# CHAPTERS 21, 27, 40 AND 61, AIR TRAFFIC RULES

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## CHAPTER 21. AIRLINE PILOT RATING

21.0. PROVISION FOR RATING: Pursuant to the provisions of the Air Commerce Act requiring the Secretary of Commerce to provide for the rating of airmen serving in connection with aircraft of the United States as to their qualifications for such service, airline pilots will be rated as to competence in accordance with the provisions of the following paragraphs.

21.1. MINIMUM REQUIREMENTS: To be eligible for an airline pilot competency rating, an applicant shall comply with the following minimum requirements:

21.10. Age—Applicant shall be at least 23 years of age.

21.11. Character—Applicant shall be of good moral character.

21.12. Citizenship—Applicant shall be

21.120 (a). a citizen of the United States, or

21.121 (b). a citizen of a foreign country which grants reciprocal commercial pilot privileges to citizens of the United States on equal terms and conditions with citizens of such foreign country, or

21.122 (c). an alien who has filed his declaration of intention to become a citizen of the United States and notifies the Secretary of the serial number of such declaration and of the date thereof and of the court in which it is filed: *Provided,* That the certificate of competency is, in such case, subject to revocation if the holder does not from time to time keep the Secretary advised of the status of the proceedings in court and does not diligently and successfully prosecute them and become admitted as a citizen.

21.13. Education:

21.130 (a). Applicant shall be able to read, write, and understand the English language, and shall be able to speak the English language without accent or impediment of speech which would interfere with two-way radio conversation; and

21.131 (b). shall be a high school graduate or what is deemed by the Secretary to be its equivalent from the applicant's showing of general experience and aeronautical experience, knowledge and skill.

21.14. Physical Condition — Applicant shall comply with the following minimum requirements as to physical condition:

21.140 (a). Eye—Applicant shall have a visual acuity of at least 20/20 in each eye separately without correction; an average depth perception of 30 millimeters or less without correction; no diplopia; not more than 1 diopter of hyperphoria; properly balanced eye muscles with an abduction of 3 diopters or more; sufficient accomodation to pass a Bureau test based primarily upon ability to read official aeronautical maps; normal fields of vision; and no pathology of the eye.

21.141 (b). Ear, Nose, Throat and Equilibrium — Applicant shall be able to hear the whispered voice at eight feet with each ear separately; shall have no acute or chronic disease of the middle or internal ear; no disease of the mastoid; no unhealed perforations of the ear drum; no disease or malformation of the nose or throat which may interfere with or be aggravated by flying, and no disturbance in equilibrium.

21.142 (c). General Physical Condition — Applicant shall have no organic or functional disease or structural defect or limitation which might interfere with the safe piloting of aircraft.

21.143 (d). Nervous System—Applicant shall have no disease of the mental or nervous system and no abnormality of the personality.

21.15. Aeronautical Knowledge — Applicant shall be familiar with and shall accomplish a satisfactory written examination on:

21.1500 (a). The provisions of CAR 00, 02, 40, 60, 61 and 98, with CAR 01.70 through 01.74, 04.52 and 04.53, and with 27, 30, 31, 91 and 94 insofar as the same deal with airline operations, and with CAR 41, 70, 71 and 77 if the pilot is to be rated for airline operation in whole or in part without the United States.

21.1501 (b). The fundamentals of air navigation and the use of formulae and of instruments and other navigational aids, both in aircraft and on the ground, which are deemed necessary for the navigation of aircraft by instruments.

21.1502 (c). The general system of weather collection and dissemination.

21.1503 (d). Weather map, weather forecast, and weather sequence abbreviations, symbols and nomenclature.

21.1504 (e). Elementary meteorology, including modern knowledge of the cyclone as associated with fronts.

21.1505 (f). Cloud forms.

21.1506 (g). Department of Agriculture Weather Bureau Circular "N", Instructions for Airway Meteorological Service, and all amendments thereto.

21.1507 (h). Weather conditions, including icing conditions and upper-air winds, affecting aeronautical activities.

21.1508 (i). Air navigation facilities in use on the civil airways, including rotating beacons, course lights, radio ranges, and radio marker beacons.

21.1509 (j). Data obtained from airplane weather observations and meteorological data reported from observations made by pilots engaged in airline flights.

21.1510 (k). The influence of terrain upon meteorological conditions and developments, and the relation thereof to airline flight operations.

21.16. Aeronautical Experience—Applicant shall comply with the following requirements:

21.160 (a). Applicant shall be possessed of a valid commercial pilot rating, or equivalent as determined by the Secretary.

21.161 (b). Applicant shall have logged at least 1,200 hours of certified solo flying time within the last 8 years, of which at least 500 hours shall have been in cross-country

flight, and of which at least 5 hours of solo flying time shall have been logged within the 60 days last preceding the date of filing the application.

21.162 (c). Applicant shall have logged at least 100 hours of solo night flying, of which at least 50 hours shall have been cross-country over lighted airways.

21.163 (d). Applicant shall have had at least 20 hours of instrument flying instruction and practice. In lieu of not to exceed 10 hours of the foregoing 20-hour requirement applicant may show an equal or greater amount of instruction and practice under simulated conditions approved by the Secretary.

21.17. Aeronautical Skill — Applicant shall demonstrate satisfactorily his ability to pilot an aircraft of each type, weight and engine classification, as provided in CAR 21.34 and 21.35, on which he seeks rating, in normal take-offs, turns, landings, and the following maneuvers (the maneuvers in CAR 21.175 and 21.176 may be performed in a type of aircraft satisfactory to the examining Bureau inspector):

21.170 (a). From 2,000 feet, with engine throttled, a 360° turn and a landing in normal landing attitude, the wheels touching the ground beyond and within 200 feet of a line or point designated by the examining Bureau inspector.

21.171 (b). From 1,500 feet, with engine throttled, a 180° turn and a landing in normal landing attitude, the wheels touching the ground beyond and within 200 feet of a line or point designated by the examining Bureau inspector.

21.172 (c). A series of 3 shallow and 3 steep figure 8 turns, and one 720° steep power turn in each direction. During these maneuvers, the pilot shall not gain or lose more than 200 feet of altitude.

21.173 (d). A spiral in one direction from 2,000 feet, or higher, with engine throttled, and a landing in normal landing attitude, the wheels touching the ground beyond and within 200 feet of a line or point designated by the examining Bureau inspector.

21.174 (e). Altitudes and permissible errors in CAR 21.170 through 21.173 are applicable when flight tests are conducted in aircraft of a gross weight in excess of 10,000 pounds, otherwise those in CAR 20.1470 through 20.1472 apply.

21.175 (f). Emergency maneuvers such as spirals, side slips and climbing turns, and recovery from stalls, maneuvers in multi-engine equipment with authorized load with one engine inoperative, and such other maneuvers as the examining Board inspector may deem necessary to demonstrate the competence of the applicant.

21.176 (g). A right hand and a left hand spin, each of at least two full turns, with not to exceed 10 degrees error.

Note.—The requirements of CAR 21.170 through 21.176 may be met by holding of a valid commercial rating.

21.177. Applicant shall accomplish satisfactorily a flight test, solely by instruments, with respect to the following:

21.1770 (a). Straight level flight for a given period of time.

21.1771 (b). Moderate banks during 180° and 360° turns in both directions.

21.1772 (c). Minimum glides and maximum climbs, and approaches to stalled attitudes of flight.

21.1773 (d). Climbing turns.

21.1774 (e). Recovery from stalls, skids, slips and spirals, and from banks in excess of 45°.

21.1775 (f). Such other maneuvers as the examining inspector deems necessary.

21.1776 (g). A practical demonstration, while in flight or under simulated conditions, of estimating arrival time, taking into account speed, wind and drift.

Note.—The requirements of CAR 21.1770 through 21.1774 may be met by the holding of a valid instrument rating.

21.178. Radio Skill — Applicant shall accomplish a satisfactory flight test, in a hooded cockpit, with respect to the following:

21.1780 (a). Tuning radio.

21.1781 (b). Orientation.

21.1782 (c). Following radio range.

21.1783 (d). *Locating cone of silence.*

21.1784 (e). Letting-down-through on the range by the approved instrument approach procedure for the particular airport used in connection with the test.

21.1785 (f). Such other maneuvers as the examining inspector deems necessary.

21.2 AIRLINE PILOT COMPETENCY CERTIFICATE

21.20. *General:* An airline pilot competency certificate will be issued by the Secretary to a natural person, who is an applicant therefor, after approval of an application made and proofs submitted in connection therewith and if, upon inspection and examination, said applicant is found by the Secretary to meet the minimum requirements prescribed therefor in CAR 21.1. For 6 months after the effective date of these regulations the holder of both a valid transport pilot license and a scheduled air transport rating, upon a showing of the same and upon application made as provided in CAR 21.21, will be issued an airline pilot certificate with ratings specifying aircraft of the type, weight and engine classification as specified on his transport pilot license. In the interim, piloting shall be under authority heretofore granted.

2121. *Application:* Application for an airline pilot certificate, subscribed under oath, shall be made to the Secretary upon a form supplied for the purpose.

21.210. Application to Amend—When any change in an airline pilot competency rating is desired, the applicant shall file a written request therefor with the Secretary upon a form supplied for the purpose.

21.211. Proceeding to Amend—A proceeding to amend an airline pilot competency rating may be instituted by the Secretary when, in his opinion, the pilot is no longer competent in respect of some matter specified in the certificate. Notice of such proceeding shall be addressed to the pilot with opportunity for a hearing. In the interim, the certificate may be suspended in whole or in part. Following the hearing, the Secretary may issue a re-rating as to competency.

21.22. *Issuance:* Upon approval of an application duly made, proofs submitted and examinations and tests satisfactorily completed, an airline pilot certificate will be issued in an appropriate form.

21.220. Temporary Certificate—Following application made for an airline pilot certificate, but prior to approval thereof and issuance of the certificate, a temporary airline pilot certificate may be issued by the examining Bureau inspector.

21.221. Special Ratings—Any special rating, except an instrument rating, issued as provided in CAR 20.2 and 20.4 will be entered or indicated at the proper place therefor on the airline pilot certificate.

21.222. Any airline pilot, possessed of a valid certificate as such, shall be considered competent to instruct, as out-

lined in CAR 20.20, other pilots in airline service on the type of equipment in which the instructing pilot is rated.

21.23. *Display:* An airline pilot certificate shall be kept in the personal possession of the pilot at all times when piloting aircraft, and shall be presented for inspection upon the demand of any passenger, or of any authorized official or employee of the Department of Commerce or any State or municipal official charged with the duty of enforcing local laws or regulations involving Federal compliance, or upon the reasonable request of any other person.

21.24. *Duration:* An airline pilot certificate, unless sooner suspended or revoked, as provided in CAR 21.27, will remain in force for 6 months.

21.25. *Renewal:* The term of an airline pilot certificate may be renewed, for a like period as the original certificate, upon application within 45 days prior to expiration and upon satisfactory showing of the following facts:

21.250 (a). 10 hours of solo flight, in aircraft of each type, weight and engine classification for which renewal is sought, within the 6 months preceding expiration.

21.251 (b). 5 hours of flying solely by instruments within the 6 months preceding the expiration date of the certificate. In lieu of 50% of the above requirement, applicant may show an equal or greater amount of practice under simulated conditions approved by the Secretary.

21.252 (c). A satisfactory physical examination by a medical examiner of the Department of Commerce, duly authorized to so examine such pilots, completed within the 45 days preceding expiration, in accordance with the provisions of CAR 21.14. Provided, however, that the existence of a lesser grade or condition in one or more of the particulars mentioned in CAR 21.14 may not disqualify the applicant if excellence in other particulars or excellence in aeronautical experience or in aeronautical skill offsets the deficiency, in the opinion of the Secretary; and *provided*, further, that an increase in such deficiency, which occurs at any time within the effective period of the certificate and cannot be compensated for by some other excellence (as in aeronautical experience or practical skill) will be ground for the revocation of such certificate.

21.253. Reinstatement—In the event of an emergency which prevents renewal prior to expiration, and upon a showing thereof satisfactory to the Secretary, the applicant may have his airline pilot certificate validated in accordance with the provisions for renewal in CAR 21.25, provided the flight tests appropriate to the rating are again satisfactorily accomplished. The date of application for reinstatement rather than the expiration date of the certificate shall be controlling in applying CAR 21.25. There shall be but one application for reinstatement following a given lapse.

21.254. Re-Rating after Lapse—Within 6 months after the expiration date of an airline pilot certificate the holder thereof may have issued to him a solo pilot certificate upon application therefor and a satisfactory showing to the Secretary of physical competency as provided in CAR 21.252, and of 5 hours of certified solo flying time logged by the applicant within the year preceding application in aircraft of each type, weight and engine classification for which the solo pilot certificate is sought.

21.26. *Non-Transferability:* An airline pilot certificate is not transferable.

21.27. *Suspension or Revocation:* The following rules will govern the suspension or revocation of an airline pilot certificate.

21.270. Automatic Invalidation — Any physical deficiency, or any increase in physical deficiency, which occurs at any time within the effective period of an airline pilot certificate and which is not compensated for by some additional excellence as provided for in CAR 21.252, will automatically cause such pilot certificate to become invalid for the period of such physical deficiency.

21.271. General Grounds—An airline pilot certificate may be suspended or revoked by reason of any of the following on the part of the holder thereof:

21.27100 (a). Any false statement in an application for a certificate or in any report required to be submitted by these regulations.

21.27101 (b). Use or display of the certificate for any fraudulent purpose.

21.27102 (c). Refusal to exhibit the certificate upon proper demand.

21.27103 (d). Unsound physical or mental condition.

21.27104 (e). Any demonstration of incompetency in the piloting of aircraft.

21.27105 (f). Failure to wear correcting lenses when required.

21.27106 (g). Being under the influence of, or using or having personal possession of, intoxicating liquor, cocaine or other habit-forming drugs while on duty.

21.27107 (h). Knowingly taking off and carrying any passenger who is obviously under the influence of intoxicating liquor, cocaine or other habit-forming drugs.

21.27108 (i). Carelessness or inattention to duty affecting safety.

21.27109 (j). Performance of any act in connection with aircraft which is contrary to the public safety or interest.

21.27110 (k). Violation of any provision of the Air Commerce Act or any rule or regulations duly issued thereunder.

21.28. *Surrender:* Upon notice from the Secretary of the suspension or revocation of an airline pilot certificate, the holder thereof shall immediately return such certificate to the Secretary.

21.29. *Re-Application:* An applicant for an airline pilot certificate who has failed to successfully accomplish any prescribed test for such rating may apply for reexamination thereon after the expiration of 30 days from the date of such failure, provided he shows at least 10 additional hours of certified solo flying time logged by him, which shall include at least 5 hours of flying solely by instruments.

