



PERSONNEL
LICENSING
ADVISORY
CIRCULAR

Barbados Civil Aviation Department

BCAD Document PLAC-054

PRIVATE PILOT-
BALLOON LICENCE
SKILL TEST STANDARDS

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**Subject: PRIVATE PILOT – BALLOON LICENCE SKILL TEST STANDARDS
BCAD Advisory Circular PLAC-054**

Date: 07/10/30

FOREWORD

1. (1) The BCAD has developed skill test standards for airmen licences and ratings and these are published as BCAD PL Advisory Circulars (PLACs). This PLAC establishes the standards for the private pilot licence skill tests for the balloon category BCAD inspectors and designated pilot skill test examiners shall conduct skill tests in compliance with these standards. Flight instructors and applicants should find these standards helpful in skill test preparation. Other PLACs have been developed for other airmen licences and can be obtained from the BCAD website: www.bcad.gov.bb.

(2) Terms, such as "shall" and "must" are directive in nature and when used in this document indicate that an action is mandatory. Guidance information is described in terms of "should" and "may" indicating the actions are desirable or permissive, but not mandatory.

(3) The BCAD gratefully acknowledges the valuable assistance provided by the FAA in the development of these skill test standards (STS).

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

(5) This PLAC may be downloaded from the BCAD website at www.bcad.gov.bb. Subsequent changes to this PLAC will also be available on BCAD web site.

(6) Comments regarding this publication should be sent to:

The Barbados Civil Aviation Department,
Grantley Adams International Airport,
Christ Church
Barbados

E. A. Archer
Director of Civil Aviation

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PURPOSE

1. The purpose of this BCAD Advisory Circular (PLAC) is to prescribe the standards that shall be used by BCAD inspectors and designated skill test examiners when conducting private pilot—balloon skill tests. Flight instructors are expected to use this document when preparing applicants for skill tests. Applicants should be familiar with this document and refer to these standards during their training.

GENERAL

2. (1) An applicant for a Barbados Private Pilot licence is required under BCARS No.1 to demonstrate to the Authority through a skill test, his ability to perform as a pilot in command of an aircraft, the relevant procedures and manoeuvres prescribed by the BCARs, with a degree of competence appropriate to the privileges granted to the holder of a Private Pilot Licence. This PLAC has been published by the BCAD to establish the standards for the Private Pilot Licence skill test for the balloon category. BCAD inspectors and designated skill test examiners shall conduct skill tests in compliance with these standards. Flight instructors and applicants should find these standards helpful in preparing students for the required skill test for a Barbados Private Pilot Licence.

SKILL TEST STANDARDS CONCEPT

3. BCARS General Application & Personnel Licensing specifies the areas of operation in which knowledge and skill must be demonstrated by the applicant before the issue of a pilot licence or rating. The BCARs provide the flexibility to permit the BCAD to publish STSs containing the areas of operation and specific tasks in which pilot competency shall be demonstrated. The BCAD shall revise this STS whenever it is determined that changes are needed in the interest of safety. Adherence to the provisions of the BCARs and the STS is mandatory for the evaluation of private pilot applicants.

SKILL TEST DESCRIPTION

4. (1) This BAC contains the STS for private pilot – balloon with either gas or hot air rating. This includes the AREAS OF OPERATION and TASKS required for the issuance of an initial private pilot—airship licence and for the addition of other aircraft category ratings.

(2) AREAS OF OPERATION are phases of the skill test arranged in a logical sequence within each standard. They begin with preflight preparation and end with postflight procedures. The examiner may conduct the skill test in any sequence that results in a complete and efficient test; however, the ground portion of the skill test shall be accomplished before the flight portion.

(3) TASKS are titles of knowledge areas, flight procedures, or manoeuvres appropriate to an AREA OF OPERATION.

(4) The TASKS required for each additional aircraft category rating are shown in the Rating Task Table on page 16, if applicable.

(5) NOTE is used to emphasize special considerations required in the AREA OF OPERATION or TASK.

(6) REFERENCE identifies the publication(s) that describe(s) the TASK. Descriptions of TASKS are not included in the standards because this information can be found in the current issue of the listed references. Publications other than those listed may be used for references if their content conveys substantially the same meaning as the referenced publications. Many of the publications listed are publications published by the Federal Aviation Administration of the United States (FAA), and adopted by BCAD in cooperation with the FAA. The most recent version of these references should be used. The STSs are based on the following references:

BCAR	General Application & Personnel Licensing
BCAR	Airworthiness
BCARS	Operations
FAA-H-8083-25	Pilot's Handbook of Aeronautical Knowledge
	Flying Training Handbook
	Pilot's Weight and Balance Handbook (formerly 91-23)
	Cold Weather Operation of Aircraft (formerly 91-13)
FAA AC 00-6	Aviation Weather
FAAAC 00-45	Aviation Weather Services
FAA AC 60-22	Aeronautical Decision Making
FAA AC 61-84	Role of Preflight Preparation
FAA AC 90-48	Pilot's Role in Collision Avoidance
FAA AC 120-51	Crew Resource Management Training
AIP	Aeronautical Information Publication – Eastern Caribbean
AFD	Airport Facility Directory
BFM	BCAD Approved Balloon Flight Manual
POH	Pertinent Pilot's Operation Handbooks
NOTAMS	Notices to Airmen
Other	Industry related materials

(7) The Objective lists the important elements that must be satisfactorily performed to demonstrate competency in a TASK. The Objective includes:

- (a) Specifically what the applicant should be able to do;
- (b) The conditions under which the TASK is to be performed; and
- (c) The acceptable standards of performance.

