CIVIL AIR REGULATIONS

PART 40—AIR CARRIER OPERATING CERTIFICATION

As amended to July 10, 1946

CIVIL AERONAUTICS BOARD

WASHINGTON, D. C.

For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. - - Price 10 cents

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40.0 Provision for issuance. Pursuant to the provisions of the Civil Aeronautics Act of 1938, as amended, empowering the Administrator of Civil Aeronautics to issue air carrier operating certificates and the Board to establish minimum safety standards for the operation of the air carrier to whom any such certificate is issued, the following regulations are prescribed for such certification of scheduled air carriers engaged in interstate air transportation within the continental limits of the United States as to their competency.

40.1 General minimum requirements. To be eligible for an air carrier operating 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 air carrier with reasonable safety as related to the service offered, for a period of at least 1 year.

40.11 Route. Applicant shall show that the route over which it proposes to operate is, or prior to operation will be, equipped with such navigational facilities (including terminal and intermediate airports, emergency landing fields, and ground aids to air navigation) as are determined by the Administrator to be necessary for safe operation as related to the service offered.

40.110 Definition of route. A route is that portion of the navigable airspace designated by the Administrator which is to be used by the air carrier in scheduled air transportation.

40.12 Aircraft. Applicant shall show certificated aircraft of a model and number found by the Administrator to be adequate for safe operation as related to the service offered, the route traversed, and the operating and maintenance procedures and techniques proposed. (See also § 40.2.)

40.13 Airmen. Applicant shall show certificated airmen (including both flight and ground personnel) of kind, grade, and number deemed by the Administrator 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 air carrier operations.

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 techniques proposed for its air carrier operations.

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

40.2. Passenger minimum requirements. To be eligible for an air carrier operating certificate for the carriage of persons in interstate air transportation within the continental limits of the United States, an applicant, in addition to meeting the minimum requirements provided for in § 40.1, shall meet and comply with the following minimum requirements prescribed for the particular kind of operation proposed. Airplanes proposed for use for the carriage of passengers shall be subject to the following requirements:

(a) No airplane certificated as a basic type after June 30, 1942, shall be deemed adequate for use in scheduled air transportation unless it has been certificated in accordance with the transport category requirements of Part 04;

(b) No airplane which has been certificated as a basic type in accordance with the transport category requirements of Part 04 shall be deemed adequate for use in scheduled air transportation unless it can meet the requirements of § 61.712 over each route to be flown;

(c) (Repealed September 18, 1944).

(d) No airplane shall be deemed adequate for use in scheduled air transportation after December 31, 1948, unless it has been certificated in accordance with the transport category requirements of Part 04, and can meet the requirements of § 61.712 over each route to be flown.

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, or is otherwise deemed satisfactory by the Administrator for the operation proposed. (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 air carrier operating certificate application.)

40.201 Airports. Applicant shall show that the airports to be used as terminals and scheduled intermediate stops are deemed adequate by the Administrator for safe air carrier operation of the type proposed.

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 or airports available for safe landings with the load authorized for the route, or part thereof, and located so that the aircraft, when flying along the proposed route, shall at no time be at a distance greater than 100 miles from an intermediate field or airport: *Provided,* That the Administrator may permit or require intermediate fields at greater or less distances if suitable or necessary to provide adequate safety along the proposed route.

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.

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40.11 Route. Applicant shall show that the route over which it proposes to operate is, or prior to operation will be, equipped with such navigational facilities (including terminal and intermediate airports, emergency landing fields, and ground aids to air navigation) as are determined by the Administrator to be necessary for safe operation as related to the service offered.

40.110 Definition of route. *A route is that portion of the navigable airspace designated* by the Administrator which is to be used by the air carrier in scheduled air transportation.

40.12 Aircraft. Applicant shall show certificated aircraft of a model and number found by the Administrator to be adequate for safe operation as related to the service offered, the route traversed, and the operating and maintenance procedures and techniques proposed. (See also § 40.2.)

40.13 Airmen. Applicant shall show certificated airmen (including both flight and ground personnel) of kind, grade, and number deemed by the Administrator to be necessary

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(b) No airplane which has been certificated as a basic type in accordance with the transport category requirements of Part 04 shall be deemed adequate for use in scheduled air transportation unless it can meet the requirements of § 61.712 over each route to be flown;

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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, or is otherwise deemed satisfactory by the Administrator for the operation proposed. (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 air carrier operating certificate application.)

