GHANA
CIVIL AVIATION AUTHORITY

ADVISORY CIRCULAR
AC 02-009

SKILL TEST STANDARDS:
AIRLINE TRANSPORT PILOT & TYPE RATING – AEROPLANE

SECTION 1 GENERAL

1.1 PURPOSE

A. This Advisory Circular (AC) provides guidance to individuals, organizations and examiners regarding the determination that an individual's skill level is adequate for the issuance of an Airline Transport Pilot License with an appropriate rating for–

1) Aeroplane Single Engine Land;

2) Aeroplane Multi-Engine Land; or

3) Aeroplane Type Rating.

B. This AC also provides the necessary information for the conduct and evaluation of AOC proficency checks in large aeroplanes.

1.2 STATUS OF THIS ADVISORY CIRCULAR

This is an original issuance of this AC.

1.3 BACKGROUND

A. ICAO Standards in Annex 1, Personnel Licensing, require that, before issuing an Airline Transport Pilot License, the State must assess the knowledge and skill of the individual to perform such operations.

B. Part 2 of the Ghana Civil Aviation Directives establishes the specific requirements for ATPL knowledge and skill testing that parallel the ICAO Standards.

C. This AC provides amplified standards for a ATPL or ATPL Type Rating applicant and the person assigned to conduct the skill test for license

1.4 APPLICABILITY

A. These Skill Test Standards are for use by examiners for determination of an individual's fitness to be issued and continue to hold ATPL privileges and ATPL privileges for aircraft-specific type ratings..

B. Flight instructors are expected to use these standards when preparing applicants for their ATPL skill tests.

- Advisory Circulars are intended to provide advice and guidance to illustrate a means, but not necessarily the only means, of complying with the directives, or to explain certain regulatory requirements by providing informative, interpretative and explanatory material.
- Where a directive contains the words "prescribed by the Authority," the AC may consider to "prescribe" a viable method of compliance, but status of that "prescription" is always "guidance" (never a directive).

C. Applicants should be familiar with these skill test standards and refer to them during their training.

D. These Skill Test Standards are also applicable to the pilots of large aeroplanes involved in commercial air transport operations and the designees that administer those proficiency checks.

1.5 RELATED DIRECTIVES

The following directives are directly applicable to the guidance contained in this advisory circular—

- GCADs Part 7, Instruments & Equipment
- GCADs Part 2, Personnel Licensing
- GCADs Part 08, Operations of Aircraft
- GCADs Part 09, AOC Personnel Qualification
- GCADs Part 09, AOC Operational Control
- GCADs Part 09, AOC Mass & Balance & Performance

1.6 RELATED PUBLICATIONS

For further information on this topic, individuals, instructors and examiners are invited to consult the following publications—

1) Ghana Civil Aviation Authority (GCAA)
   - ♦ AC 02-002, Personnel Licensing
   - ♦ AC 02-005, Flight Testing

   Copies may be obtained from the Safety Regulation Department.

2) Manufacturer of the aircraft to be used for the skill test
   - ♦ Flight Crew Operating Handbook
   - ♦ Pilot Operating Handbook, or
   - ♦ Approved Flight Manual

3) United States Federal Aviation Administration (FAA)
   - ♦ AC 00-45, Aviation Weather
   - ♦ FAA-H-8083-1, Aircraft Weight & Balance Handbook
   - ♦ FAA-H-80-8325, Pilot Handbook of Aeronautical Knowledge
   - ♦ FAA-H-8083-3A, Airplane Flying Handbook
   - ♦ FAA-H-8083-15, Instrument Flying Handbook
   - ♦ FAA-H-8083-23, Seaplane Operations Handbook
   - ♦ FAA-H-8261-1, Instrument Procedures Handbook

   - Copies are normally available through flight schools and instructors.
   - Contact the GCAA-SRD if unable to find copies.

4) International Civil Aviation Organization (ICAO)
   - ♦ Annex, 1, Personnel Licensing

   Copies may be obtained from Document Sales Unit, ICAO, 999 University Street, Montreal, Quebec, Canada H3C 5H7.

1.7 DEFINITIONS & ACRONYMS

A. The following definitions are used in this advisory circular—

1) **Aircraft – category.** Classification of aircraft according to specified basic characteristics, e.g. aeroplane, rotorcraft, glider, lighter-than-air, powered-lift.

2) **Competency.** A combination of skills, knowledge and attitudes required to perform a task to the prescribed standard.

3) **Crew resource management**. A program designed to improve the safety of flight operations by optimizing the safe, efficient, and effective use of human resources, hardware, and information through improved crew communication and coordination.

4) **Error.** An action or inaction by the flight crew that leads to deviations from organizational or flight crew intentions or expectations.

5) **Error management.** The process of detecting and responding to errors with countermeasures that reduce or eliminate the consequences of errors and mitigate the probability of further errors or undesired aircraft states.

6) **Examiner**. A qualified person designated by GCAA to conduct a proficiency test, a skill test for an license or rating, or a knowledge test under the Ghana directives.

7) **Flight simulation training device.** Any one of the following three types of apparatus in which flight conditions are simulated on the ground—

(a) *A* **flight simulator***,* which provides an accurate representation of the flight deck of a particular aircraft type to the extent that the mechanical, electrical, electronic, etc. aircraft systems control functions, the normal environment of flight crew members, and the performance and flight characteristics of that type of aircraft are realistically simulated;

(b) *A* **flight procedures trainer,** which provides a realistic flight deck environment, and which simulates instrument responses, simple control functions of mechanical, electrical, electronic, etc. aircraft systems, and the performance and flight characteristics of aircraft of a particular class;

(c) *A* **basic instrument flight trainer***,* which is equipped with appropriate instruments, and which simulates the flight deck environment of an aircraft in flight in instrument flight conditions

8) **Flight test.** For the purpose of this advisory circular, a portion of a skill test that includes Tasks that are normally accomplished while operating the aircraft.

9) **Practical Test**. For the purpose of this advisory circular, a portion of the skill test that includes Tasks accomplished before the flight portion.

10) **Rating.** An authorisation entered on or associated with a licence and forming part thereof, stating special conditions, privileges or limitations pertaining to such licence.

11) **Scenario**. A plan of action that includes the provision for accomplishing each Task specified in the skill test standards in practical and logical manner.

12) **Threat management.** The process of detecting and responding to threats with countermeasures that reduce or eliminate the consequences of threats and mitigate the probability of errors or undesired aircraft states

13) **Threat.** Events or errors that occur beyond the influence of the flight crew, increase operational complexity and must be managed to maintain the margin of safety.

