

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

**FOREWORD**

The Commercial Pilot – Airplane ECA Examination Standards handbook 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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RATING TASK TABLE

Airplane Multiengine Land

Addition of an Airplane Multiengine 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							
	ASEL	ASES	AMES	RH	RG	Glider	Balloon	Airship
I	E,F,G	E,F,G	E,F,G	A,E,F,G	A,E,F,G	A,E,F,G	A,E,F,G	A,E,F,G
II	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
III	B	B,C	B,C	B	B	B	ALL	B
IV	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
V	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
VI	NONE	NONE	NONE	NONE	NONE	NONE	ALL	NONE
VII	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
VIII	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
IX *	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
X	A	A	A	ALL	ALL	ALL	ALL	ALL
XI	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL

\*If the applicant is instrument rated, and instrument competency has been previously demonstrated in a multiengine airplane, AREA OF OPERATION IX, TASKS A, B, and C need not be demonstrated.

Example: Private pilot AMEL and instrument rated (no "VFR only" limitation). Applicant need not accomplish TASKS A, B, and C.

Deletion of Airplane Multiengine Land  
 Limitation  
 "Limited to Center Thrust"

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 HELD**

Area of Operation	AMEL Limited to Center Thrust	
I	E,F,G	
II	ALL	
III	NONE	
IV	ALL	
V	NONE	
VI	NONE	
VII	ALL	
VIII	ALL	
IX *	ALL	
X	NONE	
XI	ALL	

\*If the applicant is instrument rated, and instrument competency has only  
 been previously demonstrated in a "Center Thrust Airplane," all TASKS in  
 AREA OF OPERATION IX must be demonstrated.

## 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 Multiengine 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
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- G. OPERATION OF SYSTEMS
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- A. PILOTAGE AND DEAD RECKONING
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## **VII. SLOW FLIGHT AND STALLS**

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- C. ENGINE INOPERATIVE – LOSS OF DIRECTIONAL CONTROL  
DEMONSTRATION
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- E. ENGINE FAILURE AFTER LIFT-OFF (SIMULATED)
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(SIMULATED)
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- B. PRESSURIZATION

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- 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 the 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: PRINCIPLES OF FLIGHT – ENGINE INOPERATIVE**

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

**Objective.** To determine that the applicant exhibits knowledge of the elements related to principles of flight - engine inoperative by explaining:

1. Importance of reducing drag and banking properly into the good engine(s) for best performance.
2. Importance of establishing and maintaining proper airspeed.
3. Importance of maintaining proper pitch and bank attitudes, and proper coordination of controls.
4. Performance available based on the following drag configurations—
  - a. extension of landing gear.
  - b. extension of flaps.
  - c. extension of both landing gear and flaps.
  - d. windmilling propeller on the inoperative engine.

## **G. TASK: OPERATION OF SYSTEMS**

**REFERENCES:** 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 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. Powerplants and propellers.
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.

#### **H. 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.

#### **I. 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.

## **J. 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 reason 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 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. Briefs crew, if applicable.

5. 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 movement.
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 that engine temperatures and pressures are suitable for run-up and takeoff.

5. Accomplishes the before takeoff checks and ensures that the airplane is in safe operating condition.
6. Reviews takeoff performance airspeeds, takeoff distances, departure and emergency procedures.
7. Briefs crew on duties, if applicable.
8. Ensures no conflict with traffic prior to taxiing into takeoff position.
9. 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  $\pm 100$  feet (30 meters), and appropriate airspeed  $\pm 10$  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 centerline.
4. Advances the throttles to takeoff power.
5. Rotates and accelerates to climb speed at manufacturer's recommended airspeeds. In their absence, rotate at VMC plus 5 knots and climb at VY,  $\pm 5$  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 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 pitch attitude as required.
5. Maintains a stabilized approach and recommended airspeed, with gust factor applied,  $\pm 5$  knots.
6. Makes smooth, timely, and correct control applications 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 the runway centerline.
9. Maintains crosswind correction and directional control throughout the approach and landing.
10. Completes appropriate checklists.

### C. TASK: SHORT-FIELD TAKEOFF AND CLIMB

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

**NOTE:** In airplanes with VX values within 5 knots of VMC the use of VY or the manufacturer's recommended procedures may be more appropriate for this demonstration.

