suitably equipped with an interphone system. Ownership and lease arrangements, as well as the maintenance of the airworthiness condition requirements and flotation gear requirements when operated over water, shall conform to those items listed for an approved primary flying school airplane.

Gliders

An applicant for a glider primary or advanced flying school rating must provide at least one 2-place glider certificated as such and capable of performing the flight test maneuvers required of a commercial glider pilot. If spins are to be accomplished in powered airplanes, an aircraft acceptable for primary flying school rating must be provided. All tow planes to be used must be certificated with towing arrangements installed and proper authority for use obtained for the operation of the glider-tow plane combination.

50.11

(e) ADEQUATE SHOP, OR READILY AVAILABLE FACILITIES SUITABLE TO INSURE PROPER MAINTENANCE OF THE AIRCRAFT TO BE USED.

Maintenance facilities:

A separate shop, or space in the hangar, sufficiently large that the largest airplane used by the school may be placed inside, level, and completely assembled, with room to work completely around it, must be provided for service operations and inspections. All facilities will meet the local building and safety codes.

A bona fide contract for this service by a separate agency with such facilities may be accepted, providing the facilities are located within the boundaries of the airport on which the school is based or at the storage base.

A heating system must be provided, if necessary, to maintain a temperature of at least 60 degrees, during the coldest weather normally expected during working hours, throughout the shop, or the area in the hangar provided for service and inspection.

The shop floor will be hard surfaced. The surface must be impervious to gasoline, oil, and cleaning solvents or will be protected by adequate drip pans under each engine. It shall be smooth enough to be readily swept.

The separate space provided in the hangar need not be inclosed, unless necessary to permit the required heating.

Fixed lighting, of sufficient intensity to read ordinary newsprint anywhere around the airplane, will be required where service operations and inspections will be conducted at night. Drop cord lights will not be acceptable to meet this requirement; however, flood lights on movable stands are satisfactory.

50.11

(f) A SUFFICIENT NUMBER OF CERTIFICATED MECHANICS READILY AVAILABLE TO PROVIDE FOR THE INSPECTION, MAINTENANCE, AND REPAIR OF ALL AIRCRAFT USED FOR FLIGHT INSTRUCTION, UNLESS OTHER ARRANGEMENTS ARE APPROVED BY THE ADMINISTRATOR. Any maintenance contract must provide for the required number of mechanics to be on duty as below:

Mechanics:

Each applicant for an approved airman agency certificate must have in his regular employ at least one certificated aircraft and engine mechanic. At least one mechanic must be continuously on duty during the hours of proposed flight operations. Two mechanics may meet this requirement if one is possessed of aircraft rating only and the other of an engine aircraft rating only. Each certificated mechanic will supervise not more than 5 apprentices at any one time. A certificated mechanic will supervise and approve all flight equipment daily inspections.

50.11

(g) A SUFFICIENT NUMBER OF REGULARLY AVAILABLE AND APPROPRIATELY RATED FLIGHT INSTRUCTORS.

Flight Instructors:

At least one person with a valid pilot certificate, with commercial, flight instructor, and a pertinent type of class rating must be employed for each 15 students enrolled in the applicant's school, this instructor to be on duty at all times during his students' solo flight. An applicant for a flight instructor school rating must assign a flight instructor to this phase of training possessed of 1 year and 500 hours of flight instructional experience.

A flight instructor in an Instrument Flying School need be possessed of a valid pilot certificate with commercial, instrument, and pertinent type ratings.

50.110 CURRICULUM. A CURRICULUM APPROVED BY THE ADMINISTRATOR FOR AT LEASE ONE OF THE FOLLOWING:

(a) PRIMARY FLYING SCHOOL: 35 HOURS FLYING, OR, IF NONSPINNABLE AIRCRAFT ARE USED, NOT LESS THAN 25 HOURS FLYING.

Primary Curriculum

(Proposed) Conventional airplane 35 hours flight time.

Airplane - Land.

The applicant will provide a primary flight curriculum satisfactory to the Administrator. Such a curriculum must include not less than 35 hours of flying time and must be arranged so as to allow a minimum of 15 hours dual and 13 hours of solo flight time, of which a minimum of 8 hours dual instruction must be given prior to solo flight. A minimum of 2 hours dual and 5 hours solo cross-country experience must be provided, to include at least one solo cross-country flight with two intermediate full-stop landings. One leg of this flight must be at least 100 miles in a direct line in length. During the course of the flight instruction, ground discussion must be given at the ratio of at least 15 minutes per hour of flight time and is to include familiarization with the aircraft, controls, instruments, fuel system, accessories, parachutes, use of safety precautions, starting and stopping of engines, securing of aircraft, as well as all pertinent local air traffic rules and patterns. During the course, the student should do as many of the pre-flight and line inspections as possible prior to flight. Dual instruction prior to solo must include instruction in:

Taxiing - all phases
Straight and level flight
Shallow, medium and steep turns
Confidence maneuvers and coordination exercises
Climbs, glides, including turns
Take-offs and landings
Emergency procedures
Slow flight
Approaches to stalls and stalls
Forward slips
Spins.

