FAA-G-8082-13

INSTRUMENT RATING KNOWLEDGE TEST GUIDE

U.S. Department Of Transportation
Federal Aviation Administration

INSTRUMENT RATING
KNOWLEDGE TEST GUIDE

1999

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
Flight Standards Service

PREFACE

FAA-G-8082-13, Instrument Rating Knowledge Test Guide, provides information for obtaining authorization to take the instrument rating knowledge tests. Appendix 1 provides lists of reference materials and subject matter knowledge codes, and a list of computer testing designees (CTD's).

Changes to the subject matter knowledge codes will be published in AC 60-25, Reference Materials and Subject Matter Knowledge Codes for Airman Knowledge Testing.

The current Flight Standards Service airman training and testing material, questions banks, and subject matter knowledge codes for all airman certificates and ratings can be obtained from the Regulatory Support Division, AFS-600, home page on the Internet.

The Regulatory Support Division's Internet address is: http://www.mmac.jccbi.gov/afs/afs600

FAA-G-8082-13 supersedes Advisory Circular (AC) 61-119, dated 1995, and can be purchased from the Superintendent of Documents, U.S. Government Printing Office (GPO), Washington, DC 20402-9325, or from U.S. Government Bookstores located in major cities throughout the United States. For an explanation of why the Instrument Rating Knowledge Test Guide was taken out of the AC system, refer to AC 60-29, Renumbering of Airman Training and Testing Publications.

Comments regarding this guide should be sent to the Federal Aviation Administration, Airman Testing Standards Branch, AFS-630, Attn: Instrument Rating Certification Area Manager, P.O. Box 25082, Oklahoma City, OK 73125.

CONTENTS

APPENDIX 1

APPENDIX 2

INSTRUMENT RATING
KNOWLEDGE TEST GUIDE

INTRODUCTION

What is required to become a skilled and effective instrument rated pilot? Although some individuals possess more knowledge and skills than others, no one is a natural-born pilot. Competent instrument rated pilots become so through study, training, and experience.

This knowledge test guide will answer most of your questions about instrument rating knowledge tests, by covering the following areas: knowledge test eligibility requirements; knowledge areas on the tests; descriptions of the tests; process for taking a knowledge test; use of test aids and materials; cheating or other unauthorized conduct; validity of Airman Test Reports; and retesting procedures.

Knowledge tests for the instrument rating consist of a selection of questions in the areas that pertain to the Code of Federal Regulations (CFR's) requirements, attitude instrument flying, flight planning, meteorology, the pilot's responsibility when operating under instrument flight rules (IFR); and IFR operations pertinent to preflight, departure, en route, and arrival. The Instrument Rating—Foreign pilot test includes questions that pertain to instrument flight rules and related procedures. These tests can be administered by any authorized testing center.

KNOWLEDGE TEST ELIGIBILITY REQUIREMENTS

The general prerequisites for an instrument rating require that you have a combination of experience, knowledge, and skill. For specific information pertaining to certification, you should carefully review the appropriate sections of Title 14 of the Code of Federal Regulations (14 CFR) part 61 for instrument rating requirements.

Additionally, to be eligible for an instrument rating, you must:

- Hold at least a current private pilot certificate with an aircraft rating appropriate to the instrument rating sought.
- Be able to read, speak, write, and understand the English language.
- Show satisfactory completion of ground instruction or home study course required by 14 CFR part 61 for the certificate or rating sought.
- Present as personal identification an airman certificate, driver's license, or birth certificate showing that you meet the age requirements prescribed for the certificate sought no later than 2 years from the date of application for the test.

KNOWLEDGE AREAS ON THE TESTS

To be eligible to take an instrument rating knowledge test, you must have received ground instruction, or have logged home study in all the following areas:

- The CFR's that apply to flight under IFR conditions, the Airman's Information Manual (AIM), and the IFR air traffic system and procedures.
- Dead reckoning appropriate to IFR navigation. IFR navigation by radio aids using the VOR and any other navigation system installed in a particular aircraft, and ILS systems. The use of IFR charts and instrument approach procedures.
- The procurement and use of aviation weather reports and forecasts, and the elements of forecasting weather trends on the basis of that information and personal observation of weather conditions.
- The safe and efficient operation of aircraft, as appropriate, under instrument weather conditions.

DESCRIPTIONS OF THE TESTS

All test questions are the objective, multiple-choice type. Each question can be answered by the selection of a single response. Each test question is independent of other questions; therefore, a correct response to one does not depend upon, or influence the correct response to another.

A significant number of the questions are "category-specific" and appear only on the airplane test, or rotorcraft/helicopter test. The 20-question "added rating" tests are composed mostly of these

"category-specific" questions. A 20-question "added rating" test is administered to an instrument instructor applicant who already holds an instrument instructor rating in one category (airplane or helicopter) and wishes to meet the knowledge requirements for the other category. The "category-specific" questions pertain to such knowledge areas as recency of experience and weather minimums.

If you are pursuing a powered lift instrument rating, you may take either the airplane or the rotorcraft/helicopter knowledge test. You are not required to take an additional knowledge test when you already hold an instrument rating.

This guide will help in preparing you to take one or all of the following tests developed from the instrument rating knowledge bank of questions.

- ✈ Instrument Rating—Airplane
- ✈ Instrument Rating—Rotorcraft/Helicopter
- ✈ Instrument Rating—Foreign Pilot
- ✈ Instrument Flight Instructor—Airplane
- ✈ Instrument Flight Instructor—Rotorcraft/Helicopter
- ✈ Instrument Flight Instructor—Airplane (Added Rating)
- ✈ Instrument Flight Instructor—Rotorcraft/Helicopter (Added Rating)
- ✈ Ground Instructor—Instrument

Ground Instructor—Instrument applicants should be prepared to answer any question that appears in the instrument question bank as they are expected to teach all instrument ratings.

The following tests each contain 60 questions, and you are allowed 2.5 hours to complete each test.

- ✈ Instrument Rating—Airplane
- ✈ Instrument Rating—Rotorcraft/Helicopter

The following tests each contain 50 questions, and you are allowed 2.5 hours to complete each test.

