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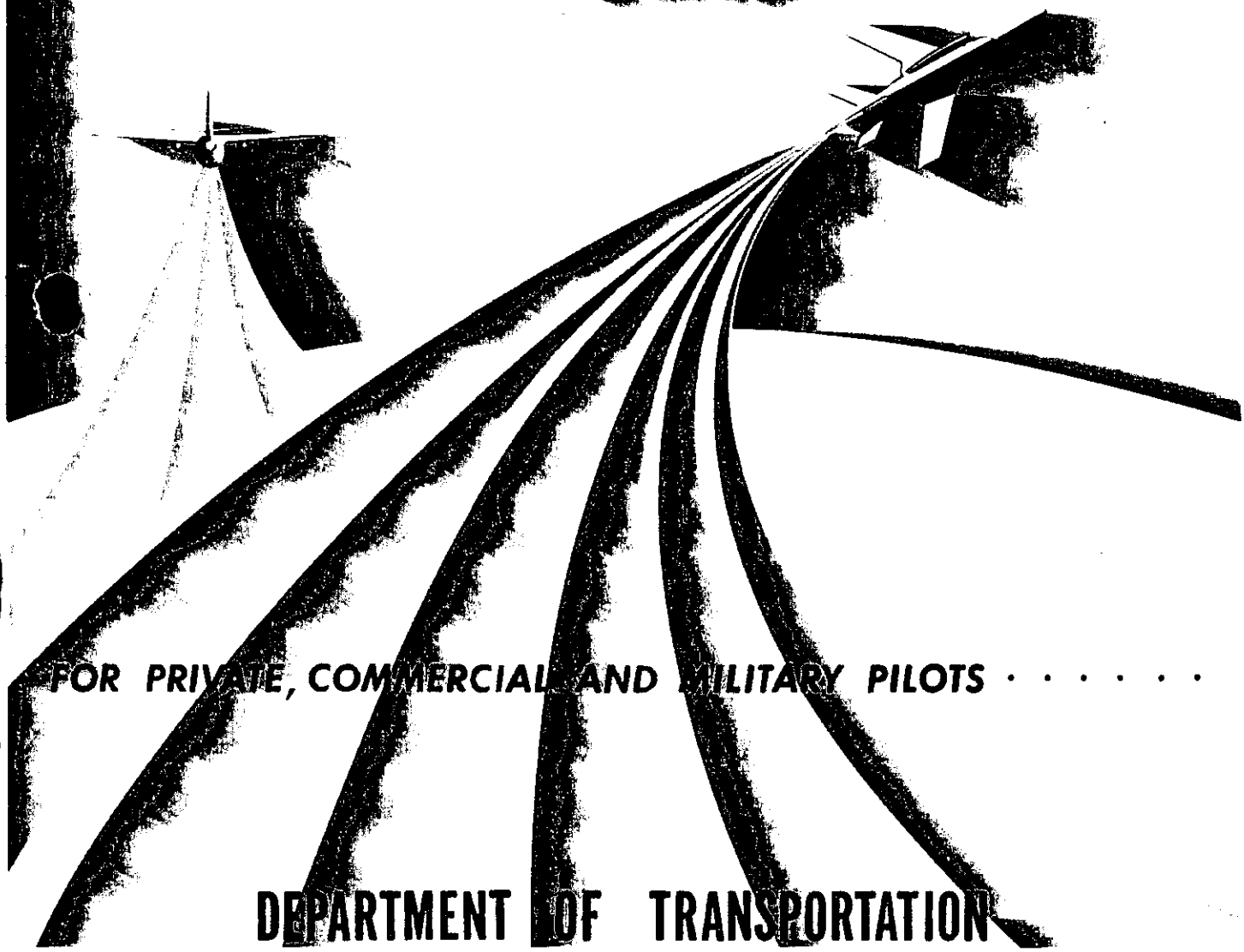
Federal Aviation Regulations Written Examination Guide



FOR PRIVATE, COMMERCIAL AND MILITARY PILOTS . . . . . .

DEPARTMENT OF TRANSPORTATION

FEDERAL AVIATION ADMINISTRATION

FEDERAL AVIATION REGULATIONS
WRITTEN EXAMINATION GUIDE

for

Private, Commercial, and Military Pilots

1967

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

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PREFACE

The Federal Aviation Administration has issued this written examination guide on Regulations for the use of both military and civilian pilots. It outlines the scope of the basic knowledge required of civilian pilots who are studying Regulations as they pertain to certification of private and commercial pilots. Additionally, it accomplishes the same for military pilots or qualified former military pilots who are applying for FAA private or commercial pilot certificates on the basis of military competency. The guide includes references recommended for use in any study program aimed at acquiring complete information in the applicable regulatory areas, and provides sample test items which are typical of the test items which the applicant may expect to encounter on his written examination. It also gives the answers to these test items, their explanations, and the appropriate FAR to which both may be referenced. Additional test items without answers are included. The answers to these may be obtained by referring to the appropriate Regulation cited. If the military pilot or the civilian pilot will follow the study outline, carefully review the test items, and use the appropriate current Regulations as a reference, then the former should be well prepared for his written examination, and the latter should acquire a basic knowledge of Regulations and the type of test item pertaining to them which are included in the written examinations for private or commercial pilot applicants. This examination guide supersedes Advisory Circular 61-7, *Military Pilot Examination Guide* (*Regulations*) dated December 1, 1963.

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FEDERAL AVIATION REGULATIONS WRITTEN EXAMINATION GUIDE FOR PRIVATE, COMMERCIAL, AND MILITARY PILOTS

INTRODUCTION

Whether a military or civilian pilot, the student of Federal Aviation Regulations should study all of this guide carefully. All of its contents are important, either to taking the examination or to a study program on Federal Aviation Regulations. It is not, however, intended as a quick and easy way to learn Federal Aviation Regulations. The student who uses it with this thought in mind will, in all likelihood be disappointed. Rather, it is intended as a study tool, and should be used with this understanding. It does delineate the appropriate areas of study and provides a foundation in those Regulations established by law as necessary to the safe and orderly conduct of flight operations. Knowledge and understanding of Regulations is extremely important to any airman worthy of the name, whether he be a professional or a nonprofessional, and as in other learning endeavors, the student will be truly informed about Regulations only after diligent study to attain basic knowledge, added effort to improve competence, and continuous review to remain currently informed.

BASIS FOR THE EXAMINATION FOR MILITARY PILOTS

The Federal Aviation Administration recognizes that rated pilots of the military services have previously undergone rigorous training and have satisfied the experience and skill requirements for civilian flying. In the area of knowledge as it relates to Regulations, however, the military pilot may not possess all the information he needs to operate as a civilian pilot. For this reason, § 61.31 of Part 61 of the *Federal Aviation Regulations* sets forth the requirements for military pilots or former military pilots who wish to obtain a private or commercial certificate. After a study of this material, it will become apparent that the examination required by § 61.31 is based entirely on a knowledge of the applicable Regulations. It should be noted that, for the military pilots, there is no difference, relative to the written examination requirements, for obtaining a private or a commercial pilot certificate.

In essence, § 61.31 states that under the conditions prescribed relative to experience and flying status, military pilots may be certificated as private or commercial pilots if they pass the written examination based on test items relating to:

(a) Pilot privileges and limitations,
(b) General operating and air traffic rules,
(c) Accident reporting rules.

If the military pilot applicant presents satisfactory evidence of meeting the stipulated requirements for experience and flying status and passes the written examination on Regulations, the FAA office where he takes the examination will issue a temporary certificate immediately. A permanent certificate will be sent to him within the next 90 days.

NATURE OF THE WRITTEN EXAMINATION FOR MILITARY PILOTS

As previously indicated, the Regulations Examination for Military Pilots (Private and Commercial) is concerned entirely with Federal Aviation Regulations and National Transportation Safety Board (formerly Civil Aeronautics Board) Safety Investigation Regulations, Subchapter C, Part 320. (NOTE: Since the inception of the Department of Transportation, aviation safety functions of the Civil Aeronautics Board (CAB) were transferred to the National Transportation Safety Board (NTSB). However, the Regulations are still published using the CAB title. Therefore, reference to the Regulations will use the CAB anotation and reference to the Board

will use NTSB.) Today, commercial pilots, and private pilots as well, are flying aircraft with performance parameters which, until a short time ago, were found only in the larger and more powerful air-carrier and military aircraft. Flight activities are no longer confined to the local flying area on pleasant summer weekends. Consequently, pilots of all experience levels are engaging in operations which require intimate knowledge and application of those Regulations which pertain to airman privileges and limitations, as well as the safety of operations on the ground and in the air. The written examination for military pilots is based on multiple-choice test items which may be answered by selecting one response from the four choices presented. This type of examination is used because it can be scored quickly and through elimination of personal opinion in scoring, provides for a high degree of reliability. In a comparatively short examination period, it can assure comprehensive testing, and therefore greater validity and opportunity for differentiation in student ability. In other words, it saves the applicant's time, can be scored quickly and objectively, and provides a valid, reliable evaluation of student knowledge. With few exceptions, the test items in the Military Pilot Written Examination are applicable to all pilot certificates and aircraft categories. However, in the interest of maximum safety, pilots should be familiar with the few Regulations that are peculiar to a specific aircraft category or pilot certificate. Such test items, germane to knowledge requirements as established by FAR 61.31, are comparatively few in number, and their inclusion in the written examination will create no problem for the informed applicant.

With certain rare exceptions, civilian pilots are not required, as are military pilots, to take a written examination which is based on Regulations alone. However, for the civilian pilots, FAR 61.83 and FAR 61.113 state that applicants for private and commercial pilot certificates must pass an examination (which also includes other appropriate subjects) on:

(a) Pilot privileges and limitations,
(b) General operating and air traffic rules,
(c) Rules of the National Transportation Safety Board (NTSB) on accident reporting.

From this it can be seen that, *insofar as Regulations alone* are concerned, the aeronautical knowledge requirements are the same for private, commercial, and military pilots. Therefore, this Examination Guide will be useful both to the military pilot studying for the written examination appropriate for him and to the civilian pilot desiring additional guidance in the study of Regulations.

TAKING EXAMINATIONS

In addition to being a test of knowledge, understanding, and application of Regulations, written examinations are, of necessity, an exercise in communications through use of written language. Communication through use of such abstract symbols as words is indeed a most complicated endeavor; so complicated in fact, that care must be constantly exercised to prevent a breakdown in the process. The same word often means different things to different people. This is especially true of rapid or careless reading which often fails to clearly establish the exact thought context whereby one determines precisely what a phrase or word means. In order to minimize this problem when taking an examination, always bear in mind the following:

1. Follow the directions given in the examination booklet.
2. Read the test item carefully and completely. Avoid hasty assumptions.
3. Do not attempt to answer the test item until there is a clear understanding of the question posed by the item.
4. The answer selected must be the most complete and accurate of the alternatives given. It is most important that the applicant understand that even though he feels there is no completely correct answer, he must make his choice based on the alternatives given with the test item.
5. It may appear that there is more than one possible answer. However, there is only one answer that is *correct and complete.* The other answers are either incomplete or erroneous.
6. Do not be concerned if it seems obvious that either a test item or its answers are based on out-of-date Regulations. If such a situation exists, applicants receive credit for the test item until a revision can be made. Answer all test items on the basis of *current* information.
7. Do not spend too much time on any one test item. If an inordinate amount of time is spent

on some test items, it may force hurried reading and inaccurate analysis in order to complete the test in the time allotted. Deal with the test items whose answers you know; then, in the time remaining, reconsider the more difficult items.