21.3 EXAMINATIONS AND TESTS

21.30. *General:* The examinations and tests prescribed in these regulations (both for an airline pilot certificate and for the ratings issued with respect thereto) will be conducted by an authorized officer or employee of the Bureau or by a properly qualified person designated for the purpose by the Secretary. During the flight tests the airline may have a check pilot on board.

21.31. *Physical Examination:* In connection with the original issuance of any airline pilot certificate the physical examination prescribed shall be accomplished by a medical examiner of the Department of Commerce, duly authorized to so examine such pilots, before any practical or theoretical test or other examination will be given, and shall be completed within the 60 days preceding the date of filing application for such pilot certificate.

21.32. *Time and Place:* All examinations and tests will be held at such times and places as the Secretary may designate.

21.33. *Aircraft Used in Tests:* The applicant shall furnish a certificated aircraft for any flight test involved. Each such aircraft, used in any test for an airline pilot certificate shall be equipped with dual controls and shall accomodate the applicant and the inspector. Aircraft having only one elevator and aileron control for two seats, or any arrangement whereby all flight and engine controls cannot be handled in a normal or conventional manner from either seat, are not considered as having dual controls for the purpose of flight tests for pilot ratings. Each such aircraft shall have full normal visibility for the check pilot.

21.34. *Aircraft Type Classification:* For purposes of specifying the types of aircraft which the applicant is deemed competent to pilot and for convenience of examining the applicant with respect thereof, the following aircraft type classification is prescribed:

(a) Conventional airplane (land or water)

(b) Unconventional airplane (land or water)

(c) Rotorplane( land or water)

(d) Glider

(e) Aerostat

21.35. *Aircraft Weight and Engine Classification:* For purposes of specifying the weight and power-plant equipment of aircraft which the applicant is deemed competent to pilot, and for convenience of examining the applicant with respect thereto, the following aircraft weight and engine classification is prescribed:

(a) Class 1—Gross weight not more than 1,500 pounds.

(b) Class 2S—Gross weight between 1,500 and 4,000 pounds, single-engine.

(c) Class 2M—Gross weight between 1,500 and 4,000 pounds, multi-engine.

(d) Class 3S—Gross weight between 4,000 and 10,000 pounds, single-engine.

(e) Class 3M—Gross weight between 4,000 and 10,000 pounds, multi-engine.

(f) Class 4S—Gross weight between 10,000 and 25,000 pounds, single-engine.

(g) Class 4M—Gross weight between 10,000 and 25,000 pounds, multi-engine.

(h) Class 5—Gross weight in excess of 25,000 pounds.

21.36. *Inspection:* The applicant for an airline pilot certificate shall offer full cooperation in respect of any inspection or examination which may be made of said applicant upon proper demand by any authorized representative of the Secretary prior or subsequent to the issuance of such certificate.

21.37. *Standard of Performance:* Every practical and theoretical examination and test shall be accomplished to the satisfaction of the Secretary and the minimum passing grade in the subject of examination or test shall be 70 per cent. Each flight maneuver will be graded separately. Other examinations will be graded as a whole.

21.38. *Reports:* The person giving any examination or test in behalf of the Secretary will report the result thereof upon an appropriate form to the Secretary and all data collected incident to such examination or test will be considered as of a confidential nature by such person and by all employees of the Department of Commerce.

21.4. PILOT REGULATIONS

21.40. *Certificate Required:* No person shall be in command of an aircraft in certificated scheduled air carrier service for the carriage of passengers on a civil airway, or in interstate or foreign air commerce or elsewhere, unless possessed of a valid airline pilot certificate.

21.41. *Aircraft Type and Weight:* No person holding a valid airline pilot certificate shall pilot for hire, or carry any person for or without hire other than a properly certificated instructor in, an aircraft of a type, weight or engine classification other than as specified in his airline pilot certificate.

21.42. *Night Flying:* Unless an airline pilot has had at least 2 hours of night solo flying within the last preceding 90 days he shall not pilot aircraft carrying passengers for hire, between sunset and sunrise, until after he has taken off and landed, between sunset and sunrise, at least 10 times. At least 3 of such landings shall have been made to a full stop.

21.43. *Log-Books:* The following rules will govern pilot log-books:

21.430. General—Every certificated airline pilot shall keep an accurate record of his flying time in a log-book in which the entries as to solo flying have been certified to by him before a notary public or by an official of the airline of which he is an employee during such time, and in which the entries as to instruction have been certified to by his instructor.

21.431. Contents—The log-book shall contain the date of flight, the type of aircraft flown, the aircraft certificate number, a statement of instrument and night flying time, the duration of the flight, and the points between which such flight was made, and, in addition, when any flight results in serious damage to the aircraft, a notation to this effect. Flying instruction time shall be logged in the same manner and, in addition, the instructor shall make complete entries in the log-book of his student showing the nature of each maneuver in which instruction was given and the time spent thereon. The instructor shall attest each such entry with his initials and pilot certificate number and rating thereon. This log-book shall be made available, upon demand, to any authorized representative of the Department of Commerce or State or municipal officer enforcing local regulations or laws involving Federal compliance.

21.44. *Foreign Flights:* No person shall be in command of any aircraft of the United States flying in any foreign country unless possessed of an airline pilot certificate with a rating for the type, weight and engine classification of aircraft so flown.

Note.—For permission of U. S. aircraft to be flown out of the United States with intent to enter a foreign country, see CAR 70.

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## Chapter 27. Airline Dispatcher Rating

27.0. PROVISION FOR RATING: Pursuant to the provisions of the Air Commerce Act requiring the Secretary of Commerce to provide by regulation for the rating of all airmen serving in connection with aircraft of the United States as to their qualification for such service and for the issuance of airmen certificates and such other certificates and regulations as the Secretary deems necessary in administering the Act, airline dispatchers will be certificated in accordance with the provisions of the following paragraphs.

27.1. MINIMUM REQUIREMENTS: To be eligible for an airline dispatcher competency rating, an applicant shall comply with the following minimum requirements.

27.10. *Dispatcher Rating:* To be eligible for a dispatcher rating:

27.100. Age—Applicant shall be at least 23 years of age.

27.101. Character—Applicant shall be of good moral character.

27.102. Citizenship—Applicant shall be

27.1020 (a). A citizen of the United States, or

27.1021 (b). A citizen of a foreign country which grants reciprocal commercial airmen privileges to citizens of the United States on equal terms and conditions with citizens of such foreign country, or

27.1022 (c). An alien who has filed his declaration of intention to become a citizen of the United States and notifies the Secretary of the serial number of such declaration and of the date thereof and of the court in which it is filed; *Provided,* That the certificate of competency is, in such case, subject to revocation if the holder does not from time to time keep the Secretary advised of the status of the proceedings in court and does not diligently and successfully prosecute them and become admitted as a citizen.

27.103. Education—Applicant shall be able to read, write and understand the English language, and speak the same without accent or impediment of speech that would interfere with two-way radio conversation.

27.104. Aeronautical Knowledge—Applicant shall be familiar with and shall accomplish a satisfactory written examination on:

27.10400 (a). The provisions of CAR 40 and 61 and those parts of CAR 60 which apply to dispatching. In each case the applicant shall understand the relation of each provision to airline operation.

27.10401 (b). The characteristics of at least one make and model of airline aircraft, with particular reference to gross load, pay loads under conditions of various fuel loads, fuel capacity, fuel consumption at specified power outputs, speed-power output, altitude charts, and loading charts.

27.10402 (c). The general system of weather collection and dissemination.

27.10403 (d). Weather map, forecast and sequence abbreviations, symbols and nomenclature. The general principles of modern methods of weather analysis including the application of data obtained from airplane weather observations and meteorological data reported from observations made by pilots engaged in airline flights.

27.10404 (e). Cloud forms, including average heights of their bases and approximate upper and lower limits within which their bases and tops respectively occur.

27.10405 (f). Weather conditions adversely affecting aeronautical activities, the circumstances under which they occur, how these are ascertained and located, and elementary principles of forecasting the conditions.

27.10406 (g). The influence of terrain upon meteorological conditions and developments, and the relation thereof to airline flight operations.

27.10407 (h). Elementary principles of radio communications and radio range operations and weather conditions adversely affecting each.

27.10408 (i). Department of Agriculture Weather Bureau Circular "N", Instructions for Airway Meteorological Service, and all amendments thereto.

27.10409 (j). Air navigation facilities in use on the civil airways, including rotating beacons, course lights, radio ranges, radio marker beacons and intermediate fields.

27.10410 (k). Elementary principles of aircraft navigation, and use and limitations of sensitive type altimeters particularly with respect to barometric settings.

27.105. Aeronautical Experience—Applicant shall

27.1050 (a). have been listed as a dispatcher in the airmen competency letter of an airline and have served as a dispatcher for such airline for at least 6 months of the 18 months' period immediately preceding application, or

27.1051 (b). have served as a first or second pilot for a certificated airline for at least one year of the 3 years immediately preceding application and have served as a dispatcher for such airline for at least 3 months of the 18 months' period immediately preceding application, or

27.1052 (c). have served for 2 years of the 4 years immediately preceding application in the operations department of a certificated airline, or

27.1053 (d). be a graduate of an airline dispatcher course of a certificated flying school, which course is deemed by the Secretary to offer the equivalent of CAR 27.1050 through 27.1052.

27.1054 (e). On the effective date of these regulations and for 6 months thereafter an applicant employed or formerly employed for the purpose of the dispatching and flight control of aircraft in airline service may be deemed by the Secretary to have met the requirements of CAR 27.105, and if so deemed, shall be presumptively entitled to an airline dispatcher rating.

27.1055. Any person now or formerly employed by an airline for the purpose of dispatching and flight control of aircraft in airline service for the periods specified either in CAR 27.1050 or CAR 27.1051 may be deemed by the Secretary to have met these respective requirements as to prior dispatcher service.

27.106. Aeronautical Skill—Applicant shall be able:

27.1060 (a). To make a reasonably accurate and intelligent analysis of a series of Weather Bureau 6-hourly maps, in accordance with modern methods, and forecast therefrom the subsequent weather conditions pertinent to flying operations.

27.1061 (b). To make an accurate and detailed analysis, in accordance with modern methods, of weather conditions prevailing in the general neighborhood of a specified civil airway from a series of Weather Bureau 6-hourly maps and sequency reports, and forecast accurately subsequent weather trends pertinent to flying operations, with particular reference to specified terminals.

27.2. AIRLINE DISPATCHER CERTIFICATE

27.20. *Provision for Issuance:* An airline dispatcher certificate of competency will be issued by the Secretary to a natural person, who is an applicant therefor, after approval of an application made and proofs submitted in connection therewith and, if upon inspection and examination, said applicant is found by the Secretary to meet the minimum requirements prescribed in CAR 27.1. (However, such person shall not dispatch airline aircraft until he has qualified as to route competency in accordance with the provisions of CAR 61.553.)

27.21. *Application:* Application for an airline dispatcher certificate, subscribed under oath, shall be made to the Secretary upon a form supplied for the purpose.

27.22. *Issuance:* Upon approval of an application duly made, proofs submitted, and examinations and tests satisfactorily completed, an airline dispatcher certificate of competency will be issued in an appropriate form.

27.220. Temporary Certificate—Following application made for an airline dispatcher certificate of competency, but prior to approval thereof and issuance of the certificate, a temporary dispatcher certificate may be issued by the local Bureau airline inspector.

27.23. *Display:* An airline dispatcher certificate shall be kept in the personal possession of the holder thereof at all times when he is on duty in connection with the dispatching of airline aircraft, and shall be presented upon the demand of any authorized official or employee of the Department of Commerce or of any State or municipal official charged with the duty of enforcing local laws or regulations involving Federal compliance, or upon the reasonable request of any other person.

27.24. *Duration:* An airline dispatcher certificate, unless sooner suspended or revoked in accordance with the provisions of CAR 27.27, will remain in force for one year after the date of issue.

27.25. *Renewal:* An airline dispatcher certificate may be renewed for additional period of one year upon application within 45 days of expiration and upon proof that the holder thereof has been listed as a dispatcher in the airmen competency letter of an airline and has served as a dispatcher for such airline for at least six months of the 12 months' period immediately preceding expiration of such certificate, or has had experience deemed equivalent by the Secretary.

27.250. Reinstatement—In the event of an emergency which prevents renewal prior to expiration, and upon a showing thereof satisfactory to the Secretary, the applicant may have his airline dispatcher certificate validated in accordance with the provisions for renewal in CAR 27.25.

27.26. *Non-Transferability:* An airline dispatcher certificate is not transferable.

27.27. *Suspension or Revocation:* An airline dispatcher certificate may be suspended or, after hearing, revoked by reason of any of the following, on the part of the holders thereof:

27.270 (a). Any false statement in an application for a certificate or in any report required by the Secretary.

27.271 (b). Using or displaying the certificate for any fraudulent purpose.

27.272 (c). Refusal to exhibit the certificate upon proper demand.

27.273 (d). Carelessness or inattention to duty affecting safety.

27.274 (e). Any demonstration of incompetency in the dispatch of airline aircraft.

27.275 (f). Being under the influence, or using, or having personal possession, of intoxicating liquor, cocaine, or other habit-forming drugs while on duty.

27.276 (g). Doing any act in connection with the dispatch of airline aircraft which is contrary to the public safety or interest.

27.277 (h). Violation of any provision of the Air Commerce Act or any of the rules or regulations duly issued thereunder.

27.28. *Surrender:* Upon notice from the Secretary of the suspension or revocation of his airline dispatcher certificate, the holder shall immediately return such certificate to the Secretary.

27.29. *Re-Application:* An applicant for an airline dispatcher certificate of competency who has failed to successfully accomplish the prescribed theoretical or practical tests may apply for re-examination at any time after the expiration of 30 days, from the date of such failure.

27.3. EXAMINATIONS AND TESTS

27.30. *General:* The examinations and tests prescribed in the foregoing regulations will be conducted by an authorized officer or employee of the Department of Commerce or by a properly qualified person designated for the purpose by the Secretary. The Secretary may, in his discretion and at any time, require any applicant or airline dispatcher certificate holder to undergo a re-examination in any theoretical or practical test prescribed as requisite for such certificates.

27.31. *Time and Place:* All examinations and tests will be held at such times and places as the Secretary may designate.

27.32. *Inspection:* The applicant for an airline dispatcher certificate of competency shall offer full cooperation in respect of any inspection and examination which may be made of said applicant upon proper demand by any authorized representative of the Secretary prior or subsequent to the issuance of an airline dispatcher certificate of competency.

27.33. *Standard of Performance:* All practical or theoretical examinations and tests shall be accomplished to the satisfaction of the Secretary and the minimum passing grade in any subject of examination or test shall be 70 per cent.

27.34. *Reports:* The person giving any examination or test in behalf of the Secretary shall promptly report the result thereof upon an appropriate form to the Secretary.

