this Part, but does not meet the recent training activity requirements of section 141.5(d) of this Part, may be issued a provisional pilot school certificate with ratings.

141.8.a Training Procedures Manual

An applicant for a pilot school approval shall prepare a Training Procedures Manual. Each manual shall be specifically identified and shall include at least the following:

- (a) A system for amendments;
- (b) Manual holder name and copy number;
- (c) An organizational chart, showing the responsibility and reporting levels of each member of the organization;
- (d) A description of the duties and responsibilities of the reporting levels listed on the organizational chart;
- (e) A simple floor plan of the facility, showing the location of the, classrooms and offices, and a general description of facilities;
- (f) Instructor qualifications;
- (g) A description of the quality control system that ensures the policies and procedures are effectively in place;
- (h) A copy of the course curriculum;
- (i) Sample copies of examination questions, which shall reflect all subjects taught;
- (j) An explanation of the means by which a student's attendance and grades can be verified;
- (k) A description of any exceptions to attendance requirements;
- (l) Procedures for development of examinations;
- (m) A copy of the graduation certificate;
- (n) A list of the names and signatures of all individuals authorized to sign certificates, forms and letters;
- (o) A description of the course prerequisites for basic training;
- (p) For type training courses, a detailed explanation of how changes to the course are controlled;
- (q) A list of reference material;
- (r) A description of training aids available for basic training.

141.9 Examining authority

The DGCA issues examining authority to a pilot school for a training course if the pilot school and its training course meet the requirements of Subpart D of this Part.

141.11 Pilot school ratings

- (a) The ratings listed in paragraph (b) of this section may be issued to an applicant for:
- (1) A pilot school certificate, provided the applicant meets the requirements of section 141.5 of this Part; or
 - (2) A provisional pilot school certificate, provided the applicant meets the requirements of section 141.7 of this Part.
- (b) An applicant may be authorized to conduct the following courses:
- (1) Certification and rating courses. (Appendixes A through J).
 - (i) Sport pilot course.
 - (ii) Private pilot course.
 - (iii) Commercial pilot course.
 - (iv) Instrument rating course.
 - (v) Airline transport pilot course.
 - (vi) Flight instructor course.
 - (vii) Flight instructor instrument course.
 - (viii) Ground instructor course.
 - (ix) Additional aircraft category or class rating course.
 - (x) Aircraft type rating course.
 - (2) Special preparation courses. (Appendix K).
 - (i) Pilot refresher course.
 - (ii) Flight instructor refresher course.
 - (iii) Ground instructor refresher course.
 - (iv) Agricultural aircraft operations course.
 - (v) Rotorcraft external-load operations course.
 - (vi) Special operations course.
 - (vii) Test pilot course.
 - (3) Pilot ground school course. (Appendix L).

141.13 Application for issuance, amendment, or renewal

- (a) Application for an original certificate and rating, an additional rating, or the renewal of a certificate under this Part must be made on a form and in a manner prescribed by the Director General.
- (b) Application for the issuance or amendment of a certificate or rating must be accompanied by two copies of each proposed training course curriculum for which approval is sought.

141.15 Location of facilities

The holder of a pilot school certificate may have a base or other facilities located outside the Republic of Indonesia, provided the Director General determines the location of the base and facilities at that place are needed for the training of students who are citizens of Indonesia.

141.17 Duration of certificate and examining authority

- (a) Unless surrendered, suspended, or revoked, a pilot school's certificate or a provisional pilot school's certificate expires:
 - (1) On the last day of the 24th calendar month from the month the certificate was issued;
 - (2) Except as provided in paragraph (b) of this section, on the date that any change in ownership of the school occurs;
 - (3) On the date of any change in the facilities upon which the school's certificate is based occurs; or
 - (4) Upon notice by the Director General that the school has failed for more than 60 days to maintain the facilities, aircraft, or personnel required for any one of the school's approved training courses.
- (b) A change in the ownership of a pilot school or provisional pilot school does not terminate that school's certificate if, within 30 days after the date that any change in ownership of the school occurs:
 - (1) Application is made for an appropriate amendment to the certificate; and
 - (2) No change in the facilities, personnel, or approved training courses is involved.
- (c) An examining authority issued to the holder of a pilot school certificate expires on the date that the pilot school certificate expires, or is surrendered, suspended, or revoked.

141.18 Carriage of narcotic drugs, marijuana, and depressant or stimulant drugs or substances

If the holder of a certificate issued under this Part permits any aircraft owned or leased by that holder to be engaged in any operation that the certificate holder knows to be in violation of section 91.19(a), that operation is a basis for suspending or revoking the certificate.

141.19 Display of certificate

- (a) Each holder of a pilot school certificate or a provisional pilot school certificate must display that certificate in a place in the school that is normally accessible to the public and is not obscured.

- (b) A certificate must be made available for inspection upon request by: (1) The Director General;
- (2) An authorized representative of the National Transportation Safety Committee; or
- (3) A law enforcement officer.

141.21 Inspections

Each holder of a certificate issued under this Part must allow the Director General to inspect its personnel, facilities, equipment, and records to determine the certificate holder's:

- (a) Eligibility to hold its certificate;
- (b) Compliance with Aviation Law Number 1/2009; and
- (c) Compliance with the Civil Aviation Safety Regulations.

141.23 Advertising limitations

- (a) The holder of a pilot school certificate or a provisional pilot school certificate may not make any statement relating to its certification and ratings that is false or designed to mislead any person contemplating enrollment in that school.
- (b) The holder of a pilot school certificate or a provisional pilot school certificate may not advertise that the school is certificated unless it clearly differentiates between courses that have been approved under Part 141 and those that have not been approved under Part 141.
- (c) The holder of a pilot school certificate or a provisional pilot school certificate must promptly remove:
- (1) From vacated premises, all signs indicating that the school was certificated by the Director General ; or
- (2) All indications (including signs), wherever located, that the school is certificated by the Director General when its certificate has expired or has been surrendered, suspended, or revoked.

141.25 Business office and operations base

- (a) Each holder of a pilot school or a provisional pilot school certificate must maintain a principal business office with a mailing address in the name shown on its certificate.
- (b) The facilities and equipment at the principal business office must be adequate to maintain the files and records required to operate the business of the school.
- (c) The principal business office may not be shared with, or used by, another pilot school.
- (d) Before changing the location of the principal business office or the operations base, each certificate holder must notify the appropriate office of the Directorate General of Civil Aviation, and the notice must be:
- (1) Submitted in writing at least 30 days before the change of location; and

- (2) Accompanied by any amendments needed for the certificate holder's approved training course outline.
- (e) A certificate holder may conduct training at an operations base other than the one specified in its certificate, if:
- (1) The Director General has inspected and approved the base for use by the certificate holder; and
 - (2) The course of training and any needed amendments have been approved for use at that base.

141.26 Training agreements

A training center certificated under Part 142 of CASR may provide the training, testing, and checking for pilot schools certificated under Part 141 of CASR, and is considered to meet the requirements of Part 141, provided -

- (a) There is a training agreement between the certificated training center and the pilot school;
- (b) The training, testing, and checking provided by the certificated training center is approved and conducted under Part 142;
- (c) The pilot school certificated under Part 141 obtains the Director General's approval for a training course outline that includes the training, testing, and checking to be conducted under Part 141 and the training, testing, and checking to be conducted under Part 142; and
- (d) Upon completion of the training, testing, and checking conducted under Part 142, a copy of each student's training record is forwarded to the Part 141 school and becomes part of the student's permanent training record.

141.27 Renewal of certificates and ratings

(a) Pilot school.

- (1) A pilot school may apply for renewal of its school certificate and ratings within 30 days preceding the month the pilot school's certificate expires, provided the school meets the requirements prescribed in paragraph (a)(2) of this section for renewal of its certificate and ratings.
- (2) A pilot school may have its school certificate and ratings renewed for an additional 24 calendar months if the Director General determines the school's personnel, aircraft, facility and airport, approved training courses, training records, and recent training ability and quality meet the requirements of this Part.
- (3) A pilot school that does not meet the renewal requirements in paragraph (a)(2) of this section, may apply for a provisional pilot school certificate if the school meets the requirements of section 141.7 of this Part.

(b) Provisional pilot school.

- (1) Except as provided in paragraph (b)(3) of this section, a provisional pilot school may not have its provisional pilot school certificate or the ratings on that certificate renewed.

- (2) A provisional pilot school may apply for a pilot school certificate and associated ratings provided that school meets the requirements of section 141.5 of this Part.
- (3) A former provisional pilot school may apply for another provisional pilot school certificate, provided 180 days have elapsed since its last provisional pilot school certificate expired.

141.29 [Reserved]

Subpart B - Personnel, Aircraft, and Facilities Requirements

141.31 Applicability

- (a) This Subpart prescribes:
 - (1) The personnel and aircraft requirements for a pilot school certificate or a provisional pilot school certificate; and
 - (2) The facilities that a pilot school or provisional pilot school must have available on a continuous basis.
- (b) As used in this Subpart, to have continuous use of a facility, including an airport, the school must have:
 - (1) Ownership of the facility or airport for at least 6 calendar months after the date the application for initial certification and on the date of renewal of the school's certificate is made; or
 - (2) A written lease agreement for the facility or airport for at least 6 calendar months after the date the application for initial certification and on the date of renewal of the school's certificate is made.

141.33 Personnel

- (a) An applicant for a pilot school certificate or for a provisional pilot school certificate must meet the following personnel requirements:
 - (1) Each applicant must have adequate personnel, including licensed flight instructors, licensed ground instructors, or holders of a commercial pilot licence with a lighter-than-air rating, and a chief instructor for each approved course of training who is qualified and competent to perform the duties to which that instructor is assigned;
 - (2) If the school employs dispatchers, aircraft handlers, and line and service personnel, then it must instruct those persons in the procedures and responsibilities of their employment;
 - (3) Each instructor to be used for ground or flight training must hold a flight instructor licence, ground instructor licence, or commercial pilot licence with a lighter-than-air rating, as appropriate, with ratings for the approved course of training and any aircraft used in that course.
- (b) An applicant for a pilot school certificate or for a provisional pilot school certificate must designate a chief instructor for each of the school's approved training courses, who must meet the requirements of section 141.35 of this Part;
- (c) When necessary, an applicant for a pilot school certificate or for a provisional pilot school certificate may designate a person to be an assistant chief instructor for an approved training course, provided that person meets the requirements of section 141.36 of this Part;
- (d) A pilot school and a provisional pilot school may designate a person to be a check instructor for conducting student stage checks, end-of-course tests, and instructor proficiency checks, provided:
 - (1) That person meets the requirements of section 141.37 of this Part; and
 - (2) The school has an enrollment of at least 10 students at the time designation is sought.

- (e) A person, as listed in this section, may serve in more than one position for a school, provided that person is qualified for each position.

141.35 Chief instructor qualifications

- (a) To be eligible for designation as a chief instructor for a course of training, a person must meet the following requirements:
- (1) Hold a commercial pilot licence or an airline transport pilot licence, and, except for a chief instructor for a course of training solely for a lighter-than-air rating, a current flight instructor licence. The licences must contain the appropriate aircraft category and class ratings for the category and class of aircraft used in the course and an instrument rating, if an instrument rating is required for enrollment in the course of training;
 - (2) Meet the pilot-in-command recent flight experience requirements of CASR section 61.57;
 - (3) Pass a knowledge test on -
 - (i) Teaching methods;
 - (ii) Applicable provisions of the "Aeronautical Information Publication";
 - (iii) Applicable provisions of Parts 61, 91, and 141; and
 - (iv) The objectives and approved course completion standards of the course for which the person seeks to obtain designation.
 - (4) Pass a proficiency test on instructional skills and ability to train students on the flight procedures and maneuvers appropriate to the course;
 - (5) Except for a course of training for gliders, balloons, or airships, the chief instructor must meet the applicable requirements in paragraphs (b), (c), and (d) of this section; and
 - (6) A chief instructor for a course of training for gliders, balloons or airships is only required to have 40 percent of the hours required in paragraphs (b) and (d) of this section.
- (b) For a course of training leading to the issuance of a sport or private pilot licence or rating, a chief instructor must have:
- (1) At least 1,000 hours as pilot in command, and
 - (2) Primary flight training experience, acquired as either a licensed flight instructor or an instructor in a military pilot flight training program, or a combination thereof, consisting of at least -
 - (i) 2 years and a total of 500 flight hours; or
 - (ii) 1,000 flight hours.
- (c) For a course of training leading to the issuance of an instrument rating or a rating with instrument privileges, a chief instructor must have:
- (1) At least 100 hours of flight time under actual or simulated instrument conditions;
 - (2) At least 1,000 hours as pilot in command; and

- (3) Instrument flight instructor experience, acquired as either a licensed flight instructor-instrument or an instructor in a military pilot flight training program, or a combination thereof, consisting of at least -
 - (i) 2 years and a total of 250 flight hours; or
 - (ii) 400 flight hours.

- (d) For a course of training other than one leading to the issuance of a sport or private pilot licence or rating, or an instrument rating or a rating with instrument privileges, a chief instructor must have:
 - (1) At least 2,000 hours as pilot in command; and
 - (2) Flight training experience, acquired as either a licensed flight instructor or an instructor in a military pilot flight training program, or a combination thereof, consisting of at least -
 - (i) 3 years and a total of 1,000 flight hours; or
 - (ii) 1,500 flight hours.

- (e) To be eligible for designation as chief instructor for a ground school course, a person must have 1 year of experience as a ground school instructor at a certificated pilot school.

141.36 Assistant chief instructor qualifications

- (a) To be eligible for designation as an assistant chief instructor for a course of training, a person must meet the following requirements:
 - (1) Hold a commercial pilot or an airline transport pilot licence and, except for the assistant chief instructor for a course of training solely for a lighter-than-air rating, a current flight instructor licence. The licences must contain the appropriate aircraft category, class, and instrument ratings if an instrument rating is required by the course of training for the category and class of aircraft used in the course;
 - (2) Meet the pilot-in-command recent flight experience requirements of CASR section 61.57;
 - (3) Pass a knowledge test on -
 - (i) Teaching methods;
 - (ii) Applicable provisions of the "Aeronautical Information Publication";
 - (iii) Applicable provisions of Parts 61, 91, and 141; and
 - (iv) The objectives and approved course completion standards of the course for which the person seeks to obtain designation.
 - (4) Pass a proficiency test on the flight procedures and maneuvers appropriate to that course; and
 - (5) Meet the applicable requirements in paragraphs (b), (c), and (d) of this section. However, an assistant chief instructor for a course of training for gliders, balloons, or airships is only required to have 40 percent of the hours required in paragraphs (b) and (d) of this section.t

- (b) For a course of training leading to the issuance of a sport or private pilot licence or rating, an assistant chief instructor must have:
 - (1) At least 500 hours as pilot in command; and
 - (2) Flight training experience, acquired as either a licensed flight instructor or an instructor in a military pilot flight training program, or a combination thereof, consisting of at least -
 - (i) 1 year and a total of 250 flight hours; or
 - (ii) 500 flight hours.

- (c) For a course of training leading to the issuance of an instrument rating or a rating with instrument privileges, an assistant chief flight instructor must have:
 - (1) At least 50 hours of flight time under actual or simulated instrument conditions;
 - (2) At least 500 hours as pilot in command; and
 - (3) Instrument flight instructor experience, acquired as either a licensed flight instructor-instrument or an instructor in a military pilot flight training program, or a combination thereof, consisting of at least -
 - (i) 1 year and a total of 125 flight hours; or
 - (ii) 200 flight hours.

- (d) For a course of training other than one leading to the issuance of a sport or private pilot licence or rating, or an instrument rating or a rating with instrument privileges, an assistant chief instructor must have:
 - (1) At least 1,000 hours as pilot in command; and
 - (2) Flight training experience, acquired as either a licensed flight instructor or an instructor in a military pilot flight training program, or a combination thereof, consisting of at least -
 - (i) 1 1/2 years and a total of 500 flight hours; or
 - (ii) 750 flight hours.

- (e) To be eligible for designation as an assistant chief instructor for a ground school course, a person must have 6 months of experience as a ground school instructor at a certificated pilot school.

141.37 Check instructor qualifications

- (a) To be designated as a check instructor for conducting student stage checks, end-of-course tests, and instructor proficiency checks under this Part, a person must meet the eligibility requirements of this section:
 - (1) For checks and tests that relate to either flight or ground training, the person must pass a test, given by the chief instructor, on -
 - (i) Teaching methods;
 - (ii) Applicable provisions of the "Aeronautical Information Publication";
 - (iii) Applicable provisions of Parts 61, 91, and 141; and

- (iv) The objectives and course completion standards of the approved training course for the designation sought.
- (2) For checks and tests that relate to a flight training course, the person must -
- (i) Meet the requirements in paragraph (a)(1) of this section;
 - (ii) Hold a commercial pilot licence or an airline transport pilot licence and, except for a check instructor for a course of training for a lighter-than-air rating, a current flight instructor licence. The licences must contain the appropriate aircraft category, class, and instrument ratings for the category and class of aircraft used in the course;
 - (iii) Meet the pilot-in-command recent flight experience requirements of section 61.57; and
 - (iv) Pass a proficiency test, given by the chief instructor or assistant chief instructor, on the flight procedures and maneuvers of the approved training course for the designation sought.
- (3) For checks and tests that relate to ground training, the person must -
- (i) Meet the requirements in paragraph (a)(1) of this section;
 - (ii) Except for a course of training for a lighter-than-air rating, hold a current flight instructor licence or ground instructor licence with ratings appropriate to the category and class of aircraft used in the course; and
 - (iii) For a course of training for a lighter-than-air rating, hold a commercial pilot licence with a lighter-than-air category rating and the appropriate class rating.
- (b) A person who meets the eligibility requirements in paragraph (a) of this section must:
- (1) Be designated, in writing, by the chief instructor to conduct student stage checks, end-of-course tests, and instructor proficiency checks; and
 - (2) Be approved by the appropriate office of the Directorate General of Civil Aviation.
- (c) A check instructor may not conduct a stage check or an end-of-course test of any student for whom the check instructor has:
- (1) Served as the principal instructor; or
 - (2) Recommended for a stage check or end-of-course test.

141.38 Airports

- (a) An applicant for a pilot school certificate or a provisional pilot school certificate must show that he or she has continuous use of each airport at which training flights originate.
- (b) Each airport used for airplanes and gliders must have at least one runway or takeoff area that allows training aircraft to make a normal takeoff or landing under the following conditions at the aircraft's maximum certificated takeoff gross weight:
 - (1) Under wind conditions of not more than 5 miles per hour;
 - (2) At temperatures in the operating area equal to the mean high temperature

for the hottest month of the year;

- (3) If applicable, with the powerplant operation, and landing gear and flap operation recommended by the manufacturer; and
- (4) In the case of a takeoff -
 - (i) With smooth transition from liftoff to the best rate of climb speed without exceptional piloting skills or techniques; and
 - (ii) Clearing all obstacles in the takeoff flight path by at least 50 feet.
- (c) Each airport must have a wind direction indicator that is visible from the end of each runway at ground level;
- (d) Each airport must have a traffic direction indicator when:
 - (1) The airport does not have an operating control tower; and
 - (2) UNICOM advisories are not available.
- (e) Except as provided in paragraph (f) of this section, each airport used for night training flights must have permanent runway lights;
- (f) An airport or seaplane base used for night training flights in seaplanes is permitted to use adequate nonpermanent lighting or shoreline lighting, if approved by the Director General.

