Pt 61-5

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TITLE 14 -- CIVIL AVIATION

Chapter I -- Civil Aeronautics Board

Part 61 -- Scheduled Air Carrier Rules

Airmen Utilization and Airmen Records

The following interpretation and statements of policy relating to §§ 61.50 and 61.500 of the Civil Air Regulations (12 F.R. 3171) were issued by the Administrator of Civil Aeronautics on August 1, 1947:

§ 61.50 Airmen Utilization.

(CAA Interpretation)

A "flight crew member" is defined as "a pilot, flight radio operator, flight engineer, or flight navigator assigned to duty on the aircraft." (Civil Air Regulation 41.99 (i)).

§ 61.500 Airmen records.

(CAA Statements of Policy)

(a) The following information must be maintained accurately and currently in the airmen records: (1) Name (full); (2) Current duties and date of assignment (First Pilot, Flight Engineer, etc.); (3) Airman Certificates (type, certificate number, and ratings); (4) Date, result, and class of last physical examination of all flight crew members; (5) Date and result of last six months' instrument competency flight check for first pilots; (6) Routes over which dispatchers and applicable flight crew members are currently qualified, together with qualification records, grades and dates; (7) Record of first pilot's flight time, including instrument flight time and flight time in the make and model of aircraft on which he is currently qualified; (8) Record of company training for all pilots, including actual flight, synthetic flight, and maintenance of proficiency training; (9) Any check pilot authorization (CAR 61.534); and (10) Any information on the individual considered desirable in these records by the air carrier as to special qualifications, duty assignment, etc.

(b) These records must (1) be available at any time for reference and inspection by authorized representatives of the Administrator of Civil Aeronautics, for the determination of compliance with appropriate qualifications and requirements prescribed in the Civil Air Regulations, (2) indicate the disposition of any dispatcher or flight crew member who is released from the employ of the air carrier, or who becomes physically or professionally disqualified, and (3) be retained by the company for at least six months.

(52 Stat. 977-1030; 49 U. S. C. 401-481, 485; sec. 7, Reorganization Plan No. III, approved April 3, 1939; sec. 7 (c), Reorganization Plan No. IV, approved April 3, 1939; 54 Stat. 1233, 1236; Letter of the Director of the Bureau of the Budget construing Reorganization Plans Nos. III and IV, dated May 2, 1940)

Issued this 1st day of August 1947.

F. B. Lee,
Acting Administrator of Civil Aeronautics

(F. R. Doc. 47-7799; Filed, Aug. 20, 1947; 9:13 a.m.)

FEDERAL AVIATION AGENCY
FLIGHT STANDARDS SERVICE
Washington 25, D. C.

March 2, 1962

CIVIL AIR REGULATIONS DRAFT RELEASE NO. 62-9

SUBJECT: Approval of Air Carrier Training Programs

The Flight Standards Service of the Federal Aviation Agency has under consideration amendments to Parts 40, 41, and 42 of the Civil Air Regulations concerning approval of air carrier training programs. The reasons therefor are set forth in the explanatory statement of the attached proposal which is being published in the Federal Register as a notice of proposed rule making.

The Flight Standards Service desires that all persons who will be affected by the requirements of this proposal be fully informed as to its effect upon them and is therefore circulating copies in order to afford interested persons ample opportunity to submit comments as they may desire.

Because of the large number of comments which we anticipate receiving in response to this draft release, we will be unable to acknowledge receipt of each reply. However, you may be assured that all comment will be given careful consideration.

It should be noted that comments should be submitted in duplicate to the Docket Section of the Federal Aviation Agency, and in order to insure consideration should be received on or before May 10, 1962.

George C. Prill

Director,
Flight Standards Service

890c

FEDERAL AVIATION AGENCY

FLIGHT STANDARDS SERVICE

[14 CFR Parts 40, 41, 42]

[Regulatory Docket No. 1093; Draft Release No. 62–9]

NOTICE OF PROPOSED RULE MAKING

Approval of Air Carrier Training Programs

Pursuant to the authority delegated to me by the Administrator (14 CFR 405.27), notice is hereby given that there is under consideration a proposal to amend Parts 40, 41, and 42 of the Civil Air Regulations as hereinafter set forth.

Interested persons may participate in the making of the proposed rules by submitting such written data, views, or arguments as they may desire. Communications should be submitted in duplicate to the Docket Section of the Federal Aviation Agency, Room C–226, 1711 New York Avenue, N.W., Washington 25, D.C. All communications received on or before May 10, 1962, will be considered by the Administrator before taking action upon the proposed rules. The proposals contained in this notice may be changed in the light of comments received. All comments submitted will be available in the Docket Section for examination by interested persons when the prescribed date for return of comments has expired.

