

**EGYPTIAN CIVIL AVIATION AUTHORITY
FLIGHT SAFETY STANDARDS SECTOR**



**COMMERCIAL PILOT
ECA Examination Standards
for
AIRPLANE (SEL)**

COMMERCIAL PILOT ECA Examination Standards for AIRPLANE (SEL)

FOREWORD

The Commercial Pilot - Airplane ECA Examination Standards book has been published by the Egyptian Civil Aviation Supervisory Authority (ECAA) to establish the standards for commercial pilot certification practical tests for the airplane category, single-engine, land and sea; and multiengine, land and sea classes. ECAA inspectors and designated pilot examiners shall conduct practical tests in compliance with these standards. Flight instructors and applicants should find these standards helpful during training and when preparing for the practical test.

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INTRODUCTION

General Information

The Egyptian Civil Aviation Supervisory Authority (ECAA) has developed this practical test book as the standard to be used by ECAA inspectors and designated pilot examiners when conducting commercial pilot – airplane (single-engine land, multiengine land, single-engine sea, and multiengine sea) practical tests. Flight instructors are expected to use this book when preparing applicants for practical test. Applicants should be familiar with this book and refer to these standards during their training. Information considered directive in nature is described in this practical test book in terms such as "shall" and "must" indicating the actions are mandatory. Guidance information is described in terms such as "should" and "may" indicating the actions are desirable or permissive but not mandatory.

The ECAA gratefully acknowledges the valuable assistance provided by many individuals and companies who contributed their time and talent in assisting with the revision of these practical test standards.

Practical Test Standard Concept

ECAR part 61 specifies the areas in which knowledge and skill must be demonstrated by the applicant before the issuance of a commercial pilot certificate. The ECARs provide the flexibility to permit the ECAA to publish ECA Examination Standards containing specific TASKS in which pilot competency shall be demonstrated. The ECAA will revise this book whenever it is determined that changes are needed in the interest of safety. Adherence to the provisions of the regulations and the ECA Examination Standards is mandatory for evaluation of commercial pilot applicants.

Practical Test Book Description

This test book contains the following commercial pilot – airplane practical test standards:

- Section 1 Airplane, Single-Engine Land
- Section 2 Airplane, Multiengine Land
- Section 3 Airplane, Single-Engine Sea
- Section 4 Airplane, Multiengine Sea

The Commercial Pilot ECA Examination Standards – Airplane include the AREAS OF OPERATION and TASKS for the issuance of an initial

commercial pilot certificate and for the addition of category and/or class ratings to that certificate.

Practical Test Standard Description

AREAS OF OPERATION are phases of the practical test arranged in a logical sequence within each standard. They begin with preflight preparation and end with postflight procedures. The examiner, however, may conduct the practical test in any sequence that results in a complete and efficient test.

TASKS are titles of knowledge areas, flight procedures, or maneuvers appropriate to an **AREA OF OPERATION**.

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

The **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 reference. Publications other than those listed may be used for references if their content conveys substantially the same meaning as the referenced publications.

References upon which this practical test book is based include:

- ECAR part 43 Maintenance, Preventive Maintenance, Rebuilding, and Alteration
- ECAR part 61 Certification: Pilots and Flight Instructors
- ECAR part 91 General Operating and Flight Rules
- AC 00-6 Aviation Weather
- AC 00-45 Aviation Weather Services
- AC 61-21 Flight Training Handbook
- AC 61-23 Pilot's Handbook of Aeronautical Knowledge
- AC 61-27 Instrument Flying Handbook
- AC 61-65 Certification: Pilots and Flight Instructors
- AC 61-67 Stall and Spin Awareness Training
- AC 61-84 Role of Preflight Preparation
- AC 61-107 Operation of Aircraft at Altitudes Above 25,000 Feet MSL
- AC 61-115 Positive Exchange of Flight Controls Program
- AC 67-2 Medical Handbook for Pilots
- AC 90-48 Pilots' Role in Collision Avoidance
- AC 91-13 Cold Weather Operation of Aircraft
- AC 91-23 Pilot's Weight and Balance Handbook

- AC 91-55 Reduction of Electrical System Failures Following Aircraft Engine Starting
- AIP Aeronautical Information Publication
- AFD Airport/Facility Directory
- NOTAM's Notices to Airmen
- ECAA-P-8740-48 On Landings
- ECAA-S-8081-4 Instrument Rating Practical Test Standards
- Other
- Pertinent Pilot Operating Handbooks
- ECAA-Approved Flight Manuals
- Navigation Charts
- Seaplane Supplement

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

1. specifically what the applicant should be able to do;
2. the conditions under which the TASK is to be performed; and
3. the acceptable standards of performance.

Use of the ECA Examination Standards Book

The Commercial Pilot ECA Examination Standards have been designed to evaluate the competency of commercial pilots in both knowledge and skill. Commercial pilots are professionals engaged in various flight activities for compensation or hire. Because of their professional status, they should exhibit a significantly higher level of knowledge and skill than the private pilot. Although some TASKS listed are similar to those in the Private Pilot Practical Test Standards, the wording used in the Commercial Pilot ECA Examination Standards is intended to reflect a higher level of competency expected of a commercial pilot applicant in performing these similar TASKS. The ECAA requires that all practical tests be conducted in accordance with the appropriate Commercial Pilot ECA Examination Standards and the policies set forth in the INTRODUCTION. Commercial pilot applicants shall be evaluated in ALL TASKS included in the AREAS OF OPERATION of the appropriate practical test standard (unless instructed or noted otherwise). In preparation for each practical test, the examiner shall develop a written "plan of action." The "plan of action" shall include all TASKS in each AREA OF OPERATION. 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 TASKS selected for evaluation during a practical test shall be evaluated in

its entirety. The examiner is not required to follow the precise order in which the AREAS OF OPERATION and TASKS appear in this book. The examiner may change the sequence or combine TASKS with similar Objectives to have an orderly and efficient flow of the practical test. For example, emergency descents may be combined with high-altitude operations. The examiner's "plan of action" shall include the order and combination of TASKS to be demonstrated by the applicant in a manner that will result in an efficient and valid test. Examiners shall place special emphasis upon areas of aircraft operation that are most critical to flight safety. Among these are precise aircraft control and sound judgment in decision making. Although these areas may or may not be shown under each TASK, they are essential to flight safety and shall receive careful evaluation throughout the practical test. If these areas are shown in the Objective, additional emphasis shall be placed on them. THE EXAMINER SHALL ALSO EMPHASIZE STALL/SPIN AWARENESS, WAKE TURBULENCE AVOIDANCE, LOW LEVEL WIND SHEAR, COLLISION AVOIDANCE, RUNWAY INCURSION AVOIDANCE, AND CHECKLIST USAGE.

The 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 ATC workload, and the condition of the aircraft used. If the procedure being evaluated would put the maneuver in jeopardy, it is expected that the applicant will simulate that portion of the maneuver i.e. - hand cranking a gear.