The military pilot may take the examination on Regulations at any Flight Standards General Aviation District Office and some Air Carrier District Offices of the Federal Aviation Administration. The applicant is allowed 2 hours to answer the test items and normally will not be permitted to take the examination if the amount of time is not available for completion. The written examinations specified for civilian candidates for private and commercial pilot certificates include many subjects in addition to Regulations; therefore, more time is allowed. These examinations may be taken at all General Aviation District Offices, most Flight Service Stations, and many Air Carrier District Offices.

SCORING EXAMINATIONS

Grading of the written examination for military pilots is accomplished at the FAA office where the applicant takes the examination and at the time it is completed. If a passing grade (70 percent) is not obtained, FAA Form 666 (Notice of Disapproval of Application) is issued. This form *must* be presented upon application for reexamination.

The written examinations taken by civilian applicants for pilot certificates are forwarded from the point where the examination was administered to the FAA Aeronautical Center in Oklahoma City, Okla., for grading. The examination results and other pertinent information are entered on AC Form 8060–37, Airman Written Examination Report, and mailed to the applicant as expeditiously as possible. This AC Form 8060–37 *must* also be retained by the applicant until such time as he passes a practical flight test or applies for a written reexamination.

RECOMMENDED STUDY MATERIALS

The applicant preparing for the Regulations Examination for Military Pilots (Private and Commercial) or for the standard written examination for civilian applicants for private or commercial pilot certificates will find the publications listed herein either helpful or essential in a study program. This list does not include all available materials on these subjects. There are many excellent audio-visual training aids and other types of instruction materials offered commercially which include the topics listed by this guide in the courses they provide. The applicant can best judge his needs for himself and it is his responsibility to obtain the study materials appropriate to these needs.

1. *FEDERAL AVIATION REGULATIONS.*

Part 1—*Definitions and Abbreviations* ($0.25)

This part places all needed definitions, abbreviations, and rules of construction applicable to *Federal Aviation Regulations* in one part and makes them apply across the board to all Regulations. In some instances, a Regulation pertaining to one of the three areas for which the military pilot is responsible on the written examination (a, b, and c, page 1) will make additional reference to a Regulation in an entirely different subchapter or part, and therefore require knowledge of that part or of Part 1, if the pilot is to comply with its provisions. For example, FAR 91.105 does not define a control zone and FAR 91.97 does not define a positive control area, yet this knowledge is essential to any meaningful application of either Regulation. FAR 91.105 requires knowledge of Part 1 and FAR 91.97 requires knowledge of both Part 1 and the appropriate Regulation in that part to which it makes pointed and specific reference; i.e., Part 71. Applicants must be aware of this feature of *Federal Aviation Regulations.*

Part 61—*Certification: Pilots and Flight Instructors* ($0.60)

This part prescribes the requirements for issuing certain specified pilot and instructor certificates and ratings, the conditions under which those certificates or ratings are necessary, and general rules applicable to the holders of these certificates and ratings. FAR 61.31 specifically states that military pilots must pass a written examination on pilot privileges and limitations.

Part 71—*Designation of Federal Airways, Controlled Airspace, and Reporting Points* ($0.20)

This part of *Federal Aviation Regulations* classifies Federal Airways and defines their extent. It also gives several definitions essential to the practical application of many of the flight rules set forth in Part 91. The study outline lists those Regulations in this part with which the applicant should be familiar.

Part 91—*General Operating and Flight Rules* ($0.60)

This part prescribes rules governing the operation of specified categories of aircraft when (*a*) within the United States, (*b*) of U.S. registry over the high seas, and (*c*) of U.S. registry outside the United States. Since FAR 61.31 requires military pilots to pass a written examination which includes knowledge of air traffic and general operating rules, it is apparent that such applicants must be familiar with the rules in Part 91 (instrument flight rules excepted).

2. *CIVIL AERONAUTICS BOARD SAFETY INVESTIGATION REGULATIONS.* Subchapter C, Part 320—*Rules Pertaining to Aircraft Accidents, Incidents, Overdue Aircraft, and Safety Investigations* ($0.05)

This Part, which for the sake of brevity, will be referred to in most instances hereinafter as Part 320 of Safety Investigation Regulations, NTSB, contains rules pertaining to:

(a) Giving notice of, and reporting aircraft accidents and incidents, and certain other occurrences in the operation of aircraft when they involve civil aircraft of the United States wherever they occur, or foreign civil aircraft when such events occur in the United States, its territories, or possessions.

(b) Preservation, access to, and release of aircraft wreckage, mail, cargo, and records involving all civil aircraft in the United States, its territories, or possessions.

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(c) Investigation of aircraft accidents, certain incidents, and overdue aircraft and special studies and investigations conducted by the Board pertaining to safety in air navigation and the prevention of accidents. FAR 61.31 states that before a military pilot is entitled to a private or commercial certificate, he must pass a written test on accident reporting rules. Therefore, such applicants must be familiar with pertinent provisions of Part 320.

3. *AIRMAN'S INFORMATION MANUAL.*

This FAA publication, known as "AIM," provides extensive information for the planning and conduct of flights in the National Airspace System. Pilots, both novice and "old timers," will find it a valuable guide and especially useful in preflight and inflight planning and operations.

The manual is designed to be carried in the cockpit and is published in sections and looseleaf style to permit removal of selected portions for easy carrying. Updated pages can readily be inserted as they are received from FAA. The *Airman's Information Manual* is sold in three separate parts. You may subscribe to or use one or all three, depending upon your individual needs. Highlights of each part are:

Part 1

Basic Flight Manual and ATC Procedures

This part is issued quarterly and contains basic fundamentals required to fly in the National Airspace System; adverse factors affecting Safety of Flight; Health and Medical Facts of interest to pilots; ATC information affecting rules, regulations or procedures; a Glossary of Aeronautical Terms; U.S. Entry and Departure Procedures, including Airports of Entry and Landing Rights Airports; Air Defense Identification Zones (ADIZ); Designated Mountainous Areas; SCATANA and Emergency Procedures. (Annual subscription price $2; foreign mailing, 50 cents additional.)

Part 2

Airport Directory

This part is issued semiannually and contains a Directory of all Airports, Seaplane Bases, and Heliports in the conterminous United States, Puerto Rico, and the Virgin Islands which are open to the general public. It includes all of their facilities and services, *except communications*, in codified form. Those airports with communications are listed in Part 3 which reflects their radio facilities. Included also is a list of selected Commercial Broadcast Stations of 100 watts or more of power. (Annual subscription price, $2; foreign mailing, 50 cents additional.)

Parts 3 and 3A

Operational Data and Notices to Airmen

Part 3 is issued every 28 days and contains a Master Alphabetical Index covering all parts of the AIM; an Airport/Facility Directory containing a list of all major airports with communications; a tabulation of Air Navigation Radio Aids and their assigned frequencies; Parachute Jump Areas; Preferred Routes; Standard Instrument Departures (SID); Substitute Route Structures; a Sectional Chart Bulletin which updates Sectional charts cumulatively; Restrictions to En Route Navigation Aids; VOR Receiver Checkpoints; Special General and Area Notices; New and Permanently Closed Airports, and Oil Burner Routes.

Part 3A is issued every 14 days and contains Notices to Airmen considered essential to the safety of flight as well as supplemental data to Part 3. (Annual subscription price, $9; foreign mailing, $2.25 additional.)

4. *VFR Exam-O-Grams*

These synopses analyze and explain selected topics of particular importance to safety in flight. Their selection is based on the need, as established by examination results, to clarify and correct common mistakes, misconceptions, and lack of information in certain areas of aeronautical knowledge and information. Certain of these Exam-O-Grams which are pertinent to *Federal Aviation Regulations* will be found on pages 19 through 27.

HOW TO OBTAIN STUDY MATERIALS

All study material listed herein except VFR Exam-O-Grams may be obtained by remitting check or money order to:

Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402

Exam-O-Grams are available free of charge in limited quantities from:

FAA Aeronautical Center
Flight Standards Technical Division, AC–200
Operations Branch, AC–240
Post Office Box 25082
Oklahoma City, Okla. 73125

STUDY OUTLINE FOR THE WRITTEN EXAMINATION ON REGULATIONS FOR MILITARY PILOTS

This study outline offers a framework upon which a student may build an organized study program. It includes topics basic to adequate knowledge and understanding of those Federal Aviation Regulations which are pertinent to FAA certification of military pilots as private or commercial pilots. Test items on Regulations in FAA examinations may be directly related to one or more of the subjects contained in this outline. The user should understand, however, that the simple rote recall of a Regulation without ability to apply it to an operationally realistic airman activity or situation will not assure knowledge of adequate depth. In most instances, applicants will be concerned with Regulations pertaining to airplanes. However, if the applicant is concerned with a different category aircraft (e.g., helicopter), he should experience no undue difficulty. In general, the Regulations with which he must be familiar are applicable to all aircraft, and he will need to know additionally only the few flight rules peculiar to his category.

I.

FEDERAL AVIATION REGULATIONS

A. FAR PART 1—DEFINITIONS AND ABBREVIATIONS. Know the meaning of the following words and terms as used in *Federal Aviation Regulations:*

1. Administrator.
2. Air Commerce.
3. Aircraft.
4. Airplane.
5. Airport.
6. Airport Traffic Area.
7. Air Traffic.
8. Air Traffic Clearance.
9. Air Traffic Control.
10. Approved.
11. Ceiling.
12. Civil Aircraft.
13. Commercial Operator.
14. Controlled Airspace.
15. Crewmember.
16. Flight Crewmember.
17. Flight Level.
18. Flight Plan.
19. Flight Time.
20. Flight Visibility.
21. Ground Visibility.
22. Helicopter.
23. Large Aircraft.
24. Maintenance.
25. Major Alteration.
26. Major Repair.
27. Night.
28. Operate.
29. Pilot in Command.
30. Positive Control.
31. Prohibited Area.
32. Rating.
33. Restricted Area.
34. Route Segment.
35. Small Aircraft.
36. Time in Service.
37. Traffic Pattern.

B. FAR PART 61—CERTIFICATION: PILOTS AND FLIGHT INSTRUCTORS. Know and understand the provisions of—

1. FAR 61.1—Applicability.
2. FAR 61.3—Certificates and rating required.
3. FAR 61.5—Application and issue.
4. FAR 61.7—Temporary certificate.
5. FAR 61.9(d)(e)(f)—Duration of certificate.
6. FAR 61.13—Change of name; replacement of lost or destroyed certificate.
7. FAR 61.15—Aircraft ratings.
8. FAR 61.16—General limitations.
9. FAR 61.27—Retesting after failure.
10. FAR 61.31—Military pilots or former military pilots: special rules.
11. FAR 61.39—Pilot log books: except airline transport pilots.
12. FAR 61.43—Medical certificates: duration.

13. FAR 61.45—Operations during physical deficiency.
14. FAR 61.47—Recent flight experience.
15. FAR 61.48—Applications, certificates, logbooks, reports, and records: falsification, reproduction, or alteration.
16. FAR 61.51—Change of address.
17. FAR 61.101—General privileges and limitations.
18. FAR 61.131—General privileges and limitations.

C. FAR PART 71—DESIGNATION OF FEDERAL AIRWAYS, CONTROLLED AIRSPACE, AND REPORTING POINTS. It is not necessary to be familiar with all the Regulations in this part. In some instances, however, FAR 91.105 refers to specific types of controlled airspace which are defined only in Part 71. An understanding of these definitions is a prerequisite to the ability to observe the provisions of the Regulation. For example, if a pilot is unable to identify a control zone or establish its limits, he will be unable to determine if he is complying with restrictions applicable to operations within a control zone. The study outline which follows identifies the more pertinent of these Regulations:

1. FAR 71.3—Classification of Federal Airways.
2. FAR 71.5—Extent of Federal airways.
3. FAR 71.7—Control areas.
4. FAR 71.9—Continental control area.
5. FAR 71.11—Control zones.