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## Chapter 40. Scheduled Airline Certification (Interstate)

40.0. PROVISION FOR CERTIFICATION: Pursuant to the provisions of the Air Commerce Act requiring the Secretary of Commerce to provide for the examination and rating of and the issuance of certificates to all airlines engaged in interstate or foreign air commerce as to their qualifications for such service, the following regulations are prescribed for such certification of scheduled airlines engaged in interstate air commerce as to their competency.

40.1. GENERAL MINIMUM REQUIREMENTS: To be eligible for a scheduled airline competency certificate, an applicant shall meet and comply with the following general minimum requirements.

40.10. *Economic Strength:* Applicant shall show economic and financial strength sufficient to establish a presumption of ability to operate the airline with reasonable safety as related to the service offered, for a period of at least one year.

40.11. *Route:* Applicant shall show that the route, including any alternate route, over which it proposes to operate is, or prior to operation will be, equipped with such air navigation facilities (including terminal and intermediate airports, intermediate landing fields and ground aids to air navigation) as are deemed by the Secretary to be necessary for safe operation as related to the service offered, provided that on the route to any alternate terminal such operation may be approved provided a signal from the alternate terminal range can be heard.

40.12. *Aircraft:* Applicant shall show certificated aircraft as provided in CAR 04, of a model and number deemed by the Secretary to be necessary for safe operation as related to the service offered, the route traversed, and the operating and maintenance procedures and techniques proposed.

40.13. *Airmen:* Applicant shall show certificated airmen (including both flight and ground personnel) of kind, grade, and number deemed by the Secretary to be necessary for safe operation as related to the service offered,

the route traversed, the aircraft used, and the operating and maintenance procedures and techniques proposed.

40.14. *Operations Manual:* Applicant shall show an operations manual, prepared for the use of its airmen, which fully details the operating and communications methods, procedures and techniques proposed for its airline.

40.15. *Maintenance Manual:* Applicant shall show a maintenance manual or suitable equivalent prepared for the use of its airmen and other maintenance personnel which adequately defines the maintenance methods, procedures and technique proposed for its airline operations.

40.16. *Schedules:* Applicant shall show proposed schedules set up with due regard to sufficient time for the adequate servicing of fuel and oil at intermediate stops, to prevailing winds, and on the basis of a cruising speed of the aircraft at not to exceed that corresponding to the specified cruising power output of the engines as specified in the operations manual.

40.2. PASSENGER MINIMUM REQUIREMENTS: To be eligible for a scheduled airline competency certificate for the carriage of persons in interstate air commerce, an applicant, in addition to meeting the minimum requirements provided for in CAR 40.1, shall meet and comply with the following minimum requirements prescribed for the particular kind of operation proposed.

40.20. *Route Requirements: Visual-Contact Day Operation*

40.200. Airway—Applicant shall show that the regular route over which the proposed operations will be conducted is, or prior to authorization will be, within the limits of a civil airway. (If applicant's proposed route does not lie within the limits of a civil airway, a petition requesting that a civil airway be designated to embrace such route may be made simultaneously with the airline certificate application.)

40.201. Airports—Applicant shall show that the airport to be used at each proposed route terminal and scheduled intermediate stop is possessed of a valid airport competency rating with relation to each aircraft which applicant proposes to use in its operation.

40.202. Public Protection—Applicant shall show that reasonable and adequate facilities and safety devices (including protection from revolving aircraft propellers) are provided for the protection of the public at each terminal and scheduled intermediate stop.

40.203. Intermediate Fields — Applicant shall show intermediate fields, available for safe landings with the load authorized for the route or part thereof, located at not more than 100 mile intervals along the proposed route provided that at the discretion of the Secretary, intermediate fields may be permitted or required at other than 100 mile intervals.

40.204. Refueling Facilities — Applicant shall show that adequate refueling facilities, including equipment to test gasoline storage tanks for the presence of water and to remove any water or condensation found therein, are provided at each terminal, scheduled intermediate stop and intermediate field where refueling is contemplated.

40.205. Radio Facilities—Applicant shall show a two-way ground-to-aircraft radio telephone communication system at each terminal and at such points as may be deemed necessary by the Secretary to insure satisfactory communications over the entire route under normal operating conditions. Such system shall be independent of radio facilities provided by Federal or other governmental agencies.

40.206. Weather Reporting — Applicant shall show weather reporting services at the proposed terminals and enroute, adequate to insure sufficient weather reports prepared from observations made and released by the United States Weather Bureau or by a source approved by it.

40.21. *Route Requirements: Visual-Contact Night Operation*

40.210. Airway—Applicant shall meet the requirements of CAR 40.200 and, in addition, shall show that the proposed route is equipped with such airway beacons and obstruction lights as are deemed by the Secretary to be adequate for safe airline operation at night.

40.211. Airports — Applicant shall meet the requirements of CAR 40.201 and, in addition, shall show that the airport to be used at each proposed terminal and scheduled intermediate stop is equipped with such lighting facilities as are deemed by the Secretary to be adequate for safe airline operation at night.

40.212. Public Protection—Same as in CAR 40.202.

40.213. Intermediate Fields—Applicant shall meet the requirements of CAR 40.203 and, in addition, shall show that such intermediate fields are equipped with lighting facilities as required by CAR 40.211.

40.214. Refueling Facilities—Same as in CAR 40.204.

40.215. Radio Facilities—Same as in CAR 40.205.

40.216. Weather Reporting—Same as in CAR 40.206.

40.22. *Route Requirements: Instrument and/or Over the Top Operation*

40.220. Airway — Applicant shall meet the requirements of CAR 40.200 for day operation, or of CAR 40.210 for night operation. In addition, for either day or night operation, applicant shall show that the proposed route is equipped with such radio range beacons (or equivalent facilities) projecting courses over the proposed route, as are deemed by the Secretary to be adequate for safe airline operation. Application shall also show other radio navigational aids (including radio markers) as may be deemed necessary by the Secretary.

40.221. Airports—For day operation applicant shall show that the airport to be used at each proposed route terminal, scheduled intermediate stop and alternate terminal is possessed of a valid airport competency rating with relation to each aircraft which applicant proposes to use in its operation. For night operation applicant shall meet the foregoing requirements and, in addition, shall show that the proposed terminal, scheduled intermediate stop, and alternate, airports are provided with such lighting facilities as are deemed by the Secretary to be adequate for safe airline operation at night.

40.222. Public Protection—Same as in CAR 40.202.

40.223. Intermediate Fields—Same as in CAR 40.203 for day operation, and as in CAR 40.213 for night operation.

40.224. Refueling Facilities—Same as in CAR 40.204.

40.225. Radio Facilities—Same as in CAR 40.205.

40.226. Weather Reporting—Same as in CAR 40.206.

40.23. *Aircraft Requirements: Visual-Contact Day Operation*

40.230. If Single-Engine Operation over Land—Applicant shall show land aircraft of a model and number necessary for safe operation, or applicant may show a similar number of water aircraft if the route to be flown over is such that the aircraft can, at all times, reach open water deemed suitable by the Secretary for a safe landing in the event of complete power failure. Single-engine

aircraft may be operated over civil airways provided such airways are deemed by the Secretary to have suitable landing terrain.

40.231. If Single-Engine Operation over Water—Applicant shall show water aircraft of a model and number necessary for safe operation, or applicant may show a similar number of land aircraft if the route to be flown over is such that the aircraft can, at all times, reach land deemed suitable by the Secretary for a safe landing in the event of complete power failure.

40.232. If Multi-Engine Operation over Land—Applicant shall show aircraft of a model and number necessary for safe operation. Applicant shall also show that such aircraft (other than those specifically listed as in scheduled airline service by the applicant prior to January 1, 1935) to be used on the proposed route or part thereof are capable, with any one engine completely out of commission, of maintaining level flight with authorized load for the route or part thereof at an altitude of at least 1,000 feet above the highest obstruction to flight on the valley level of such route or part thereof on which the aircraft will be operated.

40.233. If Multi-Engine Operation over Water—Applicant shall show aircraft of a model and number necessary for safe operation. Applicant shall also show that such aircraft, which are to be used on the proposed route or part thereof are capable, with any one engine completely out of commission, of maintaining level flight with authorized load at an altitude of at least 1,000 feet above the water. No multi-engine land aircraft shall be operated, over water, beyond gliding distance from shore without the aid of power, unless such aircraft is equipped with a fully retractable landing gear with one or more suitable emergency exits located in the upper half of the fuselage, with life preservers or other adequate flotation devices readily available for each person on board, with a Very's pistol and cartridges or equivalent signal equipment deemed suitable by the Secretary, and with radio equipment as required by CAR 40.253, 40.2530, and 40.2531. The landing gear shall be in the retracted position in the event of an emergency landing upon water. The requirements of flotation devices and signal equipment are not applicable where the operation over water is merely that of landings and take-offs, provided there is marine rescue equipment deemed suitable by the Secretary.

40.234. Number of Aircraft—Applicant shall show aircraft, certificated as provided in CAR 04.53, of a number sufficient to permit the maintenance of all schedules proposed, as provided for in CAR 40.16.

40.235. Radio Equipment—Applicant shall show that each aircraft is equipped with an approved two-way radio telephone having sufficient power to permit communication, under normal operating conditions, with at least one ground station used or to be used by the applicant on the regular or alternate route, and capable of communication with other aircraft of the applicant in flight. In addition, each aircraft shall be provided with at least one radio receiving system capable of receiving radio range beacon signals and weather broadcasts.

40.236. Hangar Facilities — Applicant shall show hangar or other facilities adequate for the proper maintenance of the aircraft, engines, equipment and parts.

40.237. Shop Facilities — Applicant shall show shop facilities (including facilities for servicing, repair, and overhaul) adequate for the proper maintenance of all aircraft, engines and equipment used.

40.238. Inspection and Overhaul Organization and Procedures—Applicant shall show inspection and overhaul organization, procedures and techniques adequate for the proper maintenance of all aircraft, engines and equipment used.

40.24. *Aircraft Requirements: Visual-Contact Night Operation*

Note.—Single-engine aircraft may not be used in night operation with passengers.

40.240. If Operation over Land—Applicant shall show multi-engine land aircraft, which meet the flight performance requirements of CAR 40.232, and of a number necessary for safe operation as provided for in CAR 40.234.

40.241. If Operation over Water — Applicant shall show multi-engine land aircraft, which meet the flight performance and equipment requirements of CAR 40.233, and of a number necessary for safe operation as provided for in CAR 40.234.

40.242. Number of Aircraft—Same as in CAR 40.234.

40.243. Radio Equipment—Same as in CAR 40.235.

40.244. Hangar Facilities—Same as in CAR 40.236.

40.245. Shop Facilities—Same as in CAR 40.237.

40.246. Inspection and Overhaul Organization and Procedures—Same as in CAR 40.238.

40.25. *Aircraft Requirements: Instrument and/or Over the Top Operation*

Note.—Single-engine aircraft may not be used in an instrument or over the top operation with passengers.

40.250. If Operation over Land—Applicant shall show multi-engine aircraft of a model and number necessary for safe operation. Applicant shall also show that such aircraft (other than those specifically listed as in scheduled airline service by the applicant prior to January 1, 1935) to be used on the proposed route, or part thereof, are capable, with any one engine completely out of commission, of maintaining level flight, with authorized load for the route or part thereof, at an altitude equivalent to 1,000 feet above the highest part of the terrain on the proposed instrument course of the route, or part thereof.

40.251. If Operation over Water—Same as in CAR 40.241.

40.252. Number of Aircraft—Same as in CAR 40.234.

40.253. Radio Equipment—Same as in CAR 40.235 and, in addition, applicant shall show that there is installed in each aircraft to be used in instrument and/or over the top operation (during day or night) over the proposed route, or part thereof, one additional separate radio receiving system capable of receiving radio range signals and weather broadcasts. Such receiver system shall normally operate from the main source of electrical supply of the aircraft but, in event of failure of the normal power source, shall be capable of being switched to operate from an independent power source. This system shall include an independent power source capable of operating such receiver continuously for a period of at least 4 hours. It is also required that such receiver operate from an independent antenna or from either of two antennae. Two sets of headphones shall be carried in the aircraft at all times.

40.2530. Radio Direction Finder—There shall also be installed in such aircraft an approved radio direction finder, covering at least the frequency range of 200 to 400 kilocycles. The design of the radio direction finder shall be such as to permit its regular operation in the taking of line bearings on any station to which the direction finder may be tuned without altering the course of the aircraft. The radio direction finder shall also be provided with means to eliminate, insofar as possible consistent with the advancement of the art, that type of interference

commonly known as rain, snow, sleet or dust static. The radio direction finder shall provide means for audible reception of radio range and weather broadcast messages. It may be installed in lieu of the emergency receiver required in CAR 40.253 provided that an independent power source equal to that described therein for such receiver is employed on either the beacon receiver required therein or on this radio direction finder. (Effective January 1, 1938).

40.2531. Radio Anti-Static Antenna—There shall also be installed on such aircraft an approved radio antenna system, which has for its purpose the collection of radio range signals, weather broadcast and emergency messages transmitted within the frequency range of 200 to 400 kilocycles. The design of this antenna system shall be such as to eliminate insofar as possible, consistent with the advancement of the art, that type of interference commonly known as rain, snow, sleet or dust static. This antenna system shall be designed to operate efficiently when used in conjunction with a receiver installed aboard such aircraft which has for its primary purpose the reception of radio range signals, weather broadcast and emergency messages.

40.254. Hangar Facilities—Same as in CAR 40.236.

40.255. Shop Facilities—Same as in CAR 40.237.

40.256. Inspection and Overhaul Organization and Procedures—Same as in CAR 40.238.

40.26. *Airmen Requirements: Visual-Contact Day Operation*

40.260. Number—Applicant shall show airmen of a number sufficient to permit the maintaining of all schedules proposed, under safe operating conditions.

40.261. First Pilots—Applicant shall show that prior to the issuance of the airline certificate all persons employed to serve as first pilots for the airline meet the following minimum requirements for qualification as to aircraft and route competency.

40.2610 (a). Each first pilot shall be possessed of a valid airline pilot competency rating with specifications or ratings indicating competency to pilot aircraft of each model to be used by him in scheduled operation.

40.2611 (b). Each first pilot, within the 6 months immediately preceding his qualification for the route, shall have made one one-way trip without passengers over the proposed route or part thereof on which he will pilot aircraft for applicant, landing at least once at each terminal, scheduled intermediate stop and intermediate field. If landings cannot be effected at each intermediate field, then the pilot shall make a ground examination, or where impracticable by reason of field conditions, a visual examination from the air at a safe low altitude, of each such field on which no landing was made and shall render a written inspection report thereon promptly to the Secretary; in the case of a visual examination he shall submit to the Secretary a sketch of the field setting forth its condition, obstructions and surrounding terrain. During the preliminary trip, the survey and landing may be accomplished by 2 or more first pilots flying together, provided each lands the aircraft at every terminal, intermediate stop and intermediate field.

