



Barbados Civil Aviation Department

BCAD Document PLAC-055

PERSONNEL
LICENSING
ADVISORY
CIRCULAR

PRIVATE PILOT LICENCE
KNOWLEDGE TEST GUIDE

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Subject: PRIVATE PILOT LICENCE KNOWLEDGE TEST GUIDE
BCAD Advisory Circular PLAC- 055
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PURPOSE

1. (1) The purpose of this Barbados Civil Aviation Department (BCAD) Advisory Circular (PLAC) is to provide guidance for applicants preparing to take Private Pilot knowledge tests. Appendices provide subject matter outline, reference material, and sample questions with learning statements.

(2) Barbados Civil Aviation Regulations (BCAR) can be obtained from the Barbados Government printery, Bay Street, St Michael, Barbados. BCAR General Application & Personnel Licensing Regulations cover the requirements for personnel licensing.

(3) This PLAC can be purchased from the Barbados Civil Aviation Department, Grantley Adams International Airport Christ Church, Barbados or downloaded from the BCAD website at <http://www.bcad.gov.bb>.

(4) Comments and/or questions regarding this PLAC should be sent to Barbados Civil Aviation Department, Grantley Adams International Airport, Christ Church, Barbados.

INTRODUCTION

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

(2) This knowledge test guide will answer most questions about taking the Private Pilot knowledge test by covering the following areas: knowledge test eligibility requirements; knowledge areas on the tests; descriptions of the tests; process for taking a knowledge test; validity of Airman Knowledge Test Reports; use of test aids and materials; cheating or other unauthorized conduct; retesting procedures; and obtaining training and testing publications and general information.

(3) This guide will help applicants in preparing to take one or all of the following tests:

- (a) Private Pilot—Aeroplane (PAR);
- (b) Private Pilot—Aeroplane Conversion (PCL);
- (c) Private Pilot—Aeroplane Validation (PVL);
- (d) Private Pilot—Helicopter (PRH);
- (e) Private Pilot—Helicopter Conversion (PCH);
- (f) Private Pilot—Helicopter Validation (PVH);
- (g) Private Pilot—Glider (PGL);

- (h) Private Pilot—Glider Conversion (PCG);
- (i) Private Pilot—Glider Validation (PVG);
- (j) Private Pilot—Airship (PLA);
- (k) Private Pilot—Airship Conversion (PCA);
- (l) Private Pilot—Airship Validation (PVA);
- (m) Private Pilot—Balloon Gas (PBG);
- (n) Private Pilot—Balloon Gas Conversion (PCB);
- (o) Private Pilot—Balloon Gas Validation (PVB);
- (p) Private Pilot—Balloon Hot Air (PBH);
- (q) Private Pilot—Balloon Hot Air Conversion (PCT);
- (r) Private Pilot—Balloon Hot Air Validation (PVT).

(4) This guide is not offered as an easy way to obtain the necessary information for passing the knowledge tests. Rather, the intent of this guide is to define and narrow the field of study to the required knowledge areas included in the tests.

(5) The BCAD airman knowledge tests are a very effective instrument for aviation safety and regulatory compliance. However, these tests can only sample the vast amount of knowledge every pilot needs to operate safely in an ever increasingly complex airspace system.

KNOWLEDGE TEST ELIGIBILITY REQUIREMENTS

3. Individuals pursuing a Private Pilot licence should review BCAD Regulations 2007: General Application & Personnel Licensing Regulation – Private Pilot Licence General Requirements; Conversion of a Private Pilot Licence from another contracting state; and/or Validation of a foreign licence. The applicant for a private pilot knowledge test must be at least 16 years old and have a BCAD Class 2 medical certificate.

KNOWLEDGE AREAS ON THE TESTS

4. (1) Private pilot tests are comprehensive because they must test the applicant’s knowledge in many subject areas.

(2) Applicants pursuing a private pilot licence or added rating should review BCAR General Application & Personnel Licensing Regulation – Knowledge areas for the knowledge areas on the tests.

DESCRIPTIONS OF THE TESTS

5. (1) All test questions are the objective, multiple-choice type. Each question can be correctly 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. **The minimum passing score is 75 percent.**

(2) The following tests each contain **60 questions**. Applicants are allowed a **maximum of 3.0 hours** to complete each test.

- (a) Private Pilot—Aeroplane;
- (b) Private Pilot—Helicopter;
- (c) Private Pilot—Glider.

(3) The following tests each contain **50 questions**. Applicants are allowed a **maximum of 2.0 hours** to complete each test.

- (a) Private Pilot—Aeroplane Conversion / Validation;
- (b) Private Pilot—Helicopter Conversion / Validation;
- (c) Private Pilot—Airship;
- (d) Private Pilot—Airship Conversion / Validation;
- (e) Private Pilot—Glider Conversion / Validation;
- (f) Private Pilot—Balloon – Gas;
- (g) Private Pilot—Balloon – Gas Conversion / Validation;
- (h) Private Pilot—Balloon - Hot Air;
- (i) Private Pilot—Balloon – Hot Air Conversion / Validation.

(4) 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 knowledge 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. Test applicants should be sure to carefully read the instructions given with each test, as well as the statements in each test item.

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

- (a) Answer each question in accordance with the latest regulations and guidance publications;
- (b) Read each question carefully before looking at the possible answers. Test applicants should clearly understand the problem before attempting to solve it;
- (c) After formulating an answer, determine which choice corresponds with that answer. The answer chosen should completely resolve the problem;

- (d) From the answers 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, erroneous, or represent common misconceptions;
- (e) If a certain question is difficult, it is best to mark it for review and proceed to the next question. After answering the less difficult questions, return to those marked for review and answer them. The review marking procedure will be explained to test applicants prior to starting the test. Although the computer should alert test applicants to unanswered questions, applicants should make sure every question has an answer recorded. This procedure will enable test applicants to use the available time to maximum advantage;
- (f) When solving a calculation problem, the answer closest to the applicant's solution should be selected. The problem has been checked with various types of calculators; therefore, if the problem has been solved correctly, the applicant's answer will be closer to the correct answer than any of the other choices.

PROCESS FOR TAKING A KNOWLEDGE TEST

6. (1) The first step in the process of taking a knowledge test is to contact the BCAD office. They can provide applicants with information relating to knowledge test prerequisites, required authorizations and endorsements, testing locations, and the appropriate fees. In addition applicants should visit the BCAD website at <<http://www.bcad.gov.bb>>.

(2) The second step in the process of taking a knowledge test is for the applicant to complete the required training and receive an endorsement from an authorized instructor or aviation training organization.

(3) Acceptable forms of endorsement are:

- (a) A certificate of graduation or a statement of accomplishment certifying the satisfactory completion of the ground school portion of a course for the certificate or rating sought. The certificate or statement may be issued by an approved aviation training organization;
- (b) A written statement or logbook endorsement from an authorized ground or flight instructor certifying that the applicant has completed an applicable ground training or home study course and is prepared to take the knowledge test;
- (c) A failed, passed, or expired Airman Knowledge Test Report, provided the airman still has the original Airman Knowledge Test Report in his/her possession;
- (d) An "expired test/credit" letter issued by the BCAD (in lieu of a duplicate Airman Knowledge Test Report).