D. FAR PART 91—GENERAL OPERATING AND FLIGHT RULES.

1. Subpart A—General (FAR 91.1 through FAR 91.49).
2. Subpart B—Flight Rules (FAR 91.61 through FAR 91.109; Instrument Flight Rules are excluded).
3. Subpart C—Maintenance, Preventive Maintenance, and Alterations (FAR 91.161 through FAR 91.175).

II.

NATIONAL TRANSPORTATION SAFETY BOARD SAFETY INVESTIGATION REGULATIONS

A. CAB PART 320—RULES PERTAINING TO AIRCRAFT ACCIDENTS, INCIDENTS, OVERDUE AIRCRAFT, AND SAFETY INVESTIGATION:

1. Subpart A—General.
   a. Section 320.1—Applicability.
   b. Section 320.2—Definitions.
2. Subpart B—Initial Notification of Aircraft Accidents, Incidents, and Overdue Aircraft.
   a. Section 320.5—Immediate Notification.
   b. Section 320.6—Information to be given in Notification.
3. Subpart D—Reporting of Aircraft Accidents, Incidents, and Overdue Aircraft.
   a. Section 320.15—Reports and Statements to be Filed.

SAMPLE EXAMINATION

It should be clearly understood that the test items which follow are merely intended as representative of the areas of knowledge and types of test items the applicant can expect on the examination. The few typical test items contained herein are not comprehensive in nature and do not in themselves provide an adequate background of knowledge. Applicants should obtain the Regulations mentioned in this guide and study them carefully before attempting the regular Military Pilot Examination on Regulations. A knowledge of all the topics mentioned in this outline—not just the mastery of the sample test items—should be used as the criterion for determining that you are properly prepared to take the FAA written examination.

Correct answers to the sample test items, along with an explanation of each test item, are on pages 13 through 14.

Test Items on Part 1, Federal Aviation Regulations

The following five test items are based on definitions found in Part 1 of *Federal Aviation Regulations:*

1. Unless otherwise specified for special cases, the term "Airport Traffic Area" is defined as—
   1—that airspace within a horizontal radius of 5 statute miles from the geographical center of any airport at which a control tower is operating, extending from the surface up to, but not including, 2,000 feet above the surface.
   2—in (1) except the horizontal radius extends 10 statute miles from the Airport Traffic Control Tower.
   3—in (1) except the airspace extends from the surface up to and including 2,500 feet above the surface.
   4—in (1) except the horizontal radius from the center of the airport is in nautical miles.

2. "Ceiling" means the height above—
   1—sea level of the lowest layer of clouds or obscuring phenomena that is "broken" or "overcast" and not classified as "thin" or "partial."
   2—the earth's surface of the lowest layer of clouds or obscuring phenomena that *is actually* "broken" or "overcast," and not classified as "thin" or "partial."
   3—the earth's surface of the lowest layer of clouds or obscuring phenomena that *is reported* as "broken," "overcast," or "obscuration," and not classified as "thin" or "partial."
   4—the earth's surface of the lowest layer of clouds or obscuring phenomena which covers five-tenths ($\frac{5}{10}$) of the sky or more.

3. By definition, which of the following would be classified as controlled airspace?
   1—Caution, warning, restricted, and prohibited areas.
   2—Only control zones and transition areas.
   3—Only climb corridors, control zones, and extensions thereof.
   4—Continental control area, control area, control zone, or transition area within which some or all aircraft may be subject to air traffic control.

4. "Flight time" means the time from the moment the aircraft—
   1—engine is started until it is shut down.
   2—starts to taxi until it is parked.
   3—first moves under its own power for the purpose of flight until the moment it first comes to rest at the next point of landing. ("Block-to-block" time.)
   4—first moves under its own power for the purpose of flight until the moment it lands.

5. "Large aircraft" means aircraft of more than—
   1—12,500 pounds empty weight.
   2—12,500 pounds maximum certificated takeoff weight.

3—12,500 pounds maximum gross weight only when pilot and co-pilot are required as a minimum crew.

4—60 feet wing span and 25,000 pounds maximum certificated takeoff weight.

* * *

TEST ITEMS ON PART 61, FEDERAL AVIATION REGULATIONS

The following test items deal with pilot certificates and are intended to familiarize you with the type that will be used in the written examinations:

6. If an applicant takes a written examination required for certification as a private or commercial pilot on January 9, and is advised that he failed, he may apply for retesting—

1—either on February 8, or after obtaining a minimum of 10 hours of additional instruction.

2—only if 30 days have passed since the date he failed that test.

3—only upon presenting a statement from a certificated flight instructor with an appropriate category rating, or a certificated ground instructor with an appropriate rating, certifying that he has given additional instruction to the applicant and now considers that he is ready for retesting.

4—by observing either of the requirements stated in (2) or (3).

7. Only when specifically authorized to do so by a Flight Standards District Office may any person act as pilot in command of a turbojet-powered airplane who does not hold—

1—a type rating for that aircraft.

2—an airline transport pilot certificate.

3—a commercial pilot certificate.

4—a class I medical certificate.

8. The holder of a pilot certificate who has a change in permanent mailing address shall notify—

1—the nearest FAA General Aviation District Office either in person or by telephone as soon as possible.

2—in writing and within 30 days after the change, the FAA Airman Certification Branch, Oklahoma City, Okla.

3—the Chairman, Civil Aeronautics Board, Washington, D.C.

4—the medical examiner at the time the holder's medical certificate is renewed.

9. Excluding the requirement applicable to airline transport pilots, a logbook or some other reliable record of flying time—

1—is not necessary once a student pilot acquires a pilot certificate.

2—must be maintained only on all flying done for hire.

3—must be maintained only for that flying time submitted to document the experience requirements for any pilot certificate or rating, or to meet the recent experience requirements of Part 61, *Federal Aviation Regulations*.

4—must be maintained on all dual, copilot, and pilot-in-command flying.

10. A second-class medical certificate, for operations requiring a commercial pilot certificate, expires—

1—at the end of the last day of the 12th month after the month in which it was issued.

2—12 months from the date of issuance.

3—on the date of issuance 12 months after issuance.

4—at the end of the first day of the 12th month after the date of issuance.

* * *

TEST ITEMS ON PART 91, FEDERAL AVIATION REGULATIONS

This part of the Federal Aviation Regulations deals with general operating and flight rules and except for the sections dealing with instrument flight rules, is applicable in its entirety to military and civilian pilots taking written examinations requisite to certification as private or commercial pilots. The test items that follow are intended to serve as examples of the type of questions applicants can expect:

11. Before beginning a cross-country flight, each pilot in command is required by Regulations to—

1—familiarize himself with all available information concerning the flight, including weather reports and fuel requirements.

2—make a preflight check to determine that the airplane is in a safe operating condition, but nothing more.

3—make a preflight check and file a flight plan.

4—accomplish both (1) and (3).

12. A U.S.-certificated pilot operating a foreign civil aircraft in the United States under VFR conditions—

1—must file a VFR flight plan.
2—must file a VFR flight plan only if he is carrying passengers.
3—is not required by Regulations to file any type of flight plan.
4—must file an IFR flight plan and conduct all flights along civil airways.

13. According to FAR, Part 91, an airplane may not be operated unless it has had an annual (formerly periodic) inspection within the preceding 12 calendar months. It can be determined that this inspection has been accomplished by checking the—

1—airplane maintenance records.
2—latest repair and alteration form.
3—date of issuance on the Aircraft Registration Certificate.
4—date of issuance on the Airworthiness Certificate.

14. Regulations state that when flying VFR, a pilot on a landing approach to a runway where a visual approach slope indicator (VASI) and traffic control tower are in operation—

1—may make an approach using any glide slope desired if the tower gives a landing clearance.
2—may make an approach utilizing the VASI only if declaration of this intent is communicated to the tower.
3—will be authorized to use the VASI only in conjunction with simulated ILS approaches.
4—shall maintain an altitude at or above the VASI glide slope until a lower altitude is necessary for a safe landing unless otherwise authorized or required by ATC.

15. When applicable, VFR cruising altitudes must be maintained appropriate to the—

1—magnetic heading being flown.
2—magnetic course being flown.
3—compass course being flown.
4—compass heading being flown.

16. Regulations pertaining to VFR enroute cruising altitudes apply to—

1—all VFR flights.
2—only VFR flights conducted at 3,000 feet or more above the surface.
3—only VFR flights conducted along Federal Airways.
4—any VFR flight operated for hire.

17. Regulations stipulate that the minimum *basic* flight visibility for VFR operations in the continental control area is—

1—1 statute mile.
2—3 statute miles.
3—5 statute miles.
4—3 miles for helicopters and 5 miles for airplanes.

* * *

TEST ITEMS ON PART 320 OF SAFETY INVESTIGATIONS, NATIONAL TRANSPORTATION SAFETY BOARD

This part to the NTSB Safety Investigation Regulations deals with, among other things, aircraft accidents, incidents, and overdue aircraft. The test items which follow indicate the type of questions an applicant can expect in this area.

18. The operator of an airplane of less than 12,500 pounds (not operating under FAR Part 135) and of U.S. registry is involved in a landing accident in Mexico. The accident results in substantial damage to the airplane, but no injuries to anyone. Under these circumstances, Part 320 of Safety Investigation Regulations—

1—does not require the operator to notify either the Federal Aviation Administration or the NTSB since the accident occurred outside the continental limits of the United States.
2—requires the operator to submit a report to the nearest Bureau of Safety Field Office of the NTSB within 10 days.
3—requires the operator to notify the NTSB immediately and submit a report within 10 days to the nearest FAA Flight Standards District Office.
4—requires the operator to notify the closest U.S. Consular official immediately and to submit a report to him within 7 days.

19. Damage incurred during the operation of an aircraft of more than 12,500 pounds must be reported—

1—only if repairs are reasonably estimated to cost $300 or more.
2—if major repair or replacement of the affected component would normally be required.

3—only if fire in flight was the primary cause of the damage.

4—only for operations conducted under the provisions of FAR Part 135 (Air Taxi Operators and Commercial Operators of Small Aircraft).

20. The NTSB must be notified immediately of incidents which involve—

1—unwanted or asymmetrical thrust reversal.

2—rapid decompression.

3—in-flight fire.

4—engine failure.

* * *

ANSWERS TO TEST ITEMS IN SAMPLE EXAMINATION

Item	Item	Item	Item	Item
1.—(1)	5.—(2)	9.—(3)	13.—(1)	17.—(3)
2.—(3)	6.—(4)	10.—(1)	14.—(4)	18.—(3)
3.—(4)	7.—(1)	11.—(1)	15.—(2)	19.—(2)
4.—(3)	8.—(2)	12.—(1)	16.—(2)	20.—(3)

EXPLANATION OF ANSWERS TO TEST ITEMS IN SAMPLE EXAMINATION

The answers to test items 1 through 5 may be found in FAR Part 1, Definitions and Abbreviations.

Item

1.—(1) See Part 1.

2.—(3) See Part 1. NOTE: When two or more layers of clouds are present, it is important that pilots understand that though the upper level by itself may be scattered, it may be *reported* as broken or overcast if the total summation of cloud cover of this and the lower layers give the appearance of broken or overcast conditions to the ground observer.

3.—(4) See Part 1.

4.—(3) See Part 1.

5.—(2) See Part 1.

6.—(4) FAR 61.27 states that an applicant may apply for retesting after failure of a written examination either by waiting until 30 days have passed or by presenting a statement from an appropriately qualified person certifying that the applicant is ready for retesting.

7.—(1) FAR 61.16 states that without specific authorization to do so, no person may act as pilot in command of a turbojet airplane without a type rating for that aircraft.

8.—(2) FAR 61.51 states that within 30 days after any change in his permanent mailing address, the holder of a pilot certificate shall notify the Federal Aviation Administration, Airman Certification Branch, Oklahoma City, Okla., in writing, of his new address.

