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DEPARTMENT OF COMMERCE

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CIVIL AERONAUTICS

MANUAL 50

FLYING SCHOOL RATING

DECEMBER 1940

INTRODUCTION

This manual prescribes in detail the minimum facilities, equipment, personnel, and curricula which must be provided by a civilian aviation school in order to be eligible for rating and certification as a flying school. Such curricula, facilities, equipment, and personnel will satisfy the requirements of Part 50 of the Civil Air Regulations.

A certificated flying school may consist of flight instruction at one location and ground instruction at another location. It is not required that the flight instruction facilities and the ground instruction facilities be owned and operated by the applicant for the flying school certificate and rating. However, the applicant in whose name the flying school certificate is issued will be held responsible by the Administrator for proper operation and maintenance of both the ground and flying facilities, equipment, and personnel.

For example: Operator A at point Z has the required flight instruction facilities, equipment, and personnel. Operator B at point X has the required ground instruction facilities, equipment, and personnel. Application for flying school rating and cartificate may be presented by either operator A or B. In such cases all required facilities, equipment, and personnel of A and B should be set forth on the application form. Operators A and B must be located within a distance of each other satisfactory to the Administrator.

To clarify Part 50 and in the furtherance of the above, this manual has been arranged to inform an applicant for a flying school certificate of the individual requirements for either the approved ground instruction facilities or the approved flying instruction facilities.

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A. GROUND SCHOOL

1. GENERAL

Such school should be housed in a building which is properly heated, lighted, and ventilated. The building should contain adequate toilet and washroom facilities and ample space for necessary classrooms and equipment.

2. CLASSROOMS

Suitable separate classroom space adequate to accommodate the largest number of students scheduled for attendance at any one time must be provided. There must be at least one classroom which will accommodate at least 20 students. Each student should be provided with a desk-chair or chair and desk suitable for writing examinations.

3. EQUIPMENT

Applicant should provide in the classroom one airplane complete with powerplant or all of its component parts to be used specifically for ground instruction. (Aircraft used in flight operation not acceptable). Such airplane need not be in airworthy condition and should be "cut-away" to show construction.

Sufficient miscellaneous equipment such as blackboards, sectional charts, writing materials, and equipment necessary to satisfactorily teach the subjects of Meteorology and Navigation should be provided.

4. PERSONNEL

Persons employed as ground instructors must be approved in accordance with section 50.24 of Part 50 of the Civil Air Regulations.

5. CURRICULUM

The applicant must provide a private pilot ground instruction curriculum satisfactory to the Administrator. Such curriculum must include not less than 30 hours instruction in aerial navigation, meteorology, elementary servicing of aircraft, and the contents of Parts 01, 20, 60 and 98 of the Civil Air Regulations.

Any curriculum to be satisfactory to the Administrator must include the following:

a. Civil Air Regulations

At least 5 classroom hours instruction on this subject to include:

(1) Aircraft registration;
(2) Certification;
(3) Transfer of title;
(4) Operation and repair of aircraft;
(5) Pilot certificate regulations;
(6) Air traffic rules; and
(7) Definitions.

The above is to be followed by a general review and examination.

(Suggested Reading - Civil Aeronautics Bulletin No. 22)

Note: It is recommended that instruction regarding the penalty provisions of the Civil Aeronautics Act of 1938 as amended, be included.

b. Meteorology

At least 10 classroom hours instruction on this subject to include:

(1) Motion of the atmosphere;
(2) Factors affecting weather and weather change, and resulting action of the atmosphere;
(3) Behavior of storms;
(4) Measurement of pressure;
(5) Effects of humidity;
(6) Cloud formations and their meaning;
(7) Precipitation;
(8) Elementary weather forecasting. Weather maps, weather sequence reports and their analysis; and,
(9) Practical uses of meteorology in flying.

The above is to be followed by a general review and examination.

(Suggested Reading - Civil Aeronautics Bulletin No. 25)

c. Aerial Navigation

At least 10 classroom hours instruction on this subject to include:

(1) Maps, charts and the earth's surface;
(2) Navigational instruments, their types, uses, and errors;
(3) Navigation methods;
(4) Practical navigation problems (contact flying, dead reckoning, drift and triangular course computations, and simple radius of action); and,
(5) Explanations of the use of radio beam in contact flight.

The above is to be followed by a general review and examination.