(4) The third step in the process of taking a knowledge test is for the applicant to receive written authorization from BCAD.

(5) The fourth step in taking a knowledge test is to proceed to the BCAD computer test centre. An applicant for a knowledge test must provide proper identification. Testing centre personnel will not begin the test until the test applicant's identification is verified.

(6) Upon completion of the knowledge test, each applicant will receive the Airman Knowledge Test Report showing their test score. The Airman Knowledge Test Report is certified with an embossed seal to authenticate the validity of the document.

(7) The Airman Knowledge Test Report lists the learning statement codes for questions answered incorrectly. The total number of codes shown on the Airman Knowledge Test Report is not necessarily an indication of the total number of questions answered incorrectly.

(8) The Appendices of this Knowledge Test Guide contain a list of reference materials for applicants to study during their training for the Private Pilot licence. The questions on the knowledge test will come from these reference materials. BCAD PL Advisory Circular PLAC-xxx, Learning Statement Reference Guide for Airman Knowledge Testing, contains learning statements and the corresponding codes used for airman knowledge testing. Applicants should match the learning statement codes on their test report to these codes to review their areas of deficiency.

(9) A list of reference materials has been prepared by BCAD to establish specific references for all knowledge standards and is to be used when preparing for an airman knowledge test. The list of reference materials is contained in the Appendix to this Knowledge Test Guide.

(10) An applicant's instructor is required to provide instruction on each of the knowledge areas listed on the Airman Knowledge Test Report and to complete an endorsement of this instruction. The Airman Knowledge Test Report must be presented to the flight test examiner prior to taking the skill test. During the oral portion of the skill test, the examiner is required to evaluate the noted areas of deficiency.

(11) Applicants requiring a duplicate Airman Knowledge Test Report due to loss or destruction of the original, should send a signed request accompanied by payment to the Barbados Civil Aviation Department, Grantley Adams International Airport, Christ Church, Barbados.

VALIDITY OF AIRMAN KNOWLEDGE TEST REPORTS

7. Airman Knowledge Test Reports for the Private Pilot licence are valid for 24 calendar months. The applicant should plan to complete the skill test during the 24 calendar month validity period. If the Airman Knowledge Test Report expires before completion of the skill test, the applicant must retake the knowledge test.

USE OF TEST AIDS AND MATERIALS

8. Knowledge test applicants may use aids, reference materials, and test materials within the guidelines listed below. All models of aviation-oriented calculators may be used, including small electronic calculators that perform only arithmetic functions (add, subtract, multiply, and divide). Simple programmable memories, which allow addition to, subtraction from, or retrieval of one number from the memory, are permissible. Also, simple functions, such as square root and percent keys are permissible. The following guidelines apply:

- (a) Applicants may use any reference materials provided with the test. In addition, applicants may use scales, straightedges, protractors, plotters, navigation computers, log sheets, holding pattern entry aids, and electronic or mechanical calculators that are directly related to the test;

- (b) Manufacturers' permanently inscribed instructions on the front and back of such aids, e.g., formulas, conversions, regulations, signals, weather data, holding pattern diagrams, frequencies, mass and balance formulas, and air traffic control procedures are permissible;
- (c) BCAD personnel may provide a calculator to applicants and/or deny use of the applicant's personal calculator based on the following limitations:
 - (i) Prior to, and upon completion of the test, while in the presence of the proctor, applicants must actuate the on/off switch and perform any other function that ensures erasure of any data stored in memory circuits, including removal of batteries;
 - (ii) The use of electronic calculators incorporating permanent or continuous type memory circuits without erasure capability is prohibited. The proctor may refuse the use of the applicant's calculator when unable to determine the calculator's erasure capability;
 - (iii) Printouts of data must be surrendered at the completion of the test if the calculator incorporates this design feature;
 - (iv) The use of magnetic cards, magnetic tapes, modules, computer chips, or any other device upon which pre-written programs or information related to the test can be stored and retrieved is prohibited;
 - (v) Applicants are not permitted to use any booklet or manual containing instructions related to use of test aids;
- (d) Dictionaries are not permitted in the testing area;
- (e) The BCAD test proctor makes the final determination relating to test materials and personal possessions the applicant may take into the testing area.

CHEATING OR OTHER UNAUTHORIZED CONDUCT

9. Computerized knowledge testing must be carried out in accordance with the strictest security procedures to avoid test compromise. The BCAD Test Proctor will terminate a test at any time that he/she suspects that a cheating incident has occurred. A BCAD investigation will be conducted. If the investigation determines that cheating or unauthorized conduct has occurred, any airman licence, certificate, or rating the applicant holds may be revoked, and the applicant will be prohibited for 1 year from applying for or taking any test for a licence, certificate or rating under BCAR General Application & Personnel Licensing Regulations.

RETESTING PROCEDURES

- 10. (1)** Applicants who receive a grade lower than 75 percent and who wish to retest must present the following to BCAD testing centre personnel when appearing for the purpose of retesting:
- (a) A failed Airman Knowledge Test Report;
 - (b) A written endorsement from an authorized instructor certifying that additional instruction has been given, and the instructor finds the applicant competent to pass the test;

(c) A written authorization from BCAD to retake the test.

(2) Applicants possessing an Airman Knowledge Test Report with a score of 75 percent or higher who decide to retake the test in anticipation of a better score, may retake the test after 30 days from the date their last test was taken. The BCAD will not allow applicants to retake a passed test before the 30-day period has lapsed. Prior to retesting, applicants will be required to surrender their current Airman Knowledge Test Report to the test proctor. The last test taken will reflect the official final score.

OBTAINING TRAINING AND TESTING PUBLICATIONS AND GENERAL INFORMATION

11. Most of the current BCAD airman training and testing publications can be obtained in electronic format from BCAD at the BCAD website at <<http://www.bcad.gov.bb>>.

AIRMAN KNOWLEDGE TEST ITEMS

12. Sample questions, and their corresponding learning statements and codes, are contained in the appendix to this test guide. They are representative of questions on airman knowledge tests. These will help airmen become familiar with similar questions found on the airman knowledge tests. The knowledge test is not designed to intimidate any prospective airman; it is designed to measure the level of competency required to receive a BCAD licence, authorisation or rating. The list of reference materials contained in the appendix to this test guide is provided to ensure that instructors and students are able to determine the importance of the subject matter to be taught and learned.

COMPUTER TESTING SUPPLEMENTS

13. The computer testing supplements contain the graphics, legends, and maps that are needed to successfully respond to certain knowledge test items. These supplements will be provided by BCAD test centre personnel during the airman knowledge test.

KNOWLEDGE TEST GUIDES

14. The knowledge test guides describe the knowledge testing policy and procedures for each licence area.

OTHER COMPUTER TESTING INFORMATION

15. Other knowledge testing information provides specific test information, such as test name, test code (three-digit test identifiers), number of questions, and the time (hours) allotted for each knowledge test. The test identifiers will assist airmen in selecting the proper test for the licence/rating being sought.