Commercial Pilot – Airplane Practical Test Prerequisites

An applicant for the commercial pilot – airplane practical test is required by ECAR part 61 to:

1. possess a private pilot certificate with an airplane rating, if a commercial pilot certificate with an airplane rating is sought, or meet the flight experience required for a private pilot certificate (airplane rating) and pass the private airplane knowledge and practical test;
2. possess an instrument rating (airplane) or the following limitation will be placed on the commercial pilot certificate: "Carrying passengers in airplanes for hire is prohibited at night or on cross-country flights of more than 50 nautical miles";
3. pass the appropriate airman knowledge test since the beginning of the 24th month before the month in which the practical test is taken;
4. obtain the applicable instruction and aeronautical experience prescribed for the pilot certificate or rating sought;

5. possess a current medical certificate appropriate to the certificate or rating sought;
6. meet the age requirement for the issuance of the certificate or rating sought; and
7. obtain a written statement from an authorized flight instructor certifying that the applicant has been given flight instruction in preparation for the practical test within 60 days preceding the date of application. The statement shall also state that the instructor finds the applicant competent to pass the practical 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.

AC 61-65, Certification: Pilots and Flight Instructors, states that the instructor may sign the instructor's recommendation on the reverse side of the ECAA Form, Airman Certificate and/or Rating Application, in lieu of the previous statement, provided all appropriate part 61 requirements are substantiated by reliable records.

Aircraft and Equipment Required for the Practical Test

The commercial pilot applicant is required by ECAR part 61 to provide an airworthy, certificated aircraft for use during the practical test. This section further requires that the aircraft:

1. have fully functioning dual controls except as provided in the ECAR;
2. be capable of performing All appropriate TASKS for the commercial pilot certificate or rating and have no operating limitations that prohibit the performance of those TASKS; and
3. must be a complex airplane furnished by the applicant for the performance of takeoffs, landings, and appropriate emergency procedures. A complex landplane is one having retractable landing gear, flaps, and controllable propeller. A complex seaplane is one having flaps and controllable propeller.

NOTE: A turbine powered airplane equipped with retractable landing gear and flaps may be used to meet the requirements in number 3 above.

Use of ECAA-Approved Flight Simulator or Flight Training Device

An airman applicant for commercial pilot - airplane certification may be authorized to use an ECAA qualified and approved flight simulator or flight training device, to complete certain flight task requirements listed in this

practical test standard. An applicant seeking such certification must complete the training and testing requirements at an approved pilot school or training center. An airman applicant seeking an added airplane rating to a commercial certificate may also use a qualified and approved flight simulator or flight training device to complete the flight task requirements in accordance with Appendix 1 and 2 of these practical test standards. These appendices should be consulted to identify which flight tasks may be accomplished in an approved flight simulator or flight training device. The level of flight simulator or flight training device required for each maneuver or procedure will also be found in the appropriate appendix. An appropriate class airplane is required to complete the remaining flight TASKS for certification. When flight tasks are accomplished in an aircraft, certain task elements may be accomplished through "simulated" actions in the interest of safety and practicality, but when accomplished in a flight simulator or flight training device, these same actions would not be "simulated." For example, when in an aircraft, a simulated engine fire may be addressed by retarding the throttle to idle, simulating the shutdown of the engine, simulating the discharge of the fire suppression agent, if applicable, simulating the disconnect of associated electrical, hydraulic, and pneumatics systems, etc. However, when the same emergency

condition is addressed in a flight simulator or flight training device, all task elements must be accomplished as would be expected under actual circumstances. Similarly, safety of flight precautions taken in the aircraft for the accomplishment of a specific maneuver or procedure (such as limiting altitude in an approach to stall or setting maximum airspeed for an engine failure expected to result in a rejected takeoff) need not be taken when a flight simulator or flight training device is used. It is important to understand that whether accomplished in an aircraft, flight simulator or flight training device, all TASKS and elements for each maneuver or procedure shall have the same performance standards applied equally for determination of overall satisfactory performance.

Examiner Responsibility

The examiner conducting the practical test is responsible for determining that the applicant meets the acceptable standards of knowledge and skill of each TASK within the appropriate practical test standard. Since there is no formal division between the "oral" and "skill" portions of the practical test, this becomes an ongoing process throughout the test. To avoid unnecessary distractions, oral questioning should be used judiciously at all times, especially during the flight portion of the practical test. Examiner's shall test to the greatest extent practicable the applicant's correlative abilities rather than mere rote enumeration of facts throughout the practical test. During the flight portion of

the practical test, the examiner shall evaluate the applicant's use of visual scanning and collision avoidance procedures.

Satisfactory Performance

Satisfactory performance to meet the requirements for certification is based on the applicant's ability to safely:

1. perform the approved areas of operation for the certificate or rating sought within the approved standards;
2. demonstrate mastery of the aircraft with the successful outcome of each task performed never seriously in doubt;

The word "examiner" is used throughout the standard to denote either the ECAA inspector or ECAA designated pilot examiner who conducts an official practical test.

3. demonstrate sound judgment; and
4. demonstrate single-pilot competence if the aircraft is type certificated for single-pilot operations.

Unsatisfactory Performance

If, in the judgment of the examiner, the applicant does not meet the standards of performance of any TASK performed, the associated AREA OF OPERATION is failed and therefore, the practical test is failed. The examiner or applicant may discontinue the test any time after the failure of an AREA OF OPERATION makes the applicant ineligible for the certificate or rating sought. The test will be continued ONLY with the consent of the applicant. If the test is either continued or discontinued, the applicant is entitled credit for only those AREAS OF OPERATION satisfactorily performed. However, during the retest and at the discretion of the examiner, any TASK may be re-evaluated including those previously passed.

Typical areas of unsatisfactory performance and grounds for disqualification are:

1. Any action or lack of action by the applicant that requires corrective intervention by the examiner to maintain safe flight.
2. Failure to use proper and effective visual scanning techniques to clear the area before and while performing maneuvers.
3. Consistently exceeding tolerances stated in the Objectives.
4. Failure to take prompt corrective action when tolerances are exceeded.

When a disapproval notice is issued, the examiner shall record the applicant's unsatisfactory performance in terms of AREA OF OPERATIONS appropriate to the practical test conducted.

Crew Resource Management (CRM)

CRM "...refers to the effective use of ALL available resources; human resources, hardware, and information. "Human resources" ...includes all other groups routinely working with the cockpit crew (or pilot) who are involved in decisions that are required to operate a flight safely. These groups include, but are not limited to: dispatchers, cabin crewmembers, maintenance personnel, and air traffic controllers." CRM is not a single TASK, it is a set of skill competencies that must be evident in all TASKS in this practical test standard as applied to either single pilot or a crew operation.

Applicant's Use of Checklists

Throughout the practical 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 unfeasible, especially in a single-pilot operation. In this case, the method might demand the need to review the checklist after the elements have been met. In any case, use of a checklist must consider proper scanning vigilance and division of attention at all times.

Use of Distractions During Practical Tests

Numerous studies indicate that many accidents have occurred when the pilot has been distracted during critical phases of flight. To evaluate the pilot's ability to utilize proper control technique while dividing attention both inside and/or outside the cockpit, the examiner shall cause a realistic distraction during the flight portion of the practical test to evaluate the applicant's ability to divide attention while maintaining safe flight.

Metric Conversion Initiative

To assist the pilots in understanding and using the metric measurement system, the ECA Examination Standards refer to the metric equivalent of various altitudes throughout. The inclusion of meters is intended to familiarize pilots with its use. The metric altimeter is arranged in 10 meter increments; therefore, when converting from feet to meters, the exact conversion, being too exact for practical purposes, is rounded to the nearest 10 meter increment or even altitude as necessary.

Positive Exchange of Flight Controls

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.

When the instructor wishes the student to take control of the aircraft, he/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.