(Suggested Reading - Civil Aeronautics Bulletin No. 24)

d. General Service of Aircraft

At least 5 hours instruction on this subject to include:

(1) Items of precaution to be observed in servicing and operating aircraft;
(2) The purpose and meaning of operations limitations and Aircraft Operation Records;
(3) Inspections required, their purposes and important items;
(4) Explanation of minor and major aircraft repairs;
(5) The use of aircraft instruments;
(6) The use and care of parachutes; and
(7) The use of log-books.

The above is to be followed by a general review and examination.

(Suggested Reading - Civil Aeronautics Bulletin No. 23)

Note: (1) The curriculum submitted by the applicant must show the time allotted for teaching each subject and sub-division thereof-

(2) Each student who is not a bona-fide flight student and who passes the required examinations on the foregoing ground instruction curriculum should be given a certificate to this effect.

For the purpose of uniformity the following form is to be used:

This is to certify that _____ _____
(Name) (Address)

has successfully completed the ground instruction required of an applicant for a private pilot certificate. Courses satisfactorily completed:

	Grade
Civil Air Regulations	_____
Meteorology	_____
Navigation	_____
General Service of Aircraft	_____
	_____
	_____
	_____

I certify that the above statements are true.

_____
(School)

By_____
(Signature)

_____
(Title)

_____
(Date Issued)

This procedure will enable the student to receive flight training as an approved school student at any certificated flying school within a year from the date of issuance of the above described certificate.

B. FLYING SCHOOL

1. LANDING AREA

Applicant must show that a landing area is available for use in giving flying instruction. The landing area must have a sufficient number of landing strips of not less than 1,800 feet effective length and 300 feet in width to permit take-offs and landings thereon upwind within 22½ degrees of the wind direction during 75 percent of the year. The minimum effective landing strip length requirement, specified above, is a sea level requirement and must be increased 1 percent for each 100 feet the landing area is above sea level. Where the landing area is only 300 feet in width, an additional 100 feet of width must be available for taxiing or parking of aircraft. The landing area surface must be suitable for the safe take-off and landing of aircraft under normal weather conditions and must be marked in accordance with the requirements prescribed by the Administrator. The landing area must have approaches permitting a 20 to 1 glide path to all required landing strips. Each required landing strip must be in such condition that an aircraft at any point thereon must be visible from any other point on such landing strip.

2. HANGAR FACILITIES

The applicant must provide at least one building of substantial construction adequate to house all flight equipment. The hangar floor must consist of such materials as wood, concrete, asphalt, brick, tile, etc. In addition, adequate toilet and washroom facilities must be provided.

3. SHOP FACILITIES

A suitable, separate space, properly heated and lighted, must be provided to conduct all necessary periodic inspections and checks on aircraft, engines, and appliances so as to insure the proper maintenance of flight equipment. Sufficient tools and mechanical devices necessary to maintain flight equipment must be a part of the applicant's shop facilities.

4. OFFICE FACILITIES

Applicant should provide a suitable space of a permanent nature, properly heated, lighted and ventilated, to house equipment necessary to properly conduct business matters required for the flight operation. (This equipment should include appropriate desks, chairs, filing cabinets, typewriters and other appurtenances essential in the keeping of records.)

5. STUDENT CLASSROOM ACCOMMODATIONS

A suitable and comfortable space of a permanent nature must be provided to accommodate flight students receiving instruction. (This space is to be furnished with chairs, clothes racks or lockers, bulletin board, aeronautical charts of the vicinity, and pertinent aeronautical literature.)

6. FLIGHT EQUIPMENT

All airplanes used for flight instruction under the terms of a flying school certificate must be properly certificated and registered in the name of the applicant or operated under a lease the terms of which must be satisfactory to the Administrator. At least one such airplane must be provided for each 15 students regularly enrolled as certificated flying school students. Such airplane must be of at least 50 h.p. and capable of carrying two persons and two parachutes without exceeding the gross weight limitations set forth in the Aircraft Operation Record, and must be suitable to perform the maneuvers necessary to accomplish the flight test prescribed for a private pilot certificate.

7. PARACHUTES

An applicant must have available at least two parachutes manufactured under a valid type certificate and maintained in accordance with the Civil Air Regulations.

8. PERSONNEL

a. Flight

Each person employed to give, or giving, flight instruction must hold a flight instructor's rating.

b. Maintenance

At least one certificated aircraft and aircraft engine mechanic must be regularly employed by the applicant for the purpose of supervising the maintenance, inspection, and repair of each 5 aircraft used for flight instruction.