B. The following acronyms are used in this advisory circular—

1) **AC** – Advisory Circular

2) **ADF** – Automatic Direction Finder
3) **APV** – Approach with Vertical Guidance
4) **ATC** – Air Traffic Control
5) **ATIS** – Automatic Terminal Information Service
6) **ATPL** – Airline Transport Pilot
7) **ATPL-A** – Airline Transport Pilot–Aeroplane
8) **ATS** – Air Traffic Service
9) **GCAA** – Ghana Civil Aviation Authority
10) **GCADs** – Ghana Civil Aviation Directives
11) **CDI** – Course Deviation Indicator
12) **CFIT** – Controlled Flight into Terrain
13) **CPL** – Commercial Pilot License
14) **DA/DH** – Decision Altitude/Decision Height
15) **DH** – Decision Height
16) **DME** – Distance Measuring Equipment
17) **DP**– Departure Procedures
18) **FMS** – Flight Management System
19) **GNSS** – Global Navigation Satellite System
20) **GPS** – Global Positioning System
21) **GPWS** – Ground Proximity Warning System
22) **IAP** – Instrument Approach Procedures
23) **IFR** – Instrument Flight Rules
24) **ILS** – Instrument Landing System
25) **IMC** – Instrument Meteorological Conditions
26) **LCD** – Liquid Crystal Display
27) **LDA** – Localizer-type Directional Aid
28) **LED** – Light Emitting Diode
29) **LOC** – ILS Localizer
30) **MAP** – Missed Approach Point
31) **MDA** – Minimum Descent Attitude
32) **NAVAID** – Navigation Aid
33) **NDB** – Non-directional Beacon (Automatic Direction Finder)
34) **NOTAM** – Notice to Airmen
35) **NPA** – Nonprecision Approach
36) **PA** – Precision Approach
37) **PC** – Proficiency Check

38) **PEL** – Personnel Licensing
39) **PPL** – Private Pilot License
40) **RAIM** – Receiver Autonomous Integrity Monitoring
41) **RMI** – Radio Magnetic Indicator
42) **RNAV** – Area Navigation
43) **SAS** – Stability Augmentation System
44) **SDF** – Simplified Directional Facility
45) **SIGMETS** – Significant Meteorological Advisory
46) **SRD** – Safety Regulation Department
47) **STAR** – Standard Terminal Arrival
48) **STS** – Skill Test Standard
49) **TCAS** – Traffic Alert and Collision Avoidance System
50) **VDP** – Visual Descent Point
51) **VHF** – Very High Frequency
52) **VNAV** – Vertical Navigation
53) **VOR** – Very High Frequency Ominidirectional Range

SECTION 2 INTRODUCTORY INFORMATION

2.1 ATPL & TYPE RATING SKILL TEST PREREQUISITES

2.1.1 AIRLINE TRANSPORT PILOT

A. An applicant for the original issuance of an airline transport pilot license is required (prior to the skill test) by GCADs Part 2 to—

1) Have passed the appropriate airline transport pilot knowledge test within 24 months before the date of the skill test;
2) Have the aeronautical experience prescribed in GCADs Part 2, that applies to the aircraft category and class rating;
3) Have a minimum of a Class 2 medical certificate, if a medical certificate is required;
4) Be at least 23 years of age; and
5) Be able to read, speak, write, and understand the English language.

The ATP license will contain the limitation NOT VALID FOR INTERNATIONAL FLIGHT if the applicant has not demonstrated at least Level 4 English language proficiency.

2.1.2 AIRCRAFT TYPE RATING

A. An applicant for a type rating in an aeroplane is required by GCADs Part 2 to have—

1) The applicable experience;
2) A minimum of a Class 2 medical certificate, if a medical certificate is required (not required for simulator);
3) The appropriate category and class rating, or accomplish the appropriate TASKs in the private/commercial pilot STS;

4) Received and logged ground training from an authorized ground or flight instructor and flight training from an authorized flight instructor, on the AREAS OF OPERATION in this skill test standard that apply to the aircraft type rating sought; and

5) Received a logbook endorsement from the instructor who conducted the training, certifying that the applicant completed all the training on the AREAS OF OPERATION in this skill test standard that apply to the aircraft type rating sought.

B. If the applicant is an employee of an AOC holder, the applicant may present a training record that shows the satisfactory completion of that AOC holder's approved pilot in command training program for the aircraft type rating sought, instead of the requirements of 4 and 5 above.

C. An applicant who holds a private pilot or limited commercial pilot certificate is required to have passed the appropriate instrument rating knowledge test since the beginning of the 24th month before the skill test is taken if the test is for the concurrent issuance of an instrument rating and an aircraft type rating.

2.2 APPLICANT SKILL TEST PREPARATION CHECKLIST

The following guidance is provided to ensure that the applicant arrives at the appointment with all equipment and documents necessary for the administration of the skill test, including—

2.2.1 APPOINTMENT WITH EXAMINER

A. Contact the GCAA-SRD to be assigned an examiner for the purpose of the skill test.

B. Contact the examiner to arrange a suitable location, date and time.

C. Plan to arrive at the designated location before the actual time of the appointment.

2.2.2 ACCEPTABLE AIRCRAFT

The applicant must provide a suitable aircraft for the type of skill test to be administered, and provide the following associated documentation—

1) Airworthiness certificate

2) Registration certificate

3) Operating limitations

4) Aircraft logbook maintenance records of airworthiness inspections and AD compliance

5) Pilot's Operating Handbook and/or the Approved Aeroplane Flight Manual

2.2.3 PERSONAL EQUIPMENT

The applicant must provide the following personal equipment for the skill test—

1) View-limiting device

2) Current aeronautical charts

3) Computer and plotter

4) Flight plan form

5) Flight logs

6) Appropriate route guide and other flight information publications

2.2.4 PERSONAL RECORDS

The applicant must provide the following personal records before the skill test can be administered—

1) Identification-photo/signature ID
2) Pilot certificate
3) Current and appropriate medical certificate
4) Completed GCAA Form 547, Airman Certificate and/or Rating Application, with Instructor's Signature (If applicable)
5) Aeronautical knowledge test report
6) Pilot Logbook with appropriate instructor endorsements
7) GCAA-Form 551, Notice of Disapproval (if applicable)
8) Graduation certificate from an Approved Training Orgnization (if applicable)
9) Examiner's fee

2.3 SKILL TEST STANDARDS FORMAT

A. **Areas Of Operation** are phases of the skill test arranged in a logical sequence within each standard.

- They begin with Preflight Preparation and end with Postflight Procedures.
- The examiner, however, may conduct the operational portions of the skill test in any sequence that will result in a complete and efficient test.
- Hhowever the ground portion of the skill test shall be accomplished before the flight portion.