**Objective.** To determine that the applicant:

1. Exhibits knowledge of the elements related to 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 throttles 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 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 roll and climb.
11. Completes appropriate checklists.

## D. 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 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, controlled rate of descent, and recommended airspeed, or in its absence, not more than 1.3 VSO, with gust factor applied,  $\pm 5$  knots.
6. Makes smooth, timely, and correct control applications 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 a 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.

## E. 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 best single-engine climb speed or VY, whichever is greater, before the final flap retraction then climbs at the appropriate airspeed,  $\pm 5$  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 MANEUVER

### **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 3,000 feet (920 meters) AGL 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. Enter 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,  $\pm 100$  feet (30 meters), and airspeed  $\pm 10$  knots.

## VI. 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 difference between preflight fuel, groundspeed, and heading calculations and those determined en route.
9. Maintains appropriate altitude,  $\pm 100$  feet (30 meters) and heading,  $\pm 10^\circ$ .
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, as appropriate.
5. Recognizes and describes the indication of station passage.
6. Recognizes signal loss and takes appropriate action.
7. Utilizes proper communication procedures when using ATC radar services.



8. Maintains the appropriate altitude,  $\pm 100$  feet (30 meters), and 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,  $\pm 100$  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.

## VII. 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 3,000 feet (920 meters) AGL or the manufacturer's recommended altitude, whichever is higher.
3. Stabilizes and maintains the airspeed at 1.2 VS1,  $\pm 5$  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,  $\pm 50$  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 3,000 feet (920 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  $30^\circ$ ,  $+0/-10^\circ$ , in turning flight, while inducing the 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 practical test standard 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 3,000 feet (920 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; a  $20^\circ$  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.

## VIII. 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 depressurization, cockpit smoke and/or fire, that require an emergency descent.
3. Establishes the prescribed airspeed and configuration for the emergency descent as recommended by the manufacturer without exceeding safety limitations.
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: MANEUVERING WITH ONE ENGINE INOPERATIVE**

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

**NOTE:** The feathering of one propeller shall be demonstrated in flight, in a multiengine airplane equipped with propellers which can be safely feathered and unfeathered. The maneuver shall be performed at altitudes and positions where safe landings on established airports can be readily accomplished. In the event a propeller cannot be unfeathered during the practical test, it shall be treated as an emergency.

**Objective.** To determine that the applicant:

1. Exhibits knowledge of the elements related to maneuvering with one engine inoperative.
2. Selects an entry altitude that will allow the task to be completed no lower than 3,000 feet (920 meters) AGL or the manufacturer's recommended altitude, whichever is higher.
3. Sets the engine controls, identifies and verifies the inoperative engine, feathers appropriate propeller, and reduces drag.
4. Attains the best engine inoperative airspeed and appropriately trims the airplane and maintains control.
5. Follows the prescribed checklist to verify procedures for securing the inoperative engine.

6. Establishes a bank toward the operating engine, as necessary, for best performance.
7. Monitors the operating engine and updates decisions based on observational feedback.
8. Restarts the inoperative engine using appropriate restart procedures.
9. Maintains the specified altitude  $\pm 100$  feet (30 meters) and heading  $\pm 10^\circ$ , when straight-and-level; levels off from climbs and descents, at specified altitudes,  $\pm 100$  feet (30 meters).
10. Completes the appropriate checklist.

### C. TASK: ENGINE INOPERATIVE - LOSS OF DIRECTIONAL CONTROL DEMONSTRATION

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

**NOTE:** Airplanes with normally aspirated engines will lose power as altitude increases because of the reduced density of the air entering the induction system of the engine. This loss of power will result in a VMC lower than the stall speed at higher altitudes. Also, some airplanes have such an effective rudder that even at sea level VMC is lower than stall speed. For these airplanes, a demonstration of loss of directional control may be safely conducted by limiting travel of the rudder pedal to simulate maximum available rudder. Limiting travel of the rudder pedal should be accomplished at a speed well above the power-off stall speed (approximately 20 knots). This will avoid the hazards of stalling one wing with maximum allowable power applied to the engine on the other wing. In the event of any indication of stall prior to loss of directional control, recover to the entry airspeed. The demonstration should then be accomplished with the rudder pedal blocked at a higher airspeed.