Flight Instructor Responsibility

An appropriately rated flight instructor is responsible for training the commercial pilot applicant to acceptable standards in all subject matter areas, procedures, and maneuvers included in the TASKS within the appropriate commercial pilot practical test standard. 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 commercial pilot and is competent to pass the required practical test.

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 AC 90-48, Pilot's Role in Collision Avoidance; AC 61-21, Flight Training Handbook; AC 61-23, Pilot's Handbook of Aeronautical Knowledge; and the Aeronautical Information Manual.

SECTION 1 – AIRPLANE SINGLE-ENGINE LAND (ASEL)
COMMERCIAL PILOT – PRACTICAL TEST STANDARDS

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- Airplane Single-Engine Land
- RATING TASK TABLE
- CHECKLISTS:
 - Applicant's Practical Test Checklist
 - Examiner's Practical Test Checklist

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I. PREFLIGHT PREPARATION

- A. CERTIFICATES AND DOCUMENTS
- B. WEATHER INFORMATION
- C. CROSS-COUNTRY FLIGHT PLANNING
- D. NATIONAL AIRSPACE SYSTEM
- E. PERFORMANCE AND LIMITATIONS
- F. OPERATION OF SYSTEMS
- G. AEROMEDICAL FACTORS
- H. PHYSIOLOGICAL ASPECTS OF NIGHT FLYING
- I. LIGHTING AND EQUIPMENT FOR NIGHT FLYING

II. PREFLIGHT PROCEDURES

- A. PREFLIGHT INSPECTION
- B. COCKPIT MANAGEMENT
- C. ENGINE STARTING
- D. TAXIING
- E. BEFORE TAKEOFF CHECK

III. AIRPORT OPERATIONS

- A. RADIO COMMUNICATIONS AND ATC LIGHT SIGNALS
- B. TRAFFIC PATTERNS
- C. AIRPORT, TAXIWAY, AND RUNWAY SIGNS, MARKINGS, AND LIGHTING

IV. TAKEOFFS, LANDINGS, AND GO-AROUNDS

- A. NORMAL AND CROSSWIND TAKEOFF AND CLIMB
- B. NORMAL AND CROSSWIND APPROACH AND LANDING
- C. SOFT-FIELD TAKEOFF AND CLIMB
- D. SOFT-FIELD APPROACH AND LANDING
- E. SHORT-FIELD TAKEOFF AND CLIMB
- F. SHORT-FIELD APPROACH AND LANDING

G. GO-AROUND

V. PERFORMANCE MANEUVERS

- A. STEEP TURNS
- B. CHANDELLES
- C. LAZY EIGHTS

VI. GROUND REFERENCE MANEUVER

- EIGHTS ON PYLONS

VII. NAVIGATION

- A. PILOTAGE AND DEAD RECKONING
- B. NAVIGATION SYSTEMS AND ATC RADAR SERVICES
- C. DIVERSION
- D. LOST PROCEDURE

VIII. SLOW FLIGHT AND STALLS

- A. MANEUVERING DURING SLOW FLIGHT
- B. POWER-OFF STALLS
- C. POWER-ON STALLS
- D. SPIN AWARENESS

IX. EMERGENCY OPERATIONS

- A. EMERGENCY DESCENT
- B. EMERGENCY APPROACH AND LANDING
- C. SYSTEMS AND EQUIPMENT MALFUNCTIONS
- D. EMERGENCY EQUIPMENT AND SURVIVAL GEAR

X. HIGH ALTITUDE OPERATIONS

- A. SUPPLEMENTAL OXYGEN
- B. PRESSURIZATION

XI. POSTFLIGHT PROCEDURES

- A. AFTER LANDING
- B. PARKING AND SECURING

APPENDIX 1—TASK VS. SIMULATION DEVICE CREDIT

Task vs. Simulation Device Credit

Use of Chart

Flight Simulation Device Level

RATING TASK TABLE

Airplane Single-Engine Land

Addition of an Airplane Single-Engine Land rating to an existing Commercial Pilot Certificate

Area of Operation	Required TASKS are indicated by either the TASK letter(s) that apply(s) or an indication that all or none of the TASKS must be tested.							
	COMMERCIAL PILOT RATING(S) HELD							
	ASES	AMEL	AMES	RH	RG	Glider	Balloon	Airship
I	E,F	E,F	E,F	E,F	E,F	ALL	ALL	ALL
II	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
III	B,C	B	B,C	B	ALL	ALL	ALL	B
IV	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
V	NONE	ALL	ALL	ALL	ALL	ALL	ALL	ALL
VI	NONE	ALL	ALL	ALL	NONE	ALL	ALL	ALL
VII	NONE	NONE	NONE	NONE	NONE	ALL	ALL	NONE
VIII	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
IX	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
X	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
XI	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL

1. If an applicant holds an AMEL rating, a complex airplane is not required for added ASEL rating .
2. If an applicant holds a single or multiengine sea rating, they must provide a complex airplane for applicable flight TASKS in AREA OF OPERATIONS, IV and IX .

APPLICANT'S PRACTICAL TEST CHECKLIST

APPOINTMENT WITH EXAMINER:

EXAMINER'S NAME _____

LOCATION _____

DATE/TIME _____

ACCEPTABLE AIRCRAFT

Aircraft Documents:

Airworthiness Certificate

Registration Certificate

Operating Limitations

Aircraft Maintenance Records:

Logbook Record of Airworthiness Inspections and AD Compliance

Pilot's Operating Handbook, ECAA-Approved

Airplane Flight Manual

PERSONAL EQUIPMENT

View-Limiting Device

Current Aeronautical Charts

Computer and Plotter

Flight Plan Form

Flight Logs

Current AIP, Airport Facility Directory, and Appropriate Publications

PERSONAL RECORDS

Identification - Photo/Signature ID

Pilot Certificate

Current Medical Certificate

Completed ECAA Form 8710-1, Airman Certificate and/or Rating

Application with Instructor's Signature (if applicable)

AC Form 8080-2, Airman Written Test Report, or Computer Test Report

Pilot Logbook with appropriate Instructor Endorsements

ECAA Form 8060-5, Notice of Disapproval (if applicable)

Approved School Graduation Certificate (if applicable)

Examiner's Fee (if applicable)

EXAMINER'S PRACTICAL TEST CHECKLIST

Airplane Single-Engine Land

APPLICANT'S NAME _____

LOCATION _____

DATE/TIME _____

I. PREFLIGHT PREPARATION

- A. CERTIFICATES AND DOCUMENTS
- B. WEATHER INFORMATION
- C. CROSS-COUNTRY FLIGHT PLANNING
- D. NATIONAL AIRSPACE SYSTEM
- E. PERFORMANCE AND LIMITATIONS
- F. OPERATION OF SYSTEMS
- G. AEROMEDICAL FACTORS
- H. PHYSIOLOGICAL ASPECTS OF NIGHT FLYING
- I. LIGHTING AND EQUIPMENT FOR NIGHT FLYING

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- A. PREFLIGHT INSPECTION
- B. COCKPIT MANAGEMENT
- C. ENGINE STARTING
- D. TAXIING
- E. BEFORE TAKEOFF CHECK

III. AIRPORT OPERATIONS

- A. RADIO COMMUNICATIONS AND ATC LIGHT SIGNALS
- B. TRAFFIC PATTERNS
- C. AIRPORT, TAXIWAY, AND RUNWAY SIGNS, MARKINGS, AND LIGHTING