By amendments 40–21, 41–28, and 42–23, effective January 1, 1961 (24 F.R. 9765, 9768, 9773), Parts 40, 41, and 42 were amended to require approval of the training program established by an air carrier. However, these amendments did not specify the procedures and minimum standards that were to be used for such approval. Also, the regulations do not clearly specify that an air carrier must administer the training program as approved, that he must revise it as necessary to insure appropriate training, or that he must keep his training material and procedures current with respect to each airplane type he uses.

The amendments to the regulations proposed herein would require that training programs be established and maintained not only in accordance with the requirements of pertinent sections of the Civil Air Regulations, but also in accordance with minimum standards prescribed by the Director, Flight Standards Service. In addition, the air carrier would be required to revise his program as necessary to insure appropriate training, to obtain approval of any revision, and to administer the program for the training of each crewmember and dispatcher. The proposal would also require an air carrier to provide and keep current, for each airplane type he uses, appropriate course material, written and oral examinations, training forms, and instructions and procedures for use in conducting crewmember and dispatcher proficiency checks.

For better arrangement of the regulations, it is proposed to set forth the requirement that air carrier training programs be approved in the same section that now requires an air carrier to establish such programs. The separate section requiring approval would be deleted.

The amendments requiring approval of air carrier training programs were issued December 1, 1959. That same month the Bureau of Flight Standards prescribed and circulated by memorandum the policies and standards that were to be used for the approval of training programs, so that the air carriers could have ample time to prepare or revise their programs and get approval. After several conferences with industry representatives, during which these standards were thoroughly reviewed, certain changes were made and issued in a revised memorandum dated September 7, 1960. This memorandum has been identified as the "Training Standards Criteria."

Since the memorandum establishing standards for the approval of training programs was an expediency to assist the air carriers in meeting the January 1, 1961, effective date of the amendments, interested persons were advised that proposed Civil Aeronautics Manual material on the subject would be circulated for comment at the earliest practicable time. The industry was also advised that in developing this proposed CAM material, Flight Standards would consider the comments and recommendations they had made during discussions of the "Training Standards Criteria." Insofar as possible, the CAM appendix proposed herein reflects these comments and recommendations.

During the original discussions of the criteria to be used in the approval of training programs and in subsequent informal meetings on this subject with various segments of industry, both support of and opposition to specifying a minimum number of hours of instruction in the standards was evidenced. While the crewmembers and dispatchers strongly concur with the training standards presently in effect, the air carriers are opposed to specifying a minimum

required number of hours of ground and flight training. This opposition is based primarily on the premise that the flexibility needed to develop new training techniques and methods would be reduced, and that an unwarranted emphasis on hours would tend to limit the overall improvement of training programs. Therefore, in view of the expressed differences of opinion with respect to specifying a minimum required number of training hours in the training program standards, it is requested that particular consideration be given this matter in preparing comments on this proposal.

The underlying interest of the Agency in air carrier training programs is with the end product; i.e., competent crewmembers and dispatchers. However, in order to assure with a reasonable degree of certainty that such satisfactory end products will result, it is necessary to evaluate the training programs in advance. While a sampling of the end products may indicate the need for a reevaluation of the programs, the application of adequate standards in the formulation of the training programs will increase the probability of adequately trained crewmembers and dispatchers.

To provide flexibility for the training of those crewmembers or dispatchers who may not require a complete training course, the standards proposed herein would allow the use of modified courses in appropriate cases. For example, a crewmember hired from another air carrier might be permitted to qualify with less training, if he had already been through the training program of a carrier conducting a comparable operation with the same type of equipment on which he is qualifying. Also, we recognize that the minimum programmed hours for ground school training on certain subjects may vary among different air carriers because of differences in training techniques, procedures, and facilities. For example, an air carrier using mock-ups, films, or other training aids might reasonably program less classroom lecture time than another carrier not using such equipment. The standards proposed herein would provide for variations in the ground school curriculum when training aids are used, if the air carrier presents appropriate justification.

In consideration of the foregoing, it is proposed to amend Parts 40, 41, and 42 of the Civil Air Regulations as follows:

1. By amending § 40.280(a) and (b) of Part 40 to read as follows:

40.280 *Training requirements.*

(a) Each air carrier shall establish and maintain a training program sufficient to insure that each crewmember and dispatcher is adequately trained to perform the duties to which he is assigned. The training program shall be established and maintained in accordance with the requirements prescribed in paragraphs (b) through (e) of this section and §§ 40.281 through 40.289, and the minimum standards prescribed by the Director, Flight Standards Service; and shall be revised as necessary to insure appropriate training. The training program and any revision thereto shall meet with the approval of the Administrator or his authorized representative, and shall be administered by the air carrier for the training of each crewmember and dispatcher. Prior to serving in air transportation, each crewmember and dispatcher shall satisfactorily complete the initial phase of the program.