B. **Tasks** are titles of knowledge areas, flight procedures, or maneuvers appropriate to an Area Of Operation.

C. **Applicable to**: The abbreviation(s) immediately following a TASK refer to the category and/or class aircraft appropriate to that TASK. The meaning of each abbreviation is as follows.

- ASEL – Aeroplane-Single-Engine Land
- AMEL – Aeroplane-Multiengine Land
- ASES – Aeroplane-Single-Engine Sea
- AMES– Aeroplane-Multiengine Sea

D. The **Objective** lists the 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) Conditions under which the *Task* is to be performed; and
3) Acceptable performance standards.

NOTE TO EXAMINERS:
- When administering a test based sections 1 and 2 of this PTS, the TASKs appropriate to the class aeroplane (ASEL, ASES, AMEL, or AMES) used for the test shall be included in the plan of action.
- The absence of a class indicates the task is for all classes.
- An accompanying note is used to emphasize special considerations required in the AREA OF OPERATION or TASK.

2.4 REGULATORY STANDARDS OF PERFORMANCE

2.4.1 DEGREE OF COMPETENCY

Reference: GCAD Section 7.079(a)

The determination of an applicant's ability to hold a license or rating is based on a demonstration of the ability to perform as pilot-in command to perform the procedures and maneuvers to the degree of competency appropriate to the privileges granted and to—

1) Recognize and manage threats and errors;
2) Manually control the aircraft within its limitations at all times;
3) Complete all manoeuvres with smoothness and accuracy;
4) Exercise good judgement and airmanship;
5) Apply aeronautical knowledge; and
6) Maintain control of the aircraft at all times in a manner such that the successful outcome of a procedure or manoeuvre is assured.

2.4.2 ADDITIONAL AIRLINE TRANSPORT LICENSE DEMONSTRATIONS

Reference: GCAD Section 7.079(b)

The following additional pilot-in-command demonstrations are required for the airline transport license—

1) Pre-flight procedures, including the preparation of the operational flight plan and filing of the air traffic services flight plan;
2) Normal flight procedures during all phases of flight;
3) Abnormal and emergency procedures and manoeuvres related to failures and malfunctions of equipment, such as powerplant, systems and airframes;
4) *For aeroplanes*, procedures and manoeuvres for instrument flight, including simulated engine failure;

2.4.3 AIRCRAFT CERTIFIED FOR TWO PILOT OPERATIONS

The airline transport pilot applicant of an aeroplane certified for operation with a minimum crew of at least two pilots under VFR and IFR shall also be required to demonstrate the following competency as the pilot flying—

1) Operation of the aircraft in the mode of automation appropriate to the phase of flight and to maintain awareness of the active mode of automation;
2) Effectively communications with other flight crew members to perform procedures for crew coordination, including—
   (a) Allocation of pilot tasks,
   (b) Crew cooperation,
   (c) Adherence to standard operating procedures and use of checklists. and
   (d) Crew incapacitation.

2.5 WAIVERS FOR PREVIOUS ACCOMPLISHMENT OF TASK

A. The actual accomplishment of the required Areas of Operation or specific Tasks in those operations may be waived at the examiner's discretion when the applicant holds another aeroplane category and class rating in which—
   1) Those tasks were accomplished; and
   2) There are no obvious skill differences for the accomplishment of those tasks between the class ratings.

2.6 SKILL STANDARDS SPECIFIED BY REGULATION

The final determination of an applicant's ability to hold a license or rating is based on a demonstration of the ability to perform as pilot-in command to perform the procedures and maneuvers to the degree of compentency appropriate to the privileges granted and to—

1) Recognize and manage threats and errors;
2) Manually control the aircraft within its limitations at all times;
3) Complete all manoeuvres with smoothness and accuracy;
4) Exercise good judgement and airmanship;
5) Apply aeronautical knowledge; and
6) Maintain control of the aircraft at all times in a manner such that the successful outcome of a procedure or manoeuvre is assured.

2.7 AIRCRAFT & EQUIPMENT: INSTRUMENT RATING SKILL TEST

2.7.1 INSTRUMENTS & EQUIPMENT

A. The instrument rating applicant is required to provide an airworthy, certificated aircraft for use during the skill test.

1) Its operating limitations must not prohibit the TASKs required on the skill test.
2) Flight instruments are those required for controlling the aircraft without outside references.
3) The required radio equipment is that which is necessary for—
   (a) Communications with ATC, and
   (b) For the performance of two of the following nonprecision approaches: VOR, NDB, GPS, LOC, LDA, SDF, or RNAV; and
   (c) One precision approach: ILS, GLS, or MLS.
   (d) GPS equipment must be instrument certified and contain the current database.

2.7.2 AIRCRAFT WITH MODERN TECHNOLOGY

A. Modern technology has introduced into aviation a new method of displaying flight instruments, such as—

- Electronic Flight instrument systems,
- Integrated flight deck displays, and
- Other similar systems.

For the purpose of the skill test standards, any flight instrument display that utilizes LCD or picture tube like displays will be referred to as "Electronic Flight Instrument Display."

B. Aircraft equipped with this technology may or may not have separate backup flight instruments installed.

C. The abnormal or emergency procedure for loss of the electronic flight instrument display appropriate to the aircraft will be evaluated in the Loss of Primary Instruments TASK.

D. The loss of the primary electronic flight instrument display must be tailored to failures that would normally be encountered in the aircraft.

E. If the aircraft is capable, total failure of the electronic flight instrument display, or a supporting component, with access only to the standby flight instruments or backup display shall be evaluated.

2.7.3 VIEW LIMITING DEVICE

The applicant is required to provide an appropriate view limiting device that is acceptable to the examiner.

1) This device shall be used during all testing that requires testing "solely by reference to instruments."
2) This device must prevent the applicant from having visual reference outside the aircraft, but not prevent the examiner from having visual reference outside the aircraft.

- A procedure should be established between the applicant and the examiner as to when and how this device should be donned and removed
- This procedure briefed before the flight.

2.7.4 AUTOPILOT AND/OR FLIGHT MANAGEMENT SYSTEM

The applicant is expected to utilize an autopilot and/or flight management system (FMS), if properly installed, during the instrument skill test to assist in the management of the aircraft.

1) The examiner is expected to test the applicant's knowledge of the systems that are installed and operative during the oral and flight portions of the skill test.
2) The applicant will be required to demonstrate the use of the autopilot and/or FMS during one of the nonprecision approaches.