- ✈ Instrument Flight Instructor—Airplane
- ✈ Instrument Flight Instructor—Rotorcraft/Helicopter
- ✈ Ground Instructor—Instrument
- ✈ Instrument Rating—Foreign Pilot

All added rating tests contain 20 questions, and you are allowed 1 hour to complete each test.

A score of 70 percent must be attained to successfully pass each test.

Communication between individuals through the use of words is a complicated process. In addition to being an exercise in the application and use of aeronautical knowledge, a test is also an exercise in communication since it involves the use of the written language. Since the tests involve written rather than spoken words, communication between the test writer and the person being tested may become a difficult matter if care is not exercised by both parties. Consequently, considerable effort is expended to write each question in a clear, precise manner. Make sure you carefully read the instructions given with each test, as well as the statements in each test item.

When taking a test, keep the following points in mind:

- Answer each question in accordance with the latest regulations and guidance publications.
- Read each question carefully before looking at the possible answers. You should clearly understand the problem before attempting to solve it.
- After formulating an answer, determine which choice corresponds with that answer. The answer chosen should completely resolve the problem.
- From the answer given, 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 are derived from popular misconceptions.
- If a certain question is difficult for you, it is best to mark it for review and proceed to the other questions. After you answer the less difficult questions, return to those which you marked for review and answer them. The review marking procedure will be explained to you prior to starting the test. Although the computer should alert you to unanswered questions, make sure every question has an answer recorded. This procedure will enable you to use the available time to the maximum advantage.
- When solving a calculation problem, select the answer closest to your solution. The problem has been

checked with various types of calculators; therefore, if you have solved it correctly, your answer will be closer to the correct answer than any of the other choices.

PROCESS FOR TAKING A KNOWLEDGE TEST

The Federal Aviation Administration (FAA) has available hundreds of computer testing centers worldwide. These testing centers offer the full range of airman knowledge tests including military competence, instrument foreign pilot, and pilot examiner predesignated tests. Refer to appendix 1 of this guide for a list of computer testing designees (CTD's).

The first step in taking a knowledge test is the registration process. You may either call the central 1-800 numbers (refer to appendix 1 for 1-800 numbers) or simply use the walk-in basis. If you choose to use the 1-800 number to register, you will need to select a testing center, schedule a test date, and make financial arrangements for test payment. You may register for tests several weeks in advance, and you may cancel your appointment according to the CTD's cancellation policy. If you do not follow the CTD's cancellation policies, you could be subject to a cancellation fee.

The next step in taking a knowledge test is providing proper identification. Testing center personnel will not begin the test until your identification is verified.

Authorization requirements should be determined before contacting or going to the computer testing center. Testing center personnel cannot begin the test until provided with the proper documents. A limited number of tests require no authorization. In the instrument rating test area an authorization is not required for Instrument Flight Instructor—Airplane, Instrument Flight Instructor—Helicopter, Instrument Rating—Foreign Pilot, and Ground Instructor—Instrument.

Acceptable forms of authorization:

- A certificate of graduation or a statement of accomplishment certifying the satisfactory completion of the ground school portion of a course from an FAA-certificated pilot school.
- A certificate of graduation or a statement of accomplishment certifying the satisfactory completion of the ground school portion of a course from an agency such as a high school, college, adult education program, U.S. Armed Force, ROTC Flight Training School, or Civil Air Patrol.
- A written statement or logbook endorsement from an authorized instructor certifying that you have accomplished a ground training or home study course required for the rating sought and you are prepared for the knowledge test.
- Failed Airman Test Report, passing Airman Test Report, or expired Airman Test Report (pass or fail), provided that you still have the original Airman Test Report in your possession.

Before you take the actual test, you will have the option to take a sample test. The actual test is time limited; however, you should have sufficient time to complete and review your test.

Upon completion of the knowledge test, you will receive your Airman Test Report, with the testing center's embossed seal, which reflects your score.

The Airman Test Report lists the subject matter knowledge codes for questions answered incorrectly. The total number of subject matter knowledge codes shown on the Airman Test Report is not necessarily an indication of the total number of questions answered incorrectly. Appendix 1 contains a list of subject matter knowledge codes that refer to the knowledge areas. Study these knowledge areas to improve your understanding of the subject matter.

Your instructor is required to provide instruction on each of the knowledge areas listed on your Airman Test Report, and complete an endorsement of this instruction. The Airman Test Report must be presented to the examiner prior to taking the practical test. During the oral portion of the practical test, the examiner is required to evaluate the noted areas of deficiency.

Should you require a duplicate Airman Test Report due to loss or destruction of the original, send a signed request accompanied by a check or money order for the amount of $1 payable to the FAA. Your request should be sent to the Federal Aviation Administration, Airmen Certification Branch, AFS-760, P.O. Box 25082, Oklahoma City, OK 73125.

USE OF TEST AIDS AND MATERIALS

Airman knowledge tests require applicants to analyze the relationship between variables needed to solve aviation problems, in addition to testing for accuracy of a mathematical calculation. The intent is that all applicants are tested on concepts rather than rote calculation ability. It is permissible to use certain calculating devices when taking airman knowledge tests, provided they are used within the following guidelines. The term "calculating devices" is interchangeable with such items as calculators, computers, or any similar devices designed for aviation-related activities.

1. Guidelines for use of test aids and materials. The applicant may use test aids and materials within the guidelines listed below, if actual test questions or answers are not revealed.

a. Applicants may use test aids, such as scales, straightedges, protractors, plotters, navigation computers, log sheets, and all models of aviation-oriented calculating devices that are directly related to the test. In addition, applicants may use any test materials provided with the test.

b. Manufacturer's permanently inscribed instructions on the front and back of such aids listed in 1(a), e.g., formulas, conversions, regulations, signals, weather data, holding pattern diagrams, frequencies, weight and balance formulas, and air traffic control procedures are permissible.

c. The test proctor may provide calculating devices to applicants and deny them use of their personal calculating devices if the applicant's device does not have a screen that indicates all memory has been erased. The test proctor must be able to determine the calculating device's erasure capability. The use of calculating devices incorporating permanent or continuous type memory circuits without erasure capability are prohibited.

d. The use of magnetic cards, magnetic tapes, modules, computer chips, or any other device upon which prewritten programs or information related to the test can be stored and retrieved are prohibited. Printouts of data will be surrendered at the completion of the test if the calculating device used incorporates this design feature.

e. The use of any booklet or manual containing instructions related to the use of the applicant's calculating device is not permitted.

f. Dictionaries are not allowed in the testing area.

g. The test proctor makes the final determination relating to test materials and personal possessions that the applicant may take into the testing area.