9. CURRICULUM.

The applicant must provide a private pilot flight instruction curriculum satisfactory to the Administrator. Such curriculum must include not less than 35 hours of flying time. The course must be arranged to give each student a minimum of 17 hours dual and check time and a minimum of 13 hours of solo flight time. A minimum of 8 hours dual instruction must be given prior to solo flight and is to be included in the 17 hours of required dual and check time.

Any curriculum to be satisfactory to the Administrator must include the following:

a. Before any flight instruction is started, ground instruction should be given each student in the following:

Familiarization with the airplane, including explanation of controls, throttle, instruments, fuel systems, brakes, instruction signals, use of safety belts, and the location of fire extinguisher and first-aid kit. The student should also be instructed regarding local and special air-traffic rules and warned regarding propeller danger and the starting and running of engines without some qualified person at the controls.

b. Prior to solo flight, the student should also be given additional ground instruction on procedures and precautions to be observed in:

(1) Swinging propellers;
(2) Starting engines;
(3) Warming up engines;
(4) Stopping of engines;
(5) The line inspection of aircraft; and
(6) The use and care of parachutes.

c. The 8 hours of dual instruction should include both theoretical and practical instruction in:

(1) Taxiing (into wind, down wind, cross wind, and gusty wind);
(2) Orientation;
(3) Straight and level flight;
(4) Medium turns (introducing precision as soon as possible);
(5) Confidence maneuvers;
(6) Coordination exercises (elementary eights - "S" turns across road, etc.);
(7) Flying rectangular courses;
(8) Normal climbs and glides;
(9) Climbing and gliding turns;
(10) Take-offs;
(11) Landings (90-degree and 180-degree approaches to be introduced as soon as possible with explanation of key position);
(12) Simulated forced landings (throttle not to be cut below 200 feet altitude and within range of a safe landing area);
(13) Stalls (power on and power off); and
(14) Spins.

Note: Never exceed two turns in the spins and introduce demonstrations of possible inadvertent entries from steep turns, climbing turns, skids, etc. The meaning of crossing controls should be explained and students warned against such control misuse.

d. The above should be followed by additional dual and solo practice in the foregoing as well as a suitable amount of dual instruction, periodic checks and solo practice on:
(1) Precision landings (including 180-degree, 360 degree and spiral approaches);
(2) Spirals;
(3) Slips (forward and side);
(4) Stalls (power on and power off);
(5) Spins;
(6) Precision turns with gentle, medium, and steep banks;
(7) 720-degree power turns with 60-degree bank;
(8) Simulated forced landings (throttle not to be cut below 200-feet altitude);
(9) Shallow (30°) figure eights around pylons;
(10) Steep (60°) figure eights on or around pylons; and
(11) Dual and solo cross-country. One dual cross-country flight of at least 1½ hours duration. One solo cross-country flight of not less than 50 miles with two full-stop landings at different points on the course.

Additional dual instruction and solo practice should follow to attain proficiency in all maneuvers. Instruction should be given on cross-wind landings and take-offs where practicable. Power approaches and landings should be demonstrated. A general review and check by the instructor, including a complete flight test on all maneuvers required in the prescribed private pilot's flight test, should be given.

Simulated forced landings should be progressive in difficulty throughout the flight training and sufficient to qualify the student to make forced landings from any reasonable position and flight attitude of the airplane.

The apportionment of dual, check, and solo time and the amount of instruction and practice in each of the above maneuvers should be sufficient to enable the student to successfully demonstrate his proficiency in each to the degree required of a private pilot.

Discussions of maneuvers should be conducted as necessary before and after each flight, and explanations and precautions as outlined in Flight Instructor's Manual, Civil Aeronautics Bulletin No. 5, revised October, 1940, and Civil Pilot Training Manual, Civil Aeronautics Bulletin No. 23, should be utilized.

Note: The curriculum submitted by the applicant must show the minimum amount of dual and supervised solo time allotted for instruction and practice in each maneuver or item of instruction included in such curriculum. Any remaining time may be listed in the curriculum as dual and supervised solo time for allotment according to the individual student needs.

SECTION II — ADVANCED FLYING SCHOOL RATING

A. GROUND SCHOOL

1. GENERAL

Such school should be housed in a building which is properly heated, lighted, and ventilated. The building should contain adequate toilet and washroom facilities and ample space for necessary classrooms and equipment.

