

**Federal Aviation Regulations
Part 121 Subpart N -Training Program**



Sec. 121.400 Applicability and terms used.

(a) This subpart prescribes the requirements applicable to each certificate holder for establishing and maintaining a training program for crewmembers, aircraft dispatchers, and other operations personnel, and for the approval and use of training devices in the conduct of the program.

(b) For the purpose of this subpart, airplane groups are as follows:

(1) Group I. Propeller driven, including--

(i) Reciprocating powered; and

(ii) Turbopropeller powered.

(2) Group II. Turbojet powered.

(c) For the purpose of this subpart, the following terms and definitions apply:

(1) Initial training. The training required for crewmembers and dispatchers who have not qualified and served in the same capacity on another airplane of the same group.

(2) Transition training. The training required for crewmembers and dispatchers who have qualified and served in the same capacity on another airplane of the same group.

(3) Upgrade training. The training required for crewmembers who have qualified and served as second in command or flight engineer on a particular airplane type, before they serve as pilot in command or second in command, respectively, on that airplane.

(4) Differences training. The training required for crewmembers and dispatchers who have qualified and served on a particular type airplane, when the Administrator finds differences training is necessary before a crewmember serves in the same capacity on a particular variation of that airplane.

(5) Programmed hours. The hours of training prescribed in this subpart which may be reduced by the Administrator upon a showing by the certificate holder that circumstances justify a lesser amount.

(6) Inflight. Refers to maneuvers, procedures, or functions that must be conducted in the airplane.

(7) Training center. An organization governed by the applicable requirements of part 142 of this chapter that provides training, testing, and checking under contract or other arrangement to certificate holders subject to the requirements of this part.

(8) Requalification training. The training required for crewmembers previously trained and qualified, but who have become unqualified due to not having met within the required period the recurrent training requirements of Sec.121.427 or the proficiency check requirements of Sec. 121.441.

Sec. 121.401 Training program: General.

(a) Each certificate holder shall:

(1) Establish, obtain the appropriate initial and final approval of, and provide, a training program that meets the requirements of this subpart and Appendixes E and F and that insures that each crewmember, aircraft dispatcher, flight instructor, and check airman, and each person assigned duties for the carriage and handling of dangerous articles and magnetized materials, is adequately trained to perform his assigned duties.

(2) Provide adequate ground and flight training facilities and properly qualified ground instructors for the training required by this subpart;

(3) Provide and keep current with respect to each airplane type and, if applicable, the particular variations within that airplane type, appropriate training material, examinations, forms, instructions, and procedures for use in conducting the training and checks required by this part; and

(4) Provide enough flight instructors, simulator instructors, and approved check airmen to conduct required flight training and flight checks, and simulator training courses permitted under this part.

(b) Whenever a crewmember or aircraft dispatcher who is required to take recurrent training, a flight check, or a competence check, takes the check or completes the training in the calendar month before or after the calendar month in which that training or check is required, he is considered to have taken or completed it in the calendar month in which it was required.

(c) Each instructor, supervisor, or check airman who is responsible for a particular ground training subject, segment of flight training, course of training, flight check, or competence check under this part shall certify as to the proficiency and knowledge of the crewmember, aircraft dispatcher, flight instructor, or check airman concerned upon completion of that training or check. That certification shall be made a part of the crewmember's or dispatcher's record. When the certification required by this paragraph is made by an entry in a computerized recordkeeping system, the certifying instructor, supervisor, or check airman must be identified with that entry. However, the signature of the certifying instructor, supervisor, or check airman is not required for computerized entries.

(d) Training subjects that are applicable to more than one airplane or crewmember position and that have been satisfactorily completed in connection with prior training for another airplane or another crewmember position, need not be repeated during subsequent training other than recurrent training.

(e) A person who progresses successfully through flight training, is recommended by his instructor or a check airman, and successfully completes the appropriate flight check for a check airman or the Administrator, need not complete the programmed hours of flight training for the particular airplane. However, whenever the Administrator finds that 20 percent of the flight checks given at a particular training base during the previous 6 months under this paragraph are unsuccessful, this paragraph may not be used by the certificate holder at that base until the Administrator finds that the effectiveness of the flight training there has improved. In the case of a certificate holder using a course of training permitted in Sec. 121.409(c), the Administrator may require the programmed hours of inflight training in whole or in part, until he finds the effectiveness of the flight training has improved as provided in paragraph (e) of this section.

Sec. 121.402 Training program: Special Rules.

(a) Other than the certificate holder, only another certificate holder certificated under this part or a training center certificated under part 142 of this chapter is eligible under this subpart to provide training, testing, and checking under contract or other arrangement to those persons subject to the requirements of this subpart.

(b) A certificate holder may contract with, or otherwise arrange to use the services of, a training center certificated under part 142 of this chapter to provide training, testing, and checking required by this part only if the training center--

(1) Holds applicable training specifications issued under part 142 of this chapter;

(2) Has facilities, training equipment, and courseware meeting the applicable requirements of part 142 of this chapter;

(3) Has approved curriculums, curriculum segments, and portions of curriculum segments applicable for use in training courses required by this subpart; and

(4) Has sufficient instructor and check airmen qualified under the applicable requirements of Secs. 121.411 or 121.413 to provide training, testing, and checking to persons subject to the requirements of this subpart.

Sec. 121.403 Training program: Curriculum.

(a) Each certificate holder must prepare and keep current a written training program curriculum for each type of airplane with respect to dispatchers and each crewmember required for that type airplane. The curriculum must include ground and flight training required by this subpart.

(b) Each training program curriculum must include:

(1) A list of principal ground training subjects, including emergency training subjects, that are provided.

(2) A list of all the training devices mockups, systems trainers, procedures trainers, or other training aids that the certificate holder will use.

(3) Detailed descriptions or pictorial displays of the approved normal, abnormal, and emergency maneuvers, procedures and functions that will be performed during each flight training phase or flight check, indicating those maneuvers, procedures and functions that are to be performed during the inflight portions of flight training and flight checks.