Following satisfactory solo flight performance and prior to graduation, instruction should be given on, and the proficiency necessary for a private pilot, be attained in:

Precision landings - all types of approaches and patterns
Slow flight
Power on and off stalls
Spins
Precision turns of shallow, medium, and steep banks to include 720° power turns at the steepest bank possible without loss of altitude under cruising throttle conditions.
Medium around pylon eights
Cross-country flying.

50.110 CURRICULUM. A CURRICULUM APPROVED BY THE ADMINISTRATOR FOR AT LEASE ONE OF THE FOLLOWING:

(a) PRIMARY FLYING SCHOOL: 35 HOURS FLYING, OR, IF NONSPINNABLE AIRCRAFT ARE USED, NOT LESS THAN 25 HOURS FLYING.

Primary Curriculum

(Proposed) Conventional airplane 35 hours flight time.

Airplane - Land.

The applicant will provide a primary flight curriculum satisfactory to the Administrator. Such a curriculum must include not less than 35 hours of flying time and must be arranged so as to allow a minimum of 15 hours dual and 13 hours of solo flight time, of which a minimum of 8 hours dual instruction must be given prior to solo flight. A minimum of 2 hours dual and 5 hours solo cross-country experience must be provided, to include at least one solo cross-country flight with two intermediate full-stop landings. One leg of this flight must be at least 100 miles in a direct line in length. During the course of the flight instruction, ground discussion must be given at the ratio of at least 15 minutes per hour of flight time and is to include familiarization with the aircraft, controls, instruments, fuel system, accessories, parachutes, use of safety precautions, starting and stopping of engines, securing of aircraft, as well as all pertinent local air traffic rules and patterns. During the course, the student should do as many of the pre-flight and line inspections as possible prior to flight. Dual instruction prior to solo must include instruction in:

Taxiing - all phases
Straight and level flight
Shallow, medium and steep turns
Confidence maneuvers and coordination exercises
Climbs, glides, including turns
Take-offs and landings
Emergency procedures
Slow flight
Approaches to stalls and stalls
Forward slips
Spins.

Following satisfactory solo flight performance and prior to graduation, instruction should be given on, and the proficiency necessary for a private pilot, be attained in:

Precision landings - all types of approaches and patterns
Slow flight
Power on and off stalls
Spins
Precision turns of shallow, medium, and steep banks to include 720° power turns at the steepest bank possible without loss of altitude under cruising throttle conditions.
Medium around pylon eights
Cross-country flying.

Airplanes - Water

Where the primary flight course is to be accomplished in seaplanes, the following must also be included during the course in addition to the requirements outlined under Primary Flying School, Airplanes - Land:

Additional ground instruction to be included.

Explanation of float action and the fundamentals of water handling.

Fundamentals of aviation seamanship, including the use of life preservers.

The general care and handling of seaplanes with emphasis being placed on the use and handling of water rudders.

The flight portion of the curriculum must also include semi-stall and full-stall landings, power approaches and power landings under glassy, normal, and rough water conditions, correct take-off and landing procedures under various types of water conditions, precision sailing, docking, beaching and mooring, cross-wind take-offs and landings, including emergency landings on water.

Nonspinnable Airplanes

The applicant must provide a flight curriculum that consists of not less than 25 hours of total flight time, of which a minimum of 12 hours dual and 10 hours solo must be obtained. Not less than five hours of the required dual instruction must be given prior to solo flight. A graduate having less than 25 hours total flight time in nonspinnable airplanes will be required to meet the minimum flight time requirements for a primary flying school graduate in conventional airplanes. The maneuvers to be accomplished on the curriculum, except for slips and spins, shall be identical with those outlined for primary flying school conventional airplane - land or water.

Alternate Curriculum for Primary Flying School

The applicant for an approved airman agency primary flying school may, at his discretion and upon approval, utilize a curriculum wherein most of the required dual instruction and solo practice may be accomplished during cross-country flights. Such a flight curriculum must meet all of the requirements of the previously outlined primary flying school with pertinent type and class of airplane. However, dual cross-country flights may be accomplished prior to solo. The first two hours of solo flight must be accomplished at the home airport. Dual and solo practice of flight maneuvers must be accomplished in practice areas or in accordance with Part 60 (Air Traffic Rules) of the Civil Air Regulations. Where this curriculum is utilized, a minimum of 16 strange airports must be visited either dual or solo, at least ten of which are farther than 25 air miles from the operations base. During the first 20 hours of flight time, no cross-country flights are to be accomplished to other than airports visited during previous dual instruction periods. Thereafter, at least five airports not previously visited should be used on solo cross-country flights.