141.39 Aircraft

- (a) When the school's training facility is located within the Republic of Indonesia, an applicant for a pilot school certificate or provisional pilot school certificate must show that each aircraft used by the school for flight training and solo flights:
 - (1) Is a civil aircraft of the Republic of Indonesia;
 - (2) Is certificated with a standard or primary airworthiness certificate, unless the DGCA determines otherwise because of the nature of the approved course;
 - (3) Is maintained and inspected in accordance with the requirements for aircraft operated for hire under part 91, subpart E;
 - (4) Has two pilot stations with engine-power controls that can be easily reached and operated in a normal manner from both pilot stations (for flight training); and
 - (5) Is equipped and maintained for IFR operations if used in a course involving IFR en route operations and instrument approaches. For training in the control and precision maneuvering of an aircraft by reference to instruments, the aircraft may be equipped as provided in the approved course of training.
- (b) When the school's training facility is located outside the Republic of Indonesia and the training will be conducted outside the Republic of Indonesia, an applicant for a pilot school certificate or provisional pilot school certificate must show that each aircraft used by the school for flight training and solo flights:
 - (1) Is either a civil aircraft of the Republic of Indonesia or a civil aircraft of foreign registry;
 - (2) Is certificated with a standard or primary airworthiness certificate or an equivalent certification from the foreign aviation authority;

- (3) Is maintained and inspected in accordance with the requirements for aircraft operated for hire under part 91, subpart E, or in accordance with equivalent maintenance and inspection from the foreign aviation authority's requirements;
 - (4) Has two pilot stations with engine-power controls that can be easily reached and operated in a normal manner from both pilot stations (for flight training); and
 - (5) Is equipped and maintained for IFR operations if used in a course involving IFR en route operations and instrument approaches. For training in the control and precision maneuvering of an aircraft by reference to instruments, the aircraft may be equipped as provided in the approved course of training.
- (c) An applicant for Pilot school Certificate or Provisional Pilot School certificate whose facility is located inside or outside Republic of Indonesia as stated in (a) and (b), must own at least 5 (five) aircraft whose type can support the continuity of training activity with 1 (one) of them is multi-engine aircraft.
- (d) The compliance to the requirements of the multi-engined aircraft as stated in (c) no more than 6 (six) months since the promulgation date of the Ministry of Transportation Regulation Number KM 57 Year 2010 regarding Civil Aviation Safety Regulation Part 141.
- (e) The holder of pilot school certificate and provisional pilot school certificate that not comply with the provision as stated in (d) may be imposed administrative sanction i.e. revocation pilot school certificate or provisional pilot school certificate.

141.41 Flight simulators, flight training devices, and training aids

An applicant for a pilot school certificate or a provisional pilot school certificate must show that its flight simulators, flight training devices, training aids, and equipment meet the following requirements:

(a) Flight simulators.

Each flight simulator used to obtain flight training credit allowed for flight simulators in an approved pilot training course curriculum must -

- (1) Be a full-size aircraft cockpit replica of a specific type of aircraft, or make, model, and series of aircraft;
- (2) Include the hardware and software necessary to represent the aircraft in ground operations and flight operations;
- (3) Use a force cueing system that provides cues at least equivalent to those cues provided by a 3 degree freedom of motion system;
- (4) Use a visual system that provides at least a 45-degree horizontal field of view and a 30-degree vertical field of view simultaneously for each pilot; and
- (5) Have been evaluated, qualified, and approved by the Director General.

(b) Flight training devices.

Each flight training device used to obtain flight training credit allowed for flight training devices in an approved pilot training course curriculum must -

- (1) Be a full-size replica of instruments, equipment panels, and controls of an aircraft, or set of aircraft, in an open flight deck area or in an enclosed cockpit, including the hardware and software for the systems installed that is necessary to simulate the aircraft in ground and flight operations;
- (2) Need not have a force (motion) cueing or visual system; and
- (3) Have been evaluated, qualified, and approved by the Director General.

(c) Training aids and equipment.

Each training aid, including any audiovisual aid, projector, tape recorder, mockup, chart, or aircraft component listed in the approved training course outline, must be accurate and appropriate to the course for which it is used.

141.43 Pilot briefing areas

- (a) An applicant for a pilot school certificate or provisional pilot school certificate must show that the applicant has continuous use of a briefing area located at each airport at which training flights originate that is:
 - (1) Adequate to shelter students waiting to engage in their training flights;
 - (2) Arranged and equipped for the conduct of pilot briefings; and
 - (3) Except as provided in paragraph (c) of this section, for a school with an instrument rating or commercial pilot course, equipped with private landline or telephone communication to the nearest DGCA Flight Service Station.
- (b) A briefing area required by paragraph (a) of this section may not be used by the applicant if it is available for use by any other pilot school during the period it is required for use by the applicant.
- (c) The communication equipment required by paragraph (a)(3) of this section is not required if the briefing area and the flight service station are located on the same airport, and are readily accessible to each other.

141.45 Ground training facilities

An applicant for a pilot school or provisional pilot school certificate must show that:

- (a) Each room, training booth, or other space used for instructional purposes is climatically controlled or ventilated, equipped with controllable lighting to enable satisfactory use of all proposed training equipment, and otherwise provides for the comfort and physiological needs of the students and to conform to local building, sanitation, and health codes; and
- (b) The training facility is so located that the students in that facility are not distracted by the training conducted in other rooms, or by flight and maintenance operations on the airport.

141.46 Facility Minimum Area Requirement for Pilot School

- (a) Other than the requirement stated in paragraph 141.25 (b), an applicant for pilot school certificate or provisional pilot school certificate must also provide adequate facility to support all flight training activity and to provide an area of minimum of 600 m.sq.

- (b) Facility stated in point (a) shall include at least
- (1) Flight Simulator;
 - (2) Briefing Room;
 - (3) Ground Training;
 - (4) Aircraft Maintenance;

141.47 Flight Following

An applicant to Pilot School Certificate or Provisional Pilot School Certificate shall provide a system to monitor the movement of aircraft that can show the position, altitude, direction and speed in real time

Subpart C - Training Course Outline and Curriculum

141.51 Applicability

This Subpart prescribes the curriculum and course outline requirements for the issuance of a pilot school certificate or provisional pilot school certificate and ratings.

141.53 Approval procedures for a training course: General

(a) General.

An applicant for a pilot school certificate or provisional pilot school certificate must obtain the Director General's approval of the outline of each training course for which certification and rating is sought.

(b) Application.

- (1) An application for the approval of an initial or amended training course must be submitted in duplicate to the appropriate office of the Directorate General of Civil Aviation.
- (2) An application for the approval of an initial or amended training course must be submitted at least 30 days before any training under that course, or any amendment thereto, is scheduled to begin.
- (3) An application for amending a training course must be accompanied by two copies of the amendment.

(c) Training courses.

An applicant for a pilot school certificate or provisional pilot school certificate may request approval for the training courses specified under section 141.11(b).

141.55 Training course: Contents

- (a) Each training course for which approval is requested must meet the minimum curriculum requirements in accordance with the appropriate Appendix of this Part. In no case may any curricula be less than the requirements established for that licence, rating, or authorization in CASR Part 61.
- (b) Except as provided in paragraphs (d) and (e) of this section, each training course for which approval is requested must meet the minimum ground and flight training time requirements in accordance with the appropriate Appendix of this Part. In no case may any training times be less than the ground and flight time requirements established for that licence, rating or authorization in CASR Part 61.
- (c) Each training course for which approval is requested must contain:
 - (1) A description of each room used for ground training, including the room's size and the maximum number of students that may be trained in the room at one time;
 - (2) A description of each type of audiovisual aid, projector, tape recorder, mockup, chart, aircraft component, and other special training aids used for ground training;
 - (3) A description of each flight simulator or flight training device used for training;

- (4) A listing of the airports at which training flights originate and a description of the facilities, including pilot briefing areas that are available for use by the school's students and personnel at each of those airports;
 - (5) A description of the type of aircraft including any special equipment used for each phase of training;
 - (6) The minimum qualifications and ratings for each instructor assigned to ground or flight training; and
 - (7) A training syllabus that includes the following information -
 - (i) The prerequisites for enrolling in the ground and flight portion of the course that include the pilot licence and rating (if required by this Part), training, pilot experience, and pilot knowledge;
 - (ii) A detailed description of each lesson, including the lesson's objectives, standards, and planned time for completion;
 - (iii) A description of what the course is expected to accomplish with regard to student learning;
 - (iv) The expected accomplishments and the standards for each stage of training; and
 - (v) A description of the checks and tests to be used to measure a student's accomplishments for each stage of training.
- (d) A pilot school may request and receive initial approval for a period of not more than 24 calendar months for any training course under this Part that does not meet the minimum ground and flight training time requirements, provided the following provisions are met:
- (1) The school holds a pilot school certificate issued under this Part and has held that certificate for a period of at least 24 consecutive calendar months preceding the month of the request;
 - (2) In addition to the information required by paragraph (c) of this section, the training course specifies planned ground and flight training time requirements for the course;
 - (3) The school does not request the training course to be approved for examining authority, nor may that school hold examining authority for that course; and
 - (4) The practical test or knowledge test for the course is to be given by -
 - (i) A DGCA inspector; or
 - (ii) An examiner who is not an employee of the school.
- (e) A pilot school may request and receive final approval for any training course under this Part that does not meet the minimum ground and flight training time requirements, provided the following conditions are met:
- (1) The school has held initial approval for that training course for at least 24 calendar months.
 - (2) The school has -

- (i) Trained at least 10 students in that training course within the preceding 24 calendar months and recommended those students for a pilot, flight instructor, or ground instructor licence or rating; and
- (ii) At least 80 percent of those students passed the practical or knowledge test, as appropriate, on the first attempt, and that test was given by--
 - (A) A DGCA inspector; or
 - (B) An examiner who is not an employee of the school.
- (3) In addition to the information required by paragraph (c) of this section, the training course specifies planned ground and flight training time requirements for the course.
- (4) The school does not request that the training course be approved for examining authority nor may that school hold examining authority for that course.

141.57 Special curricula.

- (a) An applicant for a pilot school certificate or provisional pilot school certificate may apply for approval to conduct a special course of airman training for which a curriculum is not prescribed in the appendixes of this Part, provided:
 - (1) The applicant shows that the training course contains features that could achieve a level of pilot proficiency equivalent to that achieved by a training course prescribed in the appendixes of this Part or the requirements of Part 61.
 - (2) The applicant shows that the elements of that course meet the minimum training and experience requirements established by CASR Part 61 or any other criteria recognized by the Director General ; and
 - (3) Pilot proficiency acquired from such training course would ensure the privileges of any authorization resulting from that course could be exercised in a safe and proper manner; or
 - (4) No official accreditation is sought and no official privileges are obtained from that course;
 - (5) Unless specifically authorized by the Director General, no special preparation courses may be used to satisfy the training requirements of CASR Part 121 or 135.

Subpart D - Examining Authority

141.61 Applicability.

This Subpart prescribes the requirements for the issuance of examining authority to the holder of a pilot school certificate, and the privileges and limitations of that examining authority.

141.63 Examining authority qualification requirements.

- (a) A pilot school must meet the following prerequisites to receive initial approval for examining authority:
- (1) The school must complete the application for examining authority on a form and in a manner prescribed by the Director General;
 - (2) The school must hold a pilot school certificate and rating issued under this Part;
 - (3) The school must have held the rating in which examining authority is sought for at least 24 consecutive calendar months preceding the month of application for examining authority;
 - (4) The training course for which examining authority is requested may not be a course that is approved without meeting the minimum ground and flight training time requirements of this Part; and
 - (5) Within 24 calendar months before the date of application for examining authority, that school must meet the following requirements -
 - (i) The school must have trained at least 10 students in the training course for which examining authority is sought and recommended those students for a pilot, flight instructor, or ground instructor licence or rating; and
 - (ii) At least 90 percent of those students passed the required practical or knowledge test, or any combination thereof, for the pilot, flight instructor, or ground instructor licence or rating on the first attempt, and that test was given by :
 - (A) A DGCA inspector; or
 - (B) An examiner who is not an employee of the school.
- (b) A pilot school must meet the following requirements to retain approval of its examining authority:
- (1) The school must complete the application for renewal of its examining authority on a form and in a manner prescribed by the Director General;
 - (2) The school must hold a pilot school certificate and rating issued under this Part;
 - (3) The school must have held the rating for which continued examining authority is sought for at least 24 calendar months preceding the month of application for renewal of its examining authority; and
 - (4) The training course for which continued examining authority is requested may not be a course that is approved without meeting the minimum ground and flight training time requirements of this Part.

141.65 Privileges.

A pilot school that holds examining authority may recommend a person for the appropriate pilot, flight instructor, or ground instructor licence or rating without taking the DGCA knowledge test or practical test, provided;

- (a) The person being recommended has graduated from the appropriate course approved for that school;
- (b) The knowledge and or practical tests are given by a examiner authorized by the Director General to conduct such tests; and
- (c) The candidate was deemed to have passed the knowledge and or practical tests as applicable and meets all other licensing requirements relating to that licence or rating.

141.67 Limitations and reports.

A pilot school that holds examining authority may only recommend the issuance of a pilot, flight instructor, or ground instructor licence and rating to a person who does not take an DGCA knowledge test or practical test, if the recommendation for the issuance of that licence or rating is in accordance with the following requirements:

- (a) The person graduated from a training course for which the pilot school holds examining authority.
- (b) Except as provided in this paragraph, the person satisfactorily completed all the curriculum requirements of that pilot school's approved training course. A person who transfers from one Part 141 approved pilot school to another Part 141 approved pilot school may receive credit for that previous training, provided the following requirements are met:
 - (1) The maximum credited training time does not exceed one-half of the receiving school's curriculum requirements;
 - (2) The person completes a knowledge and proficiency test conducted by the receiving school for the purpose of determining the amount of pilot experience and knowledge to be credited;
 - (3) The receiving school determines (based on the person's performance on the knowledge and proficiency test required by paragraph (b)(2) of this section) the amount of credit to be awarded, and records that credit in the person's training record;
 - (4) The person who requests credit for previous pilot experience and knowledge obtained the experience and knowledge from another Part 141 approved pilot school and training course; and
 - (5) The receiving school retains a copy of the person's training record from the previous school.
- (c) Tests given by a pilot school that holds examining authority must be approved by the Director General and be at least equal in scope, depth, and difficulty to the comparable knowledge and practical tests prescribed by the Director General under Part 61.
- (d) A pilot school that holds examining authority may not use its knowledge or practical tests if the school:
 - (1) Knows, or has reason to believe, the test has been compromised; or
 - (2) Is notified by the DGCA that there is reason to believe or it is known that the

test has been compromised.

- (e) A pilot school that holds examining authority must maintain a record of all temporary airman licences it issues, which consist of the following information:
- (1) A chronological listing that includes -
 - (i) The date the temporary airman licence was issued;
 - (ii) The student to whom the temporary airman licence was issued, and that student's permanent mailing address and telephone number;
 - (iii) The training course from which the student graduated;
 - (iv) The name of person who conducted the knowledge or practical test;
 - (v) The type of temporary airman licence or rating issued to the student; and
 - (vi) The date the student's airman application file was sent to the DGCA for processing for a permanent airman licence.
 - (2) A copy of the record containing each student's graduation certificate, airman application, temporary airman licence, superseded airman licence (if applicable), and knowledge test or practical test results; and
 - (3) The records required by paragraph (e) of this section must be retained for 2 year and made available to the Director General upon request. These records must be surrendered to the Director General when the pilot school ceases to have examining authority.
- (f) Except for pilot schools that have an airman certification representative, when a student passes the knowledge test or practical test, the pilot school that holds examining authority must submit that student's airman application file and training record to the DGCA for processing for the issuance of a permanent airman licence.
- (g) Through (p) [Reserved]
- (q) Where a person requests training credit for training received from a pilot school certified in a foreign country, such credit may be given provided;
- (1) The pilot school from which the training was received is the holder of a pilot school certificate or equivalent document issued by the appropriate authority of that country;
 - (2) That country is an ICAO contracting state;
 - (3) The records required by subpart F of this part are prepared and certified by the chief flight instructor of the foreign organization;
- (4) The provisions of 141.67 (a) (1)(2) and(3) are complied with;
 - (5) The Director General is satisfied that the training standards of the foreign country meet the standards of this Part for the course credits being sought;
 - (6) That the foreign country provides reciprocal rights to Indonesian certified pilot schools.

Subpart E - Operating Rules

141.71 Applicability.

This Subpart prescribes the operating rules applicable to a pilot school or provisional pilot school certificated under the provisions of this Part.

141.73 Privileges.

- (a) The holder of a pilot school certificate or a provisional pilot school certificate may advertise and conduct approved pilot training courses in accordance with the certificate and any ratings that it holds.
- (b) A pilot school that holds examining authority for an approved training course may recommend a graduate of that course for the issuance of an appropriate pilot, flight instructor, or ground instructor licence and rating, without taking an DGCA knowledge test or practical test, provided the training course has been approved and meets the minimum ground and flight training time requirements of this Part.

141.75 Checklists and aircraft operating manuals or handbooks.

- (a) No Pilot school may use an aircraft for flight training and solo flights unless there is carried on board that aircraft;

A checklist approved for use by the aircraft manufacture, that ensures the aircraft is operated in accordance with the Approved Airplane or Rotorcraft Flight Manual. Each checklist must give required actions for at least the following events;

- (i) Before starting the engine/s;
 - (ii) Before take-off;
 - (iii) Before landing;
 - (iv) Before and after engine shutdown; and
 - (v) Any abnormal or emergency conditions which have specific procedures published in the airplane or rotorcraft flight manual.
- (b) Each student using the aircraft must be furnished a copy of the aircraft operating manual or equivalent document, at least for the portion of the course that requires the operation of the aircraft.

141.77 Limitations.

- (a) The holder of a pilot school certificate or a provisional pilot school certificate may not issue a graduation certificate to a student, or recommend a student for a pilot licence or rating, unless the student has:
 - (1) Completed the training specified in the pilot school's course of training; and
 - (2) Passed the required final tests.
- (b) Except as provided in paragraph (c) of this section, the holder of a pilot school certificate or a provisional pilot school certificate may not graduate a student from a course of training unless the student has completed all of the curriculum requirements of that course.

- (c) A student may be given credit towards the curriculum requirements of a course for previous training under the following conditions:
- (1) If the student completed a proficiency test and knowledge test that was conducted by the receiving pilot school and the previous training was based on a Part 141- or a Part 142-approved flight training course, the credit is limited to not more than 50 percent of the flight training requirements of the curriculum.
 - (2) If the student completed a knowledge test that was conducted by the receiving pilot school and the previous training was based on a Part 141- or a Part 142-approved aeronautical knowledge training course, the credit is limited to not more than 50 percent of the aeronautical knowledge training requirements of the curriculum.
 - (3) If the student completed a proficiency test and knowledge test that was conducted by the receiving pilot school and the training was received from other than a Part 141- or a Part 142-approved flight training course, the credit is limited to not more than 25 percent of the flight training requirements of the curriculum.
 - (4) If the student completed a knowledge test that was conducted by the receiving pilot school and the previous training was received from other than a Part 141- or a Part 142-approved aeronautical knowledge training course, the credit is limited to not more than 25 percent of the aeronautical knowledge training requirements of the curriculum.
 - (5) Completion of previous training must be certified in the student's training record by the training provider or a management official within the training provider's organization, and must contain--
 - (i) The kind and amount of training provided; and
 - (ii) The result of each stage check and end-of-course test, if appropriate.