(4) A list of airplane simulators or other training devices approved under Sec. 121.407, including approvals for particular maneuvers, procedures, or functions.

(5) The programmed hours of training that will be applied to each phase of training.

(6) A copy of each statement issued by the Administrator under Sec. 121.405(d) for reduction of programmed hours of training.

Sec. 121.404 Compliance dates: Crew and dispatcher resource management training.

After March 19, 1998, no certificate holder may use a person as a flight crewmember, and after March 19, 1999, no certificate holder may use a person as a flight attendant or aircraft dispatcher unless that person has completed approved crew resource management (CRM) or dispatcher resource management (DRM) initial training, as applicable, with that certificate holder or with another certificate holder.

Sec. 121.405 Training program and revision: Initial and final approval.

a. To obtain initial and final approval of a training program, or a revision to an approved training program, each certificate holder must submit to the Administrator—

(1) An outline of the proposed program or revision, including an outline of the proposed or revised curriculum, that provides enough information for a preliminary evaluation of the proposed training program or revised training program; and

(2) Additional relevant information as may be requested by the Administrator.

(b) If the proposed training program or revision complies with this subpart the Administrator grants initial approval in writing after which the certificate holder may conduct the training in accordance with that program. The Administrator then evaluates the effectiveness of the training program and advises the certificate holder of deficiencies, if any, that must be corrected.

(c) The Administrator grants final approval of the training program or revision if the certificate holder shows that the training conducted under the initial approval set forth in paragraph (b) of this section ensures that each person that successfully completes the training is adequately trained to perform his assigned duties.

(d) In granting initial and final approval of training programs or revisions, including reductions in programmed hours specified in this subpart, the Administrator considers the training aids, devices, methods, and procedures listed in the certificate holder's curriculum as set forth in Sec. 121.403 that increase the quality and effectiveness of the teaching-learning process. If approval of reduced programmed hours of training is granted, the Administrator provides the certificate holder with a statement of the basis for the approval.

(e) Whenever the Administrator finds that revisions are necessary for the continued adequacy of a training program that has been granted final approval, the certificate holder shall, after notification by the Administrator, make any changes in the program that are found necessary by the Administrator. Within 30 days after the certificate holder receives such notice, it may file a petition to reconsider the notice with the certificate-holding district office. The filing of a petition to reconsider stays the notice pending a decision by the Administrator. However, if the Administrator finds that there is an emergency that requires immediate action in the interest of safety in air transportation, he may, upon a statement of the reasons, require a change effective without stay.

(f) Each certificate holder described in Sec. 135.3 (b) and (c) of this chapter must include the material required by Sec. 121.403 in the manual required by Sec. 135.21 of this chapter.

(g) The Administrator may grant a deviation to certificate holders described in Sec. 135.3 (b) and (c) of this chapter to allow reduced programmed hours of ground training required by Sec. 121.419 if it is found that a reduction is warranted based on the certificate holder's operations and the complexity of the make, model, and series of the aircraft used.

Sec. 121.406 Credit for previous CRM/DRM training.

(a) For flightcrew members, the Administrator may credit CRM training received before March 19, 1998 toward all or part of the initial ground CRM training required by Sec. 121.419.

(b) For flight attendants, the Administrator may credit CRM training received before March 19, 1999 toward all or part of the initial ground CRM training required by Sec. 121.421.

(c) For aircraft dispatchers, the Administrator may credit CRM training received before March 19, 1999 toward all or part of the initial ground CRM training required by Sec. 121.422.

(d) In granting credit for initial ground CRM or DRM training, the Administrator considers training aids, devices, methods, and procedures used by the certificate holder in a voluntary CRM or DRM program or in an AQP program that effectively meets the quality of an approved CRM or DRM initial ground training program under section 121.419, 121.421, or 121.422 as appropriate.

Sec. 121.407 Training program: Approval of airplane simulators and other training devices.

(a) Each airplane simulator and other training device that is used in a training course permitted under Sec. 121.409, in checks required under Subpart O of this part or as permitted in Appendices E and F to this part must:

(1) Be specifically approved for--

(i) The certificate holder;

(ii) The type airplane and, if applicable, the particular variation within type, for which the training or check is being conducted; and

(iii) The particular maneuver, procedure, or crewmember function involved.

(2) Maintain the performance, functional, and other characteristics that are required for approval.

(3) Be modified to conform with any modification to the airplane being simulated that results in changes to performance, functional, or other characteristics required for approval.

(4) Be given a daily functional preflight check before being used.

(5) Have a daily discrepancy log kept with each discrepancy entered in that log by the appropriate instructor or check airman at the end of each training or check flight.

(b) A particular airplane simulator or other training device may be approved for use by more than one certificate holder.

(c) An airplane simulator may be used instead of the airplane to satisfy the in-flight requirements of Secs. 121.439 and 121.441 and Appendices E and F of this part, if the simulator--

(1) Is approved under this section and meets the appropriate simulator requirements of Appendix H of this part; and

(2) Is used as part of an approved program that meets the training requirements of Sec. 121.424 (a) and (c) and Appendix H of this part.

(d) An airplane simulator approved under this section must be used instead of the airplane to satisfy the pilot flight training requirements prescribed in the certificate holder's approved low-altitude windshear flight training program set forth in Sec. 121.409(d) of this part.

Sec. 121.409 Training courses using airplane simulators and other training devices.

(a) Training courses utilizing airplane simulators and other training devices may be included in the certificate holder's approved training program for use as provided in this section.

(b) A course of training in an airplane simulator may be included for use as provided in Sec. 121.441 if that course--

(1) Provides at least 4 hours of training at the pilot controls of an airplane simulator as well as a proper briefing before and after the training;

(2) Provides training in at least the procedures and maneuvers set forth in Appendix F to this part; or

(3) Provides line-oriented training that--

(i) Utilizes a complete flight crew;

(ii) Includes at least the maneuvers and procedures (abnormal and emergency) that may be expected in line operations;

(iii) Is representative of the flight segment appropriate to the operations being conducted by the certificate holder; and

(4) Is given by an instructor who meets the applicable requirements of Sec. 121.411.