(8) The following abbreviations have the meanings shown:

ADM	Aeronautical Decision Making
AIRMETS	Airman's Meteorological Information
APV	Approach with Vertical Guidance
AFD	Airport Facility Directory
ATC	Air Traffic Control
AIP	Aeronautical Information Publication of the Eastern Caribbean
ATS	Air Traffic Service

BCARS	Barbados Civil Aviation Regulations
CRM	Crew Resource Management
FAA AC	Federal Aviation Administration Advisory Circular
FSTD	Flight Simulation Training Device
NOTAM	Notice to Airmen
NPA	Nonprecision Approach
PIREP(s)	Pilot Weather Reports
SIGMETS	Significant Meteorological Advisory
SRM	Single Pilot Resource Management
STS	Skill Test Standards
SUA	Single Use Airspace
TFR	Temporary Flight Restriction

USE OF SKILL TEST STANDARDS

5. (1) The BCAD requires that all private pilot skill tests be conducted in accordance with the appropriate private pilot STS and the policies set forth herein. Applicants shall be evaluated in all tasks included in the areas of operation of the appropriate STS (unless otherwise noted).

(2) An applicant who holds at least a private pilot licence seeking an additional aircraft category rating in the balloon category shall take the entire private pilot – balloon skill test in full.

(3) In preparation for each skill test, the flight test examiner shall develop a written "plan of action." The "plan of action" shall include all tasks in each area of operation, unless noted otherwise. If the elements in one task have already been evaluated in another task, they need not be repeated. For example, the "plan of action" need not include evaluating the applicant on complying with markings, signals, and clearances at the end of the flight, if that element was sufficiently observed at the beginning of the flight. **Any task selected for evaluation during a skill test shall be evaluated in its entirety.**

(4) The flight test examiner is not required to follow the precise order in which the areas of operation and tasks appear in this document. The flight test examiner may change the sequence or combine tasks with similar Objectives to have an orderly and efficient flow of the skill test..

(5) The flight test examiner is expected to use good judgment in the performance of simulated emergency procedures. The use of the safest means for simulation is expected. Consideration must be given to local conditions, both meteorological and topographical, at the time of the test, as well as the applicant's workload, and the condition of the aircraft used. If the procedure being evaluated would jeopardize safety, it is expected that the applicant will simulate that portion of the manoeuvre.

SPECIAL EMPHASIS AREAS

6. (1) Skill test examiners shall place special emphasis upon areas of aircraft operations considered critical to flight safety. Among these are:

- (a) Wake turbulence avoidance;
- (b) Low level wind shear;

- (c) In-flight collision avoidance;
- (d) Runway incursion avoidance; and
- (e) Checklist usage.

(2) Although these areas may not be specifically addressed under each TASK, they are essential to flight safety and will be evaluated during the skill test.

SKILL TEST PREREQUISITES: PRIVATE PILOT - AIRSHIP LICENCE

7. An applicant for a private pilot - balloon skill test is required by BCARs (General Applications and Personnel Licence) NO:30 to:

- (a) Age: Be at least 17 years of age.
- (b) Medical fitness: hold Class 2 medical certificate issued as appropriate to the level of licence held; and
- (c) Language: Be able to read, speak, write, and understand the English language; and
- (d) Training: Obtain the applicable training and aeronautical experience prescribed for the instrument rating sought;
- (e) Language Proficiency: Be able to read, speak, write and understand the English Language.
- (f) Instructor Authorization: Obtain a written statement from an authorized flight instructor certifying that the applicant has been given flight training in preparation for the skill test within 60 days preceding the date of application. The statement shall also state that the instructor finds the applicant competent to pass the skill test and that the applicant has satisfactory knowledge of the subject area(s) in which a deficiency was indicated by the Airman Knowledge Test Report.

AIRCRAFT AND EQUIPMENT REQUIRED FOR THE SKILL TEST

8. (1) the private pilot - balloon applicant is required to provide an airworthy, certificated aircraft for use during the skill test. Its operating limitations must not prohibit the TASKS required on the skill test. Flight instruments are those required for controlling the aircraft without outside references. The aircraft shall have fully functioning dual controls, except as authorized by the Authority.

USE OF BCAD APPROVED FLIGHT SIMULATION TRAINING DEVICES

9. Reserved.

FLIGHT INSTRUCTOR RESPONSIBILITY

10. (1) an appropriately rated flight instructor is responsible for training the pilot applicant to acceptable standards in all subject matter areas, procedures, and manoeuvres included in the TASKS within the appropriate skill test standard.

(2) Because of the impact of their teaching activities in developing safe,

proficient pilots, flight instructors should exhibit a high level of knowledge, skill, and the ability to impart that knowledge and skill to students. Additionally, the flight instructor must certify that the applicant is able to perform safely as a private pilot – airship and is competent to pass the required skill test.