Rotorcraft

A curriculum satisfactory to the Administrator must include a minimum total of 35 hours of flight time, of which not less than 15 hours of dual instruction and 13 hours of solo flight time is accomplished. Eight hours of the required dual instruction must be given prior to solo flight. A minimum of two hours dual and two hours solo cross-country experience must be provided in the curriculum, and must include a solo cross-country flight with two intermediate full-stop landings, one leg of which is at least 50 miles in length and at least a one hour dual and one hour solo flight in the vicinity of the home base to a minimum altitude of at least 5000 feet above the base of operations. During this flight, slow flying, stalling of power, and hovering without ground effect maneuvers should be practiced or attempted.

Ground instruction and discussion regarding the operation of rotorcraft on the following subjects will be given at the ratio of 30 minutes for each one hour of flight time. This instruction is to include familiarization with the rotorcraft, including usage of all controls, instruments, fuel system, brakes, safety belts, general safety precautions, with emphasis being placed on the danger to spectators of the main and tail rotors. Special emphasis should be placed on the daily and pre-flight inspection of rotorcraft, as well as starting and warm-up procedures.

Prior to solo flight, dual instruction must be received on the starting, warming-up and taxiing of rotorcraft.

Normal turns, take-off, approaches and landings.

Hovering to include flying over ground patterns wherein the aircraft is turned directionally from which flown, sideward and backward.

Ninety-degree hovering turns.

Elementary autorotation.

Prior to graduation, the student should receive suitable dual and solo practice in the foregoing, as well as being proficient to a degree required of a private pilot in the following maneuvers:

Starting, stopping, warming up, and correct cockpit procedure.

Taxiing under all wind conditions.

Normal, jump, and maximum climb, take-offs.

Normal, slow-steep approaches and landings, fast-shallow approaches and landings.

Cross-wind take-offs.

Cross-wind, hovering, take-offs, and landings.

Emergency (maximum rate) climbs and descents.

Shallow, minimum, and steep turns.

Hovering into the wind, cross-wind, and down-wind to include 360° hovering turns.

180° down-wind turn from a hovering position and flying of ground patterns with heading change and without heading change (sideward, backward, forward flight).

Quick stops.

Autorotation with straight-in, 90°, 180°, and 360° approaches following by both flare and nonflare approaches.

Settling with power to include varying rates of descent with and without forward speed.

Running take-offs and landings should be demonstrated.

Dual and solo cross-country.

High altitude operations.

Curriculum

An applicant for a primary glider flying school rating must provide a flight curriculum satisfactory to the Administrator. This curriculum must include not less than eight hours of total flight time. Any curriculum, to be satisfactory to the Administrator, must include the following:

A minimum of three hours of dual and check time.

A minimum of five hours of supervised solo flight time.

A minimum of 80 gliding flights.

Flight instruction shall include, but not be limited to the following maneuvers:

Straight glides
Confidence maneuvers
Turns
Coordination exercises
Stalls
Airplane tow technique
Glidepath technique
Use of spoilers
Spins
Cross and down-wind technique
Landings.

Additional dual instruction and solo practice should follow to obtain proficiency in all maneuvers. The apportionment of dual and solo time and the amount of instruction and practice in each maneuver should be adequate to enable the student to sufficiently demonstrate his proficiency in each to a degree required of a private glider pilot.

50.110

(b) COMMERCIAL FLYING SCHOOL.

Conventional airplane (land and sea): 160 hours of flight time.

A curriculum satisfactory to the Administrator must consist of not less than 160 hours of flying time, the sole objective being the qualifying of a student for a commercial pilot rating. This curriculum must include a minimum of 65 hours of dual instruction and a minimum of 95 hours of solo flight time, of which five hours of dual, and five hours of solo night flying must be given. Three hours of the required night dual instruction must be given as a night cross-country flight under VFR conditions and over lighted airways, if available. A minimum of 25 hours of dual and solo cross-country flying must be included with not less than one solo cross-country flight, to a point not less than 300 miles

distance airline from the home base of operations. During such flight, at least three full-stop landings must be made at different airports and all radio aids to air navigation available in that vicinity utilized. A record of this flight must be made in the student's folder, including the prepared and proposed flight plan, as well as the detailed log of this flight, including time over check points, time of arrival, take-offs, and radio contacts made.

Not less than 10 hours of the prescribed solo time must be given in aircraft of 145 horsepower or over, or in aircraft of not less than 125 horsepower, and with a wing loading of at least 14 pounds per square foot and a power loading of more than 12 pounds per square foot. A minimum of 15 hours solo must be given in tandem seating aircraft and a minimum of 15 hours solo must be given in side-by-side seating aircraft. The first 35 hours of flight time must be identical with the requirements for the primary flying school curriculum for the type of aircraft utilized.