The satisfactory completion of the course of training must be certified by either the Administrator or a qualified check airman.

(c) The programmed hours of flight training set forth in this subpart do not apply if the training program for the airplane type includes--

(1) A course of pilot training in an airplane simulator as provided in Sec. 121.424(d); or

(2) A course of flight engineer training in an airplane simulator or other training device as provided in Sec. 121.425(c).

(d) Each certificate holder required to comply with Sec. 121.358 of this part must use an approved simulator for each airplane type in each of its pilot training courses that provides training in at least the procedures and maneuvers set forth in the certificate holder's approved low-altitude windshear flight training program. The approved low-altitude windshear flight training, if applicable, must be included in each of the pilot flight training courses prescribed in Secs. 121.409(b), 121.418, 121.424, and 121.427 of this part.

Sec. 121.411 Qualifications: Check airmen (airplane) and check airmen (simulator).

(a) For the purposes of this section and Sec. 121.413:

(1) A check airman (airplane) is a person who is qualified, and permitted, to conduct flight checks or instruction in an airplane, in a flight simulator, or in a flight training device for a particular type airplane.

(2) A check airman (simulator) is a person who is qualified to conduct flight checks or instruction, but only in a flight simulator or in a flight training device for a particular type airplane.

(3) Check airmen (airplane) and check airmen (simulator) are those check airmen who perform the functions described in Sec. 121.401(a)(4).

(b) No certificate holder may use a person, nor may any person serve as a check airman (airplane) in a training program established under this subpart unless, with respect to the airplane type involved, that person--

(1) Holds the airman certificates and ratings required to serve as a pilot in command, a flight engineer, or a flight navigator, as applicable, in operations under this part;

(2) Has satisfactorily completed the appropriate training phases for the airplane, including recurrent training, that are required to serve as a pilot in command, flight engineer, or flight navigator, as applicable, in operations under this part;

(3) Has satisfactorily completed the appropriate proficiency or competency checks that are required to serve as a pilot in command, flight engineer, or flight navigator, as applicable, in operations under this part;

(4) Has satisfactorily completed the applicable training requirements of Sec. 121.413 including in-flight training and practice for initial and transition training;

(5) Holds at least a Class III medical certificate unless serving as a required crewmember, in which case holds a Class I or Class II medical certificate as appropriate;

(6) Has satisfied the recency of experience requirements of Sec. 121.439; and

(7) Has been approved by the Administrator for the check airman duties involved.

(c) No certificate holder may use a person nor may any person serve as a check airman (simulator) in a training program established under this subpart unless, with respect to the airplane type involved, that person meets the provisions of paragraph (b) of this section, or--

(1) Holds the airman certificates and ratings, except medical certificate, required to serve as a pilot in command, a flight engineer, or a flight navigator, as applicable, in operations under this part;

(2) Has satisfactorily completed the appropriate training phases for the airplane, including recurrent training, that are required to serve as a pilot in command, flight engineer, or flight navigator in operations under this part;

(3) Has satisfactorily completed the appropriate proficiency or competency checks that are required to serve as a pilot in command, flight engineer, or flight navigator in operations under this part;

(4) Has satisfactorily completed the applicable training requirements of Sec. 121.413; and

(5) Has been approved by the Administrator for the check airman (simulator) duties involved.

(d) Completion of the requirements in paragraphs (b) (2), (3), and (4) or (c) (2), (3), and (4) of this section, as applicable, shall be entered in the individual's training record maintained by the certificate holder.

(e) Check airmen who have reached their 60th birthday or who do not hold an appropriate medical certificate may function as check airmen, but may not serve as pilot flightcrew members in operations under this part.

(f) A check airman (simulator) must accomplish the following--

(1) Fly at least two flight segments as a required crewmember for the type airplane involved within the 12-month period preceding the performance of any check airman duty in a flight simulator; or

(2) Satisfactorily complete an approved line-observation program within the period prescribed by that program and that must precede the performance of any check airman duty in a flight simulator.

(g) The flight segments or line-observation program required in paragraph (f) of this section are considered to be completed in the month required if completed in the calendar month before or in the calendar month after the month in which it is due.

Sec. 121.412 Qualifications: Flight instructors (airplane) and flight instructors (simulator).

(a) For the purposes of this section and Sec. 121.412:

(1) A flight instructor (airplane) is a person who is qualified to instruct in an airplane, in a flight simulator, or in a flight training device for a particular type airplane.

(2) A flight instructor (simulator) is a person who is qualified to instruct, but only in a flight simulator, in a flight training device, or both, for a particular type airplane.

(3) Flight instructors (airplane) and flight instructors (simulator) are those instructors who perform the functions described in Sec. 121.401(a)(4).

(b) No certificate holder may use a person nor may any person serve as a flight instructor (airplane) in a training program established under this subpart unless, with respect to the airplane type involved, that person--

(1) Holds the airman certificates and rating required to serve as a pilot in command, a flight engineer, or a flight navigator, as applicable, in operations under this part;

(2) Has satisfactorily completed the appropriate training phases for the airplane, including recurrent training, that are required to serve as a pilot in command, flight engineer, or flight navigator, as applicable, in operations under this part;

(3) Has satisfactorily completed the appropriate proficiency or competency checks that are required to serve as a pilot in command, flight engineer, or flight navigator, as

applicable, in operations under this part;

(4) Has satisfactorily completed the applicable training requirements of Sec. 121.414, including in-flight training and practice for initial and transition training;

(5) Holds at least a Class III medical certificate unless serving as a required crewmember, in which case holds a Class I or a Class II medical certificate as appropriate.

(6) Has satisfied the recency of experience requirements of Sec. 121.439.