141.79 Flight training.

- (a) No person other than a licensed flight instructor or commercial pilot with a lighter-than-air rating who has the ratings and the minimum qualifications specified in the approved training course outline may give a student flight training under an approved course of training.
- (b) No student pilot may be released for a solo practice flight from an airport unless each flight is authorized and supervised by a licensed flight instructor or commercial pilot with a lighter-than-air rating who is present at that airport.
- (c) Each chief instructor and assistant chief instructor assigned to a training course must complete, at least once every 12 calendar months, an approved syllabus of training consisting of ground or flight training, or both, or an approved flight instructor refresher course.
- (d) Each licensed flight instructor or commercial pilot with a lighter-than-air rating who is assigned to a flight training course must satisfactorily complete the following tasks, which must be administered by the school's chief instructor, assistant chief instructor, or check instructor:
 - (1) Prior to receiving authorization to train students in a flight training course, must -
 - (i) Accomplish a review of and receive a briefing on the objectives and standards of that training course; and

- (ii) Accomplish an initial proficiency check in each make and model of aircraft used in that training course in which that person provides training; and
- (2) Every 12 calendar months after the month in which the person last complied with the requirements of paragraph (d)(1)(ii) of this section, accomplish a recurrent proficiency check in one of the aircraft in which the person trains students.

141.81 Ground training.

- (a) Except as provided in paragraph (b) of this section, each instructor who is assigned to a ground training course must hold a flight or ground instructor licence, or a commercial pilot licence with a lighter-than-air rating, with the appropriate rating for that course of training.
- (b) A person who does not meet the requirements of paragraph (a) of this section may be assigned ground training duties in a ground training course, if:
 - (1) The chief instructor who is assigned to that ground training course finds the person qualified to give that training; and
 - (2) The training is given while under the supervision of the chief instructor or the assistant chief instructor who is present at the facility when the training is given.
- (c) An instructor may not be used in a ground training course until that instructor has been briefed on the objectives and standards of that course by the chief instructor, assistant chief instructor, or check instructor.

141.83 Quality of training, quality control, quality assurance, and safety management system.

Quality of training

- (a) Each pilot school or provisional pilot school must meet the following requirements:
 - (1) Comply with its approved training course; and
 - (2) Provide training of such quality that meets the requirements of section 141.5(d) of this Part.
- (b) The failure of a pilot school or provisional pilot school to maintain the quality of training specified in paragraph (a) of this section may be the basis for suspending or revoking that school's certificate.
- (c) When requested by the Director General, a pilot school or provisional pilot school must allow the DGCA to administer any knowledge test, practical test, stage check, or end-of-course test to its students.
- (d) When a stage check or end-of-course test is administered by the DGCA under the provisions of paragraph (c) of this section, and the student has not completed the training course, then that test will be based on the standards prescribed in the school's approved training course.
- (e) When a practical test or knowledge test is administered by the DGCA under the provisions of paragraph (c) of this section, to a student who has completed the school's training course, that test will be based upon the areas of operation approved by the Director General.

Quality control system

- (a) A pilot school or provisional flight school shall establish a quality control system to ensure that the policies and procedures described in the Training Procedures Manual are effectively in place.
- (b) The pilot school or the provisional flight school shall appoint a person who will be responsible to ensure the integrity of the quality control program.
- (c) The person appointed in accordance with paragraph (b) shall have:
 - (1) A minimum of five years experience as a pilot;
 - (2) Experience as a trainer and / or administrator at a recognized pilot school;
 - (3) Demonstrated ability to administer a quality control program.

Quality assurance system.

- (a) A pilot school or provisional pilot school shall establish a quality assurance system that includes an independent internal audit in order to monitor compliance with the policies and procedures described in the Training Procedures Manual.
- (b) A quality feedback reporting system to the accountable manager that ensures proper and timely corrective action is taken in response to reports resulting from the internal independent audit established to meet paragraph (a).

Safety Management System

- (a) A certified pilot school shall have in place a Safety Management System (SMS) that is acceptable to Directorate General of Civil Aviation that, as a minimum:
 - (1) Identifies safety hazards and assesses and mitigates risks;
 - (2) Ensures that remedial action necessary to maintain an acceptable level of safety is implemented;
 - (3) Provides for continuous monitoring and regular assessment of the safety level achieved; and
 - (4) Aims to make continuous improvement to the overall level of safety.
- (b) In order to be acceptable to the Directorate General of Civil Aviation, the SMS shall meet the requirements set forth in Minister Regulation Number 20 year 2009, as Appendix AA of this Part.

141.85 Chief instructor responsibilities.

- (a) A chief instructor designated for a pilot school or provisional pilot school is responsible for:
 - (1) Certifying each student's training record, graduation certificate, stage check and end-of-course test reports, and recommendation for course completion, unless the duties are delegated by the chief instructor to an assistant chief instructor or recommending instructor;
 - (2) Ensuring that each licensed flight instructor, licensed ground instructor, or commercial pilot with a lighter-than-air rating passes an initial proficiency check prior to that instructor being assigned instructing duties in the school's approved training course, and thereafter that the instructor passes

- a recurrent proficiency check every 12 calendar months after the month in which the initial test was accomplished;
- (3) Ensuring that each student accomplishes the required stage checks and end-of-course tests in accordance with the school's approved training course; and
 - (4) Maintaining training techniques, procedures, and standards for the school that are acceptable to the Director General.
- (b) The chief instructor or an assistant chief instructor must be available at the pilot school or, if away from the pilot school, be available by telephone, radio, or other electronic means during the time that training is given for an approved training course.
- (c) The chief instructor may delegate authority for conducting stage checks, end-of-course tests, and flight instructor proficiency checks to the assistant chief instructor or a check instructor.

141.87 Change of chief instructor.

- (a) Where any change in any chief instructor designation is proposed or has taken place beyond the company's control, the company shall notify the DGCA immediately, of any temporary assignments to ensure the chief instructor duties are being carried out. The organization must advise the DGCA within 60 days of its new chief instructor designee, requesting approval for the new candidate.
- (b) Training without a chief instructor may be conducted for that training course for a period not to exceed 60 days while awaiting the designation and approval of another chief instructor;
- (c) For a period not to exceed 60 days, the stage checks and end-of-course tests may be administered by:
 - (1) The training course's assistant chief instructor, if one has been designated;
 - (2) The training course's check instructor, if one has been designated;
 - (3) A DGCA inspector; or
 - (4) An examiner.
- (d) After 60 days without a chief instructor, the pilot school shall cease operations and surrender its certificate to the DGCA; and
- (e) A certificate may be reinstated, upon the organization:
 - (1) Designating for approval, another chief instructor;
 - (2) Showing it still meets all the requirements for issue of a pilot school certificate as laid down in 141.27(a)(2) of this part; and
 - (3) Applying for reinstatement on a form and in a manner prescribed by the DGCA.

141.89 Maintenance of personnel, facilities, and equipment.

The holder of a pilot school certificate or provisional pilot school certificate may not provide training to a student who is enrolled in an approved course of training unless:

- (a) Each airport, aircraft, and facility necessary for that training meets the standards specified in the holder's approved training course outline and the appropriate requirements of this Part; and

- (b) Except as provided in section 141.87 of this Part, each chief instructor, assistant chief instructor, check instructor, or instructor meets the qualifications specified in the holder's approved course of training and the appropriate requirements of this Part.
- (c) an applicant for pilot school certificate or provisional pilot school certificate shall have management organization and procedures that are clearly defined to control aircraft maintenance.

141.91 Satellite bases.

The holder of a pilot school certificate or provisional pilot school certificate may conduct ground training or flight training in an approved course of training at a base other than its main operations base if:

- (a) An assistant chief instructor is designated for each satellite base, and that assistant chief instructor is available at that base or, if away from the premises, by telephone, radio, or other electronic means during the time that training is provided for an approved training course;
- (b) The airport, facilities, and personnel used at the satellite base meet the appropriate requirements of Subpart B of this Part and its approved training course outline;
- (c) The instructors are under the direct supervision of the chief instructor or assistant chief instructor for the appropriate training course, who is readily available for consultation in accordance with section 141.85(b) of this Part; and
- (d) The Directorate General of Civil Aviation is notified in writing if training is conducted at a base other than the school's main operations base for more than 7 consecutive days.

141.93 Enrollment.

- (a) The holder of a pilot school certificate or a provisional pilot school certificate must, at the time a student is enrolled in an approved training course, furnish that student with a copy of the following:
 - (1) A certificate of enrollment containing -
 - (i) The name of the course in which the student is enrolled; and
 - (ii) The date of that enrollment.
 - (2) A copy of the student's training syllabus.
 - (3) A copy of the safety procedures and practices developed by the school that describe the use of the school's facilities and the operation of its aircraft. Those procedures and practices shall include training on at least the following information -
 - (i) The weather minimums required by the school for dual and solo flights;
 - (ii) The procedures for starting and taxiing aircraft on the ramp;
 - (iii) Fire precautions and procedures;
 - (iv) Re-dispatch procedures after un-programmed landings, on and off airports;
 - (v) Aircraft discrepancies and approval for return-to-service determinations;
 - (vi) Securing of aircraft when not in use;

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- (vii) Fuel reserves necessary for local and cross-country flights;
 - (viii) Avoidance of other aircraft in flight and on the ground;
 - (ix) Minimum altitude limitations and simulated emergency landing instructions; and
 - (x) A description of and instructions regarding the use of assigned practice areas.
- (b) The holder of a pilot school certificate or provisional pilot school certificate must maintain a monthly listing of persons enrolled in each training course offered by the school.

141.95 Graduation certificate.

- (a) The holder of a pilot school certificate or provisional pilot school certificate must issue a graduation certificate to each student who completes its approved course of training.
- (b) The graduation certificate must be issued to the student upon completion of the course of training and contain at least the following information:
 - (1) The name of the school and the certificate number of the school;
 - (2) The name of the graduate to whom it was issued;
 - (3) The course of training for which it was issued;
- (4) The date of graduation;
- (5) A statement that the student has satisfactorily completed each required stage of the approved course of training including the tests for those stages;
- (6) A certification by the chief instructor as to the accuracy of all information contained on the graduation certificate for that course of training; and
- (7) A statement showing the cross-country training that the student received in the course of training.

Subpart F – Records

141.101 Training records.

- (a) Each holder of a pilot school certificate or provisional pilot school certificate must establish and maintain a current and accurate record of the participation of each student enrolled in an approved course of training conducted by the school that includes the following information:
- (1) The date the student was enrolled in the approved course;
 - (2) A chronological log of the student's course attendance, subjects, and flight operations covered in the student's training, and the names and grades of any tests taken by the student; and
 - (3) The date the student graduated, terminated training, or transferred to another school.
- (b) The records required to be maintained in a student's logbook will not suffice for the record required by paragraph (a) of this section.
- (c) Whenever a student graduates, terminates training, or transfers to another school, the student's record must be certified to that effect by the chief instructor.
- (d) The holder of a pilot school certificate or a provisional pilot school certificate must retain each student record required by this section for at least 5 (five) years from the date that the student:
- (1) Graduates from the course to which the record pertains;
 - (2) Terminates enrollment in the course to which the record pertains; or
 - (3) Transfers to another school.
- (e) The holder of a pilot school certificate or a provisional pilot school certificate must make a copy of the student's training record available upon request by the student.
- (f) Notwithstanding the provisions of 141.95, upon successful completion of an approved course, each graduate will receive a graduation certificate, signed by the principal of the pilot school.

Appendix A to Part 141 - Sport Pilot Certification Course

141xA.1. Applicability.

This Appendix prescribes the minimum curriculum required for a sport pilot certification course under this Part, for the following ratings:

- (a) Airplane single-engine.
- (b) Rotorcraft helicopter.
- (c) Rotorcraft gyroplane.

141xA.2. Eligibility for enrollment.

A person must hold a student pilot licence prior to enrolling in the flight portion of the sport pilot certification course.

141xA.3. Aeronautical knowledge training.

Each approved course must include at least 20 hours of ground training on the following aeronautical knowledge areas, appropriate to the aircraft category and class for which the course applies:

- (a) Applicable Civil Aviation Safety Regulations for sport pilot privileges, limitations, and flight operations;
- (b) Accident reporting requirements of the National Transportation Safety Committee;
- (c) Applicable subjects in the "Aeronautical Information Publication" and the appropriate DGCA advisory circulars;
- (d) Use of aeronautical charts for VFR navigation using pilotage with the aid of a magnetic compass;
- (e) Recognition of critical weather situations from the ground and in flight, windshear avoidance, and the procurement and use of aeronautical weather reports and forecasts;
- (f) Safe and efficient operation of aircraft, including collision avoidance, and recognition and avoidance of wake turbulence;
- (g) Effects of density altitude on takeoff and climb performance;
- (h) Weight and balance computations;
- (i) Principles of aerodynamics, powerplants, and aircraft systems;
- (j) Stall awareness, spin entry, spins, and spin recovery techniques, if applying for an airplane single-engine rating;
- (k) Aeronautical decision making and judgment; and
- (l) Preflight action that includes :
 - (1) How to obtain information on runway lengths at airports of intended use, data on takeoff and landing distances, weather reports and forecasts, and fuel requirements; and
 - (2) How to plan for alternatives if the planned flight cannot be completed or delays are encountered.

141xA.4. Flight training.

- (a) Each approved course must include at least 30 hours of flight training (of which 15 hours must be with a licensed flight instructor and 3 hours must be solo flight training as provided in section No. **141xA.5.** of this Appendix) on the approved areas of operation listed in paragraph (c) of this section that are appropriate to the aircraft category and class rating for which the course applies, including:
- (1) Except as provided in section 61.100, 2 hours of dual flight training to and at an airport that is located more than 25 nautical miles from the airport where the applicant normally trains, with at least three takeoffs and three landings; and
 - (2) 3 hours of dual flight training in an aircraft that is appropriate to the aircraft category and class for which the course applies, in preparation for the practical test within 60 days preceding the date of the test.
- (b) Each training flight must include a preflight briefing and a post flight critique of the student by the flight instructor assigned to that flight.
- (c) Flight training must include the following approved areas of operation appropriate to the aircraft category and class rating :
- (1) For an airplane single-engine course:
 - (i) Preflight preparation;
 - (ii) Preflight procedures;
 - (iii) Airport operations;
 - (iv) Takeoffs, landings, and go-arounds;
 - (v) Performance maneuvers;
 - (vi) Ground reference maneuvers;
 - (vii) Navigation;
 - (viii) Slow flight and stalls;
 - (ix) Emergency operations; and
 - (x) Post flight procedures.
 - (2) For a rotorcraft helicopter course:
 - (i) Preflight preparation;
 - (ii) Preflight procedures;
 - (iii) Airport and heliport operations;
 - (iv) Hovering maneuvers;
 - (v) Takeoffs, landings, and go-arounds;
 - (vi) Performance maneuvers;
 - (vii) Navigation;
 - (viii) Emergency operations; and
 - (ix) Post flight procedures.
 - (3) For a rotorcraft gyroplane course:
 - (i) Preflight preparation;
 - (ii) Preflight procedures;

- (iii) Airport operations;
- (iv) Takeoffs, landings, and go-arounds;
- (v) Performance maneuvers;
- (vi) Ground reference maneuvers;
- (vii) Navigation;
- (viii) Flight at slow airspeeds;
- (ix) Emergency operations; and
- (x) Post flight procedures.

141xA.5. Solo flight training.

Each approved course must include at least 3 hours of solo flight training on the approved areas of operation listed in paragraph (c) of section No. **141xA.4.** of this Appendix that are appropriate to the aircraft category and class rating for which the course applies.

141xA.6. Stage checks and end-of-course tests.

- (a) Each student enrolled in a sport pilot course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the approved areas of operation listed in paragraph
- (c) of section No. **141xA.4.** of this Appendix that are appropriate to the aircraft category and class rating for which the course applies.
- (b) Each student must demonstrate satisfactory proficiency prior to receiving an endorsement to operate an aircraft in solo flight.

Appendix B to Part 141 - Private Pilot Certification Course

141xB.1. Applicability.

This Appendix prescribes the minimum curriculum for a private pilot certification course required under this Part, for the following ratings:

- (a) Airplane single-engine.
- (b) Airplane multiengine.
- (c) Rotorcraft helicopter.
- (d) Rotorcraft gyroplane.
- (e) Powered-lift.
- (f) Glider.
- (g) Lighter-than-air airship.
- (h) Lighter-than-air balloon.

141xB.2. Eligibility for enrollment.

A person must hold either a sport pilot licence, or student pilot licence before enrolling in the solo flight phase of the private pilot certification course.

141xB.3. Aeronautical knowledge training.

- (a) Each approved course must include at least the following ground training on the aeronautical knowledge areas listed in paragraph (b) of this section, appropriate to the aircraft category and class rating:
 - (1) 35 hours of training if the course is for an airplane, rotorcraft, or powered-lift category rating.
 - (2) 15 hours of training if the course is for a glider category rating.
 - (3) 10 hours of training if the course is for a lighter-than-air category with a balloon class rating.
 - (4) 35 hours of training if the course is for a lighter-than-air category with an airship class rating.
- (b) Ground training must include the following aeronautical knowledge areas:
 - (1) Applicable Civil Aviation Safety Regulations for private pilot privileges, limitations, and flight operations;
 - (2) Accident reporting requirements of the National Transportation Safety Committee;
 - (3) Applicable subjects of the "Aeronautical Information Publication" and the appropriate DGCA advisory circulars;
 - (4) Aeronautical charts for VFR navigation using pilotage, dead reckoning, and navigation systems;
 - (5) Radio communication procedures;
 - (6) Recognition of critical weather situations from the ground and in flight, windshear avoidance, and the procurement and use of aeronautical

- weather reports and forecasts;
- (7) Safe and efficient operation of aircraft, including collision avoidance, and recognition and avoidance of wake turbulence;
 - (8) Effects of density altitude on takeoff and climb performance;
 - (9) Weight and balance computations;
 - (10) Principles of aerodynamics, powerplants, and aircraft systems;
 - (11) If the course of training is for an airplane category or glider category rating, stall awareness, spin entry, spins, and spin recovery techniques;
 - (12) Aeronautical decision making and judgment;
 - (13) Preflight action that includes -
 - (i) How to obtain information on runway lengths at airports of intended use, data on takeoff and landing distances, weather reports and forecasts, and fuel requirements;
 - (ii) How to plan for alternatives if the planned flight cannot be completed or delays are encountered; and
 - (14) Human performance including principles of threat and error management.

141xB.4. Flight training.

- (a) Each approved course must include at least the following flight training, as provided in this section and new section No. **141xB.5.** of this Appendix, on the approved areas of operation listed in paragraph (d) of this section, appropriate to the aircraft category and class rating:
 - (1) 35 hours of training if the course is for an airplane, rotorcraft, powered-lift, or airship rating.
 - (2) 6 hours of training if the course is for a glider rating.
 - (3) 8 hours of training if the course is for a balloon rating.
- (b) Each approved course must include at least the following flight training:
 - (1) For an airplane single-engine course: 20 hours of flight training from a licensed flight instructor on the approved areas of operation in paragraph (d)(1) of this section that includes at least -
 - (i) Except as provided in section 61.111, 5 hours of cross-country flight training in a single-engine airplane that include one cross-country flight of more than 150-nautical-miles total distance including full stop landings at two different aerodromes shall be made;
 - (ii) 3 hours of night flight training in a single-engine airplane that includes 10 takeoffs and 10 landings;
 - (iii) Three hours of flight training in a single engine airplane on the control and maneuvering of a single engine airplane solely by reference to instruments, including straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems/facilities and radar services appropriate to instrument flight; and
 - (iv) 3 hours of flight training in a single-engine airplane in preparation for the practical test within 60 days preceding the date of the test.