(2) Throughout the applicant's training, the flight instructor is responsible for emphasizing the performance of effective visual scanning, collision avoidance, and runway incursion avoidance procedures. These areas are covered, in part, in AP 90-48, Pilot's Role in Collision Avoidance; FAA-H-8083-3, Aeroplane Flying Handbook; FAA-H-8083-25, Pilot's Handbook of Aeronautical Knowledge; and the Aeronautical Information Publication.

SKILL TEST EXAMINER¹ RESPONSIBILITY

10. (1) The skill test examiner conducting the skill test is responsible for determining that the applicant meets the acceptable standards of knowledge and skill of each task within the appropriate STS. This is an ongoing process throughout the test. Oral questioning, to determine the applicant's knowledge of tasks and related safety factors, should be used judiciously at all times, especially during the flight portion of the skill test. Examiners shall test to the greatest extent practicable the applicant's correlative abilities rather than mere rote enumeration of facts throughout the skill test.

(2) If the skill test examiner determines that a task is incomplete, or the outcome uncertain, he may require the applicant to repeat that task, or portions of that task. This provision has been made in the interest of fairness and does not mean that instruction, practice, or the repeating of an unsatisfactory task is permitted during the certification process. In this case, the remaining tasks of the skill test phase should be completed before repeating the questionable task.

(3) Throughout the flight portion of the skill test, the skill test examiner shall evaluate the applicant's use of visual scanning and collision avoidance procedures.

SATISFACTORY PERFORMANCE

11. Satisfactory performance to meet the requirements for licence issue is based on the applicant's ability to safely -

- (a) Perform the tasks specified in the areas of operation for the licence or rating sought within the approved standards;
- (b) Demonstrate mastery of the aircraft with the successful outcome of each task performed never seriously in doubt;
- (c) Demonstrate satisfactory proficiency and competency within the approved standards;
- (d) Demonstrate sound judgment; and

¹ The word "examiner" denotes either the BCAD inspector or BCAD designated pilot examiner who conducts the skill test.

- (e) Demonstrate single-pilot competence if the aircraft is type certificated for single-pilot operations.

UNSATISFACTORY PERFORMANCE

12. (1) The tolerances represent the performance expected in good flying conditions. If, in the judgment of the skill test examiner, the applicant does not meet the standards of performance of any task performed, the associated area of operation is failed and therefore, the skill test is failed.

(2) The skill test examiner or applicant may discontinue the test at any time when the failure of an area of operation makes the applicant ineligible for the licence or rating sought. **The test may be continued ONLY with the consent of the applicant.** If the test is discontinued, the applicant is entitled credit for only those areas of operation and their associated tasks that were satisfactorily performed. However, during the retest, and at the discretion of the skill test examiner, any task may be re-evaluated, including those previously passed.

(3) Typical areas of unsatisfactory performance and grounds for disqualification are -

- (a) Any action or lack of action by the applicant that requires corrective intervention by the flight test examiner to maintain safe flight;
- (b) Failure to use proper and effective visual scanning techniques to clear the area before and while performing manoeuvres;
- (c) Consistently exceeding tolerances stated in the Objectives;
- (d) Failure to take prompt corrective action when tolerances are exceeded.

(4) When a notice of disapproval is issued, the skill test examiner shall record the applicant's unsatisfactory performance in terms of the area of operation and specific task(s) not meeting the standard appropriate to the skill test conducted. The area(s) of operation/tasks not tested and the number of skill test failures shall also be recorded. If the applicant fails the skill test because of a special emphasis area, the Notice of Disapproval shall indicate the associated task.

AERONAUTICAL DECISION MAKING AND RISK MANAGEMENT

13. (1) the examiner shall evaluate the applicant's ability throughout the skill test to use good aeronautical decision making procedures in order to evaluate risks. The examiner shall accomplish this requirement by developing scenarios that incorporate as many TASKS as possible to evaluate the applicants risk management in making safe aeronautical decisions. For example, the examiner may develop a scenario that incorporates weather decisions and performance planning.

(2) The applicant's ability to utilize all the assets available in making a risk analysis to determine the safest course of action is essential for satisfactory performance. The scenarios should be realistic and within the capabilities of the aircraft used for the skill test.

CREW RESOURCE MANAGEMENT (CRM)

14. (1) CRM refers to the effective use of all available resources: human resources, hardware, and information. Human resources include all groups routinely working with the cockpit crew or pilot who are involved with decisions that are required to operate a flight safely. These groups include, but are not limited to flight operations officers/dispatchers, cabin crewmembers, maintenance personnel, air traffic controllers, and weather services. CRM is not a single task, but a set of competencies that must be evident in all tasks in this STS as applied to either single pilot operations or crew. CRM competencies, grouped into three clusters of observable behaviour, are:

(a) COMMUNICATIONS PROCESSES AND DECISIONS

1. Briefing
2. Inquiry/Advocacy/Assertiveness
3. Self-Critique
4. Communication with Available Personnel Resources
5. Decision Making

(b) BUILDING AND MAINTENANCE OF A FLIGHT TEAM

1. Leadership/Followership
2. Interpersonal Relationships

(c) WORKLOAD MANAGEMENT AND SITUATIONAL AWARENESS

1. Preparation/Planning
2. Vigilance
3. Workload Distribution
4. Distraction Avoidance
5. Wake Turbulence Avoidance

(2) CRM deficiencies almost always contribute to the unsatisfactory performance of a TASK. Therefore, the competencies provide an extremely valuable vocabulary for debriefing. For debriefing purposes, an amplified list of these competencies, expressed as behavioural markers, may be found in FAA AC 120-51, Crew Resource Management Training, as amended. These markers consider the use of various levels of automation in flight management systems.