40.2612 (c). Each first pilot shall have made 2 round trips, in addition to the trip required by CAR 40.2611 over the proposed route or part thereof on which he will pilot aircraft for applicant as first pilot, without passengers, or shall have made 3 round trips in addition to that required by CAR 40.2611 as second pilot, with or without passengers, within the 12 months immediately preceding his qualifications for such route.

40.2613 (d). During these trips required by CAR 40.2611 and CAR 40.2612 the flights shall be visual-contact and the visibility shall be not less than 5 miles as observed from the aircraft.

40.2614 (e). Each first pilot to be qualified as to route competency with respect to an alternate route shall have complied with the provisions of CAR 40.2611 and 40.2613 as applied to such alternate route.

40.262 Second pilots—Applicant shall show that each person employed to serve as a second pilot for the airline is possessed of at least a valid commercial pilot competency rating and before serving as second pilot in any aircraft in scheduled airline service shall have demonstrated, to an airline inspector representing the Secretary or to a check pilot or instructor of the airline authorized by the Secretary, his ability to take-off and land such aircraft by making at least 3 satisfactory take-offs and landings in each model of aircraft in which he is to serve. Six months after the effective date of these regulations each applicant for or holder of an airline competency certificate will be required to show that each such person is possessed of a valid instrument rating, unless possessed of valid airline pilot competency rating.

40.263. Airline Dispatchers—Applicant shall show that each person assuming aircraft dispatcher duties for the airline is familiar with the route or part thereof over which he will dispatch aircraft, the weather characteristics and phenomena peculiar to such route, the nature and peculiarities of the terrain and of obstructions to flight, the air navigation facilities available on the ground and in the aircraft, the contents of the operations manual of the proposed airline and the aircraft limitations specified in the certificates of the aircraft proposed for use. Six months after the effective date of these regulations each applicant for or holder of an airline competency certificate will be required to show that each such person is possessed of a valid and appropriate airline dispatcher competency rating.

40.27. *Airmen Requirements: Visual-Contact Night Operation.*

40.270. Number—Same as in CAR 40.260.

40.271. First Pilots—Same as in CAR 40.261, except that at least one trip required by CAR 40.2612 shall have been made between the hours of sunset and sunrise, except that for qualification on an alternate route flights shall be made in accordance with CAR 40.2614.

40.272. Second Pilots—Same as in CAR 40.262.

40.273. Airline Dispatchers—Same as in CAR 40.263.

40.28 *Airmen Requirements: Instrument and/or Over the Top Operation.*

40.280. Number—Same as in CAR 40.260.

40.281. First Pilots—Same as in CAR 40.261 and, in addition, applicant shall show that each first pilot, for whom instrument authorization is sought, has demonstrated to an airline inspector representing the Secretary or to a check pilot or instructor of the airline duly authorized by the Secretary, his capability with respect to the following:

40.2810. (a). Familiarity with the aircraft, including demonstration of ability to maneuver such aircraft with the load authorized for the route or part thereof, with any one engine fully throttled, at an altitude equivalent to 1000 feet above the highest part of the terrain on the proposed instrument course of the route, or part thereof, to be flown by the pilot in airline service.

40.2811. (b). Familiarity with the route and with instruments, including demonstration of ability to fly solely

by instruments, under actual or simulated conditions, over the route for which qualification is sought.

40.2812 (c). Familiarity with procedures, including demonstration of ability to accomplish a let-down-through by instruments, according to the procedure specified in the appropriate competency letter, at one station at least, on the route, in each model of aircraft to be used by the pilot in airline operation. Such demonstrations as to the other stations as deemed necessary by the Secretary may be made to an airline inspector representing the Secretary, or to a check pilot or instructor of the airline duly authorized by the Secretary, under simulated conditions or by equivalent means approved by the Secretary.

40.282. Second Pilots—Are required for all instrument operations and shall meet the minimum requirements of CAR 40.262.

40.283. Airline Dispatchers—Same as in CAR 40.263.

40.29. *Miscellaneous Requirements*

40.290. Weather Minimums—Authorization of ceiling and visibility minimums for purposes of flight clearance and for transition from instrument to visual-contact flights and vice-versa will be made by the Secretary and will be based upon the following considerations affecting the clearance and completion of the flight:

(a) the terrain conditions affecting the flight area necessary for the working out of an approach and let-down-through procedure, or for a climb-up-through procedure; and

(b) the skill and experience of dispatcher personnel; and

(c) the skill and experience of pilot personnel; and

(d) the model and maneuverability of the aircraft; and

(e) the obstructions to flight, considered both vertically and horizontally, in the vicinity of the landing area; and

(f) the quality and quantity of meteorological service and of other ground aids to flight available.

40.291. Airline Operation Skill—Applicant shall demonstrate, during a test period (of not less than 10 days of operation) determined by the Secretary (in which time applicant may in the discretion of the Secretary carry mail or goods, as the case may be, in interstate air commerce), ability to operate with safety a scheduled airline service over the route proposed, with the aircraft and airmen proposed, and by means of the operating and maintenance procedures and techniques proposed. For extensions of established operations the test period will be determined by the Secretary on the basis of the length of the proposed extension, pilot qualifications, air navigation facilities and all other factors affecting the applicant's proposed operation.

40.3. GOODS MINIMUM REQUIREMENTS: To be eligible for a scheduled airline competency certificate for the carriage of goods (including mail) in interstate air commerce, an applicant, in addition to meeting the minimum requirements provided for in CAR 40.1, shall meet and comply with the following minimum requirements prescribed for the particular kind of operation proposed:

40.30. *Route Requirements: Visual-Contact Day Operation*

40.300. Airway—Same as in CAR 40.200.

40.301. Airports—Same as in CAR 40.201.

40.302. Public Protection—Same as in CAR 40.202.

40.303. Intermediate Fields—Same as in CAR 40.203.

40.304. Refueling Facilities—Same as in CAR 40.204.

40.305. Radio Facilities—Same as in CAR 40.205.

40.306. Weather Reporting—Same as in CAR 40.206.

40.31. *Route Requirements: Visual-Contact Night Operation*

40.310. Airway—Applicant shall meet the requirements of CAR 40.200 and shall show that the proposed route is provided with such obstruction lights as are deemed by the Secretary to be adequate for safe airline operation at night. In addition applicant shall show that the proposed route is equipped with such airway beacons as are deemed by the Secretary to be adequate for safe airline operation, or the applicant may show that the proposed route is equipped with such radio range beacons (or equivalent facilities) projecting courses over the proposed route as are deemed adequate by the Secretary for safe airline operation.

40.311. Airports—Same as in CAR 40.211.

40.312. Public Protection—Same as in CAR 40.202.

40.313. Intermediate Fields—Same as in CAR 40.213.

40.314. Refueling Facilities—Same as in CAR 40.204.

40.315. Radio Facilities—Same as in CAR 40.205.

40.316. Weather Reporting—Same as in CAR 40.206.

40.32. *Route Requirements: Instrument and/or Over Over the Top Operation*

40.320. Airway—Applicant shall meet the requirements of CAR 40.200 for a proposed day operation, or of CAR 40.310 for a proposed night operation. In addition, for either day or night operation, applicant shall show that the proposed route is equipped with radio range beacons (or equivalent facilities) projecting courses over the proposed route, as are deemed to be adequate by the Secretary for safe airline operation. Applicant shall also show other radio navigational aids (including radio markers), as may be deemed necessary by the Secretary.

40.321. Airports—Same as in CAR 40.221.

40.322. Public Protection—Same as in CAR 40.202.

40.323. Intermediate Fields—Same as in CAR 40.203 for day operation, and as in CAR 40.213 for night operation.

40.324. Refueling Facilities—Same as in CAR 40.204.

40.325. Radio Facilities—Same as in CAR 40.205.

40.326. Weather Reporting—Same as in CAR 40.206.

40.33. *Aircraft Requirements: Visual-Contact Day Operation*

40.330. If Single-Engine Operation over Land—Same as in CAR 40.230.

40.331. If Single-Engine Operation over Water—Same as in CAR 40.231.

40.332. If Multi-Engine Operation over Land—Applicant shall show aircraft of a model and number necessary for safe operation. Applicant shall also show that such aircraft to be used on the proposed route or part thereof are capable, with any one engine completely out of commission, of maintaining level flight with the authorized load for the route or part thereof at an altitude of at least 1,000 feet above the airport at each terminal and scheduled intermediate stop on the route or part thereof on which the aircraft will be operated.

40.333. If Multi-Engine Operation over Water—Same as in CAR 40.233.

40.334. Number of Aircraft—Applicant shall show aircraft certificated as provided in CAR 04.52, of a number sufficient to permit the maintenance of all schedules proposed, as provided for in CAR 40.16.

40.335. Radio Equipment—Same as in CAR 40.235.

40.336. Hangar Facilities—Same as in CAR 40.236.

40.337. Shop Facilities—Same as in CAR 40.237.

40.338. Inspection and Overhaul Organization and Procedures—Same as in CAR 40.238.

40.34. *Aircraft Requirements: Visual-Contact Night Operation*

40.340. If Single-Engine Operation over Land—Applicant shall show aircraft, except float seaplanes, of a model and number necessary for safe operation, and, in addition thereto, that the civil airways over which the proposed operation is to be conducted are deemed by the Secretary to have suitable landing terrain.

40.341. If Single-Engine Operation over Water—Applicant shall show aircraft, except float seaplanes, of a model and number necessary for safe operation. Applicant shall also show that the route to be flown over is such that the aircraft can, at all times, reach land deemed suitable by the Secretary for a safe landing in the event of complete power failure.

40.342. If Multi-Engine Operation over Land—Same as in CAR 40.332.

40.343. If Multi-Engine Operation over Water—Same as in CAR 40.233.

40.344. Number of Aircraft—Same as in CAR 40.334.

40.345. Radio Equipment—Same as in CAR 40.235 and, in addition, applicant shall meet the requirements of CAR 40.253, 40.2530 and 40. 2531 if the proposed route is not equipped with airway beacons as provided in CAR 40.210.

40.346. Hangar Facilities—Same as in CAR 40.236.

40.347. Shop Facilities—Same as in CAR 40.237.

40.348. Inspection and Overhaul Organization and Procedures—Same as in CAR 40.238.

40.35. *Aircraft Requirements: Instrument and/or Over the Top Operation*

40.350. If Single-Engine Operation over Land—Same as in CAR 40.340.

40.351. If Single-Engine Operation over Water—Same as in CAR 40.341.

40.352. If Multi-Engine Operation over Land—Same as in CAR 40.332.

40.353. If Multi-Engine Operation over Water—Same as in CAR 40.233.

40.354. Number of Aircraft—Same as in CAR 40.334.

40.355. Radio Equipment—Same as in CAR 40.253, 40.2530, and 40.2531.

40.356. Hangar Facilities—Same as in CAR 40.236.

40.357. Shop Facilities—Same as in CAR 40.237.

40.358. Inspection and Overhaul Organization and Procedures—Same as in CAR 40.238.

40.36. *Airmen Requirements: Visual-Contact Day Operation*

40.360. Number—Same as in CAR 40.260.

40.361. First Pilots—Applicant shall show prior to the issuance of the airline certificate that all persons employed to serve as first pilots for the airline meet the following minimum requirements for qualification as to aircraft and route competency:

40.3610 (a). Each first pilot shall be possessed of at least a valid commercial pilot competency rating with specifications or rating indicating competency to pilot aircraft of each model to be used by him in scheduled operation. Each first pilot shall also be possessed of a valid instrument rating unless possessed of a valid airline pilot competency rating.

40.3611 (b). Each first pilot, within the 6 months immediately preceding his qualification for the route, shall have made one one-way trip over the proposed route, or part thereof on which he will pilot aircraft for applicant, landing at least once at each terminal, scheduled intermediate stop and intermediate field. If landings cannot be effected at each intermediate field, then the pilot shall make a ground examination, or where impracticable by reason of field conditions, a visual examination from the air at a safe low altitude, of each such field on which no landing was made and shall render a written inspection report thereon promptly to the Secretary; in the case of a visual examination he shall submit to the Secretary a sketch of the field setting forth its condition, obstructions and surrounding terrain. During the preliminary trip, the survey and landing may be accomplished by 2 or more first pilots flying together, provided each lands the aircraft at every terminal, intermediate stop and intermediate field.

40.3612 (c). During the trip required by CAR 40.3611 the flight shall be visual-contact and the visibility shall be not less than 5 miles as observed from the aircraft.

40.3613 (d). Each first pilot to be qualified as to route competency with respect to an alternate route shall have complied with the provisions of CAR 40.3611 and 40.3612 as applied to such alternate route.

40.362. Second Pilots—Applicant shall show that each person employed to serve as a second pilot for the airline is possessed of at least a valid commercial pilot competency rating and before serving as second pilot in any aircraft in scheduled airline service shall have demonstrated, to an airline inspector representing the Secretary or to a check pilot or instructor of the airline duly authorized by the Secretary, his ability to take-off and land such aircraft, by making at least 3 satisfactory take-offs and landings in each model of aircraft in which he is to serve.

40.363. Airline Dispatchers—Same as in CAR 40.263.

40.37. *Airmen Requirements: Visual-Contact Night Operation*

40.370. Number—Same as in CAR 40.260.

40.371. First Pilots—Same as in CAR 40.361, except that each first pilot shall have logged at least 1,200 hours of certified solo flying time, and the trip required by CAR 40.3611 shall have been made between the hours of sunset and sunrise.

40.372. Second Pilots—Same as in CAR 40.362 and, in addition, 6 months after the effective date of these regulations, each applicant for or holder of an airline competency certificate will be required to show that each such person is possessed of a valid instrument rating, unless possessed of a valid airline pilot competency rating.

40.373. Airline Dispatchers—Same as in CAR 40.263.

40.38. *Airmen Requirements: Instrument and/or Over the Top Operation*

40.380. Number—Same as in CAR 40.260.

40.381. First Pilots—Same as in CAR 40.361, except that each first pilot shall have logged at least 1,200 hours of certified solo flying time, and, in addition, applicant shall show that each first pilot, for whom an instrument authorization is sought, has demonstrated to an airline inspector representing the Secretary or to a check pilot or instructor of the airline duly authorized by the Secretary, his capability with respect to the following:

40.3810 (a). Familiarity with the aircraft, including demonstration of ability to maneuver such aircraft with the load authorized for the route or part thereof; and, if a multi-engine operation, then the foregoing and in addi-

tion thereto a demonstration of ability to maneuver such aircraft with said load with any one engine fully throttled, at an altitude equivalent to 1,000 feet above the highest part of the terrain on the proposed instrument course of the route, or part thereof to be flown by the pilot in airline service.

40.3811 (b). Familiarity with the route and with instruments, including demonstration of ability to fly solely by instruments, under actual or simulated conditions, over the route for which qualification is sought.