REFERENCE MATERIALS / LEARNING STATEMENT CODES

16. The appendices of this guide contain the listings of reference materials and sample test questions with related learning statements used for airman knowledge testing. The listings of reference materials and sample questions have been prepared by the BCAD to establish specific references for all knowledge standards. The listings contain reference materials to be used when preparing for all airman knowledge tests. The learning statements contained in BCAD Advisory Circular PLAC-052, should be referred to when reviewing areas of deficiency on airman knowledge test reports.

E. A. Archer
Director of Civil Aviation

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APPENDIX A

LIST OF PRIVATE PILOT REFERENCE MATERIALS FOR ALL CERTIFICATIONS

The publications listed below contain study material applicants need to be familiar with when preparing for private pilot knowledge tests. Most of these publications can be purchased from Barbados Civil Aviation Department, or be downloaded from the BCAD web site at <<http://www.bcad.gov.bb>>. ICAO publications can be purchased from ICAO at <<http://www.icao.int>>. The latest revision of the listed references should be requested.

- (1) Barbados Civil Aviation Regulations (BCAR), in particular:
 - (a) BCAR – General Application and Personnel Licensing
 - (b) BCAR – Aircraft Operations
 - (c) BCAR – Airworthiness
 - (d) BCAR – Instruments and Equipment
- (2) ICAO Annexes: 3, 10 Volume II, 11 and 14 (pertinent parts)
- (3) ICAO Document 4444: General provisions, Aero Control service, Approach control service, Aerodrome control service, and Flight information and alerting service.
- (4) Aeronautical Information Publication (AIP) Eastern Caribbean
- (5) Enroute Low Altitude Chart
- (6) Sectional Aeronautical Chart
- (7) Airport/Facility Directory
- (8) Instrument Approach Procedure Chart
- (9) GA 42 Airship Training Manual – Jeppesen Sanderson
- (10) Pilot's Handbook for Navy Model ZP2K Airship and Handling Rigid Airships on the Ground
- (11) Balloon Digest—Balloon Federation of America
- (12) Balloon Ground School—Balloon Publishing Company
- (13) Cameron Balloons Flight Manual—Cameron Balloons Limited
- (14) How To Fly A Balloon The Balloonist's Resource—Balloon Publishing Company
- (15) FAA Accident Prevention Program Bulletins (adopted in cooperation with FAA)
- (16) FAA AC 00-6—Aviation Weather

APPENDIX A (CONTINUED)

LIST OF PRIVATE PILOT REFERENCE MATERIALS FOR ALL CERTIFICATIONS

- (17) FAA AC 00-45—Aviation Weather Services
- (18) FAA AC 20-43—Aircraft Fuel Control
- (19) FAA AC 20-103—Aircraft Engine Crankshaft Failure
- (20) FAA AC 60-22—Aeronautical Decision Making
- (21) FAA AC 91-13— Cold Weather Operation of Aircraft
- (22) FAA-H-8083-1—Aircraft Weight and Balance (adopted in cooperation with FAA)
- (23) FAA-H-8083-3—Airplane Flying Handbook (adopted in cooperation with FAA)
- (24) FAA-H-8083-11—Balloon Flying Handbook (adopted in cooperation with FAA)
- (25) FAA-H-8083-13—Glider Flying Handbook (adopted in cooperation with FAA)
- (26) FAA-H-8083-15—Instrument Flying Handbook (adopted in cooperation with the FAA)
- (27) FAA-H-8083-21—Rotorcraft Flying Handbook (adopted in cooperation with FAA)
- (28) FAA-H-8083-23—Seaplane (adopted in cooperation with FAA)
- (29) FAA-H-8083-25—Pilot’s Handbook of Aeronautical Knowledge (adopted in cooperation with FAA)
- (30) U.S. Terminal Procedures

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APPENDIX B

PRIVATE PILOT – AEROPLANE (PAR)

SUBJECT MATTER OUTLINE

The following outlines the major topics and underlying content areas on the Private Pilot – Aeroplane knowledge test.

1. Air Law:
 - (a) Rules and regulations relevant to the holder of a PPL;
 - (b) Rules of the air;
 - (c) Appropriate air traffic services practices and procedures.

2. Aircraft General Knowledge:
 - (a) Principles of operation and functioning of powerplants, systems and instruments;
 - (b) Operating limitations of aeroplanes and powerplants;
 - (c) Relevant operational information from the flight manual or other appropriate document.

3. Flight Performance and Planning:
 - (a) Effects of loading and weight distribution on flight characteristics;
 - (b) Mass and balance calculations;
 - (c) Use and practical application of take-off, landing and other performance data;
 - (d) Pre-flight and en-route flight planning appropriate to private operations under VFR;
 - (e) Preparation and filing of air traffic services flight plans;
 - (f) Appropriate air traffic services procedures, position reporting procedures;
 - (g) Altimeter setting procedures, and operations in areas of high-density traffic.

4. Human Performance:
 - (a) Human performance relevant to the Private Pilot—airplane;
 - (b) Principles of threat and error management.

5. Meteorology:
 - (a) Application of elementary aeronautical meteorology;
 - (b) Use of and procedures for obtaining meteorological information altimetry and hazardous weather conditions..

6. Navigation:
 - (a) Practical aspects of air navigation and dead-reckoning techniques;
 - (b) Use of aeronautical charts.

APPENDIX B (CONTINUED)

PRIVATE PILOT – AEROPLANE (PAR)

SUBJECT MATTER OUTLINE

7. Operational Procedures:
 - (a) Application of threat and a error management to operational procedures;
 - (b) Altimeter setting procedures;
 - (c) Use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;
 - (d) Appropriate precautionary and emergency procedures, including action to be taken to avoid hazardous weather, wake turbulence and other operating hazards.

8. Principles of Flight:
 - (a) Principles of flight relating to aeroplanes;
 - (b) Flight characteristics and forces acting on an aircraft.

9. Radiotelephony:
 - (a) Communication procedures and phraseology as applied to VFR operations;
 - (b) Action to be taken in case of communication failure.

APPENDIX B-1

PRIVATE PILOT—AEROPLANE (PAR)

SAMPLE QUESTIONS, LEARNING STATEMENTS AND ANSWERS

1. What minimum radio equipment is required for operation within controlled airspace?

A—Two-way radio communications equipment and a 4096-code transponder.

B—Two-way radio communications equipment, a 4096-code transponder, and DME.

C—Two-way radio communications equipment having the aeronautic emergency frequency 121.5 MHz.

Answer C—Learning Statement: Recall regulations – controlled / restricted airspace requirements

2. In the Northern Hemisphere, if an aircraft is accelerated or decelerated, the magnetic compass will normally indicate

A—a turn momentarily.

B—correctly when on a north or south heading.

C—a turn toward the south.

Answer B—Learning Statement: Recall flight instruments – magnetic compass

3. What is absolute altitude?

A—The altitude read directly from the altimeter.

B—The vertical distance of the aircraft above the surface.

C—The height above the standard datum plane.