2.7.5 GLOBAL POSITIONING SYSTEM (GPS)

If the skill test is conducted in the aircraft, and the aircraft has an operable and properly installed GPS, the applicant must demonstrate GPS approach proficiency when asked.

- If the applicant has contracted for training in an approved course that includes GPS training in the system that is installed in the aeroplane/simulator/FTD and the aeroplane/simulator/FTD used for the checking/testing has the same system properly installed and operable, the applicant must demonstrate GPS approach proficiency.

2.7.6 MULTI ENGINE PRIVILEGES

A. To obtain an instrument rating with multiengine privileges, an applicant must demonstrate competency in a multiengine aeroplane not limited to center thrust.

B. The multiengine aeroplane that is used to obtain unlimited multiengine privileges must have a published VMC speed established by the manufacturer, and produce an asymmetrical thrust configuration with the loss of one or more engines.

C. If an instrument flight test is conducted in a multiengine aeroplane limited to center thrust, a limitation shall be placed on the applicant's certificate—

- **INSTRUMENT RATING, AEROPLANE MULTIENGINE, LIMITED TO CENTER THRUST**

2.8 UNSATISFACTORY PERFORMANCE

A. 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 skill test is failed.

B. The examiner or applicant may discontinue the test at any time when the failure of an AREA OF OPERATION makes the applicant ineligible for the certificate or rating sought.

- The test may be continued ONLY with the consent of the applicant.

C. If the test is discontinued, the applicant is entitled credit for only those AREAS OF OPERATION and their associated TASKs satisfactorily performed.

The applicant must understand that during a retest, and at the discretion of the examiner, any TASK may be re-evaluated, including those previously passed.

D. 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 skill test TASK Objectives.

Failure to take prompt corrective action when tolerances are exceeded.

SECTION 3 AREA OF OPERATION: PREFLIGHT PREPARATION

3.1 TASK: EQUIPMENT EXAMINATION

Objective. To determine that the applicant—

1) Exhibits adequate knowledge appropriate to the aeroplane; its systems and components; its normal, abnormal, and emergency procedures; and uses the correct terminology with regard to the following items—

(a) Landing gear—extension/retraction system(s); indicators, float devices, brakes, antiskid, tires, nose-wheel steering, and shock absorbers.

(b) Powerplant—controls and indications, induction system, carburetor and fuel injection, turbocharging, cooling, fire detection/protection, mounting points, turbine wheels, compressors, deicing, anti-icing, and other related components.

(c) Propellers—type, controls, feathering/unfeathering, autofeather, negative torque sensing, synchronizing, and synchrophasing.

(d) Fuel system—capacity; drains; pumps; controls; indicators; crossfeeding; transferring; jettison; fuel grade, color and additives; fueling and defueling procedures; and fuel substitutions, if applicable.

(e) Oil system—capacity, grade, quantities, and indicators.

(f) Hydraulic system—capacity, pumps, pressure, reservoirs, grade, and regulators.

(g) Electrical system—alternators, generators, battery, circuit breakers and protection devices, controls, indicators, and external and auxiliary power sources and ratings.

(h) Environmental systems—heating, cooling, ventilation, oxygen and pressurization, controls, indicators, and regulating devices.

(i) Avionics and communications—autopilot; flight director; Electronic Flight Instrument Systems (EFIS); Flight Management System(s) (FMS); Doppler Radar; Inertial Navigation Systems (INS); Global Positioning System/Wide Area Augmentation System/Local Area Augmentation System (GPS/WAAS/LAAS); VOR, NDB, ILS/MLS, GLS, RNAV systems and components; traffic awareness/warning/avoidance systems, terrain awareness/warning/alert systems; other avionics or communications equipment, as appropriate; indicating devices; transponder; and emergency locator transmitter.

(j) Ice protection—anti-ice, deice, pitot-static system protection, propeller, windshield, wing and tail surfaces.

(k) Crewmember and passenger equipment—oxygen system, survival gear, emergency exits, evacuation procedures and crew duties, and quick donning oxygen mask for crewmembers and passengers.

(l) Flight controls—ailerons, elevator(s), rudder(s), control tabs, balance tabs, stabilizer, flaps, spoilers, leading edge flaps/slats and trim systems.

(m) Pitot-static system with associated instruments and the power source for the flight instruments.

2) Exhibits adequate knowledge of the contents of the POH or AFM with regard to the systems and components listed in paragraph 1 (above); the Minimum Equipment List (MEL), if appropriate; and the operations specifications, if applicable.

3.2 TASK: PERFORMANCE & LIMITATIONS

Objective. To determine that the applicant—

1) Exhibits adequate knowledge of performance and limitations, including a thorough knowledge of the adverse effects of exceeding any limitation.

2) Demonstrates proficient use of (as appropriate to the aeroplane, performance charts, tables, graphs, or other data relating to items, such as—

(a) Accelerate-stop distance.

(b) Accelerate-go distance.

(c) Takeoff performance—all engines and with engine(s) inoperative.

(d) Climb performance including segmented climb performance with all engines operating—with one or more engine(s) inoperative, and with other engine malfunctions as may be appropriate.

(e) Service ceiling—all engines, with engines(s) inoperative, including drift down, if appropriate.

(f) Cruise performance.

(g) Fuel consumption, range, and endurance.

(h) Descent performance.

(i) Landing distance.

(j) Land and hold short operations (LAHSO).

(k) Go-around from rejected landings.

(l) Other performance data (appropriate to the aeroplane).

3) Describes (as appropriate to the aeroplane) the airspeeds used during specific phases of flight.

4) Describes the effects of meteorological conditions upon performance characteristics and correctly applies these factors to a specific chart, table, graph, or other performance data.

5) Computes the center-of-gravity location for a specific load condition (as specified by the examiner), including adding, removing, or shifting weight.

6) Determines if the computed center-of-gravity is within the forward and aft center-of-gravity limits, and that lateral fuel balance is within limits for takeoff and landing.

7) Demonstrates adequate knowledge of the adverse effects of airframe icing during pre-takeoff, takeoff, cruise and landing phases of flight and corrective actions.

8) Demonstrates good planning and knowledge of procedures in applying operational factors affecting aeroplane performance.

9) Demonstrates knowledge of the stabilized approach procedures and the decision criteria for go-around or rejected landings.

3.3 TASK: WATER & SEAPLANE CHARACTERISTICS

Applicable To:: AMES, ASES

Objective. To determine that the applicant exhibits knowledge of the elements related to water and seaplane characteristics by explaining—

1) The characteristics of a water surface as affected by features, such as—
   (a) Size and location.
   (b) Direction and strength of the water current.
   (c) Presence of floating and partially submerged debris.
   (d) Protected and unprotected areas.
   (e) Effect of surface wind and method of determining its force.
   (f) Operating near sandbars, islands, and shoals.
   (g) Other pertinent characteristics deemed important by the examiner.
2) Float and hull construction and their effect on seaplane/flying boat performance.
3) Causes of porpoising and skipping, and pilot action to prevent or correct these occurrences.