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- B. NORMAL AND CROSSWIND APPROACH AND LANDING
- C. SOFT-FIELD TAKEOFF AND CLIMB
- D. SOFT-FIELD APPROACH AND LANDING
- E. SHORT-FIELD TAKEOFF AND CLIMB
- F. SHORT-FIELD APPROACH AND LANDING
- G. GO-AROUND

V. PERFORMANCE MANEUVERS

- A. STEEP TURNS
- B. CHANDELLES
- C. LAZY EIGHTS

VI. GROUND REFERENCE MANEUVER EIGHTS ON PYLONS

VII. NAVIGATION

- A. PILOTAGE AND DEAD RECKONING
- B. NAVIGATION SYSTEMS AND ATC RADAR SERVICES
- C. DIVERSION
- D. LOST PROCEDURE

VIII. SLOW FLIGHT AND STALLS

- A. MANEUVERING DURING SLOW FLIGHT
- B. POWER-OFF STALLS
- C. POWER-ON STALLS
- D. SPIN AWARENESS

IX. EMERGENCY OPERATIONS

- A. EMERGENCY DESCENT
- B. EMERGENCY APPROACH AND LANDING
- C. SYSTEMS AND EQUIPMENT MALFUNCTIONS
- D. EMERGENCY EQUIPMENT AND SURVIVAL GEAR

X. HIGH ALTITUDE OPERATIONS

- A. SUPPLEMENTAL OXYGEN
- B. PRESSURIZATION

XI. POSTFLIGHT PROCEDURES

- A. AFTER LANDING
- B. PARKING AND SECURING

I. AREA OF OPERATION: PREFLIGHT PREPARATION

A. TASK: CERTIFICATES AND DOCUMENTS

REFERENCES: ECAR parts 43, 61, 91; AC 61-21, AC 61-23; Pilot's Operating Handbook, ECAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to certificates and documents by explaining—
 - a. commercial pilot certificate privileges and limitations.
 - b. medical certificates, class and duration as related to commercial pilot privileges.
 - c. pilot logbook or flight records.
2. Exhibits knowledge of the elements related to certificates and documents by locating and explaining—
 - a. airworthiness and registration certificates.
 - b. operating limitations, placards, instrument markings, Pilot's Operating Handbook and Airplane Flight Manual.
 - c. weight and balance data, and equipment list.
 - d. airworthiness directives, compliance records, maintenance/inspection requirements, tests, and other appropriate records.
3. Exhibits knowledge of the elements and procedures related to inoperative instruments and equipment by explaining—
 - a. limitations imposed on airplane operations with inoperative instruments or equipment.
 - b. when a special flight permit is required.
 - c. procedures for obtaining a special flight permit.

B. TASK: WEATHER INFORMATION

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

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to weather information by analyzing weather reports, charts, and forecasts from various sources with emphasis on—

- a. convective SIGMET's.
 - b. SIGMET's.
 - c. AIRMET's.
 - d. wind shear reports.
 - e. PIREP's.
2. Makes a competent "go/no-go" decision based on available weather information.

C. TASK: CROSS-COUNTRY FLIGHT PLANNING

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

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to cross-country flight planning by presenting and explaining a pre-planned VFR cross-country flight, as previously assigned by the examiner. On the day of the test, the final flight plan shall include real-time weather to the first fuel stop. Computations shall be based on maximum allowable passenger, baggage and/or cargo loads.
2. Uses appropriate, current aeronautical charts.
3. Properly identifies airspace, obstructions, and terrain features.
4. Selects easily identifiable en route checkpoints.
5. Selects most favorable altitudes or flight levels, considering weather conditions and equipment capabilities.
6. Computes headings, flight time, and fuel requirements.
7. Selects appropriate navigation system/facilities and communication frequencies.
8. Extracts and records pertinent information from NOTAM's, Airport/Facility Directory, and other flight publications.
9. Completes a navigation log and simulates filing a VFR flight plan.

D. TASK: NATIONAL AIRSPACE SYSTEM

REFERENCES: ECAR part 91; AIP.

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

1. VFR Weather Minimums— for all classes of airspace.

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

E. TASK: PERFORMANCE AND LIMITATIONS

REFERENCES: AC 61-21, AC 61-23, AC 61-84, AC 91-23; Pilot's Operating Handbook, ECAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to performance and limitations by explaining the use of charts, tables, and appropriate data to determine performance, including takeoff, climb, cruise, endurance, landing distance, and the adverse effects of exceeding limitations.
2. Describes the effects of various atmospheric conditions on the airplane's performance, to include—
 - a. calibrated airspeed.
 - b. true airspeed.
 - c. pressure altitude.
 - d. density altitude.
3. Computes weight and balance, including adding, removing, and shifting weight. Determines if the weight and center of gravity will remain within limits during all phases of flight.
4. Determines whether the computed performance is within the airplane's capabilities and operating limitations.

F. TASK: OPERATION OF SYSTEMS

REFERENCES: AC 61-21, AC 61-23; Pilot's Operating Handbook, ECAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant exhibits knowledge of the elements related to the operation of systems on the airplane provided for the practical test by explaining at least five (5) of the following:

1. Primary flight controls and trim.
2. Flaps, leading edge devices, and spoilers.
3. Powerplant and propeller.
4. Landing gear system.
5. Fuel, oil, and hydraulic systems.
6. Electrical system.
7. Avionics systems.
8. Pitot-static system, vacuum/pressure system and associated flight instruments.
9. Environmental system.
10. Deicing and anti-icing systems.

G. TASK: AEROMEDICAL FACTORS

REFERENCES: AC 61-21, AC 61-23, AC 67-2; 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 four (4) of the following—
 - a. hypoxia.
 - b. hyperventilation.
 - c. middle ear and sinus problems.
 - d. spatial disorientation.
 - e. motion sickness.
 - f. carbon monoxide poisoning.
 - g. 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.

H. TASK: PHYSIOLOGICAL ASPECTS OF NIGHT FLYING

REFERENCES: AC 61-21, AC 67-2; AIP.

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

1. The function of various parts of the eye essential for night vision.
2. Adaptation of the eye to changing light.
3. Coping with illusions created by various light conditions.
4. Effects of the pilot's physical condition on visual acuity.
5. Methods for increasing vision effectiveness.

I. TASK: LIGHTING AND EQUIPMENT FOR NIGHT FLYING

REFERENCES: ECAR part 91; AC 61-21; Pilot's Operating Handbook, ECAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant exhibits knowledge of the elements related to lighting and equipment for night flying by explaining:

1. Types and uses of various personal lighting devices.
2. Required equipment, additional equipment recommended, and location of external navigation lighting of the airplane.
3. Meaning of various airport and navigation lights, the method of determining their status, and the procedure for airborne activation of runway lights.

II. AREA OF OPERATION: PREFLIGHT PROCEDURES

A. TASK: PREFLIGHT INSPECTION

REFERENCES: AC 61-21; Pilot's Operating Handbook, ECAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a preflight inspection including which items must be inspected, the reasons for checking each item, and how to detect possible defects.
2. Inspects the airplane with reference to an appropriate checklist.
3. Verifies that the airplane is in condition for safe flight, notes any discrepancy, and determines whether the airplane requires maintenance.
4. Locates and identifies switches, circuit breakers/fuses, and spare fuses, pertinent to day and night operations.

B. TASK: COCKPIT MANAGEMENT

REFERENCES: AC 61-21; Pilot's Operating Handbook, ECAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to efficient cockpit management procedures and related safety factors.
2. Organizes and arranges material and equipment in a manner that makes the items readily available.
3. Briefs or causes the briefing of occupants on the use of safety belts and emergency procedures.
4. Uses all appropriate checklists.