2. Guidelines for dyslexic applicant's use of test aids and materials. A dyslexic applicant may request approval from the local Flight Standards District Office (FSDO) to take an airman knowledge test using one of the three options listed in preferential order:

a. Option One. Use current testing facilities and procedures whenever possible.

b. Option Two. Applicants may use Franklin Speaking Wordmaster® to facilitate the testing process. The Wordmaster® is a self-contained electronic thesaurus that audibly pronounces typed in words and presents them on a display screen. It has a built-in headphone jack for private listening. The headphone feature will be used during testing to avoid disturbing others.

c. Option Three. Applicants who do not choose to use the first or second option may request a test proctor to assist in reading specific words or terms from the test questions and supplement material. In the interest of preventing compromise of the testing process, the test proctor should be someone who is non-aviation oriented. The test proctor will provide reading assistance only, with no explanation of words or terms. The Airman Testing Standards Branch, AFS-630, will assist in the selection of a test site and test proctor.

Cheating or other unauthorized conduct

Computer testing centers must follow strict security procedures to avoid test compromise. These procedures are established by the FAA and are covered in FAA Order 8080.6, Conduct of Airman Knowledge Tests. The FAA has directed testing centers to terminate a test at any time a test proctor suspects a cheating incident has occurred. An FAA investigation will then be conducted. If the investigation determines that cheating or unauthorized conduct has occurred, then any airman certificate or rating that you hold may be revoked, and you will be prohibited for 1 year from applying for or taking any test for a certificate or rating under 14 CFR part 61.

Validity of airman test reports

Airman Test Reports are valid for the 24-calendar month period preceding the month you complete the practical test. If the Airman Test Report expires before completion of the practical test, you must retake the knowledge test.

Retesting procedures

If you receive a grade lower than 70 percent and wish to retest, you must present the following to testing center personnel.

- failed Airman Test Report; and
- a written endorsement from an authorized instructor

certifying that additional instruction has been given, and the instructor finds you competent to pass the test.

If you decide to retake the test in anticipation of a better score, you may retake the test after 30 days from the date your last test was taken. The FAA will not allow you to retake a passed test before the 30-day period taken will reflect the official score.

Explanation of the sample test

The sample questions in this knowledge test guide are similar to the instrument rating test questions.

Knowledge in all areas presented in this test guide, not just the ability to respond to sample test questions, should be the goal in preparing for the test. For example, you should expect to encounter many test questions dealing with detailed ATC procedures, and you may prepare yourself for such test questions by careful study of Part I of the Aeronautical Information Manual.
Correct responses, references, and detailed explanations for the sample test questions are included with the test questions.

This sample test is based on instrument flight from the Reno Cannon International Airport in Reno, Nevada, to the Bishop Airport in Bishop, California. A completed flight plan, navigational log, and airplane information sheet are provided for information purposes.

The sample questions, responses, and analyses are based on procedures and regulations in effect at the time of preparation of this publication. When taking the test, always use the most current information available.

SAMPLE TEST QUESTIONS AND ANSWERS

1. When is the VOR navigation system required to be checked for bearing error limits before operating under instrument flight rules?

A—Within 10 days or 10 aircraft hours, whichever occurs first.
B—Within the last 30 days.
C—Within the last 60 days.

Answer B—Subject Matter Knowledge Code: B10 14 CFR part 91, section 91.171. VOR equipment check for IFR operations.

2. A pilot's recent instrument flight experience includes three instrument approaches and 6 hours of simulated instrument practice within the preceding 6-month period. What experience must the pilot have to conduct a flight under IFR as pilot in command in an airplane?

A—Passed an instrument proficiency check in the category of aircraft involved within the preceding 6-month period.
B—Have had 6 hours simulated instrument time and six approaches in helicopters within the preceding 6-month period.
C—Have 3 hours simulated instrument time in airplanes and 3 hours in helicopters in the preceding 6-month period.

Answer A— Subject Matter Knowledge Code A20: Reference 14 CFR part 61.57 (c) (1) i, ii, iii. Recent flight experience: Pilot in command.

If a pilot passes a proficiency check, the pilot does not have to meet the recent instrument experience requirements.

NOTE: Questions pertain to a proposed IFR flight from Reno Cannon International Airport, in Reno, Nevada, to the Bishop Airport in Bishop, California.

The route of flight is given in figure 1, Block 8. Information which pertains to your aircraft is given in figure 2. Additional information required to complete the flight time computation is given in figure 4.

3. (Refer to appendix 2, figure 1, and the previous NOTE.) What aircraft equipment code should be entered in block 3 of the flight plan?

A—A.
B—T.
C—U.

Answer C—Subject Matter Knowledge Code: J15. AIM paragraph 5-1.

In block 3 of the flight plan, you enter the designation of the aircraft followed by a slash and a letter for the equipment code. Figure 1 indicates only a transponder with Mode C.

4. (Refer to appendix 2, figure 1.) What CAS must be used to maintain the filed TAS at the flight planned altitude if the OAT is -15 °C?

A—137 KCAS.
B—142 KCAS.
C—148 KCAS.

Answer B—Subject Matter Knowledge Code: H342. AC 61-23, chapter 8.

In the center of the computer side of your flight computer, on the right side, put the air temperature of -15° over the altitude of 17,000 feet (from block 7 of the flight plan, figure 1) then on the outer scale, find TAS of 185 (from block 4) which is over calibrated airspeed on the inner scale of 142 knots.

5. (Refer to appendix 2, figures 1 and 2.) (Use the FD excerpt below for RNO and use the entry closest to the flight planned altitude. Use the variation given for the FMG VORTAC site in figure 2.) What is the entry to be made in block 10 of the flight plan shown in figure 1?

FT	6000	9000	12000	18000
RNO		1920+02	2038-05	2258-15

A—1 hour 19 minutes.
B—1 hour 24 minutes.
C—1 hour 29 minutes.