(b) Each air carrier shall provide adequate ground and flight training facilities, and properly qualified instructors; and shall provide and keep current, with respect to each airplane type used in air carrier operations, appropriate course material, written and oral examinations, training forms, and instructions and procedures for use in conducting crewmember and dispatcher proficiency checks required by this part. Each air carrier shall also provide a sufficient number of check airmen to conduct the flight checks required by this part. Such check airmen shall hold the same airman certificates and ratings as are required for the airman being checked.

2. By deleting § 40.290.

3. By adding an appendix to Part 40 to read as follows:

Appendix

STANDARDS FOR THE PREPARATION AND APPROVAL OF AIR CARRIER TRAINING PROGRAMS

General

1. *Purpose.* These standards prescribe the procedures for approval of air carrier crewmember and dispatcher training programs and the minimum curriculum requirements for such programs.

2. *Application for approval.*

(a) The air carrier shall submit an application for initial approval of its training program to the FAA Principal Operations Inspector. The application shall be accompanied by three copies of the air carrier's training program curriculum. The air carrier shall also submit for examination such training forms, records, and other material pertaining to the training program as may be requested by the Principal Operations Inspector.

(b) If the curriculum complies with the requirements prescribed in this Appendix, and the other pertinent material submitted for examination is adequate, the air carrier will be notified that its training program has been approved and an approved copy of the curriculum will be returned to the air carrier.

3. *Revisions of approved training program.* Requests for approval of revisions to a previously approved training program shall be submitted to the FAA Principal Operations Inspector. If the request pertains to revision of a training program curriculum approved in accordance with the requirements prescribed in this Appendix, 3 copies of the revision for which approval is requested shall be submitted in a form that will permit it to be readily substituted, if approved, for that portion being replaced in the approved training program curriculum on file with the FAA.

4. *Curriculum; general form and content.* The training program curriculum shall include a table of contents setting forth in appropriately numbered sections the following:

(a) The policy and procedures to be employed by the air carrier in complying with the training requirements for all crewmembers and dispatchers;

(b) The initial, upgrading, transitional, recurrent, and emergency courses of training administered to dispatchers and to each type of crewmember including the ground school, synthetic trainer, aircraft familiarization, and flight training subjects and maneuvers, as appropriate (separate sections should be used for the dispatchers and for each type of crewmember);

(c) Appropriate detailed descriptions or pictorial displays of all normal and emergency flight maneuvers and procedures to be administered in the flight phase of the training program;

(d) The minimum hours of training and instruction programmed for each phase of the ground, synthetic, and flight training required for approval; and

(e) Provisions for giving practical tests or closed-book written examinations, as appropriate, in all required subjects.

Detailed Curriculum Requirements

11. *Ground school training.* The curriculum shall provide for ground school instructions and training for crewmembers and dispatchers in accordance with the requirements prescribed by Part 40 of the Civil Air Regulations. It shall also include the subjects listed in paragraphs (a) through (j) of this section, designated by appropriate symbols, for the type of operation conducted by the air carrier. In establishing the ground school training curriculum for individual air carriers, subject matter which is not necessary for the training requirements of the air carrier's particular type of operation is not required for approval. In all cases, the curriculum shall include ground school training and instruction for crewmembers and dispatchers in those subjects considered necessary to insure that they will perform their duties with a high level of proficiency in the particular type of operation conducted by the air carrier. The following subjects are applicable to the pilot in command, second in command and third pilot; and to dispatchers, flight engineers, navigators, and flight attendants as indicated:

NOTE.—The following symbols are used to designate those segments of each subject in which a particular crewmember and a dispatcher must be given training and instruction:

PC—Pilot in command,
2C—Second in command,
3P—Third pilot,
FE—Flight engineer,
DS—Dispatcher,
NA—Navigator, and
FA—Flight attendant.

(a) *Crew duties and responsibilities.*

(1) Orientation—DS, FA, NA, FE;
(2) Organizational structure—DS, FA, NA, FE;
(3) Company policies—DS, FA, NA, FE;
(4) Verification of qualifications—DS, NA, FE;
(5) Use of intoxicants—DS, FA, NA, FE;
(6) Duties and responsibilities—DS, FA, NA, FE;
(7) Issuance of manuals and equipment—DS, FA, NA, FE;
(8) Conduct of flight—DS, NA, FE;
(9) Flight simulator or procedural trainer—FE;
(10) Preflight duties—NA, FE;
(11) Inflight duties—FA, NA, FE;
(12) Postflight duties—FA, NA, FE;
(13) Authority, command and second in command—DS, FA, NA, FE;
(14) Emergency authority and responsibility—DS, FE;
(15) Passenger handling—FA, FE;
(16) Alternate, provisional, and unscheduled landings—DS, FE;
(17) Illness, crew and/or passengers—FA, NA, FE.