Students enrolling in a commercial course with previous flight time experience may be credited with this experience to an amount deemed appropriate by the airman agency in which he is enrolled. The flight curriculum and schedules must be so arranged to allow the student and instructor a ground instruction period of at least 15 minutes for each hour's flight time given and to allow the enrollee to maintain a high degree of self-confidence while improving his proficiency to the standards required of a commercial pilot as outlined in Part 20 of the Civil Air Regulations.

In addition to the maneuvers required of an approved primary flying school for the type of aircraft involved, the commercial curriculum will contain at least these additional maneuvers:

Short-field take-offs
Landing procedures, including power approaches and power landings.
Cross-wind take-offs and landings.
Two-turn precision spins.
Accidental spins entered from climbing and gliding turns.
Advanced slow flight.
High speed stalls.
Spirals both around the spot and with a constant bank.
Radio navigation.

Rotorcraft (Proposed)

An advanced flying school curriculum satisfactory to the Administrator must contain not less than 150 hours of flight time, of which a minimum of 60 hours must be dual instruction and 90 hours of solo flight. At least one hour of instruction and four hours of solo flight at night and at least a minimum of five hours dual and 20 hours solo must be in cross-country flight. At least one solo cross-country flight must be to a point at least 150 miles from the base of operations. A minimum of two hours dual and three hours solo flight practice at an altitude of at least 5000 feet above the elevation of the base airport. The first 35 hours of instruction must be identical to those outlined under primary flying school rotorcraft. All flight schedules must be arranged so as to allow

instructor and student at least 30 minutes of ground discussion time for each one hour of flight time. In addition to the maneuvers required for primary rotorcraft flying course, the following maneuvers must be accomplished by dual and solo flight, together with the primary maneuvers. These maneuvers must be practiced to the proficiency required of commercial rotorcraft pilots.

Minimum power hovering and slow flight.
Low and slow flight with S and 180 degree turns.
Running take-offs and landings.
Vertical autorotation.
360 degree and spiral autorotations.
Vertical settling with power.
Precision pattern flying to include precise traffic pattern as well as intricate and precise ground patterns.
Precision steep turns.
Quick stops with sideward flare.

Gliders

A glider commercial flight curriculum to be satisfactory to the Administrator must consist of not less than 20 hours of flight and must include:

A minimum of 8 hours of dual and check time; three hours of such instruction to be given prior to first solo flight.
A minimum of 12 hours of supervised solo.
A minimum of 100 gliding flights or five hours of soaring flight time.
The first ten hours of instruction and solo practice will be identical with the private glider curriculum.
The following maneuvers in addition to those taught and practiced in the private glider pilot course:
Emergency maneuvers such as recovery from stalls, entered from both level and steeply banked altitudes.
Precision spirals and spins.
Cross-wind take-offs and landings.
Soaring techniques.
Lazy eights.
Precision spot landings.

The flight curriculum will be arranged so as to give instruction and solo flight practice on all maneuvers necessary to enable a student to demonstrate proficiency to a degree required of a commercial glider pilot.

50.110

(c) INSTRUMENT FLYING SCHOOL: 30 HOURS OF INSTRUMENT FLYING INSTRUCTION OF WHICH AT LEAST 20 HOURS SHALL BE IN ACTUAL FLIGHT; AND 30 HOURS OF GROUND INSTRUCTION IN THE SUBJECTS OF CIVIL AIR REGULATIONS, NAVIGATION, METEOROLOGY, AND RADIO ORIENTATION AND PROCEDURE, AS APPLIED TO INSTRUMENT FLYING.

An applicant for an instrument flying school rating must be possessed of the facilities and equipment specified herein, as well as providing a curriculum for a minimum of 30 hours of instrument flying instruction, of which at least 20 hours are in actual flight and not less than 30 hours of ground instruction. The ground school facilities and equipment will meet the same requirements as an approved Basic Ground School. The ground instruction should be given concurrently with the flight instruction and must include:

A minimum of five hours on Civil Air Regulations, Parts 01, 20, 42, 43, and 60; special emphasis to be placed on instrument flight rules.

A minimum of five hours of instruction on the subject of Meteorology to include the general subjects listed for an advanced ground school rating, plus a detailed study of conditions usually found under instrument flight conditions.

A study of icing conditions and frontal penetration to include precision practice and practical weather observation, utilizing special and sequence reports and weather maps.

A minimum of five classroom hours on the subject of Aerial Navigation to include navigation under instrument flight conditions, basic radio orientation methods, basic position finding by radio, radius of action, and radius of action to an alternate airport problem.

At least five classroom hours of instruction on the use of Instruments, Radio, and Navigational Aids to include the study of all radio aids to air navigation and the use of low frequency VOR, VHF, and omni-direction ranges, ILS and GCA, landing methods.

The mechanics of handling of all types of aircraft radio equipment.