Answer B—Subject Matter Knowledge Code: H342. AC 61-23, chapter 8.

To determine the estimated time en route to be entered in block 10, you must complete the flight planning log in figure 2.

Note that the variation on figure 2 is 16E, which is magnetic variation of 16° E. Subtract this from 220° (to convert wind from true to magnetic). Compute the groundspeed by use of wind, magnetic course, and true airspeed. By using groundspeed and distance, you can determine the time for each leg. Computed time is 1 hour 24 minutes and 12 seconds, which is nearest the listed response of 1 hour 24 minutes.

6. (Refer to appendix 2, figure 3.) Under which flight condition or location does the MUSTANG TWO DEPARTURE terminate?

A—At the FMG VORTAC.
B—When arriving at the flight planned altitude or altitude as amended by ATC.
C—When arriving at YERIN intersection.

Answer A—Subject Matter Knowledge Code: J16. AIM.

The departure route description at the bottom of the SID on figure 3 indicates that aircraft climbs via IRNO North LOC course to SPK, then right turn to FMG VORTAC or assigned route.

7. (Refer to appendix 2, figure 3.) What is the minimum rate of climb required to meet the Mustang Two Departure, RWY 34L, at 140 knots ground speed? (Mustang Two Departure, RWY 34L)

A—270 FPM.
B—583 FPM.
C—700 FPM.

Answer C—Subject Matter Knowledge Code: J16. AIM.

On figure 3, the note in the middle of the SID requires a minimum climb rate of 270 feet per NM to 6,700 feet. At a groundspeed of 140 knots, 2.333 NM is traveled in 1 minute. This requires a climb rate of approximately 630 FPM. (2.333 x 270 = 630) (any climb rate over 630 FPM will be satisfactory). An easy way to calculate rate-of-climb requirements is to use the rate-of-climb table in the instrument approach procedures legend.

8. (Refer to appendix 2, figures 1 and 4.) What is the visibility requirement for your aircraft approach category?

A—1-1/4 statute mile.
B—1-1/2 statute mile.
C—1-3/4 statute mile.

Answer B—Subject Matter Knowledge Code: J18. AIM paragraphs 5-4-7 and 5-4-18.

For the VOR-A approach at BISHOP, the minimum descent altitude (MDA) for Category B aircraft is 7,400 feet with 1-1/2 mile visibility. The VSO on figure 1 is given as 74. 1.3 VSO is 96 knots, which is Category B.

9. When using a 2-bar VASI system, what visual indication should be observed when on the VASI glidepath approaching a runway?

A—Two bars on the left side of the runway; the far bars red and the near bars white.
B—Two bars on the left side of the runway and two bars on the right side of the runway; the far bars red and near bars white.
C—Two bars on the right side of the runway; the far bars red and the near bars white.

Answer A—Subject Matter Knowledge Code: J03. AIM paragraph 2-2.

The light units are on the left side of the runway on 2-bar VASI's. When on the VASI glidepath, near lights are white and the far lights are red.

10. (Refer to appendix 2, figure 5.) Which VOR equipment check is acceptable on the northwest end of taxiway A at Reno Cannon International?

A—OBS set to 229, CDI centered, TO/FROM shows FROM, and the DME indicates 5.8 NM.
B—OBS set to 059, CDI indicates 2° to the right, TO/FROM shows TO, and the DME indicates blank.
C—OBS set to 239, CDI indicates 3° to the left, TO/FROM shows TO, and the DME indicates 5.5 NM.

Answer B—Subject Matter Knowledge Code: B10. 14 CFR part 91. General operating and flight rules.

At Reno Cannon International, the VOR DME equipment check listed under VOR receiver checkpoints on figure 5 indicates that at the northwest end of taxiway A, there is a ground check on the 239° radial from the facility, which is 5.5 NM. Set the OBS to 059° (239° minus 180°) and the TO/FROM indicator indicates TO. The CDI indicates 2° to the right, which is acceptable as the CFR requires you to be within plus or minus 4° on ground checks. The blank DME is acceptable because VOR checks require no DME verification.

APPENDIX 1

LIST OF REFERENCE MATERIALS AND SUBJECT MATTER KNOWLEDGE CODES

The publications listed in the following pages contain study material you need to be familiar with when preparing for instrument rating knowledge tests. All of these publications can be purchased through U.S. Government Bookstores, commercial aviation supply houses, or industry organizations. The latest revision of the listed references should be requested. Additional study material is also available through these sources that may be helpful in preparing for knowledge tests.

The subject matter knowledge codes refer to the specific reference for the knowledge standard. When reviewing results of your knowledge test, you should compare the subject matter knowledge code(s) on your Airman Test Report to the ones found below. This will be helpful for both review and preparation for the practical test.

Title 14 of the Code of Federal Regulations (14 CFR) part 61—Certification: Pilots, Flight Instructors, and Ground Instructors

A20 General
A21 Aircraft Ratings and Pilot Authorizations
A23 Private Pilots
A24 Commercial Pilots
A26 Flight Instructors

14 CFR part 91—General Operating and Flight Rules

B07 General
B08 Flight Rules—General
B09 Visual Flight Rules
B10 Instrument Flight Rules
B11 Equipment, Instrument, and Certificate Requirements
B12 Special Flight Operations
B13 Maintenance, Preventive Maintenance, and Alterations

14 CFR part 97—Standard Instrument Approach Procedures

B97 General

NTSB 830—Rules Pertaining to the Notification and Reporting of Aircraft Accidents or Incidents and Overdue Aircraft, and Preservation of Aircraft Wreckage, Mail, Cargo, and Records

G10 General
G11 Initial Notification of Aircraft Accidents, Incidents, and Overdue Aircraft
G12 Preservation of Aircraft Wreckage, Mail, Cargo, and Records
G13 Reporting of Aircraft Accidents, Incidents, and Overdue Aircraft