Answer B—Learning Statement: Define altitude – absolute / true / indicated / density / pressure

4. The danger of spatial disorientation during flight in poor visual conditions may be reduced by

A—shifting the eyes quickly between the exterior visual field and the instrument panel.

B—having faith in the instruments rather than taking a chance on the sensory organs.

C—leaning the body in the opposite direction of the motion of the aircraft.

Answer B—Learning Statement: Recall physiological factors – spatial disorientation

5. How many Global Positioning System (GPS) satellites are required to yield a three dimensional position (latitude, longitude, and altitude) and time solution?

A—4.

B—5.

C—6.

Answer A—Learning Statement: Recall radio – GPS / RNAV / RAIM

APPENDIX C

PRIVATE PILOT – AEROPLANE CONVERSION (PCL) PRIVATE PILOT – AEROPLANE VALIDATION (PVL)

SUBJECT MATTER OUTLINE

The following outlines the major topics and underlying content areas on the Private Pilot – Aeroplane Conversion and Validation knowledge tests.

1. Air Law:
 - (a) Rules and regulations relevant to the holder of a PPL;
 - (b) Rules of the air;
 - (c) Appropriate air traffic services practices and procedures.

2. Meteorology:
 - (a) Application of elementary aeronautical meteorology;
 - (b) Use of and procedures for obtaining meteorological information altimetry and hazardous weather conditions.

3. Operational Procedures:
 - (a) Application of threat and an error management to operational procedures;
 - (b) Altimeter setting procedures;
 - (c) Use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;
 - (d) Appropriate precautionary and emergency procedures, including action to be taken to avoid hazardous weather, wake turbulence and other operating hazards.

4. Radiotelephony:
 - (a) Communication procedures and phraseology as applied to VFR operations;
 - (b) Action to be taken in case of communication failure.

APPENDIX C-1

**PRIVATE PILOT – AEROPLANE CONVERSION (PCL)
PRIVATE PILOT – AEROPLANE VALIDATION (PVL)**

SAMPLE QUESTIONS, LEARNING STATEMENTS AND ANSWERS

1. If an aircraft is involved in an accident which results in substantial damage to the aircraft, the nearest appropriate authority should be notified

A—by the quickest available means.

B—within 48 hours.

C—within 72 hours.

Answer A—Learning Statement: Recall regulations – immediate notification

2. What information is contained in a convective SIGMET?

A—Tornadoes, embedded thunderstorms, and hail $\frac{3}{4}$ inch or greater in diameter.

B—Severe icing, severe turbulence, or widespread dust storms lowering visibility to less than 3 miles.

C—Surface winds greater than 40 knots or thunderstorms equal to or greater than video integrator processor (VIP) level 4.

Answer A—Learning Statement: Recall information on AIRMETS / SIGMETS

3. Aerodrome taxiway edge lights are identified at night by

A—white directional lights.

B—blue omnidirectional lights.

C—alternate red and green lights.

Answer B—Learning Statement: Recall aerodrome operations – markings / signs / lighting

4. If the aircraft's radio fails, what is the recommended procedure when landing at a controlled aerodrome?

A—Observe the traffic flow, enter the pattern, and look for a light signal from the tower.

B—Enter a crossing leg and rock the wings.

C—Flash the landing lights and cycle the landing gear while circling the aerodrome.

Answer A—Learning Statement: Recall aerodrome traffic patterns – entry procedures

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APPENDIX D

PRIVATE PILOT – HELICOPTER (PRH)

SUBJECT MATTER OUTLINE

The following outlines the major topics and underlying content areas on the Private Pilot—Helicopter knowledge test.

1. Air Law
 - (a) Rules and regulations relevant to the holder of a PPL.
 - (b) Rules of the air.
 - (c) Appropriate air traffic services practices and procedures.

2. Aircraft General Knowledge
 - (a) Principles of operation and functioning of powerplants, systems and instruments.
 - (b) Operating limitations of the appropriate category of aircraft and powerplants.
 - (c) Relevant operational information from the flight manual or other appropriate document.
 - (d) Use and serviceability checks of equipment and systems of appropriate aircraft.
 - (e) Maintenance procedures for airframes, systems and powerplants of appropriate aircraft.

3. Flight Performance and Planning
 - (a) Effects of loading and weight distribution on flight characteristics.
 - (b) Mass and balance calculations.
 - (c) Use and practical application of take-off, landing and other performance data.
 - (d) Pre-flight and en-route flight planning appropriate to private pilot operations under VFR.
 - (e) Preparation and filing of air traffic services flight plans.
 - (f) Appropriate air traffic services procedures, position reporting procedures.
 - (g) Altimeter setting procedures, and operations in areas of high-density traffic.

4. Human Performance
 - (a) Human performance relevant to the appropriate aircraft type.
 - (b) Principles of threat and error management.

5. Meteorology
 - (a) Application of elementary aeronautical meteorology.
 - (b) Use of and procedures for obtaining meteorological information, altimetry and hazardous weather conditions.

APPENDIX D (CONTINUED)

PRIVATE PILOT – HELICOPTER (PRH)

SUBJECT MATTER OUTLINE

6. Navigation

- (a) Practical aspects of air navigation and dead-reckoning techniques.
- (b) Use of aeronautical charts.

7. Operational Procedures

- (a) Application of threat and error management to operational procedures.
- (b) Altimeter setting procedures.
- (c) Use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations.
- (d) Appropriate precautionary and emergency procedures, including action to be taken to avoid hazardous weather, wake turbulence and other operating hazards..

8. Principles of Flight

- (a) Principles of flight relating to the appropriate category of aircraft.
- (b) Flight characteristics and forces acting on an aircraft.

9. Radiotelephony

- (a) Communication procedures and phraseology as applied to VFR operations.
- (b) Action to be taken in case of communication failure.

APPENDIX D-1

PRIVATE PILOT – HELICOPTER (PRH)

SAMPLE QUESTIONS, LEARNING STATEMENTS AND ANSWERS

1. Who is responsible for determining if an aircraft is in condition for safe flight?

A—A licenced aircraft maintenance technician.

B—The pilot in command.

C—The owner or operator.

Answer B—Learning Statement: Recall regulations – pilot-in-command authority / responsibility

2. What type fuel can be substituted for an aircraft if the recommended octane is not available?

A—The next higher octane aviation gas.

B—The next lower octane aviation gas.

C—Unleaded automotive gas of the same octane rating.

Answer A—Learning Statement: Recall fuel – types / characteristics / contamination / fueling / defueling / precautions

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3. (Refer to figure 47.) What is the best rate-of-climb speed for the helicopter?

A—24 MPH.

B—40 MPH.

C—57 MPH.

Answer C—Learning Statement: Recall information on a Height Velocity Diagram (See Appendix N for Figure 47.)

4. To get a complete weather briefing for the planned flight, the pilot should request

A—a general briefing.

B—an abbreviated briefing.

C—a standard briefing.

Answer C—Learning Statement: Recall weather reporting systems – briefings / forecasts / reports

5. When operating at high forward airspeeds, retreating blade stalls are more likely to occur under which condition?

A—Low gross weight and low density altitude.