(c) No certificate holder may use a person, nor may any person service as a flight instructor (simulator) in a training program established under this subpart, unless, with respect to the airplane type involved, that person meets the provisions of paragraph (b) of this section, or--

(1) Holds the airman certificates and ratings, except medical certificate, required to serve as a pilot in command, a flight engineer, or a flight navigator, as applicable, in operations under this part except before February 19, 1997 that person need not hold a type rating for the airplane type involved provided that he or she only provides the instruction described in Secs. 121.409(b) and 121.441;

(2) Has satisfactorily completed the appropriate training phases for the airplane, including recurrent training, that are required to serve as a pilot in command, flight engineer, or flight navigator, as applicable, in operations under this part;

(3) Has satisfactorily completed the appropriate proficiency or competency checks that are required to serve as a pilot in command, flight engineer, or flight navigator, as applicable, in operations under this part; and

(4) Has satisfactorily completed the applicable training requirements of Sec. 121.414.

(d) Completion of the requirements in paragraphs (b) (2), (3), and (4) or (c) (2), (3), and (4) of this section as applicable shall be entered in the individual's training record maintained by the certificate holder.

(e) Airmen who have reached their 60th birthday, or who do not hold an appropriate medical certificate, may not function as a flight instructor (airplane), nor may they serve as pilot flightcrew members in operations under this part.

(f) A flight instructor (simulator) must accomplish the following--

(1) Fly at least two flight segments as a required crewmember for the type of airplane within the 12-month period preceding the performance of any flight instructor duty in a flight simulator (and must hold a Class I or Class II medical certificate as appropriate); or

(2) Satisfactorily complete an approved line-observation program within the period

prescribed by that program and that must precede the performance of any check airman duty in a flight simulator.

(g) The flight segments or line-observation program required in paragraph (f) of this section is considered completed in the month required if completed in the calendar month before, or the calendar month after the month in which it is due.

Sec. 121.413 Initial and transition training and checking requirements: Check airmen (airplane), check airmen (simulator).

(a) No certificate holder may use a person nor may any person serve as a check airman unless--

(1) That person has satisfactorily completed initial or transition check airman training; and

(2) Within the preceding 24 calendar months that person satisfactorily conducts a proficiency or competency check under the observation of an FAA inspector or an aircrew designated examiner employed by the operator. The observation check may be accomplished in part or in full in an airplane, in a flight simulator, or in a flight training device. This paragraph applies after February 19, 1997.

(b) The observation check required by paragraph (a)(2) of this section is considered to have been completed in the month required if completed in the calendar month before, or the calendar month after, the month in which it is due.

(c) The initial ground training for check airmen must include the following:

(1) Check airman duties, functions, and responsibilities.

(2) The applicable Code of Federal Regulations and the certificate holder's policies and procedures.

(3) The appropriate methods, procedures, and techniques for conducting the required checks.

(4) Proper evaluation of student performance including the detection of--

(i) Improper and insufficient training; and

(ii) Personal characteristics of an applicant that could adversely affect safety.

(5) The appropriate corrective action in the case of unsatisfactory checks.

(6) The approved methods, procedures, and limitations for performing the required normal, abnormal, and emergency procedures in the airplane.

(d) The transition ground training for check airmen must include the approved methods, procedures, and limitations for performing the required normal, abnormal, and emergency procedures applicable to the airplane to which the check airman is in transaction.

(e) The initial and transition flight training for pilot check airmen (airplane), flight engineer check airmen (airplane), and flight navigator check airmen (airplane) must include the following:

(1) The safety measures for emergency situations that are likely to develop during a check.

(2) The potential results of improper, untimely, or non-execution of safety measures during a check.

(3) For pilot check airman (airplane)--

(i) Training and practice in conducting flight checks from the left and right pilot seats in the required normal, abnormal, and emergency procedures to ensure competence to conduct the pilot flight checks required by this part; and

(ii) The safety measures to be taken from either pilot seat for emergency situations that are likely to develop during a check.

(4) For flight engineer check airmen (airplane) and flight navigator check airmen (airplane), training to ensure competence to perform assigned duties.

(f) The requirements of paragraph (e) of this section may be accomplished in full or in part in flight, in a flight simulator, or in a flight training device, as appropriate.

(g) The initial and transition flight training for check airmen (simulator) must include the following:

(1) Training and practice in conducting flight checks in the required normal, abnormal, and emergency procedures to ensure competence to conduct the flight checks

required by this part. This training and practice must be accomplished in a flight simulator or in a flight training device.

(2) Training in the operation of flight simulators or flight training devices, or both, to ensure competence to conduct the flight checks required by this part.

Sec. 121.414 Initial and transition training and checking requirements: flight instructors (airplane), flight instructors (simulator).

(a) No certificate holder may use a person nor may any person serve as a flight instructor unless--

(1) That person has satisfactorily completed initial or transition flight instructor training; and

(2) Within the preceding 24 calendar months, that person satisfactorily conducts instruction under the observation of an FAA inspector, an operator check airman, or an aircrew designated examiner employed by the operator. The observation check may be accomplished in part or in full in an airplane, in a flight simulator, or in a flight training device. This paragraph applies after February 19, 1997.

(b) The observation check required by paragraph (a)(2) of this section is considered to have been completed in the month required if completed in the calendar month before, or the calendar month after, the month in which it is due.

(c) The initial ground training for flight instructors must include the following:

(1) Flight instructor duties, functions, and responsibilities.

(2) The applicable Code of Federal Regulations and the certificate holder's policies and procedures.

(3) The appropriate methods, procedures, and techniques for conducting flight instruction.

(4) Proper evaluation of student performance including the detection of--

(i) Improper and insufficient training; and

(ii) Personal characteristics of an applicant that could adversely affect safety.

(5) The corrective action in the case of unsatisfactory training progress.

(6) The approved methods, procedures, and limitations for performing the required normal, abnormal, and emergency procedures in the airplane.

(7) Except for holders of a flight instructor certificate--

(i) The fundamental principles of the teaching-learning process;

(ii) Teaching methods and procedures; and

(iii) The instructor-student relationship.

(d) The transition ground training for flight instructors must include the approved methods, procedures, and limitations for performing the required normal, abnormal, and emergency procedures applicable to the airplane to which the flight instructor is in transition.