AC 61-23—Pilot's Handbook Of Aeronautical Knowledge

H312 The Pitot-Static System and Associated Instruments
H313 Gyroscopic Flight Instruments
H314 Magnetic Compass
H316 Balance, Stability, and Center of Gravity
H317 Airplane Performance
H320 Weather Briefings
H321 Nature of the Atmosphere
H322 The Cause of Atmospheric Circulation
H323 Moisture and Temperature
H324 Air Masses and Fronts
H325 Aviation Weather Reports, Forecasts, and Weather Charts
H326 Types of Airports
H327 Sources for Airport Data
H328 Airport Markings and Signs
H329 Airport Lighting
H330 Wind Direction Indicators
H331 Radio Communications
H332 Air Traffic Services
H333 Wake Turbulence
H334 Collision Avoidance
H335 Controlled Airspace
H336 Uncontrolled Airspace
H337 Special Use Airspace
H338 Other Airspace Areas
H339 Aeronautical Charts
H340 Latitude and Longitude
H341 Effect of Wind
H342 Basic Calculations
H343 Pilotage
H344 Dead Reckoning

H345 Flight Planning
H346 Charting the Course
H348 Radio Navigation
H349 Obtaining a Medical Certificate
H350 Health Factors Affecting Pilot Performance
H351 Environmental Factors which Affect Pilot Performance

AC 61-21—Flight Training Handbook

H62 Emergency Flight by Reference to Instruments

AC 61-27—Instrument Flying Handbook

I01 Training Considerations
I02 Instrument Flying: Coping with Illusions in Flight
I03 Aerodynamic Factors Related to Instrument Flying
I04 Basic Flight Instruments
I05 Attitude Instrument Flying—Airplanes
I06 Attitude Instrument Flying—Helicopters
I07 Electronic Aids to Instrument Flying
I08 Using the Navigation Instruments
I09 Radio Communications Facilities and Equipment
I10 The Federal Airways System and Controlled Airspace
I11 Air Traffic Control
I12 ATC Operations and Procedures
I13 Flight Planning
I14 Appendix: Instrument Instructor Lesson Guide—Airplanes
I15 Segment of En Route Low Altitude Chart

AC 00-6—Aviation Weather

I20 The Earth's Atmosphere
I21 Temperature
I22 Atmospheric Pressure and Altimetry
I23 Wind
I24 Moisture, Cloud Formation, and Precipitation
I25 Stable and Unstable Air
I26 Clouds
I27 Air Masses and Fronts
I28 Turbulence
I29 Icing
I30 Thunderstorms
I31 Common IFR Producers
I32 High Altitude Weather
I36 Glossary of Weather Terms

AC 00-45—Aviation Weather Services

I40 The Aviation Weather Service Program
I41 Surface Aviation Weather Reports
I42 Pilot and Radar Reports and Satellite Pictures
I43 Aviation Weather Forecasts
I44 Surface Analysis Chart
I45 Weather Depiction Chart
I46 Radar Summary Chart
I47 Significant Weather Prognostics
I48 Winds and Temperatures Aloft
I49 Composite Moisture Stability Chart
I50 Severe Weather Outlook Chart
I51 Constant Pressure Charts
I52 Tropopause Data Chart
I53 Tables and Conversion Graphs

AIM—Aeronautical Information Manual

J01 Air Navigation Radio Aids
J02 Radar Services and Procedures
J03 Airport Lighting Aids
J04 Air Navigation and Obstruction Lighting
J05 Airport Marking Aids and Signs
J06 Airspace—General
J07 Class G Airspace
J08 Controlled Airspace
J09 Special Use Airspace
J10 Other Airspace Areas
J11 Service Available to Pilots
J12 Radio Communications Phraseology and Techniques
J13 Airport Operations
J14 ATC Clearance/Separations
J15 Preflight
J16 Departure Procedures
J17 En Route Procedures
J18 Arrival Procedures
J19 Pilot/Controller Roles and Responsibilities
J21 Emergency Procedures—General
J22 Emergency Services Available to Pilots
J23 Distress and Urgency Procedures
J24 Two-Way Radio Communications Failure
J25 Meteorology
J26 Altimeter Setting Procedures
J27 Wake Turbulence
J29 Potential Flight Hazards
J30 Safety, Accident, and Hazard Reports
J31 Fitness for Flight
J32 Type of Charts Available
J33 Pilot Controller Glossary

Other Documents

J34 Airport/Facility Directory
J35 En Route Low Altitude Chart
J36 En Route High Altitude Chart
J39 Terminal Area Chart
J40 Standard Instrument Departure (SID) Chart
J41 Standard Terminal Arrival (STAR) Chart
J42 Instrument Approach Procedures

AC 67-2—Medical Handbook For Pilots

J52 Hypoxia
J56 Alcohol
J57 Drugs and Flying
J58 Carbon Monoxide
J59 Vision
J60 Night Flying
J61 Cockpit Lighting
J62 Disorientation (Vertigo)
J63 Motion Sickness
J64 Fatigue
J65 Noise
J66 Age
J67 Some Psychological Aspects of Flying

Additional Advisory Circulars

K01 AC 00-24, Thunderstorms
K02 AC 00-30, Rules of Thumb for Avoiding or Minimizing Encounters with Clear Air Turbulence
K04 AC 00-54, Pilot Wind Shear Guide
K23 AC 20-121, Airworthiness Approval of Airborne Loran C Systems for Use in the U.S. National Airspace System
K26 AC 20-138, Airworthiness Approval of Global Positioning System (GPS) Navigation Equipment for Use as a VFR and IFR Supplemental Navigation System
K40 AC 25-4, Inertial Navigation System (INS)
K80 AC 60-4, Pilot's Spatial Disorientation
L05 AC 60-22, Aeronautical Decision Making
L44 AC 90-94, Guidelines for Using Global Positioning System Equipment for IFR En Route and Terminal Operations and for Nonprecision Instrument Approaches in the U.S. National Airspace System
L50 AC 91-6, Water, Slush, and Snow on the Runway
L53 AC 91-14, Altimeter Setting Sources
L57 AC 91-43, Unreliable Airspeed Indications
L59 AC 91-46, Gyroscopic Instruments—Good Operating Practices
L61 AC 91-50, Importance of Transponder Operation and Altitude Reporting
L62 AC 91-51, Airplane Deice and Anti-Ice Systems
L70 AC 91-67, Minimum Equipment Requirements for General Aviation Operations Under FAR part 91
M51 AC 20-117, Hazards Following Ground Deicing and Ground Operations in Conditions Conductive to Aircraft Icing