40.201 Airports. Applicant shall show that the airports to be used as terminals and scheduled intermediate stops are deemed adequate by the Administrator for safe air carrier operation of the type proposed.

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 or airports available for safe landings with the load authorized for the route, or part thereof, and located so that the aircraft, when flying along the proposed route, shall at no time be at a distance greater than 100 miles from an intermediate field or airport: *Provided*, That the Administrator may permit or require intermediate fields at greater or less distances if suitable or necessary to provide adequate safety along the proposed route.

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 such terminals and at such points as may be deemed necessary by the Administrator 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 en route, 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 § 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 Administrator to be adequate for safe air carrier operation at night.

40.211 Airports. Applicant shall meet the requirements of § 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 Administrator to be adequate for safe air carrier operation at night.

40.212 Public protection. Same as in § 40.202.

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

40.214 *Refueling facilities.* Same as in § 40.204.

40.215 Radio facilities. Same as in § 40.205.

40.216 Weather reporting. Same as in § 40.206.

40.22 Route requirements: Instrument or over-the-top operation.

40.220 Airway. (a) Applicant shall meet the requirements of § 40.200 for day operation, or of § 40.210 for night operation. In addition, for either day or night operation, applicant shall show that the proposed route is equipped with radio ranges (or equivalent facilities) adequate for safe air carrier operation, projecting courses over the proposed route. The applicant may show, in lieu of courses projected over the proposed route by such radio ranges or equivalent facilities, (1) that instrument navigation may be safely conducted over the proposed route by the use of radio direction finding equipment installed in the aircraft, and (2) that a practical alternate route, equipped with radio range stations (or equivalent facilities) projecting courses over such alternate route, exists between the terminals of the proposed route.

(b) Applicant shall also show such other radio navigational aids (including radio markers) as are necessary for safe air carrier operation.

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 deemed adequate by the Administrator for the service offered. 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 Administrator to be adequate for safe air carrier operation at night.

40.222 Public protection. Same as in § 40.202.

40.223 Intermediate fields. Same as in § 40.203 for day operation, and as in § 40.213 for night operation.

40.224 Refueling facilities. Same as in § 40.204.

40.225 Radio facilities. Same as in § 40.205.

40.226 Weather reporting. Same as in § 40.206.

40.23 Aircraft requirements: Visual-contact day operation.

40.230 If single-engine operation over land. Applicant shall show land aircraft of 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 Administrator for a safe landing in the event of complete power failure.

Single-engine aircraft may be operated over routes deemed by the Administrator to have suitable landing terrain.

40.231 If single-engine operation over water. Applicant shall show water aircraft of 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 Administrator 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:

(*a*) That such aircraft (other than those specifically listed as in scheduled air carrier 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 inoperative, 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 the route or part thereof on which the aircraft will be operated; or

(*b*) Operating procedures which, in the opinion of the Administrator, will assure that such aircraft will be capable of effecting a safe landing at an airport or other suitable area in the event of the failure of any one engine at any point on the route on which such aircraft will be operated.

40.2320 Engine rotation. On and after July 1, 1941, applicant shall show that any aircraft to be used in air transportation which have engines with maximum power ratings of 480 horsepower or more are so equipped that engine rotation may be promptly stopped during flight; and, on and after January 1, 1943, the same showing shall be made with respect to all other aircraft to be used in air transportation.

40.233 If multi-engine operation over water. Applicant shall show aircraft of 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 inoperative, 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 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 pistol and cartridges or equivalent signal equipment deemed suitable by the Administrator, and with radio equipment as required by §§ 40.253, 40.2530, and 40.2531.

The requirements of flotation devices and signal equipment do not apply where such operations consist only of landings, take-offs, or flights of short duration over water and the Administrator finds in each case that such equipment is unnecessary.

40.2330 Engine rotation. On and after July 1, 1941, applicant shall show that any aircraft to be used in air transportation which have engines with maximum power ratings of 480 horsepower or more are so equipped that engine rotation may be promptly stopped during flight; and, on and after January 1, 1943, the same showing shall be made with respect to all other aircraft to be used in air transportation.