2. CLASSROOMS

Suitable separate classroom space adequate to accommodate the largest number of students scheduled for attendance at any one time must be provided. There must be at least one classroom which will accommodate at least 20 students. Each student should be provided with a desk-chair or chair and desk suitable for writing examinations.

3. EQUIPMENT

Same as required for a primary ground school rating and in addition the following:

a. Two wing panels each of a different construction.

b. Two different makes of modern aircraft engines, only one of which may be liquid-cooled.

c. Sufficient equipment to properly instruct in the theory and use of controllable pitch propellers, supercharged engines, flaps, retractable landing gear, and instruments (including sensitive altimeters, turn and bank indicators, vertical speed indicators, directional gyros, artificial horizons, manifold pressure gauges, vacuum gauges, and other instruments normally found in modern aircraft).

Note:

Equipment listed under (c) may consist of models, blueprints, charts, diagrams, etcetera.

4. PERSONNEL

Persons employed as ground instructors must be approved in accordance with section 50.24 of Part 50 of the Civil Air Regulations.

5. CURRICULUM

An applicant must provide a commercial pilot ground instruction curriculum of not less than 105 hours, which is satisfactory to the Administrator. The curriculum set forth herein, however, includes a total of 126 hours in order to provide other instruction deemed necessary for an advanced school student.

a. Civil Air Regulations

Parts 01, 20, 60, and 98.

At least 10 classroom hours instruction on this subject to include:

(1) Aircraft registration;
(2) Certification;
(3) Transfer of title;
(4) Operation and repair of aircraft;
(5) Pilot certificate regulations;
(6) Air traffic rules; and
(7) Definitions.

The above is to be followed by a general review and examination.

(Suggested Reading - Civil Aeronautics Bulletin No. 22).

Note: It is recommended that instruction regarding the penalty provisions of the Civil Aeronautics Act of 1938 be included.

b. Aircraft Engines (Powerplants)

At least 20 hours instruction on this subject to include:

(1) Principles of the internal combustion engine;
(2) Construction;
(3) Classification and description of engine components;
(4) Lubrication and cooling systems;
(5) Carburetion and ignition;
(6) Propellers (fixed, adjustable, controllable, pitch and constant speed);
(7) Disassembly;
(8) Inspection and maintenance;
(9) Overhaul, repair, timing, and assembly;
(10) Trouble shooting;
(11) Checking procedures; and
(12) Logs and other records.

Particular attention should be paid to emphasizing the precautions to be observed and good practices to be followed in the operation of aircraft engines.

The above is to be followed by a general review and examination.

(Suggested Reading - Civil Aeronautics Bulletin No. 28)

A maximum of 6 hours of the above required 20 hours instruction may be shop practice on the basis of 3 hours of such shop practice being equivalent to 1 hour of classroom instruction.

c. Aircraft

At least 30 hours on this subject to include:

(1) History of aviation;
(2) Nomenclature;
(3) Aerodynamics and theory of flight;
(4) Factors of aircraft design, construction and rigging;
(5) Necessity for and meaning of the various operations limitations imposed and specified on Aircraft Operation Records and their results on operation and performance;
(6) Materials;
(7) Methods of fabrication of fuselage, wings, and other components, fabric covering, doping and finishing;
(8) Types of tubing, spar, rib and cable splices;
(9) Various types of repair and maintenance;
(10) Log-books and other records; and
(11) Aircraft accessories.

Note: The discussions and explanations regarding precautions to be observed in aircraft operation with regard to structural and operation limitations, reasons for such limitations, effects of operating at or in excess of the speed limitation specified in Aircraft Operation Record, effects of over-loading and exceeding critical C. G. positions, and where to find the information regarding the limits imposed on any aircraft must be very thorough.

The above is to be followed by a general review and examination.

(Suggested Reading - *Civil Aeronautics Bulletins Nos. 26 and 27*)

A maximum of 10 hours of the above 30 hours instruction on aircraft may be shop practice on the basis of 3 hours shop practice being equivalent to one hour of classroom instruction.

d. Meteorology

At least 15 classroom hours instruction on this subject to include:

(1) Motion of the atmosphere;
(2) Factors affecting weather and weather change, and resulting action of the atmosphere;
(3) *Behavior of storms;*
(4) Measurement of pressure;
(5) Effects of humidity;
(6) Cloud formations and their meaning;
(7) Precipitation;
(8) Elementary weather forecasting. Weather maps, weather sequence reports and their analysis; and
(9) Practical uses of meteorology in flying.