(e) The initial and transition flight training for flight instructors (airplane), flight engineer instructors (airplane), and flight navigator instructors (airplane) must include the following:

(1) The safety measures for emergency situations that are likely to develop during instruction.

(2) The potential results of improper, untimely, or non-execution of safety measures during instruction.

(3) For pilot flight instructor (airplane)--

(i) In-flight training and practice in conducting flight instruction from the left and right pilot seats in the required normal, abnormal, and emergency procedures to ensure competence as an instructor; and

(ii) The safety measures to be taken from either pilot seat for emergency situations that are likely to develop during instruction.

(4) For flight engineer instructors (airplane) and flight navigator instructors (airplane), in-flight training to ensure competence to perform assigned duties.

(f) The requirements of paragraph (e) of this section may be accomplished in full or in part in flight, in a flight simulator, or in a flight training device, as appropriate.

(g) The initial and transition flight training for flight instructors (simulator) must include the following:

(1) Training and practice in the required normal, abnormal, and emergency procedures to ensure competence to conduct the flight instruction required by this part. This training and practice must be accomplished in full or in part in a flight simulator or in a flight training device.

(2) Training in the operation of flight simulators or flight training devices, or both, to ensure competence to conduct the flight instruction required by this part.

Sec. 121.415 Crewmember and dispatcher training requirements.

(a) Each training program must provide the following ground training as appropriate to the particular assignment of the crewmember or dispatcher:

(1) Basic indoctrination ground training for newly hired crewmembers or dispatchers including 40 programmed hours of instruction, unless reduced under Sec. 121.405 or as specified in Sec. 121.401(d), in at least the following--

(i) Duties and responsibilities of crewmembers or dispatchers, as applicable;

(ii) Appropriate provisions of the Federal Aviation Regulations;

(iii) Contents of the certificate holder's operating certificate and operations specifications (not required for flight attendants); and

(iv) Appropriate portions of the certificate holder's operating manual.

(2) The initial and transition ground training specified in Secs. 121.419 through 121.422, as applicable.

(3) Emergency training as specified in Sec. 121.417 (not required for dispatchers).

(b) Each training program must provide the flight training specified in Secs. 121.424 through 121.426, as applicable.

(c) Each training program must provide recurrent ground and flight training as provided in Sec. 121.427.

(d) Each training program must provide the differences training specified in Sec. 121.418 if the Administrator finds that, due to differences between airplanes of the same type operated by the certificate holder, additional training is necessary to insure that each crewmember and dispatcher is adequately trained to perform his assigned duties.

(e) Upgrade training as specified in Secs. 121.419 and 121.424 for a particular type airplane may be included in the training program for crewmembers who have qualified and served as second in command pilot or flight engineer on that airplane.

(f) Particular subjects, maneuvers, procedures, or parts thereof specified in Secs. 121.419 through 121.425 for transition or upgrade training, as applicable, may be omitted, or the programmed hours of ground instruction or inflight training may be reduced, as provided in Sec. 121.405.

(g) In addition to initial, transition, upgrade, recurrent and differences training, each training program must also provide ground and flight training, instruction, and practice as necessary to insure that each crewmember and dispatcher--

(1) Remains adequately trained and currently proficient with respect to each airplane, crewmember position, and type of operation in which he serves; and

(2) Qualifies in new equipment, facilities, procedures, and techniques, including modifications to airplanes.

Sec. 121.417 Crewmember emergency training.

(a) Each training program must provide the emergency training set forth in this section with respect to each airplane type, model, and configuration, each required crewmember, and each kind of operation conducted, insofar as appropriate for each crewmember and the certificate holder.

(b) Emergency training must provide the following:

(1) Instruction in emergency assignments and procedures, including coordination among crewmembers.

(2) Individual instruction in the location, function, and operation of emergency equipment including--

(i) Equipment used in ditching and evacuation;

(ii) First aid equipment and its proper use;

(iii) Portable fire extinguishers, with emphasis on type of extinguisher to be used on different classes of fires; and

(iv) Emergency exits in the emergency mode with the evacuation slide/raft pack attached (if applicable), with training emphasis on the operation of the exits under adverse conditions.

(3) Instruction in the handling of emergency situations including--

(i) Rapid decompression;

(ii) Fire in flight or on the surface, and smoke control procedures with emphasis on electrical equipment and related circuit breakers found in cabin areas including all galleys, service centers, lifts, lavatories and movie screens;

(iii) Ditching and other evacuation, including the evacuation of persons and their attendants, if any, who may need the assistance of another person to move expeditiously to an exit in the event of an emergency.

(iv) Illness, injury, or other abnormal situations involving passengers or crewmembers to include familiarization with the emergency medical kit; and

(v) Hijacking and other unusual situations.

(4) Review and discussion of previous aircraft accidents and incidents pertaining to actual emergency situations.

(c) Each crewmember must accomplish the following emergency training during the specified training periods, using those items of installed emergency equipment for each type of airplane in which he or she is to serve (Alternate recurrent training required by Sec. 121.433(c) of this part may be accomplished by approved pictorial presentation or demonstration):

(1) One-time emergency drill requirements to be accomplished during initial training. Each crewmember must perform--

(i) At least one approved protective breathing equipment (PBE) drill in which the crewmember combats an actual or simulated fire using at least one type of installed hand fire extinguisher or approved fire extinguisher that is appropriate for the type of actual fire or simulated fire to be fought while using the type of installed PBE required by Sec. 121.337 or approved PBE simulation device as defined by paragraph (d) of this section for combatting fires aboard airplanes;

(ii) At least one approved firefighting drill in which the crewmember combats an actual fire using at least one type of installed hand fire extinguisher or approved fire extinguisher that is appropriate for the type of fire to be fought. This firefighting drill is not required if the crewmember performs the PBE drill of paragraph (c)(1)(i) by combating an actual fire; and

(iii) An emergency evacuation drill with each person egressing the airplane or approved training device using at least one type of installed emergency evacuation slide. The crewmember may either observe the airplane exits being opened in the emergency mode and the associated exit slide/raft pack being deployed and inflated, or perform the tasks resulting in the accomplishment of these actions.