- (2) For an airplane multiengine course: 20 hours of flight training from a licensed flight instructor on the approved areas of operation in paragraph (d)(2) of this section that includes at least –
- (i) Except as provided in section 61.111, 5 hours of cross-country flight training in a multi-engine airplane that include one cross-country flight of more than 150-nautical-miles total distance including full stop landings at two different aerodromes shall be made;
 - (ii) 3 hours of night flight training in a multi-engine airplane that includes 10 takeoffs and 10 landings;
 - (iii) Three hours of flight training in a multiengine airplane on the control and maneuvering of a multiengine airplane solely by reference to instruments, including straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems/facilities and radar services appropriate to instrument flight; and
 - (iv) 3 hours of flight training in a multiengine airplane in preparation for the practical test within 60 days preceding the date of the test.
- (3) For a rotorcraft helicopter course: 20 hours of flight training from a licensed flight instructor on the approved areas of operation in paragraph (d)(3) of this section that includes at least -
- (i) Except as provided in section 61.111, 5 hours of cross-country flight training in a helicopter that include one cross-country flight of more than 100-nautical-miles total distance including full stop landings at two different aerodromes shall be made;
 - (ii) 3 hours of night flight training in a helicopter that includes 10 takeoffs and 10 landings;
 - (iii) 3 hours of flight training in a helicopter in preparation for the practical test within 60 days preceding the date of the test.
- (4) For a rotorcraft gyroplane course: 20 hours of flight training from a licensed flight instructor on the approved areas of operation in paragraph (d)(4) of this section that includes at least -
- (i) Except as provided in section 61.111, 5 hours of cross-country flight training in a rotorcraft gyroplane that include one cross-country flight of more than 50-nautical-miles total distance including full stop landings at two different aerodromes shall be made;
 - (ii) 3 hours of night flight training in a rotorcraft gyroplane that includes 10 takeoffs and 10 landings;
 - (iii) 3 hours of flight training in a gyroplane in preparation for the practical test within 60 days preceding the date of the test.
- (5) For a powered-lift course: 20 hours of flight training from a licensed flight instructor on the approved areas of operation in paragraph (d)(5) of this section that includes at least -
- (i) Except as provided in section 61.111, 5 hours of cross-country flight training in a powered-lift that include one cross-country flight of more than 150-nautical-miles total distance including full stop landings at two different aerodromes shall be made;
 - (ii) 3 hours of night flight training in a powered-lift that includes 10 takeoffs and

- 10 landings;
- (iii) Three hours of flight training in a powered-lift on the control and maneuvering of a powered-lift solely by reference to instruments, including straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems/facilities and radar services appropriate to instrument flight; and
 - (iv) 3 hours of flight training in a powered-lift in preparation for the practical test, within 60 days preceding the date of the test.
- (6) For a glider course: 4 hours of flight training from a licensed flight instructor on the approved areas of operation in paragraph (d)(6) of this section that includes at least -
- (i) Five training flights in a glider with a licensed flight instructor on the launch/tow procedures approved for the course and on the appropriate approved areas of operation listed in paragraph (d)(6) of this section; and
 - (ii) Three training flights in a glider with a licensed flight instructor in preparation for the practical test within 60 days preceding the date of the test.
- (7) For a lighter-than-air airship course: 20 hours of flight training from a commercial pilot with an airship rating on the approved areas of operation in paragraph (d)(7) of this section that includes at least -
- (i) Except as provided in section 61.111, 5 hours of cross-country flight training in an airship that include one cross-country flight of more than 25-nautical-miles total distance including full stop landings at two different aerodromes shall be made;
 - (ii) 3 hours of night flight training in an airship that includes 5 takeoffs and 5 landings;
 - (iii) 3 hours of instrument training in an airship; and
 - (iv) 3 hours of flight training in an airship in preparation for the practical test within 60 days preceding the date of the test.
- (8) For a lighter-than-air balloon course: 8 hours of flight training, including at least five training flights, from a commercial pilot with a balloon rating on the approved areas of operation in paragraph (d)(8) of this section, that includes-
- (i) If the training is being performed in a gas balloon -
 - (A) Two flights of 1 hour each;
 - (B) One flight involving a controlled ascent to 3,000 feet above the launch site; and
 - (C) Two flights in preparation for the practical test within 60 days preceding the date of the test.
 - (ii) If the training is being performed in a balloon with an airborne heater -
 - (A) Two flights of 30 minutes each;
 - (B) One flight involving a controlled ascent to 2,000 feet above the launch site; and
 - (C) Two flights in preparation for the practical test within 60 days preceding the date of the test.

(c) For use of flight simulators or flight training devices:

- (1) The course may include training in a flight simulator or flight training device, provided it is representative of the aircraft for which the course is approved, meets the requirements of this paragraph, and the training is given by an authorized instructor.
- (2) Training in a flight simulator that meets the requirements of section 141.41(a) of this Part may be credited for a maximum of 20 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (3) Training in a flight training device that meets the requirements of section 141.41(b) of this Part may be credited for a maximum of 15 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (4) Training in flight simulators or flight training devices described in paragraphs (c)(2) and (c)(3) of this section, if used in combination, may be credited for a maximum of 20 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less. However, credit for training in a flight training device that meets the requirements of section 141.41(b) cannot exceed the limitation provided for in paragraph (c)(3) of this section.

(d) Each approved course must include the flight training on the approved areas of operation listed in this paragraph that are appropriate to the aircraft category and class rating –

(1) For a single-engine airplane course:

- (i) Preflight preparation;
- (ii) Preflight procedures;
- (iii) Airport and seaplane base operations;
- (iv) Takeoffs, landings, and go-arounds;
- (v) Performance maneuvers;
- (vi) Ground reference maneuvers;
- (vii) Navigation;
- (viii) Slow flight and stalls;
- (ix) Basic instrument maneuvers;
- (x) Emergency operations;
- (xi) Night operations; and
- (xii) Post flight procedures.

(2) For a multiengine airplane course:

- (i) Preflight preparation;
- (ii) Preflight procedures;
- (iii) Airport and seaplane base operations;
- (iv) Takeoffs, landings, and go-arounds;
- (v) Performance maneuvers;

- (vi) Ground reference maneuvers;
 - (vii) Navigation;
 - (viii) Slow flight and stalls;
 - (ix) Basic instrument maneuvers;
 - (x) Emergency operations;
 - (xi) Multiengine operations;
 - (xii) Night operations; and
 - (xiii) Post flight procedures.
- (3) For a rotorcraft helicopter course:
- (i) Preflight preparation;
 - (ii) Preflight procedures;
 - (iii) Airport and heliport operations;
 - (iv) Hovering maneuvers;
 - (v) Takeoffs, landings, and go-arounds;
 - (vi) Performance maneuvers;
 - (vii) Navigation;
 - (viii) Emergency operations;
 - (ix) Night operations; and
 - (x) Post flight procedures.
- (4) For a rotorcraft gyroplane course:
- (i) Preflight preparation;
 - (ii) Preflight procedures;
 - (iii) Airport operations;
 - (iv) Takeoffs, landings, and go-arounds;
 - (v) Performance maneuvers;
 - (vi) Ground reference maneuvers;
 - (vii) Navigation;
 - (viii) Flight at slow airspeeds;
 - (ix) Emergency operations;
 - (x) Night operations; and
 - (xi) Post flight procedures.
- (5) For a powered-lift course:
- (i) Preflight preparation;
 - (ii) Preflight procedures;
 - (iii) Airport and heliport operations;
 - (iv) Hovering maneuvers;
 - (v) Takeoffs, landings, and go-arounds;

- (vi) Performance maneuvers;
 - (vii) Ground reference maneuvers;
 - (viii) Navigation;
 - (ix) Slow flight and stalls;
 - (x) Basic instrument maneuvers;
 - (xi) Emergency operations;
 - (xii) Night operations; and
 - (xiii) Post flight procedures.
- (6) For a glider course:
- (i) Preflight preparation;
 - (ii) Preflight procedures;
 - (iii) Airport and gliderport operations;
 - (iv) Launches/tows, as appropriate, and landings;
 - (v) Performance speeds;
 - (vi) Soaring techniques;
 - (vii) Performance maneuvers;
 - (viii) Navigation;
 - (ix) Slow flight and stalls;
 - (x) Emergency operations; and
 - (xi) Post flight procedures.
- (7) For a lighter-than-air airship course:
- (i) Preflight preparation;
 - (ii) Preflight procedures;
 - (iii) Airport operations;
 - (iv) Takeoffs, landings, and go-arounds;
 - (v) Performance maneuvers;
 - (vi) Ground reference maneuvers;
 - (vii) Navigation;
 - (viii) Emergency operations; and
 - (ix) Post flight procedures.
- (8) For a lighter-than-air balloon course:
- (i) Preflight preparation;
 - (ii) Preflight procedures;
 - (iii) Airport operations;
 - (iv) Launches and landings;
 - (v) Performance maneuvers;
 - (vi) Navigation;
 - (vii) Emergency operations; and

- (viii) Post flight procedures.

141xB.5. Solo flight training.

Each approved course must include at least the following solo flight training:

- (a) For an airplane single-engine course: 5 hours of solo flight training in a single-engine airplane on the approved areas of operation in paragraph (d)(1) of section No. **141xB.4.** of this Appendix that includes at least -
- (1) One solo 150 nautical miles cross country flight with landings at a minimum of three points and one segment of the flight consisting of a straight-line distance of more than 50 nautical miles between the takeoff and landing locations; and
 - (2) Three takeoffs and three landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.
- (b) For an airplane multiengine course: 5 hours of flight training in a multiengine airplane performing the duties of a pilot in command while under the supervision of a licensed flight instructor. The training must consist of the approved areas of operation in paragraph (d)(2) of section No. **141xB.4.** of this Appendix, and include at least -
- (1) One 150 nautical miles cross country flight with landings at a minimum of three points and one segment of the flight consisting of a straight-line distance of more than 50 nautical miles between the takeoff and landing locations; and
 - (2) Three takeoffs and three landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.
- (c) For a rotorcraft helicopter course: 5 hours of solo flight training in a helicopter on the approved areas of operation in paragraph (d)(3) of section No. **141xB.4.** of this Appendix that includes at least -
- (1) One solo 100 nautical miles cross country flight with landings at a minimum of three points and one segment of the flight consisting of a straight-line distance of more than 25 nautical miles between the takeoff and landing locations; and
 - (2) Three takeoffs and three landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.
- (d) For a rotorcraft gyroplane course: 5 hours of solo flight training in gyroplanes on the approved areas of operation in paragraph (d)(4) of section No. **141xB.4.** of this Appendix that includes at least -
- (1) One solo 100 nautical miles cross country flight with landings at a minimum of three points and one segment of the flight consisting of a straight-line distance of more than 25 nautical miles between the takeoff and landing locations; and
 - (2) Three takeoffs and three landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.
- (e) For a powered-lift course: 5 hours of solo flight training in a powered-lift on the

approved areas of operation in paragraph (d)(5) of section No. **141xB.4.** of this Appendix that includes at least –

- (1) One solo 100 nautical miles cross country flight with landings at a minimum of three points and one segment of the flight consisting of a straight-line distance of more than 50 nautical miles between the takeoff and landing locations; and
 - (2) Three takeoffs and three landings to a full stop (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower.
- (f) For a glider course: Two solo flights in a glider on the approved areas of operation in paragraph (d)(6) of section No. **141xB.4.** of this Appendix, and the launch and tow procedures appropriate for the approved course.
- (g) For a lighter-than-air airship course: 5 hours of flight training in an airship performing the duties of pilot in command while under the supervision of a commercial pilot with an airship rating. The training must consist of the approved areas of operation in paragraph (d)(7) of section No. **141xB.4.** of this Appendix.
- (h) For a lighter-than-air balloon course: Two solo flights in a balloon with an airborne heater if the course involves a balloon with an airborne heater or, if the course involves a gas balloon, at least two flights in a gas balloon performing the duties of pilot in command while under the supervision of a commercial pilot with a balloon rating. The training must consist of the approved areas of operation in paragraph (d)(8) of section No. **141xB.4.** of this Appendix, in the kind of balloon for which the course applies.

141xB.6. Stage checks and end-of-course tests.

- (a) Each student enrolled in a private pilot course must satisfactorily accomplish the stage checks and end-of-course tests in accordance with the school's approved training course, consisting of the approved areas of operation listed in paragraph (d) of section No. 141xB.4. of this Appendix that are appropriate to the aircraft category and class rating for which the course applies.
- (b) Each student must demonstrate satisfactory proficiency prior to receiving an endorsement to operate an aircraft in solo flight.

Appendix C to Part 141 - Instrument Rating Course

141xC.1. Applicability.

This Appendix prescribes the minimum curriculum for an instrument rating course and an additional instrument rating course, required under this Part, for the following ratings:

- (a) Instrument -- airplane.
- (b) Instrument -- helicopter.
- (c) Instrument -- powered-lift.

141xC.2. Eligibility for enrollment.

A person must hold at least a private pilot licence with an aircraft category and class rating appropriate to the instrument rating for which the course applies prior to enrolling in the flight portion of the instrument rating course.

141xC.3. Aeronautical knowledge training.

- (a) Each approved course must include at least the following ground training on the aeronautical knowledge areas listed in paragraph (b) of this section appropriate to the instrument rating for which the course applies:
 - (1) 30 hours of training if the course is for an initial instrument rating.
 - (2) 20 hours of training if the course is for an additional instrument rating.
- (b) Ground training must include the following aeronautical knowledge areas:
 - (1) Applicable Civil Aviation Safety Regulations for IFR flight operations;
 - (2) Appropriate information in the "Aeronautical Information Publication";
 - (3) Air traffic control system and procedures for instrument flight operations;
 - (4) IFR navigation and approaches by use of navigation systems;
 - (5) Use of IFR en route and instrument approach procedure charts;
 - (6) Procurement and use of aviation weather reports and forecasts, and the elements of forecasting weather trends on the basis of that information and personal observation of weather conditions;
 - (7) Safe and efficient operation of aircraft under instrument flight rules and conditions;
 - (8) Recognition of critical weather situations and windshear avoidance;
 - (9) Aeronautical decision making and judgment; and
 - (10) Crew resource management, to include crew communication and coordination.

141xC.4. Flight training

- (a) Each approved course must include at least the following flight training on the approved areas of operation listed in paragraph (d) of this section, appropriate to the instrument-aircraft category and class rating for which the course applies:
- (1) 40 hours of instrument training if the course is for an initial instrument rating.
 - (2) 15 hours of instrument training if the course is for an additional instrument rating.
- (b) For the use of flight simulators or flight training devices -
- (1) The course may include training in a flight simulator or flight training device, provided it is representative of the aircraft for which the course is approved, meets the requirements of this paragraph, and the training is given by an authorized instructor.
 - (2) Credit for training in a flight simulator that meets the requirements of section 141.41(a) cannot exceed 50 percent of the total flight training hour requirements of the course or of this section, whichever is less.
 - (3) Credit for training in a flight training device that meets the requirements of section 141.41(b) cannot exceed 40 percent of the total flight training hour requirements of the course or of this section, whichever is less.
 - (4) Credit for training in flight simulators and flight training devices, if used in combination, cannot exceed 50 percent of the total flight training hour requirements of the course or of this section, whichever is less. However, credit for training in a flight training device cannot exceed the limitation provided for in paragraph (b)(3) of this section.
 - (5) [Reserved]
 - (6) [Reserved]
- (c) Each approved course must include the following flight training -
- (1) For an instrument airplane course: Instrument training time from a licensed flight instructor with an instrument rating on the approved areas of operation in paragraph (d) of this section including at least one cross-country flight that-
 - (i) Is in the category and class of airplane that the course is approved for, and is performed under IFR;
 - (ii) Is a distance of at least 250 nautical miles along airways or ATC-directed routing with one segment of the flight consisting of at least a straight-line distance of 100 nautical miles between airports;
 - (iii) Involves an instrument approach at each airport; and
 - (iv) Involves three different kinds of approaches with the use of navigation systems.
 - (2) For an instrument helicopter course: Instrument training time from a licensed flight instructor with an instrument rating on the approved areas of operation in paragraph (d) of this section including at least one cross-country flight that-
 - (i) Is in a helicopter and is performed under IFR;

- (ii) Is a distance of at least 100 nautical miles along airways or ATC-directed routing with one segment of the flight consisting of at least a straight-line distance of 50 nautical miles between airports;
 - (iii) Involves an instrument approach at each airport; and
 - (iv) Involves three different kinds of approaches with the use of navigation systems.
- (3) For an instrument powered-lift course: Instrument training time from a licensed flight instructor with an instrument rating on the approved areas of operation in paragraph (d) of this section including at least one cross-country flight that -
- (i) Is in a powered-lift and is performed under IFR;
 - (ii) Is a distance of at least 250 nautical miles along airways or ATC-directed routing with one segment of the flight consisting of at least a straight-line distance of 100 nautical miles between airports;
 - (iii) Involves an instrument approach at each airport; and
 - (iv) Involves three different kinds of approaches with the use of navigation systems.
- (d) Each course must include flight training on the areas of operation listed under this paragraph appropriate to the instrument aircraft category and class rating (if a class rating is appropriate) for which the course applies:
- (1) Preflight preparation;
 - (2) Preflight procedures;
 - (3) Air traffic control clearances and procedures;
 - (4) Flight by reference to instruments;
 - (5) Navigation systems;
 - (6) Instrument approach procedures;
 - (7) Emergency operations; and
 - (8) Post flight procedures.

141xC.5. Stage checks and end-of-course tests.

Each student enrolled in an instrument rating course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the approved areas of operation listed in paragraph (d) of section No. **141xC.4.** of this Appendix that are appropriate to the aircraft category and class rating for which the course applies.

Appendix D to Part 141 - Commercial Pilot Certification Course

141xD.1. Applicability.

This Appendix prescribes the minimum curriculum for a commercial pilot certification course required under this Part, for the following ratings:

- (a) Airplane single-engine.
- (b) Airplane multiengine.
- (c) Rotorcraft helicopter.
- (d) Rotorcraft gyroplane.
- (e) Powered-lift.
- (f) Glider.
- (g) Lighter-than-air airship.
- (h) Lighter-than-air balloon.

141xD.2. Eligibility for enrollment.

A person must hold the following prior to enrolling in the flight portion of the commercial pilot certification course:

- (a) At least a private pilot licence;
- (b) [Reserved].

141xD.3. Aeronautical knowledge training.

- (a) Each approved course must include at least the following ground training on the aeronautical knowledge areas listed in paragraph (b) of this section, appropriate to the aircraft category and class rating for which the course applies:
 - (1) 35 hours of training if the course is for an airplane category rating or a powered-lift category rating.
 - (2) 65 hours of training if the course is for a lighter-than-air category with an airship class rating.
 - (3) 30 hours of training if the course is for a rotorcraft category rating.
 - (4) 20 hours of training if the course is for a glider category rating.
 - (5) 20 hours of training if the course is for lighter-than-air category with a balloon class rating.
- (b) Ground training must include the following aeronautical knowledge areas:
 - (1) Civil Aviation Safety Regulations that apply to commercial pilot privileges, limitations, and flight operations;
 - (2) Accident reporting requirements of the National Transportation Safety Committee;
 - (3) Basic aerodynamics and the principles of flight;

- (4) Meteorology, to include recognition of critical weather situations, windshear recognition and avoidance, and the use of aeronautical weather reports and forecasts;
- (5) Safe and efficient operation of aircraft;
- (6) Weight and balance computations;
- (7) Use of performance charts;
- (8) Significance and effects of exceeding aircraft performance limitations;
- (9) Use of aeronautical charts and a magnetic compass for pilotage and dead reckoning;
- (10) Use of air navigation facilities;
- (11) Aeronautical decision making and judgment;
- (12) Principles and functions of aircraft systems;
- (13) Maneuvers, procedures, and emergency operations appropriate to the aircraft;
- (14) Night and high-altitude operations;
- (15) Descriptions of and procedures for operating within the National Airspace System;
- (16) Procedures for flight and ground training for lighter-than-air ratings; and
- (17) Human performance including principles of threat and error management.