(b) *Civil Air Regulations and Civil Aeronautics Manual relative to each part, where applicable.*

(1) CAR/CAM 4a—Airplane Airworthiness (non-T Category)—DS, FE;
(2) CAR/CAM 4b—Airplane Airworthiness (T Category)—DS, FE;
(3) SR–422, SR–422A, SR–422B } Turbine-Powered Transport Category Airplanes of Current Design—DS, FE;
(4) CAR/CAM 29—Physical Standards for Airmen; Medical Certificates—DS, NA, FE;
(5) CAR/CAM 40—Scheduled Interstate Air Carrier Certification and Operation Rules—DS, NA, FE;
(6) CAR/CAM 41—Certification and Operation Rules for Scheduled Air Carrier Operations Outside the Continental Limits of the United States—DS, NA, FE;
(7) CAR/CAM 42—Irregular Air Carrier and Off-Route Rules—DS, NA, FE;
(8) CAR/CAM 43—General Operation Rules—DS, FE;
(9) CAR/CAM 45—Commercial Operator Certification and Operation Rules—DS;
(10) CAR/CAM 49—Transportation of Explosives and Other Dangerous Articles—DS, FE;
(11) CAR/CAM 60—Air Traffic Rules—DS, NA;
(12) Part 320 of the Civil Aeronautics Board's Safety Investigation Regulations—Notification and Reporting of Aircraft Accidents and Overdue Aircraft—DS.

(c) *Navigation.*

(1) The globe; size, shape, movement, and time—DS, NA;

(2) Projections; maps, charts, and limitations—DS, NA;

(3) Navigational computer and its use—DS, NA;

(4) Basic principles of dead reckoning navigation—DS, NA;

(5) Celestial navigation—NA;

(6) Radio navigation; loran and radar—NA;

(7) Single heading navigation—NA;

(8) Pressure pattern flight planning—DS, NA;

(9) Emergency aids to navigation; VHF-DF and HF-DF—DS, NA;

(10) Navigational publications; Flight Information Manual, Airman's Guide, NOTAMS, etc.—DS, NA;

(11) Flight plans and procedures—DS, NA;

(12) En route requirements and procedures—DS, NA;

(13) Continental and oceanic control—DS, NA;

(14) High density traffic control ADIZ, restricted and prohibited areas—DS, NA;

(15) Fuel requirements and cruise control—DS, NA, FE;

(16) Airports; provisional and alternate airport requirements—DS;

(17) Approach procedures and plates, ASR-PAR-ILS-GCA-LF/MF-VOR-ADF—DS;

(18) Approach and landing minimums—DS.

(d) *Meteorology.*

(1) Physics and properties of the atmosphere—DS, FE;

(2) Air mass analysis—DS, FE;

(3) Adiabatic processes—DS, FE;

(4) Temperature, dewpoint, and humidity—DS, FE;

(5) Frontal weather systems—DS, FE;

(6) Pressure systems—DS, FE;

(7) Precipitation; rain, freezing rain, snow, sleet, hail, and ice—DS, FE;

(8) Clouds and fog—DS, FE;

(9) Winds including jet stream—DS, FE;

(10) Turbulance and adverse weather; thunderstorms, tornadoes, and hurricanes—DS, FE;

(11) Upper air soundings—DS, FE;

(12) USWS reports and forecasts—DS, NA, FE;

(13) Interpretation of weather data—DS, NA, FE;

(14) Flight principles of pressure patterns—DS, NA;

(15) Pilot inflight weather reports—DS, FE;

(16) High altitude weather—DS, FE.

(e) *Communications.*

(1) Communications procedures—DS, FE;

(2) Emergency procedures—DS, FE;

(3) Visual signals—FE;

(4) Ramp and hand signals—FE;

(5) FAA emergency code of distress—FE, NA;

(6) NOTAMS—DS, FE, NA;

(7) Clearance symbols and terminology—DS, FE, NA;

(8) ATC clearance copying—NA;

(9) Continental Morse Code copying practice—NA.

(f) *Airway traffic control.*

(1) Types of clearance and flight plans—DS;

(2) ADIZ DVFR clearances and reports—DS;

(3) Types of approaches and holding procedures;

(4) Jet flight planning—DS, NA, FE;

(5) Protection afforded;

(6) Acceptable tolerances—NA;

(7) Pilot and company responsibility—NA;

(8) Government responsibility—DS;

(9) Flight plan cancellations—DS;

(10) Search and rescue protection—DS, FE, NA;

(11) Manuals and publications—DS, NA, FE,

(i) Definitions and symbols—DS, NA,

(ii) Flight Information Manual—DS, NA, FE,

(iii) Airman's Guide—DS, NA, FE,

(iv) ANC Manual—DS, NA.

(g) *Emergencies.*

(1) Authority and responsibilities—DS, FA, NA, FE;

(2) Determination and declaration for the following types—DS, FA, NA, FE:

(i) Potential,

(ii) Actual,

(iii) Crash,

(iv) Inflight,

(v) Landing,

(vi) Ground.