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

40.235 Radio equipment. Applicant shall show that each aircraft is equipped with a type certificated 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 type certificated radio receiving system capable of receiving radio range signals and weather broadcasts. Such receiving system shall include a type certificated audio filter system with suitable switching arrangements to be used in connection with the reception of simultaneous radio range and voice broadcasts: *Provided*, That such audio filter system will not be required if the airway or route traversed is not equipped with simultaneous type radio range stations.

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 overland. Applicant shall show multi-engine land aircraft, which meet the flight performance requirements of § 40.232, and of a number necessary for safe operation as provided for in § 40.234.

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

40.242 Number of aircraft. Same as in § 40.234.

40.243 Radio equipment. Same as in § 40.235.

40.244 Hangar facilities. Same as in § 40.236.

40.245 Shop facilities. Same as in § 40.237.

40.246 Inspection and overhaul organization and procedures. Same as in § 40.238.

40.25 Aircraft requirements: Instrument 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 overland. Applicant shall show multi-engine aircraft of model and number necessary for safe operation. Applicant shall also show:

(*a*) That such aircraft (other than those specifically listed as in scheduled air carrier 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 inoperative, 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; or

(*b*) Operating procedures, which, in the opinion of the Administrator, will assure that such aircraft will be capable of effecting a safe landing at an airport or other suitable area in the event of the failure of any one engine at any point on the route on which such aircraft will be operated.

40.2500 Engine rotation. On and after July 1, 1941, applicant shall show that any aircraft to be used in air transportation which have engines with maximum power ratings of 480 horsepower or more are so equipped that engine rotation may be promptly stopped during flight; and, on and after January 1, 1943, the same showing shall be made with respect to all other aircraft to be used in air transportation.

40.251 If operation over water. Same as in § 40.241.

40.252 Number of aircraft. Same as in § 40.234.

40.253 Radio equipment. Same as in § 40.235 and, in addition, applicant shall show that there is installed in each aircraft to be used in instrument or over-the-top operation (during day or night) over the proposed route, or part thereof, one additional separate type certificated 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 antennas. Two sets of type certificated headphones and two type certificated microphones shall be carried in the aircraft at all times.

40.2530 Radio direction finder. Applicant shall show that there is installed in each aircraft a type certificated 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 § 40.253 provided that an

independent power source equal to that described therein for such receiver is employed on either the radio range receiver required therein or on this radio direction finder.

40.2531 Radio anti-static antenna. Applicant shall show that there is installed in each aircraft a type certificated 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.

40.2532 Marker beacon receiver. Applicant shall show that there is installed in each aircraft a type certificated ultra-high frequency receiving system operating on the frequency of 75 megacycles. The system shall provide means for the visual and aural indications of signals transmitted by ultra-high frequency positive-cone-of-silence and fan type marker stations. The design of the system shall preclude, insofar as possible, erroneous patterns of the transmitted signal caused by the receiving system. Such receiving system will not be required if the airway or route traversed is not equipped with ultra-high frequency positive-cone-of-silence or fan type marker stations.

40.254 Hangar facilities. Same as in § 40.236.

40.255 Shop facilities. Same as in § 40.237.

40.256 Inspection and overhaul organization and procedures. Same as in § 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 air carrier operating certificate all persons employed to serve as first pilots for the air carrier meet the following minimum requirements for qualification as to aircraft and route competency:

40.2610 Each first pilot shall be possessed of a valid airline transport 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 Requirements for pilot route qualifications. The air carrier shall be responsible for qualifying each first pilot for the route over which he is to fly aircraft in scheduled air transportation as first pilot. Such qualification shall include a thorough knowledge of all of the instrument approach procedures, the terrain, any obstructions or congested areas, and the physical lay-out of the airport and approaches at each regular, provisional, refueling, and alternate airport approved for the route. It shall also include the navigational facilities, communications procedures, minimum safe flight levels, position reporting points, holding procedures, and all other traffic control procedures for the route. In complying with the foregoing requirements the air carrier shall establish a detailed qualifying procedure, including flight over the route, which shall be performed by the pilot qualifying for the route. Such procedure shall be submitted for the approval of the Administrator and when approved by him shall be made a part of the air carrier operating certificate. A pilot may be listed in the air carrier operating certificate as first pilot for the route when the air carrier has certified to the Administrator that the pilot has performed the qualifying procedures and is qualified for the route, and this certification is endorsed by the pilot.