(3) The standards for each CRM competency as generally stated and applied are subjective. Conversely, some of the competencies may be found objectively stated as required operational procedures for one or more TASKS. Examples of the latter include briefings, radio calls, and instrument approach callouts. Whether subjective or objective, application of CRM competencies are dependent upon the composition of the crew.

HOW THE EXAMINER APPLIES CREW RESOURCE MANAGEMENT

14. (1) Examiners are required to exercise proper CRM competencies in conducting tests as well as expecting the same from applicants.

(2) Pass/Fail judgments based solely on CRM issues must be carefully chosen since they may be entirely subjective. Those Pass/Fail judgments which are not subjective apply to CRM-related procedures in FAA-approved operations manuals that must be accomplished, such as briefings to other crewmembers. In such cases, the operator (or the aircraft manufacturer) specifies what should be briefed and when the briefings should occur. The examiner may judge objectively whether the briefing requirement was or was not met. In those cases where the operator (or aircraft manufacturer) has not specified a briefing, the examiner shall require the applicant to brief the appropriate items from the following note. The examiner may then judge objectively whether the briefing requirement was or was not met.

(3) The majority of aviation accidents and incidents are due to resource management failures by the pilot/crew; fewer are due to technical failures. Each applicant shall give a crew briefing before each takeoff/departure and approach/landing. If the operator or aircraft manufacturer has not specified a briefing, the briefing shall cover the appropriate items, such as runway, SID/STAR/IAP, power settings, speeds, abnormals or emergency prior to or after takeoff, emergency return intentions, missed approach procedures, FAF, altitude at FAF, initial rate of descent, DH/MDA, time to missed approach, and what is expected of the other crewmembers during the takeoff/SID and approach/landing. If the first takeoff/departure and approach/landing briefings are satisfactory, the examiner may allow the applicant to brief only the changes, during the remainder of the flight.

SINGLE-PILOT RESOURCE MANAGEMENT

15. Single-Pilot Resource Management refers to the effective use of ALL available resources: human resources, hardware, and information. It is similar to Crew Resource Management (CRM) procedures that are being emphasized in multi-crewmember operations except that only one crewmember (the pilot) is involved. Human resources "...include all other groups routinely working with the pilot who are involved in decisions that are required to operate a flight safely. These groups include, but are not limited to: dispatchers, weather briefers, maintenance personnel, and air traffic controllers." Pilot Resource Management is not a single TASK; it is a set of skill competencies that must be evident in all TASKS in this skill test standard as applied to single-pilot operation.

APPLICANT'S USE OF CHECKLISTS

16. Throughout the skill test, the applicant is evaluated on the use of an appropriate checklist. Proper use is dependent on the specific task being evaluated. The situation may be such that the use of the checklist, while accomplishing elements of an Objective, would be either unsafe or impractical, especially in a single-pilot operation. In this case, a review of the checklist after the elements have been accomplished would be appropriate. Division of attention and proper visual scanning should be considered when using a checklist.

USE OF DISTRACTIONS DURING SKILL TESTS

17 Numerous studies indicate that many accidents have occurred when the pilot has been distracted during critical phases of flight. To evaluate the applicant's ability to utilize proper control technique while dividing attention both inside and/or outside the cockpit, the

flight test examiner shall cause realistic distractions during the flight portion of the skill test to evaluate the applicant's ability to divide attention while maintaining safe flight.

POSITIVE EXCHANGE OF FLIGHT CONTROLS

18. (1) During flight training, there must always be a clear understanding between students and flight instructors of who has control of the aircraft. Prior to flight, a briefing should be conducted that includes the procedure for the exchange of flight controls. A positive three-step process in the exchange of flight controls between pilots is a proven procedure and one that is strongly recommended.

(2) When the instructor wishes the student to take control of the aircraft, he or she will say, "You have the flight controls." The student acknowledges immediately by saying, "I have the flight controls." The flight instructor again says, "You have the flight controls." When control is returned to the instructor, follow the same procedure. A visual check is recommended to verify that the exchange has occurred. There should never be any doubt as to who is flying the aircraft.