C. TASK: ENGINE STARTING

REFERENCES: AC 61-21, AC 61-23, AC 91-13, AC 91-55; Pilot's Operating Handbook, ECAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to recommended engine starting procedures, including the use of an external power source, starting under various atmospheric conditions, awareness of other persons and property during start, and the effects of using incorrect starting procedures.

2. Accomplishes recommended starting procedures.
3. Completes appropriate checklists.

D. TASK: TAXIING

REFERENCES: AC 61-21; Pilot's Operating Handbook, ECAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to recommended taxi procedures, including the effect of wind on the airplane during taxiing and the appropriate control position for such conditions.
2. Performs a brake check immediately after the airplane begins moving.
3. Positions flight controls properly, considering the wind.
4. Controls direction and speed without excessive use of brakes.
5. Complies with airport markings, signals, and ATC clearances.
6. Avoids other aircraft and hazards.
7. Completes the appropriate checklist.

E. TASK: BEFORE TAKEOFF CHECK

REFERENCES: AC 61-21; Pilot's Operating Handbook, ECAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to the before takeoff check, including the reasons for checking each item and how to detect malfunctions.
2. Positions the airplane properly considering other aircraft, wind and surface conditions.
3. Divides attention inside and outside the cockpit.
4. Ensures the engine temperatures and pressures are suitable for run-up and takeoff.
5. Accomplishes the before takeoff checks and ensures the airplane is in safe operating condition.
6. Reviews takeoff performance airspeeds, takeoff distances, departure and emergency procedures.
7. Ensures no conflict with traffic prior to taxiing into takeoff position.

8. Completes appropriate checklist.

III. AREA OF OPERATION: AIRPORT OPERATIONS

A. TASK: RADIO COMMUNICATIONS AND ATC LIGHT SIGNALS

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

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to radio communications, radio failure, and ATC light signals.
2. Demonstrates use of radio communications by—
 - a. selecting appropriate frequencies for facilities to be used.
 - b. transmitting using recommended phraseology.
 - c. acknowledging and complying with radio communications and ATC instructions.
3. Uses appropriate procedures for simulated radio communications failure.
4. Complies with ATC light signals.

B. TASK: TRAFFIC PATTERNS

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

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to traffic pattern. This shall include procedures at controlled and uncontrolled airports, runway incursion and collision avoidance, wake turbulence avoidance, and approach procedure when wind shear is reported.
2. Complies with established traffic pattern procedures.
3. Maintains proper spacing from other traffic.
4. Establishes an appropriate distance from the runway/landing area.
5. Corrects for wind-drift to maintain proper ground track.
6. Remains oriented with runway and landing area in use.
7. Maintains and holds traffic pattern altitude ± 100 feet (30 meters), and appropriate airspeed ± 10 knots.
8. Completes appropriate checklists.

**C. TASK: AIRPORT, TAXIWAY, AND RUNWAY SIGNS,
MARKINGS, AND LIGHTING**

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

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to airport, taxiway, and runway signs, markings, and lighting.
2. Identifies and interprets airport, taxiway, and runway signs, markings, and lighting.

IV. AREA OF OPERATION: TAKEOFFS, LANDINGS, AND GO-AROUNDS

A. TASK: NORMAL AND CROSSWIND TAKEOFF AND CLIMB

REFERENCES: AC 61-21; Pilot's Operating Handbook, ECAA-Approved Airplane Flight Manual.

NOTE: If a crosswind condition does not exist, the applicant's knowledge of the crosswind elements shall be evaluated through oral testing.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to normal and crosswind takeoff and climb.
2. Positions the flight controls for the existing conditions.
3. Clears the area, taxis into the takeoff position, and aligns the airplane on the runway center.
4. Advances the throttle to takeoff power.
5. Rotates at recommended airspeed, and accelerates to VY, ± 5 knots.
6. Retracts the landing gear after a positive rate of climb is established.
7. Maintains takeoff power to a safe maneuvering altitude, then sets climb power.
8. Maintains directional control and proper wind-drift correction throughout the takeoff and climb.
9. Complies with noise abatement procedures.
10. Completes appropriate checklists.

B. TASK: NORMAL AND CROSSWIND APPROACH AND LANDING

REFERENCES: AC 61-21; Pilot's Operating Handbook, ECAA-Approved Airplane Flight Manual.

NOTE: If a crosswind condition does not exist, the applicant's knowledge of the crosswind elements shall be evaluated through oral testing.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to normal and crosswind approach and landing.
2. Considers the wind conditions, landing surface, and obstructions.
3. Selects a suitable touchdown point.
4. Establishes the recommended approach and landing configuration and adjusts power and attitude as required.
5. Maintains a stabilized approach and recommended airspeed with gust factor applied, ± 5 knots.
6. Makes smooth, timely, and correct control application during the roundout and touchdown.
7. Remains aware of the possibility of wind shear and/or wake turbulence.
8. Touches down smoothly at approximate stalling speed, at a specified point at or within 200 feet (60 meters) beyond a specified point with no drift, and with the airplane's longitudinal axis aligned with and over the runway centerline.
9. Maintains crosswind correction and directional control throughout the approach and landing.
10. Completes appropriate checklists.

C. TASK: SOFT-FIELD TAKEOFF AND CLIMB

REFERENCES: AC 61-21; Pilot's Operating Handbook; ECAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a soft-field takeoff and climb.
2. Positions the flight controls and flaps for existing conditions to maximize lift as quickly as possible.
3. Clears the area, taxis onto the takeoff surface at a speed consistent with safety and aligns the airplane without stopping while advancing the throttle smoothly to takeoff power.
4. Establishes and maintains a pitch attitude that will transfer the weight of the airplane from the wheels to the wings.
5. Remains in ground effect after takeoff while accelerating to VX or VY, as required.
6. Maintains VY, ± 5 knots.

7. Retracts the landing gear and flaps after a positive rate of climb is established, or as specified by the manufacturer.
8. Maintains takeoff power to a safe maneuvering altitude, then sets climb power.
9. Maintains directional control and proper wind-drift correction throughout the takeoff and climb.
10. Completes appropriate checklists.

D. TASK: SOFT-FIELD APPROACH AND LANDING

REFERENCES: AC 61-21; Pilot's Operating Handbook, ECAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a soft-field approach and landing.
2. Considers the wind conditions, landing surface, and obstructions.
3. Selects the most suitable touchdown point.
4. Establishes the recommended approach and landing configuration and adjusts power and pitch attitude as required.
5. Maintains a stabilized approach and recommended airspeed, or in its absence, not more than 1.3 VSO, with gust factor applied, ± 5 knots.
6. Makes smooth, timely, and correct control application during the roundout and touchdown.
7. Maintains crosswind correction and directional control throughout the approach and landing.
8. Touches down softly, with no drift, and with the airplane's longitudinal axis aligned with the landing surface.
9. Maintains proper position of the flight controls and sufficient speed to taxi on the soft surface.
10. Completes appropriate checklists.