40.2612 (Unassigned).

40.2613 (Unassigned).

40.2615 Each first pilot shall be familiar with the aircraft, and shall demonstrate to an authorized air carrier inspector of the Administrator, or to a check pilot of the air carrier duly

authorized by the Administrator, satisfactory capability to maneuver such aircraft with the maximum authorized load for the route or part thereof; and, in addition, if the aircraft is multi-engined, he shall demonstrate his ability to maneuver such aircraft with said load with any one engine fully throttled either:

(a) at an altitude equivalent to 500 feet above the highest part of the terrain on the proposed route or part thereof to be flown by the pilot in air carrier service, or

(b) at the one engine inoperative service ceiling.

40.262 Second pilots. Applicant shall show that each person employed to serve as a second pilot for the air carrier is possessed of at least a valid commercial pilot competency rating and before serving as second pilot in any aircraft in scheduled air transportation service shall have demonstrated to an air carrier inspector representing the Administrator or to a check pilot of the air carrier duly authorized by the Administrator, his ability to take off and land such aircraft in which he is to serve by making at least three satisfactory take-offs and landings in each model of such aircraft. On and after July 1, 1938, each applicant for or holder of an air carrier operating certificate will be required to show that each such person is possessed of a valid instrument rating, unless possessed of a valid airline transport pilot competency rating.

40.263 Aircraft dispatchers. Applicant shall show that each person assuming aircraft dispatcher duties for the air carrier 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 air carrier and the aircraft limitations specified in the certificates of the aircraft proposed for use. On and after July 1, 1938, each applicant for or holder of an air carrier operating certificate will be required to show that each such person is possessed of a valid and appropriate aircraft dispatcher competency rating.

40.27 Airmen requirements: Visual-contact night operation.

40.270 Number. Same as in § 40.260.

40.271 First pilots. Same as in § 40.261, except that at least one one-way trip of those trips required by § 40.2611 shall have been made during the period between 1 hour after sunset and 1 hour before sunrise.

40.272 Second pilots. Same as in § 40.262.

40.273 Aircraft dispatchers. Same as in § 40.263.

40.28 Airmen requirements: Instrument or over-the-top operation.

40.280 Number. Same as in § 40.260.

40.281 First pilots. Same as in § 40.261 and, in addition, applicant shall show that each first pilot, for whom instrument authorization is sought, has demonstrated to an air carrier inspector representing the Administrator, or to a check pilot of the air carrier duly authorized by the Administrator, satisfactory capability with respect to the following:

40.2810 Familiarity with the aircraft, including demonstration of ability to maneuver such aircraft with the maximum authorized load for the route or part thereof, with any one engine fully throttled, either:

(a) 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 air carrier service, or

(b) at the one engine inoperative service ceiling.

40.2811 Familiarity with the route and with instruments, including demonstration of ability, under actual or simulated conditions, to fly such route solely by instruments.

40.2812 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 air carrier operation. Such demonstrations as to the other stations as deemed necessary by the Administrator may be made to an air carrier inspector representing the Administrator, or to a check pilot of the air carrier duly authorized by the Administrator, under simulated conditions or by equivalent means approved by the Administrator.

40.282 Second pilots. Are required for all instrument operations and shall meet the minimum requirements of § 40.262.

40.283 Aircraft dispatchers. Same as in § 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 Administrator 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 obstruction 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 Air carrier operation skill. Applicant shall demonstrate to the satisfaction of the Administrator ability to conduct a safe operation over the entire route to be flown in air transportation. Such demonstration shall be by means of actual flights over each proposed route employing such of the proposed aircraft, airmen, and operating and maintenance procedures and techniques as the Administrator may deem necessary.

40.3 Goods minimum requirements. To be eligible for an air carrier operating certificate for the carriage of goods (including mail) in interstate air transportation within the continental limits of the United States, an applicant, in addition to meeting the minimum requirements provided for in § 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 § 40.200.