Do not perform this maneuver by increasing the pitch attitude to a high angle with both engines operating and then reducing power on the critical engine. This technique is hazardous and may result in loss of airplane control.

**Objective.** To determine that the applicant:

1. Exhibits knowledge of the elements related to engine inoperative loss of directional control by explaining the—
  - a. Meaning of the term "critical engine".

- b. Effects of density altitude on the VMC demonstration.
  - c. Effects of airplane weight and center of gravity on control.
  - d. Reasons for variations in VMC.
  - e. Relationship of VMC to stall speed.
  - f. Reasons for loss of directional control.
  - g. Indications of loss of directional control.
  - h. Importance of maintaining proper pitch and bank attitude, and proper coordination of controls.
  - i. Loss of directional control recovery procedure.
  - j. Engine failure during takeoff including; planning, decisions, and single-engine operations.
2. Exhibits skills in performing an engine inoperative-loss of directional control demonstration—
- a. Selects an entry altitude that will allow the task to be completed no lower than 3,000 feet (920 meters) AGL or the manufacturer's recommended altitude, whichever is higher.
  - b. Configures the airplane at VSSE/VYSE, as appropriate, as follows:
    - (1) Landing gear retracted.
    - (2) Flaps set for takeoff.
    - (3) Cowl flaps set for takeoff.
    - (4) Trim set for takeoff.
    - (5) Propellers set for high RPM.
    - (6) Power on critical engine reduced to idle.
    - (7) Power on operating engine set to takeoff or maximum available power.
  - c. Establishes a single-engine climb attitude with the airspeed at approximately 10 knots above VSSE.
  - d. Establishes a bank toward the operating engine, as required for best performance and controllability.
  - e. Increases the pitch attitude slowly to reduce the airspeed at approximately 1 knot per second while applying rudder pressure to maintain directional control until full rudder is applied.
  - f. Recognizes and announces the first indications of loss of directional control, stall warning or buffet.
  - g. Recovers promptly by simultaneously reducing power sufficiently on the operating engine while decreasing the angle

of attack as necessary to regain airspeed and directional control with a minimum loss of altitude.

Recovery SHOULD NOT be attempted by increasing the power on the simulated failed engine.

- h. Recovers within 20° of the entry heading.
- i. Advances power smoothly on operating engine and accelerates to VXSE/VYSE, as appropriate, ±5 knots, during the recovery.

#### **D. TASK: ENGINE FAILURE DURING TAKEOFF BEFORE VMC**

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

**NOTE:** A simulated engine failure shall be accomplished before reaching 50 percent of the calculated VMC.

**Objective.** To determine that the applicant:

- 1. Exhibits knowledge of the elements related to the procedure used for engine failure during takeoff prior to reaching VMC.
- 2. Utilizes the appropriate emergency procedures.
- 3. Promptly and smoothly closes the throttle(s) when simulated engine failure occurs.
- 4. Maintains directional control within 15 feet (5 meters) of the runway center while applying the brakes and nosewheel steering as necessary.

#### **E. TASK: ENGINE FAILURE AFTER LIFT-OFF (SIMULATED)**

**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 procedure used for engine failure after lift-off.
- 2. Recognizes a simulated engine failure promptly, maintains control, and utilizes appropriate emergency procedures.
- 3. Reduces drag, identifies and verifies the inoperative engine after simulated engine failure.
- 4. Simulates feathering the propeller on the inoperative engine. Examiner shall then establish zero-thrust on the inoperative engine.
- 5. Establishes VYSE or VXSE as required, if obstructions are present, establishes VXSE or VMC +5 knots, whichever is greater, until obstruction is cleared, then V YSE.
- 6. Follows the engine failure takeoff checklist after reaching 400 feet (120 meters) or safe obstruction clearance altitude.



7. Establishes a bank toward the operating engine, as necessary, for best performance.
8. Attempts to determine the reason for the engine malfunction.
9. Determines if it is feasible to restart the affected engine; If so, follows appropriate restart procedures.
10. Returns for landing at the airport or other suitable landing area.
11. Completes appropriate checklists.