A minimum of 10 classroom hours of instruction on the technique of instrument flight.

Beam bracketing and direction finding methods.

Cross-country flying utilizing the various types of radio aids in use.

Letdown and emergency procedures, air traffic control, and flight planning procedure.

The applicant for an instrument flying school rating must have available for use a landing area meeting the requirements of an approved Primary Flying School using conventional airplanes. (Parachutes are required as for a primary school.) The operational base must be within 50 airline miles of a suitable radio range facility. A flight curriculum to be satisfactory to the Administrator must consist of not less than 30 hours of flight instruction, of which not more than ten hours of instrument flight instruction may be simulated in a Link Trainer. The flight curriculum must include at least the following:

Climbing and gliding turns.
Level flight.
Climb turns and steep turns.
Slow flight.
Approaches to stalls, and stalls.
Recovery from unusual and abnormal attitudes.
Radio navigation orientation, including the proficiency and use of at least three methods.
Beam bracketing.
Cone identification.
Holding and emergency procedures.
Final approach and missed-approach procedure.
Speed, wind, and drift performances.
The use of radio direction finding equipment, including loop and radio compass.
Use of omni-directional ranges (if available).

50.110

(d) FLIGHT INSTRUCTOR SCHOOL: 25 HOURS OF FLYING DEVOTED EXCLUSIVELY TO THE SCIENCE OF FLIGHT INSTRUCTION, AND 40 HOURS OF THEORETICAL INSTRUCTION IN SUBJECTS COVERING THE FUNDAMENTALS OF GIVING FLIGHT INSTRUCTION AND THE ANALYSIS AND PERFORMANCE OF FLIGHT TECHNIQUE.

An applicant for a flight instructor school rating must provide facilities meeting the classroom requirements of a Basic Ground School. All personnel employed as ground or flight instructors for this phase of training must be possessed of a valid pilot certificate with commercial and flight instructor ratings. These instructors must be possessed of at least a year's experience and 500 hours of flight instruction experience.

The applicant must provide a ground instruction curriculum consisting of not less than 20 hours each on the subjects of:

Analysis and Performance of Maneuvers.
Psychology, Technique, and Methods of Flight Instruction.

All ground instruction is to be given concurrently with flight instruction.

The curriculum will include:

The teaching steps in pilot flight training.
The common errors in flight instruction methods.
The "hows and whys" of student learning.
The adoption of training methods to suit individual student capacities.
Physical and psychological conditioning of students.
The evaluation of trainee progress.
Self-evaluation as an instructor.
The benefits of planned and concise methods.

A review of all Civil Air Regulations pertinent to student-instructor relationship.

The use and processing of all forms required by the Civil Aeronautics Administration during flight training.

The analysis of all aircraft flight maneuvers.

The performance of all aircraft flight maneuvers.

The applicant will provide a flight instruction curriculum which will consist of not less than 25 hours flying time, of which not less than five hours dual and five hours solo is to be practiced in the performance of all elementary, intermediate, and advanced maneuvers, at which time the student will acquire the ability to demonstrate these maneuvers with smoothness and proficiency in a relaxed manner with full knowledge of his own and the aircraft's limitations.

A minimum of 15 hours practice in the art of giving flight instruction in all of the required elementary, intermediate, and advanced maneuvers. During this period the instructor will act as the trainee to simulate the various attitudes and types of novice pilots with varying degrees of proficiency. The flight maneuvers accomplished will consist of all the required maneuvers listed for an approved primary and commercial flying school for the type of aircraft involved, and in addition, will include:

360-degree spiral approaches for landings.

Down-wind landings.

Dragging areas.

Controlled slipping turns.

Chandelles and Lazy Eights.

Precision spins.

Inadvertent stalls and spins from poorly coordinated turns.

The flight schedule will be so arranged as to allow a 30 minute discussion period for the instructor and student per each hour of flight time.

50.2 GENERAL

50.200 Application. Application for an airman agency certificate and rating shall be made upon the form prescribed and furnished by the Administrator, and shall be accompanied by two copies of any proposed curriculum.

The application forms may be obtained from the nearest CAA Aviation Safety District Office. The local aeronautical agent will furnish full information as to the execution of this application and will arrange appointments for the inspection of the facilities, equipment, etc. It is suggested that prior to the execution of the application the applicant discuss the rating sought with the CAA aeronautical agent involved.

Unless requested by the local CAA agent, it will not be necessary to submit the proposed curriculums in duplicate.

50.201 Display. Display of an airman agency certificate shall be made upon the reasonable request of any person.

An airman agency flight or ground school will be furnished with a large multilithed certificate suitable for framing and display by the Washington office upon final approval of their school. The date on this certificate will not be changed if renewal inspections are accomplished. In addition, the CAA regional office involved will execute an airman agency certificate which will be forwarded to the applicant upon approval of his application or upon renewal of his airman agency certificate. This certificate should be kept in the file for reference and available upon the request of any CAA representative. The latter Form ACA-390a is the legal basis for school operation as an approved airman agency.