FAA Accident Prevention Program Bulletins

V01 FAA-P-8740-2, Density Altitude
V02 FAA-P-8740-5, Weight and Balance
V03 FAA-P-8740-12, Thunderstorms
V04 FAA-P-8740-19, Flying Light Twins Safely
V05 FAA-P-8740-23, Planning your Takeoff
V06 FAA-P-8740-24, Tips on Winter Flying
V07 FAA-P-8740-25, Always Leave Yourself an Out
V08 FAA-P-8740-30, How to Obtain a Good Weather Briefing
V09 FAA-P-8740-40, Wind Shear
V10 FAA-P-8740-41, Medical Facts for Pilots
V11 FAA-P-8740-44, Impossible Turns
V12 FAA-P-8740-48, On Landings, Part I
V13 FAA-P-8740-49, On Landings, Part II
V14 FAA-P-8740-50, On landings, Part III
V15 FAA-P-8740-51, How to Avoid a Midair Collision
V16 FAA-P-8740-52, The Silent Emergency

NOTE: AC 00-2, Advisory Circular Checklist, transmits the status of all FAA advisory circulars (AC's), as well as FAA internal publications and miscellaneous flight information, such as Aeronautical Information Manual, Airport/Facility Directory, knowledge test guides, practical test standards, and other material directly related to a certificate or rating. AC 00-2 is accessible through the Internet at http://www.faa.gov/abc/ac-chklst/actoc.htm, or you may obtain a free copy from:

U.S. Department of Transportation
Subsequent Distribution Office, SVC-121.23
Ardmore East Business Center
3341 Q 75 Ave.
Landover, MD 20785

Appendix 1

COMPUTER TESTING DESIGNEES

The following is a list of the computer testing designees authorized to give FAA airman knowledge tests. This list should be helpful in case you choose to register for a test or simply want more information.

Computer Assisted Testing Service (CATS)

1849 Old Bayshore Highway
Burlingame, CA 94010

Applicant inquiry and test registration: 1-800-947-4228
From outside the U.S. (650) 259-8550

Sylvan Prometric

1000 Lancaster Street
Baltimore, MD 21202

Applicant inquiry and test registration: 1-800-274-1900, 1-800-967-1100, or 1-800-359-3278
From outside the U.S. (410) 843-4800, x8890 or 1-800-359-3278

LaserGrade Computer Testing

16209 S.E. McGillivray, Suite L
Vancouver, WA 98683

Applicant inquiry and test registration: 1-800-211-2753 or 1-800-211-2754
From outside the U.S. (360) 896-9111

APPENDIX 2

Form Approved: OMB No. 2120-0034

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

FLIGHT PLAN

(FAA USE ONLY) ☐ PILOT BRIEFING ☐ VNR ☐ STOPOVER | TIME STARTED | SPECIALIST INITIALS

1. TYPE	2. AIRCRAFT IDENTIFICATION	3. AIRCRAFT TYPE/ SPECIAL EQUIPMENT	4. TRUE AIRSPEED	5. DEPARTURE POINT	6. DEPARTURE TIME		7. CRUISING ALTITUDE
					PROPOSED (Z)	ACTUAL (Z)	
X IFR	N1123A	BE58	185 KTS	RNO	1900		17,000

8. ROUTE OF FLIGHT
MUSTANG TWO DEPARTURE, FMG V105, OAL, DIRECT

9. DESTINATION (Name of airport and city)	10. EST. TIME ENROUTE HOURS	MINUTES	11. REMARKS
BIH			TRAINING FLIGHT

12. FUEL ON BOARD HOURS	MINUTES	13. ALTERNATE AIRPORT(S)	14. PILOT'S NAME, ADDRESS & TELEPHONE NUMBER & AIRCRAFT HOME BASE	15. NUMBER ABOARD
5	09	N/A	JOE PILOT 17. DESTINATION CONTACT/TELEPHONE (OPTIONAL)	2

16. COLOR OF AIRCRAFT
RED/WHITE/BLUE

CIVIL AIRCRAFT PILOTS. FAR Part 91 requires you file an IFR flight plan to operate under instrument flight rules in controlled airspace. Failure to file could result in a civil penalty not to exceed $1,000 for each violation (Section 901 of the Federal Aviation Act of 1958, as amended). Filing of a VFR flight plan is recommended as a good operating practice. See also Part 99 for requirements concerning DVFR flight plans.

FAA Form 7233-1 (8-82)

CLOSE VFR FLIGHT PLAN WITH _____ FSS ON ARRIVAL

AIRCRAFT INFORMATION

MAKE Beechcraft MODEL BE58

N 1123A VSO 74 KIAS

AIRCRAFT EQUIPMENT / STATUS **

**NOTE: X = OPERATIVE INOP = INOPERATIVE N/A = NOT APPLICABLE

Transponder: X (Mode C) X ILS: (Localizer) X (Glide Slope) Inop.

VOR: (No. 1) X (No. 2) X ADF: X RNAV: N/A Vertical Path Computer N/A

DME: Inop. Marker Beacon: (Audio) X (Visual) X

FIGURE 1.—Completed Flight Plan.

FLIGHT LOG

RENO CANNON, (RNO) TO BISHOP (BIH)

CHECK POINTS		ROUTE	COURSE	WIND	SPEED-KTS		DIST	TIME		FUEL	
FROM	TO	ALTITUDE		TEMP	TAS	GS	NM	LEG	TOT	LEG	TOT
		SID	MUSTANG	220/58							
RNO	FMG	CLIMB	TWO DEPT								
		V105									
FMG	YERIN	CLIMB	119°		185kts	133kts	51	:23:00			
		V105									
YERIN	OAL	17,000	120°			170kts	82	:29:00			
		DIRECT									
OAL	BIH	16,000	200°			127kts	47	:22:12			
		APPROACH &									
	AIRPORT	LANDING						:10:00			
							180	1:24:12			

OTHER DATA:

NOTE: VAR. 16° E
FUEL AT 30 gal/hr
Total Fuel 155 gal
3:30 hrs. fuel reserve
:45 hr @ cruise
2:45 holding or time to alternate

FLIGHT SUMMARY

TIME	FUEL (LB)	
1:24	255 lb	EN ROUTE
3:30	630 lb	RESERVE
:15	45 lb	MISSED APPR.
5:09	930 lb	TOTAL

FIGURE 2.—Flight Planning Log.