Item

9.—(3) FAR 61.39 stipulates that there must be a reliable record of the flight time used to meet the experience requirements for any pilot certificate or rating, or to meet recent flight experience requirements. The logging of other flight time is *not required* except for airline transport pilots.

10.—(1) FAR 61.43 states that a second-class medical certificate expires at the end of the last day of the 12th month after the month in which it is issued, for operations requiring a commercial pilot certificate.

11.—(1) FAR 91.5 states that each pilot in command shall, before beginning a flight, familiarize himself with all available information concerning that flight. If the flight is not in the vicinity of an airport, this information must include available weather reports and forecasts, and fuel requirements as well as other specified items.

12.—(1) FAR 91.43 provides that, in addition to the general provision of this Part, each person operating a foreign civil aircraft within the United States shall comply with the section which states that no person may operate a foreign aircraft under VFR unless a VFR flight plan has been filed with an FAA communications station.

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Item

13.—(1) FAR 91.173 provides, along with other stipulations, that maintenance records must be presented for required entries each time inspection or maintenance is done on the aircraft or engine. Neither registration and airworthiness certificates, nor repair and alteration forms contain data relative to annual inspections.

14.—(4) FAR 91.87 requires that at those airports where an operating Visual Approach Slope Indicator (VASI) is in use, each pilot of an airplane approaching to land on a runway served by such an indicator shall maintain an altitude at or above the glide slope until a lower altitude is necessary for a safe landing.

15.—(2) FAR 91.109 is the applicable Regulation here. It states that the specified altitudes are based on the magnetic course being flown.

16.—(2) FAR 91.109 states that each person operating an aircraft VFR in level cruising flight shall maintain a prescribed cruising altitude when at or above 3,000 feet above the surface.

17.—(3) FAR 91.105 states that with respect to basic weather minimums, no person may operate an aircraft under Visual Flight Rules in the continental control area unless flight visibility is at least 5 statute miles.

Item

18.—(3) Part 320 of Safety Investigation Regulations, NTSB, requires that the NTSB be *notified* immediately of all occurrences involving substantial damage to U.S.-registered aircraft, regardless of where they occur (320.1(a)). However, since the aircraft was less than 12,500 pounds in authorized maximum takeoff weight, the *report* on the accident will be submitted to the Federal Aviation Administration within 10 days after the occurrence (320.15(c)(2)).

19.—(2) Part 320.2 of Safety Investigation Regulations, NTSB, defines an "aircraft accident" and "substantial damage." Part 320.15 lists those situations relative to accidents and incidents which require reports to the NTSB.

20.—(3) Alternate response 3 is the only occurrence of the four responses given which requires immediate notification. Refer to Part 320.5 of Safety Investigation Regulations, NTSB.

* * * * *

MISCELLANEOUS QUESTIONS

1. Must medical certificates be carried on the person while piloting an aircraft? (Reference FAR 61.3(c).)
2. What are the minimum safe altitudes established by Regulations for flight over a congested area? (Reference FAR 91.79.)
3. What is the standard direction for all turns in an airplane approaching to land at an airport without an operating control tower? (Reference FAR 91.89.)
4. What do Regulations require of a helicopter pilot with respect to fixed-wing aircraft traffic when approaching to land at airports without control towers? (Reference FAR 91.89.)
5. For all operations more than 1,200 feet above the surface are the basic VFR weather minimums for all aircraft the same? (Reference FAR 91.105.)
6. Is an intentional maneuver with a bank in excess of 60° considered an acrobatic maneuver? (Reference FAR 91.71.)
7. What are the restrictions on the proximity of one aircraft to another in flight? (Reference FAR 91.65.)
8. At what altitude does the continental control area begin? (Reference FAR 71.9.)
9. What is a control zone? (Reference FAR 71.11.)
10. At what altitude does a transition area begin when designated in conjunction with airway route structure or segments? (Reference FAR 71.13.)
11. What class medical certificate must an applicant hold if he is to be eligible for a commercial pilot certificate? (Reference FAR 61.111.)
12. With respect to those Regulations which pertain to certification, ratings, privileges, and limitations of airmen, what do the terms "category," "class," and "type" mean? (Reference FAR 1.)
13. For how long a period are private and commercial pilot certificates valid? (Reference FAR 61.9(e)(f).)
14. May a certificated pilot, who meets recent experience requirements in a small, single-engine land airplane, fly as pilot-in-command of all airplanes in this class? (Reference FAR 61.16.)
15. What placards, documents, or publications are required on board during the operation of a civil aircraft? (Reference FAR 91.27 and 91.31(b).)
16. May civilian pilots operate civil aircraft in formation flight? (Reference FAR 91.65.)
17. Does an airplane towing a glider have the right-of-way over a glider in free flight? (Reference FAR 91.67(c).)
18. May a noninstrument rated pilot operate an aircraft in a positive control area? (Reference FAR 91.97.)
19. Are the requirements relative to recency of flight experience the same for all operations conducted for compensation or hire? (Reference FAR 61.47.)
20. May a commercial pilot exercise the privileges of a private pilot after his second-class medical certificate has expired? (Reference FAR 61.43.)
21. May a person certificated as a private pilot act as pilot-in-command of an aircraft for compensation or hire? (Reference FAR 61.101.)
22. Is it mandatory that the pilot keep his seatbelt fastened while at the controls of an aircraft? (Reference FAR 91.7.)
23. May an aircraft be operated between sunset and sunrise without lighted position lights? (Reference FAR 91.73.)
24. With respect to center of gravity and weight limitations, who is responsible for the proper loading of an aircraft? (Reference FAR 91.29 and FAR 91.31.)
25. Do Regulations require any operational checks on VOR radio navigation equipment in an airplane which is flown VFR only? (Reference FAR 91.25.)

26. Within the United States, may a pilot-in-command allow a person to make a parachute jump from an aircraft if no emergency exists? (Reference FAR 91.15.)
27. Is it the responsibility of the pilot-in-command to determine that all parachutes carried in an aircraft for emergency use have been packed within the preceding 60 days? (Reference FAR 91.15.)

* * *

28. May a pilot carry in a civil aircraft a person who is obviously under the influence of intoxicating liquor? (Reference FAR 91.11.)
29. What followup action is required of the pilot-in-command, who in an emergency, deviates from the rules in Part 91, General Operating and Flight Rules? (Reference FAR 91.3.)
30. Is any report required of the pilot-in-command who, in an emergency, is given priority by ATC? (Reference FAR 91.75(d).)

* * *

APPENDIX

Each of the illustrations and selected Exam-O-Grams presented in this Appendix relates to a Federal Aviation Regulation, and, either directly or indirectly, is pertinent to test items found in the Military Pilot Written Examination or to test items dealing with Regulations in other written examinations requisite to certification as private or commercial pilots.

It should be understood that VFR Pilot Exam-O-Grams are nondirective in nature and are used solely as an information service.

The locations and addresses of the Federal Aviation Administration's General Aviation District Offices which appear on pages 41 through 43 may change from time to time, but up-to-date information with respect to GADO telephone numbers and FAA information services may be obtained from a current issue of the FAA *Airman's Information Manual* (AIM).

FEDERAL AVIATION ADMINISTRATION
VFR PILOT EXAM-O-GRAM NO. 1

Control Zone VFR Weather Minimums

A pilot plans a VFR cross-country flight with his destination airport located in a control zone. The terminal forecast indicates that the ceiling and visibility will be decreasing but will remain above VFR minimums until his estimated time of arrival. Upon arrival, he enters the control zone, contacts the tower, and indicates that he desires to land. He is cleared to land by the tower.

We shall assume that one or more of the following conditions actually existed at the time he entered the control zone:

(1) Flight or ground visibility was less than 3 miles, but not less than 1 mile; and

(2) Ceiling was *less than* 1,000 feet.

Analysis

1. *WAS THE PILOT LEGAL?* No! The fact that the control tower operator cleared him to land *does not mean* that he is legal. The tower controller is concerned with the safe, orderly, and expeditious movement of air traffic. He will refuse landing only on the basis of other traffic.
2. *WHY WAS THE PILOT NOT LEGAL?* FAR Part 91.105 states in part that no person may operate an aircraft under VFR within a control zone beneath the ceiling when the ceiling is less than 1,000 feet, or unless the flight visibility is at least 3 statute miles. It further states that no person may take off or land an aircraft, or enter the traffic pattern of an airport, under VFR, within a control zone unless ground visibility is at least 3 statute miles.
3. *WHAT ACTION SHOULD THE PILOT HAVE TAKEN TO BE LEGAL?* He should have remained clear of the control zone, called the control tower, and requested an air traffic control clearance to land. He should remember that such a clearance does not constitute authority for him to deviate from the minimum safe altitudes as given in FAR Part 91.79.
4. *WHAT ACTION IS DICTATED BY GOOD OPERATING PRACTICES?* He should have used reasonable restraint in exercising the prerogative of VFR flight, especially in terminal areas. The weather minimums and distances from clouds are *minimums*. Giving oneself a greater margin in specific instances is just good judgment.

* * * * *

FEDERAL AVIATION ADMINISTRATION
VFR PILOT EXAM-O-GRAM NO. 2

VFR Cruising Altitudes

Assume that you plan to make a VFR cross-country flight over terrain which has a constant elevation of 2,900 feet. After charting the course you determine that the true course is 188° and the magnetic variation is 12° E. According to the latest aviation weather reports there is a broken layer of clouds at 7,000 feet all along the route, and the visibility is unlimited along your intended route. The Winds Aloft Forcast indicates that the higher the altitude, the more favorable the wind direction and speed. If you intend to take advantage of the most favorable wind and still comply with Federal Aviation Regulations, you should decide upon a cruising altitude of:

(1) 5,500 feet M.S.L.
(2) 6,500 feet M.S.L.
(3) 7,500 feet M.S.L.
(4) 9,500 feet M.S.L.

Analysis

1. You wish to fly as high as legally possible to take advantage of the most favorable wind.
2. The base of the broken clouds is reported in height *above the surface.* Therefore, the base of the clouds is approximately 2,900 feet plus 7,000 feet, or 9,900 feet above sea level.
3. Cruising altitude is a level above M.S.L., but the rules pertaining to the selection of a cruising altitude appropriate to the flight's magnetic course are applicable *only when flying at or above 3,000 feet above the ground.*
4. This flight will be made at an altitude of 3,000 feet or more above the surface in order to take advantage of the more favorable winds at higher altitudes. Since you will be flying at 3,000 feet or more above the surface, you must, according to Federal Aviation Regulations, fly at a cruising altitude appropriate to the magnetic course. In this instance the magnetic course is 176° (true course 188° − 12° E. variation = 176°).
5. A magnetic course of 176° in this case requires that you fly at an altitude (above sea level) of an odd thousand plus 500 feet.
6. In this example, you must maintain a vertical distance under the base of any cloud formation of at least 500 feet. This rules out a cruising altitude of 9,500 feet. You do not choose 5,500 feet since you want to take advantage of better tailwinds at higher altitudes. You eliminate 6,500 feet because you must be at an odd thousand altitude plus 500 feet. Therefore, you select a cruising altitude of 7,500 feet, which meets legal requirements and gives you the advantage of more favorable winds.