50.202 Duration. An airman agency certificate shall expire 24 calendar months after the month of issuance.

The holder of an airman agency certificate may apply for renewal of this certificate 60 days prior to the month of expiration of this certificate. It is the holder's responsibility to arrange with the local CAA aeronautical agent for the renewal and inspection prior to the expiration month of this certificate.

50.203 Renewal. Application for renewal of an airman agency certificate shall be made on a form furnished by the Administrator and may be mailed or presented to any inspector within 60 days prior to the month of expiration.

50.204 Transfer. An airman agency certificate is not transferable.

The holder of an airman agency certificate should advise the local CAA aeronautical agent upon the change of: name, location, facilities, equipment, or key personnel within his agency. A change in: ownership, or operating control, name or location will necessitate the submission of a new application, reinspection and reissuance of the Airman Agency Certificate, Form ACA-390a.

50.205 SURRENDER. UPON THE SUSPENSION, REVOCATION, TERMINATION, OR CANCELLATION OF AN AIRMAN AGENCY CERTIFICATE THE HOLDER THEREOF SHALL SURRENDER SUCH CERTIFICATE TO AN AUTHORIZED REPRESENTATIVE OF THE ADMINISTRATOR.

50.206 QUALITY OF INSTRUCTION.

THE HOLDER OF AN AIRMAN AGENCY CERTIFICATE SHALL FURNISH ON A FORM (ACA-1784) PROVIDED BY THE ADMINISTRATOR AT LEAST ONCE EACH SIX MONTHS, THE NAMES, CURRICULUM FROM WHICH GRADUATED, AND THE DATES OF COMPLETION OF STUDENTS GRADUATED FROM HIS AGENCY.

50.207 STUDENT EXAMINATIONS.

UPON THE COMPLETION OF EACH SUBJECT INCLUDED IN AN APPROVED CURRICULUM, EACH STUDENT TAKING THE SUBJECT SHALL BE GIVEN AN APPROPRIATE EXAMINATION. THE STUDENT'S WRITTEN EXAMINATION, OR, IN THE CASE OF A PRACTICAL EXAMINATION, A REPORT THEREOF, SHALL BE KEPT BY THE SCHOOL FOR NOT LESS THAN ONE YEAR FROM THE DATE OF THE TERMINATION OF THE STUDENT'S ENROLLMENT. The local Aeronautical Agent will periodically spot check the student file folders to ascertain that each file folder is complete.

50.208 RECORDS.

THE SCHOOL SHALL KEEP AN ACCURATE INDIVIDUAL RECORD OF EACH STUDENT, WHICH SHALL INCLUDE A CHRONOLOGICAL LOG OF ALL INSTRUCTION, ATTENDANCE, SUBJECTS COVERED, EXAMINATIONS, AND EXAMINATION GRADES. THE ENTIRE RECORD SHALL BE CERTIFIED BY AN AUTHORIZED OFFICIAL OF THE SCHOOL.

Upon course completion or graduation, the entire record or file will be certified by an authorized representative of the school. This student file folder shall be available for inspection upon reasonable request by an authorized representative of the Administrator.

50.209 GRADUATION CERTIFICATES.

A GRADUATION CERTIFICATE ON THE FORM PRESCRIBED BY THE ADMINISTRATOR SHALL BE GIVEN EACH STUDENT GRADUATED FROM A CERTIFICATED AIRMAN AGENCY SCHOOL.

In addition, a prescribed standardized form will be used by the school for recommending its enrollees for any of the prescribed examinations, prior to graduation.

50.210 INSPECTION.

UPON REASONABLE REQUEST, AN APPLICANT FOR AN AIRMAN AGENCY CERTIFICATE, OR THE HOLDER OF SUCH A CERTIFICATE, SHALL PERMIT ANY AUTHORIZED REPRESENTATIVE OF THE ADMINISTRATOR OR THE BOARD TO INSPECT ITS PERSONNEL, FACILITIES, EQUIPMENT AND RECORDS.

At varying intervals it will be necessary for the local CAA Aeronautical Agent to spot check, reinspect or examine each operation including

the students, instructors, facilities, equipment, etc.

It is anticipated that the arrangements for these inspections will be made on a mutually cooperative basis and, that the examining agent will minimize the interruption to normal training schedules.

50.211 CURRICULUM CHANGES.

CHANGES IN AN APPROVED CURRICULUM SHALL NOT BE MADE WITHOUT FILING IMMEDIATE NOTIFICATION OF SUCH CHANGES WITH THE ADMINISTRATOR. UNLESS THE SCHOOL IS NOTIFIED TO THE CONTRARY WITHIN 45 DAYS AFTER FILING THE PROPOSED CHANGES WITH THE ADMINISTRATOR, THEY WILL BE CONSIDERED APPROVED.