40.3812 (c). Familiarity with procedures, including demonstration of ability to accomplish a let-down-through by instruments, according to the procedure specified in the appropriate competency letter, at one station at least on the route or part thereof, having radio range facilities that are intended for such use by the pilot. Such demonstration shall be conducted at least at each pilot division terminal in each model of aircraft to be used by the pilot in airline operation. Such demonstrations as to other stations as deemed necessary by the Secretary may be made to an airline inspector representing the Secretary, or to a check pilot or instructor of the airline duly authorized by the Secretary, under simulated conditions by equivalent means approved by the Secretary.

40.382. *Second Pilots*—Same as in CAR 40.262.

40.383. Airline Dispatchers—Same as in CAR 40.263.

40.39. *Miscellaneous Requirements*

40.390. Weather Minimums—Same as in CAR 40.29, giving consideration to the fact that no passengers are being carried in this operation and providing for the most rapid progress of the art of flying.

40.391. Airline Operation Skill—Same as in CAR 40.291.

40.4. AIRLINE COMPETENCY CERTIFICATE

40.40. *Provision for Issuance:* An airline competency certificate will be issued by the Secretary to an applicant after approval of application made and proofs submitted in connection therewith and if, upon inspection and examination, said applicant is found by the Secretary to meet the general requirements prescribed in CAR 40.1 and the appropriate particular minimum requirements prescribed in CAR 40.2 or 40.3 and is, therefore rated as competent to engage in interstate air commerce for the carriage of mail, goods, or passengers, in scheduled operation as specified in the certificate or appended competency letters (provided for in CAR 40.5). Airlines conducting authorized operations shall have until 90 days after the effective date of these regulations to apply for the airline certificate as provided in CAR 40.41. In the interim operations shall be under authority heretofore granted. Also, any airline which heretofore has proven its competency for safe operation shall be entitled presumptively to the airline certificate so applied for.

40.41. *Application:* Application for a scheduled airline certificate shall be made to the Secretary and subscribed under oath by the applicant in the manner outlined in Form AC 40-1.

40.410. Number of Copies—Applicant shall submit at least three copies of the application duly completed and executed, and, in the discretion of the Secretary, may be required to submit a greater number not to exceed ten.

40.411. Application to Amend—When changes in, or amendments thereto, the original application are desired, the applicant shall submit one copy in addition to the number previously required for the original application, of the amended page or pages, incorporating the change or changes desired in the manner provided in CAR 40.41. These copies shall be submitted to the Secretary through the supervising airline inspector involved and shall not be effective until written approval of the Secretary has been received, except that a 30-day period of provisional approval may be granted by the supervising airline inspector for changes in pilot and dispatcher personnel.

40.412. Proceeding to Amend—A proceeding to amend an airline certificate may be instituted by the Secretary when, in his opinion, the airline operator is no longer competent in respect of some matter specified in the certificate. Notice of such proceeding will be addressed to the airline operator with opportunity for a hearing. In the interim, the part of the certificate effected may be suspended in whole or in part. Following the hearing, the Secretary may issue a rerating as to competency, in which event the findings will be incorporated in a new competency letter.

40.413. Inspection—The applicant for an airline certificate shall offer full cooperation with respect to any inspection or examination which may be made of said applicant upon proper demand by any authorized representative of the Secretary prior or subsequent to the issuance of such airline certificate.

40.42. *Temporary Permit:* Following application made for an airline certificate, but prior to approval thereof and issuance of the certificate, a temporary permit may be issued by the Secretary in order to enable the applicant to demonstrate ability to meet and comply with the minimum requirements of CAR 40.291 pertaining to airline operation skill. During such period no pay passengers shall be carried.

40.43. *Issuance:* An airline certificate will be issued in an appropriate form in accordance with the provisions of CAR 40.40.

40.44. *Display:* The airline certificate in its current and effective form (or a copy thereof) shall be conspicuously posted in the principal office of the airline where it may be readily seen, and any such certificate shall be presented for inspection upon demand of any authorized officer or employee of the Department of Commerce, or upon the reasonable request of any other person. Facsimile copies of such airline certificate may be posted for display elsewhere.

40.45. *Duration:* An airline certificate will remain effective for an indeterminate time, or until

(a) the certificate is suspended or revoked, or

(b) the airline service is discontinued.

40.46. *Non-Transferability:* An airline certificate is not transferable, except with the consent of the Secretary.

40.47. *Suspension or Revocation:* An airline certificate may be suspended or, after hearing, revoked, in whole or in part, for any of the following reasons:

40.470 (a). Any false statement by the airline operator in the application for such certificate, or in any information accompanying such application, or in any report required by the Secretary.

40.471 (b). Violation on the part of the operator of any of the terms, conditions, specifications, limitations or other provisions of such airline certificate.

40.472 (c). Violation on the part of the operator of any of the terms, conditions, specifications, limitations or other provisions of any competency letter appended to such certificate.

40.473 (d). Violation on the part of the operator of any provision of the Air Commerce Act or any rule or regulation duly issued thereunder.

40.474 (e). Grossly negligent or wilful (and inexcusable) violation by any employee of the operator of any of

the terms, conditions, specifications, limitations or other provisions of such airline certificate or any competency letter appended thereto, or of any provision of the Air Commerce Act or any rule or regulation duly issued thereunder.

40.475 (f). Suspension of airline service by the operator, except for reasons beyond control of the operator.

40.476 (g). Any unsafe operation of the airline.

40.477 (h). Any failure to maintain safety standards requisite to the obtaining of such certificate.

40.48. *Surrender:* Upon notice from the Secretary of the suspension or revocation of an airline certificate, the operator to whom it has been issued shall immediately return such certificate to the Secretary.

40.49. *Re-application:* An operator whose application for an airline certificate has been disapproved may reapply at any time.

40.5. AIRLINE COMPETENCY LETTERS

40.50. *Provision for Issuance:* To provide necessary minimum safety standards for the operation of a domestic scheduled airline with sufficient flexibility to meet new and constantly changing situations, 6 airline competency letters will be appended to each airline certificate by the Secretary. Such letters will establish the basis for, and set the limitations upon, the competency of the airline operation and will be deemed an integral part of the airline certificate. The 6 competency letters will be as follows:

40.500 (a). Service Competency Letter
40.501 (b). Route Competency Letter
40.502 (c). Aircraft Competency Letter
40.503 (d). Maintenance Competency Letter
40.504 (e). Airmen Competency Letter
40.505 (f). Weather Competency Letter

40.51. *Application:* Application for an airline certificate will constitute, without other formality, application for a competency letter of each kind.

40.510. Application to Amend—Application to amend a competency letter of any kind may be made by amending the application for the airline certificate as provided for in CAR 40.411.

40.511. Proceeding to Amend—A proceeding to amend a competency letter of any kind may be instituted by the Secretary when, in his opinion, the airline operator is no longer competent in respect of some matter specified in the letter. Notice of such proceeding will be addressed to the airline operator with opportunity for a hearing. In the interim, the part of the letter effected may be suspended in whole of in part. Following the hearing, the Secretary may issue a re-rating as to competency in which event the findings will be incorporated in a new competency letter.

40.512. Inspection—Same as in CAR 40.413.

40.52. *Temporary Letter:* Following application made for an airline certificate, but prior to approval and issuance thereof, temporary competency letters may be issued for the purpose of enabling applicant to demonstrate ability to meet the requirements as to service, route; aircraft, maintenance, airmen, and weather competency, for the duration of the temporary permit provided for in CAR 40.42.

40.53. *Issuance:* Upon approval of an application duly made and proofs submitted (including inspection and examination), a competency letter will be issued in an appropriate form.

40.54. *Display:* No competency letter need be posted for purposes of display, but any such letter shall be presented in its current and effective form for inspection upon demand of any authorized officer or employee of the Department of Commerce, or upon the reasonable request of any other person.

40.55. *Duration:* A competency letter will remain effective for an indeterminate time, or until

(a) the letter is superseded by a later competency letter of the same kind, or

(b) the letter is suspended or revoked, or

(c) the certificate of which it is a part is suspended or revoked, or

(d) the airline service is discontinued.

40.56. *Non-Transferability:* A competency letter is not transferable, except with the consent of the Secretary.

40.57. *Suspension or Revocation:* A competency letter may be suspended or revoked for any of the reasons specified in CAR 40.47.

40.58. *Surrender:* Upon notice from the Secretary of the suspension or revocation of a competency letter, the operator to whom it has been issued shall immediately return such letter to the Secretary.

40.59. *Re-Application:* An operator, whose application for a competency letter has been disapproved, may reapply at any time.

CHAPTER 61. SCHEDULED AIRLINE RULES (INTERSTATE)

61.0. CERTIFICATION

61.00. *Certificate Required:* No scheduled airline shall be operated in interstate air commerce for the carriage of mail, goods, or persons, or any combination thereof, unless

(a) possessed of a valid airline certificate (or temporary permit) issued by the Secretary of Commerce, and

(b) possessed of valid competency letters (or temporary letters) relating to service, route, aircraft, maintenance, airmen, and weather, issued by the Secretary of Commeree and appended to such certificate and deemed a part thereof.

61.01. *Violation of Terms:* No scheduled airline shall be operated in interstate air commerce for the carriage of mail, goods, or persons, or any combination thereof, in violation of any of the terms, conditions, specifications, limitations, or other provisions

(a) contained in its airline certificate or temporary permit, or

(b) contained in any current competency letter or temporary letter relating to service, route, aircraft, maintenance, airmen, or weather.

61.1. SERVICE

61.10. *Service Performed and Changes:* No scheduled airline shall perform or render any service, as related to the carriage of mail, goods, or persons, or to day or night operation, until rated competent to render such service in an appropriate competency letter issued by the Secretary. When an airline operator desires to effect a change in the kind of service offered with respect to the above, application for a competency rating therefor shall be made to the Secretary in accordance with CAR 40.510.

61.11. *Schedules*

61.110. Operations Schedules—Shall be set up with due regard to sufficient time for the adequate servicing of fuel and oil at intermediate stops, to prevailing winds, and of a basis of cruising speed of the aircraft at not to exceed the specified cruising power output of the engines as operated in the aircraft. All airline aircraft when being tested for ratings will be checked to determine cruising speeds that

are to be approved. Block-to-block time shall be used in establishing time from stop to stop.

61.2. ROUTE

61.20. *Route Operation and Changes:* No scheduled airline shall operate over any route or part thereof until rated competent to operate thereover in an appropriate competency letter, issued by the Secretary. When an airline operator desires to effect a change in the route flown over, application for a competency rating therefor shall be made to the Secretary in accordance with CAR 40.510.

61.21. *Regular Route:* The conduct of operations by a scheduled airline shall at all times be in strict accordance with the terms of its route competency letter.

61.22. *Regular Stops:* Regular terminals and intermediate stops shall be used only as specified in the route competency letter.

61.23. *Alternate Airports:* Regular terminals, intermediate stops or other adequate airports, may be used as alternates when used for the purpose of complying with clearance requirements, provided such alternates are listed as such in the route competency letter.

61.24. *Alternate Route:* No scheduled airline shall operate over any alternate route until rated competent to operate thereover in an appropriate competency letter issued by the Secretary, and the conduct of operations by such airline shall at all times be in strict accordance with the terms of its route competency letter.

61.3. AIRCRAFT

61.30. *Aircraft Operation and Changes:* No scheduled airline shall operate any aircraft until rated competent with respect thereto in an appropriate competency letter issued by the Secretary. When an airline operator desires to effect a change in the model aircraft utilized, application for a competency rating therefor shall be made to the Secretary in accordance with CAR 40.510.

61.31. *Single-Engine Aircraft*

61.310. Day Operation over Land—No single-engine float seaplane shall be operated over land unless such aircraft can, at all times, reach open water suitable for a landing in the event of complete power failure.

61.311. Night Operation over Land—No single-engine aircraft shall be operated at night with passengers.

61.312. Day Operation over Water—The following rules shall govern the operation of single-engine aircraft in day operation over water:

61.3120 (a). No single-engine land aircraft shall be operated over water unless such aircraft can at all times reach land suitable for a landing in the event of a complete power failure.

61.3121 (b). No single-engine water aircraft may be operated over water unless a landing may be effected at all times within a distance of eight miles from shore, in the event of a complete power failure.

61.3122 (c). No single-engine water aircraft shall be operated over water, except during such time and seasons as permit the use of such water for landing without any hazard from floating ice or freezing water spray.

61.313. Night Operation over Water—No single-engine aircraft shall be operated at night with passengers.

61.32. *Multi-Engine Aircraft*

61.320. Day Operation over Land—No Multi-engine float seaplane shall be operated over land unless such aircraft can, at all times, reach open water suitable for a landing in the event of a complete power failure.

61.321. Night Operation over Land—No multi-engine float seaplane shall be operated at night over land.

61.322. Day Operation over Water—The following rules will govern the operation of multi-engine aircraft in day operation over water:

61.3220 (a). No multi-engine aircraft shall be operated over water, beyond gliding distance from shore without the aid of power, unless completely equipped for over-water flying, as provided in CAR 40.233.

61.3221 (b). No multi-engine aircraft shall be operated over water unless such aircraft can, at all times, maintain an altitude of at least 1,000 feet above the water, with any one engine completely out of commission and with the authorized load for the route or part thereof.

61.3222 (c). No multi-engine seaplane shall be operated over water except during such time and seasons as permit the use of such water for landing without any hazard from floating ice or freezing water spray.

61.3223 (d). When one engine fails in a twin-engine aircraft operating over water, the aircraft shall be headed toward, and thereafter continuously flown toward, the shore nearest in terms of time.

61.323. Night Operation over Water—The following rules will govern the operation of multi-engine aircraft in night operation over water:

61.3230 (a). Multi-engine water aircraft, except float seaplanes, may be operated over water at night for the carriage of mail and goods.

61.3231 (b). Same as CAR 61.3221.

61.3232 (c). No multi-engine aircraft shall be operated over water at night beyond gliding distance from shore without the aid of power, unless completely equipped for over-water flying, as provided in CAR 40.233.

61.3233 (d). Same as CAR 61.3223.

61.33. *Instruments:* No scheduled airline shall operate any aircraft in scheduled airline service unless such aircraft is possessed of all instruments required by the provisions of CAR 04.52 and 04.53. Flight instruments shall be properly functioning at the time of clearance and take-off of the aircraft.

61.34. *Equipment:* No scheduled airline shall operate any aircraft in scheduled airline service unless such aircraft is possessed of all equipment required by the provisions of CAR 04.52 and 04.53. Such equipment shall, at the time of clearance and take-off of the aircraft, be in a serviceable condition and ready for use.

61.35. *Maintenance*

61.3500. General—Each aircraft operated by a scheduled airline shall be maintained in a continuous condition of airworthiness, in accordance with accepted standards and practices, and the terms of the aircraft and maintenance competency letters.

61.3501. Organization—A maintenance organization shall be set up by the airline and it shall be responsible for the continuous condition of the airworthiness of all aircraft, engines, propellers, accessories and instruments, for the proper maintenance of adequate facilities, for the adequacy and competence of maintenance personnel and for the preparation and dissemination of such maintenance reports as are required by the Secretary.