B—High RPM and low density altitude.

C—Steep turns in turbulent air.

Answer C—Learning Statement: Recall stalls –characteristics / factors / recovery / precautions

APPENDIX E

PRIVATE PILOT – HELICOPTER CONVERSION (PCH) PRIVATE PILOT – HELICOPTER VALIDATION (PVH)

SUBJECT MATTER OUTLINE

The following outlines the major topics and underlying content areas on the Private Pilot – Helicopter Conversion and Validation knowledge tests.

1. Air Law
 - (a) Rules and regulations relevant to the holder of a PPL.
 - (b) Rules of the air.
 - (c) Appropriate air traffic services practices and procedures.
2. Meteorology
 - (a) Application of elementary aeronautical meteorology.
 - (b) Use of and procedures for obtaining meteorological information, pre-flight, and in-flight, altimetry and hazardous weather conditions.
3. Operational Procedures
 - (a) Application of threat and error management to operational procedures.
 - (b) Altimeter setting procedures.
 - (c) Use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations.
 - (d) Appropriate precautionary and emergency procedures , including action to be taken to avoid hazardous weather, wake turbulence and other operating hazards.
4. Radiotelephony
 - (a) Communication procedures and phraseology as applied to VFR operations.
 - (b) Action to be taken in case of communication failure.

APPENDIX E-1

PRIVATE PILOT – HELICOPTER CONVERSION (PCH) PRIVATE PILOT – HELICOPTER VALIDATION (PVH)

SAMPLE QUESTIONS, LEARNING STATEMENTS AND ANSWERS

1. If a licenced pilot changes permanent mailing address and fails to notify the Authority of the new address, the pilot is entitled to exercise the privileges of the pilot licence for a period of only

A—30 days after the date of the move.

B—60 days after the date of the move.

C—90 days after the date of the move.

Answer A—Learning Statement: Recall regulations – change of address

2. Which type of weather briefing should a pilot request to supplement mass disseminated data?

A—An outlook briefing.

B—A supplemental briefing.

C—An abbreviated briefing.

Answer C—Learning Statement: Recall weather reporting systems – briefings / forecasts / reports

3. When exiting the runway, the ‘runway exit’ sign indicates the

A—direction to take-off runway.

B—direction to turn to exit runway onto named taxiway.

C—designation and direction of taxiway leading out of an intersection.

Answer B—Learning Statement: Recall aerodrome operations – markings / signs / lighting

4. Which of the frequency ranges below would be considered to be in the VHF frequency band?

A—3 MHz to 30 MHz.

B—2850 KHz to 22000 KHz.

C—30 MHz to 300 MHz.

Answer C—Learning Statement: Recall radio system – licence requirements / frequencies

APPENDIX F

PRIVATE PILOT – GLIDER (PGL)

SUBJECT MATTER OUTLINE

The following outlines the major topics and underlying content areas on the Private Pilot – Glider knowledge test.

1. Air Law
 - (a) Rules and regulations relevant to the holder of a PPL.
 - (b) Rules of the air.
 - (c) Appropriate air traffic services practices and procedures.
2. Aircraft General Knowledge
 - (a) Principles of systems and instruments.
 - (b) Operating limitations of gliders.
 - (c) Relevant operational information from the flight manual or other appropriate document.
3. Flight Performance and Planning
 - (a) Effects of loading and weight distribution on flight characteristics.
 - (b) Mass and balance calculations.
 - (c) Use and practical application of take-off, landing and other performance data.
 - (d) Pre-flight and en-route flight planning appropriate to private pilot operations under VFR.
 - (e) Preparation and filing of air traffic services flight plans.
 - (f) Appropriate air traffic services procedures, position reporting procedures.
 - (g) Altimeter setting procedures and operations in areas of high-density traffic.
4. Human Performance
 - (a) Human performance relevant to the private pilot glider.
 - (b) Principles of threat and error management.
5. Meteorology
 - (a) Application of elementary aeronautical meteorology.
 - (b) Use of and procedures for obtaining meteorological information, altimetry and hazardous weather conditions.
6. Navigation
 - (a) Practical aspects of air navigation, and dead-reckoning techniques.
 - (b) Use of aeronautical charts.

APPENDIX F (CONTINUED)
PRIVATE PILOT – GLIDER (PGL)
SUBJECT MATTER OUTLINE

7. Operational Procedures

- (a) Application of threat and error management to operational procedures.
- (b) Altimeter setting procedures
- (c) Use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations.
- (d) Appropriate precautionary and emergency procedures, including action to be taken to avoid hazardous weather, wake turbulence and other operating hazards.

8. Principles of Flight

- (a) Principles of flight relating to gliders.
- (b) Flight characteristics and forces acting on an aircraft.

9. Radiotelephony

- (a) Communication procedures and phraseology as applied to VFR operations.
- (b) Action to be taken in case of communication failure.

APPENDIX F-1

PRIVATE PILOT – GLIDER (PGL)

SAMPLE QUESTIONS, LEARNING STATEMENTS AND ANSWERS

1. If a licenced pilot changes permanent mailing address and fails to notify the Authority of the new address, the pilot is entitled to exercise the privileges of the pilot licence for a period of only

A—30 days after the date of the move.

B—60 days after the date of the move.

C—90 days after the date of the move.

Answer A—Learning Statement: Recall regulations – change of address

2. If it is necessary to set the altimeter from 29.15 to 29.85, what change occurs?

A—70-foot increase in indicated altitude.

B—70-foot increase in density altitude.

C—700-foot increase in indicated altitude.

Answer C—Learning Statement: Recall altimeter – settings / setting procedures

3. What is absolute altitude?

A—The altitude read directly from the altimeter.

B—The vertical distance of the aircraft above the surface.

C—The height above the standard datum plane.

Answer B—Learning Statement: Define altitude – absolute / true / indicated / density / pressure

4. A sailplane has a best glide ratio of 30:1. How many nautical miles will the glider travel while losing 2,000 feet?

A—10 nautical miles.

B—15 nautical miles.

C—21 nautical miles.

Answer A—Learning Statement: Calculate aircraft performance – glide

5. The suffix ‘nimbus,’ used in naming clouds, means

A—a cloud with extensive vertical development.

B—a rain cloud.

C—a middle cloud containing ice pellets.

Answer B—Learning Statement: Recall cloud types – formation / resulting weather

APPENDIX G

PRIVATE PILOT – GLIDER CONVERSION (PCG) PRIVATE PILOT – GLIDER VALIDATION (PVG)

SUBJECT MATTER OUTLINE

The following outlines the major topics and underlying content areas on the Private Pilot – Glider Conversion and Validation knowledge tests.

1. Air Law
 - (a) Rules and regulations relevant to the holder of a PPL.
 - (b) Rules of the air.
 - (c) Appropriate air traffic services practices and procedures.

2. Meteorology
 - (a) Application of elementary aeronautical meteorology.
 - (b) Use of and procedures for obtaining meteorological information, altimetry and hazardous weather conditions.