ADDITIONAL RATING TASK TABLES

23. Reserved.

SECTION TWO

**APPLICANT'S SKILL TEST CHECKLIST: PRIVATE PILOT LICENCE - BALLOON
APPOINTMENT WITH THE FLIGHT TEST EXAMINER:**

FLIGHT TEST EXAMINER'S NAME: _____

LOCATION: _____

DATE/TIME: _____

I. ACCEPTABLE AIRCRAFT

- Aircraft Documents:
 - Airworthiness Licence
 - Registration Licence
 - Operating Limitations
- Aircraft Maintenance Records:
 - Logbook Record of Airworthiness Inspections and AD Compliance
 - Applicable Airworthiness Directives
- Pilot's Operating Handbook,
- BCAD Approved Balloon Flight Manual

II. PERSONAL EQUIPMENT

- Skill Test Standards
- Current Aeronautical Charts
- Computer and Plotter
- Flight Plan Form
- Flight Logs
- Current and Appropriate Flight Information Publications

III. PERSONAL RECORDS

- Identification-Photo/Signature ID
- Pilot Licence Currently Held (if applicable)
- Current and Appropriate Medical Certificate
- Completed BCAD Form PL001, Application For Flight Crew Licence, Rating, Authorization or Validation Certificate with authorized instructor's Signature (If applicable)
- Original Aviation Knowledge Test Report
- Pilot Logbook or Approved Training Organization (ATO) document containing an authorized instructor's endorsement certifying the applicant is prepared for the required skill test.
- BCAD Form PL005, Notice of Denial (if applicable)
- Examiner's Fee (if applicable)

**EXAMINER'S PRACTICAL TEST CHECKLIST
PRIVATE PILOT—BALLOON**

APPLICANT'S NAME _____

LOCATION _____

DATE/TIME _____

I. PREFLIGHT PREPARATION

- A. Certificates and Documents
- B. Weather Information
- C. Flight Planning
- D. National Airspace System
- E. Performance and Limitations
- F. Operations of Systems
- G. Aeromedical Factors

II. PREFLIGHT PROCEDURES

- A. Launch Site Selection
- B. Crew Briefing and Preparation
- C. Layout and Assembly
- D. Preflight Inspection
- E. Inflation
- F. Basket/Gondola Management
- G. Pre-launch Check

III. AIRPORT OPERATIONS

Radio Communications and ATC Light Signals

IV. LAUNCHES AND LANDINGS

- A. Normal Launch
- B. Launch Over Obstacle
- C. Approach to Landing
- D. Normal Landing
- E. High-wind Landing

V. PERFORMANCE MANEUVERS

- A. Ascents
- B. Altitude control (Level Flight)
- C. Descents
- D. Contour Flying
- E. Obstruction Clearance

- F.** Tethering
- G.** Winter Flying
- H.** Mountain Flying

VI. NAVIGATION

Navigation

VII. EMERGENCY OPERATIONS

- A.** Systems and Equipment Malfunctions
- B.** Emergency Equipment and Survival Gear
- C.** Water Landing
- D.** Thermal Flight

VIII. POSTFLIGHT PROCEDURES

- A.** Recovery
- B.** Deflation and Packing
- C.** Refuelling

AREAS OF OPERATION

I. PREFLIGHT PREPARATION

A. TASK: CERTIFICATES AND DOCUMENTS

REFERENCES: 14 CFR parts 43, 61, 91; FAA AC 61-21, FAA AC 61-23; Balloon Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to certificates and documents by explaining the appropriate—
 - a. pilot certificate privileges and limitations.
 - b. medical statement.
 - c. pilot logbook or flight record, required entries.
2. Exhibits knowledge of the elements related to certificates and documents by locating and explaining the—
 - a. airworthiness and registration certificates.
 - b. operating limitations, placards, instrument markings, handbooks, and manuals.
 - c. weight data, including the equipment list as appropriate.
 - d. airworthiness directives and compliance records, maintenance/inspection requirements and appropriate records.

B. TASK: WEATHER INFORMATION

REFERENCES: FAA AC 00-6, FAA AC 00-45, FAA AC 61-23, FAA AC 61-84; AIP.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to weather information by analyzing weather reports and forecasts from various sources with emphasis on—
 - a. surface wind.
 - b. winds aloft.
 - c. wind shear.
 - d. PIREP's.
 - e. SIGMET's and AIRMET's.

2. Exhibits knowledge of the elements related to weather information by explaining various atmospheric conditions, and their effect on balloon flight, including—
 - a. temperature and pressure variations.
 - b. atmospheric stability.
 - c. cloud formations.
 - d. thunderstorms and associated turbulence.
 - e. thermals.
 - f. land and sea or lake breezes.
 - g. orographic winds.
3. Makes a competent “go/no-go” decision based on available weather information.

C. TASK: FLIGHT PLANNING

REFERENCES: FAA AC 61-21, FAA AC 61-23, FAA AC 61-84; Navigation Charts; NOTAM’s; Airport/Facility Directory; AIP.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to flight planning by presenting and explaining a preplanned flight of maximum duration, appropriate to the balloon used for the flight test, as previously assigned by the examiner. The final flight plan shall include real-time weather.
2. Uses appropriate, current aeronautical charts and appropriate, current local road/street maps.
3. Plots a course for the intended route of flight based on the winds aloft forecast.
4. Selects the appropriate VHF communication frequencies, if radio equipped.
5. Identifies airspace, obstructions, and terrain features.
6. Selects suitable landing areas.
7. Extracts and applies pertinent information from NOTAM’s, Airport/Facility Directory, and AIM as necessary.