61.3502. Supervision — All phases of maintenance duties shall be adequately supervised by qualified mechanics, mechanics in charge, crew chiefs, or foremen.

61.3503. Inspection—An adequate inspection organization shall be set up by the airline and it shall be responsible for determining that all maintenance work conforms to Department of Commerce requirements as to workmanship, methods employed, and materials used, as provided

in CAR 61.35. Each inspector shall hold valid mechanic's certificate for the type of inspection involved.

61.3504. Workmanship — Workmanship shall be at least equivalent to that generally accepted as conforming to good practice as related to the airworthiness of the aircraft or auxiliary equipment.

61.3505. Methods—Methods employed shall conform to those generally accepted as good practice. Insofar as they apply, the methods provided for in CAR 18 shall be utilized.

61.3506. Materials — Materials used shall conform, when possible, to Army, Navy or CAR 18 specifications. In no case shall materials be used of physical properties less than those of the material used by the manufacturer of the equipment or component in question insofar as the airworthiness of such equipment or component is affected.

61.3507. Mechanics—An adequate staff of qualified mechanics and experienced artisans shall be employed by the airline operator and kept available for the performance of functions of maintenance and other duties which are reasonable and necessary to the safe and orderly operation involved. Each such mechanic and artisan shall be relieved of all airline duties for a period of at least 24 consecutive hours during each week of duty or equivalent thereof.

61.3508. Training Program—A training program shall be maintained so that maintenance personnel may at all times be familiar with the duties required, with particular reference to the introduction into airline service of new or unfamiliar equipment.

61.3509. Distribution of Personnel—Sufficient maintenance personnel shall be stationed or provided for along the airline route and at such scheduled stops as may be deemed necessary by the Secretary to provide proper service to flight equipment and auxiliaries thereto.

61.3510. Shops and Facilities—At least one general overhaul and maintenance shop containing adequate working space shall be provided for by the operator. Such shop shall be properly lighted, ventilated and heated.

61.3511. Stock—An adequate quantity of spare parts and supplies shall be kept on hand or readily available at all times.

61.3512. Adequate Facilities—Adequate facilities for the proper servicing, maintenance and repair of airline aircraft and auxiliary equipment shall be available at all points along the airline deemed necessary or advisable by the Secretary.

61.3513. Inflammable Material—Including dope, gasoline, etc., shall be kept remote from that portion of shops where sparks or open flames present fire hazards, by their proximity.

61.3514. Refueling Requirements—The following rules will govern the operations incident to the refueling of airline aircraft:

61.35140 (a). Water elimination facilities shall be provided at all refueling points.

61.35141 (b). A daily check for the presence of water in fuel and storage and dispensing tanks shall be made and a record of such water checks shall be kept.

61.35142 (c). Where refueling is accomplished during conditions of rain or snow, precautions shall be taken to prevent the entrance of moisture into the fuel tanks of the aircraft.

61.35143 (d). During refueling the aircraft and the fuel dispensing apparatus shall both be grounded to a point or to points of zero electrical potential.

61.35144 (e). When refueling is accomplished at night, adequate lights shall be provided to insure proper servicing.

61.35145 (f). No smoking and no fires or flames shall be permitted in the immediate vicinity of an aircraft while refueling is being accomplished.

61.35146 (g). When practicable, the aircraft electrical switches shall be not turned on or off while refueling is being accomplished.

61.35147 (h). When passengers are permitted to remain in the cabin while refueling is being accomplished, a responsible cabin attendant shall remain in the cabin at or near the cabin door.

61.3515. Alteration and Repairs—Airline aircraft, including training aircraft, aircraft engines, propellers and approved components thereof, shall be altered or repaired only in conformity to the procedures provided in CAR 18. Reports of such alterations or repairs shall be submitted promptly to the Secretary through the airline maintenance inspector having supervision of the operation involved.

61.3516. *Records:* Current records shall be kept of the total time of service, the time since last overhaul, and time since last inspection, on all aircraft, engines, propellers and where practicable on instruments and accessories.

61.4. MAINTENANCE MANUAL

61.40. *Necessity For:* In order to properly maintain flight equipment, each operator of a scheduled airline shall prepare and maintain a maintenance manual for the use and guidance of the maintenance personnel.

61.41. *Contents:* Each maintenance manual shall contain instructions for each operation covering the overhaul, check, inspection and servicing of flight equipment and other equipment auxiliary thereto, and shall also contain a copy of the current maintenance competency letter. The duties and responsibilities of each mechanic in charge, crew chief, foreman and inspector shall be clearly prescribed.

61.42. *Form:* The maintenance manual shall be loose-leaf in form, and each page therein shall be numbered and dated to show the currency of all material contained therein. All copies of such manual shall at all times be kept up to date.

61.43. *Delivery of Copies:* A copy of the maintenance manual shall be furnished to at least the following persons:

61.430 (a). the Secretary of Commerce,

61.431 (b). the Chief, Airline Inspection Section, Bureau of Air Commerce,

61.432 (c). each airline maintenance inspector of the Bureau of Air Commerce in charge of inspection of any part of the airline,

61.433 (d). each chief of maintenance of the airline,

61.434 (e). each chief inspector of the airline, and

61.435 (f). each mechanic of the airline in charge of all stations where servicing, inspection, checks or overhauls is or are done.

61.44. *Record of Copies:* Each airline operator shall keep a complete record of all persons to whom copies of its maintenance manual have been supplied.

61.45. *Changes:* The following rules will govern changes made in the maintenance manual:

61.450 (a). Any change issuing from the Secretary pertaining to the maintenance manual shall be promptly incorporated in the maintenance manual and copy thereof sent, in the form of a new page of such manual, to each

person required to hold a copy of the manual. Each amended page of the manual shall be properly dated.

61.451 (b). Upon receipt of such amended page or pages the recipient shall insert the current information in the manual.

61.452 (c). No change shall be made in any of the overhaul, check or inspection periods contained in the manual without the approval in writing of the Secretary.

61.453 (d). Any data not issuing from the Secretary may be changed by the operator, without the approval of the Secretary, provided such change is not inconsistent with any Federal regulation or competency letter or safe maintenance practice. Notice of such change shall be promptly given in accordance with CAR 61.450.

61.46. *Retirement of Parts Program:* A retirement of parts program shall be set up by the operator based upon the experience of the operator and the best information available including recommendations from the original manufacturer of the equipment.

61.5. AIRMEN

61.50. *Airmen Utilization and Changes:* No scheduled airline shall utilize any pilot or dispatcher until such airman has been rated competent for the particular airline operation by the Secretary. When an airline operator desires to effect a change in the airmen listed in the airmen competency letter, application for a competency rating therefor shall be made to the Secretary in accordance with CAR 40.510.

61.51. *First Pilot*

61.510. Aircraft Commander—The first pilot shall be in command of the aircraft at all times during flight, and shall be responsible for the safety of persons and goods carried, and for the conduct and safety of the members of the crew.

61.511. Aircraft Competency—The first pilot shall meet the appropriate minimum requirements of CAR 40 and be listed in the airmen competency letter as approved for service to be performed.

61.512. Instrument Competency—The first pilot, in addition to meeting the minimum requirements for an instrument rating provided for in CAR 20.21 and the appropriate provisions of CAR 21, as the case may be, must prove satisfactorily to the operator's check pilot, at least every six months after entry into service in accordance with the training program required by CAR 61.53, his ability to pilot and navigate by instruments an aircraft of a make and model to be flown by him in the airline service. Additional checks may be required by the Secretary in his discretion.

61.513. Route Competency—The first pilot shall meet the appropriate minimum requirements of CAR 40 and be listed in the airmen competency letter as approved for the route, or part thereof, specified therein. Nopilot shall be scheduled over an alternate route unless he has met the requirements of CAR 61.5141 regarding qualification over such route.

61.514. Route Competency Expiration—The following rules will govern conditions of route competency expiration, as related to first pilots:

61.5140 (a). Regular Route—After 6 consecutive months' absence from flight duty over a regular route, or part thereof, a first pilot will no longer be deemed competent for the carriage of persons in airline service over such route or part thereof.

61.5141 (b). Alternate Route—After 12 consecutive months' absence from flight duty over an alternate route, a first pilot will no longer be deemed competent for the carriage of persons in airline service over such route.

61.515. Route Competency Renewal—The following rules will govern conditions of route competency renewal, as related to first pilots:

61.5150 (a). A first pilot, who has been absent from flight duty over a regular route, or part thereof, for a period of less than 12 consecutive months and whose route competency has expired in accordance with the provisions of CAR 61.5140, will be deemed competent for such route, or part thereof, upon completion of one round trip flight over the route, or part thereof, as pilot (without passengers) or as second pilot (with or without passengers), and upon notice to the Secretary of such flight with weather conditions as outlined in CAR 40.2613.

61.5151 (b). A first pilot, who has been absent from flight duty over an alternate route for a period of more than 12 consecutive months and whose route competency has expired in accordance with the provisions of CAR 61.5141, will be deemed competent for such alternate route upon compliance with the requirements of CAR 40.2611, CAR 40.2612 and CAR 40.2613, as to such alternate route.

61.516. Logging Flight Time—A first pilot shall log the total actual flight time elapsing during his command of the aircraft.

61.517. Logging Instrument Flight Time—Instrument time may be logged as such only when the aircraft is flown solely by reference to instruments either under actual or simulated conditions. (Over-the-top flying shall not be logged as instrument time.)

61.518. Flight Time Limitations—The following rules will provide the limitations as to the first pilot flight time:

61.5180 (a). A first pilot may be scheduled to fly 8 hours or less during any 24 consecutive hours, without a rest period during such 8 hours. If such pilot be scheduled to fly in excess of 8 hours during any 24 consecutive hours, he shall be given an intervening rest period at or before the termination of 8 scheduled hours of flight duty. Such rest period shall equal at least twice the number of hours flown since the last preceding rest period and in no case shall such rest period be less than 8 hours. During such rest period, the pilot shall be relieved of all duties with the airline.

61.5181 (b). When a first pilot has flown in scheduled airline service in excess of 8 hours during any 24 consecutive hours, he shall receive 24 hours of rest before being assigned any duty with the airline.

61.5182 (c). A first pilot shall not fly in excess of 30 hours during any 7 consecutive days. Relief from all duty for not less than 24 consecutive hours shall be provided for and given to such pilot at least once during any 7 consecutive days.

61.5183 (d). A first pilot shall not fly in scheduled airline service as a member of the crew more than 100 hours in any one month.

61.5184 (e). A first pilot shall not fly in airline service more than 1,000 hours in any calendar year.

61.5185 (f). All first pilot flight time limitations of these regulations are applicable even though such pilot may be used as a second pilot except when first pilot is qualifying on a regular route or alternate route on which he is not qualified.

61.5186 (g). A first pilot shall not do other commercial flying while employed by an airline operator when such flying will exceed any flight time limitations specified herein.

61.519. Physical examination—A first pilot shall complete a satisfactory physical examination given by a medical examiner designated by the Secretary in accordance with the requirements of CAR 20.3504 and 21.252, as the case may be. Additional examinations may be required by the Secretary at his discretion.

61.52. *Second Pilot*

61.520. When Required—A second pilot will be required in the following cases when passengers are carried:

61.5200 (a). When the aircraft used is of a design incorporating multi-engine features, combined with retractable landing gear or wing flaps or of a single-engine design incorporating both retractable landing gear and wing flaps, or

61.5201 (b). when the first pilot is required to fly 5 or more hours during any 24 consecutive hours without an intervening rest period equal to at least 2 hours for each hour flown since the last preceding rest period. Such rest period when required shall not be less than 8 hours, or

61.5202 (c). when the operation authorized permits instrument flying, or

61.5203 (d). when, in the opinion of the Secretary, the usual and customary duties of a first pilot in the navigation and conduct of a flight would be unduly interfered with through the necessity of performing other duties.

61.521. Aircraft Competency — A second pilot shall meet the minimum requirements prescribed in CAR 40.262.

61.522. Instrument Competency—At least once each 6 months after entry into service as a second pilot, each second pilot shall have his log-book certified to the effect that he is capable of flying by instruments and has demonstrated such fact to a first pilot, check pilot, or to the chief pilot of the airline, which person shall so certify.

61.523. Logging Flight Time—A second pilot may log 50% of the total actual flight time or he may log the full flight time during which he was the sole manipulator of the controls, provided that if such time be in excess of 50% of the total flight time, the time so flown by the second pilot shall be certified by the first pilot.

61.524. Flight Time Limitations—A second pilot shall not fly as a member of the crew in scheduled airline service, more than 100 hours in any month.

61.53 *Pilot Technique Maintenance*

61.530. Responsibility of Operator—In order to maintain a high standard of pilot technique, the airline operator shall be responsible for proper and periodic instruction, in their respective duties, of all first and second pilots employed by such operator. The instruction so given to first pilots shall at least include single-engine operation and approach for landing with maximum load authorized for the route or portion thereof, in each type of aircraft to be used by the pilot in scheduled airline service, and instrument approach procedures.

61.531. Transition Training—If a first pilot has not flown a particular make and model of aircraft, within the previous 90 days, he shall before being scheduled in such equipment receive flight training on such aircraft, including:

61.5310 (a). 5 take-offs and landings, with one-half to three-quarters of the useful load aboard.

61.5311 (b). One landing of the 5 provided for in CAR 61.5310, with one engine fully throttled approach, effected during the day, and where night operation is authorized one landing of the 5 provided for in CAR 61.5310, with one engine fully throttled approach, effected at night.

61.532. Persons Carried During Transition Training—During such pilot transition training, no person other than airline personnel on airline business may be carried.

61.533. Pilot Certification for Equipment—When such tests are not conducted by a Department of Commerce airline inspector, an authorized check pilot shall certify to the pilot's capabilities on the equipment involved.

61.534. Check Pilots—Each airline operator shall provide a sufficient number of check pilots to insure that each pilot constantly meets and complies with the minimum pilot requirements pertaining to scheduled airline service. No check pilot so provided by the operator shall check any first pilots for the airline until such check pilot has been approved therefor by the Secretary. No check of pilot capabilities made in behalf of the airline operator abrogates the authority of the Secretary to make whatever pilot checks are deemed by him to be necessary in the interests of safe airline operation.

61.535. Training Program—A pilot training and instruction program satisfactory to the Secretary shall be maintained by the airline. The operator shall submit it to the Secretary within 60 days of certification of the airline.

61.54. *Radio Operator*

61.540. Pilot as Operator—The first or second pilot may serve in the capacity of a radio operator, subject to the rules of the Federal Communications Commission in respect to the grade of operator's license required.

61.55. *Dispatchers*

61.550. Number Required—The airline operator shall provide an adequate number of certificated airline dispatchers, necessary for the type of operation involved, for the purpose of dispatching airline aircraft.

61.551. Location—One or more airline dispatchers shall be located at such terminal or intermediate points on the route as may be deemed by the Secretary to be necessary for the operation involved.