The above is to be followed by a general review and examination.

(Suggested Reading - Civil Aeronautics Bulletin No. 25)

e. Aerial Navigation

At least 20 classroom hours instruction on this subject to include:

(1) Maps and charts and the earth's surface;
(2) Navigational instruments, their construction, method of operation, errors, installation, care and use;
(3) Navigation methods;
(4) Practical navigation problems, (contact flying, dead reckoning, drift, triangular course computations, and radius of action returning to different base); and
(5) Explanations of the use of radio beam and radio compass.

The above is to be followed by a general review and examination.

(Suggested Reading - Civil Aeronautics Bulletin No. 24)

f. Instruments, Parachutes and General Service of Aircraft

At least 10 hours instruction on these subjects to include:

(1) Design, construction, reliability, care and proper usage, and inspection of instruments;
(2) Design, construction, care and operation of radio receivers, transmitters, and special equipment;
(3) History, classification, construction, inspection, packing procedure, and proper usage of parachutes;
(4) Aircraft and engine inspections, purpose and use of log-books;
(5) Inspection and servicing of propellers and instruments, and minor and major aircraft repairs; and
(6) Precautions to be observed in the operation and servicing of aircraft and aircraft engines, with particular attention to operation limits specified on Aircraft Operation Records, the reason for, and the meaning of, them.

The above is to be followed by a general review and examination.

(Suggested Reading - Civil Aeronautics Bulletins Nos. 23, 27 and 28)

g. Use of Airway Aids to Air Navigation

At least 11 hours of instruction on these subjects to include:

(1) The radio range and how to use it;
(2) Tuning the radio;
(3) Flight plans;
(4) Airways priority;
(5) Air traffic control procedures and phraseologies;

(6) Airport traffic control (See Civil Aeronautics Manual 60 - Parts 2 & 3);
(7) Aeronautical lights and their uses; and
(8) Radio beacons and their uses.

The above is to be followed by a general review and examination.

(Suggested Reading - Civil Aeronautics Bulletin No. 29)

h. Flight Instruction

At least 10 hours of instruction on the theory, technique and psychology of Flight Instruction, using Civil Aeronautics Bulletin No. 5, "The Flight Instructor's Manual" for study and discussion, to be followed by a general review and examination.

Note: (1) If the applicant chooses to offer the 105 hour curriculum as required in Part 50, he may omit paragraphs (g) and (h) of the above curriculum.
(2) The curriculum submitted by the applicant must show the time allotted for teaching each subject and subdivision thereof.

B. FLYING SCHOOL

1. LANDING AREA

The same landing area requirements specified for a primary flying school rating must be available, and, in addition suitable boundary and obstruction lights must be provided.

2. HANGAR FACILITIES

The applicant must provide at least one building of substantial construction, adequate to house all flight equipment. The hangar floor must consist of such materials as wood, concrete, asphalt, brick, tile, etc. In addition, adequate toilet and washroom facilities must be provided.

3. SHOP FACILITIES.

A suitable, separate space, properly heated and lighted, must be provided to conduct all necessary periodic inspections and checks on aircraft, engines, and appliances so as to insure the proper maintenance of flight equipment. Sufficient tools and mechanical devices necessary to maintain flight equipment must be a part of the applicant's shop facilities.

4. OFFICE FACILITIES

Applicant should provide a suitable space of a permanent nature, properly heated, lighted and ventilated, to house equipment necessary to properly conduct business matters required for the flight operation. (This equipment should include appropriate desks, chairs, filing cabinets, typewriters, and other appurtenances essential in keeping of records.)

5. STUDENT CLASSROOM ACCOMMODATIONS

A suitable and comfortable classroom space of a permanent nature must be provided at the landing area to accommodate flight students receiving instruction. (This space is to be furnished with a table, chairs, clothes racks or lockers, bulletin board, blackboard, aeronautical charts of the vicinity, and pertinent aeronautical literature.)

6. FLIGHT EQUIPMENT

An applicant for an advanced flying school rating must possess the same flight equipment as is required for a primary flying school rating and, in addition, must possess the following:

In addition to the airplanes used for primary training, at least two other airplanes for giving flying instruction must be registered in the name of the applicant or operated under a lease the terms of which must be satisfactory to the Administrator.