3.4 TASK: SEAPLANE BASES, MARITIME RULES & AIDS TO MARINE NAVIGATION

Applicable To:: AMES/ASES

Objective. To determine that the applicant exhibits knowledge of the elements related to seaplane bases, maritime rules, and aids to marine navigation by explaining—

1) How to identify and locate seaplane bases on charts or in directories.
2) Operating restrictions at seaplane bases.
3) Right-of-way, steering, and sailing rules pertinent to seaplane operation.
4) Purpose and identification of marine navigation aids, such as buoys, beacons, lights, and range markers.

SECTION 4 AREA OF OPERATION: PREFLIGHT PROCEDURES

4.1 TASK: PREFLIGHT INSPECTION

Objective. To determine that the applicant—

1) Exhibits adequate knowledge of the preflight inspection procedures, while explaining briefly—

   (a) The purpose of inspecting the items, which must be checked.

   (b) How to detect possible defects.

   (c) The corrective action to take.

- If a flight engineer (FE) is a required crewmember for a particular type aeroplane, the actual visual inspection may be waived.
- The actual visual inspection may be replaced by using an approved pictorial means that realistically portrays the location and detail of inspection items.
- On aeroplanes requiring an FE, an applicant must demonstrate adequate knowledge of the FE functions for the safe completion of the flight if the FE becomes ill or incapacitated during a flight.

2) Exhibits adequate knowledge of the operational status of the aeroplane by locating and explaining the significance and importance of related documents, such as—

   (a) Airworthiness and registration certificates.

   (b) Operating limitations, handbooks, and manuals.

   (c) Minimum equipment list (MEL) (if appropriate).

   (d) Weight and balance data.

   (e) Maintenance requirements, tests, and appropriate records applicable to the proposed flight or operation; and maintenance that may be performed by the pilot or other designated crewmember.

3) Uses the appropriate checklist to inspect the aeroplane externally and internally.

4) Uses the challenge-and-response or other approved method with the other crewmember(s), where applicable, to accomplish the checklist procedures.

5) Verifies the aeroplane is safe for flight by emphasizing (as appropriate) the need to look at and explain the purpose of inspecting items, such as—

   (a) Powerplant, including controls and indicators.

   (b) Fuel quantity, grade, type, contamination safeguards, and servicing procedures.

   (c) Oil quantity, grade, and type.

   (d) Hydraulic fluid quantity, grade, type, and servicing procedures.

   (e) Oxygen quantity, pressures, servicing procedures, and associated systems and equipment for crew and passengers.

   (f) Hull, landing gear, float devices, brakes, steering system, winglets, and canards.

   (g) Tires for condition, inflation, and correct mounting, where applicable.

   (h) Fire protection/detection systems for proper operation, servicing, pressures, and discharge indications.

   (i) Pneumatic system pressures and servicing.

   (j) Ground environmental systems for proper servicing and operation.

   (k) Auxiliary power unit (APU) for servicing and operation.

   (l) Flight control systems including trim, spoilers, and leading/trailing edge.

   (m) Anti-ice, deice systems, servicing, and operation.

   (n) Installed and auxiliary aircraft security equipment, as appropriate.

6) Coordinates with ground crew and ensures adequate clearance prior to moving any devices, such as door, hatches, and flight control surfaces.

7) Complies with the provisions of the appropriate Operations Specifications, if applicable, as they pertain to the particular aeroplane and operation.

8) Demonstrates proper operation of all applicable aeroplane systems.

9) Notes any discrepancies, determines if the aeroplane is airworthy and safe for flight, or takes the proper corrective action.

10) Checks the general area around the aeroplane for hazards to the safety of the aeroplane and personnel.

4.2 TASK: POWERPLANT START

Objective. To determine that the applicant—

1) Exhibits adequate knowledge of the correct powerplant start procedures including the use of an auxiliary power unit (APU) or external power source, starting under various atmospheric conditions, normal and abnormal starting limitations, and the proper action required in the event of a malfunction.

2) Ensures the ground safety procedures are followed during the before-start, start, and after-start phases.

3) Ensures the use of appropriate ground crew personnel during the start procedures.

4) Performs all items of the start procedures by systematically following the approved checklist items for the before-start, start, and after-start phases.

5) Demonstrates sound judgment and operating practices in those instances where specific instructions or checklist items are not published.

4.3 TASK: TAXIING

Objective. To determine that the applicant—

1) Exhibits adequate knowledge of safe taxi procedures (as appropriate to the aeroplane including push-back or powerback, as may be applicable).

2) Demonstrates proficiency by maintaining correct and positive aeroplane control. In aeroplanes equipped with float devices, this includes water taxiing, sailing, step taxi, approaching a buoy, and docking.

3) Maintains proper spacing on other aircraft, obstructions, and persons.

4) Accomplishes the applicable checklist items and performs recommended procedures.

5) Maintains desired track and speed.

6) Complies with instructions issued by ATC (or the examiner simulating ATC).

7) Observes runway hold lines, localizer and glide slope critical areas, buoys, beacons, and other surface control markings and lighting.

8) Maintains constant vigilance and aeroplane control during taxi operation to prevent runway/waterway incursion.

4.4 TASK: SAILING

Applicable To:: AMES/ASES

Objective. To determine that the applicant—

1) Exhibits knowledge of the elements related to sailing by explaining the techniques used in this procedure.

2) Recognizes the circumstance when sailing should be used.

3) Plans and follows the most favorable course considering wind, water current, obstructions, debris, and other vessels.

4) Uses flight controls, flaps, doors, and water rudders as appropriate, to follow the desired course.

4.5 TASK: SEAPLANE BASE/WATER LANDING SITE MARKINGS & LIGHTING

Applicable To:: AMES, ASES

Objective. To determine that the applicant—

1) Exhibits knowledge of the elements related to seaplane base/water landing site markings and lighting.

2) Identifies and interprets seaplane base/water landing site markings and lighting.

4.6 TASK: PRE-TAKEOFF CHECKS

Objective. To determine that the applicant—

1) Exhibits adequate knowledge of the pre-takeoff checks by stating the reason for checking the items outlined on the approved checklist and explaining how to detect possible malfunctions.

2) Divides attention properly inside and outside cockpit.

3) Ensures that all systems are within their normal operating range prior to beginning, during the performance of, and at the completion of those checks required by the approved checklist.