* * * * *

FEDERAL AVIATION ADMINISTRATION
VFR PILOT EXAM-O-GRAM NO. 4

PREFLIGHT PLANNING FOR A VFR CROSS-COUNTRY FLIGHT

(Series 1)

1. *WHAT IS REQUIRED OF THE PILOT PRIOR TO THE FLIGHT?* FAR Part 91.5 states that, "Each pilot in commmand shall, before beginning a flight, familiarize himself with all available information concerning that flight. This information must include, for . . . a flight not in the vicinity of an airport, available weather reports and forecasts, fuel requirements, alternatives available if the planned flight cannot be completed, and any known traffic delays of which he has been advised by ATC."
2. *WHY IS THIS REQUIRED?* Careful preflight planning, in addition to satisfying FAR, enables the pilot to make his flight with greater confidence, ease, and safety. A review of fatal accident statistics for one year shows that as a "cause factor," *inadequate flight planning* was second only to failure to maintain airspeed resulting in a stall.
3. *WHAT ARE SOME SUGGESTED STEPS TO BE USED IN FLIGHT PLANNING?*
   (a) Assemble materials which will be needed on the flight such as current sectional charts, and other charts for the route to be flown; the latest Airman's Information Manual (AIM), and plotter, computer, etc. Take along charts which adjoin those for the route of flight. Thus, you are prepared in case it becomes necessary to circumnavigate bad weather, or in case you inadvertently fly off the chart on which your course is drawn.
   (b) On the sectional chart, draw course to be flown; study terrain; select appropriate check points; consider caution, restricted, and prohibited areas and Air Defense Identification Zones; study airport information, including en route airports that can be used in case of emergency; choose refueling stops; list frequencies of towers and navigational aids to be used and also Flight Service Stations reporting the weather.
   (c) Review weather maps and forcasts, current weather reports, winds aloft forecasts, pilot weather reports, SIGMETS, AIRMETS, Notices to Airmen (NOTAMS), and other information. Although you can get weather information by telephone, it is strongly recommended that a personal visit be made to the nearest Weather Bureau, Flight Service Station, or other flight service facility. A chapter on Flight Planning is contained in the FAA publication Private Pilot's Handbook of Aeronautical Knowledge, including a summary of flight assistance services available.
4. *WHAT FURTHER ACTION IS DICTATED BY GOOD OPERATING PRACTICES? File a flight plan!* This is *not required* by FAR but *is dictated by good operating practice.* It is extremely unlikely that air traffic rules can ever be written so as to eliminate the need for GOOD JUDGMENT in the planning and conduct of every flight. The pilot must make the final decision as to whether or not to make a flight. Use reasonable restraint in exercising this prerogative when preflight planning indicates the existence of marginal conditions of any kind.

BE SAFER—FILE A FLIGHT PLAN

* * * * *

FEDERAL AVIATION ADMINISTRATION

VFR PILOT EXAM-O-GRAM NO. 5

PREFLIGHT PLANNING FOR A VFR CROSS-COUNTRY FLIGHT

(Series 2)

1. *HOW MAY YOU OBTAIN WEATHER INFORMATION FOR PREFLIGHT PLANNING?* Visit your local weather bureau airport station or your nearest FAA Flight Service Station (FSS), or other flight service facility for a thorough weather briefing. The latest weather maps, area forecasts, terminal forecasts, winds aloft forecasts, winds aloft reports, advisories, hourly sequence reports, and pilot reports will be available. If a visit is impractical, telephone calls are welcomed. When telephoning, identify yourself as a pilot; state your intended route, destination, intended time of takeoff, and approximate time en route; and advise if you intend to fly only VFR.

   The "FSS Information and Weather Bureau Telephone Numbers" section of the AIM contains the location and telephone numbers of weather bureau offices and FSS's along with other pertinent information. Note the "restricted" telephone number listed for some weather bureau stations on which *only* aviation weather information is given. Some weather bureau stations have the Pilots' Automatic Telephone Weather Answering Service (PATWAS) which is a transcribed weather information service. For availability of weather information at various airports, check the Airport Directory, Airport/Facility Directory or "FSS Information and Weather Bureau Telephone Numbers" sections of AIM.

2. *WHAT IMPROVEMENTS HAVE BEEN MADE TO PROVIDE MORE AND BETTER WEATHER INFORMATION FOR PILOTS?* (1) An increasing number of Flight Service Stations are capable of facsimile reproduction of weather data (2) much of the raw weather data is computer anlyzed and processed (3) Many Flight Service Station specialists have been given specialized training in weather briefing techniques. More are being trained in these techniques (4) Equipment is provided at *selected* FSS's by which weather and NOTAM data will be recorded on tapes and broadcast continuously over the low-frequency (200–400 kc.) navigational NAVAID.
3. *WHAT FURTHER PREFLIGHT WEATHER PLANNING SHOULD BE DONE TO OBTAIN IN-FLIGHT WEATHER INFORMATION?* From your charts and the appropriate section of the AIM (FSS Information and Weather Bureau Telephone Numbers), make a list of the FSS's along your route that broadcast the weather information at 15 and 45 minutes past each hour. In addition to these two broadcasts, you may contact them at any time for further information.
4. *WHAT IS RECOMMENDED BY GOOD OPERATING PRACTICES?* If the preflight weather briefing reveals questionable or marginal weather, use reasonable restraint in flying VFR. *File a flight plan* and maintain a close check on the weather through your FSS's. Be sure to *close your flight plan* upon arrival.

* * * * *

FEDERAL AVIATION ADMINISTRATION
VFR PILOT EXAM-O-GRAM NO. 6

PREFLIGHT PLANNING FOR A VFR CROSS-COUNTRY FLIGHT

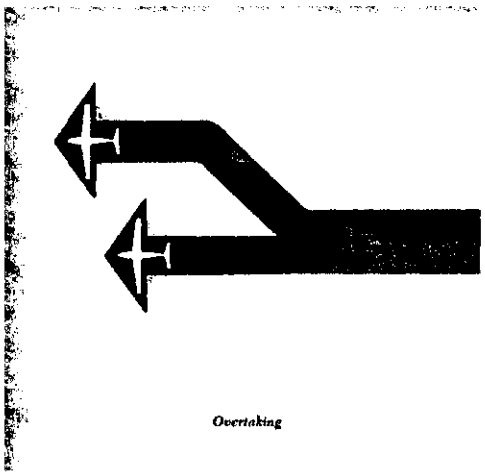
(Series 3)

1. *WHAT IS THE PURPOSE IN FILING A VFR FLIGHT PLAN?* It is excellent insurance and costs nothing but a few minutes of your time. The information in your flight plan will be used in search and rescue operations in the event of an emergency, so make it accurate.
2. *HOW, WHEN, AND WHERE SHOULD A VFR FLIGHT PLAN BE FILED?* Pilots are *urged* to file in person or by telephone to the nearest FSS *prior to departure.* Radio should be used for filing plans *only* when it is impossible to file in person or by telephone to avoid congestion on the already busy communications channels. When filing by telephone or radio, have all the necessary information written down in the order it appears on a flight plan so that you utilize the least amount of the controller's time and release the telephone circuit or radio frequency for someone else.
3. *HOW MAY A FLIGHT PLAN BE ACTIVATED AFTER IT IS FILED?* (1) If you have no radio capability, you must advise the Flight Service Station of this fact and specifically request that your flight plan be activated at your proposed departure time. (2) If you have the necessary radio capability, you should call the appropriate FSS or ATC facility advising them of your takeoff time and requesting that your flight plan be activated. When you reach your destination, BE SURE TO FILE AN ARRIVAL NOTICE.

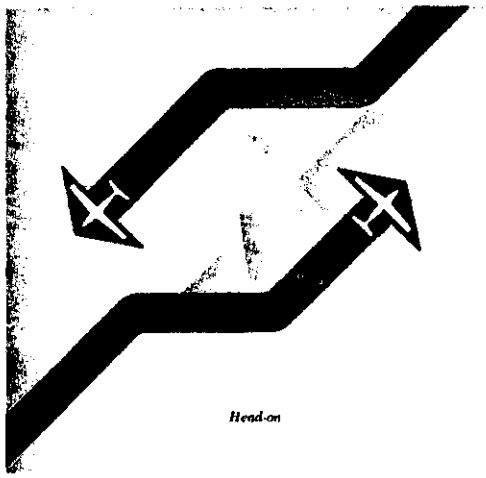
   FAR, Part 91.83, states that "When a flight plan has been filed, the pilot in command, upon canceling or completing the flight under the flight plan, shall notify the nearest FAA Flight Service Station or ATC facility." Pilots are urged to file arrival notices with the nearest FSS when practical to reduce congestion on control tower communications channels.
4. *WHAT IS RECOMMENDED BY GOOD OPERATING PRACTICES?* Except for the preflight action required in FAR 91.5 and filing an arrival or completion notice, the other procedures above come under good operating practices. Whether you file a flight plan or not, make regular position reports to FSS so that search and rescue action, if necessary, can be focused within the proper area. These FSS contacts will enable them to give you pertinent SIGMETS and AIRMETS, current altimeter settings, and upon request, they will provide complete information on weather conditions, status of airports, and NAVAIDS. Monitor the scheduled broadcasts made by these stations.

BE SAFER WITH A FLIGHT PLAN

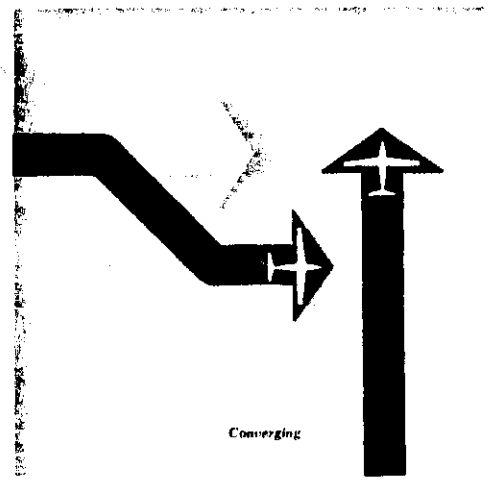
* * * * *



Overtaking



Head-on



Converging

FIGURE 1. Right-of-way.

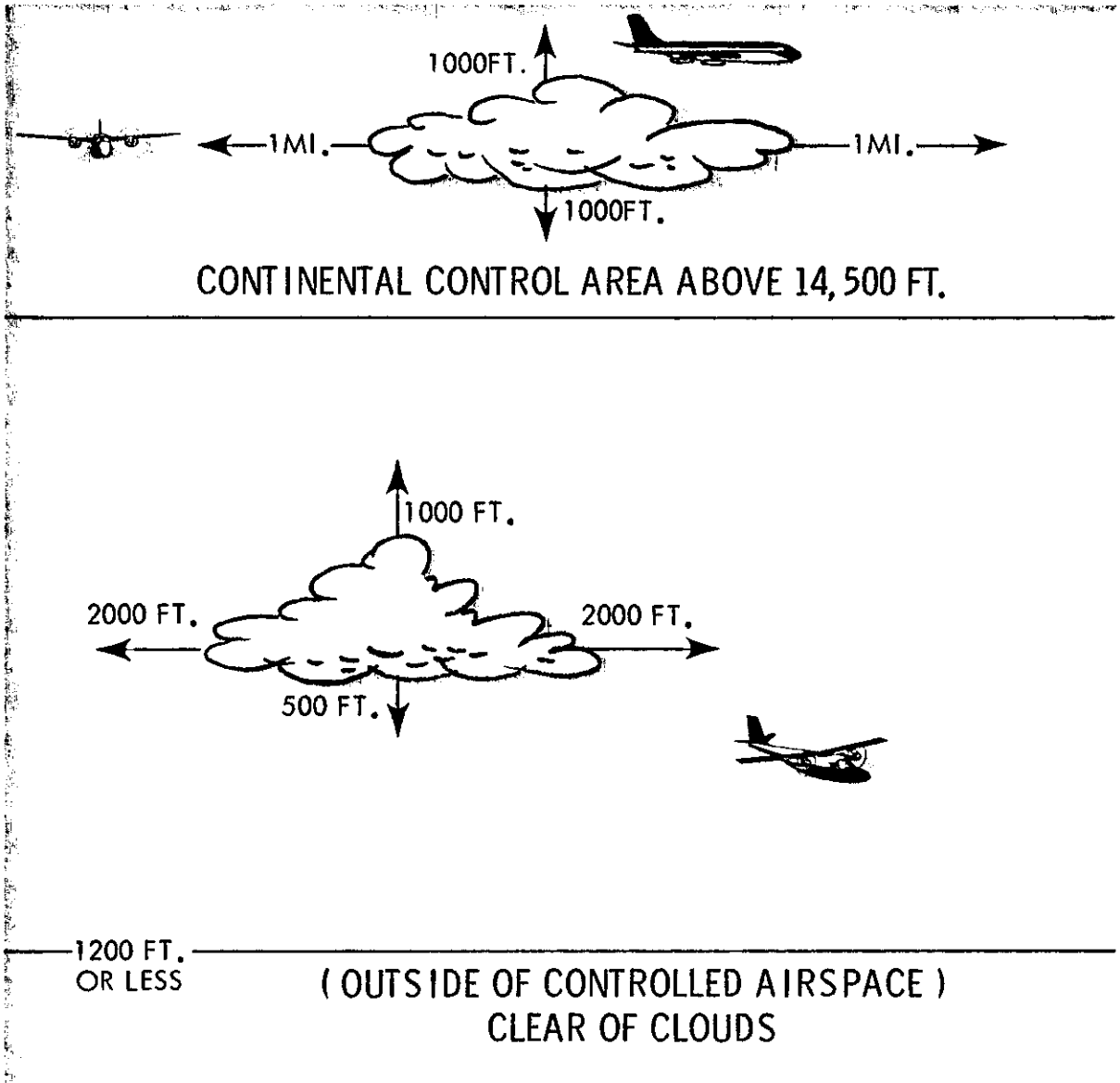


FIGURE 2. Minimum distances from clouds—VFR.