40.301 Airports. Same as in § 40.201.

40.302 Public protection. Same as in § 40.202.

40.303 Intermediate fields. Same as in § 40.203.

40.304 Refueling facilities. Same as in § 40.204.

40.305 Radio facilities. Applicant shall show an adequate two-way ground to aircraft communication system which, under normal operating conditions, shall be capable of maintaining communication with all aircraft of the applicant in flight over the proposed route

40.306 Weather reporting. Same as in § 40.206.

40.31 Route requirements: Visual-contact night operation.

40.310 Airway. Applicant shall meet the requirements of § 40.200 and shall show that the proposed route is equipped with such obstruction lights as are necessary for safe air carrier operation at night. In addition, applicant shall show that the proposed route is equipped with such airway beacon lights and radio ranges (or equivalent facilities) as are necessary for safe air carrier operation.

40.311 Airports. Same as in § 40.211.

40.312 Public protection. Same as in § 40.202.

40.313 Intermediate fields. Same as in § 40.213.

40.314 Refueling facilities. Same as § 40.204.

40.315 Radio facilities. Same as in § 40.305.

40.316 Weather reporting. Same as in § 40.206.

40.32 Route requirements: Instrument or over-the-top operation

40.320 Airway. Same as § 40.220.

40.321 Airports. Same as in § 40.221.

40.322 Public protection. Same as in § 40.202.

40.323 Intermediate fields. Same as in § 40.203 for day operation, and as in § 40.213 for night operation.

40.324 Refueling facilities. Same as in § 40.204.

40.325 Radio facilities. Same as in § 40.205.

40.326 Weather reporting. Same as in § 40.206.

40.33 Aircraft requirements: Visual-contact day operation.

40.330 If single-engine operation over land. Same as in § 40.230.

40.331 If single-engine operation over water. Same as in § 40.231.

40.332 If multi-engine operation over land. Applicant shall show aircraft of model and number necessary for safe operation. Applicant shall also show:

(a) That such aircraft to be used on the proposed route or part thereof are capable, with any one engine inoperative, 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; or

(b) Operating procedures which, in the opinion of the Administrator, will assure that such aircraft will be capable of effecting a safe landing at an airport or other suitable area in the event of the failure of any one engine at any point on the route on which such aircraft will be operated.

***40.3320* Engine rotation.** On and after *July 1, 1941*, applicant shall show that any aircraft to be used in air transportation which have engines with maximum power ratings of 480 horsepower or more are so equipped that engine rotation may be promptly stopped during flight; and, on and after January 1, 1943, the same showing shall be made with respect to all other aircraft to be used in air transportation.

40.333 If multi-engine operation over water. Same as in § 40.233.

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

40.335 Radio equipment. Applicant shall show that each aircraft is equipped with a type certificated two-way radio telephone system 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 route. Such system shall be capable of:

(a) communication with other aircraft of the applicant in flight, and

(b) satisfactorily receiving radio range signals and weather broadcasts. Such system shall also include a type certificated audio filter system with suitable switching arrangement to be used in connection with the reception of simultaneous range and voice broadcast if the airway or route to be traversed is equipped with simultaneous type radio range stations.

40.336 Hangar facilities. Same as in § 40.236.

40.337 Shop facilities. Same as in § 40.237.

40.338 Inspection and overhaul organization and procedures. Same as in § 40.238.

40.34 Aircraft requirements: Visual-contact night operation.

40.340 If single-engine operation over land. Applicant shall show aircraft of model and number necessary for safe operation, and, in addition thereto, that the routes over which the proposed operation is to be conducted are deemed by the Administrator to have suitable landing terrain.

40.341 If single-engine operation over water. Applicant shall show aircraft of 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 Administrator for a safe landing in the event of complete power failure.