3. Operational Procedures
 - (a) Application of threat and error management to operational procedures.
 - (b) Altimeter setting procedures.
 - (c) Use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations.
 - (d) Appropriate precautionary and emergency procedures, including action to be taken to avoid hazardous weather, wake turbulence and other operating hazards.

4. Radiotelephony
 - (a) Communication procedures and phraseology as applied to VFR operations.
 - (b) Action to be taken in case of communication failure.

APPENDIX G-1

PRIVATE PILOT – GLIDER CONVERSION (PCG) PRIVATE PILOT – GLIDER VALIDATION (PVG)

SAMPLE QUESTIONS, LEARNING STATEMENTS AND ANSWERS

1. With respect to the Personnel Licencing, which is a class of aircraft?

- A—Aeroplane, helicopter, glider, lighter-than-air.
- B—Single-engine land and sea, multiengine land and sea.
- C—Lighter-than-air, airship, hot air balloon, gas balloon.

Answer B—Learning Statement: Recall regulations – aircraft Category / Class

2. What is indicated when a current convective SIGMET forecasts thunderstorms?

- A—Moderate thunderstorms covering 30 percent of the area.
- B—Moderate or severe turbulence.
- C—Thunderstorms obscured by massive cloud layers.

Answer C—Recall information on AIRMETS / SIGMETS

3. When landing behind a large aircraft, the pilot should avoid wake turbulence by staying

- A—above the large aircraft's final approach path and landing beyond the large aircraft's touchdown point.
- B—below the large aircraft's final approach path and landing before the large aircraft's touchdown point.
- C—above the large aircraft's final approach path and landing before the large aircraft's touchdown point.

Answer A—Learning Statement: Recall wake turbulence – characteristics / avoidance techniques

4. A non-tower satellite aerodrome, within the same Class D airspace as that designated for the primary aerodrome, requires radio communications be established and maintained with the

- A—satellite aerodrome's UNICOM.
- B—associated Flight Service Station.
- C—primary aerodrome's control tower.

Answer C—Learning Statement: Recall airspace classes – limits / requirements / restrictions / airspeeds / equipment

APPENDIX H

PRIVATE PILOT – AIRSHIP (PLA)

SUBJECT MATTER OUTLINE

The following outlines the major topics and underlying content areas on the Private Pilot – Airship knowledge test.

1. Air Law
 - (a) Rules and regulations relevant to the holder of a PPL.
 - (b) Rules of the air.
 - (c) Appropriate air traffic services practices and procedures.

2. Aircraft General Knowledge
 - (a) Principles of operation and functioning of powerplants, systems and instruments.
 - (b) Operating limitations of airships and powerplants.
 - (c) Relevant operational information from the flight manual or other appropriate document.

3. Flight Performance and Planning
 - (a) Effects of loading and weight distribution on aircraft handling, flight characteristics and performance.
 - (b) Mass and balance calculations.
 - (c) Use and practical application of take-off, landing and other performance data.
 - (d) Pre-flight and en-route flight planning appropriate to private operations under VFR.
 - (e) Preparation and filing of air traffic services flight plans.
 - (f) Appropriate air traffic services procedures, position reporting procedures.
 - (g) Altimeter setting procedures, and operations in areas of high-density traffic.

4. Human Performance
 - (a) Human performance relevant to the private pilot airship.
 - (b) Principles of threat and error management.

5. Meteorology
 - (a) Application of elementary aeronautical meteorology.
 - (b) Use of and procedures for obtaining meteorological information, altimetry and hazardous weather conditions.

APPENDIX H (CONTINUED)
PRIVATE PILOT – AIRSHIP (PLA)
SUBJECT MATTER OUTLINE

6. Navigation

- (a) Practical aspects of air navigation and dead-reckoning techniques.
- (b) Use of aeronautical charts.

7. Operational Procedures

- (a) Application of threat and error management to operational procedures.
- (b) Altimeter setting procedures.
- (c) Use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations.
- (d) Appropriate precautionary and emergency procedures, including action to be taken to avoid hazardous weather, wake turbulence and other operating hazards.
- (e) Operational procedures for carriage of freight.
- (f) Potential hazards associated with dangerous goods.
- (g) Requirements and practices for safety briefing to passengers, including precautions to be observed when embarking and disembarking from aircraft.
- (h) Safety procedures associated with flight under VFR.

8. Principles of Flight

- (a) Principles of flight relating to airships.
- (b) Flight characteristics and forces acting on an aircraft.

9. Radiotelephony

- (a) Communication procedures and phraseology as applied to VFR operations.
- (b) Action to be taken in case of communication failure.

APPENDIX H-1

PRIVATE PILOT – AIRSHIP (PLA)

SAMPLE QUESTIONS, LEARNING STATEMENTS AND ANSWERS

1. What action is required when two aircraft of the same category converge, but not head-on?

- A—The faster aircraft shall give way.
- B—The aircraft on the left shall give way.
- C—Each aircraft shall give way to the right.

Answer B—Learning Statement: Recall regulations – general right-of-way rules

2. The basic purpose of adjusting the fuel/air mixture at altitude is to

- A—decrease the amount of fuel in the mixture in order to compensate for increased air density.
- B—decrease the fuel flow in order to compensate for decreased air density.
- C—increase the amount of fuel in the mixture to compensate for the decrease in pressure and density of the air.

Answer B—Learning Statement: Recall fuel – air mixture

3. What effect does high density altitude have on aircraft performance?

- A—It increases engine performance.
- B—It reduces climb performance.
- C—It increases takeoff performance.

Answer B—Learning Statement: Recall aircraft performance – density altitude

4. Which statement best defines hypoxia?

- A—A state of oxygen deficiency in the body.
- B—An abnormal increase in the volume of air breathed.
- C—A condition of gas bubble formation around the joints or muscles.

Answer A—Learning Statement: Recall physiological factors – cause / effects of hypoxia

5. One of the most easily recognized discontinuities across a front is

- A—a change in temperature.
- B—an increase in cloud coverage.
- C—an increase in relative humidity.

Answer A—Learning Statement: Recall weather associated with frontal activity / air masses

APPENDIX I

PRIVATE PILOT – AIRSHIP CONVERSION (PCA) PRIVATE PILOT – AIRSHIP VALIDATION (PVA)

SUBJECT MATTER OUTLINE

The following outlines the major topics and underlying content areas on the Private Pilot – Airship Conversion and Validation knowledge tests.

1. Air Law
 - (a) Rules and regulations relevant to the holder of a PPL.
 - (b) Rules of the air.
 - (c) Appropriate air traffic services practices and procedures.

2. Meteorology
 - (a) Application of elementary aeronautical meteorology.
 - (b) Use of and procedures for obtaining meteorological information, altimetry and hazardous weather conditions.

3. Operational Procedures
 - (a) Application of threat and error management to operational procedures.
 - (b) Altimeter setting procedures.
 - (c) Use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations.
 - (d) Appropriate precautionary and emergency procedures, including action to be taken to avoid hazardous weather, wake turbulence and other operating hazards.