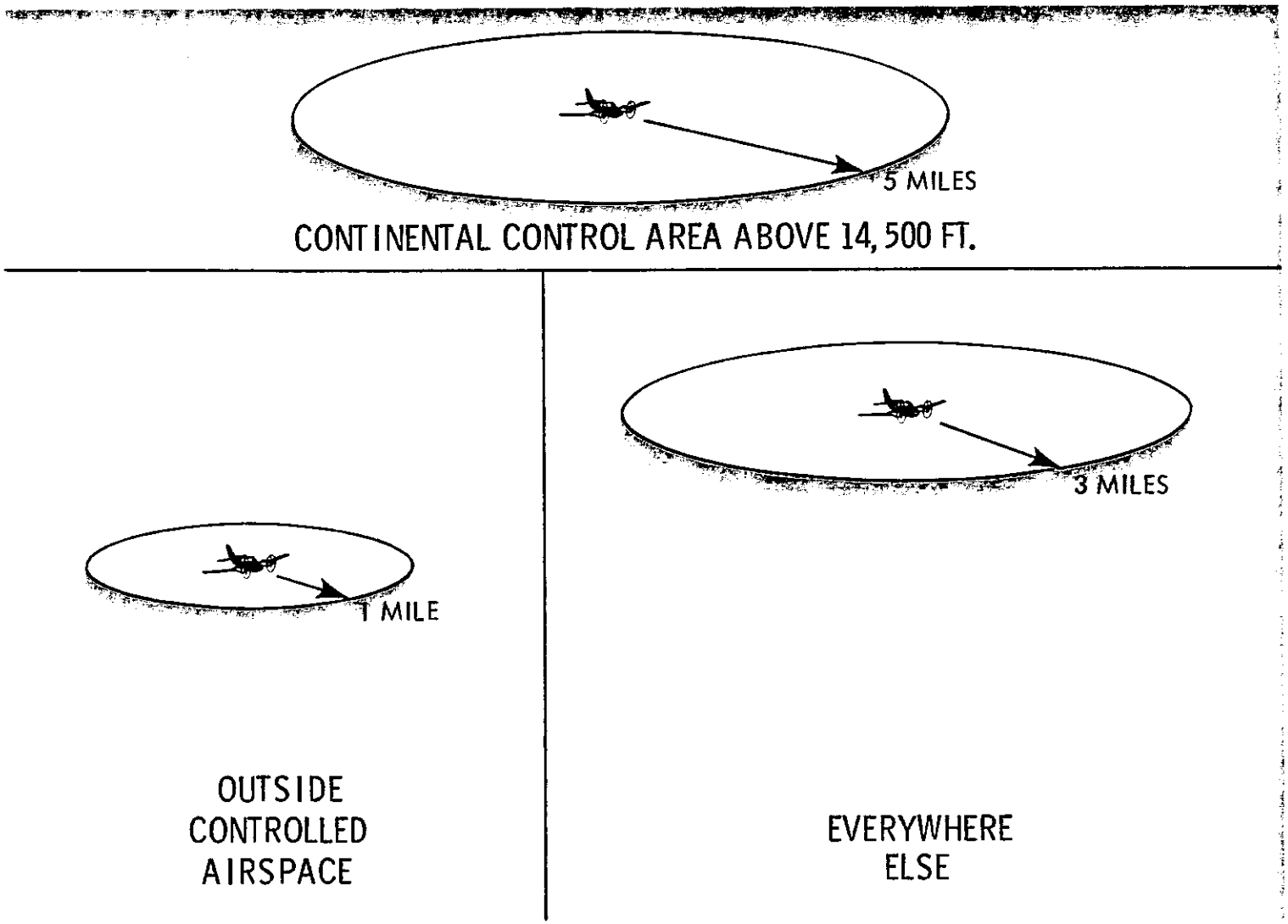
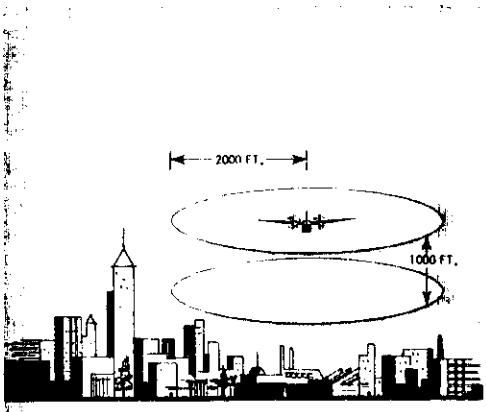
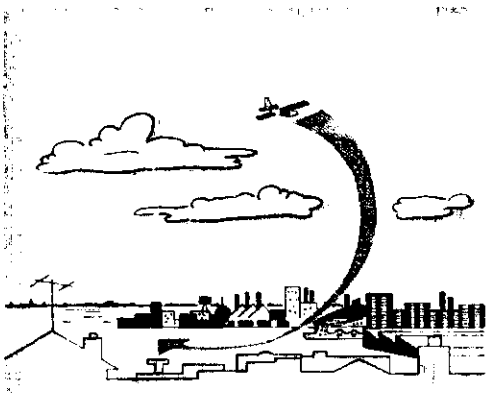


FIGURE 3. Minimum visibility—VFR.



Congested area



Allow for forced landing

Open areas

FIGURE 4. Minimum safe altitudes—VFR.

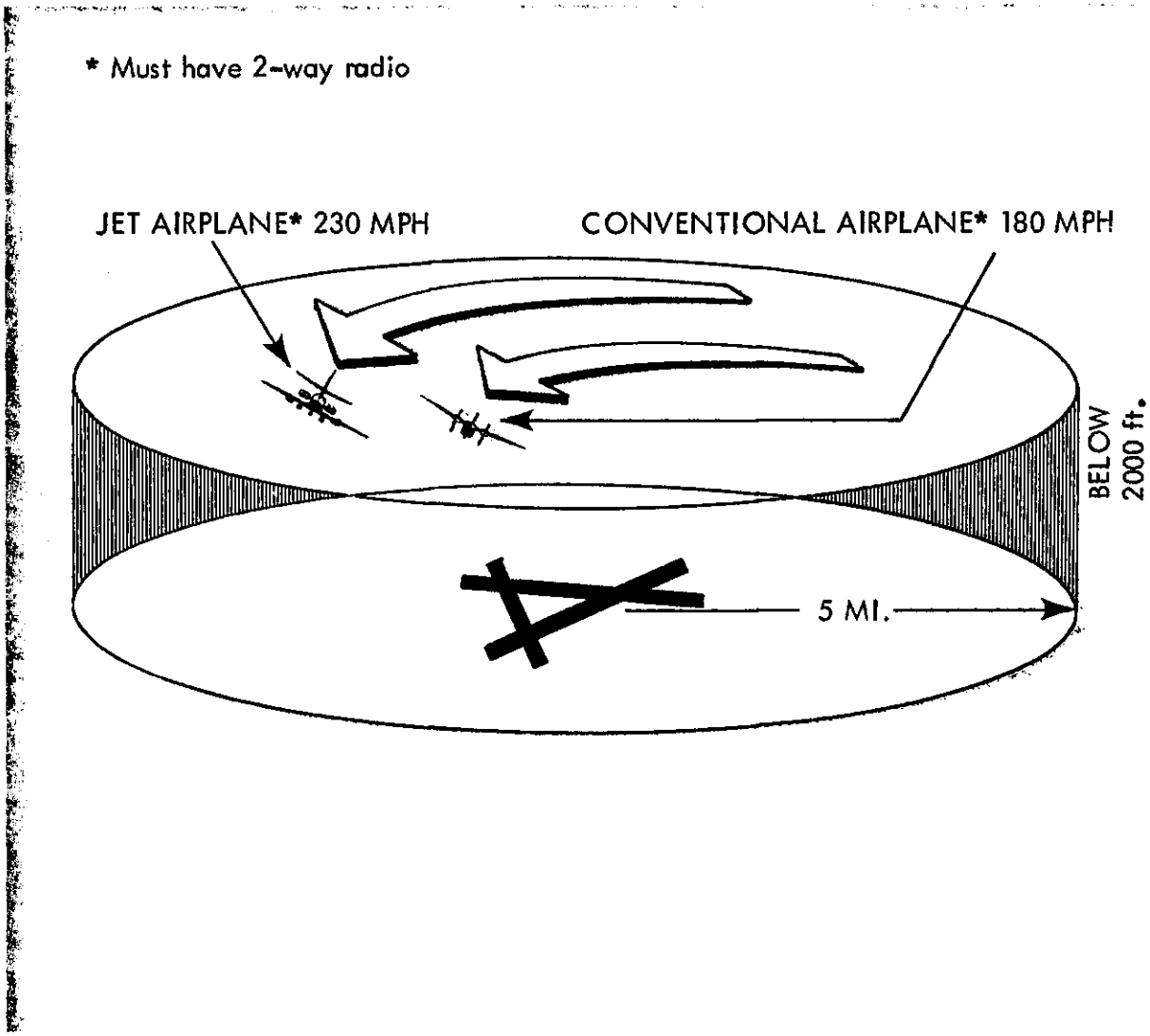


FIGURE 5. Airport traffic area.

CRUISING ALTITUDES – FLIGHT LEVELS

The following procedures apply to the operation of aircraft within the United States, excluding the Aleutian Islands west of 160°00'W and the State of Hawaii. They are also applicable within the airspace between the Continental United States and the adjacent ICAO Flight Information Regions (FIRs).

ALTIMETER SETTING

The vertical displacement of an aircraft shall be determined by reference to an altimeter set:

(a) Below 18,000 feet MSL, to the current altimeter setting reported by a station which is within 100 nautical miles, if possible. The altimeter of an aircraft without radio shall be set to the elevation of the airport of departure, or to an appropriate available setting. Vertical displacement determined by use of these settings are Cruising Altitudes and are expressed in feet above mean sea level.