40.342 If multi-engine operation over land. Same as in § 40.332.

40.343 If multi-engine operation over water. Same as in § 40.233.

40.344 Number of aircraft. Same as in § 40.334.

40.345 Radio equipment. Same as in § 40.335.

40.346 Hangar facilities. Same as in § 40.236.

40.347 Shop facilities. Same as in § 40.237.

40.348 Inspection and overhaul organization and procedures. Same as in § 40.238.

40.35 Aircraft requirements: Instrument or over-the-top operation.

40.350 If single-engine operation over land. Same as in § 40.340.

40.351 If single-engine operation over water. Same as in § 40.341.

40.352 If multi-engine operation over land. Same as in § 40.332.

40.353 If multi-engine operation over water. Same as in § 40.233.

40.354 Number of aircraft. Same as in § 40.334.

40.355 Radio equipment. Same as in §§ 40.253, 40.2530, 40.2531, and 40.2532.

40.356 Hangar facilities. Same as in § 40.236.

40.357 Shop facilities. Same as in § 40.237.

40.358 Inspection and overhaul organization and procedures. Same as in § 40.238.

40.36 Airmen requirements: Visual-contact day operation.

40.360 Number. Same as in § 40.260.

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

40.3610 Each first pilot shall be possessed of at least a valid commercial pilot competency rating with specifications or ratings 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 transport pilot competency rating.

40.3611 Same as § 40.2611.

40.3614 Same as § 40.2615.

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

40.363 Aircraft dispatchers. Same as in § 40.263.

40.37 Airmen requirements: Visual-contact night operation.

40.370 Number. Same as in § 40.260.

40.371 First pilots. Same as in § 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 § 40.3611 shall have been made between the hours of sunset and sunrise.

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

* This date is May 31, 1938.

40.373 Aircraft dispatchers. Same as in § 40.263.

40.38 Airmen requirements: Instrument or over-the-top operation.

40.380 Number. Same as in § 40.260.

40.381 First pilots. Same as in § 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 instrument authorization is sought, has demonstrated to an air carrier inspector representing the Administrator or to a check pilot of the air carrier duly authorized by the Administrator, satisfactory capability with respect to the following:

40.3810 Familiarity with the aircraft, including demonstration of ability to maneuver such aircraft with the maximum authorized load for the route or part thereof; and, in addition, if the aircraft is multi-engined, a demonstration of ability to maneuver such aircraft with said load, with any one engine fully throttled either:

(a) 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 air carrier service, or

(b) at the one engine inoperative service ceiling.

40.3811 Familiarity with the route and with instruments, including demonstration of ability, under actual or simulated conditions, to fly such route solely by instruments.

40.3812 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 air carrier operation. Such demonstrations as to other stations as deemed necessary by the Administrator may be made to an air carrier inspector representing the Administrator, or to a check pilot of the air carrier duly authorized by the Administrator, under simulated conditions or by equivalent means approved by the Administrator.

40.382 Second pilots. Same as in § 40.262.

40.383 Aircraft dispatchers. Same as in § 40.263.

40.39 Miscellaneous requirements.

40.390 Weather minimums. Same as in § 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 Air carrier operation skill. Same as in § 40.291.

40.4 Air carrier operating certificate.

40.40 Application for and issuance of air carrier operating certificate. (*a*) Application for an air carrier operating certificate shall be made upon the applicable forms prescribed and furnished by the Administrator.

(*b*) An air carrier operating certificate may be issued by the Administrator to an applicant after approval of application made and proof submitted in connection therewith, if the Administrator finds, after investigation, that such person is properly and adequately equipped and able to conduct a safe operation in accordance with the requirements of the Act and the applicable rules, regulations, and standards prescribed thereunder for such operation.

40.41 Display. The air carrier operating certificate shall be presented for inspection upon the request of any duly authorized representative of the Administrator or Board.

40.42 Duration. An air carrier operating certificate shall be of indefinite duration unless cancelled, suspended, or revoked.

40.43 Surrender. Upon the cancellation, suspension, or revocation of an air carrier operating certificate, or part thereof, the holder shall, upon request, surrender such certificate, or part thereof, to any officer or employee of the Administrator.

40.44 Nontransferability. An air carrier operating certificate is not transferable except with the written consent of the Administrator.

40.45 Inspection. A duly authorized representative of the Administrator shall be permitted at any time and place to make such inspection or examination as may be deemed necessary to determine the operator's compliance with the requirements of the Civil Air Regulations and the Civil Aeronautics Act of 1938, as amended.

40.46 Amendment. Application by the air carrier to amend the air carrier operating certificate shall be made upon the applicable form prescribed and furnished by the Administrator.

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