One of these airplanes must be a tandem open airplane powered with an engine of 120 h.p. or more.

One of these airplanes must be a cabin airplane powered with an engine of 145 h.p. or more.

Together, the aircraft must provide such equipment and devices necessary to properly instruct advance students in the functioning and operation of flaps, manifold pressure indicators, and radio.

One airplane must be equipped with appropriate night flying equipment as set forth in Part 04 of the Civil Air Regulations.

7. PARACHUTES

In addition to the parachute requirement outlined for primary flight school approval, applicant for an advanced flying school rating should have two additional parachutes manufactured under a valid type certificate and maintained in accordance with the Civil Air Regulations for each 15 students enrolled in the commercial pilot course.

8. PERSONNEL

a. Flight

Same as for a primary flying school rating. In the event of employing more than one flying instructor, one such instructor should be designated as the Chief Instructor and be held responsible for all flying instruction given by the school.

b. Maintenance

Same as for a primary flying school rating.

9. CURRICULUM

An applicant for an advanced flying school rating must provide a flight instruction curriculum satisfactory to the Administrator. Such curriculum must consist of not less than 175 hours of flying time for the purpose of qualifying persons for commercial pilot certificates. Any curriculum to be satisfactory to the Administrator must include the following:

a. A minimum of 50 hours of dual and check time must be given. 8 hours of such dual instruction must be given prior to solo flight.

b. A minimum of 105 hours of supervised solo flight must be given.

c. A total of 10 hours of dual and solo night flying instruction must be given. At least 3 hours should be cross-country over lighted airways when practicable.

d. A minimum of 15 hours dual and solo cross-country flying must be given. During the course of instruction at least one solo cross-country flight should be made to a point not less than 300 miles from the operating base. During such flight at least 3 full-stop landings should be made. In the course of the cross-country flight training, the student's flight record must indicate one flight wherein all radio aids to air navigation that are available have been utilized and must include an approved flight plan.

e. In addition to the cross-country and night flying time requirements, a minimum of 10 hours solo must be given on each of the two airplanes prescribed in the flight equipment requirement and not used for primary instruction.

f. At least 10 hours of dual practice in the giving of primary flight instruction, which should include a complete explanation of all maneuvers and practice in the analysis and correction of errors by the student acting as an instructor. In this connection, Civil Aeronautics Bulletins Nos. 5 and 23 should be utilized.

g. The first 35 hours of instruction and solo practice must be identical with the private pilot flight curriculum and students who have satisfactorily completed such curriculum in a certificated flying school may be given appropriate credit when applying for the commercial pilot flight course.

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

Such maneuvers, in addition to those taught and practiced in the primary course, are:

(1) medium eights <u>on</u> pylons and 70° eights <u>around</u> pylons;
(2) chandelles;
(3) lazy eights and wingovers;
(4) advanced stalls (1 complete oscillation);
(5) precision spins (2 turns);
(6) power approaches and landings;

(7) dragging areas; and

(8) advanced coordination and orientation exercises. Such acrobatic maneuvers which are not objectionable to the student, and can be accurately and safely executed within the limitations of the airplane, are suggested, for coordination and orientation purposes, but are not a requirement.

Note:

The curriculum submitted by the applicant must show the minimum amount of dual and supervised solo time allotted for instruction and practice in each maneuver or item of instruction included in such curriculum. Any remaining time may be listed in the curriculum as dual and supervised solo time for allotment according to the individual student needs.

SECTION III. --- GENERAL

A. APPLICATION

In addition to the application requirements of Part 50, each application must be accompanied by a scale drawing of the airport, showing the dimensions of the landing area, all adjacent obstructions and hazards, and their height and distance from the boundaries of the landing area. When approval is requested for a landing area that might be considered marginal, the application must be accompanied by United States Geological Survey quadrangle sheets for the area in which such landing area is located. The boundaries of the landing area must be plotted thereon. These maps are available in local stationary stores. In addition, a climatological report, indicating the prevailing winds over a period of at least one year, for the area in which the airport is located must be submitted. Such reports may be obtained from the local U. S. Weather Bureau.

B. CERTIFICATED AIRCRAFT

Extreme caution should be exercised in utilizing for flight training aircraft which have special restrictions or limitations relative to flight characteristics. Aircraft powered with engines built for use in military aircraft prior to 1925 will not be considered satisfactory for use in an approved flying school.