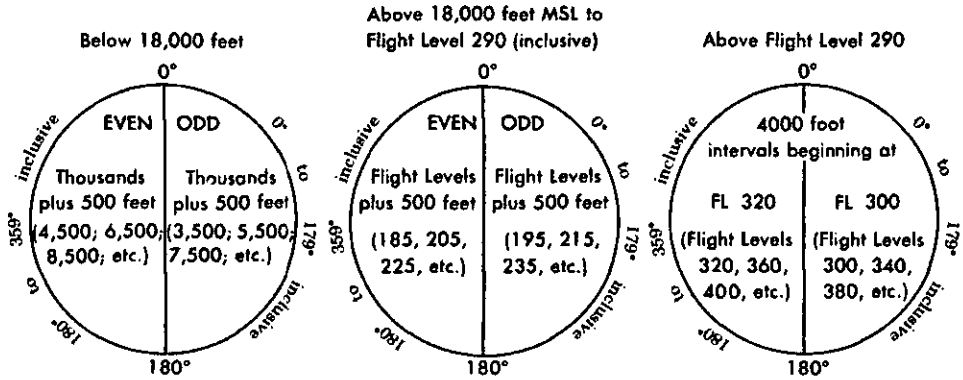
(b) At or above 18,000 feet MSL, to a standard setting of 29.92". Vertical displacements determined by that setting are Flight Levels and are expressed in 3-digit figures; for example, Flight Level 265 represents an indication of 26,500 feet on an altimeter set to 29.92". The use of Flight Levels below 18,000 feet MSL is not permissible. The lowest usable Flight Level, however, may be a figure which is numerically greater than 180, depending upon atmospheric conditions. For example, when the actual atmospheric pressure is 27.92", an aircraft at Flight Level 200 will be at an actual height of 18,000 feet MSL and, therefore, will be at the lowest usable Flight Level.

DIRECTION OF FLIGHT

When an aircraft is operated in level flight, the following Cruising Altitudes or Flight Levels, whichever is appropriate, shall be observed in accordance with the magnetic course being flown.

(a) Under Visual Flight Rules (VFR)

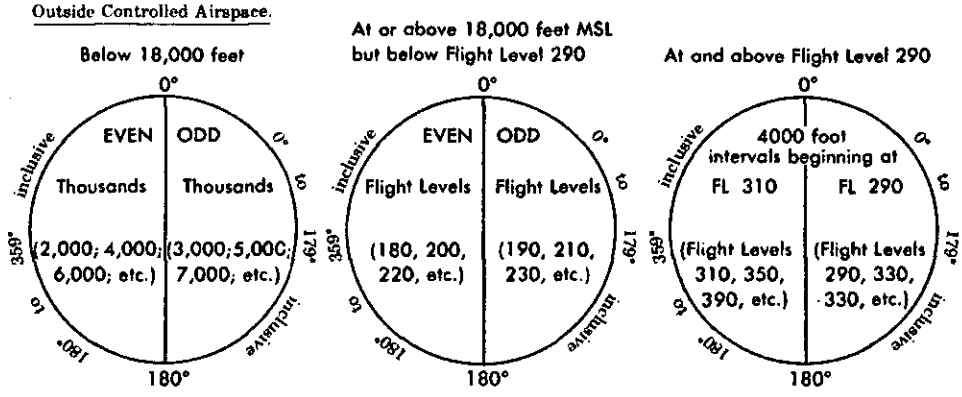
At 3,000 feet or more above the surface.



(b) Under Instrument Flight Rules (IFR)

Within Controlled Airspace, as authorized by an air traffic control facility, except that aircraft operating "on top", in the absence of an authorized specific altitude shall be flown as specified above for Visual Flight Rules.

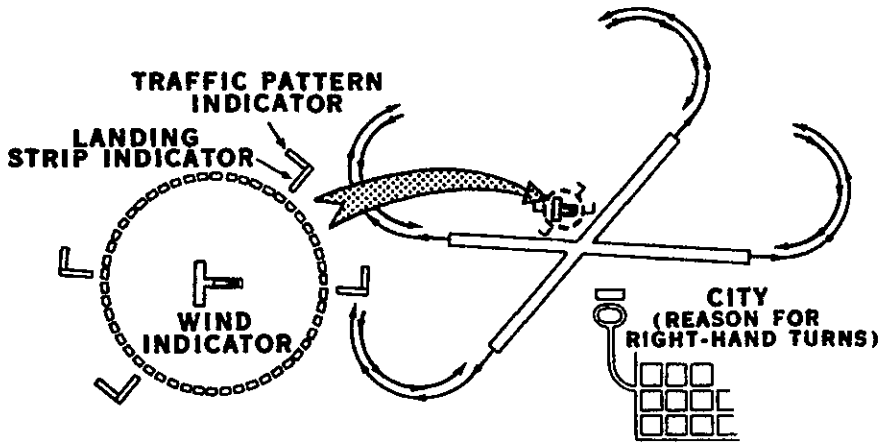
Outside Controlled Airspace.



Within ICAO Flight Information Regions (FIRs), including the Aleutian Islands west of 160°00'W, the State of Hawaii and the United States Possessions and Territories, Cruising Altitudes and Flight Levels shall be determined and observed in accordance with the ICAO Regional Supplementary Procedures.

FIGURE 6. VFR cruising altitudes and flight levels.

1. The segmented circle system consists of the following components: A wind indicator (sock) will be found at the center of the circle. Associated with the wind indicator and also located at the center of the circle, is the landing direction indicator, which may be a tetrahedron or tee, either free swinging or set for a particular runway. Although appearing as a single unit, the L-shaped indicator located at various positions around the segmented circle or at the end of a runway actually consists of two parts. That portion of the L in alignment with or parallel to a runway is known as the landing strip indicator. The other section of the L running at a right angle to the runway is known as the traffic pattern indicator.



2. Preparatory to a landing, the pilot should concern himself with the indicator for the approach end of the runway to be used. If the pilot will mentally enlarge the indicator for the runway to be used, the base and final approach legs of the traffic pattern to be flown immediately become apparent. Similar treatment of the indicator at the departure end of the runway will clearly indicate the direction of turn to join the cross wind leg of the traffic pattern after takeoff.

3. A flashing amber light in the center of the segmented circle or on top the control tower or adjoining building indicates clockwise flow of traffic is in effect at that time and that right turns shall be made unless otherwise authorized by Air Traffic Control.

4. Right hand flow of traffic may be also be shown by indicators located at either the segmented circle or ends of the runway. A pilot may determine the direction of traffic flow by circling the airport at an altitude above the airport traffic area.

FIGURE 7. The segmented circle system.

Color and Type of Signal	On the Ground	In flight
STEADY GREEN	Cleared for take-off	Cleared to land
FLASHING GREEN	Cleared to taxi	Return for landing (to be followed by steady green at proper time)
STEADY RED	Stop	Give way to other aircraft and continue circling
FLASHING RED	Taxi clear of landing area (runway) in use	Airport unsafe – do not land
FLASHING WHITE	Return to starting point on airport	
ALTERNATING RED & GREEN	General Warning Signal – Exercise Extreme Caution	

FIGURE 8. Visual traffic control light signals.

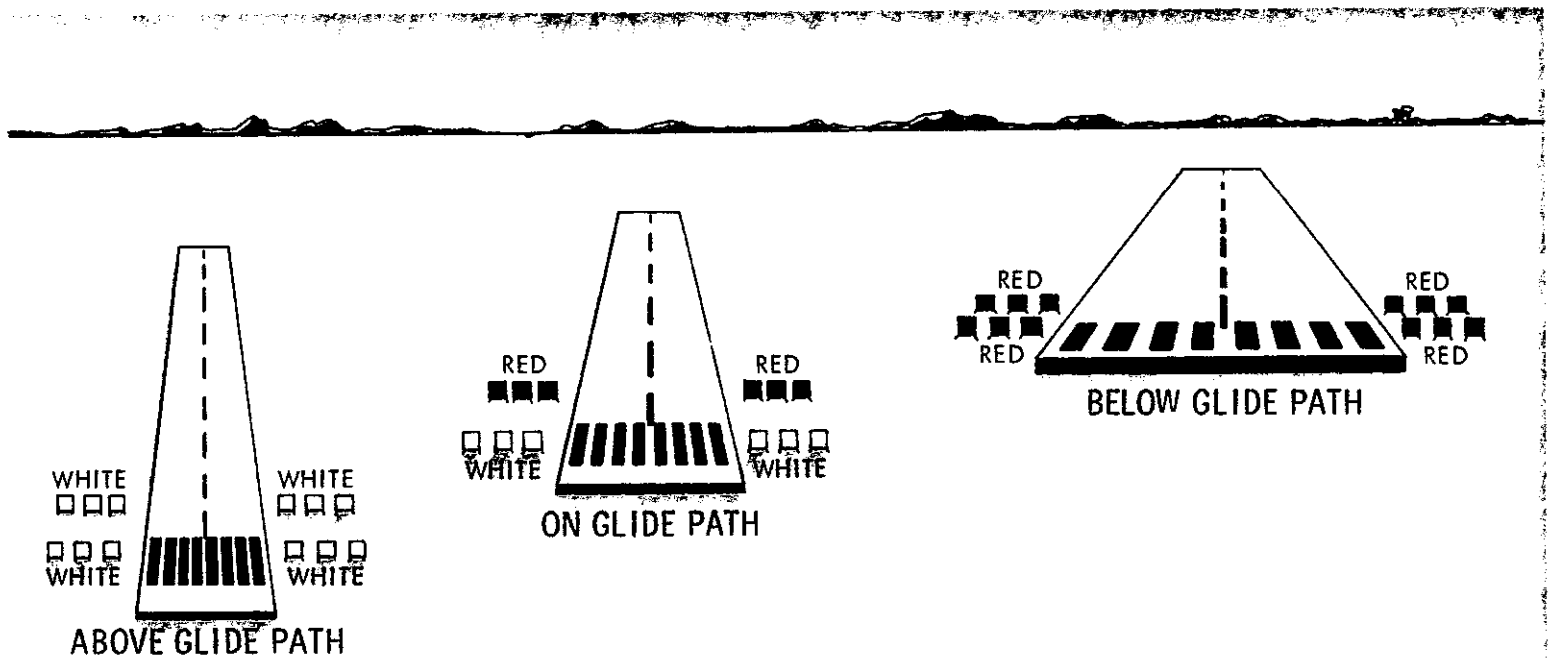


FIGURE 9. Visual approach slope indications.