It will be the responsibility of each approved airman agency to notify and follow the instructions of the local CAA Aeronautical Agent upon changes in any of the approved curriculums and should the Agent request it, forward the altered curriculum in duplicate. Until rejection or approval is received from the Washington office, the altered curriculum cannot be utilized. This action will be completed within the 45 days prescribed above.

50.212 MAINTENANCE OF FACILITIES, EQUIPMENT, AND MATERIAL

A CERTIFICATED AIRMAN AGENCY SHALL MAINTAIN PERSONNEL, FACILITIES, AND EQUIPMENT AT LEAST EQUAL IN QUALITY AND QUANTITY TO THOSE REQUIRED FOR THE ISSUANCE OF SUCH A CERTIFICATE.

Each approved airman agency shall keep current and available for reference Civil Air Regulations and the attendant manuals on the following parts: 01, 20, 43, 50 and 60.

50.213 ADVERTISING.

NO CERTIFICATED AIRMAN AGENCY SHALL MAKE ANY STATEMENT PERTAINING TO THE SCHOOL WHICH IS FALSE, OR WHICH IS DESIGNED TO MISLEAD ANY PERSON CONTEMPLATING ENROLLMENT IN THE SCHOOL. ANY ADVERTISING WHICH INDICATES THAT THE SCHOOL IS APPROVED BY THE ADMINISTRATOR SHALL CLEARLY DIFFERENTIAT BETWEEN THOSE COURSES WHICH HAVE BEEN APPROVED BY THE ADMINISTRATOR AND THOSE WHICH HAVE NOT.

It is necessary that any airman agency accompany the use of their airman agency number with their pertinent ratings on any form, correspondence, or advertising.

APPENDIX A

Minimum Landing Aera Requirements

Airports

A minimum effective runway length of 1500 feet at sea level plus 7 per cent increase per 1000 feet of altitude above sea level at which altitude the airport is located. A minimum landing strip width of 200 feet plus a minimum taxi strip width of 50 feet. If all or part of the taxiing is to be done on the runway, the minimum landing strip width is 250 feet. All landing strips to be so located and oriented to enable take-offs and landings to be accomplished 95 per cent of the time with cross-wind components of less than 15 miles per hour. The minimum allowable approach angles at the end of each landing strip must allow a 20 to 1 glide path clearance to all of the landing strips. The surface must be of a gradient sufficient to allow an aircraft on any portion of the landing area to be visible to other aircraft occupying any other portion of the landing area.

Seadromes

A minimum effective length of 3500 feet at sea level plus 7 per cent per 1000 feet of altitude above sea level in which landing area is located. A minimum effective width of 300 feet. A minimum water depth allowable of 3 feet. The approach angles at the end of each landing aera must allow a 20 to 1 glide path clearance above all obstruction to a distance 2 miles from the approach end of each landing area.

Helioports

The minimum allowable length for a helioport shall be 1000 feet of effective surface. The minimum allowable width shall be 500 feet. Landing strips must be so located as to allow into-the-wind approaches and take-offs at least 50 per cent of the time with a cross-wind component of less than 15 miles per hour. The landing approach clearance angles shall be at least 10 to 1 in the magnetic direction and reciprocal of the prevailing wind. The entire area must have an approach angle obstruction clearance of at least 5 to 1.

APPENDIX B

Minimum Lighting Requirements

I. GENERAL REQUIREMENTS - ARRANGEMENT

A. Airports

The lights or reflectors shall mark both edges of the strip or runway. Longitudinal spacing shall be 200 feet and the units shall be placed opposite each other in rows not over 200 feet apart laterally. Single units may be omitted to allow for runway intersections. The lights or reflectors shall show clear (white) light, except that the units on the end of each row shall be green lights (not reflectors) to mark the threshold of the runway or strip. When used, the portable floodlights shall be located so that they do not extend above a 20:1 approach clearance angle, measured from the green threshold lights at the same end of the runway. Each floodlight location shall be marked by a red obstruction light. Other obstructions shall be lighted in accordance with CAA Technical Standard Order TSO-N2; however, airports lighted by the portable lighting equipment described below may calculate approach clearances from the green threshold lights. A lighted wind indicator shall be provided and located so that it is visible from all directions from the air.

B. Seadromes

The lights shall be spaced in a single row 500 feet apart. All lights marking the landing path shall be clear except the one light on the approach end which shall be green. Obstructions shall be marked by red lights as required.

II. FIXTURES Portable fixtures shall meet the following minimum requirements:

A. Portable Handlanterns

The fixture shall consist of a steady burning incandescent or gaseous discharge source. Minimum candlepower with a clear lens shall be not less than 5 candles in any direction above the horizontal. Handlanterns shall be supplied by rechargeable storage batteries of not less than 20 ampere-hour capacity. Green filters or globes shall have a transmission factor not less than 17 per cent of clear. Red filters or globes shall have a transmission factor not less than 13 per cent of clear.