4) Explains, as may be requested by the examiner, any normal or abnormal system-operating characteristic or limitation; and the corrective action for a specific malfunction.

5) Determines if the aeroplane is safe for the proposed flight or requires maintenance.

6) Determines the aeroplane's takeoff performance, considering such factors as wind, density altitude, weight, temperature, pressure altitude, and runway/waterway condition and length.

7) Determines airspeeds/V-speeds and properly sets all instrument references, flight director and autopilot controls, and navigation and communications equipment.

8) Reviews procedures for emergency and abnormal situations, which may be encountered during takeoff, and states the corrective action required of the pilot in command and other concerned crewmembers.

9) Obtains and correctly interprets the takeoff and departure clearance as issued by ATC.

SECTION 5 AREA OF OPERATION: TAKEOFF & DEPARTURE PHASE

5.1 TASK: NORMAL & CROSSWIND TAKEOFF

Objective. To determine that the applicant—

1) Exhibits adequate knowledge of normal and crosswind takeoffs and climbs including (as appropriate to the aeroplane) airspeeds, configurations, and emergency/ abnormal procedures.

2) Notes any surface conditions, obstructions, aircraft cleared for LAHSO, or other hazards that might hinder a safe takeoff.

3) Verifies and correctly applies correction for the existing wind component to the takeoff performance.

4) Completes required checks prior to starting takeoff to verify the expected powerplant performance. Performs all required pre-takeoff checks as required by the appropriate checklist items.

5) Aligns the aeroplane on the runway centerline or clear of obstacles and vessels on waterways as appropriate.

6) Applies the controls correctly to maintain longitudinal alignment on the centerline of the runway, if appropriate, prior to initiating and during the takeoff.

7) Adjusts the powerplant controls as recommended by the approved guidance for the existing conditions.

8) Monitors powerplant controls, settings, and instruments during takeoff to ensure all predetermined parameters are maintained.

9) Adjusts the controls to attain the desired pitch attitude at the predetermined airspeed/V-speed to attain the desired performance for the particular takeoff segment.

10) Performs the required pitch changes and, as appropriate, performs or calls for and verifies the accomplishment of, gear and flap retractions, power adjustments, and other required pilot-related activities at the required airspeed/V-speeds within the tolerances established in the POH or AFM.

11) Uses the applicable noise abatement and wake turbulence avoidance procedures, as required.

12) Accomplishes or calls for and verifies the accomplishment of the appropriate checklist items.

13) Maintains the appropriate climb segment airspeed/V-speeds.

14) Maintains the desired heading within ±5° and the desired airspeed/V-speed within ±5 knots or the appropriate V-speed range.

5.2 TASK: GLASSY WATER TAKEOFF & CLIMB

Applicable To:: AMES/ASES

Objective. To determine that the applicant—

1) Exhibits knowledge of the elements related to a glassy water takeoff and climb.

2) Positions the flight controls and flaps for the existing conditions.

- If a glassy water condition does not exist, the applicant's knowledge of glassy water elements must be evaluated through oral testing.
- The applicant's skill must be evaluated by simulating the TASK.

3) Clears the area, notes any surface hazards and/or vessels prior to selecting a takeoff path.

4) Retracts the water rudders, if applicable.

5) Advances the throttles to takeoff power.

6) Avoids excessive water spray on the propellers.

7) Establishes and maintains an appropriate planing attitude, directional control, and corrects for porpoising, skipping, and increases in water drag.

8) Utilizes appropriate techniques to lift seaplane from the water surface.

9) Establishes proper attitude/airspeed, lifts off and accelerates to best single-engine climb speed or VY, whichever is greater, ±5 knots during the climb.

10) Reduces the flaps after a positive rate of climb is established and at a safe altitude.

11) Maintains takeoff power to a safe maneuvering altitude, then sets climb power.

12) Maintains directional control and proper wind-drift correction throughout takeoff and climb.

13) Uses noise abatement procedures, as required.

14) Completes appropriate checklists.

5.3 TASK: ROUGH WATER TAKEOFF & CLIMB

Applicable To:: AMES/ASES

Objective. To determine that the applicant—

1) Exhibits knowledge of the elements related to rough water takeoff and climb.

2) Positions the flight controls and flaps for the existing conditions.

- If a rough water condition does not exist, the applicant's knowledge of glassy water elements must be evaluated through oral testing.
- The applicant's skill must be evaluated by simulating the TASK.

3) Clears the area, selects the proper takeoff path, considering wind, swells, surface hazards and/or vessels.

4) Retracts the water rudders, if applicable.

5) Advances the throttles to takeoff power.

6) Avoids excessive water spray on the propellers.

7) Establishes and maintains an appropriate planing/lift-off attitude, directional control, and corrects for porpoising, skipping, or excessive bouncing.

8) Establishes and maintains proper attitude to lift-off at minimum airspeed and accelerates to best single-engine climb speed or VY, whichever is greater, ±5 knots before leaving ground effect.

9) Retracts the flaps after a positive rate of climb is established and at a safe altitude.

10) Maintains takeoff power to a safe maneuvering altitude, then sets climb power.

11) Maintains directional control and proper wind-drift correction throughout takeoff and climb.

12) Uses noise abatement procedures, as required.

13) Completes appropriate checklists.

5.4 TASK: CONFINED-AREA TAKEOFF & CLIMB

Applicable To:: AMES/ASES

Objective. To determine that the applicant—

1) Exhibits knowledge of the elements related to a confinedarea takeoff and climb.

2) Positions the flight controls and flaps for the existing conditions.

3) Clears the area, notes any surface hazards, vessels, and/or obstructions prior to selecting a takeoff path.

4) Selects a takeoff path that will allow maximum safe utilization of wind, water, and low terrain.

- This TASK simulates a takeoff from a small pond, which would require a takeoff and spiral climb; or a straight-ahead takeoff and climb from a narrow waterway with obstructions at either end.
- The examiner must evaluate both takeoff situations for this TASK.
- In multiengine seaplanes with VX values within 5 knots of VMC, the use of VY or the manufacturer's recommendation may be more appropriate for this demonstration.

5) Advances the throttles to takeoff power.

6) Ensures that the water rudders are retracted when no longer needed.

7) Maintains the most efficient alignment and planing angle, without skidding, porpoising, and skipping.

8) Lifts off at recommended airspeed and accelerates to manufacturer's recommended climb airspeed.

9) Climbs at manufacturer's recommended configuration and airspeed, or in their absence at VX, +5/-0 knots until the obstacle is cleared.