STATUS OF THE FEDERAL AVIATION REGULATIONS
(As of January 31, 1967)

FAR PART NO.	TITLE	EFFECTIVE DATE	PRICE	CHANGES
1	Definitions and Abbreviations	5/15/62	$0.25	10
11	General Rule-Making Procedures	11/10/62	.20	6
13	Enforcement Procedures	11/10/62	.20	4
15	Nondiscrimination in Federally Assisted Programs of the Federal Aviation Agency	1/30/65	.20	----
21	Certification Procedures for Products and Parts	2/1/65	.45	10
23	Airworthiness Standards: Normal, Utility, and Acrobatic Category Airplanes	2/1/65	.65	3
25	Airworthiness Standards: Transport Category Airplanes	2/1/65	1.50	9
27	Airworthiness Standards: Normal Category Rotorcraft	2/1/65	.45	----
29	Airworthiness Standards: Transport Category Rotorcraft	2/1/65	.65	1
31	Airworthiness Standards: Manned Free Balloons	7/1/64	.20	2
33	Airworthiness Standards: Aircraft Engines	2/1/65	.20	2
35	Airworthiness Standards: Propellers	2/1/65	.20	1
37	Technical Standard Order Authorizations	1/4/65	.20	----
39	Airworthiness Directives	11/20/64	.10	1
43	Maintenance, Preventive Maintenance, Rebuilding, and Alteration	7/6/64	.30	6
45	Identification and Registration Marking	4/20/64	.20	2
47	Aircraft Registration	5/1/66	.20	2
49	Recording of Aircraft Titles and Security Documents	8/18/64	.20	2
61	Certification: Pilots and Flight Instructors	11/1/62	.60	19
63	Certification: Flight Crewmembers Other Than Pilots	11/1/62	.30	7
65	Certification: Airmen Other Than Flight Crewmembers	11/1/62	.30	9
67	Medical Standards and Certification	11/1/62	.25	5
71	Designation of Federal Airways, Controlled Airspace, and Reporting Points	12/12/62	.20	3
73	Special Use Airspace	12/12/62	.15	1
75	Establishment of Jet Routes	12/12/62	.20	2
77	Objects Affecting Navigable Airspace	5/1/65	.35	1
91	General Operating and Flight Rules	9/30/63	.60	21
93	Special Air Traffic Rules and Airport Traffic Patterns	9/30/63	.30	9
*95	IFR Altitudes	9/30/63	.20	----
*97	Standard Instrument Approach Procedures	9/30/63	.20	----
99	Security Control of Air Traffic	9/30/63	.25	5
101	Moored Balloons, Kites, Unmanned Rockets and Unmanned Free Balloons	9/30/63	.20	1
103	Transportation of Dangerous Articles and Magnetized Materials	9/30/63	.20	2
105	Parachute Jumping	2/26/63	.20	2
121	Certification and Operations: Air Carriers and Commercial Operators of Large Aircraft	4/1/65	1.25	16
127	Certification and Operations of Scheduled Air Carriers with Helicopters	11/2/64	.35	6
129	Operations of Foreign Air Carriers	4/1/64	.15	4

133	Rotorcraft External-Load Operations	5/17/64	.20	2
135	Air Taxi Operators and Commercial Operators of Small Aircraft	4/7/64 and 9/7/64	.30	2
137	Agricultural Aircraft Operations	1/1/66	.25	2
141	Pilot Schools	9/17/62	.30	3
143	Ground Instructors	9/17/62	.15	2
145	Repair Stations	9/17/62	.35	7
147	Mechanic Schools	9/17/62	.20	-------
149	Parachute Lofts	9/17/62	.20	1
151	Federal Aid to Airports	2/11/63	.45	15
153	Acquisition of U. S. Land for Public Airports	2/11/63	.20	1
155	Release of Airport Property from Surplus Property Disposal Restrictions	2/11/63	.20	-------
157	Notice of Construction, Alteration, Activation, and Deactivation of Airports	3/2/66	.15	-------
159	National Capital Airports	10/1/62	.30	8
161	(Deleted effective 6/1/66)	-------	-------	-------
163	(Deleted effective 7/1/65)	-------	-------	-------
165	Wake Island Code	9/4/62	.30	1
167	Annette Island, Alaska, Airport	8/21/66	.15	-------
171	Non-Federal Navigation Facilities	10/1/64	.25	2
181	Seal			-------
183	Representatives of the Administrator			2
185	Testimony by Employees and Production of Records in Legal Proceedings	6/30/62	.25	1
187	Fees for Copying and Certifying Federal Aviation Agency Records			2
189	Use of Federal Aviation Agency Communications Systems			-------

* Due to the complexity, length, and frequency of issuance, enroute IFR altitudes and instrument approach procedures are published in the Federal Register, the Airman's Information Manual, and are depicted on the aeronautical charts. Therefore, they are NOT included in the basic Parts 95 and 97.

INSTRUCTIONS FOR ORDERING

Orders for the FARs should include remittance by check or money order made payable to the Superintendent of Documents, and should be addressed to:

Superintendent of Documents
U. S. Government Printing Office
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Orders from foreign countries should include an additional amount of one-fourth the purchase price to cover foreign mailing. Remittance should be by International Money Order or by a draft on a U.S. Bank.

GENERAL AVIATION DISTRICT OFFICES

Address correspondence to: Supervising Inspector, GADO, Federal Aviation Administration.

State	*City*	*Address*
ALABAMA	Birmingham	6500 43d Ave. N., Birmingham, Ala. 35206.
ALASKA	Anchorage	1714 East 5th Ave., Anchorage, Alaska 99501.
	Fairbanks	5640 Airport Way, Fairbanks, Alaska 99701.
	Juneau	Star Route 1, Terminal Bldg., Juneau Municipal Airport, Juneau, Alaska 99801.
ARIZONA	Phoenix	2800 Sky Harbor Blvd., Sky Harbor Airport, Phoenix, Ariz. 85034.
ARKANSAS	Little Rock	Terminal Annex Bldg., RFD 77, Adams Field, Little Rock, Ark. 72202.
CALIFORNIA	Fresno	Government Agency Bldg., Suite 1–B, Fresno, Calif. 93727.
	Long Beach	2815 East Spring St., Long Beach Municipal Airport, Long Beach, Calif. 90806.
	Oakland	Post Office Box 2397, Oakland, Calif. 94614.
	Ontario	Administration Bldg., Ontario International Airport, Ontario, Calif. 91761.
	Sacramento	Municipal Airport, Sacramento, Calif. 95822.
	San Diego	3110 Goddard Way, Administration Bldg., Lindberg Field, San Diego, Calif. 92101.
	Santa Monica	3200 Airport Ave., Santa Monica, Calif. 90405.
	Van Nuys	16700 Roscoe Blvd., Van Nuys, Calif. 91406.
COLORADO	Broomfield	Jefferson County Airport, Broomfield, Colo. 80020.
DISTRICT OF COLUMBIA	Washington	West Bldg., Washington National Airport, Washington, D.C. 20001.
FLORIDA	Jacksonville	Post Office Box 1527, Jacksonville, Fla. 32201.
	Miami	Post Office Box 365, Opa Locka, Fla. 33054.
	St. Petersburg	St. Petersburg-Clearwater Airport, St. Petersburg, Fla. 33732.
GEORGIA	Atlanta	3999 Gordon Rd. SW., Atlanta, Ga. 30331.
HAWAII	Honolulu	Post Office Box 4009, Honolulu, Hawaii 96812.
IDAHO	Boise	3113 Airport Way, Boise, Idaho 83706.
ILLINOIS	Chicago	Post Office Box 337, West Chicago, Ill. 60185.
	Springfield	Post Office Box 197, Springfield, Ill. 62705.
INDIANA	Indianapolis	Bldg. 1, Municipal Airport, Indianapolis, Ind. 46241.
	South Bend	St. Joseph County Airport, South Bend, Ind. 46628.

GENERAL AVIATION DISTRICT OFFICES—Continued

State	*City*	*Address*
IOWA	Des Moines	Room 132, Admin. Bldg., Des Moines Municipal Airport, Des Moines, Iowa 50321.
KANSAS	Kansas City	2d Floor, Administration Bldg., Fairfax Airport, Kansas City, Kans. 66115.
	Wichita	Flight Standards Bldg., Municipal Airport, Wichita, Kans. 67209.
KENTUCKY	Louisville	Administrative Bldg., Bowman Field, Louisville, Ky. 40205.
LOUISIANA	New Orleans	Room 227, New Orleans Lakefront Airport, New Orleans, La. 70126.
	Shreveport	Admin. Bldg., Downtown Airport, Shreveport, La. 71107.
MAINE	Portland	974 Westbrook St., Portland, Maine 04102.
MARYLAND	Baltimore	Friendship International Airport, Baltimore, Md. 21240.
MASSACHUSETTS	Norwood	Municipal Airport, Norwood, Mass. 02062.
	Westfield	Post Office Box 544, Westfield, Mass. 01085.
MICHIGAN	Ypsilanti	Willow Run Airport, Ypsilanti, Mich. 48197.
	Grand Rapids	Kent County Airport, Grand Rapids, Mich. 49508.
MINNESOTA	Minneapolis	6301 34th Ave. S., Minneapolis, Minn. 55450.
MISSISSIPPI	Jackson	Post Office Box 5855, Pearl Station, Jackson Miss. 39208.
MISSOURI	Berkeley	9275 Genaire Dr., Berkeley, Mo. 63134.
MONTANA	Billings	Room 205, Admin. Bldg., Billings-Logan Field, Billings, Mont. 59101.
	Helena	Post Office Box 1167, Helena, Mont. 59601.
NEBRASKA	Lincoln	General Aviation Bldg., Lincoln Municipal Airport, Lincoln, Nebr. 68524.
NEVADA	Reno	2601 East Plumb Lane, Reno, Nev. 89502.
NEW JERSEY	Teterboro	Teterboro Air Terminal, Teterboro, N.J. 07608.
NEW MEXICO	Albuquerque	Post Office Box 9045, Albuquerque, N. Mex. 87119.
NEW YORK	Albany	Albany County Airport, Albany, N.Y. 12211.
	Lindenhurst	Zahns Airport, North Wellwood Ave., Lindenhurst, N. Y. 11757.
	LaGuardia	Post Office Box 575, LaGuardia Airport, Flushing, N.Y. 11371.
	Rochester	Municipal Airport, Rochester, N.Y. 14624.
NORTH CAROLINA	Charlotte	Municipal Airport Post Office, Charlotte, N.C. 28208.
	Raleigh	Post Office Box 1858, Raleigh, N.C. 27602.
NORTH DAKOTA	Fargo	Post Office Box 2128, Fargo, N. Dak. 58103.
OHIO	Cincinnati	Administration Bldg., Lunken Airport, Cincinnati, Ohio 45226.
	Cleveland	Cleveland Hopkins Airport, Bldg. W–11, Cleveland, Ohio 44135.
	Columbus	Terminal Bldg., Box 214 Port Columbus Airport, Columbus, Ohio 43219.

GENERAL AVIATION DISTRICT OFFICES—Continued

State	*City*	*Address*
OKLAHOMA	Oklahoma City	FAA Building, Wiley Post Airport, Bethany, Okla. 73008.
	Tulsa	Business Aircraft Terminal, Tulsa International Airport, Tulsa, Okla. 74115.
OREGON	Portland	Service Office Bldg., 5410 Northeast Marine Dr., Portland, Oreg. 97218.
PENNSYLVANIA	Allentown	Allentown-Bethlehem-Easton Airport, Allentown, Pa. 18103.
	Harrisburg	Post Office Box 390, New Cumberland, Pa. 17070.
	Philadelphia	Administration Bldg., 1st Floor, North Philadelphia Airport, Philadelphia, Pa. 11914.
	Pittsburgh	Allegheny County Airport, West Mifflin, Pa. 15122.
SOUTH CAROLINA	Columbia	Metropolitan Airport, Box 200, West Columbia, S.C. 29169.
SOUTH DAKOTA	Rapid City	R.F.D. 2, Box 633B, Rapid City, S. Dak. 57705.
TENNESSEE	Memphis	Post Office Box 30050, Memphis, Tenn. 38118.
	Nashville	West Terminal Bldg., Metropolitan Airport, Nashville, Tennessee 37127
TEXAS	Dallas	3323 Grove St., Dallas, Tex. 75235.
	El Paso	Room 202, Federal Aviation Bldg., El Paso, Tex. 79925.
	Fort Worth	Post Office Box 1689, Fort Worth, Tex. 76101.
	Houston	Post Office Box 60158, Houston, Tex. 77060.
	Lubbock	Post Office Box 5247, Lubbock, Tex. 79415.
	San Antonio	Room 201, Executive Aircraft Terminal, International Airport, San Antonio, Tex. 78126.
UTAH	Salt Lake City	2398 West North Temple, Salt Lake City, Utah 84116.
VIRGINIA	Richmond	Byrd Field, Sandston, Va. 23150.
WASHINGTON	Seattle	Room 104, FAA Bldg., Boeing Field, Seattle, Wash. 98108.
	Spokane	Post Office Box 247, Parkwater Station, Spokane, Wash. 99211.
WEST VIRGINIA	Charleston	Kanawha Airport, Charleston, W. Va. 25311
WISCONSIN	Milwaukee	General Mitchell Field, Milwaukee, Wis. 53207.
WYOMING	Cheyenne	Post Office Box 2166, Cheyenne, Wyo. 82002.

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