(3) Termination of emergency—FE, NA;

(4) Codes and signals—FA, FE, NA;

(5) Available aids and assistance—DS, FA, NA, FE;

(6) Drills and procedures for:

(i) Ditchings—FA, NA, FE,

(ii) Aircraft evacuation—FA, NA, FE,

(iii) Fire fighting—FA, NA, FE,

(iv) Smoke evacuation—FA, NA, FE,

(v) Fuel dumping—FE,

(vi) Propeller feathering—FE,

(vii) Overspeed propeller—FE,

(viii) Hydraulic failures—FE,

(ix) Gear extension failure—FE,

(x) Gear collapse—FA, NA, FE,

(xi) Utilization of emergency exits—FA, NA, FE,
(xii) Communications failure — FE, NA,
(xiii) Inflight death—FA, FE, NA,
(xiv) Bomb hoax—FE, DS, NA, FA,
(xv) Unreported flight—DS, FE,
(xvi) Decompression—DS, FA, NA, FE,
(xvii) Descents—FA, NA, FE.

(h) *Operations.*
(1) Dispatching procedures—DS, FE, NA;
(2) Weight and balance—FE;
(3) Flight planning—DS, NA, FE;
(4) Jet flight planning—DS, NA, FE;
(5) Ground handling and public protection—FE;
(6) Flight schedules—FE, DS, NA;
(7) Cruise control—NA, FE;
(8) Operating specifications—DS, FE, NA;
(9) Flight training simulator and aircraft proficiency checks—FE;
(10) Maintenance and logbooks including equipment "go-no-go" lists—DS, FE;
(11) Ferry flights—DS, FE;
(12) High altitude indoctrination—NA, FE, FA.

(i) *Equipment.*
(1) General description—DS, FA, NA, FE;
(2) Performance and limitations—DS, FE;
(3) Powerplants and propellers—DS, FE;
(4) Systems:
(i) Fuel—FE,
(ii) Oil—FE,
(iii) Hydraulic—FE,
(iv) Pneumatic—FE,
(v) Water injection—FE,
(vi) Heating—FE,
(vii) Cooling—FE,
(viii) Pressurization—FE,
(ix) Autopilot—FE,
(x) Radio and radar—NA, FE,
(xi) Electrical—NA, FE,
(xii) Vacuum—FE,
(xiii) Ignition—FE,
(xiv) Induction—FE,
(xv) Ice elimination—FE,
(xvi) Instruments and navigational—NA, FE,
(xvii) Control—FE.
(5) Oxygen equipment—FA, NA, FE;
(6) Emergency equipment—FA, NA, FE;
(7) Emergency systems and procedures—NA, FE.

(j) *Familiarization assignments.*
(1) Air route traffic control center—DS, NA;
(2) Airport traffic control tower;
(3) Flight dispatch center—NA, FE, DS;
(4) Pilot schedule office—FE, NA;
(5) Station operations—DS, FA, NA, FE;
(6) Meteorological office—DS, NA, FE;
(7) Aircraft on ground—DS, FA, NA, FE;
(8) Maintenance facility—FE;
(9) Student flight training—FE;
(10) Synthetic flight trainer—FE;
(11) En route line flights—FA, DS, NA, FE.

12. *Flight training.* The curriculum shall provide for flight training which will insure adequate initial, transitional, upgrading, recurrent, and emergency training for all crewmembers on the aircraft type(s) to which they are assigned in air carrier operations. The recurrent training shall be adequate to insure the continued maintenance by all air carrier crewmembers of a high level of proficiency. The curriculum shall provide for the flight training required by Part 40 of the Civil Air Regulations and include the flight training/simulator subjects for initial, transitional, upgrading, and recurrent training listed in paragraphs (a) through (y) of this section.

NOTE.—Subjects listed in this section represent a combined list which may be used for simulator and flight phases of training. Subjects in which pilots serving as second in command must be trained are identified with an asterisk (*). The subjects listed for the development of air carrier simulator/synthetic trainer courses should not be confused with the standards for the approval of simulator courses prescribed under § 40.302(b)(3).

(a) *Briefing session.**
(b) *Preflight inspection of the aircraft.**
(c) *Engine starting.**
(d) *Taxiing.*
(e) *Prior to takeoff checks.**
(f) *Takeoffs:*
(1) Normal takeoffs;*
(2) Crosswind takeoffs;
(3) Night takeoffs;*
(4) Takeoffs with simulated engine failure.*
(g) *Climb and climbing turns.**
(h) *Maneuver—minimum speed.**
(i) *Approach to stalls.**
(j) *Rapid descent and pullup.*
(k) *Engine-out procedures and familiarization.**
(l) *Roll rates—spoilers on, off, and up.**
(m) *Dutch roll.**
(n) *Spoilers.**
(o) *Stabilizer trim:**
(1) Procedures to be used for runway stabilizer;
(2) Procedures to be used for jammed stabilizer;
(3) Procedures to be used for landing and "go-around" with horizontal stabilizer out of trim.
(p) *Tuck and mach warning.**
(q) *Recovery from unusual attitudes.*
(r) *Emergency descent.*
(s) *Traffic control procedures.**
(t) *Instrument approach, missed approach, and orientation procedures for ILS, VOR, ADF, LFR, GCA, PAR, ASR.**
(u) *Landings:*
(1) Normal landings;*
(2) Night landings;*
(3) Crosswind landings;*

(4) Zero flap landings;
(5) Maneuvering to landings with simulated failure of 50 percent of power units concentrated on one side of the aircraft;
(6) Maneuvering to a landing under circling minimum conditions.