141xD.4. Flight training.

- (a) Each approved course must include at least the following flight training, as provided in this section and section No. **141xD.5.** of this Appendix, on the approved areas of operation listed in paragraph (d) of this section that are appropriate to the aircraft category and class rating for which the course applies:
 - (1) 120 hours of training if the course is for an airplane or powered-lift rating.
 - (2) 155 hours of training if the course is for an airship rating.
 - (3) 115 hours of training if the course is for a rotorcraft rating.
 - (4) 6 hours of training if the course is for a glider rating.
 - (5) 10 hours of training and 8 training flights if the course is for a balloon rating.
- (b) Each approved course must include at least the following flight training:
 - (1) For an airplane single-engine course: 55 hours of flight training from a licensed flight instructor on the approved areas of operation listed in paragraph (d)(1) of this section that includes at least -
 - (i) Ten hours of instrument training using a view-limiting device including attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. Five hours of the 10 hours required on instrument training must be in a single engine airplane;

- (ii) [Reserved]
 - (iii) One 2-hours of cross country flight in daytime conditions in a single engine airplane that consists of a total straight-line distance of more than 100 nautical miles from the original point of departure; and
 - (iv) [Reserved]
 - (v) 3 hours in a single-engine airplane in preparation for the practical test within 60 days preceding the date of the test.
- (2) For an airplane multiengine course: 55 hours of flight training from a licensed flight instructor on the approved areas of operation listed in paragraph (d)(2) of this section that includes at least -
- (i) Ten hours of instrument training using a view-limiting device including attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. Five hours of the 10 hours required on instrument training must be in a multiengine airplane;
 - (ii) 10 hours of training in a multiengine airplane that has retractable landing gear, flaps, and a controllable pitch propeller, or is turbine-powered;
 - (iii) One 2 -hours cross country flight in daytime conditions in a multiengine airplane that consists of a total straight-line distance of more than 100 nautical miles from the original point of departure; and
 - (iv) [Reserved]
 - (v) 3 hours in a multiengine airplane in preparation for the practical test within 60 days preceding the date of the test.
- (3) For a rotorcraft helicopter course: 30 hours of flight training from a licensed flight instructor on the approved areas of operation listed in paragraph (d)(3) of this section that includes at least -
- (i) Five hours on the control and maneuvering of a helicopter solely by reference to instruments, including using a view-limiting device for attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. This aeronautical experience may be performed in an aircraft, flight simulator, or flight training device;
 - (ii) One 2-hour cross country flight in daytime conditions in a helicopter that consists of a total straight-line distance of more than 50 nautical miles from the original point of departure; and
 - (iii) [Reserved]
 - (iv) 3 hours in a helicopter in preparation for the practical test within 60 days preceding the date of the test.
- (4) For a rotorcraft gyroplane course: 30 hours of flight training from a licensed flight instructor on the approved areas of operation listed in paragraph (d)(4) of this section that includes at least -
- (i) 2.5 hours on the control and maneuvering of a gyroplane solely by reference to instruments, including using a view-limiting device for attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. This aeronautical experience may be performed in an aircraft, flight simulator, or flight

- training device;
- (ii) One 2-hour cross country flight in daytime conditions in a gyroplane that consists of a total straight-line distance of more than 50 nautical miles from the original point of departure;
 - (iii) [Reserved] ; and
 - (iv) 3 hours in a gyroplane in preparation for the practical test within 60 days preceding the date of the test.
- (5) For a powered-lift course: 55 hours of flight training from a licensed flight instructor on the approved areas of operation listed in paragraph (d)(5) of this section that includes at least -
- (i) Ten hours of instrument training using a view-limiting device including attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. Five hours of the 10 hours required on instrument training must be in a powered-lift;
 - (ii) One 2-hour cross country flight in daytime conditions in a powered-lift that consists of a total straight-line distance of more than 100 nautical miles from the original point of departure;
 - (iii) [Reserved] ; and
 - (iv) 3 hours in a powered-lift in preparation for the practical test within 60 days preceding the date of the test.
- (6) For a glider course: 4 hours of flight training from a licensed flight instructor on the approved areas of operation in paragraph (d)(6) of this section, that includes at least -
- (i) Five training flights in a glider with a licensed flight instructor on the launch/tow procedures approved for the course and on the appropriate approved areas of operation listed in paragraph (d)(6) of this section; and
 - (ii) Three training flights in a glider with a licensed flight instructor in preparation for the practical test within 60 days preceding the date of the test.
- (7) For a lighter-than-air airship course: 55 hours of flight training in airships from a commercial pilot with an airship rating on the approved areas of operation in paragraph (d)(7) of this section that includes at least -
- (i) Three hours of instrument training in an airship, including using a view-limiting device for attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems;
 - (ii) One hour cross country flight in daytime conditions in an airship that consists of a total straight-line distance of more than 25 nautical miles from the original point of departure;
 - (iii) [Reserved] ; and
 - (iv) 3 hours in an airship, in preparation for the practical test within 60 days preceding the date of the test.
- (8) For a lighter-than-air balloon course: Flight training from a commercial pilot with a balloon rating on the approved areas of operation in paragraph (d)(8) of this section that includes at least -
- (i) If the course involves training in a gas balloon:

- (A) Two flights of 1 hour each;
 - (B) One flight involving a controlled ascent to at least 5,000 feet above the launch site; and
 - (C) Two flights in preparation for the practical test within 60 days preceding the date of the test.
- (ii) If the course involves training in a balloon with an airborne heater:
- (A) Two flights of 30 minutes each;
 - (B) One flight involving a controlled ascent to at least 3,000 feet above the launch site; and
 - (C) Two flights in preparation for the practical test within 60 days preceding the date of the test.
- (c) For the use of flight simulators or flight training devices:
- (1) The course may include training in a flight simulator or flight training device, provided it is representative of the aircraft for which the course is approved, meets the requirements of this paragraph, and is given by an authorized instructor.
 - (2) Training in a flight simulator that meets the requirements of section 141.41(a) of this Part may be credited for a maximum of 30 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
 - (3) Training in a flight training device that meets the requirements of section 141.41(b) of this Part may be credited for a maximum of 20 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
 - (4) Training in the flight training devices described in paragraphs (c)(2) and (c)(3) of this section, if used in combination, may be credited for a maximum of 30 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less. However, credit for training in a flight training device that meets the requirements of section 141.41(b) cannot exceed the limitation provided for in paragraph (c)(3) of this section.
- (d) Each approved course must include the flight training on the approved areas of operation listed in this paragraph that are appropriate to the aircraft category and class rating –
- (1) For an airplane single-engine course:
 - (i) Preflight preparation;
 - (ii) Preflight procedures;
 - (iii) Airport and seaplane base operations;
 - (iv) Takeoffs, landings, and go-arounds;
 - (v) Performance maneuvers;
 - (vi) Navigation;
 - (vii) Slow flight and stalls;

- (viii) Emergency operations;
 - (ix) High-altitude operations; and
 - (x) Post flight procedures.
- (2) For an airplane multiengine course:
- (i) Preflight preparation;
 - (ii) Preflight procedures;
 - (iii) Airport and seaplane base operations;
 - (iv) Takeoffs, landings, and go-arounds;
 - (v) Performance maneuvers;
 - (vi) Navigation;
 - (vii) Slow flight and stalls;
 - (viii) Emergency operations;
 - (ix) Multiengine operations;
 - (x) High-altitude operations; and
 - (xi) Post flight procedures.
- (3) For a rotorcraft helicopter course:
- (i) Preflight preparation;
 - (ii) Preflight procedures;
 - (iii) Airport and heliport operations;
 - (iv) Hovering maneuvers;
 - (v) Takeoffs, landings, and go-arounds;
 - (vi) Performance maneuvers;
 - (vii) Navigation;
 - (viii) Emergency operations;
 - (ix) Special operations; and
 - (x) Post flight procedures.
- (4) For a rotorcraft gyroplane course:
- (i) Preflight preparation;
 - (ii) Preflight procedures;
 - (iii) Airport operations;
 - (iv) Takeoffs, landings, and go-arounds;
 - (v) Performance maneuvers;
 - (vi) Ground reference maneuvers;
 - (vii) Navigation;
 - (viii) Flight at slow airspeeds;
 - (ix) Emergency operations; and
 - (x) Post flight procedures.

- (5) For a powered-lift course:
- (i) Preflight preparation;
 - (ii) Preflight procedures;
 - (iii) Airport and heliport operations;
 - (iv) Hovering maneuvers;
 - (v) Takeoffs, landings, and go-arounds;
 - (vi) Performance maneuvers;
 - (vii) Navigation;
 - (viii) Slow flight and stalls;
 - (ix) Emergency operations;
 - (x) High altitude operations;
 - (xi) Special operations; and
 - (xii) Post flight procedures.
- (6) For a glider course:
- (i) Preflight preparation;
 - (ii) Preflight procedures;
 - (iii) Airport and gliderport operations;
 - (iv) Launches/tows, as appropriate, and landings;
 - (v) Performance speeds;
 - (vi) Soaring techniques;
 - (vii) Performance maneuvers;
 - (viii) Navigation;
 - (ix) Slow flight and stalls;
 - (x) Emergency operations; and
 - (xi) Post flight procedures.
- (7) For a lighter-than-air airship course:
- (i) Fundamentals of instructing;
 - (ii) Technical subjects;
 - (iii) Preflight preparation;
 - (iv) Preflight lessons on a maneuver to be performed in flight;
 - (v) Preflight procedures;
 - (vi) Airport operations;
 - (vii) Takeoffs, landings, and go-arounds;
 - (viii) Performance maneuvers;
 - (ix) Navigation;
 - (x) Emergency operations; and
 - (xi) Post flight procedures.

- (8) For a lighter-than-air balloon course:
- (i) Fundamentals of instructing;
 - (ii) Technical subjects;
 - (iii) Preflight preparation;
 - (iv) Preflight lesson on a maneuver to be performed in flight;
 - (v) Preflight procedures;
 - (vi) Airport operations;
 - (vii) Launches and landings;
 - (viii) Performance maneuvers;
 - (ix) Navigation;
 - (x) Emergency operations; and
 - (xi) Post flight procedures.

141xD.5. Solo training.

Each approved course must include at least the following solo flight training:

- (a) For an airplane single engine course. Ten hours of solo flight time in a single engine airplane, or 10 hours of flight time while performing the duties of pilot in command in a single engine airplane with an authorized instructor on board. The training must consist of the approved areas of operation under paragraph (d)(1) of section No. **141xD.4.** of this Appendix, and include--
- (1) One cross-country flight, if the training is being performed in the small islands, with landings at a minimum of three points, and one of the segments consisting of a straight-line distance of at least 150 nautical miles;
 - (2) One cross-country flight, if the training is being performed in other than small islands, with landings at a minimum of three points, and one segment of the flight consisting of a straight-line distance of at least 250 nautical miles; and
 - (3) 5 hours in night VFR conditions with 10 takeoffs and 10 landings (with each landing involving a flight with a traffic pattern) at an airport with an operating control tower.
- (b) For an airplane multiengine course. Ten hours of flight time while performing the duties of pilot in command in a multiengine airplane with an authorized instructor on board. The training must consist of the approved areas of operation under paragraph (d)(2) of section No. **141xD.4.** of this Appendix, and include--
- (1) One cross-country flight, if the training is being performed in the small islands, with landings at a minimum of three points, and one of the segments consisting of a straight-line distance of at least 150 nautical miles;
 - (2) One cross-country flight, if the training is being performed in other than small islands, with landings at a minimum of three points and one segment of the flight consisting of straight-line distance of at least 250 nautical miles; and
 - (3) 5 hours in night VFR conditions with 10 takeoffs and 10 landings (with each

- landing involving a flight with a traffic pattern) at an airport with an operating control tower.
- (c) For a rotorcraft helicopter course. Ten hours of solo flight time in a helicopter, or 10 hours of flight time while performing the duties of pilot in command in a helicopter with an authorized instructor on board. The training must consist of the approved areas of operation under paragraph (d)(3) of section No. **141xD.4.** of this Appendix, and include--
- (1) One cross-country flight with landings at a minimum of three points and one segment of the flight consisting of a straight-line distance of at least 50 nautical miles from the original point of departure; and
 - (2) 5 hours in night VFR conditions with 10 takeoffs and 10 landings (with each landing involving a flight with a traffic pattern) at an airport with an operating control tower.
- (d) For a rotorcraft-gyroplane course. Ten hours of solo flight time in a gyroplane, or 10 hours of flight time while performing the duties of pilot in command in a gyroplane with an authorized instructor on board. The training must consist of the approved areas of operation under paragraph (d)(4) of section No. **141xD.4.** of this Appendix, and include--
- (1) One cross-country flight with landings at a minimum of three points, and one segment of the flight consisting of a straight-line distance of at least 50 nautical miles from the original point of departure; and
 - (2) 5 hours in night VFR conditions with 10 takeoffs and 10 landings (with each landing involving a flight with a traffic pattern) at an airport with an operating control tower.
- (e) For a powered-lift course. Ten hours of solo flight time in a powered-lift, or 10 hours of flight time while performing the duties of pilot in command in a powered-lift with an authorized instructor on board. The training must consist of the approved areas of operation under paragraph (d)(5) of section No. **141xD.4.** of this Appendix, and include--
- (1) One cross-country flight, if the training is being performed in the small islands, with landings at a minimum of three points, and one segment of the flight consisting of a straight-line distance of at least 150 nautical miles;
 - (2) One cross-country flight, if the training is being performed in other than small islands, with landings at a minimum of three points, and one segment of the flight consisting of a straight-line distance of at least 250 nautical miles; and
 - (3) 5 hours in night VFR conditions with 10 takeoffs and 10 landings (with each landing involving a flight with a traffic pattern) at an airport with an operating control tower.
- (f) For a glider course: 5 solo flights in a glider on the approved areas of operation in paragraph (d)(6) of section No. **141xD.4.** of this Appendix.
- (g) For a lighter-than-air airship course: 10 hours of flight training in an airship performing the duties of pilot in command while under the supervision of a commercial pilot with an airship rating. The training must consist of the approved areas of operation in paragraph (d)(7) of section No. **141xD.4.** of this Appendix and include at least -

- (1) One cross-country flight with landings at a minimum of three points, and one segment of the flight consisting of a straight-line distance of at least 25 nautical miles from the original point of departure; and
 - (2) 5 hours in night VFR conditions with 10 takeoffs and 10 landings (with each landing involving a flight with a traffic pattern).
- (h) For a lighter-than-air balloon course: Two solo flights if the course is for a hot air balloon rating, or, if the course is for a gas balloon rating, at least two flights in a gas balloon, while performing the duties of pilot in command under the supervision of a commercial pilot with a balloon rating. The training shall consist of the approved areas of operation in paragraph (d)(8) of section No. **141xD.4.** of this Appendix, in the kind of balloon for which the course applies.

141xD.6. Stage checks and end-of-course tests.

- (a) Each student enrolled in a commercial pilot course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the approved areas of operation listed in paragraph (d) of section No. **141xD.4.** of this Appendix that are appropriate to aircraft category and class rating for which the course applies.
- (b) Each student must demonstrate satisfactory proficiency prior to receiving an endorsement to operate an aircraft in solo flight.

Appendix E to Part 141 - Airline Transport Pilot Certification Course

141xE.1. Applicability.

This Appendix prescribes the minimum curriculum for an airline transport pilot certification course under this Part, for the following ratings:

- (a) [Reserved]
- (b) Airplane multiengine.
- (c) Rotorcraft helicopter.
- (d) Powered-lift.

141xE.2. Eligibility for enrollment.

Before completing the flight portion of the airline transport pilot certification course, a person must meet the aeronautical experience requirements for an airline transport pilot licence under Part 61, Subpart G that is appropriate to the aircraft category and class rating for which the course applies, and:

- (a) Hold at least a commercial pilot licence and an instrument rating;
- (b) Meet the military experience requirements under section 61.73 to qualify for a commercial pilot licence and an instrument rating, if the person is a rated military pilot or former rated military pilot of an Armed Force of the Republic of Indonesia; or
- (c) Hold either a foreign airline transport pilot licence or foreign commercial pilot licence and an instrument rating, if the person holds a pilot licence issued by a contracting State to the Convention on International Civil Aviation.

141xE.3. Aeronautical knowledge areas.

- (a) Each approved course must include at least 40 hours of ground training on the aeronautical knowledge areas listed in paragraph (b) of this section, appropriate to the aircraft category and class rating for which the course applies.
- (b) Ground training must include the following aeronautical knowledge areas:
 - (1) Applicable Civil Aviation Safety Regulations that relate to airline transport pilot privileges, limitations, and flight operations;
 - (2) Meteorology, including knowledge of and effects of fronts, frontal characteristics, cloud formations, icing, and upper-air data;
 - (3) General system of weather and NOTAM collection, dissemination, interpretation, and use;
 - (4) Interpretation and use of weather charts, maps, forecasts, sequence reports, abbreviations, and symbols;
 - (5) National weather service functions as they pertain to operations in the national airspace system;
 - (6) Windshear and microburst awareness, identification, and avoidance;

- (7) Principles of air navigation under instrument meteorological conditions in the national airspace system;
- (8) Air traffic control procedures and pilot responsibilities as they relate to en route operations, terminal area and radar operations, and instrument departure and approach procedures;
- (9) Aircraft loading; weight and balance; use of charts, graphs, tables, formulas, and computations; and the effects on aircraft performance;
- (10) Aerodynamics relating to an aircraft's flight characteristics and performance in normal and abnormal flight regimes;
- (11) Human factors;
- (12) Aeronautical decision making and judgment; and
- (13) Crew resource management to include crew communication and coordination.

141xE.4. Flight training.

- (a) Each approved course must include at least 25 hours of flight training on the approved areas of operation listed in paragraph (c) of this section appropriate to the aircraft category and class rating for which the course applies. At least 15 hours of this flight training must be instrument flight training.
- (b) For the use of flight simulators or flight training devices -
 - (1) The course may include training in a flight simulator or flight training device, provided it is representative of the aircraft for which the course is approved, meets the requirements of this paragraph, and the training is given by an authorized instructor.
 - (2) Training in a flight simulator that meets the requirements of section 141.41(a) of this Part may be credited for a maximum of 50 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
 - (3) Training in a flight training device that meets the requirements of section 141.41(b) of this Part may be credited for a maximum of 25 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
 - (4) Training in flight simulators or flight training devices described in paragraphs (b)(2) and (b)(3) of this section, if used in combination, may be credited for a maximum of 50 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less. However, credit for training in a flight training device that meets the requirements of section 141.41(b) cannot exceed the limitation provided for in paragraph (b)(3) of this section.

- (c) Each approved course must include flight training on the approved areas of operation listed in this paragraph appropriate to the aircraft category and class rating for which the course applies:
- (1) Preflight preparation;
 - (2) Preflight procedures;
 - (3) Takeoff and departure phase;
 - (4) In-flight maneuvers;
 - (5) Instrument procedures;
 - (6) Landings and approaches to landings;
 - (7) Normal and abnormal procedures;
 - (8) Emergency procedures; and
 - (9) Post flight procedures.

141xE.5. Stage checks and end-of-course tests.

- (a) Each student enrolled in an airline transport pilot course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the approved areas of operation listed in paragraph (c) of section No. **141xE.4.** of this Appendix that are appropriate to the aircraft category and class rating for which the course applies.
- (b) Each student must demonstrate satisfactory proficiency prior to receiving an endorsement to operate an aircraft.