4. Radiotelephony
 - (a) Communication procedures and phraseology as applied to VFR operations.
 - (b) Action to be taken in case of communication failure.

APPENDIX I-1

PRIVATE PILOT – AIRSHIP CONVERSION (PCA) PRIVATE PILOT – AIRSHIP VALIDATION (PVA)

SAMPLE QUESTIONS, LEARNING STATEMENTS AND ANSWERS

1. The definition of night is

A—sunset to sunrise.

B—1 hour before sunset to 1 hour after sunrise.

C—the time between the end of evening civil twilight and the beginning of morning civil twilight or such other period between sunset and sunrise.

Answer C—Learning Statement: Recall regulations – definitions

2. To get a complete weather briefing for the planned flight, the pilot should request

A—a general briefing.

B—an abbreviated briefing.

C—a standard briefing.

Answer C—Recall weather reporting systems – briefings / forecasts / reports

3. During flight in an airship, when is vertical equilibrium established?

A—When buoyancy is greater than airship weight.

B—When buoyancy equals airship weight.

C—When buoyancy is less than airship weight.

Answer B—Recall airship – buoyancy

4. When should pilots decline a land and hold short (LAHSO) clearance?

A—Pilots can not decline clearance.

B—Only when the tower operator concurs.

C—When it will compromise safety.

Answer C—Learning Statement: Interpret ATC communications / instructions / terminology

APPENDIX J

PRIVATE PILOT – BALLOON GAS (PBG)

SUBJECT MATTER OUTLINE

The following outlines the major topics and underlying content areas on the Private Pilot – Balloon Gas knowledge test.

1. Air Law
 - (a) Rules and regulations relevant to the holder of a PPL.
 - (b) Rules of the air.
 - (c) Appropriate air traffic services practices and procedures.

2. Aircraft General Knowledge
 - (a) Principles of systems and instruments.
 - (b) Operating limitations of gas balloons.
 - (c) Relevant operational information from the flight manual or other appropriate document.

3. Flight Performance and Planning
 - (a) Effects of loading and weight distribution on flight characteristics.
 - (b) Mass and balance calculations.
 - (c) Use and practical application of launching, landing and other performance data.
 - (d) Pre-flight and en-route flight planning appropriate to private pilot operations under VFR.
 - (e) Preparation and filing of air traffic services flight plans.
 - (f) Appropriate air traffic services procedures, position reporting procedures
 - (g) Altimeter setting procedures, and operations in areas of high-density traffic.

4. Human Performance
 - (a) Human performance relevant to the private pilot gas balloon.
 - (b) Principles of threat and error management.

5. Meteorology
 - (a) Application of elementary aeronautical meteorology.
 - (b) Use of and procedures for obtaining meteorological information, altimetry and hazardous weather conditions.

6. Navigation
 - (a) Practical aspects of air navigation, and dead-reckoning techniques.
 - (b) Use of aeronautical charts.

APPENDIX J (CONTINUED)

PRIVATE PILOT – BALLOON GAS (PBG)

SUBJECT MATTER OUTLINE

7. Operational Procedures

- (a) Application of threat and error management to operational procedures.
- (b) Altimeter setting procedures
- (c) Use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations.
- (d) Appropriate precautionary and emergency procedures, including action to be taken to avoid hazardous weather, wake turbulence and other operating hazards.

8. Principles of Flight

- (a) Principles of flight relating to gas balloons.
- (b) Flight characteristics and forces acting on a balloon.

9. Radiotelephony

- (a) Communication procedures and phraseology as applied to VFR operations.
- (b) Action to be taken in case of communication failure.

APPENDIX J-1

PRIVATE PILOT – BALLOON GAS (PBG)

SAMPLE QUESTIONS, LEARNING STATEMENTS AND ANSWERS

1. The definition of night is

A—sunset to sunrise.

B—1 hour before sunset to 1 hour after sunrise.

C—the time between the end of evening civil twilight and the beginning of morning civil twilight or such other period between sunset and sunrise.

Answer C—Learning Statement: Recall regulations – definitions

2. What effect, if any, does high humidity have on aircraft performance?

A—It increases performance.

B—It decreases performance.

C—It has no effect on performance.

Answer B—Recall aircraft performance – atmospheric effects

3. When a stressful situation is encountered in flight, an abnormal increase in the volume of air breathed in and out can cause a condition know as

A—hyperventilation.

B—aerosinusitis.

C—erotitis.

Answer A—Learning Statement: Recall physiological factors – hyperventilation

4. Which type of weather briefing should a pilot request to supplement mass disseminated data?

A—An outlook briefing.

B—A supplemental briefing.

C—An abbreviated briefing.

Answer C—Learning Statement: Recall weather reporting systems – briefings / forecasts / reports

5. Normal VFR operations in Class D airspace with an operating control tower require the ceiling and visibility to be at least

A—1,000 feet and 1 statute mile.

B—1,000 feet and 3 nautical miles.

C—1,500 feet and 3 statute miles.

Answer C—Learning Statement: Recall airspace requirements – visibility / cloud clearance

APPENDIX K

PRIVATE PILOT – BALLOON GAS CONVERSION (PCB) PRIVATE PILOT – BALLOON GAS VALIDATION (PVB)

SUBJECT MATTER OUTLINE

The following outlines the major topics and underlying content areas on the Private Pilot – Balloon Gas Conversion and Validation knowledge tests.

1. Air Law
 - (a) Rules and regulations relevant to the holder of a PPL.
 - (b) Rules of the air.
 - (c) Appropriate air traffic services practices and procedures.

2. Meteorology
 - (a) Application of elementary aeronautical meteorology.
 - (b) Use of and procedures for obtaining meteorological information, altimetry, and hazardous weather conditions.

3. Operational Procedures
 - (a) Application of threat and error management to operational procedures.
 - (b) Altimeter setting procedures
 - (c) Use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations.
 - (d) Appropriate precautionary and emergency procedures, including action to be taken to avoid hazardous weather, wake turbulence and other operating hazards.

4. Radiotelephony
 - (a) Communication procedures and phraseology as applied to VFR operations.
 - (b) Action to be taken in case of communication failure.

APPENDIX K-1

PRIVATE PILOT – BALLOON GAS CONVERSION (PCB) PRIVATE PILOT – BALLOON GAS VALIDATION (PVB)

SAMPLE QUESTIONS, LEARNING STATEMENTS AND ANSWERS

1. Who is responsible for determining if an aircraft is in condition for safe flight?

A—A licenced aircraft maintenance technician.

B—The pilot in command.

C—The owner or operator.

Answer B—Learning Statement: Recall regulations – pilot-in-command authority / responsibility

2. Low-level turbulence can occur and icing can become hazardous in which type of fog?

A—Rain-induced fog.

B—Upslope fog.

C—Steam fog.

Answer C—Learning Statement: Recall fog – types / formation / resulting weather

3. A non-tower satellite aerodrome within the same Class D airspace as that designated for the primary aerodrome, requires radio communications be established and maintained with the

A—satellite aerodrome's UNICOM.

B—associated Flight Service Station.

C—primary aerodrome's control tower.