(v) *Operation of flight engineer panel.* Sufficient training shall be given to qualify a crewmember, other than the flight engineer, to perform satisfactorily in this capacity, should the flight engineer become incapacitated.

(w) *Systems use:**
(1) Anti-icing system;
(2) Pressurization and air conditioning;
(3) Fuel systems;
(4) Cockpit and aircraft lighting system;
(5) Navigational and communication systems;
(6) Flight instrumentation.

(x) *Inflight emergency procedures:**
(1) Engine fire;
(2) Heater and cargo compartment—fire-smoke removal;
(3) Empennage fire;
(4) Wing fire;
(5) Cabin fire-smoke removal;
(6) Electrical fires and failures;
(7) Flight instrument power failure;
(8) Pneumatic failure;
(9) Hydraulic system failures;
(10) Flight control boost-off procedures;
(11) Emergency decompression;
(12) Fuel dumping.

(y) *Ground emergencies:**
(1) Emergency evacuation;
(2) Ditching drill;
(3) Brake fire;
(4) Use of emergency brake;
(5) Engine and fuselage fires.

13. *Minimum hours of training.*

(a) The curriculum shall program for each crewmember and dispatcher the minimum number of hours of training in the various phases of training, as specified in the following Charts 1 and 2:

NOTE.—The symbols used in Charts 1 and 2 have the following meaning:
PC—Pilot in command;
2C—Second in command (copilot) and third pilot in a required three-pilot crew;
3P—Third pilot not required by regulation;
FE—Flight engineer;
NA—Navigator;
FA—Flight attendant;
DS—Dispatcher;
I/T—Initial training;
U—Upgrading training;
R—Recurrent training;
X—One round trip (total time not less than 5 hours).

(b) The minimum hours of training required by paragraph (a) of this section shall be programmed for the following defined training phases:

(1) *Basic training.* Basic training or indoctrination is that phase of training required to qualify all newly employed crewmember and dispatcher personnel for service in air transportation.

(2) *Initial training (I/T).* Initial training is that phase of training required to qualify crewmembers and dispatchers for service in connection with an airplane type for which they are not currently qualified.

(3) *Upgrading training (U).* Upgrading training is that phase of training required to qualify second in command (copilot) personnel to serve in a pilot-in-command capacity on an airplane type on which they are currently qualified to serve as second in command. If a second in command is to be upgraded to serve in a pilot-in-command capacity on an aircraft type on which he is not currently qualified to serve as second in command, he must be trained in accordance with the requirements for initial training. Upgrading training is also the training required to qualify personnel to serve in a second-in-command capacity on an airplane type on which they are currently qualified to serve in the capacity of a third pilot (3P) not required by the Civil Air Regulations.

4. *Recurrent training (R).* Recurrent training is that phase of training required within each 12-month period to insure the continued competence of crewmembers and dispatchers. Recurrent flight training for the pilot in command shall be programmed as two training periods, each period consisting of not less than half of the recurrent flight training required by paragraph (a) of this section.

(c) The initial equipment line check requirements of paragraph (a) of this section represent the following:

(1) For a pilot in command, the minimum time this crewmember must be observed by a qualified check airman while performing the duties of pilot in command;

(2) For a pilot qualifying to serve as second in command, the minimum time the trainee must spend in observing an actual operation prior to assignment as a second in command in air carrier operations; and

(3) For a flight engineer, the minimum time this crewmember must be observed by a qualified flight engineer while performing the duties of flight engineer in air carrier operation.

14. *Provisions for adjustment of minimum hours of training.* The minimum programmed hours of training required by section 13 for all curriculums are predicated on complete training for each crewmember and dispatcher on one type of airplane. To account for individual training combinations, circumstances, and procedures, an air carrier, in its curriculum, may provide for adjustments in these minimum programmed hours of training, in accordance with the provisions of paragraphs (a) through (e) of this section.

(a) *Ground school training.*

(1) When training crewmembers or dispatchers on more than one type of airplane, the subject matter that is repetitious for each type may be given once, and need not be repeated for each airplane. For example, where dispatchers are given initial training on several airplane types, the subjects applicable to all types need be given only once.