#### **F. TASK: APPROACH AND LANDING WITH AN INOPERATIVE ENGINE (SIMULATED)**

**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 approach and landing procedures to be used in various emergency situations.
2. Recognizes a simulated engine failure, maintains control and utilizes recommended emergency procedures.
3. Sets the engine controls, reduces drag, and identifies and verifies the inoperative engine.
4. Simulates feathering the propeller of the inoperative engine. The examiner shall establish zero-thrust on the simulated inoperative engine.
5. Establishes the best engine inoperative airspeed,  $\pm 5$  knots.
6. Banks toward the operating engine, as necessary, for best performance and trims airplane.
7. Determines if it is feasible to restart the affected engine.
8. Plans and follows a flight pattern to the selected airport or landing area.
9. Establishes the best engine inoperative approach, landing configuration, and airspeed.
10. Maintains a stabilized approach and the recommended approach airspeed,  $\pm 5$  knots, until landing is assured.
11. Maintains crosswind correction and directional control throughout the approach and landing.
12. Makes smooth, timely and correct control applications during roundout and touchdown.
13. Touches down within first one-third of available runway, with no drift and the airplane's longitudinal axis aligned with the runway centerline.
14. Completes appropriate checklists.

## G. TASK: SYSTEMS AND EQUIPMENT MALFUNCTIONS

**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 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 roughness or overheat.
  - c. loss of oil pressure.
  - d. fuel starvation.
  - e. smoke and fire.
  - f. icing.
  - g. pitot-static system, vacuum/pressure system and associated flight instruments.
  - h. electrical.
  - i. landing gear.
  - j. flaps (asymmetrical position).
  - k. inadvertent door opening.
  - l. emergency exits open.
  - m. any other emergency unique to the airplane flown.
3. Follows the appropriate emergency checklists or procedures.

## H. 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.& method of safe storage.

## IX. AREA OF OPERATION: MULTIENGINE OPERATIONS

**NOTE:** If the applicant has previously demonstrated instrument proficiency in a multiengine airplane, TASKS A, B, and C, need not be accomplished (See RATING TASK TABLE).

### **A. TASK: ENGINE FAILURE DURING FLIGHT (By Reference to Instruments)**

**REFERENCES:** ECAR part 61; AC 61-21, AC 61-27; ECAA-S-8081-4.

**Objective.** To determine that the applicant:

1. Exhibits knowledge of the elements related to engine failure during flight.
2. Recognizes simulated engine failure promptly during straight-and-level flight and turns to predetermined headings.
3. Sets the engine controls, reduces drag, and identifies and verifies the inoperative engine.
4. Attains the best engine inoperative airspeed and appropriately trims the airplane and maintains control.
5. Follows the prescribed checklist to verify procedures for securing the inoperative engine.
6. Establishes a bank toward the operating engine(s), as necessary, for best performance.
7. Attempts to determine the reason for the engine malfunction.
8. Monitors the operating engine(s) and updates decisions based on observational feedback.
9. Determines if it is feasible to restart the affected engine; if so, follows appropriate restart procedures.
10. Demonstrates coordinated flight while flying straight-and-level and while turning in both directions.
11. Maintains the specified altitude  $\pm 100$  feet (30 meters), if within the airplane's capability, the specified airspeed  $\pm 10$  knots, and the specified heading  $\pm 10^\circ$ , if straight-and-level, or the specified bank within  $\pm 10^\circ$  of the standard rate bank angle, if in a turn.

### **B. TASK: INSTRUMENT APPROACH - ALL ENGINES OPERATING (By Reference to Instruments)**

**REFERENCES:** ECAR part 61; AC 61-21, AC 61-27; ECAA-S-8081-4.

**Objective.** To determine that the applicant:

1. Exhibits knowledge of the elements related to a published instrument approach with all engines operating.
2. Sets the navigation and communication equipment used during the approach and uses the proper communications technique.
3. Requests and receives an actual or simulated ATC clearance for an instrument approach.
4. Follows instructions and instrument approach procedures correctly.
5. Maintains a specified airspeed within 10 knots and an altitude within 100 feet (30 meters), prior to the final approach fix.
6. Establishes a rate of descent that will ensure arrival at the MDA or DH, whichever is appropriate, in a position from which a normal landing can be made either straight-in or circling.
7. Allows, while on the final approach segment, no more than three-quarter-scale deflection of the localizer/glide slope indicators, CDI, or within 10° in the case of RMI or ADF indicators.
8. Avoids descent below the published minimum altitude on straight-in approaches or exceeding the visibility criteria for the aircraft approach category on circling approaches.
9. Completes the appropriate checklist.