(2) Additional emergency drill requirements to be accomplished during initial training and once each 24 calendar months during recurrent training. Each crewmember must--

(i) Perform the following emergency drills and operate the following equipment:

(A) Each type of emergency exit in the normal and emergency modes, including the actions and forces required in the deployment of the emergency evacuation slides;

(B) Each type of installed hand fire extinguisher;

(C) Each type of emergency oxygen system to include protective breathing equipment;

(D) Donning, use, and inflation of individual flotation means, if applicable; and

(E) Ditching, if applicable, including but not limited to, as appropriate:

(1) Cockpit preparation and procedures;

- (2) Crew coordination;
- (3) Passenger briefing and cabin preparation;
- (4) Donning and inflation of life preservers;
- (5) Use of life-lines; and
- (6) Boarding of passengers and crew into raft or a slide/raft pack.

(ii) Observe the following drills:

(A) Removal from the airplane (or training device) and inflation of each type of life raft, if applicable;

(B) Transfer of each type of slide/raft pack from one door to another;

(C) Deployment, inflation, and detachment from the airplane (or training device) of each type of slide/raft pack; and

(D) Emergency evacuation including the use of a slide.

(d) After September 1, 1993, no crewmember may serve in operations under this part unless that crewmember has performed the PBE drill and the firefighting drill described by paragraphs (c)(1)(i) and (c)(1)(ii) of this section, as part of a one-time training requirement of paragraphs (c)(1) or (c)(2) of this section as appropriate. Any crewmember who performs the PBE drill and the firefighting drill prescribed in paragraphs (c)(1)(i) and (c)(1)(ii) of this section after May 26, 1987, is deemed to be in compliance with this regulation upon presentation of information or documentation, in a form and manner acceptable to the Director, Flight Standards Service, showing that the appropriate drills have been accomplished.

(e) Crewmembers who serve in operations above 25,000 feet must receive instruction in the following:

- (1) Respiration.
- (2) Hypoxia.
- (3) Duration of consciousness without supplemental oxygen at altitude.
- (4) Gas expansion.
- (5) Gas bubble formation.
- (6) Physical phenomena and incidents of decompression.

(f) For the purposes of this section the following definitions apply:

(1) Actual fire means an ignited combustible material, in controlled conditions, of sufficient magnitude and duration to accomplish the training objectives outlined in paragraphs (c)(1)(i) and (c)(1)(ii) of this section.

(2) Approved fire extinguisher means a training device that has been approved by the Administrator for use in meeting the training requirements of Sec. 121.417(c).

(3) Approved PBE simulation device means a training device that has been approved by the Administrator for use in meeting the training requirements of Sec. 121.417(c).

(4) Combats, in this context, means to properly fight an actual or simulated fire using an appropriate type of fire extinguisher until that fire is extinguished.

(5) Observe means to watch without participating actively in the drill.

(6) PBE drill means an emergency drill in which a crewmember demonstrates the proper use of protective breathing equipment while fighting an actual or simulated fire.

(7) Perform means to satisfactorily accomplish a prescribed emergency drill using established procedures that stress the skill of the persons involved in the drill.

(8) Simulated fire means an artificial duplication of smoke or flame used to create various aircraft firefighting scenarios, such as lavatory, galley oven, and aircraft seat fires.

Sec. 121.418 Differences training: Crewmembers and dispatchers.

(a) Differences training for crewmembers and dispatchers must consist of at least the following as applicable to their assigned duties and responsibilities:

(1) Instruction in each appropriate subject or part thereof required for initial ground training in the airplane unless the Administrator finds that particular subjects are not necessary.

(2) Flight training in each appropriate maneuver or procedure required for initial flight training in the airplane unless the Administrator finds that particular maneuvers or procedures are not necessary.

(3) The number of programmed hours of ground and flight training determined by the Administrator to be necessary for the airplane, the operation, and the crewmember or aircraft dispatcher involved. Differences training for all variations of a particular type airplane may be included in initial, transition, upgrade, and recurrent training for the airplane.

Sec. 121.419 Pilots and flight engineers: Initial, transition, and upgrade ground training.

(a) Initial, transition, and upgrade ground training for pilots and flight engineers must include instruction in at least the following as applicable to their assigned duties:

(1) General subjects--

- (i) The certificate holder's dispatch or flight release procedures;
- (ii) Principles and methods for determining weight and balance, and runway limitations for takeoff and landing;
- (iii) Enough meteorology to insure a practical knowledge of weather phenomena, including the principles of frontal systems, icing, fog, thunderstorms, and high altitude weather situations;
- (iv) Air traffic control systems, procedures, and phraseology;
- (v) Navigation and the use of navigation aids, including instrument approach procedures;
- (vi) Normal and emergency communication procedures;
- (vii) Visual cues prior to and during descent below DH or MDA;
- (viii) Approved crew resource management initial training; and
- (ix) Other instructions as necessary to ensure his competence.

(2) For each airplane type--

- (i) A general description;
- (ii) Performance characteristics;
- (iii) Engines and propellers;
- (iv) Major components;
- (v) Major airplane systems (i.e., flight controls, electrical, hydraulic); other systems as appropriate; principles of normal, abnormal, and emergency operations; appropriate procedures and limitations;
- (vi) Procedures for--
 - (A) Recognizing and avoiding severe weather situations;
 - (B) Escaping from severe weather situations, in case of inadvertent encounters, including low-altitude windshear, and
 - (C) Operating in or near thunderstorms (including best penetrating altitudes), turbulent air (including clear air turbulence), icing, hail, and other potentially hazardous meteorological conditions;
- (vii) Operating limitations;

- (viii) Fuel consumption and cruise control;
- (ix) Flight planning;
- (x) Each normal and emergency procedure; and
- (xi) The approved Airplane Flight Manual.

(b) Initial ground training for pilots and flight engineers must consist of at least the following programmed hours of instruction in the required subjects specified in paragraph (a) of this section and in Sec. 121.415(a) unless reduced under Sec. 121.405:

- (1) Group I airplanes--
 - (i) Reciprocating powered, 64 hours; and
 - (ii) Turbopropeller powered, 80 hours.
- (2) Group II airplanes, 120 hours.