D. TASK: NATIONAL AIRSPACE SYSTEM

REFERENCES: 14 CFR part 91; Navigation Charts; AIP.

Objective. To determine that the applicant exhibits knowledge of the elements related to the National Airspace System by explaining:

1. Basic VFR Weather Minimums – for all classes of airspace.
2. Airspace classes – their boundaries, pilot certification, and equipment requirements for the following—
 - a. Class A.
 - b. Class B.
 - c. Class C.
 - d. Class D.
 - e. Class E.
 - f. Class G.
3. Special use airspace and other airspace areas.

E. TASK: PERFORMANCE AND LIMITATIONS

REFERENCES: FAA AC 61-21, FAA AC 61-23, FAA AC 61-84, FAA AC 91-23; Balloon Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to performance and limitations by explaining the use of appropriate data, if available from the manufacturer, to determine performance. This shall include operational characteristics and loading, and the adverse effects of exceeding limitations.
2. Computes operating weight, maximum load, and expected envelope temperature, as related to maximum envelope temperature.
3. Determines balloon performance, considering density altitude, wind, other weather related conditions, and terrain.
4. Determines normal and maximum rates of ascent and descent, and the altitude required to arrest high rates of descent.
5. Determines envelope temperatures, including never-exceed temperature and maximum continuous temperature, if appropriate.
6. Determines whether the computed performance is within the balloon's capabilities and operating limitations.

F. TASK: OPERATION OF SYSTEMS

REFERENCE: Balloon Flight Manual.

Objective. To determine that the applicant exhibits knowledge of the elements related to the operation of systems on the balloon provided for the practical test by explaining the following:

1. Fuel system and associated gauges.
2. Venting and/or deflation systems.
3. Flight instruments and gauges.
4. Avionics/communications system, as appropriate.

G. TASK: AEROMEDICAL FACTORS

REFERENCES: FAA AC 61-21; AIP.

Objective. To determine that the applicant exhibits knowledge of the elements related to aeromedical factors by explaining:

1. The symptoms, causes, effects, and corrective actions of at least three of the following—
 - a. hypoxia.
 - b. hyperventilation.
 - c. middle ear and sinus problems.
 - d. spatial disorientation.
 - e. stress and fatigue.
2. The effects of alcohol and drugs, including over-the-counter drugs.
3. The effects of nitrogen excesses during scuba dives upon a pilot and/or passenger in flight.

II. PREFLIGHT PROCEDURES

A. TASK: LAUNCH SITE SELECTION

REFERENCE: Balloon Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to launch site selection.
2. Arranges to launch with adequate time to complete the flight safely considering wind, weather conditions, and landing sites.
3. Selects a launch site with emphasis on—
 - a. suitable landing areas.
 - b. airspace considerations.
 - c. surface wind and winds aloft.
 - d. accessibility.
 - e. surface condition.
 - f. size.
 - g. hazards and obstacles in the vicinity of the site.
4. Makes a competent “go/no-go” decision considering all of the factors involved in the selection of a safe launch site.

B. TASK: CREW BRIEFING AND PREPARATION

REFERENCE: Balloon Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to crew briefing and preparation.
2. Designates a crew chief, if appropriate, and assigns each crewmember specific duties and responsibilities, considering the experience level of each crewmember.
3. Briefs crewmembers in all areas of the flight, including layout and assembly; tie-off, if appropriate; inflation; in-flight; landing; recovery; and emergency procedures.
4. Establishes a common means of communication such as hand signals and/or two-way radio.
5. Describes the proposed direction of flight and the estimated time aloft.
6. Ensures that all necessary equipment is on board.
7. Supervises and coordinates all activities.
8. Completes the appropriate checklist.

C. TASK: LAYOUT AND ASSEMBLY

REFERENCE: Balloon Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to layout and assembly.
2. Positions balloon properly, considering wind conditions and obstacles.
3. Checks fuel system for security, leaks, and correct fuel pressure.
4. Uses tie-off, if appropriate.
5. Assembles balloon as appropriate.
6. Completes the appropriate checklist.

D. TASK: PREFLIGHT INSPECTION

REFERENCE: Balloon Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to visual inspection. This shall include which items must be inspected, the reasons for checking each item, and how to detect possible defects.
2. Inspects the balloon with reference to the checklist emphasizing the—
 - a. basket.
 - b. fuel system.
 - c. flight instruments.
 - d. items.
 - e. envelope.
 - f. venting and/or deflation systems.
3. Verifies the balloon is in condition for safe flight.
4. Completes the appropriate checklist.

E. TASK: INFLATION

REFERENCE: Balloon Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to inflation.
2. Accomplishes the proper tie-off procedure, if appropriate.
3. Inflates the balloon to equilibrium as appropriate.
4. Positions and secures the vent/deflation lines.
5. Completes the appropriate checklist.

F. TASK: BASKET/GONDOLA MANAGEMENT

REFERENCE: Balloon Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to basket/gondola management procedures.
2. Ensures all loose items in the basket/gondola are secured.
3. Briefs passengers on the proper boarding, in-flight, and landing behaviour and procedures.
4. Organizes material and equipment in a logical, efficient manner.
5. Utilizes all appropriate checklists.