Chart 1

MINIMUM PROGRAMMED HOURS OF TRAINING

		I *Ground School*						II *Flight Training*			III *Procedural Trainer Approved Simulator*			IV *Synthetic Instrument Trainer*		V *Initial Equipment Line Check*					
		PC FE	2C	3P	NA	FA	DS	PC	2C FE	3P	PC	2C	3P	PC	2C	PC	2C	3P	FE	NA	DS FA
Basic (Indroctrination of New Hires)		40	40	40	40	40	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—
DC–3,	I/T	40	40	—	—	8	16	8	4	—	—	—	—	4	4	10	10	—	—	—	X
C–46	U	—	16	—	—	—	—	—	4	—	—	—	—	—	4	—	10	—	—	—	—
	R	12	12	—	—	3	8	2.5	1.0	—	—	—	—	4	4	—	—	—	—	—	—
M202/404,	I/T	64	64	—	—	8	30	8	5	—	10	10	—	4	4	15	15	—	—	—	X
CV–240/440	U	—	32	—	—	—	—	—	5	—	—	10	—	—	4	—	10	—	—	—	—
	R	16	16	—	—	4	8	3	1.5	—	10	10	—	4	4	—	—	—	—	—	—
DC–4,	I/T	64	64	—	24	8	40	8	5	—	10	10	—	4	4	15	15	—	7.5	12	X
L–049, 749	U	—	32	—	—	—	—	—	5	—	—	10	—	—	4	—	15	—	—	—	—
L–1049	R	16	16	—	12	4	10	3	1.5	—	10	10	—	4	4	—	—	—	—	—	—
B–377	I/T	80	80	—	24	10	40	10	6	—	15	15	—	4	4	20	20	—	10	12	X
L–1649	U	—	40	—	—	—	—	—	6	—	—	15	—	—	4	—	20	—	—	—	—
DC–6/7	R	20	20	—	12	5	10	3	1.5	—	10	10	—	4	4	—	—	—	—	—	—
F–27	I/T	80	80	—	—	8	40	10	6	—	—	—	—	4	4	20	20	—	—	—	X
CV–540	U	—	40	—	—	—	—	—	6	—	—	—	—	—	4	—	20	—	—	—	—
	R	20	20	—	—	4	10	3	1.5	—	—	—	—	4	4	—	—	—	—	—	—
Viscount	I/T	80	80	—	—	10	40	10	6	—	10	10	—	4	4	25	25	—	—	—	X
	U	—	40	—	—	—	—	—	6	—	—	10	—	—	4	—	25	—	—	—	—
	R	20	20	—	—	5	20	3	1.5	—	—	—	—	4	4	—	—	—	—	—	—
L–188 CL–44	I/T	120	120	—	—	10	40	10	7	—	15	15	—	4	4	25	25	—	12.5	—	X
Argosy	U	—	60	—	—	—	—	—	7	—	—	15	—	—	4	—	25	—	—	—	—
Caravelle	R	20	20	—	—	5	20	3	1.5	—	10	10	—	4	4	—	—	—	—	—	—
B–707	I/T	120	120	120	32	16	40	20	10	*	20	20	*	4	4	25	25	—	12.5	12	X
DC–8	U	—	60	—	—	—	—	—	10	10**	—	15	15**	—	4	—	15	15	—	—	—
CV–880	R	25	25	25	16	12	20	6	3	*	10	10	*	4	4	—	—	—	—	—	—

*Amount of Training Will be Predicated on Actual Duties Assigned.
**Lesser Time May be Acceptable Based on Previous Training.

Chart 2

MINIMUM PROGRAMMED HOURS OF TRAINING—SMALL AIRCRAFT

(12,500 Pounds or Less MOTOW)

		I			II			III		IV			
		Ground			*Flight Training*			*Synthetic Instrument Trainer* [1]		*Initial Equipment Line Check*			
		PC	2C	FA	PC	2C	FA	PC	2C	PC	2C	FA	DS
Basic Indoctrination of New Hires		40	40	20	—	—	—	—	—	—	—	—	—
Single Engine	I/T	8	—	—	2	—	—	1	—	5	—	—	—
	U	—	—	—	—	—	—	—	—	—	—	—	—
	R	5	—	—	2	—	—	1	—	—	—	—	—
Multiengine	I/T	20	20	4	4	1	—	2	1	5	3	—	—
	U	—	8	—	—	3	—	—	1	—	2	—	—
	R	8	8	2	2	1	—	2	1	—	—	—	—
Instrument	I/T	20	10	—	6	1	—	4	2	10	5	—	—
	U	—	6	—	—	5	—	—	3	—	5	—	—
	R	4	4	—	2	1	—	2	1	—	—	—	—

[1] Link time not required when equivalent training is given in an aircraft under hood.

NOTE.—This standard does not apply to turbine-powered airplanes.