E. TASK: SHORT-FIELD TAKEOFF AND CLIMB

REFERENCES: AC 61-21; Pilot's Operating Handbook, ECAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a short-field takeoff and climb.
2. Positions the flight controls and flaps for the existing conditions.
3. Clears the area, taxis into position for maximum utilization of available takeoff area.
4. Advances the throttle smoothly to takeoff power while holding brakes, or as specified by the manufacturer.
5. Rotates at the recommended airspeed.
6. Climbs at manufacturer's recommended airspeed and configuration, or in their absence at VX, +5/-0 knots until the obstacle is cleared, or until the airplane is at least 50 feet (20 meters) above the surface.
7. After clearing the obstacle, accelerates to and maintains VY, ±5 knots.
8. Retracts the landing gear and flaps after a positive rate of climb is established, or as specified by the manufacturer.
9. Maintains takeoff power to a safe maneuvering altitude, then sets climb power.
10. Maintains directional control and proper wind-drift correction throughout the takeoff and climb.
11. Completes appropriate checklists.

F. TASK: SHORT-FIELD APPROACH AND LANDING

REFERENCES: AC 61-21; Pilot's Operating Handbook, ECAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a short-field approach and landing.
2. Considers the wind conditions, landing surface, and obstructions.
3. Selects the most suitable touchdown point.
4. Establishes the recommended approach and landing configuration and adjusts power and pitch attitude as required.
5. Maintains a stabilized approach and recommended airspeed, or in its absence, not more than 1.3 VSO, with gust factor applied, ±5 knots.

6. Makes smooth, timely, and correct control application during the roundout and touchdown.
7. Remains aware of the possibility of wind shear and/or wake turbulence.
8. Touches down at a specified point at or within 100 feet (30 meters) beyond the specified point, with little or no float, with no drift, and with the airplane's longitudinal axis aligned with and over the center of the landing surface.
9. Maintains crosswind correction and directional control throughout the approach and landing.
10. Applies brakes, as necessary, to stop in the shortest distance consistent with safety.
11. Completes appropriate checklists.

G. TASK: GO-AROUND

REFERENCES: AC 61-21; Pilot's Operating Handbook, ECAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a go-around.
2. Makes a timely decision to discontinue the approach to landing.
3. Applies maximum allowable power immediately and establishes the pitch attitude that will stop the descent.
4. Retracts flaps to approach setting.
5. Retracts the landing gear after a positive rate of climb is established, or as specified by the manufacturer.
6. Trims the airplane to accelerate to VY before the final flap retraction then climbs at VY, ± 5 knots.
7. Maneuvers to the side of runway/landing area to clear and avoid (simulated) conflicting traffic.
8. Maintains maximum allowable power to a safe maneuvering altitude, then sets climb power.
9. Maintains proper wind-drift correction and obstruction clearance throughout the transition to climb.
10. Completes appropriate checklists.

V. AREA OF OPERATION: PERFORMANCE MANEUVERS

A. TASK: STEEP TURNS

REFERENCES: AC 61-21; Pilot's Operating Handbook, ECAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to steep turns.
2. Selects an altitude that allows the task to be completed no lower than 1,500 feet AGL (460 meters) or the manufacturer's recommended altitude, whichever is higher.
3. Establishes the manufacturer's recommended airspeed or if one is not stated, the examiner may designate a safe airspeed not to exceed VA .
4. Enters a smooth, coordinated 360° steep turn with a 50° bank, $\pm 5^\circ$, immediately followed by a 360° steep turn in the opposite direction.
5. Divides attention between airplane control and orientation.
6. Rolls out on the entry heading $\pm 10^\circ$.
7. Maintains the entry altitude throughout the maneuver, ± 100 feet (30 meters), and airspeed ± 10 knots.

B. TASK: CHANDELLES

REFERENCES: AC 61-21; Pilot's Operating Handbook, ECAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to performance factors associated with chandelles.
2. Selects an altitude that will allow the maneuver to be performed no lower than 1,500 feet AGL (460 meters) or the manufacturer's recommended altitude, whichever is higher.
3. Establishes the entry configuration at an airspeed no greater than the maximum entry speed recommended by the manufacturer (not to exceed VA).
4. Establishes approximately, but does not exceed, 30° of bank.
5. Simultaneously applies specified power and pitch to maintain a smooth, coordinated climbing turn with constant bank to the 90° point.

6. Begins a coordinated constant rate of rollout from the 90° point to the 180° point maintaining specified power and a constant pitch attitude that will result in a rollout within $\pm 10^\circ$ of desired heading and airspeed within + 5 knots of power-on stall speed.
7. Reduces pitch attitude to resume straight-and-level flight at the final altitude attained, ± 50 feet (20 meters).

C. TASK: LAZY EIGHTS

REFERENCES: AC 61-21; Pilot's Operating Handbook, ECAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to performance factors associated with lazy eights.
2. Selects an altitude that will allow the task to be performed no lower than 1,500 feet AGL (460 meters) or the manufacturer's recommended altitude, whichever is higher.
3. Selects a prominent 90° reference point in the distance.
4. Establishes the recommended entry power and airspeed.
5. Plans and remains oriented while maneuvering the airplane with positive, accurate control, and demonstrates mastery of the airplane.
6. Achieves the following throughout the task—
 - a. constant change of pitch, bank, and turn rate.
 - b. altitude and airspeed consistent at the 90° points, ± 100 feet (30 meters) and ± 10 knots respectively.
 - c. through proper power setting, attains the starting altitude and airspeed at the completion of the maneuver, ± 100 feet (30 meters) and ± 10 knots respectively.
 - d. heading tolerance $\pm 10^\circ$ at each 180° point.
7. Continues the task through at least two 180° circuits and resumes straight-and-level flight.

VI. AREA OF OPERATION: GROUND REFERENCE MANEUVER

TASK: EIGHTS ON PYLONS

REFERENCE: AC 61-21.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to eights on pylons including the relationship of groundspeed change to the performance of the maneuver.
2. Determines the approximate pivotal altitude.
3. Selects suitable pylons, considering emergency landing areas, that will permit approximately 3 to 5 seconds of straight-and-level flight between them.
4. Attains proper configuration and airspeed prior to entry.
5. Applies the necessary corrections so that the line-of-sight reference line remains on the pylon with minimum longitudinal movement.
6. Exhibits proper orientation, division of attention, and planning.
7. Applies the necessary wind-effect correction to track properly between pylons.
8. Holds pylon using appropriate pivotal altitude avoiding slips and skids.

VII. AREA OF OPERATION: NAVIGATION

A. TASK: PILOTAGE AND DEAD RECKONING

REFERENCES: AC 61-21, AC 61-23, AC 61-84.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to pilotage and dead reckoning.
2. Correctly flies to at least the first planned checkpoint to demonstrate accuracy in computations, considers available alternates, and suitable action for various situations including possible route alteration by the examiner.
3. Follows the preplanned course by reference to landmarks.
4. Identifies landmarks by relating the surface features to chart symbols.
5. Navigates by means of precomputed headings, groundspeed, and elapsed time.
6. Verifies the airplane's position within 1 nautical mile (1.85 km) of flight planned route at all times.
7. Arrives at the en route checkpoints or destination within 3 minutes of the ETA.
8. Corrects for, and records, the differences between preflight fuel, groundspeed, and heading calculations and those determined en route.
9. Maintains appropriate altitude, ± 100 feet (30 meters), and headings, $\pm 10^\circ$.
10. Completes appropriate checklists.

B. TASK: NAVIGATION SYSTEMS AND ATC RADAR SERVICES

REFERENCES: AC 61-21, AC 61-23.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to navigation systems and ATC radar services.
2. Selects and identifies the appropriate navigation system/facility.
3. Locates the airplane's position using radials, bearings, or coordinates, as appropriate.
4. Intercepts and tracks a given radial or bearing, if appropriate.