10) After clearing all obstacles, accelerates to and maintains VY, ±5 knots, retracts flaps and maintains safe bank angles while turning and/or providing best terrain clearance.

11) Maintains takeoff power to a safe altitude, and then sets climb power.

12) Uses noise abatement procedures, as required.

13) Completes appropriate checklists.

5.5 TASK: INSTRUMENT TAKEOFF

Objective. To determine that the applicant—

1) Exhibits adequate knowledge of an instrument takeoff with instrument meteorological conditions (IMC) simulated at or before reaching an altitude of 100 feet AGL. If accomplished in a flight simulator, visibility should be no greater than onequarter (1/4) mile, or as specified by operator specifications.

2) Takes into account, prior to beginning the takeoff, operational factors which could affect the maneuver, such as Takeoff Warning Inhibit Systems or other aeroplane characteristics, runway length, surface conditions, wind, wake turbulence, icing conditions, obstructions, and other related factors that could adversely affect safety.

3) Accomplishes the appropriate checklist items to ensure that the aeroplane systems applicable to the instrument takeoff are operating properly.

4) Sets the applicable radios/flight instruments to the desired setting prior to initiating the takeoff.

5) Applies the controls correctly to maintain longitudinal alignment on the centerline of the runway, if appropriate, prior to initiating and during the takeoff.

6) Transitions smoothly and accurately from visual meteorological conditions (VMC) to actual or simulated instrument meteorological conditions (IMC).

7) Maintains the appropriate climb attitude.

8) Complies with the appropriate airspeeds/V-speeds and climb segment airspeeds.

9) Maintains desired heading within ±5° and desired airspeeds within ±5 knots.

10) Complies with ATC clearances and instructions issued by ATC (or the examiner simulating ATC).

5.6 TASK: POWERPLANT FAILURE DURING TAKEOFF

Objective. To determine that the applicant—

1) Exhibits adequate knowledge of the procedures used during powerplant failure on takeoff, the appropriate reference airspeeds, and the specific pilot actions required.

2) Takes into account, prior to beginning the takeoff, operational factors which could affect the maneuver, such as Takeoff Warning Inhibit Systems or other aeroplane characteristics, runway length, surface conditions, wind, wake turbulence, visibility, precipitation, obstructions, and other related factors that could adversely affect safety.

In a multiengine aeroplane certificated with published V_1, V_R, and/or V_2 speeds, the failure of the most critical powerplant should be simulated at a point—

- After V_1 and prior to V_2, if in the opinion of the examiner, it is appropriate under the prevailing conditions; or
- As close as possible after V_1 when V_1 and V_2 or V_1 and V_R are identical.
- In a multiengine aeroplane certificated WITH no publsihed V_1, V_R, or V_2 speeds, the failure of the most critical powerplant should be simulated at a point after reaching a minimum of V_{SSE} and, if accomplished in the aircraft, at an altitude not lower than 500 feet AGL.

3) Completes required checks prior to starting takeoff to verify the expected powerplant performance. Performs all required pre-takeoff checks as required by the appropriate checklist items.

4) Aligns the aeroplane on the runway/waterway.

5) Applies the controls correctly to maintain longitudinal alignment on the centerline of the runway, if appropriate, prior to initiating and during the takeoff.

6) Adjusts the powerplant controls as recommended by the approved guidance for the existing conditions.

7) Single-engine aeroplanes—establishes a power-off descent approximately straight-ahead, if the powerplant failure occurs after becoming airborne and before reaching an altitude where a safe turn can be made.

8) Continues the takeoff (in a multiengine aeroplane) if the (simulated) powerplant failure occurs at a point where the aeroplane can continue to a specified airspeed and altitude at the end of the runway commensurate with the aeroplane's performance capabilities and operating limitations.

9) Maintains (in a multiengine aeroplane), after a simulated powerplant failure and after a climb has been established, the desired heading within ±5°, desired airspeed within ±5 knots, and, if appropriate for the aeroplane, establishes a bank of approximately 5°, or as recommended by the manufacturer, toward the operating powerplant.

10) Maintains the aeroplane alignment with the heading appropriate for climb performance and terrain clearance when powerplant failure occurs.

5.7 TASK: REJECTED TAKEOFF

Objective. To determine that the applicant understands when to reject or continue the takeoff and—

1) Exhibits adequate knowledge of the technique and procedure for accomplishing a rejected takeoff after powerplant /system(s) failure/warnings, including related safety factors.

2) Takes into account, prior to beginning the takeoff, operational factors, which could affect the maneuver, such as Takeoff Warning Inhibit Systems or other aeroplane characteristics, runway length, surface conditions, wind, visibility, precipitation, obstructions, and aircraft cleared for LAHSO that could affect takeoff performance and could adversely affect safety.

3) Aligns the aeroplane on the runway centerline or clear of obstacles and vessels on waterways.

4) Performs all required pre-takeoff checks as required by the appropriate checklist items.

5) Adjusts the powerplant controls as recommended by the FAAapproved guidance for the existing conditions.

6) Applies the controls correctly to maintain longitudinal alignment on the centerline of the runway.

7) Aborts the takeoff if, in a single-engine aeroplane the powerplant failure occurs prior to becoming airborne, or in a multiengine aeroplane, the powerplant failure occurs at a point during the takeoff where the abort procedure can be initiated and the aeroplane can be safely stopped on the remaining runway/stopway. If a flight simulator is not used, the powerplant failure must be simulated before reaching 50 percent of VMC.

8) Reduces the power smoothly and promptly, if appropriate to the aeroplane, when powerplant failure is recognized.

9) Uses spoilers, prop reverse, thrust reverse, wheel brakes, and other drag/braking devices, as appropriate, maintaining positive control in such a manner as to bring the aeroplane to a safe stop.

10) Accomplishes the appropriate powerplant failure or other procedures and/or checklists as set forth in the POH or AFM.

5.8 TASK: DEPARTURE PROCEDURES

Objective. To determine that the applicant—

1) In actual or simulated instrument conditions, exhibits adequate knowledge of DPs, En Route Low and High Altitude Charts, FMSP, and related pilot/controller responsibilities.

2) Uses the current and appropriate navigation publications for the proposed flight.

3) Selects and uses the appropriate communications frequencies, and selects and identifies the navigation aids associated with the proposed flight.

4) Performs the appropriate checklist items.

5) Establishes communications with ATC, using proper phraseology and advises ATC when unable to comply with a clearance or restriction.

6) Complies, in a timely manner, with all instructions and airspace restrictions.

7) Exhibits adequate knowledge of two-way radio communications failure procedures.

8) Intercepts, in a timely manner, all courses, radials, and bearings appropriate to the procedure, route, clearance, or as directed by the examiner.