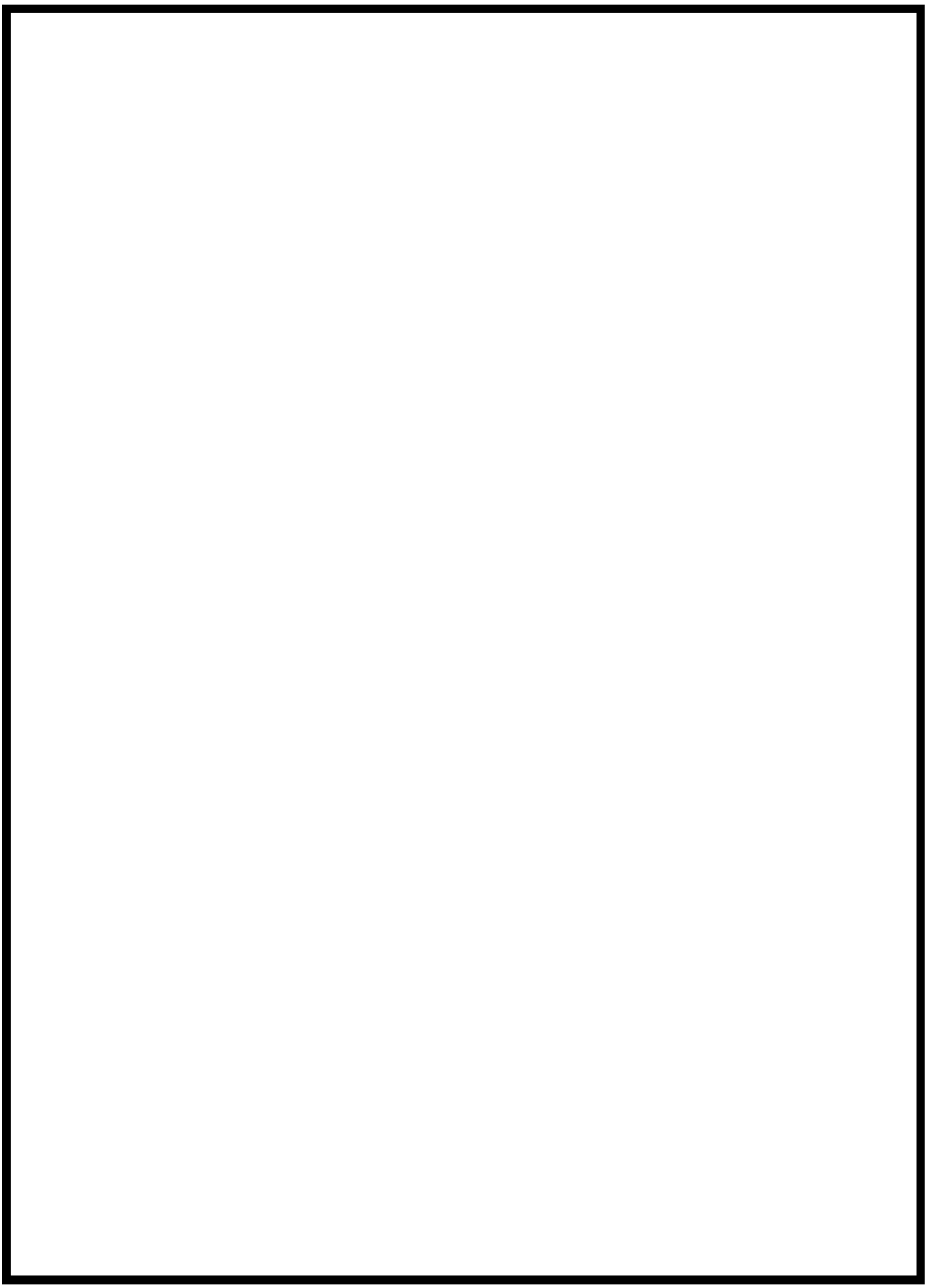

FIGURE 3.—Mustang Two Departure.

NEGATIVE IS BEING PROVIDED FOR PRINTING PURPOSES.