Sec. 121.420 Flight navigators: Initial and transition ground training.

(a) Initial and transition ground training for flight navigators must include instruction in the subjects specified in Sec. 121.419(a) as appropriate to his assigned duties and responsibilities and in the following with respect to the particular type airplane:

- (1) Limitations on climb, cruise, and descent speeds.
- (2) Each item of navigational equipment installed including appropriate radio, radar, and other electronic equipment.
- (3) Airplane performance.
- (4) Airspeed, temperature, and pressure indicating instruments or systems.
- (5) Compass limitations and methods of compensation.
- (6) Cruise control charts and data, including fuel consumption rates.
- (7) Any other instruction as necessary to ensure his competence.

(b) Initial ground training for flight navigators must consist of at least the following programmed hours of instruction in the subjects specified in paragraph (a) of this section and in Sec. 121.415(a) unless reduced under Sec. 121.405:

- (1) Group I airplanes--
 - (i) Reciprocating powered, 16 hours; and
 - (ii) Turbopropeller powered; 32 hours.

(2) Group II airplanes, 32 hours.

Sec. 121.421 Flight attendants: Initial and transition ground training.

(a) Initial and transition ground training for flight attendants must include instruction in at least the following:

(1) General subjects--

(i) The authority of the pilot in command;

(ii) Passenger handling, including the procedures to be followed in the case of deranged persons or other persons whose conduct might jeopardize safety; and

(iii) Approved crew resource management initial training.

(2) For each airplane type--

(i) A general description of the airplane emphasizing physical characteristics that may have a bearing on ditching, evacuation, and inflight emergency procedures and on other related duties;

(ii) The use of both the public address system and the means of communicating with other flight crewmembers, including emergency means in the case of attempted hijacking or other unusual situations; and

(iii) Proper use of electrical galley equipment and the controls for cabin heat and ventilation.

(b) Initial and transition ground training for flight attendants must include a competence check to determine ability to perform assigned duties and responsibilities.

(c) Initial ground training for flight attendants must consist of at least the following programmed hours of instruction in the subjects specified in paragraph (a) of this section and in Sec. 121.415(a) unless reduced under Sec. 121.405.

(1) Group I airplanes--

(i) Reciprocating powered, 8 hours; and

(ii) Turbopropeller powered, 8 hours.

(2) Group II airplanes, 16 hours.

Sec. 121.422 Aircraft dispatchers: Initial and transition ground training.

(a) Initial and transition ground training for aircraft dispatchers must include instruction in at least the following:

(1) General subjects--

(i) Use of communications systems including the characteristics of those systems and the appropriate normal and emergency procedures;

(ii) Meteorology, including various types of meteorological information and forecasts, interpretation of weather data (including forecasting of en route and terminal temperatures and other weather conditions), frontal systems, wind conditions, and use of actual and prognostic weather charts for various altitudes;

(iii) The NOTAM system;

(iv) Navigational aids and publications;

(v) Joint dispatcher-pilot responsibilities;

(vi) Characteristics of appropriate airports;

(vii) Prevailing weather phenomena and the available sources of weather information;

(viii) Air traffic control and instrument approach procedures; and

(ix) Approved dispatcher resource management (DRM) initial training.

(2) For each airplane--

(i) A general description of the airplane emphasizing operating and performance characteristics, navigation equipment, instrument approach and communication equipment, emergency equipment and procedures, and other subjects having a bearing on dispatcher duties and responsibilities;

(ii) Flight operation procedures including procedures specified in Sec. 121.419(a)(2)(vi);

(iii) Weight and balance computations;

(iv) Basic airplane performance dispatch requirements and procedures;

(v) Flight planning including track selection, flight time analysis, and fuel requirements; and

(vi) Emergency procedures.

(3) Emergency procedures must be emphasized, including the alerting of proper governmental, company, and private agencies during emergencies to give maximum help to an airplane in distress.

(b) Initial and transition ground training for aircraft dispatchers must include a competence check given by an appropriate supervisor or ground instructor that demonstrates knowledge and ability with the subjects set forth in paragraph (a) of this section.

(c) Initial ground training for aircraft dispatchers must consist of at least the following programmed hours of instruction in the subjects specified in paragraph (a) of this section and in Sec. 121.415(a) unless reduced under Sec. 121.405:

(1) Group I airplanes--

(i) Reciprocating powered, 30 hours; and

(ii) Turbopropeller powered, 40 hours.

(2) Group II airplanes, 40 hours.

Sec. 121.424 Pilots: Initial, transition, and upgrade flight training.

(a) Initial, transition, and upgrade training for pilots must include flight training and practice in the maneuvers and procedures set forth in the certificate holder's approved low-altitude windshear flight training program and in Appendix E to this part, as applicable.

(b) The maneuvers and procedures required by paragraph (a) of this section must be performed inflight except--

(1) That windshear maneuvers and procedures must be performed in a simulator in which the maneuvers and procedures are specifically authorized to be accomplished; and

(2) To the extent that certain other maneuvers and procedures may be performed in an airplane simulator, an appropriate training device, or a static airplane as permitted in Appendix E to this part.

(c) Except as permitted in paragraph (d) of this section, the initial flight training required by paragraph (a) of this section must include at least the following programmed hours of inflight training and practice unless reduced under Sec. 121.405;

(1) Group I airplanes--

(i) Reciprocating powered. Pilot in command, 10 hours; second in command, 6 hours; and

(ii) Turbopropeller powered. Pilot in command, 15 hours; second in command, 7 hours.

(2) Group II airplanes. Pilot in command, 20 hours; second in command, 10 hours.