G. TASK: PRE-LAUNCH CHECK

REFERENCE: Balloon Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to the pre-launch check. This shall include the reasons for checking each item and how to detect malfunctions.
2. Reviews the wind conditions, temperatures, and obstructions.
3. Divides attention inside and outside the basket/gondola.
4. Performs final instrument check.
5. Ensures that the vent/deflation lines are positioned and secured properly.
6. Determines equilibrium.
7. Accomplishes the pre-launch check and confirms that the balloon is in safe operating condition.
8. Accomplishes final coordination with the ground crew, including signals and emergency procedures.
9. Assures no conflict with traffic prior to launch.
10. Completes the appropriate checklist.

III. AIRPORT OPERATIONS

TASK: RADIO COMMUNICATIONS AND ATC LIGHT SIGNALS

REFERENCES: FAA AC 61-21, FAA AC 61-23; AIP.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to radio communications and ATC light signals.
2. Selects appropriate frequencies.
3. Transmits using recommended phraseology.
4. Acknowledges radio communications and complies with instructions.
5. Interprets and complies with ATC light signals, as appropriate.

IV. LAUNCHES AND LANDINGS

A. TASK: NORMAL LAUNCH

REFERENCE: Balloon Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a normal launch.
2. Directs ground crew to clear the area.
3. Recognizes equilibrium.
4. Uses tie-off quick release line correctly, if appropriate.
5. Recognizes presence of false lift and wind conditions.
6. Coordinates lift-off and initial ascent.
7. Completes the appropriate checklist.

B. TASK: LAUNCH OVER OBSTACLE

REFERENCE: Balloon Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a launch over an obstacle.
2. Determines the height of the obstacle.
3. Considers the distance to the obstacle relative to the wind conditions.
4. Recognizes the presence of false lift.
5. Acts decisively so as to clear the obstacle safely.
6. Completes the appropriate checklist.

C. TASK: APPROACH TO LANDING

REFERENCE: Balloon Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to an approach to landing.
2. Considers the wind conditions, landing area, obstructions, and surface, and selects the most suitable touchdown point.
3. Establishes the appropriate approach profile and rate(s) of descent.
4. Ensures that each passenger is thoroughly briefed and positioned properly in accordance with landing conditions.
5. Stows loose articles and secures equipment, as appropriate.
6. Makes a timely decision to abort the approach, if necessary.
7. Completes the appropriate checklist.

D. TASK: NORMAL LANDING

REFERENCE: Balloon Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a normal landing.
2. Prepares vent/deflation system for use.
3. Touches down within the designated area or aborts the landing and ascends as specified by the examiner.
4. Uses burner controls, vent/deflation system properly to stabilize balloon on touchdown.
5. Stabilizes balloon prior to passengers exiting.
6. Completes the appropriate checklist.

E. TASK: HIGH-WIND LANDING

NOTE: If a high-wind condition does not exist, the applicant's knowledge of the TASK shall be evaluated through oral testing.

REFERENCE: Balloon Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a high-wind landing.
2. Identifies hazards associated with a high-wind landing.
3. Prepares vent/deflation system for use.
4. Uses burner controls and vent/deflation system to land the balloon and control ground travel.
5. Touches down within the designated area or aborts the landing and ascends as specified by the examiner.
6. Extinguishes pilot lights at the appropriate time.
7. Completes the appropriate checklist.

V. PERFORMANCE MANEUVERS

A. TASK: ASCENTS

REFERENCE: Balloon Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to ascents.
2. Transitions from level flight to ascent, as specified by the examiner.
3. Ascends at an appropriate rate, ± 100 feet (30 meters) per minute.
4. Transitions from ascent to level flight at an altitude specified by the examiner, ± 100 feet (30 meters).
5. Completes the appropriate checklist.

B. TASK: ALTITUDE CONTROL (LEVEL FLIGHT)

REFERENCE: Balloon Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to altitude control.
2. Recognizes vertical movement.
3. Maintains equilibrium by smooth use of burner controls.
4. Uses instruments to assist in altitude control.
5. Maintains assigned altitudes, ± 100 feet (30 meters).
6. Completes the appropriate checklist.

C. TASK: DESCENTS

REFERENCE: Balloon Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to descents.
2. Transitions from level flight to descent, as specified by the examiner.
3. Descends at a specified rate, ± 100 feet (30 meters) per minute.
4. Transitions from descent to level flight at an altitude specified by the examiner, ± 100 feet (30 meters).
5. Completes the appropriate checklist.

D. TASK: CONTOUR FLYING

REFERENCE: Balloon Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to contour flying.
2. Uses all controls properly to maintain the desired altitude, based on the appropriate clearance over terrain and obstacles.
3. Considers the effects of wind gusts, wind shear, thermal activity and orographic conditions.
4. Allows adequate clearance for livestock and other animals.
5. Divides attention between balloon control, ground track, and forward surveillance.

E. TASK: OBSTRUCTION CLEARANCE

REFERENCE: Balloon Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to obstruction clearance.
2. Recognizes obstructions, including powerlines, and allows time to take appropriate action.
3. Uses proper procedures to avoid obstructions, including powerlines.
4. Uses proper procedures when collision is imminent.