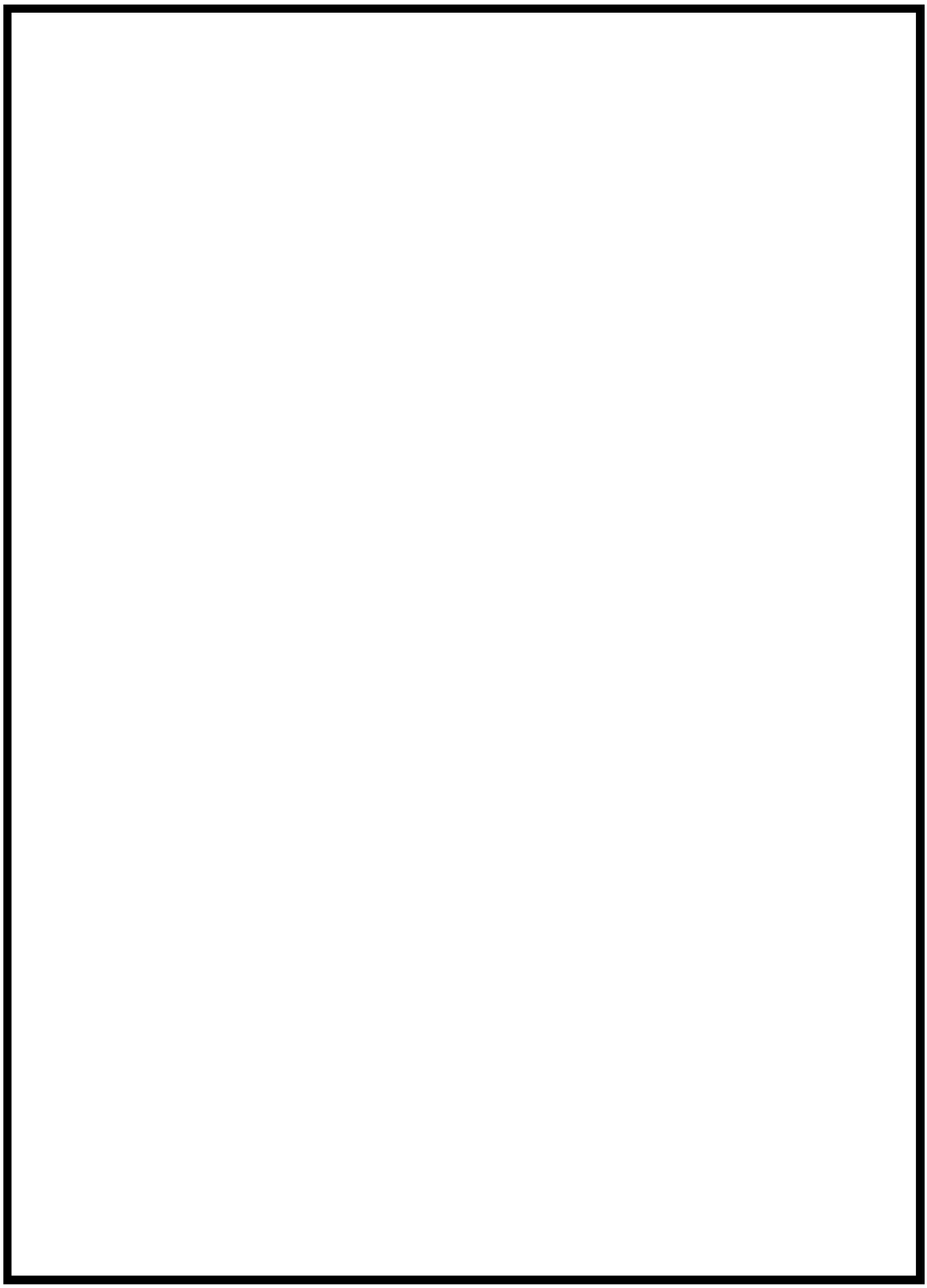

FIGURE 4.—VOR–A Approach, Bishop, (BIH) CALF.

NEGATIVE IS BEING PROVIDED FOR PRINTING PURPOSES.

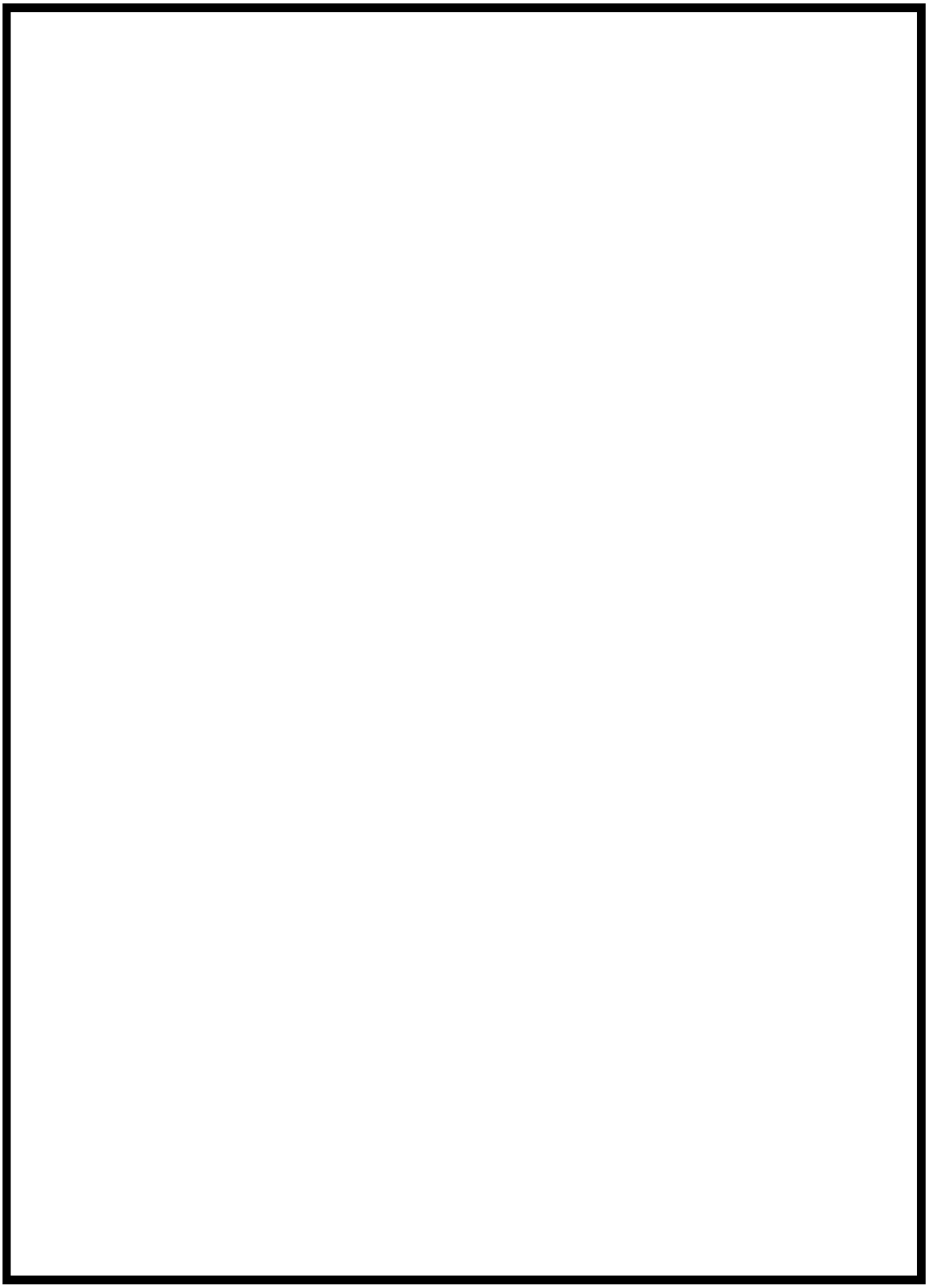

FIGURE 5.—Excerpt from the Airport Facility Directory.

NEGATIVE IS BEING PROVIDED FOR PRINTING PURPOSES.