(2) Recurrent ground school training includes instruction in such general subjects as regulations, weather, and company policy, as well as training on a specific type of airplane. In programming recurrent ground school training for crewmembers or dispatchers who hold qualifications on more than one type of airplane, the general subjects applicable to all types need not be repeated, and training may consist of that necessary to cover such general subjects and to insure adequate training on each type of airplane involved.

(3) The minimum programmed hours of recurrent ground school training may be reduced up to 25 percent when the air carrier provides a directed study course, including properly supervised closed-book examinations.

(b) *Flight training.*

(1) The minimum programmed hours of flight training required by section 13 for all curriculums is that time required in the airplane when training in aircraft simulators or procedural trainers is not provided. When approved simulator training is provided, and the programmed time is equivalent to that contained in the procedural trainer/approved simulator column, the minimum programmed flight time for initial training may be reduced by 25 percent.

(2) When training is provided in procedural trainers or aircraft simulators that have not been approved, a representative of the Administrator may authorize appropriate reductions up to 25 percent in the airplane flight time programmed for initial training. Prior to such authorization, the training device will be evaluated to determine the degree of simulation provided.

(3) Any programmed period of recurrent flight training in a particular type of airplane may also be accomplished by means of a proficiency check or an approved course of training in an aircraft simulator. When a proficiency check is used, the flight time must be sufficient to satisfactorily accomplish the check, but need not be equivalent to that programmed for the training period. A course of training in an aircraft simulator may be approved for the recurrent flight training of flight engineers as well as pilots.

(4) Flight crewmembers who retain qualifications on two or more types of airplanes need not be given more than one period of recurrent flight training in each type within a 12-month period. For a second in command, third pilot, or flight engineer, the crew concept must be used in at least one period of recurrent flight training within each 12-month period.

(5) When a proficiency check or period of recurrent flight training for a second in command, third pilot, or flight engineer is given separately and does not involve the crew concept, the flight training time programmed for that period may be reduced to that necessary for covering the required training or proficiency check maneuvers. If this procedure is used, the crewmember involved shall be required to satisfactorily accomplish each training or proficiency check maneuver prior to completion of the check or training period.

(6) Crewmembers who progress successfully through any phase of the air carrier's flight training program in less than the minimum flight time programmed for that phase, and are recommended by the air carrier, may be flight checked by a representative of the Administrator or a check airman of the air carrier. The privilege of flight examining crewmembers recommended for checks with less than the minimum programmed hours of flight training will be discontinued if the failure rate of such crewmembers indicates that the training given is not sufficient to insure competence.

(c) *Ground school and flight training.*

(1) An air carrier may obtain approval of a modified version of the complete training course, for use in training crewmembers or dispatchers hired from another air carrier using the same type of equipment in a comparable operation. The modified version shall provide for sufficient training to bring the individual or group to the proficiency level normally achieved by a complete course of training, and shall include at least the following:

(i) A written examination on company policies and procedures, the airplane type(s) involved, and other subjects peculiar to the particular air carrier;

(ii) Appropriate flight checks on all normal and emergency procedures; and

(iii) A requirement that the training record for the crewmember or dispatcher must include a complete history of the individual's background, previous training, qualifications, and the examinations conducted by the present employer to determine his proficiency status.

(2) An air carrier may obtain approval of modified versions of the complete training course, for use in training crewmembers or dispatchers transitioning from one variation of an airplane type to another variation of the same type, or from one airplane type to a similar type, as in the case of transition from a Boeing 707 to a Douglas DC–8. For simplicity of reference, the term "differences training" may be used to identify this training. "Difference training" courses must provide for sufficient training to insure proficiency in the airplane(s) involved, and will be evaluated on an individual basis.

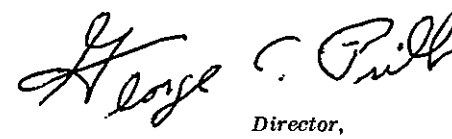
(d) *Initial equipment line checks.* The minimum programmed hours of initial equipment line checks for a pilot in command, second in command, or flight engineer may be reduced by not more than 50 percent by substituting one takeoff and landing for each programmed hour. For example, the 20 hours of line checks programmed for a pilot in command in L–1649 airplanes may be reduced to 10 hours when this crewmember makes 10 takeoffs and landings during the 10-hour period.

(e) *Prohibition against deviations.* An air carrier shall not deviated from the minimum pro-

grammed hours specified in its training program curriculum, except in accordance with adjustments specified in and approved as a part of the approved training program.

4. By promulgating similar amendments to Part 41 and to Part 42 for the carriers and commercial operators operating large aircraft under the provisions of that Part.

These amendments are proposed under the authority of sections 313(a), 601 and 604(a) of the Federal Aviation Act of 1958 (72 Stat. 752, 775, 778; 49 U.S.C. 1354(a), 1421, 1424).



Director,
Flight Standards Service.

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