**C. TASK: INSTRUMENT APPROACH - ONE ENGINE INOPERATIVE (By Reference to Instruments)**

**REFERENCES:** ECAR part 61; AC 61-21, AC 61-27

**Objective.** To determine that the applicant:

1. Exhibits knowledge of the elements related to multiengine procedures used during a published instrument approach with one engine inoperative.
2. Sets the navigation and communication equipment used during the approach and uses the proper communications technique.
3. Requests and receives an actual or simulated ATC clearance for an instrument approach.
4. Recognizes simulated engine failure and maintains control.
5. Sets the engine controls, reduces drag, and identifies and verifies the inoperative engine. The examiner shall establish zero-thrust on the inoperative engine.
6. Follows the appropriate checklist to verify procedures for securing the inoperative engine.
7. Establishes a bank toward the operating engine, as necessary, for best performance.

8. Establishes the best engine inoperative airspeed,  $\pm 5$  knots and trims the airplane.
9. Monitors the operating engine(s) and updates decisions based on observational feedback.
10. Attempts to determine the reason for the engine malfunction.
11. Determines if it is feasible to restart the affected engine; if so, follows appropriate restart procedures.
12. Follows instructions and instrument approach procedures correctly.
13. Maintains a specified airspeed within 10 knots and an altitude within 100 feet (30 meters), prior to the final approach fix.
14. Establishes a rate of descent that will ensure arrival at the MDA or DH, whichever is appropriate, in a position from which a normal landing can be made either straight-in or circling.
15. Allows, while on final approach segment, no more than three-quarter-scale deflection of the localizer/glide slope indicators, CDI, or within  $10^\circ$  in the case of RMI or ADF indicators.
16. Avoids descent below the published minimum altitude on straight-in approaches or exceeding the visibility criteria for the aircraft approach category on circling approaches.
17. Completes appropriate checklists.

## 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 and taxies to suitable parking/refueling area while 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 2 AIRPLANE MULTIENGINE 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 2

### AIRPLANE MULTIENGINE LAND FLIGHT TASK FLIGHT SIMULATION DEVICE LEVEL

Areas of Operation	1	2	3	4	5	6	7	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
C. Short-Field Takeoff and Climb	---	---	---	---	---	---	---	X	X	X	X
D. Short-Field Approach and Landing	---	---	---	---	---	---	---	---	---	X	X
E. Go-Around	---	---	X	---	---	X	X	X	X	X	X
V. Performance Maneuver											
Steep Turns	---	---	X	---	---	X	X	X	X	X	X
VI. 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
VII. Slow Flight and Stalls											
A. Maneuvering During Slow Flight	---	---	X	---	---	X	X	X	X	X	X
VIII. Emergency Operations											
A. Emergency Descent	---	---	X	---	---	X	X	X	X	X	X
B. Maneuvering with One Engine Inoperative	---	---	---	---	---	---	---	X	X	X	X
C. Engine Inoperative - Loss of Directional Control Demonstration	---	---	---	---	---	---	---	X	X	X	X
D. Engine Failure During Takeoff Before VMC	---	---	---	---	---	---	---	X	X	X	X
E. Engine Failure After Lift-Off (Simulated)	---	---	---	---	---	---	---	X	X	X	X
F. Approach and Landing with an Inoperative Engine (Simulated)	---	---	---	---	---	---	---	---	---	---	---
G. Systems and Equipment Malfunctions	---	A	X	A	A	X	X	X	X	X	X
IX. Multiengine Operations											

A. Engine Failure During Flight (By reference to instruments)	---	---	X	---	---	X	X	X	X	X	X
B. Instrument Approach - All Engines Operating (By reference to instruments)	---	A	X	---	A	X	X	X	X	X	X
C. Instrument Approach - One Engine Inoperative (By reference to instruments)	---	---	---	---	---	---	---	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