Answer C—Learning Statement: Recall airspace classes – limits / requirements / restrictions / airspeeds / equipment

4. Normal VFR operations in Class D airspace with an operating control tower require the ceiling and visibility to be at least

A—1,000 feet and 1 statute mile.

B—1,000 feet and 3 nautical miles.

C—1,500 feet and 3 statute miles.

Answer C—Learning Statement: Recall airspace requirements – visibility / cloud clearance

APPENDIX L

PRIVATE PILOT – BALLOON HOT AIR (PBH)

SUBJECT MATTER OUTLINE

The following outlines the major topics and underlying content areas on the Private Pilot – Balloon Hot Air knowledge test.

1. Air Law
 - (a) Rules and regulations relevant to the holder of a PPL.
 - (b) Rules of the air.
 - (c) Appropriate air traffic services practices and procedures.

2. Aircraft General Knowledge
 - (a) Principles of systems and instruments.
 - (b) Operating limitations of hot air balloons.
 - (c) Relevant operational information from the flight manual or other appropriate document.

3. Flight Performance and Planning
 - (a) Effects of loading and weight distribution on flight characteristics.
 - (b) Mass and balance calculations.
 - (c) Use and practical application of launching, landing and other performance data.
 - (d) Pre-flight and en-route flight planning appropriate to private pilot operations under VFR.
 - (e) Preparation and filing of air traffic services flight plans.
 - (f) Appropriate air traffic services procedures, position reporting procedures.
 - (g) Altimeter setting procedures, and operations in areas of high-density traffic.

4. Human Performance
 - (a) Human performance relevant to the private pilot hot air balloons.
 - (b) Principles of threat and error management.

5. Meteorology
 - (a) Application of elementary aeronautical meteorology.
 - (b) Use of and procedures for obtaining meteorological information, altimetry and hazardous weather conditions.

6. Navigation
 - (a) Practical aspects of air navigation and dead-reckoning techniques.
 - (b) Use of aeronautical charts.

APPENDIX L (CONTINUED)

PRIVATE PILOT – BALLOON HOT AIR (PBH)

SUBJECT MATTER OUTLINE

7. Operational Procedures

- (a) Application of threat and error management to operational procedures.
- (b) Altimeter setting procedures.
- (c) Use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations.
- (d) Appropriate precautionary and emergency procedures, including action to be taken to avoid hazardous weather, wake turbulence and other operating hazards.

8. Principles of Flight

- (a) Principles of flight relating to hot air balloons.
- (b) Flight characteristics and forces acting on a balloon.

9. Radiotelephony

- (a) Communication procedures and phraseology as applied to VFR operations.
- (b) Action to be taken in case of communication failure.

APPENDIX L-1

PRIVATE PILOT – BALLOON HOT AIR (PBH)

SAMPLE QUESTIONS, LEARNING STATEMENTS AND ANSWERS

1. If a licenced pilot changes permanent mailing address and fails to notify the Authority of the new address, the pilot is entitled to exercise the privileges of the pilot licence for a period of only

A—30 days after the date of the move.

B—60 days after the date of the move.

C—90 days after the date of the move.

Answer A—Learning Statement: Recall regulations – change of address

2. What is absolute altitude?

A—The altitude read directly from the altimeter.

B—The vertical distance of the aircraft above the surface.

C—The height above the standard datum plane.

Answer B—Learning Statement: Define altitude – absolute / true / indicated / density / pressure

3. What is one procedure for relighting the burner while in flight?

A—Open the regulator or blast valve full open and light the pilot light.

B—Close the tank valves, vent the fuel lines, reopen the tank valves, and light the pilot light.

C—Open another tank valve, open the regulator or blast valve, and light the main jets with reduced flow.

Answer C—Learning Statement: Recall emergency conditions / procedures

4. What is the relationship of false lift with the wind?

A—False lift increases as the wind accelerates the balloon.

B—False lift does not exist if the surface winds are calm.

C—False lift decreases as the wind accelerates the balloon.

Answer C—Learning Statement: Recall forces acting on aircraft – airspeed / air density / lift / drag

APPENDIX M

PRIVATE PILOT – BALLOON HOT AIR CONVERSION (PCT) PRIVATE PILOT – BALLOON HOT AIR VALIDATION (PVT)

SUBJECT MATTER OUTLINE

The following outlines the major topics and underlying content areas on the Private Pilot – Balloon Hot Air Conversion and Validation knowledge tests.

1. Air Law
 - (a) Rules and regulations relevant to the holder of a PPL.
 - (b) Rules of the air.
 - (c) Appropriate air traffic services practices and procedures.

2. Meteorology
 - (a) Application of elementary aeronautical meteorology.
 - (b) Use of and procedures for obtaining meteorological information, altimetry and hazardous weather conditions.

3. Operational Procedures
 - (a) Application of threat and error management to operational procedures.
 - (b) Altimeter setting procedures.
 - (c) Use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations.
 - (d) Appropriate precautionary and emergency procedures, including action to be taken to avoid hazardous weather, wake turbulence and other operating hazards.

4. Radiotelephony
 - (a) Communication procedures and phraseology as applied to VFR operations.
 - (b) Action to be taken in case of communication failure.

APPENDIX M-1

PRIVATE PILOT – BALLOON HOT AIR CONVERSION (PCT) PRIVATE PILOT – BALLOON HOT AIR VALIDATION (PVT)

SAMPLE QUESTIONS, LEARNING STATEMENTS AND ANSWERS

1. If a licenced pilot changes permanent mailing address and fails to notify the Authority of the new address, the pilot is entitled to exercise the privileges of the pilot licence for a period of only

A—30 days after the date of the move.

B—60 days after the date of the move.

C—90 days after the date of the move.

Answer A—Learning Statement: Recall regulations – change of address

2. Low-level turbulence can occur and icing can become hazardous in which type of fog?

A—Rain-induced fog.

B—Upslope fog.

C—Steam fog.

Answer C—Learning Statement: Recall fog – types / formation / resulting weather

3. What is one procedure for relighting the burner while in flight?

A—Open the regulator or blast valve full open and light the pilot light.

B—Close the tank valves, vent the fuel lines, reopen the tank valves, and light the pilot light.

C—Open another tank valve, open the regulator or blast valve, and light the main jets with reduced flow.

Answer C—Learning Statement: Recall emergency conditions / procedures

4. What is the relationship of false lift with the wind?

A—False lift increases as the wind accelerates the balloon.

B—False lift does not exist if the surface winds are calm.

C—False lift decreases as the wind accelerates the balloon.

Answer C—Learning Statement: Recall forces acting on aircraft – airspeed / air density / lift / drag

APPENDIX N

FIGURES FOR SAMPLE QUESTIONS IN THIS PUBLICATION

APPENDIX D-1, QUESTION NUMBER 3, FIGURE 47

**HEIGHT VELOCITY DIAGRAM
FOR
OPERATION AT SEA LEVEL**

(Tests conducted on prepared surfaces)
2200 POUNDS GROSS WEIGHT

//// AVOID OPERATION IN THIS AREA