(d) If the certificate holder's approved training program includes a course of training utilizing an airplane simulator under Sec. 121.409 (c) and (d) of this part, each pilot must successfully complete--

(1) With respect to Sec. 121.409(c) of this part--

(i) Training and practice in the simulator in at least all of the maneuvers and procedures set forth in Appendix E to this part for initial flight training that are capable of being performed in an airplane simulator without a visual system; and

(ii) A flight check in the simulator or the airplane to the level of proficiency of a pilot in command or second in command, as applicable, in at least the maneuvers and procedures set forth in Appendix F to this part that are capable of being performed in an airplane simulator without a visual system.

(2) With respect to Sec. 121.409(d) of this part, training and practice in at least the maneuvers and procedures set forth in the certificate holder's approved low-altitude windshear flight training program that are capable of being performed in an airplane simulator in which the maneuvers and procedures are specifically authorized.

Sec. 121.425 Flight engineers: Initial and transition flight training.

(a) Initial and transition flight training for flight engineers must include at least the following:

(1) Training and practice in procedures related to the carrying out of flight engineer duties and functions. This training and practice may be accomplished either inflight, in an airplane simulator, or in a training device.

(2) A flight check that includes--

(i) Preflight inspection;

(ii) Inflight performance of assigned duties accomplished from the flight engineer station during taxi, runup, takeoff, climb, cruise, descent, approach, and landing;

(iii) Accomplishment of other functions, such as fuel management and preparation of fuel consumption records, and normal and emergency or alternate operation of all airplane flight systems, performed either inflight, in an airplane simulator, or in a training device. Flight engineers possessing a commercial pilot certificate with an instrument, category and class rating, or pilots already qualified as second in command and reverting to flight engineer, may complete the entire flight check in an approved airplane simulator.

(b) Except as permitted in paragraph (c) of this section, the initial flight training required by paragraph (a) of this section must include at least the same number of programmed hours of flight training and practice that are specified for a second in command pilot

under Sec. 121.424(c) unless reduced under Sec. 121.405.

(c) If the certificate holder's approved training program includes a course of training utilizing an airplane simulator or other training device under Sec. 121.409(c), each flight engineer must successfully complete in the simulator or other training device--

(1) Training and practice in at least all of the assigned duties, procedures, and functions required by paragraph (a) of this section; and

(2) A flight check to a flight engineer level of proficiency in the assigned duties, procedures, and functions.

Sec. 121.426 Flight navigators: Initial and transition flight training.

(a) Initial and transition flight training for flight navigators must include flight training and a flight check that are adequate to insure his proficiency in the performance of his assigned duties.

(b) The flight training and checks specified in paragraph (a) of this section must be performed--

(1) Inflight or in an appropriate training device; or

(2) In operations under this part if performed under supervision of a qualified flight navigator.

Sec. 121.427 Recurrent training.

(a) Recurrent training must ensure that each crew member or dispatcher is adequately trained and currently proficient with respect to the type airplane (including differences training, if applicable) and crewmember position involved.

(b) Recurrent ground training for crewmembers and dispatchers must include at least the following:

(1) A quiz or other review to determine the state of the crewmember's or dispatcher's knowledge with respect to the airplane and position involved.

(2) Instruction as necessary in the subjects required for initial ground training by Sec. 121.415(a), as appropriate, including emergency training (not required for aircraft dispatchers).

(3) For flight attendants and dispatchers, a competence check as required by Secs. 121.421(b) and 121.422(b), respectively.

(4) Approved recurrent CRM training. For flight crewmembers, this training or portions thereof may be accomplished during an approved simulator line operational flight training (LOFT) session. The recurrent CRM training requirement does not apply until a person has completed the applicable initial CRM training required by Secs. 121.419, 121.421, or 121.422.

(c) Recurrent ground training for crewmembers and dispatchers must consist of at least the following programmed hours unless reduced under Sec. 121.405:

(1) For pilots and flight engineers--

- (i) Group I, reciprocating powered airplanes, 16 hours;
- (ii) Group I turbopropeller powered airplanes, 20 hours; and
- (iii) Group II airplanes, 25 hours.

(2) For flight navigators--

- (i) Group I reciprocating powered airplanes, 12 hours;
- (ii) Group I turbopropeller powered airplanes, 16 hours; and
- (iii) Group II airplanes, 16 hours.

(3) For flight attendants--

- (i) Group I reciprocating powered airplanes, 4 hours;
- (ii) Group I turbopropeller powered airplanes, 5 hours; and
- (iii) Group II airplanes, 12 hours.

(4) For aircraft dispatchers--

- (i) Group I reciprocating powered airplanes, 8 hours;
- (ii) Group I turbopropeller powered airplanes, 10 hours; and
- (iii) Group II airplanes, 20 hours.

(d) Recurrent flight training for flight crewmembers must include at least the following:

(1) For pilots, flight training in an approved simulator in maneuvers and procedures set forth in the certificate holder's approved low-altitude windshear flight training program and flight training in maneuvers and procedures set forth in Appendix F to this part, or in a flight training program approved by the Administrator, except as follows--

- (i) The number of programmed inflight hours is not specified; and
- (ii) Satisfactory completion of a proficiency check may be substituted for recurrent flight training as permitted in Sec. 121.433(c).

(2) For flight engineers, flight training as provided by Sec. 121.425(a) except as follows--

(i) The specified number of inflight hours is not required; and

(ii) The flight check, other than the preflight inspection, may be conducted in an airplane simulator or other training device. The preflight inspection may be conducted in an airplane, or by using an approved pictorial means that realistically portrays the location and detail of preflight inspection items and provides for the portrayal of abnormal conditions. Satisfactory completion of an approved line-oriented simulator training program may be substituted for the flight check.

(3) For flight navigators, enough inflight training and an inflight check to insure competency with respect to operating procedures and navigation equipment to be used and familiarity with essential navigation information pertaining to the certificate holder's routes that require a flight navigator.

Sec. 121.429 Prohibited drugs.

(a) Each certificate holder shall provide each employee performing a function listed in Appendix I to this part and his or her supervisor with the training specified in that appendix.

(b) No certificate holder may use any contractor to perform a function listed in Appendix I to this part unless that contractor provides each of its employees performing that function for the certificate holder and his or her supervisor with the training specified in that appendix.