5. Recognizes and describes the indication of station passage.
6. Recognizes signal loss and takes appropriate action.
7. Utilizes proper communication procedures when utilizing ATC radar services.
8. Maintains the appropriate altitude, ± 100 feet (30 meters), heading, $\pm 10^\circ$.

C. TASK: DIVERSION

REFERENCES: AC 61-21, AC 61-23.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to procedures for diversion.
2. Selects an appropriate alternate airport and route.
3. Diverts toward the alternate airport promptly.
4. Makes an accurate estimate of heading, groundspeed, arrival time, and fuel consumption to the alternate airport.
5. Maintains the appropriate altitude, ± 100 feet (30 meters), and heading, $\pm 10^\circ$.

D. TASK: LOST PROCEDURE

REFERENCES: AC 61-21, AC 61-23.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to lost procedures.
2. Selects the best course of action, including best power and altitude.
3. Maintains the original or appropriate heading, and if necessary, climbs.
4. Attempts to identify nearest prominent landmark(s).
5. Uses available navigation aids or contacts an appropriate facility for assistance.
6. Plans a precautionary landing if deteriorating visibility and/or fuel exhaustion is imminent.

VIII. AREA OF OPERATION: SLOW FLIGHT AND STALLS

A. TASK: MANEUVERING DURING SLOW FLIGHT

REFERENCES: AC 61-21; Pilot's Operating Handbook, ECAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to flight characteristics and controllability associated with maneuvering during slow flight.
2. Selects an entry altitude that will allow the task to be completed no lower than 1,500 feet (460 meters) AGL or the manufacturer's recommended altitude, whichever is higher.
3. Stabilizes and maintains the airspeed at 1.2 VS1, ± 5 knots.
4. Establishes straight-and-level flight and level turns, with gear and flaps selected as specified by the examiner.
5. Maintains the specified altitude, ± 50 feet (20 meters).
6. Maintains the specified heading during straight flight $\pm 10^\circ$.
7. Maintains specified bank angle, $\pm 10^\circ$, during turning flight.
8. Rolls out on specified headings, $\pm 10^\circ$.
9. Divides attention between airplane control and orientation.

B. TASK: POWER-OFF STALLS

REFERENCES: AC 61-21, AC 61-67; Pilot's Operating Handbook, ECAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to aerodynamic factors associated with power-off stalls and how this relates to actual approach and landing situations.
2. Selects an entry altitude that allows the task to be completed no lower than 1,500 feet (460 meters) AGL or the manufacturer's recommended altitude, whichever is higher.
3. Establishes a stabilized descent, in the approach or landing configuration, as specified by the examiner.
4. Transitions smoothly from the approach or landing attitude to a pitch attitude that will induce a stall.

5. Maintains the specified heading $\pm 10^\circ$, in straight flight; maintains a specified angle of bank, not to exceed 30° , $+0/-10^\circ$, in turning flight, while inducing a stall.
6. Recognizes and announces the onset of the stall by identifying the first aerodynamic buffeting or decay of control effectiveness.
7. Recovers promptly as the stall occurs by simultaneously decreasing the pitch attitude, increasing power and leveling the wings, with a minimum loss of altitude.
8. Retracts flaps to the recommended setting, and retracts landing gear after a positive rate of climb is established.
9. Accelerates to VX or VY speed before final flap retraction, or as recommended by the manufacturer.
10. Returns to the altitude, heading, and airspeed specified by the examiner.

C. TASK: POWER-ON STALLS

REFERENCES: AC 61-21, AC 61-67; Pilot's Operating Handbook, ECAA-Approved Airplane Flight Manual.

NOTE: In some high performance airplanes, the power setting may have to be reduced below the ECA Examination Standards guideline power setting to prevent excessively high pitch attitudes (greater than 30° nose up).

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to aerodynamic factors associated with power-on stalls and how this relates to actual takeoff and departure situations.
2. Selects an entry altitude that allows the task to be completed no lower than 1,500 feet (460 meters) AGL or the manufacturer's recommended altitude, whichever is higher.
3. Establishes the takeoff configuration and slows the airplane to normal lift-off speed.
4. Sets power to manufacturer's recommended power-on stall power setting while establishing the climb attitude (in the absence of a manufacturer recommended power setting, use no less than approximately 55-60 percent of full power as a guideline).

5. Maintains the specified heading $\pm 10^\circ$, in straight flight; maintains a specified angle of bank, not to exceed a 20° angle of bank, $\pm 10^\circ$, in turning flight.
6. Recognizes and announces the onset of the stall by identifying the first aerodynamic buffeting or decay of control effectiveness.
7. Recovers promptly as the stall occurs, by simultaneously decreasing the pitch attitude, increasing power and leveling the wings, with a minimum loss of altitude.
8. Retracts flaps (if applicable) and landing gear after a positive rate of climb is established.
9. Returns to the altitude, heading, and airspeed specified by the examiner.

D. TASK: SPIN AWARENESS

REFERENCES: AC 61-21, AC 61-67; Pilot's Operating Handbook, ECAA-Approved Airplane Flight Manual.

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

1. Aerodynamic conditions required for a spin.
2. Flight situations and conditions where unintentional spins may occur.
3. Instrument indications during a spin and/or spiral.
4. Techniques and procedures used to recognize and recover from unintentional spins.

IX. AREA OF OPERATION: EMERGENCY OPERATIONS

A. TASK: EMERGENCY DESCENT

REFERENCES: AC 61-21; Pilot's Operating Handbook, ECAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to an emergency descent.
2. Recognizes situations, such as decompression, cockpit smoke and/or fire, that require an emergency descent.
3. Establishes the emergency descent configuration and airspeed, and maintains that airspeed, ± 5 knots.
4. Uses proper engine control settings.
5. Exhibits orientation, division of attention, and proper planning.
6. Maintains positive load factors during the descent.
7. Completes appropriate checklists.

B. TASK: EMERGENCY APPROACH AND LANDING

REFERENCES: AC 61-21; Pilot's Operating Handbook, ECAA-Approved Airplane Flight Manual.

NOTE: Emergency landings shall be evaluated over favorable terrain in the event an actual emergency landing becomes necessary

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to emergency approach procedures.
2. Establishes recommended best-glide airspeed, ± 10 knots, and configuration during simulated emergencies.
3. Selects a suitable landing area, considering the possibility of an actual emergency landing.
4. Attempts to determine the reason for the simulated malfunction.
5. Varies airspeed, descent, and flight pattern as necessary, so as to arrive at selected landing area, considering altitude, wind, terrain, obstructions, and other factors.
6. Prepares for low approach, landing, or go-around, as specified by the examiner.
7. Completes appropriate checklists.

C. TASK: SYSTEMS AND EQUIPMENT MALFUNCTIONS

REFERENCES: AC 61-21; Pilot's Operating Handbook, ECAA-Approved Airplane Flight Manual.

NOTE: Examiners shall relate the required applicant's knowledge in this TASK to the most complex airplane (as defined in the Introduction) used for the practical test.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to causes, indications, and pilot actions for various systems and equipment malfunctions.
2. Analyzes the situation and takes appropriate action for at least five (5) of the following simulated emergencies—
 - a. partial power loss.
 - b. engine failure during various phases of flight.
 - c. engine roughness or overheat.
 - d. loss of oil pressure.
 - e. fuel starvation.
 - f. smoke and fire.
 - g. icing.
 - h. pitot static/vacuum system and associated flight instruments.
 - i. electrical.
 - j. landing gear.
 - k. flaps (asymmetrical position).
 - l. inadvertent door opening.
 - m. emergency exits open.
 - n. any other emergency unique to the airplane flown.
3. Follows the appropriate emergency checklists or procedures.