Appendix F to Part 141 - Flight Instructor Certification

Course 141xF.1. Applicability.

This Appendix prescribes the minimum curriculum for a flight instructor certification course and an additional flight instructor rating course required under this Part, for the following ratings:

- (a) Airplane single-engine.
- (b) Airplane multiengine.
- (c) Rotorcraft helicopter.
- (d) Rotorcraft gyroplane.
- (e) Powered-lift.
- (f) Glider category.

141xF.2. Eligibility for enrollment.

A person must hold the following prior to enrolling in the flight portion of the flight instructor or additional flight instructor rating course:

- (a) A commercial pilot licence or an airline transport pilot licence, with an aircraft category and class rating appropriate to the flight instructor rating for which the course applies; and
- (b) An instrument rating or privilege in an aircraft that is appropriate to the aircraft category and class rating for which the course applies, if the course is for a flight instructor airplane or powered-lift instrument rating.

141xF.3. Aeronautical knowledge training.

- (a) Each approved course must include at least the following ground training in the aeronautical knowledge areas listed in paragraph (b) of this section:
 - (1) 40 hours of training if the course is for an initial issuance of a flight instructor licence; or
 - (2) 20 hours of training if the course is for an additional flight instructor rating.
- (b) Ground training must include the following aeronautical knowledge areas:
 - (1) The fundamentals of instructing including -
 - (i) The learning process;
 - (ii) Elements of effective teaching;
 - (iii) Student evaluation and testing;
 - (iv) Course development;
 - (v) Lesson planning; and
 - (vi) Classroom training techniques.
 - (2) The aeronautical knowledge areas in which training is required for -
 - (i) A sport, private, and commercial pilot licence that is appropriate to the aircraft category and class rating for which the course applies; and

- (ii) An instrument rating that is appropriate to the aircraft category and class rating for which the course applies, if the course is for an airplane or powered-lift aircraft rating.
- (c) A student who satisfactorily completes 2 years of study on the principles of education at a college or university may be credited with no more than 20 hours of the training required in paragraph (a)(1) of this section.

141xF.4. Flight training.

- (a) Each approved course must include at least the following flight training on the approved areas of operation of paragraph (c) of this section appropriate to the flight instructor rating for which the course applies:
- (1) 25 hours, if the course is for an airplane, rotorcraft, or powered-lift rating; and
 - (2) 10 hours, which must include 10 flights, if the course is for a glider category rating.
- (b) For the use of flight simulators or flight training devices:
- (1) The course may include training in a flight simulator or flight training device, provided it is representative of the aircraft for which the course is approved, meets the requirements of this paragraph, and the training is given by an authorized instructor.
 - (2) Training in a flight simulator that meets the requirements of section 141.41(a) of this Part, may be credited for a maximum of 10 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
 - (3) Training in a flight training device that meets the requirements of section 141.41(b) of this Part, may be credited for a maximum of 5 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
 - (4) Training in flight simulators or flight training devices described in paragraphs (b)(2) and (b)(3) of this section, if used in combination, may be credited for a maximum of 10 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less. However, credit for training in a flight training device that meets the requirements of section 141.41(b) cannot exceed the limitation provided for in paragraph (b)(3) of this section.
- (c) Each approved course must include flight training on the approved areas of operation listed in this paragraph that are appropriate to the aircraft category and class rating for which the course applies -
- (1) For an airplane -- single-engine course:
 - (i) Fundamentals of instructing;
 - (ii) Technical subject areas;
 - (iii) Preflight preparation;
 - (iv) Preflight lesson on a maneuver to be performed in flight;

- (v) Preflight procedures;
- (vi) Airport and seaplane base operations;
- (vii) Takeoffs, landings, and go-arounds;
- (viii) Fundamentals of flight;
- (ix) Performance maneuvers;
- (x) Ground reference maneuvers;
- (xi) Slow flight, stalls, and spins;
- (xii) Basic instrument maneuvers;
- (xiii) Emergency operations; and
- (xiv) Post flight procedures.

(2) For an airplane -- multiengine course:

- (i) Fundamentals of instructing;
- (ii) Technical subject areas;
- (iii) Preflight preparation;
- (iv) Preflight lesson on a maneuver to be performed in flight;
- (v) Preflight procedures;
- (vi) Airport and seaplane base operations;
- (vii) Takeoffs, landings, and go-arounds;
- (viii) Fundamentals of flight;
- (ix) Performance maneuvers;
- (x) Ground reference maneuvers;
- (xi) Slow flight and stalls;
- (xii) Basic instrument maneuvers;
- (xiii) Emergency operations;
- (xiv) Multiengine operations; and
- (xv) Post flight procedures.

(3) For a rotorcraft -- helicopter course:

- (i) Fundamentals of instructing;
- (ii) Technical subject areas;
- (iii) Preflight preparation;
- (iv) Preflight lesson on a maneuver to be performed in flight;
- (v) Preflight procedures;
- (vi) Airport and heliport operations;
- (vii) Hovering maneuvers;
- (viii) Takeoffs, landings, and go-arounds;
- (ix) Fundamentals of flight;

- (x) Performance maneuvers;
- (xi) Emergency operations;
- (xii) Special operations; and
- (xiii) Post flight procedures.

(4) For a rotorcraft -- gyroplane course:

- (i) Fundamentals of instructing;
- (ii) Technical subject areas;
- (iii) Preflight preparation;
- (iv) Preflight lesson on a maneuver to be performed in flight;
- (v) Preflight procedures;
- (vi) Airport operations;
- (vii) Takeoffs, landings, and go-arounds;
- (viii) Fundamentals of flight;
- (ix) Performance maneuvers;
- (x) Flight at slow airspeeds;
- (xi) Ground reference maneuvers;
- (xii) Emergency operations; and
- (xiii) Post flight procedures.

(5) For a powered-lift course:

- (i) Fundamentals of instructing;
- (ii) Technical subject areas;
- (iii) Preflight preparation;
- (iv) Preflight lesson on a maneuver to be performed in flight;
- (v) Preflight procedures;
- (vi) Airport and heliport operations;
- (vii) Hovering maneuvers;
- (viii) Takeoffs, landings, and go-arounds;
- (ix) Fundamentals of flight;
- (x) Performance maneuvers;
- (xi) Ground reference maneuvers;
- (xii) Slow flight and stalls;
- (xiii) Basic instrument maneuvers;
- (xiv) Emergency operations;
- (xv) Special operations; and
- (xvi) Post flight procedures.

- (6) For a glider course:
- (i) Fundamentals of instructing;
 - (ii) Technical subject areas;
 - (iii) Preflight preparation;
 - (iv) Preflight lesson on a maneuver to be performed in flight;
 - (v) Preflight procedures;
 - (vi) Airport and gliderport operations;
 - (vii) Tows or launches, landings, and go-arounds, if applicable;
 - (viii) Fundamentals of flight;
 - (ix) Performance speeds;
 - (x) Soaring techniques;
 - (xi) Performance maneuvers;
 - (xii) Slow flight, stalls, and spins;
 - (xiii) Emergency operations; and
 - (xiv) Post flight procedures.

141xF.5. Stage checks and end-of-course tests.

- (a) Each student enrolled in a flight instructor course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the appropriate approved areas of operation listed in paragraph (c) of section No. **141xF.4.** of this Appendix appropriate to the flight instructor rating for which the course applies.
- (b) In the case of a student who is enrolled in a flight instructor-airplane rating or flight instructor-glider rating course, that student must have:
- (1) Received a logbook endorsement from a licensed flight instructor certifying the student received ground and flight training on stall awareness and spin avoidance procedures in an aircraft that is licensed for spins and is appropriate to the rating sought; and
 - (2) Demonstrated instructional proficiency in stall awareness, and spin avoidance procedures.

Appendix G to Part 141 - Flight Instructor Instrument (For an Airplane, Helicopter, or Powered-Lift Instrument Instructor Rating, as Appropriate) Certification Course

141xG.1. Applicability.

This Appendix prescribes the minimum curriculum for a flight instructor instrument certification course required under this Part, for the following ratings:

- (a) Flight Instructor Instrument -- Airplane.
- (b) Flight Instructor Instrument -- Helicopter.
- (c) Flight Instructor Instrument -- Powered-lift aircraft.

141xG.2. Eligibility for enrollment.

A person must hold the following prior to enrolling in the flight portion of the flight instructor instrument course:

- (a) A commercial pilot licence or airline transport pilot licence with an aircraft category and class rating appropriate to the flight instructor category and class rating for which the course applies; and
- (b) An instrument rating or privilege on that flight instructor applicant's pilot licence that is appropriate to the flight instructor instrument rating (for an airplane-, helicopter-, or powered-lift-instrument rating, as appropriate) for which the course applies.

141xG.3. Aeronautical knowledge training.

- (a) Each approved course must include at least 15 hours of ground training on the aeronautical knowledge areas listed in paragraph (b) of this section, appropriate to the flight instructor instrument rating (for an airplane-, helicopter-, or powered-lift-instrument rating, as appropriate) for which the course applies:
- (b) Ground training must include the following aeronautical knowledge areas:
 - (1) The fundamentals of instructing including:
 - (i) The learning process;
 - (ii) Elements of effective teaching;
 - (iii) Student evaluation and testing;
 - (iv) Course development;
 - (v) Lesson planning; and
 - (vi) Classroom training techniques.
 - (2) The aeronautical knowledge areas in which training is required for an instrument rating that is appropriate to the aircraft category and class rating for the course which applies.

141xG.4. Flight training.

- (a) Each approved course must include at least 15 hours of flight training in the approved areas of operation of paragraph (c) of this section appropriate to the flight instructor rating for which the course applies.
- (b) For the use of flight simulators or flight training devices:
- (1) The course may include training in a flight simulator or flight training device, provided it is representative of the aircraft for which the course is approved for, meets requirements of this paragraph, and the training is given by an instructor.
 - (2) Training in a flight simulator that meets the requirements of section 141.41(a) of this Part, may be credited for a maximum of 10 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
 - (3) Training in a flight training device that meets the requirements of section 141.41(b) of this Part, may be credited for a maximum of 5 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
 - (4) Training in flight simulators or flight training devices described in paragraphs (b)(2) and (b)(3) of this section, if used in combination, may be credited for a maximum of 10 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less. However, credit for training in a flight training device that meets the requirements of section 141.41(b) cannot exceed the limitation provided for in paragraph (b)(3) of this section.
- (c) An approved course for the flight instructor-instrument rating must include flight training on the following approved areas of operation that are appropriate to the instrument-aircraft category and class rating for which the course applies:
- (1) Fundamentals of instructing;
 - (2) Technical subject areas;
 - (3) Preflight preparation;
 - (4) Preflight lesson on a maneuver to be performed in flight;
 - (5) Air traffic control clearances and procedures;
 - (6) Flight by reference to instruments;
 - (7) Navigation systems;
 - (8) Instrument approach procedures;
 - (9) Emergency operations; and
 - (10) Post flight procedures.

141xG.5. Stage checks and end-of-course tests.

Each student enrolled in a flight instructor instrument course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the approved areas of operation listed in paragraph (c) of section No. **141xG.4.** of this Appendix that are appropriate to the flight instructor instrument rating (for an airplane-, helicopter-, or powered-lift-instrument rating, as appropriate) for which the course applies.

Appendix H to Part 141 - Ground Instructor Certification

Course 141xH.1. Applicability.

This Appendix prescribes the minimum curriculum for a ground instructor certification course and an additional ground instructor rating course, required under this Part, for the following ratings:

- (a) Ground Instructor -- Basic.
- (b) Ground Instructor -- Advanced.
- (c) Ground Instructor -- Instrument.

141xH.2. Aeronautical knowledge training.

- (a) Each approved course must include at least the following ground training on the knowledge areas listed in paragraphs (b), (c), (d), and (e) of this section, appropriate to the ground instructor rating for which the course applies:
 - (1) 20 hours of training if the course is for an initial issuance of a ground instructor licence; or
 - (2) 10 hours of training if the course is for an additional ground instructor rating.
- (b) Ground training must include the following aeronautical knowledge areas:
 - (1) Learning process;
 - (2) Elements of effective teaching;
 - (3) Student evaluation and testing;
 - (4) Course development;
 - (5) Lesson planning; and
 - (6) Classroom training techniques.
- (c) Ground training for a basic ground instructor licence must include the aeronautical knowledge areas applicable to a sport and private pilot.
- (d) Ground training for an advanced ground instructor rating must include the aeronautical knowledge areas applicable to a sport, private, commercial, and airline transport pilot.
- (e) Ground training for an instrument ground instructor rating must include the aeronautical knowledge areas applicable to an instrument rating.
- (f) A student who satisfactorily completed 2 years of study on the principles of education at a college or university may be credited with 10 hours of the training required in paragraph (a)(1) of this section.

141xH.3. Stage checks and end-of-course tests.

Each student enrolled in a ground instructor course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the approved knowledge areas in paragraph (b), (c), (d), and (e) of section No. **141xH.2.** of this Appendix appropriate to the ground instructor rating for which the course applies.

Appendix I to Part 141 - Additional Aircraft Category and/or Class Rating

Course 141xl.1. Applicability.

This Appendix prescribes the minimum curriculum for an additional aircraft category rating course or an additional aircraft class rating course required under this Part, for the following ratings:

- (a) Airplane single-engine.
- (b) Airplane multiengine.
- (c) Rotorcraft helicopter.
- (d) Rotorcraft gyroplane.
- (e) Powered-lift.
- (f) Glider.
- (g) Lighter-than-air airship.
- (h) Lighter-than-air balloon.

141xl.2. Eligibility for enrollment.

A person must hold the level of pilot licence for the additional aircraft category and class rating for which the course applies prior to enrolling in the flight portion of an additional aircraft category or additional aircraft class rating course.

141xl.3. Aeronautical knowledge training.

- (a) For a sport pilot licence, the following aeronautical knowledge areas must be included in a 10-hour ground training course for an additional aircraft category and/or class rating:
 - (1) Applicable regulations issued by the Directorate General of Civil Aviation for sport pilot privileges, limitations, and flight operations;
 - (2) Safe and efficient operation of aircraft, including collision avoidance, and recognition and avoidance of wake turbulence;
 - (3) Effects of density altitude on takeoff and climb performance;
 - (4) Weight and balance computations;
 - (5) Principles of aerodynamics, powerplants, and aircraft systems;
 - (6) Stall awareness, spin entry, spins, spin recovery techniques and spin avoidance if applying for an airplane single engine rating; and
 - (7) Preflight action that includes how to obtain information on runway lengths at airports of intended use, data on takeoff and landing distances, weather reports and forecasts, and fuel requirements.

- (b) For a private pilot licence, the following aeronautical knowledge areas must be included in a 10-hour ground training course for an additional class rating or a 15-hour ground training course for an additional aircraft category and class rating:
- (1) Applicable regulations issued by the Directorate General of Civil Aviation for private pilot privileges, limitations, and flight operations;
 - (2) Safe and efficient operation of aircraft, including collision avoidance, and recognition and avoidance of wake turbulence;
 - (3) Effects of density altitude on takeoff and climb performance;
 - (4) Weight and balance computations;
 - (5) Principles of aerodynamics, powerplants, and aircraft systems;
 - (6) Stall awareness, spin entry, spins, spin recovery techniques and spin avoidance if applying for an airplane single engine rating; and
 - (7) Preflight action that includes how to obtain information on runway lengths at airports of intended use, data on takeoff and landing distances, weather reports and forecasts, and fuel requirements.
- (c) For a commercial pilot licence, the following aeronautical knowledge areas must be included in a 15-hour ground training course for an additional class rating or a 20-hour ground training course for an additional aircraft category and class rating:
- (1) Applicable regulations issued by the Directorate General of Civil Aviation for commercial pilot privileges, limitations, and flight operations;
 - (2) Basic aerodynamics and the principles of flight;
 - (3) Safe and efficient operation of aircraft;
 - (4) Weight and balance computations;
 - (5) Use of performance charts;
 - (6) Significance and effects of exceeding aircraft performance limitations;
 - (7) Principles and functions of aircraft systems;
 - (8) Maneuvers, procedures, and emergency operations appropriate to the aircraft;
 - (9) Nighttime and high-altitude operations; and
 - (10) Procedures for flight and ground training for lighter-than-air ratings.
- (d) For an airline transport pilot licence, the following aeronautical knowledge areas must be included in a 25-hour ground training course for an additional aircraft category and/or class rating:
- (1) Applicable regulations issued by the Directorate General of Civil Aviation for airline transport pilot privileges, limitations, and flight operations;
 - (2) Meteorology, including knowledge and effects of fronts, frontal characteristics, cloud formations, icing, and upper-air data;
 - (3) General system of weather and NOTAM collection, dissemination, interpretation, and use;

- (4) Interpretation and use of weather charts, maps, forecasts, sequence reports, abbreviations, and symbols;
- (5) National weather service functions as they pertain to operations in the national airspace system;
- (6) Windshear and microburst awareness, identification, and avoidance;
- (7) Principles of air navigation under instrument meteorological conditions in the national airspace system;
- (8) Air traffic control procedures and pilot responsibilities as they relate to en route operations, terminal area and radar operations, and instrument departure and approach procedures;
- (9) Aircraft loading; weight and balance; use of charts, graphs, tables, formulas, and computations; and the effects on aircraft performance;
- (10) Aerodynamics relating to an aircraft's flight characteristics and performance in normal and abnormal flight regimes;
- (11) Human factors;
- (12) Aeronautical decision making and judgment; and
- (13) Crew resource management to include crew communication and coordination.

141xl.4. Flight training.

(a) Course for an additional airplane category and single engine class rating.