B. Portable Floodlights and Reflectors

1. The floodlighting system shall consist of not less than two commercial floodlights, rated not less than 200 watts, located in the approach to the lighted runway or strip, as described in Section I "Arrangements". The beam spread of any floodlight used should not be more than 60 degrees. The system shall include an obstruction light mounted on or above each floodlight or floodlight location. The green threshold lights and obstruction lights shall use a lamp providing not less than 5 candlepower, bare lamp distribution.

2. The reflectors shall be a "wicket", stake, or cone mounted type and shall include a clear retroreflective surface consisting of:

   (1) A "button" not less than 3 inches in diameter or

   (2) A treated cloth, fabric, or coating of not less than 60 square inches.

   Reflecting materials shall be equal to "Scotchlite Type F" or AGA Stinsonite #1753-A1.

C. Semi-Portable Cable Fed System

The fixture shall consist of a steady burning incandescent or gaseous discharge source. Minimum candlepower with a clear lens shall be not less than 5 candles in any direction above the horizontal. Green filters, if used, shall have a transmission factor not less than 17 per cent of clear. Red filters, if used, shall have a transmission factor not less than 13 per cent of clear. A globe to protect the lamp shall be provided. The support for the lighting fixture, if the total height (above ground) of the unit is greater than 5 inches, shall be designed to break free or crush without damage to a plane striking it. An electrical disconnect shall be supplied at each elevated fixture which shall separate when struck.

D. Portable Seadrome Lights

The fixture shall consist of a marine type, steady burning incandescent or gaseous discharge source. Minimum candlepower with a clear lens shall be not less than 5 candles in any direction from 15 degrees below the horizontal to the zenith. Seadrome lights shall be supplied by rechargeable storage batteries of not less than 20 ampere-hour capacity. Green filters or globes shall have a transmission factor not less than 17 per cent of clear. Red filters or globes shall have a transmission factor not less than 13 per cent of clear. The light center shall be elevated not less than 8 inches above the water line.

E. Lighted Wind Indicators One of the following lighted wind indicators shall be used:

1. Lighted wind cone conforming to CAA, Office of Airports Specification L-807, "Illuminated Wind Cone for Small Airports".

2. Lighted wind cone, conforming to Army-Navy Aeronautical Specification AN-I-23, "Indicator Assemblies; Wind Cone; (Unlighted and Externally Lighted)".

3. Lighted wind tee, conforming to CAA, Office of Airports Specification L-808, "Lighted Wind Tee".

4. Lighted Tetrahedron, conforming to Army-Navy Aeronautical Specification AN-I-1, "Indicator; Tetrahedral, Wind Direction".

III. STANDARD PERMANENT TYPE AIRPORT LIGHTING SYSTEMS

Standard permanent type lighting systems shall be considered as satisfying the minimum lighting requirements for flight training schools. Such systems are installations made in conformance with Civil Aeronautics Administration specification and CAA Technical Standard Order TSO-N1, using permanent type equipment conforming to CAA or ANC (Army-Navy-Civil) specifications.

All of the above references are on sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., at the following

Recommended Bibliographies:

I. Private Pilot
Civil Air Regulations
Part 43) as required by CAR 43.51
Part 60) "Requirement for First Solo".
Plus items 1, 2, 3, and 4 of II below.

II. Commercial Pilot
1. Civil Air Regulations
CAR Part 20
CAR Part 42
CAR Part 43
CAR Part 60 (except Instrument Flight Rules)
Manual 60 - Air Traffic Rules

2. Navigation
Practical Air Navigation (Civil Aeronautics Bulletin No. 25)
Path of Flight

3. Meteorology
Meteorology for Pilots (Civil Aeronautics Bulletin No. 25)
Realm of Flight

4. Airplanes and Engines
Facts of Flight
Civil Pilot Training Manual (Civil Aeronautics Bulletin No. 23)
Aerodynamics for Pilots (Civil Aeronautics Bulletin No. 26)
Pilots Powerplant Manual (Civil Aeronautics Bulletin No. 28)

5. Commercial Pilot Examination Kit for 1-2-3-4 above

III. Flight Instructor
Flight Instructors Manual (Civil Aeronautics Bulletin No. 5)
Civil Pilot Training Manual (Civil Aeronautics Bulletin No. 23)

IV. Instrument Rating
1. Civil Air Regulations
CAR Part 43
CAR Part 60

2. Meteorology
Meteorology for pilots (Civil Aeronautics Bulletin No. 25)

3. Orientation and Navigation
Practical Air Navigation (Civil Aeronautics Bulletin No. 24)
CAA Flight Information Manual