61.552. Dispatcher Competency Certificate—Each dispatcher used by the airline for the purpose of dispatching airline aircraft shall be possessed of a valid dispatcher's certificate, in accordance with the provisions of CAR 27.

61.553. Route Competency—The following rules shall govern a dispatcher's route competency:

61.55300 (a). He shall have made at least one round trip over the route, or part thereof, on which he is to serve during the previous 90 days prior to dispatching any airplane over such route or part thereof.

61.55301 (b). He shall observe and be familiar with the prevailing weather phenomena peculiar to the route, or part thereof, for which qualification is sought.

61.55302 (c). He shall be familiar with the airline operation over the route, or part thereof, for which qualification is sought.

61.55303 (d). He shall be familiar with the contents of the airline operations manual.

61.55304 (e). He shall be familiar with the airmen and weather competency letters over the route or part thereof for which qualification is sought.

61.55305 (f). He shall be familiar with the general and special rules of the airline concerning dispatch of aircraft in scheduled operations.

61.55306 (g). He shall be familiar with the aircraft used by the airline.

61.55307 (h). He shall be familiar with the provisions of the aircraft certificates and with the loading charts for the equipment used.

61.55308 (i). He shall be familiar with the maximum authorized loads, with respect to the route or part thereof, for the aircraft to be used.

61.55309 (j). He shall be familiar with the fuel and oil consumption of the aircraft, with respect to the airline operating conditions.

61.55310 (k). He shall be familiar with the available charts used to compute the air speed of the aircraft and the fuel consumption, at various altitudes and power outputs of the aircraft engines.

61.55311 (l). He shall be familiar with the local United States Weather Bureau and Bureau of Air Commerce personnel.

61.55312 (m). He shall be familiar with the radio facilities in the aircraft used.

61.55313 (n). He shall be familiar with the peculiarities and limitations of each radio range and radio marker station over the route, or part thereof, for which route competency is sought.

61.55314 (o). He shall be familiar with the effect of weather conditions upon the radio reception by the aircraft to be used.

61.55315 (p). He shall be familiar with the time-tables which ordinarily apply to the airline operation.

61.55316 (q). He shall be familiar with any airway facility, additional to those mentioned in CAR 61.55313 enroute, to, or located at, alternate airports approved as such, for the route or part thereof, in the route and weather competency letter.

61.554. Route Competency Maintenance — Each dispatcher, listed in the airline airmen competency letter shall make at least one round trip over the route, or part thereof, on which he dispatches airline aircraft in scheduled operations, at least once each 6 months.

61.555. A dispatcher shall not dispatch visual-contact, instrument and/or over-the-top flights, either day or night, below the respective minimums specified for such flights in the weather competency letter, except as provided in CAR 61.71094.

61.556. Dispatcher Route Competency Expiration — After 24 consecutive months' absence from dispatching duty over a route or part thereof, a dispatcher will no longer be deemed competent to dispatch aircraft in scheduled operations over such route or part thereof.

61.557. Dispatcher Time Limitations—The following rules will govern the hours of duty for authorized dispatchers:

61.5570 (a). Maximum Consecutive Hours of Duty—No dispatcher shall be on duty as such for a period of more than 10 consecutive hours.

61.5571 (b). Maximum Hours of Duty in 24 Consecutive Hours—If a dispatcher is scheduled to be on duty as such for more than 10 hours in a period of 24 consecutive hours, he shall be given a rest period of not less than 8 hours, at or before the termination of 10 hours of dispatcher duty except in emergencies due to illness or unavoidable absence of a dispatcher due to weather during a qualification trip or other circumstances beyond the control of the operator.

61.5572 (c). Dispatcher's Time Off—Relief from all duty with the airline for not less than 24 hours shall be provided for and given each dispatcher at least once during any consecutive 7 days, or equivalent thereto within one calendar month.

61.6. WEATHER

61.60. *Reports:* The following rules shall govern the use of weather reports by scheduled airline operators:

61.600 (a). No weather report shall be used to control flight movements unless prepared from observations made and released by the United States Weather Bureau, or by a source approved by such Bureau including pilots' flight observation reports.

61.601 (b). The weather reports used shall be the latest reports available.

61.602 (c). The last airway weather report entered upon the clearance form or attached thereto shall be not more than one hour and 15 minutes old at the time the aircraft departs on a scheduled flight, except that off-course weather reports or on-call weather reports may be entered thereupon or attached thereto if the last such report is not more than 2 hours old.

61.603 (d). Barometric pressures, corrected to sea level readings, shall be utilized exclusively.

61.604 (e). All ceiling heights, reported by pilots in flight either by radio or by entry on forms, shall be with reference to altitude above sea level.

61.605 (f). Forecasts made by the Weather Bureau or company meteorologists, or both, may be used.

61.7. FLIGHT OPERATIONS

61.70. *Prior to Clearance*

61.700. Aircraft to be Airworthy—No scheduled airline shall operate any aircraft unless, at the time of use, the aircraft departs on a scheduled flight, except that off-terms of its current aircraft certificate and is loaded in conformity with the current loading schedule which is a part of such certificate.

61.701. Adequately Serviced — Before departure on any flight, the airline aircraft shall be adequately serviced. The first pilot shall be responsible for the proper servicing of the aircraft, although he may delegate the actual work of supervision to a second pilot or other airman.

61.702. Adequate Fuel Supply—The following rules shall govern the minimum fuel supply to be carried by all airline aircraft:

61.7020 (a). Visual-Contact Operation (Day or Night)—No airline aircraft shall be dispatched or shall take off without fuel and oil sufficient, considering the wind and other weather conditions to be encountered during the course of the flight, at least

(1) to complete such flight to the point cleared to, and thereafter.

(2) to fly for a period of 45 minutes at normal cruising consumption for the flight.

61.7021 (b). Instrument or Over-the-Top Operation (Day or Night)—No airline aircraft shall be dispatched or shall take off without fuel and oil sufficient, considering the wind and other weather conditions to be encountered during the course of the flight, at least

(1) to complete such flight to the point cleared to, and thereafter

(2) to fly to and land at the alternate airport designated in the clearance and most distant from the point cleared to, and thereafter

(3) to fly for a period of 45 minutes at normal cruising consumption for the flight.

61.703. Radio Ground Check—Immediately preceding departure from originating station it shall be determined that both day and night frequencies of the two-way radio, as well as all additional frequencies whose use are contemplated during the flight, are working satisfactorily. The

method of determining this shall be by radio contact on each frequency with at least one ground station.

61.704. Passengers Aboard During Refueling—Passengers may be permitted to remain in the cabin during refueling, provided:

61.7040 (a). There is no smoking in the aircraft, and

61.7041 (b). there is no smoking on the ground in the vicinity of the aircraft, and

61.7042 (c). an employee of the operator is stationed in the entrance to the passenger cabin and remains there alert for any emergency until refueling is completed.

61.705. Notice of Other Aircraft in Flight on Route—Prior to clearance, it shall be the responsibility of the dispatcher to ascertain from the best information available what other aircraft flights are in progress over the route to be flown, the results of which shall be made known to the pilot. After departure of the scheduled flight the dispatcher will continue to advise his flight or flights the progress of all other known aircraft in flight on the course, crossing courses, converging courses, etc.

61.71. *Dispatching Rules (For Clearance)*

61.7100. Necessity for Dispatching Authorization—No scheduled airline flight shall be started except on the authority of an airline dispatcher whose name appears in the airmen competency letter as qualified for the route, or part thereof, on which the flight takes off.

61.7101. Dispatcher Reporting for Duty — No dispatcher shall clear a flight of airline aircraft unless he has been on duty, at the station from which such clearance is effected, for a period sufficient to become familiar with existing conditions. He shall continue on duty until the aircraft has landed in completion of a trip, or until the dispatching supervision has been taken over by an adjacent airline dispatcher or by another dispatcher who has relieved him after such relief dispatcher has been on duty for a period sufficient to become familiar with existing conditions.

61.7102. Clearance Form: Approval — The clearance form used shall be approved by the Secretary. (Note: A sample form may be obtained from the Secretary which contains substantially the material that would be acceptable.)

61.7103. Clearance Preparation and Execution — A clearance form shall be properly prepared and executed for each flight between designated clearance points, and shall be signed by the first pilot and by an authorized dispatcher or by duly authorized station personnel of the operator after receiving current authority from the authorized dispatcher on duty only when both the first pilot and the dispatcher believe the flight may be made with safety. The original copy shall be given to the first pilot and a duplicate copy shall be kept in the station file for a period of at least 30 days.

61.7104. Clearance Contents—The following rules will govern the clearance contents:

61.71040 (a). The clearance shall contain or have attached thereto all current weather reports as outlined in 61.60 over the airway or part thereof and, when available, any off-airway or on-call weather reports considered necessary or desirable by the pilot or dispatcher to insure the safety of the flight.

61.71041 (b). When available, the latest terminal and airway forecasts shall be included in or attached to the clearance and shall be considered by the dispatcher responsible and first pilot before clearance.

61.71042 (c). The dispatcher or duly authorized station personnel shall attach or enter all current reports or information pertaining to irregularities of navigational aids and facilities affecting the flight. He shall also inform the pilot, during flight, of any additional or different irregularities and the flight shall be controlled accordingly.

61.7105. Clearance Request Repetition—When a pilot requests clearance from a dispatcher authorized to clear the proposed flight and is refused such clearance, he shall not make a similar request from another dispatcher.

61.7106. Change in Clearance by Radio—If a change in clearance is desirable while the aircraft is in flight, the pilot may be given a change in clearance by radio by an authorized dispatcher, provided the two-way conversation appears in the radio log. If the pilot is refused such change by one dispatcher, he shall not make a similar request of another dispatcher.

61.7107. Weather Minimums: General—The following rules relating to weather conditions will govern the dispatching of airline aircraft. No scheduled airline aircraft shall be dispatched unless:

61.71070 (a). At the time of take-off, the ceiling and visibility at the point of departure are equal to or better than those specified for departure in the weather competency letter.

61.71071 (b). In the event of ground fog, all take-offs or landings shall be made in strict accordance with the procedure specified in the weather competency letter.

61.7108. Weather Minimums: Visual-Contact Clearance—The following rules relating to weather conditions will govern the dispatching of airline aircraft in visual-contact operation. No scheduled airline aircraft shall be dispatched unless:

61.71080 (a). The hourly weather report and sequence and current weather forecasts shall show a trend that gives sufficient indication that the ceilings and visibilities along the entire route to be flown are and will remain at or above the minimums specified in the weather competency letter until the flight arrives at the point cleared to.

61.71081 (b). During day operation minimum visibility shall be one mile except contact flight may be made when visibility is reduced to one-half mile by local smoke, dust, haze, blowing snow or sand.

61.71082 (c). During night operation at least one beacon on the course shall be visible from the aircraft at all times.

61.7109. Weather Minimums: Instrument or Over-the-Top Clearance—The following rules relating to weather conditions will govern the dispatching of airline aircraft in instrument and/or over-the-top operation:

61.71090 (a). No scheduled airline aircraft shall be dispatched unless the observed weather information and current weather forecasts, pertaining to the point cleared to, give sufficient indication at the time of clearance that the ceiling and visibility are or will be, when the flight would arrive at such point, at or above the minimums specified in the weather competency letter for letting-down-through.

61.71091 (b). When the observed weather information and current weather forecasts pertaining to the point cleared to give sufficient indication, at the time of clearance, that the ceilings and visibility are, and will remain until the flight would arrive at such point, at or above the minimums specified in the weather competency letter for letting-down-through, there shall be at least one designated alternate airport or intermediate field specified on the appropriate flight clearance. Such alternate airport or field shall be suitable for landing and be within the fuel and oil requirements as outlined in CAR 61.702.

61.71092 (c). If the alternate referred to in CAR 61.71091 is equipped with a radio range beacon, the weather conditions existing thereat at the time of clearance must indicate that the ceilings and visibility are, and will remain until the flight would arrive at such point, at or above the minimums specified in the weather competency letter for letting-down-through, and the hourly weather report sequence and current forecast shall show a trend that gives sufficient indication of weather conditions continuing so until the flight would arrive thereat.

61.71093 (d). If the alternate referred to in CAR 61.71091 is not equipped with a radio range beacon, the weather conditions existing thereat at the time of clearance must be equal to, or better than, broken clouds and a ceiling of 1,000 feet and visibility of 2 miles, and the hourly weather report sequence and forecast shall show a trend that gives sufficient indication of continuing so until the flight would arrive thereat. The Secretary may, in his discretion, prescribe higher minimums.

61.71094 (e). When the ceiling or visibility at the point cleared to is below the minimum specified in the weather competency letter for landing-down-through, but the weather reports pertaining to such point at such time shall show a trend, by the hourly sequence and current forecast, that gives sufficient indication of the weather conditions improving to or above such minimums upon arrival of the flight thereat, 2 designated alternate airports or intermediate fields shall be specified in the appropriate flight clearance. Each such alternate shall be suitable for landing and be within the fuel and oil requirements, as outlined in CAR 61.702.

61.71095 (f). If any one of the alternates, referred to in CAR 61.71094, is equipped with a radio range beacon, the weather conditions existing at such alternate at the time of clearance shall not be less than the minimums provided for in CAR 61.71092.

61.71096 (g). If any one of the alternates, referred to in CAR 61.71094, is not equipped with a radio range beacon, the weather condition existing at such alternate at the time of clearance shall not be less than the minimums provided for in CAR 61.71093.

61.7110. Clearance of Flights on Alternate Routes—Clearance of flights on alternate routes shall not be permitted unless such route or routes have been approved and listed in the letter of competency, and conditions on the regular route are such that the flight would otherwise be canceled or delayed, or when for the purpose of keeping pilots qualified over such routes. When such flights are made for qualifying pilots, such flights shall be made by visual-contact with visibility not less than 5 miles as observed from the aircraft over the entire route. When flights are cleared over alternate routes due to conditions on the regular route being such that flight is considered inadvisable, the weather conditions on the alternate route shall be equal to or better than those listed in the letter of competency for the particular alternate route.

61.7111. Late or Off-Schedule Flights — When variations from the regular schedules occur, the dispatcher shall take such action or issue such special orders as may be necessary and proper.

61.7112. Flight Hazards—No scheduled airline flight shall be dispatched, or permitted to continue in flight, when there is a known probability of its encountering any hazardous conditions in making or continuing such flight.

61.72. *Flight Preparation and Take-Off Rules*

61.7200. Radio Ground Check—Before departure from the originating terminal on any scheduled airline operation, at least one check shall be made by the pilot of the radio system to be used in flight.

61.7201. Radio Check After Take-Off—When a trailing antenna is used, a precautionary radio check to determine possible loss of such antenna shall be made as soon as practicable after take-off.

61.7202. Control Tests—The pilot shall test the flight controls on the ground and determine that they are functioning properly.