- (1) For the sport pilot licence, the course must include 15 hours of flight training on the areas of operations under Part 141, Appendix A, paragraph 4(c)(1) that include--
 - (i) Two hours of flight training to an airport and at an airport that is located more than 25 nautical miles from the airport where the applicant normally trains, with three takeoffs and three landings, except as provided under section 61.100; and
 - (ii) Three hours of flight training in an aircraft with the airplane category and single engine class within 2 calendar months before the date of the practical test.
- (2) For the private pilot licence, the course must include 20 hours of flight training on the areas of operations under Part 141, Appendix B, paragraph 4(d)(1). A flight simulator and flight training device cannot be used to meet more than 4 hours of the training requirements, and the use of the flight training device is limited to 3 hours of the 4 hours permitted. The course must include--
 - (i) Except as provided in section 61.111, 5 hours of cross-country flight training in a single-engine airplane that include one cross-country flight of more than 150-nautical-miles total distance including full stop landings at two different aerodromes shall be made;

- (ii) 3 hours of night flight training in a single-engine airplane that includes 10 takeoffs and 10 landings;
 - (iii) Three hours of flight training in a single engine airplane on the control and maneuvering of the airplane solely by reference to instruments, including straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems/facilities and radar services appropriate to instrument flight; and
 - (iv) Three hours of flight training in a single engine airplane within 2 calendar months before the date of the practical test.
- (3) For the commercial pilot licence, the course must include 55 hours of flight training on the areas of operations under Part 141, Appendix D, paragraph 4(d)(1). A flight simulator and flight training device cannot be used to meet more than 16.5 hours of the training requirements, and the use of the flight training device is limited to 11 hours of the 16.5 hours permitted. The course must include--
- (i) Five hours of instrument training in a single engine airplane that includes training using a view-limiting device on attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems;
 - (ii) Ten hours of training in an airplane that has retractable landing gear, flaps, and a controllable pitch propeller, or is turbine-powered;
 - (iii) One 2-hour cross country flight during daytime conditions in a single engine airplane, a total straight-line distance of more than 100 nautical miles from the original point of departure;
 - (iv) [Reserved]; and
 - (v) Three hours of flight training in a single engine airplane within 2 calendar months before the date of the practical test.
- (4) For the airline transport pilot licence, the course must include 25 hours flight training, including 15 hours of instrument training, in a single engine airplane on the areas of operation under Part 141, Appendix E, paragraph 4.(c). A flight simulator and flight training device cannot be used to meet more than 12.5 hours of the training requirements; and the use of the flight training device is limited to 6.25 hours of the 12.5 hours permitted.
- (b) Course for an additional airplane category and multiengine class rating.
- (1) For the private pilot licence, the course requires 20 hours flight training on the areas of operations under Part 141, Appendix B, paragraph 4.(d)(2). A flight simulator and flight training device cannot be used more than 4 hours to meet the training requirements, and use of the flight training device is limited to 3 hours of the 4 hours permitted. The course must include :
- (i) Except as provided in section 61.111, 5 hours of cross-country flight training in a multi-engine airplane that include one cross-country flight of more than 150-nautical-miles total distance including full stop landings at two different aerodromes shall be made;

- (ii) 3 hours of night flight training in a multi-engine airplane that includes 10 takeoffs and 10 landings;
 - (iii) Three hours of flight training in a multiengine airplane on the control and maneuvering of a multiengine airplane solely by reference to instruments, including straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems/facilities and radar services appropriate to instrument flight; and
 - (iv) Three hours of flight training in a multiengine airplane in preparation for the practical test within 2 calendar months before the date of the test.
- (2) For the commercial pilot licence, the course requires 55 hours flight training on the areas of operations under Part 141, Appendix D, paragraph 4.(d)(2). A flight simulator and flight training device cannot be used more than 16.5 hours to meet the training requirements, and use of the flight training device is limited to 11 hours of the 16.5 hours permitted. The course must include--
- (i) Five hours of instrument training in a multiengine airplane including training using a view-limiting device for attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems;
 - (ii) Ten hours of training in a multiengine airplane that has retractable landing gear, flaps, and a controllable pitch propeller, or is turbine-powered;
 - (iii) One 2-hour cross country flight during daytime conditions in a multiengine airplane, and a total straight-line distance of more than 100 nautical miles from the original point of departure;
 - (iv) [Reserved]; and
 - (v) Three hours in a multiengine airplane within 2 calendar months before the date of the practical test.
- (3) For the airline transport pilot licence, the course requires 25 hours of flight training in a multiengine airplane on the areas of operation under Part 141, Appendix E, paragraph 4.(c) that includes 15 hours of instrument training. A flight simulator and flight training device cannot be used more than 12.5 hours to meet the training requirements, and use of the flight training device is limited to 6.25 hours of the 12.5 hours permitted.
- (c) Course for an additional rotorcraft category and helicopter class rating.
- (1) For the sport pilot licence, the course requires 15 hours of flight training on the areas of operations under Part 141, Appendix A, paragraph 4.(c)(2) that includes--
- (i) Two hours of flight training to and at an airport that is located more than 25 nautical miles from the airport where the applicant normally trains, with three takeoffs and three landings, except as provided under section 61.100; and

- (ii) Three hours of flight training in a rotorcraft category and a helicopter class aircraft within 2 calendar months before the date of the practical test.
 - (2) For the private pilot licence, the course requires 20 hours flight training on the areas of operations under Part 141, Appendix B, paragraph 4.(d)(3). A flight simulator and flight training device cannot be used more than 4 hours to meet the training requirements, and use of the flight training device is limited to 3 hours of the 4 hours permitted. The course must include--
 - (i) Except as provided in section 61.111, 5 hours of cross-country flight training in a helicopter that include one cross-country flight of more than 150-nautical-miles total distance including full stop landings at two different aerodromes shall be made;
 - (ii) 3 hours of night flight training in a helicopter that includes 10 takeoffs and 10 landings; and
 - (iii) Three hours of flight training in a helicopter within 2 calendar months before the date of the practical test.
 - (3) The commercial pilot licence level requires 30 hours flight training on the areas of operations under Appendix D of Part 141, paragraph 4.(d)(3). A flight simulator and flight training device cannot be used more than 9 hours to meet the training requirements, and use of the flight training device is limited to 6 hours of the 9 hours permitted. The course must include--
 - (i) Five hours on the control and maneuvering of a helicopter solely by reference to instruments, and must include training using a view-limiting device for attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. This aeronautical experience may be performed in an aircraft, flight simulator, flight training device, or an aviation training device;
 - (ii) One 2-hour cross country flight during daytime conditions in a helicopter, a total straight-line distance of more than 50 nautical miles from the original point of departure; and
 - (iii) [Reserved]
 - (iv) Three hours in a helicopter within 2 calendar months before the date of the practical test.
 - (4) For the airline transport pilot licence, the course requires 25 hours of flight training, including 15 hours of instrument training, in a helicopter on the areas of operation under Part 141, Appendix E, paragraph 4.(c). A flight simulator and flight training device cannot be used more than 12.5 hours to meet the training requirements, and use of the flight training device is limited to 6.25 hours of the 12.5 hours permitted.
- (d) Course for an additional rotorcraft category and a gyroplane class rating.
- (1) For the sport pilot licence, the course requires 15 hours flight training on the areas of operations under Part 141, Appendix A, paragraph 4.(c)(3) that includes--

- (i) Two hours of flight training to and at an airport that is located more than 25 nautical miles from the airport where the applicant normally trains, with three takeoffs and three landings, except as provided under section 61.100; and
 - (ii) Three hours of flight training in a gyroplane class within 2 calendar months before the date of the practical test.
 - (2) For the private pilot licence, the course requires 20 hours flight training on the areas of operations under Part 141, Appendix B, paragraph 4.(d)(4). A flight simulator and flight training device cannot be used more than 4 hours to meet the training requirements, and use of the flight training device is limited to 3 hours of the 4 hours permitted. The course must include--
 - (i) Except as provided in section 61.111, 5 hours of cross-country flight training in a gyroplane that include one cross-country flight of more than 150-nautical-miles total distance including full stop landings at two different aerodromes shall be made;
 - (ii) 3 hours of night flight training in a gyroplane that includes 10 takeoffs and 10 landings; and
 - (iii) Three hours of flight training in a gyroplane within 2 calendar months before the date of the practical test.
 - (3) For the commercial pilot licence, the course requires 30 hours flight training on the areas of operations of Appendix D to Part 141, paragraph 4.(d)(4). A flight simulator and flight training device cannot be used more than 9 hours to meet the training requirements, and use of the flight training device is limited to 6 hours of the 9 hours permitted. The course must include--
 - (i) 2.5 hours on the control and maneuvering of a gyroplane solely by reference to instruments, and must include training using a view-limiting device for attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. This aeronautical experience may be performed in an aircraft, flight simulator, flight training device, or an aviation training device;
 - (ii) One 2-hour cross country flight during daytime conditions in a gyroplane, a total straight-line distance of more than 50 nautical miles from the original point of departure;
 - (iii) [Reserved]; and
 - (iv) Three hours in a gyroplane within 2 calendar months before the date of the practical test.
- (e) Course for an additional lighter-than-air category and airship class rating.
- (1) For the private pilot licence, the course requires 20 hours of flight training on the areas of operation under Part 141, Appendix B, paragraph 4.(d)(7). A flight simulator and flight training device cannot be used more than 4 hours to meet the training requirements, and use of the flight training device is limited to 3 hours of the 4 hours permitted. The course must include--
 - (i) Except as provided in section 61.111, 5 hours of cross-country flight training in an airship that include one cross-country flight of more than 150-nautical-miles total distance including full stop landings at two different aerodromes shall be made;

- (ii) 3 hours of night flight training in an airship that includes 10 takeoffs and 10 landings;
 - (iii) Three hours of flight training in an airship on the control and maneuvering of an airship solely by reference to instruments, including straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems/facilities and radar services appropriate to instrument flight; and
 - (iv) Three hours of flight training in an airship within 2 calendar months before the date of the practical test.
- (2) For the commercial pilot licence, the course requires 55 hours of flight training on the areas of operation under Part 141, Appendix D, paragraph 4.(d)(7). A flight simulator and flight training device cannot be used more than 16.5 hours to meet the training requirements, and use of the flight training device is limited to 11 hours of the 16.5 hours permitted. The course must include--
- (i) Three hours of instrument training in an airship that must include training using a view-limiting device for attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems;
 - (ii) One hour cross country flight during daytime conditions in an airship that consists of, a total straight-line distance of more than 25 nautical miles from the original point of departure;
 - (iii) [Reserved]; and
 - (iv) Three hours of flight training in an airship within 2 calendar months before the date of the practical test.
- (f) Course for an additional lighter-than-air category and a gas balloon class rating.
- (1) For the private pilot licence, the course requires eight hours of flight training that includes 5 training flights on the areas of operations under Part 141, Appendix B, paragraph 4(d)(8). A flight simulator and flight training device cannot be used more than 1.6 hours to meet the training requirements, and use of the flight training device is limited to 1.2 hours of the 1.6 hours permitted. The course must include--
- (i) Two flights of 1 hour each;
 - (ii) One flight involving a controlled ascent to 3,000 feet above the launch site; and
 - (iii) Two flights within 2 calendar months before the date of the practical test.
- (2) For the commercial pilot licence, the course requires 10 hours of flight training that includes eight training flights on the areas of operations under Part 141, Appendix D, paragraph 4(d)(8). A flight simulator and flight training

device cannot be used more than 3 hours to meet the training requirements, and use of the flight training device is limited to 2 hours of the 3 hours permitted. The course must include--

- (i) Two flights of 1 hour each;
- (ii) One flight involving a controlled ascent to 5,000 feet above the launch site; and
- (iii) Two flights within 2 calendar months before the date of the practical test.

(g) Course for an additional lighter-than-air category and a hot air balloon class rating.

(1) For the private pilot licence, the course requires eight hours of flight training that includes 5 training flights on the areas of operations under Part 141, Appendix B, paragraph 4(d)(8). A flight simulator and flight training device cannot be used more than 1.6 hours to meet the training requirements, and use of the flight training device is limited to 1.2 hours of the 1.6 hours permitted. The course must include--

- (i) Two flights of 30 minutes each;
- (ii) One flight involving a controlled ascent to 2,000 feet above the launch site; and
- (iii) Two flights within 2 calendar months before the date of the practical test.

(2) For the commercial pilot licence, the course requires 10 hours of flight training that includes eight training flights on the areas of operation under Part 141, Appendix D, paragraph 4(d)(8). A flight simulator and flight training device cannot be used more than 3 hours to meet the training requirements, and use of the flight training device is limited to 2 hours of the 3 hours permitted. The course must include--

- (i) Two flights of 30 minutes each;
- (ii) One flight involving a controlled ascent to 3,000 feet above the launch site; and
- (iii) Two flights within 2 calendar months before the date of the practical test.

(h) Course for an additional powered-lift category rating.

(1) For the private pilot licence, the course requires 20 hours flight training on the areas of operations under Part 141, Appendix B, paragraph 4(d)(5). A flight simulator and flight training device cannot be used more than 4 hours to meet the training requirements, and use of the flight training device is limited to 3 hours of the 4 hours permitted. The course must include--

- (i) Except as provided in section 61.111, 5 hours of cross-country flight training in a powered-lift that include one cross-country flight of more than 150-nautical-miles total distance including full stop landings at two different aerodromes shall be made;

- (ii) 3 hours of night flight training in a powered-lift that includes 10 takeoffs and 10 landings;
 - (iii) Three hours of flight training in a powered-lift on the control and maneuvering of a powered-lift solely by reference to instruments, including straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems/facilities and radar services appropriate to instrument flight; and
 - (iv) Three hours of flight training in a powered-lift within 2 calendar months before the date of the practical test.
- (2) For the commercial pilot licence, the course requires 55 hours flight training on the areas of operations under Part 141, Appendix D, paragraph 4(d)(5). A flight simulator and flight training device cannot be used more than 16.5 hours to meet the training requirements, and use of the flight training device is limited to 11 hours of the 16.5 hours permitted. The course includes--
- (i) Five hours of instrument training in a powered-lift that must include training using a view-limiting device for attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems;
 - (ii) One 2-hour cross country flight during daytime conditions in a powered-lift, a total straight-line distance of more than 100 nautical miles from the original point of departure;
 - (iii) [Reserved]; and
 - (iv) Three hours of flight training in a powered-lift within 2 calendar months before the date of the practical test.
- (3) For the airline transport pilot licence, the course requires 25 hours flight training in a powered-lift on the areas of operation under Part 141, Appendix E, paragraph 4(c) that includes 15 hours of instrument training. A flight simulator and flight training device cannot be used more than 12.5 hours to meet the training requirements, and use of the flight training device is limited to 6.25 hours of the 12.5 hours permitted.
- (i) Course for an additional glider category rating.
- (1) For the private pilot licence, the course requires 4 hours of flight training in a glider on the areas of operations under Part 141, Appendix B, paragraph 4(d)(6). A flight simulator and flight training device cannot be used more than 0.8 hours to meet the training requirements, and use of the flight training device is limited to 0.6 hours of the 0.8 hours permitted. The course must include--
- (i) Five training flights in a glider with a licensed flight instructor on the launch/tow procedures approved for the course and on the appropriate approved areas of operation listed under Appendix B, paragraph 4(d)(6) of this Part; and
 - (ii) Three training flights in a glider with a licensed flight instructor within 2 calendar months before the date of the practical test.

- (2) The commercial pilot licence level requires 4 hours of flight training in a glider on the areas of operation under Part 141, Appendix D, paragraph 4.(d)(6). A flight simulator and flight training device cannot be used more than 0.8 hours to meet the training requirements, and use of the flight training device is limited to 0.6 hours of the 0.8 hours permitted.
- (j) Course for an airplane additional single engine class rating.
- (1) For the private pilot licence, the course requires 3 hours of flight training in the areas of operations under Part 141, Appendix B, paragraph 4.(d)(1). A flight simulator and flight training device cannot be used more than 0.6 hours to meet the training requirements, and use of the flight training device is limited to 0.4 hours of the 0.6 hours permitted. The course must include--
- (i) Except as provided in section 61.111, 5 hours of cross-country flight training in a single-engine airplane that include one cross-country flight of more than 150-nautical-miles total distance including full stop landings at two different aerodromes shall be made;
 - (ii) 3 hours of night flight training in a single-engine airplane that includes 10 takeoffs and 10 landings;
 - (iii) Three hours of flight training in a single engine airplane on the control and maneuvering of a single engine airplane solely by reference to instruments, including straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems/facilities and radar services appropriate to instrument flight; and
 - (iv) Three hours of flight training in a single engine airplane within 2 calendar months before the date of the practical test.
- (2) For the commercial pilot licence, the course requires 10 hours of flight training on the areas of operations under Part 141, Appendix D, paragraph 4.(d)(1).
- (i) Five hours of instrument training in a single engine airplane that must include training using a view-limiting device for attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems.
 - (ii) Ten hours of flight training in an airplane that has retractable landing gear, flaps, and a controllable pitch propeller, or is turbine-powered.
 - (iii) One 2-hour cross country flight during daytime conditions in a single engine airplane and a total straight-line distance of more than 100 nautical miles from the original point of departure;
 - (iv) [Reserved] ; and
 - (v) Three hours of flight training in a single engine airplane within 2 calendar months before the date of the practical test.
- (3) For the airline transport pilot licence, the course requires 25 hours flight training in a single engine airplane on the areas of operation under Appendix E to Part 141, paragraph 4.(c), that includes 15 hours of instrument training. A flight simulator and flight training device cannot be used more than 12.5

hours to meet the training requirements, and use of the flight training device is limited to 6.25 hours of the 12.5 hours permitted.

(k) Course for an airplane additional multiengine class rating.

- (1) For the private pilot licence, the course requires 3 hours of flight training on the areas of operations of Appendix B to Part 141, paragraph 4(d)(2). A flight simulator and flight training device cannot be used more than 0.6 hours to meet the training requirements, and use of the flight training device is limited to 0.4 hours of the 0.6 hours permitted. The course must include--
 - (i) Except as provided in section 61.111, 5 hours of cross-country flight training in a multiengine airplane that include one cross-country flight of more than 150-nautical-miles total distance including full stop landings at two different aerodromes shall be made;
 - (ii) 3 hours of night flight training in a multiengine airplane that includes 10 takeoffs and 10 landings;
 - (iii) Three hours of flight training in a multiengine airplane on the control and maneuvering of a multiengine airplane solely by reference to instruments, including straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems/facilities and radar services appropriate to instrument flight; and
 - (iv) Three hours of flight training in a multiengine airplane within 2 calendar months before the date of the practical test.
- (2) For the commercial pilot licence, the course requires 10 hours of training on the areas of operations under Appendix D of Part 141, paragraph 4(d)(2). A flight simulator and flight training device cannot be used more than 3 hours to meet the training requirements, and use of the flight training device is limited to 2 hours of the 3 hours permitted. The course must include--
 - (i) Five hours of instrument training in a multiengine airplane that must include training using a view-limiting device on for attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems;
 - (ii) Ten hours of training in a multiengine airplane that has retractable landing gear, flaps, and a controllable pitch propeller, or is turbine-powered;
 - (iii) One 2-hour cross country flight during daytime conditions in a multiengine airplane and, a total straight-line distance of more than 100 nautical miles from the original point of departure;
 - (iv) [Reserved] ; and
 - (v) Three hours of flight training in a multiengine airplane within 2 calendar months before the date of the practical test.
- (3) For the airline transport pilot licence, the course requires 25 hours of training in a multiengine airplane on the areas of operation of Appendix E to Part 141, paragraph 4.(c) that includes 15 hours of instrument training. A flight simulator and flight training device cannot be used more than 12.5 hours

to meet the training requirements, and use of the flight training device is limited to 6.25 hours of the 12.5 hours permitted.

- (l) Course for a rotorcraft additional helicopter class rating.
 - (1) For the sport pilot licence, the course requires 3 hours of flight training on the areas of operations under Appendix A of Part 141, paragraph 4.(c)(2) that includes--
 - (i) Two hours of flight training to and at an airport that is located more than 25 nautical miles from the airport where the applicant normally trains, with three takeoffs and three landings, except as provided under section 61.100; and
 - (ii) Three hours of flight training in a helicopter within 2 calendar months before the date of the practical test.
 - (2) For the private pilot licence, the course requires 3 hours flight training on the areas of operations under Appendix B of Part 141, paragraph 4.(d)(3). A flight simulator and flight training device cannot be used more than 0.6 hours to meet the training requirements, and use of the flight training device is limited to 0.4 hours of the 0.6 hours permitted. The course must include--
 - (i) Except as provided in section 61.111, 5 hours of cross-country flight training in a helicopter that include one cross-country flight of more than 150-nautical-miles total distance including full stop landings at two different aerodromes shall be made;
 - (ii) 3 hours of night flight training in a helicopter that includes 10 takeoffs and 10 landings; and
 - (iii) Three hours of flight training in a helicopter within 2 calendar months before the date of the practical test.
 - (3) For the commercial pilot licence, the course requires 5 hours flight training on the areas of operations under Appendix D of Part 141, paragraph 4.(d)(3). Use of a flight simulator and flight training device in the approved training course cannot exceed 1 hour; however, use of the flight training device cannot exceed 0.7 of the one hour. The course must include--
 - (i) Five hours on the control and maneuvering of a helicopter solely by reference to instruments, and must include training using a view-limiting device for attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. This aeronautical experience may be performed in an aircraft, flight simulator, flight training device, or an aviation training device;
 - (ii) One 2-hour cross country flight during daytime conditions in a helicopter and, a total straight-line distance of more than 50 nautical miles from the original point of departure;
 - (iii) [Reserved]; and
 - (iv) Three hours of flight training in a helicopter within 2 calendar months before the date of the practical test.