F. TASK: TETHERING

REFERENCE: Balloon Flight Manual.

Objective. To determine that the applicant exhibits knowledge of the elements related to tethering by explaining:

1. The proper recognition of wind conditions and obstructions.
2. The recognition of the effects of false lift and wind gusts.
3. The recommended tethering procedure with emphasis on utilizing an adequate number of appropriate tether lines of adequate strength, in the proper location.
4. The briefing for ground crewmembers, to include crowd control.

G. TASK: WINTER FLYING

REFERENCE: Balloon Flight Manual.

Objective. To determine that the applicant exhibits knowledge of the elements related to winter flying by explaining:

1. The proper preparation, equipment, and survival supplies necessary for flight in cold temperatures.
2. The proper methods for pressurizing fuel tanks.
3. The added concerns for fuel vaporization, leaks, and risk of fire during cold weather.

H. TASK: MOUNTAIN FLYING

REFERENCE: Balloon Flight Manual.

Objective. To determine that the applicant exhibits knowledge of the elements related to mountain flying by explaining:

1. The proper preparation, equipment, and survival supplies necessary for flight over mountainous terrain.
2. The accessibility to landing areas.
3. The recognition of cloud formations and descending air currents on the leeward side of mountains as evidence of possible turbulence.
4. The caution required in regard to windshear encounters and possible rapid weather changes.

VI. NAVIGATION

TASK: NAVIGATION

REFERENCE: Balloon Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to navigation.
2. Identifies airspace and altitude restrictions.
3. Recognizes the preplanned course by reference to landmarks.
4. Identifies landmarks by relating surface features to chart symbols.
5. Verifies the balloon's position at all times.
6. Manages fuel properly.
7. Determines the duration of the flight, considering—
 - a. availability of suitable landing areas.
 - b. fuel consumption.
 - c. wind and other atmospheric conditions.
 - d. obstructions.
 - e. payload.
8. Notes the differences, if any, between preflight flight planning and the actual flight.
9. Completes the appropriate checklist.

VII. EMERGENCY OPERATIONS

A. TASK: SYSTEMS AND EQUIPMENT MALFUNCTIONS

REFERENCE: Balloon Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to systems and equipment malfunctions appropriate to the balloon used for the practical test.
2. Analyzes the situation and takes the appropriate action for simulated emergencies, such as—
 - a. pilot light flameout or failure.
 - b. blast valve failure.
 - c. fuel exhaustion.
 - d. propane leak.
 - e. envelope failure.
 - f. any other systems and equipment malfunction appropriate to the balloon provided for the flight test.
3. Follows the appropriate emergency checklist.

B. TASK: EMERGENCY EQUIPMENT AND SURVIVAL GEAR

REFERENCE: Balloon Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to emergency equipment and survival gear appropriate to the balloon provided for the practical test, such as—
 - a. location and purpose.
 - b. method of operation or use.
 - c. servicing requirements.
 - d. method of safe storage.
 - e. equipment and survival gear appropriate for operation in various climates and topographical environments.
2. Follows the appropriate emergency checklist.

C. TASK: WATER LANDING

REFERENCE: Balloon Flight Manual.

Objective. To determine that the applicant exhibits knowledge of the elements related to a water landing by explaining:

1. The emergency conditions under which water landings are necessary.
2. The effect of wind direction and speed, and water current.
3. The preparation required for contact with water, to include briefing passengers.
4. The procedure to be used for actual water landing.

D. TASK: THERMAL FLIGHT

REFERENCE: Balloon Flight Manual.

Objective. To determine that the applicant exhibits knowledge of the elements related to thermal flight by explaining:

1. The conditions that cause thermal activity.
2. The recognition of convective conditions and associated hazards.
3. The effects of thermal activity on balloon flight.
4. The procedures to be used upon encountering thermal activity.

VIII. POSTFLIGHT PROCEDURES

A. TASK: RECOVERY

REFERENCE: Balloon Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to recovery.
2. Coordinates landing and recovery with landowner, as appropriate.
3. Minimizes property damage during recovery.
4. Supervises ground crew during recovery, including vehicle and spectator control.
5. Completes the appropriate checklist.

B. TASK: DEFLATION AND PACKING

REFERENCE: Balloon Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to deflation and packing.
2. Ensures the fuel system is secure.
3. Deflates envelope properly, considering wind conditions and obstacles.
4. Disassembles envelope and basket components, as appropriate.
5. Packs and stores envelope, basket and components, and fuel system, as appropriate.
6. Performs satisfactory postflight inspection.
7. Completes the appropriate checklist.

C. TASK: REFUELING

REFERENCE: Balloon Flight Manual.

Objective. To determine that the applicant exhibits knowledge of the elements related to refuelling by explaining:

1. A crewmember briefing on safety precautions.
2. The danger of explosion and burns when handling propane.
3. The need for adequate ventilation.
4. Water contamination.
5. The proper method of filling the cylinders, as appropriate.

APPENDIX

TASK VS. FLIGHT SIMULATION TRAINING DEVICE CREDIT

Reserved