D. TASK: EMERGENCY EQUIPMENT AND SURVIVAL GEAR

REFERENCES: AC 61-21; Pilot's Operating Handbook, ECAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to emergency equipment appropriate to the airplane used for the practical test by describing—

- a. location in the airplane.
 - b. method of operation.
 - c. servicing requirements.
 - d. method of safe storage.
2. Exhibits knowledge of the elements related to survival gear by describing—
- a. survival gear appropriate for operation in various climatological and topographical environments.
 - b. location in the airplane.
 - c. method of operation.
 - d. servicing requirements.
 - e. method of safe storage.

X. AREA OF OPERATION: HIGH ALTITUDE OPERATIONS

A. TASK: SUPPLEMENTAL OXYGEN

REFERENCES: ECAR part 91; AC 61-107; Pilot's Operating Handbook, ECAA-Approved Airplane Flight Manual, AIP.

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

1. Supplemental oxygen requirements for flight crew and passengers when operating non-pressurized airplanes.
2. Distinctions between "aviators' breathing oxygen" and other types.
3. Method of determining oxygen service availability.
4. Operational characteristics of continuous flow, demand, and pressure-demand oxygen systems.
5. Care and storage of high-pressure oxygen bottles.

B. TASK: PRESSURIZATION

REFERENCES: ECAR part 91; AC 61-21, AC 61-107; Pilot's Operating Handbook, ECAA-Approved Airplane Flight Manual, AIP.

NOTE: This TASK applies only if the flight test airplane is equipped for pressurized flight operations.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to pressurization by explaining—
 - a. fundamental concept of cabin pressurization.
 - b. supplemental oxygen requirements when operating airplanes with pressurized cabins.
 - c. physiological hazards associated with high altitude flight and decompression.
 - d. operational and physiological reasons for completing emergency descents.
 - e. need for wearing safety belts and for rapid access to supplemental oxygen.
2. Operates the pressurization system properly, and reacts promptly and properly to simulated pressurization malfunctions.

XI. AREA OF OPERATION: POSTFLIGHT PROCEDURES

A. TASK: AFTER LANDING

REFERENCES: AC 61-21; Pilot's Operating Handbook, ECAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to after-landing procedures, including local and ATC procedures.
2. Clears runway/landing area, taxis to suitable parking/refueling area using proper wind correction and obstacle clearance procedures.
3. Completes appropriate checklists.

B. TASK: PARKING AND SECURING

REFERENCES: AC 61-21; Pilot's Operating Handbook, ECAA-Approved Airplane Flight Manual.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to ramp safety, parking hand signals, shutdown, securing, and postflight inspection.
2. Parks the airplane properly, considering the safety of nearby persons and property.
3. Follows the recommended procedure for engine shutdown, securing the cockpit, and deplaning passengers.
4. Secures the airplane properly.
5. Performs a satisfactory postflight inspection.
6. Completes appropriate checklists.

APPENDIX 1

TASK VS. SIMULATION DEVICE CREDIT
SINGLE-ENGINE LAND (SEL)
APPENDIX 1
AIRPLANE SINGLE-ENGINE LAND
TASK VS. SIMULATION DEVICE CREDIT

Examiners conducting the Commercial Pilot - Airplane Practical Tests with flight simulation devices should consult appropriate documentation to ensure that the device has been approved for training, testing, or checking. The documentation for each device should reflect that the following activities have occurred:

1. The device must be evaluated, determined to meet the appropriate standards, and assigned the appropriate qualification level by the National Simulator Program Manager. The device must continue to meet qualification standards through continuing evaluations as outlined in the appropriate advisory circular (AC). For airplane flight training devices (FTD's), AC 120-45 (as amended), Airplane Flight Training Device Qualifications, will be used. For simulators, AC 120-40 (as amended), Airplane Simulator Qualification, will be used.
2. The ECAA must approve the device for training and checking the specific flight TASKS listed in this appendix.
3. The device must continue to support the level of student or applicant performance required by this PTS .

NOTE: Users of the following chart are cautioned that use of the chart alone is incomplete. The description and objective of each task as listed in the body of the PTS, including all notes, must also be incorporated for accurate simulation device use.

USE OF CHART

X Creditable.

A Creditable if appropriate systems are installed and operating.

* Asterisk items require use of FTD or simulator visual reference .

NOTE:

1. Use of Level 2 or Level 3 FTD's authorized only for those airplanes not requiring a type rating.
2. For practical tests, not more than 50 % of the maneuvers may be accomplished in an FTD or simulator UNLESS :
 - a. each maneuver has been satisfactorily accomplished for an instructor, in the appropriate airplane, not less than three (3) times, OR
 - b. the applicant has logged not less than 500 hours of flight time as a pilot in airplanes .
3. Not all AREAS OF OPERATIONS (AOAs) and TASKS required by this PTS are listed in the appendix. The remaining AOAs and TASKS must be accomplished in an airplane .
4. Standards for and use of Level 1 FTD's have not been determined.

APPENDIX 1

AIRPLANE SINGLE-ENGINE LAND FLIGHT TASK FLIGHT SIMULATION DEVICE LEVEL

Areas of Operation	١	٢	٣	٤	٥	٦	٧	A	B	C	D
II. Preflight Procedures											
A. Preflight Inspection (Cockpit Only)	—	A	X	A	A	X	X	X	X	X	X
B. Cockpit Management	—	A	X	A	A	X	X	X	X	X	X
C. Engine Starting	—	A	X	A	A	X	X	X	X	X	X
D. Taxiing	—	—	—	—	—	—	—	—	—	X	X
E. Before Takeoff Check	—	A	X	A	A	X	X	X	X	X	X
IV. Takeoffs, Landings, and Go-Arounds											
A. Normal and Crosswind Takeoff and Climb	—	—	—	—	—	—	—	—	—	X	X
B. Normal and Crosswind Approach and Landing	—	—	—	—	—	—	—	—	—	X	X
E. Short-Field Takeoff and Climb	—	—	—	—	—	—	—	X	X	X	X
F. Short-Field Approach and Landing	—	—	—	—	—	—	—	—	—	X	X
G. Go-Around*	—	—	X	—	—	X	X	X	X	X	X
V. Performance Maneuvers											

A. Steep Turns	—	—	X	—	—	X	X	X	X	X	X
VII. Navigation											
B. Navigation Systems and ATC Radar Services	—	A	—	—	A	X	X	X	X	X	X
C. Diversion	—	A	X	—	A	X	X	X	X	X	X
D. Lost Procedures	—	A	X	—	A	X	X	X	X	X	X
VIII. Slow Flight and Stalls											
A. Maneuvering During Slow Flight	—	—	X	—	—	X	X	X	X	X	X
IX. Emergency Operations											
A. Emergency Descent	—	—	X	—	—	X	X	X	X	X	X
B. Emergency Approach and Landing	—	—	—	—	—	—	—	—	—	X	X
C. Systems and Equipment Malfunctions	—	A	X	A	A	X	X	X	X	X	X
X. High Altitude Operations											
B. Pressurization	—	A	X	A	A	X	X	X	X	X	X
XI. Postflight Procedures											
A. After Landing	—	A	X	A	A	X	X	X	X	X	X