- (4) For the airline transport pilot licence, the course requires 25 hours of flight training in a helicopter on the areas of operation under Appendix E of Part 141, paragraph 4.(c) that includes 15 hours of instrument training. A flight simulator and flight training device cannot be used more than 12.5 hours to meet the training requirements, and use of the flight training device is limited to 6.25 hours of the 12.5 hours permitted.
- (m) Course for a rotorcraft additional gyroplane class rating.
- (1) For the sport pilot licence, the course requires 3 hours flight training on the areas of operations of Appendix A to Part 141, paragraph 4.(c)(3) that includes--
- (i) Except as provided under section 61.100, 2 hours of flight training to and at an airport that is located more than 25 nautical miles from the airport where the applicant normally trains, with three takeoffs and three landings; and
 - (ii) Within 2 calendar months before the date of the practical test, 3 hours of flight training in a gyroplane.
- (2) For the private pilot licence, the course requires 3 hours flight training on the areas of operations of Appendix B to Part 141, paragraph 4.(d)(4). A flight simulator and flight training device cannot be used more than 0.6 hours to meet the training requirements, and use of the flight training device is limited to 0.4 hours of the 0.6 hours permitted. The course must include--
- (i) Except as provided in section 61.111, 5 hours of cross-country flight training in a gyroplane that include one cross-country flight of more than 150-nautical-miles total distance including full stop landings at two different aerodromes shall be made;
 - (ii) 3 hours of night flight training in a gyroplane that includes 10 takeoffs and 10 landings; and
 - (iii) Three hours of flight training in a gyroplane within 2 calendar months before the date of the practical test.
- (3) For the commercial pilot licence, the course requires 5 hours flight training on the areas of operations of Appendix D to Part 141, paragraph 4.(d)(4). A flight simulator and flight training device cannot be used more than 1 hour to meet the training requirements, and use of the flight training device is limited to 0.7 hours of the 1 hour permitted. The course must include--
- (i) 2.5 hours on the control and maneuvering of a gyroplane solely by reference to instruments, and must include training using a view-limiting device for attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems. This aeronautical experience may be performed in an aircraft, flight simulator, flight training device, or an aviation training device.
 - (ii) Three hours of cross country flight training in a gyroplane, except as provided under section 61.111;
 - (iii) [Reserved]; and

- (iv) Three hours of flight training in a gyroplane within 2 calendar months before the date of the practical test.

(n) Course for a lighter-than-air additional airship class rating.

(1) For the private pilot licence, the course requires 20 hours of flight training on the areas of operation under Appendix B of Part 141, paragraph 4.(d)(7). A flight simulator and flight training device cannot be used more than 4 hours to meet the training requirements, and use of the flight training device is limited to 3 hours of the 4 hours permitted. The course must include--

- (i) Except as provided in section 61.111, 5 hours of cross-country flight training in an airship that include one cross-country flight of more than 150-nautical-miles total distance including full stop landings at two different aerodromes shall be made;
- (ii) 3 hours of night flight training in an airship that includes 10 takeoffs and 10 landings;
- (iii) Three hours of flight training in an airship on the control and maneuvering of an airship solely by reference to instruments, including straight and level flight, constant airspeed climbs and descents, turns to a heading, recovery from unusual flight attitudes, radio communications, and the use of navigation systems/facilities and radar services appropriate to instrument flight; and
- (iv) Three hours of flight training in an airship within 2 calendar months before the date of the practical test.

(2) For the commercial pilot licence, the course requires 55 hours of flight training on the areas of operation under Appendix D of Part 141, paragraph 4.(d)(7). A flight simulator and flight training device cannot be used more than 16.5 hours to meet the training requirements, and use of the flight training device is limited to 11 hours of the 16.5 hours permitted. The course must include--

- (i) Three hours of instrument training in an airship that must include training using a view-limiting device for attitude instrument flying, partial panel skills, recovery from unusual flight attitudes, and intercepting and tracking navigational systems;
- (ii) One hour cross country flight during daytime conditions in an airship that consists of a total straight-line distance of more than 25 nautical miles from the original point of departure;
- (iii) [Reserved] and
- (iv) Three hours of flight training in an airship within 2 calendar months before the date of the practical test.

(o) Course for a lighter-than-air additional gas balloon class rating.

(1) For the private pilot licence, the course requires eight hours of flight training that includes 5 training flights on the areas of operations under Appendix B of Part 141, paragraph 4.(d)(8). A flight simulator and flight training device cannot be used more than 1.6 hours to meet the training requirements, and

use of the flight training device is limited to 1.2 hours of the 1.6 hours permitted. The course must include--

- (i) Two flights of 1 hour each;
 - (ii) One flight involving a controlled ascent to 3,000 feet above the launch site; and
 - (iii) Two flights within 2 calendar months before the date of the practical test.
- (2) For the commercial pilot licence, the course requires 10 hours of flight training that includes eight training flights on the areas of operations of Appendix D to Part 141, paragraph 4.(d)(8). A flight simulator and flight training device cannot be used more than 3 hours to meet the training requirements, and use of the flight training device is limited to 2 hours of the 3 hours permitted. The course must include--
- (i) Two flights of 1 hour each;
 - (ii) One flight involving a controlled ascent to 5,000 feet above the launch site; and
 - (iii) Two flights within 2 calendar months before the date of the practical test.

(p) Course for a lighter-than-air additional hot air balloon class rating.

- (1) For the private pilot licence, the course requires 8 hours of flight training that includes 5 training flights on the areas of operations of Appendix B to Part 141, paragraph 4.(d)(8). A flight simulator and flight training device cannot be used more than 1.6 hours to meet the training requirements, and use of the flight training device is limited to 1.2 hours of the 1.6 hours permitted. The course must include--
- (i) Two flights of 30 minutes each;
 - (ii) One flight involving a controlled ascent to 2,000 feet above the launch site; and
 - (iii) Two flights within 2 calendar months before the date of the practical test.
- (2) For the commercial pilot licence, the course requires 10 hours of flight training that includes eight training flight on the areas of operation of Appendix D to Part 141, paragraph 4.(d)(8). A flight simulator and flight training device cannot be used more than 3 hours to meet the training requirements, and use of the flight training device is limited to 2 hours of the 3 hours permitted. The course must include--
- (i) Two flights of 30 minutes each.
 - (ii) One flight involving a controlled ascent to 3,000 feet above the launch site; and
 - (iii) Two flights within 2 calendar months before the date of the practical test.

141xl.5. Stage checks and end-of-course tests.

- (a) Each student enrolled in an additional aircraft category rating course or an additional aircraft class rating course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the approved areas of operation in section No. **141xl.4.** of this Appendix that are appropriate to the aircraft category and class rating for which the course applies at the appropriate pilot licence level.
- (b) Each student must demonstrate satisfactory proficiency prior to receiving an endorsement to operate an aircraft in solo flight.

Appendix J to Part 141 - Aircraft Type Rating Course, For Other Than an Airline Transport Pilot Licence

141xJ.1. Applicability.

This Appendix prescribes the minimum curriculum for an aircraft type rating course other than an airline transport pilot licence, for:

- (a) A type rating in an airplane category -- single-engine class.
- (b) A type rating in an airplane category -- multiengine class.
- (c) A type rating in a rotorcraft category -- helicopter class.
- (d) A type rating in a powered-lift category.
- (e) Other aircraft type ratings specified by the Director General through the aircraft type certificate procedures.

141xJ.2. Eligibility for enrollment.

Prior to enrolling in the flight portion of an aircraft type rating course, a person must hold at least a private pilot licence and:

- (a) An instrument rating in the category and class of aircraft that is appropriate to the aircraft type rating for which the course applies, provided the aircraft's type certificate does not have a VFR limitation; or
- (b) Be concurrently enrolled in an instrument rating course in the category and class of aircraft that is appropriate to the aircraft type rating for which the course applies, and pass the required instrument rating practical test concurrently with the aircraft type rating practical test.

141xJ.3. Aeronautical knowledge training.

- (a) Each approved course must include at least 10 hours of ground training on the aeronautical knowledge areas listed in paragraph (b) of this section, appropriate to the aircraft type rating for which the course applies.
- (b) Ground training must include the following aeronautical areas:
 - (1) Proper control of airspeed, configuration, direction, altitude, and attitude in accordance with procedures and limitations contained in the aircraft's flight manual, checklists, or other approved material appropriate to the aircraft type;
 - (2) Compliance with approved en route, instrument approach, missed approach, ATC, or other applicable procedures that apply to the aircraft type;
 - (3) Subjects requiring a practical knowledge of the aircraft type and its powerplant, systems, components, operational, and performance factors;
 - (4) The aircraft's normal, abnormal, and emergency procedures, and the operations and limitations relating thereto;
 - (5) Appropriate provisions of the approved aircraft's flight manual;

- (6) Location of and purpose for inspecting each item on the aircraft's checklist that relates to the exterior and interior preflight; and
- (7) Use of the aircraft's prestart checklist, appropriate control system checks, starting procedures, radio and electronic equipment checks, and the selection of proper navigation and communication radio facilities and frequencies.

141xJ.4. Flight training.

(a) Each approved course must include at least:

- (1) Flight training on the approved areas of operation of paragraph (c) of this section in the aircraft type for which the course applies; and
- (2) 10 hours of training of which at least 5 hours must be instrument training in the aircraft for which the course applies.

(b) For the use of flight simulators or flight training devices:

- (1) The course may include training in a flight simulator or flight training device, provided it is representative of the aircraft for which the course is approved, meets requirements of this paragraph, and the training is given by an authorized instructor.
- (2) Training in a flight simulator that meets the requirements of section 141.41(a) of this Part, may be credited for a maximum of 50 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (3) Training in a flight training device that meets the requirements of section 141.41(b) of this Part, may be credited for a maximum of 25 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (4) Training in the flight simulators or flight training devices described in paragraphs (b)(2) and (b)(3) of this section, if used in combination, may be credited for a maximum of 50 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less. However, credit training in a flight training device that meets the requirements of section 141.41(b) cannot exceed the limitation provided for in paragraph (b)(3) of this section.

(c) Each approved course must include the flight training on the areas of operation listed in this paragraph, that are appropriate to the aircraft category and class rating for which the course applies:

- (1) A type rating for an airplane -- single-engine course:
 - (i) Preflight preparation;
 - (ii) Preflight procedures;
 - (iii) Takeoff and departure phase;
 - (iv) In-flight maneuvers;

- (v) Instrument procedures;
 - (vi) Landings and approaches to landings;
 - (vii) Normal and abnormal procedures;
 - (viii) Emergency procedures; and
 - (ix) Post flight procedures.
- (2) A type rating for an airplane -- multiengine course:
- (i) Preflight preparation;
 - (ii) Preflight procedures;
 - (iii) Takeoff and departure phase;
 - (iv) In-flight maneuvers;
 - (v) Instrument procedures;
 - (vi) Landings and approaches to landings;
 - (vii) Normal and abnormal procedures;
 - (viii) Emergency procedures; and
 - (ix) Post flight procedures.
- (3) A type rating for a powered-lift course:
- (i) Preflight preparation;
 - (ii) Preflight procedures;
 - (iii) Takeoff and departure phase;
 - (iv) In-flight maneuvers;
 - (v) Instrument procedures;
 - (vi) Landings and approaches to landings;
 - (vii) Normal and abnormal procedures;
 - (viii) Emergency procedures; and
 - (ix) Post flight procedures.
- (4) A type rating for a rotorcraft -- helicopter course:
- (i) Preflight preparation;
 - (ii) Preflight procedures;
 - (iii) Takeoff and departure phase;
 - (iv) In-flight maneuvers;
 - (v) Instrument procedures;
 - (vi) Landings and approaches to landings;
 - (vii) Normal and abnormal procedures;
 - (viii) Emergency procedures; and
 - (ix) Post flight procedures.

- (5) Other aircraft type ratings specified by the Director General through aircraft type certificate procedures:
- (i) Preflight preparation;
 - (ii) Preflight procedures;
 - (iii) Takeoff and departure phase;
 - (iv) In-flight maneuvers;
 - (v) Instrument procedures;
 - (vi) Landings and approaches to landings;
 - (vii) Normal and abnormal procedures;
 - (viii) Emergency procedures; and
 - (ix) Post flight procedures.

141xJ.5. Stage checks and end-of-course tests.

- (a) Each student enrolled in an aircraft type rating course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the approved areas of operation that are appropriate to the aircraft type rating for which the course applies at the airline transport pilot licence level; and
- (b) Each student must demonstrate satisfactory proficiency prior to receiving an endorsement to operate an aircraft in solo flight.

Appendix K to Part 141 - Special Preparation

Courses 141xK.1. Applicability.

This Appendix prescribes the minimum curriculum for the special preparation courses that are listed in section 141.11 of this Part.

141xK.2. Eligibility for enrollment.

Prior to enrolling in the flight portion of a special preparation course, a person must hold a pilot licence, flight instructor licence, or ground instructor licence that is appropriate for the exercise of the operating privileges or authorizations sought.

141xK.3. General requirements.

- (a) To be approved, a special preparation course must:
- (1) Meet the appropriate requirements of this Appendix; and
 - (2) Prepare the graduate with the necessary skills, competency, and proficiency to exercise safely the privileges of the licence, rating, or authorization for which the course is established.
- (b) An approved special preparation course must include ground and flight training on the operating privileges or authorization sought, for developing competency, proficiency, resourcefulness, self-confidence, and self-reliance in the student.

141xK.4. Use of flight simulators or flight training devices.

- (a) The approved special preparation course may include training in a flight simulator or flight training device, provided it is representative of the aircraft for which the course is approved, meets requirements of this paragraph, and the training is given by an authorized instructor.
- (b) Training in a flight simulator that meets the requirements of section 141.41(a) of this Part, may be credited for a maximum of 10 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (c) Training in a flight training device that meets the requirements of section 141.41(b) of this Part, may be credited for a maximum of 5 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less.
- (d) Training in the flight simulators or flight training devices described in paragraphs (b) and (c) of this section, if used in combination, may be credited for a maximum of 10 percent of the total flight training hour requirements of the approved course, or of this section, whichever is less. However, credit for training in a flight training device that meets the requirements of section 141.41(b) cannot exceed the limitation provided for in paragraph (c) of this section.

141xK.5. Stage check and end-of-course tests.

Each person enrolled in a special preparation course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the approved areas of operation that are appropriate to the operating privileges or authorization sought, and for which the course applies.

141xK.6. Agricultural aircraft operations course.

An approved special preparation course for pilots in agricultural aircraft operations must include at least the following -

(a) 25 hours of training on:

- (1) Agricultural aircraft operations;
- (2) Safe piloting and operating practices and procedures for handling, dispensing, and disposing agricultural and industrial chemicals, including operating in and around congested areas; and
- (3) Applicable provisions of Part 137.

(b) 15 hours of flight training on agricultural aircraft operations.

141xK.7. Rotorcraft external-load operations course.

An approved special preparation course for pilots of external-load operations must include at least the following -

(a) 10 hours of training on:

- (1) Rotorcraft external-load operations;
- (2) Safe piloting and operating practices and procedures for external-load operations, including operating in and around congested areas; and
- (3) Applicable provisions of Part 133.

(b) 15 hours of flight training on external-load operations.

141xK.8. Test pilot course.

An approved special preparation course for pilots in test pilot duties must include at least the following -

(a) Aeronautical knowledge training on:

- (1) Performing aircraft maintenance, quality assurance, and certification test flight operations;
- (2) Safe piloting and operating practices and procedures for performing aircraft maintenance, quality assurance, and certification test flight operations;
- (3) Applicable Parts that pertain to aircraft maintenance, quality assurance, and certification tests; and
- (4) Test pilot duties and responsibilities.

(b) 15 hours of flight training on test pilot duties and responsibilities.

141xK.9. Special operations course.

An approved special preparation course for pilots in special operations that are mission-specific for certain aircraft must include at least the following -

(a) Aeronautical knowledge training on:

- (1) Performing that special flight operation;
- (2) Safe piloting and operating practices and procedures for performing that special flight operation;
- (3) Applicable Parts that pertain to that special flight operation; and
- (4) Pilot in command duties and responsibilities for performing that special flight operation.

(b) Flight training:

- (1) On that special flight operation; and
- (2) To develop skills, competency, proficiency, resourcefulness, self-confidence, and self-reliance in the student for performing that special flight operation in a safe manner.

141xK.10. Pilot refresher course.

An approved special preparation pilot refresher course for a pilot licence, aircraft category and class rating, or an instrument rating must include at least the following -

(a) 4 hours of aeronautical knowledge training on:

- (1) The aeronautical knowledge areas that are applicable to the level of pilot licence, aircraft category and class rating, or instrument rating, as appropriate, that pertain to that course;
- (2) Safe piloting operating practices and procedures; and
- (3) Applicable provisions of Parts 61 and 91 for pilots.

(b) 6 hours of flight training on the approved areas of operation that are applicable to the level of pilot licence, aircraft category and class rating, or instrument rating, as appropriate, for performing pilot-in-command duties and responsibilities.

141xK.11. Flight instructor refresher course.

An approved special preparation flight instructor refresher course must include at least a combined total of 16 hours of aeronautical knowledge training, flight training, or any combination of ground and flight training on the following -

(a) Aeronautical knowledge training on:

- (1) The aeronautical knowledge areas of Part 61 that apply to student, sport, private, and commercial pilot licences and instrument ratings;
- (2) The aeronautical knowledge areas of Part 61 that apply to flight instructor licences;
- (3) Safe piloting operating practices and procedures, including airport operations and operating in the national airspace system; and

(4) Applicable provisions of Parts 61 and 91 that apply to pilots and flight instructors.

(b) Flight training to review:

- (1) The approved areas of operations applicable to student, sport, private, and commercial pilot licences and instrument ratings; and
- (2) The skills, competency, and proficiency for performing flight instructor duties and responsibilities.

141xK.12. Ground instructor refresher course.

An approved special preparation ground instructor refresher course must include at least 16 hours of aeronautical knowledge training on:

- (a) The aeronautical knowledge areas of Part 61 that apply to student, sport, private, and commercial pilots and instrument rated pilots;
- (b) The aeronautical knowledge areas of Part 61 that apply to ground instructors;
- (c) Safe piloting operating practices and procedures, including airport operations and operating in the national airspace system; and
- (d) Applicable provisions of Parts 61 and 91 that apply to pilots and ground instructors.

Appendix L to Part 141 - Pilot Ground School

Course 141xL.1. Applicability.

This Appendix prescribes the minimum curriculum for a pilot ground school course required under this Part.

141xL.2. General requirements.

An approved course of training for a pilot ground school must include training on the aeronautical knowledge areas that are:

- (a) Needed to safely exercise the privileges of the certificate, rating, or authority for which the course is established; and
- (b) Conducted to develop competency, proficiency, resourcefulness, self-confidence, and self-reliance in each student.

141xL.3. Aeronautical knowledge training requirements.

Each approved pilot ground school course must include:

- (a) The aeronautical knowledge training that is appropriate to the aircraft rating and pilot licence level for which the course applies; and
- (b) An adequate number of total aeronautical knowledge training hours appropriate to the aircraft rating and pilot licence level for which the course applies.

141xL.4. Stage checks and end-of-course tests.

Each person enrolled in a pilot ground school course must satisfactorily accomplish the stage checks and end-of-course tests, in accordance with the school's approved training course, consisting of the approved areas of operation that are appropriate to the operating privileges or authorization that graduation from the course will permit and for which the course applies.