61.7203. View of Traffic—Immediately prior to take-off, the pilot shall maneuver the aircraft to a position from which he can observe incoming and outgoing aircraft.

61.7204. Engine Tests—Before the take-off run, the aircraft engine or engines shall be individually tested at full throttle, except that supercharged engines shall be tested at run-up r. p. m. at the manifold pressure specified by the operator for the particular conditions involved. The engine temperatures (including oil, carburetor, and head temperatures) shall be normal and each magneto shall be individually tested.

61.72040 (a). No person other than a certificated airman may run-up the engine or engines of an airline aircraft while such engines are installed in an airline aircraft.

61.72041 (b). Engine rup-ups shall be conducted in such a manner as to minimize the effect of loose gravel, cinders and like material in contacting the propeller blades, aircraft control, lift and stabilizing surfaces.

61.7205. Instrument Tests—Before the take-off run, as many as possible of the aircraft flight instruments, and particularly all pressure gauges and gyroscopic flight instruments, shall be tested by the pilot to determine that they are all functioning properly.

61.7206. Take-Off Restrictions—No pilot shall take-off any airline aircraft if, in his opinion, the aircraft is not airworthy. No pilot shall take-off any airline aircraft at any time when an engine is not functioning properly.

61.7207. Runway Utilization — The take-off shall be started from a point which makes available the greatest length of runway, considering the direction of the wind.

61.7208. Restricted-Vision Take-Offs—If a method of take-off, under conditions of restricted vision (including conditions of ground fog), is specified in the weather competency letter, it shall be strictly followed.

61.7209. Banking after Take-Off—So far as practicable, the aircraft shall not be banked immediately after take-off until at least a minimum altitude of 500 feet has been attained.

61.7210. Pilots at Controls—Neither pilot shall leave the controls during ascent of the aircraft immediately following take-off.

61.7211. Take-Off from Fields Not Designated as Airports—No scheduled airline aircraft shall take-off with passengers from any field not designated as an airport until such aircraft has been properly cleared by a dispatcher authorized to act in such an emergency and until a complete agreement has been reached by both the pilot in command of such flight and the authorized dispatcher that such clearance can be accomplished with safety.

61.73. *Flight Course and Enroute Rules*

61.730. Alternate Routes—Scheduled airline aircraft shall not be operated over an alternate route unless authorized to do so in a route competency letter and then only in compliance with the provisions thereof.

61.731. Deviation from Airway — Scheduled airline aircraft shall not deviate from the prescribed airway except when the circumstances render such deviation neces-

sary as an emergency safety measure. Any such deviation shall be explained by the pilot in a written report to the airline operations manager. The operations manager shall furnish a copy of such report with comments promptly to the Secretary.

61.732. Dispatcher Emergency Decisions—In an emergency situation, arising during the course of the flight, which requires immediate decision and action on the part of the dispatcher, and that is known to him, the airline dispatcher shall notify and advise the pilot as to such situation. Further, the dispatcher shall determine from the pilot what final decision has been made by such pilot and shall enter it in the station radio log.

61.74 *Flight Altitude Rules*

61.740. Visual-Contact Day or Night—Except during take-offs and landings, no scheduled airline aircraft shall be flown at an altitude less than 500 feet above the ground, or within 500 feet from any mountain, hill or other obstruction to flight, except as may be specifically approved by the Secretary.

61.741. Instrument Flights—Altitudes established for instrument flights by the provisions of CAR 60.58 shall be strictly adhered to during such flights. Except during take-offs, and final approaches and landings, no instrument flight shall be conducted within 1,000 feet above the ground or any obstruction.

61.742. Maximum Altitude of Flight Operations—In scheduled airline aircraft carrying passengers and operating at an altitude above 15,000 feet above sea level, there shall be a competent cabin attendant provided to observe and care for the passengers. Scheduled airline flights above 15,000 feet are prohibited except for the periods of time which are necessary to clear obstructions to flight and to avoid hazardous weather conditions. Scheduled airline flights at altitudes above 18,000 feet are prohibited unless specifically permitted by the terms of the weather competency letter.

61.75. *Instrument Approach Rules*

61.750. Altitude Maintenance on Initial Approach—When making an initial approach to a radio range station, on instruments or on top of overcast or clouds, an aircraft in scheduled airline operation shall not descend below the pertinent minimum altitude for initial approach specified in the weather competency letter for such station, until arrival over the radio range station has been definitely proved by the method outlined in the appropriate instrument approach procedures of the weather competency letter.

61.751. Letting-Down-Through Procedure—When instrument authority is authorized standard instrument approach procedure shall be established by the operator for each radio range station used or to be used for letting-down-through, and approved by the Secretary and included in the weather competency letter. The letting-down-through methods, procedures and minimums specified, shall be strictly adhered to.

61.76. *Landing Rules*

61.760. Pilots at Controls—The pilots shall remain at their controls during the final approach and landing.

61.761. Restricted-Vision Landing — The Method of landing under conditions of restricted vision, when authorized, will be specified in the weather competency letter and shall be strictly adhered to.

61.77. *Flight Interruption Rules*

61.770. Weather Interruption—If any hazardous flight condition is encountered enroute, the pilot shall broadcast information as to the course of action which he is taking and as to his reasons therefor.

61.771. Mechanical Interruptions—In the event of any mechanical failure or interruption (including failure of engine, flight instrument, radio, or other essential component of the aircraft) which may involve the safety of the flight, the pilot shall proceed to and land at the nearest place where a safe landing can be effected. (For general pilot authorization, in emergency situations, see CAR 61.7811.)

61.78. *General Pilot Rules*

61.7800. Command of Flight—The first pilot shall be in command during the flight of the aircraft.

61.7801. Remaining at Controls—The pilots shall remain at their posts while the aircraft is in flight and shall not leave the pilots' compartment except when it is necessary in attending to their regular duties or when replaced by a person authorized in CAR 61.7803. When a second pilot is required to attend passengers, he shall not, unless the first pilot deems it necessary, leave the pilots' compartment until the aircraft has ascended to its cruising altitude, or during the final stages of an approach for a landing.

61.7802. Manipulation of Controls—No person, other than a first or second pilot shall manipulate the controls of an airline aircraft while in scheduled flight, provided, however, that at the discretion of the first pilot such restriction shall not apply to an authorized airline inspector of the Department of Commerce or to properly qualified company personnel.

61.7803. Pilots' Compartment—The door or doors between the pilots' compartment and the passenger compartment shall be kept closed when the aircraft is in flight. No person shall be admitted to such pilots' compartment while the aircraft is in scheduled flight, except at the discretion of the first pilot, an employee authorized by the operator or any of the following personnel of the Department of Commerce may be admitted

Secretary of Commerce
Assistant Secretary of Commerce
Director of Air Commerce
Assistant Director of Air Commerce
Chief, Certificate and Inspection Division
Chief, Airline Inspection Section
Supervisor, Air Traffic Control
Airline Inspectors of Operation
Airline Inspectors of Maintenance
Airline Inspectors of Radio

61.7804. Radio Head-Sets—A radio telephone headset shall be worn by the first pilot or by a second pilot and the radio tuned to appropriate frequencies at least during the time while the aircraft is in flight or taxiing.

61.7805. Time of Reporting for Duty—The pilot in command of any scheduled flight and the second pilot shall report to the operations office of the operator in sufficient time prior to the start of any scheduled flight to study and familiarize themselves with weather conditions on the route to be flown and for the plan of flight to be executed for the proposed schedule.

61.7806. Local Airport Rules and Interline Agreements—Pilots shall at all times comply with accepted safety agreements or practices, including current interairline agreements and local airport traffic rules.

61.7807. Pilot Seat Belts—Any pilot while actually manipulating or in a situation where he may have to take

over the controls shall keep his seat belt fastened at all times.

61.7808. Maneuvers—All aircraft maneuvers not necessary to the safe and orderly progress of the flight shall be avoided.

61.7809. Maps and Flight Equipment—It shall be the responsibility of the pilot in command before any scheduled flight is started to have in his possession in the cockpit proper flight and navigational facility maps, including instrument approach procedures when instrument flight is authorized, and such other flight equipment as may be necessary to properly conduct the particular flight proposed.

61.7810. Flashlights—It shall be the responsibility of the pilot in command to see that 2 satisfactory flashlights in good working order are provided in the aircraft and accessible to both pilots.

61.7811. Emergency Decisions—The first pilot is authorized, in emergency situations which require immediate decision and action, to resolve upon a course of action which is required by the factors and information available to him. He may, in such situations, deviate from prescribed methods, procedures or minimums to the extent required by considerations of safety. When such emergency authority is exercised, the pilot shall keep the proper control station fully informed regarding the progress of the flight. He shall submit a written report of any such deviation to his operations manager. The operations manager shall furnish a copy of such report, with his comments, promptly to the Secretary.

61.79. *Miscellaneous Rules*

61.790. Distribution of Notices—The operator shall set up some provisions for the prompt transmission of all information pertaining to changes and irregularities of all navigational aids and facilities over his entire system. In addition where inter-airline agreements, airway traffic control regulations, and local airport traffic rules, etc., have been provided and adopted, on any portion of the route or routes, prompt notice and appropriate instructions shall be given to all personnel concerned.

61.791. Airline Aircraft Proving Period

61.7910 (a). All airline aircraft of a new make or model shall have at least 100 hours of proving tests in the hands of an airline operator, under the supervision of an authorized representative of the Bureau of Air Commerce before authority for carrying passengers may be issued. At least 50 hours of such tests shall be on scheduled operation and include at least 10 hours of night operation.

61.7911 (b). In the case of major changes on aircraft previously proved, or the use of the same aircraft on a different operation, 50 hours of proving tests similar to that outlined in the preceding paragraph may be required, at least 25 hours of which shall be in scheduled operation.

61.7912 (c). During the tests specified in (a) and (b) above, passengers other than those essential to the tests are prohibited. Mail, express and/or cargo may be carried, at the discretion of the Secretary.

61.792. Smoking Rules — The operator may permit smoking in scheduled airline aircraft except in berths of sleeper planes and during refueling, provided:

61.7920 (a). The aircraft carries a second pilot or cabin attendant, who shall notify passengers when and where smoking is prohibited.

61.7921 (b). Sufficient ash containers of a suitable type are provided.

61.793. No Smoking Signs—A prominent "No Smoking" sign shall be displayed in berths.

61.794. Smoking in Pilot Compartment — When the operator permits smoking in the pilot compartment, suitable ash containers for the members of crew shall be provided. In no event shall smoking be permitted during take-offs, landing and refueling.

61.795. Radio Rules—The following rules will govern the use and operation of radio facilities by an airline operator.

61.7950 (a). Radio facilities, exclusive of the emergency equipment, in the aircraft shall be operating and ready for immediate use at all times when the aircraft is in flight.

61.7951 (b). The radio communications system required by the civil air regulations shall at all times be operated in strict accordance with the rules and regulations provided therefor by the Federal Communications Commission.

61.7952 (c). Where a communication channel serves point-to-point contacts in addition to ground to plane it is required that priority of the circuit be given to plane to ground and ground to plane communication. Where in the opinion of the Secretary the volume of point-to-point traffic is so heavy as to interfere with the primary purpose of the circuit, i. e., plane to ground and ground to plane contacts, the Secretary may require that all other traffic be removed from this circuit.

61.8. OPERATIONS MANUAL

61.80. *Necessity For:* Each operator of a scheduled airline shall prepare and maintain an operations manual for the use and guidance of the airline flight and ground personnel. If desired by the operator, such manual may be broken down into two or more parts, on a divisional basis, but the manual for each division shall be complete as pertains to such division.

61.81. *Contents:* Each operations manual, including a divisional manual, shall contain

61.810. (a) a copy of the current route and weather competency letters,

(b) a copy of all interline traffic agreements affecting the particular operation involved; and

(c) any other data or information which the operator desires to include for the efficiency or safety of the operation.

61.82. *Form:* The operations manual shall be loose-leaf in form, and each page therein shall be numbered and dated to show the currency of all material contained therein. All copies of such manual shall at all times be kept up to date.

61.83. *Delivery of Copies:* A copy of the operations manual shall be furnished to at least the following persons:

(a) the Secretary of Commerce;

(b) the Chief of the Airline Inspection Section, Bureau of Air Commerce;

(c) each airline inspector of the Bureau of Air Commerce in charge of inspection on any portion of the route, including any division thereof;

(d) each airline first pilot;

(e) each airline second pilot;

(f) each person authorized for dispatching duty;

(g) each airline aircraft radio operator; and at

(h) each airline terminal and scheduled intermediate stop.

61.84. *Record of Copies:* Each airline operator shall keep a complete record of all persons to whom copies of its operations manual have been furnished.

61.85. *Changes:* The following rules will govern changes made in the operations manual:

61.850 (a). Any change, issuing from the Secretary, pertaining to the route or weather competency letter shall be promptly incorporated in the operations manual and a copy thereof sent, in the form of a new page of such manual, to each person required to hold a copy of the manual. Each amended page of the manual shall be properly dated.

61.851 (b). Upon receipt of such new page or pages, the recipient shall insert the current information in the manual.

61.852 (c). No change shall be made in any of the terms, specifications, conditions, limitations, or other provisions appearing in the airline certificate or in any appended competency letter without the approval, in writing, of the Secretary.

61.853 (d). Any data not issuing from the Secretary may be changed by the operator, without approval of the Secretary, provided such change is not inconsistent with any Federal regulation or competency letter or safe operation practice. Notice of any such change shall be given promptly in accordance with the provisions of CAR 61.850.

61.9. REPORTS

61.90. *General:* Each scheduled domestic airline operator shall furnish the Secretary such reports as may be required by him.

61.91. *Monthly Report:* A monthly operations report shall be submitted on Form No. AC 61-1 to the Secretary not later than the 20th of the next succeeding month.

61.92. *Mechanical Interruption:* Two copies of mechanical interruption in flight report shall be submitted to the Secretary, through the airline maintenance inspector of the Bureau of Air Commerce who is assigned to such operation, on Form No. AC 61-2 as soon as possible, but not later than 10 days after a mechanical interruption occurs.

61.93. *Weather Interruption:* A weather interruption report shall be submitted to the Secretary on Form No. AC 61-3 as soon as possible but not later than 10 days after a weather interruption occurs. A duplicate copy thereof shall be sent to the Bureau of Air Commerce airline inspector who is assigned to such operation.

61.94. *Mechanical Record:* The records of the airline operator covering mechanical trouble shall be made available upon request to the Bureau of Air Commerce airline maintenance inspector who is assigned to such operation, or to any other authorized representative of the Secretary.

61.95. *Irregularity Report:* All airmen, including flight and ground personnel, shall immediately report any irregularity or hazard which exists on or adjacent to any civil airway, and which in their opinion, makes for unsafe operation of aircraft in flight. Such report shall be made to the airline operations manager, who shall verify its accuracy to the best of his ability. If the report is justified, notice of the irregularity or hazard shall at once be given to the Secretary.

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