9) Maintains the appropriate airspeed within ±10 knots, headings within ±10°, altitude within ±100 feet; and accurately tracks a course, radial, or bearing.

10) Conducts the departure phase to a point where, in the opinion of the examiner, the transition to the en route environment is complete.

SECTION 6 AREA OF OPERATION: INFLIGHT MANEUVERS

6.1 TASK: STEEP TURNS

Objective. To determine that the applicant—

1) In actual or simulated instrument conditions, exhibits adequate knowledge of steep turns (if applicable to the aeroplane) and the factors associated with performance; and, if applicable, wing loading, angle of bank, stall speed, pitch, power requirements, and over-banking tendencies.
2) Selects an altitude recommended by the manufacturer, training syllabus, or other training directive, but in no case lower than 3,000 feet AGL.
3) Establishes the recommended entry airspeed.
4) Rolls into a coordinated turn of 180° or 360° with a bank of at least 45°. Maintains the bank angle within ±5° while in smooth, stabilized flight.
5) Applies smooth coordinated pitch, bank, and power to maintain the specified altitude within ±100 feet and the desired airspeed within ±10 knots.
6) Rolls out of the turn (at approximately the same rate as used to roll into the turn) within ±10° of the entry or specified heading, stabilizes the aeroplane in a straight-and-level attitude or, at the discretion of the examiner, reverses the direction of turn and repeats the maneuver in the opposite direction.
7) Avoids any indication of an approaching stall, abnormal flight attitude, or exceeding any structural or operating limitation during any part of the maneuver.

6.2 TASK: APPROACHES TO STALLS

Objective. To determine that the applicant—

1) In actual or simulated instrument conditions exhibits adequate knowledge of the factors, which influence stall characteristics, including the use of various drag configurations, power settings, pitch attitudes, weights, and bank angles.
2) Also, exhibits adequate knowledge of the proper procedure for resuming normal flight.

THREE approaches to stall are required, as follows (unless otherwise specified by the FSB Report)—

- 1. One in the takeoff configuration (except where the aeroplane uses only zero-flap takeoff configuration) or approach configuration.
- 2. One in a clean configuration.
- 3. One in a landing configuration.
- One of these approaches to a stall must be accomplished while in a turn using a bank angle of 15 to 30°.

3) Selects an entry altitude that is in accordance with the AFM or POH, but in no case lower than an altitude that will allow recovery to be safely completed at a minimum of 3,000 feet AGL.
   - ♦ When accomplished in an FTD or flight simulator, the entry altitude should be consistent with expected operational environment for the stall configuration.
4) Observes the area is clear of other aircraft prior to accomplishing an approach to a stall.
5) While maintaining altitude, slowly establishes the pitch attitude (using trim or elevator/stabilizer), bank angle, and power setting that will induce a stall.

6) Announces the first indication of an impending stall (such as buffeting, stick shaker, decay of control effectiveness, and any other cues related to the specific aeroplane design characteristics) and initiates recovery (using maximum power or as directed by the examiner).

7) Recovers to a reference airspeed, altitude and heading with minimal loss of altitude, airspeed, and heading deviation.

8) Demonstrates smooth, positive control during entry, approach to a stall, and recovery.

6.3 TASK: POWERPLANT FAILURE: MULTIENGINE AEROPLANE

Objective. To determine that the applicant—

1) Exhibits adequate knowledge of the flight characteristics and controllability associated with maneuvering with powerplant(s) inoperative (as appropriate to the aeroplane).

2) Maintains positive aeroplane control. Establishes a bank of approximately 5°, if required, or as recommended by the manufacturer, to maintain coordinated flight, and properly trims for that condition.

3) Sets powerplant controls, reduces drag as necessary, correctly identifies and verifies the inoperative powerplant(s) after the failure (or simulated failure).

4) Maintains the operating powerplant(s) within acceptable operating limits.

- When not in an FTD or a flight simulator, the feathering of one propeller must be demonstrated in any multiengine aeroplane equipped with propellers (includes turboprop), which can be safely feathered and unfeathered while airborne.
- In a multiengine jet aeroplane, one engine must be shut down and a restart must be demonstrated while airborne.
- Feathering or shutdown should be performed only under conditions, and at such altitudes (no lower than 3,000 feet AGL) and in a position where a safe landing can be made on an established airport in the event difficulty is encountered in unfeathering the propeller or restarting the engine.
- At an altitude lower than 3,000 feet AGL, simulated engine failure will be performed by setting the powerplant controls to simulate zero-thrust.
- In the event the propeller cannot be unfeathered or the engine air started during the test, it should be treated as an emergency.

5) Follows the prescribed aeroplane checklist, and verifies the procedures for securing the inoperative powerplant(s).

6) Determines the cause for the powerplant(s) failure and if a restart is a viable option.

7) Maintains desired altitude within ±100 feet, when a constant altitude is specified and is within the capability of the aeroplane.

8) Maintains the desired airspeed within ±10 knots.

- When authorized and conducted in a flight simulator, feathering or shutdown may be performed in conjunction with any procedure or maneuver and at locations and altitudes at the discretion of the examiner.
- However, when conducted in an FTD, authorizations are limited to shutdown, feathering, restart, and/or unfeathering procedures only.

9) Maintains the desired heading within ±10° of the specified heading.

10) Demonstrates proper powerplant restart procedures (if appropriate) in accordance with GCAA-approved procedure/checklist or the manufacturer's recommended procedures and pertinent checklist items.

6.4 TASK: POWERPLANT FAILURE: SINGLE–ENGINE AEROPLANE

Objective. To determine that the applicant—

1) Exhibits adequate knowledge of the flight characteristics, approach and forced (emergency) landing procedures, and related procedures to use in the event of a powerplant failure (as appropriate to the aeroplane).

No simulated powerplant failure will be given by the examiner in an aeroplane when an actual touchdown cannot be safely completed, should it become necessary.

2) Maintains positive control throughout the maneuver.
3) Establishes and maintains the recommended best glide airspeed, ±5 knots, and configuration during a simulated powerplant failure.
4) Selects a suitable airport or landing area, which is within the performance capability of the aeroplane.
5) Establishes a proper flight pattern to the selected airport or landing area, taking into account altitude, wind, terrain, obstructions, and other pertinent operational factors.
6) Follows the emergency checklist items appropriate to the aeroplane.
7) Determines the cause for the simulated powerplant failure (if altitude permits) and if a restart is a viable option.
8) Uses configuration devices, such as landing gear and flaps in a manner recommended by the manufacturer and/or approved by the GCAA.

6.5 TASK: SPECIFIC FLIGHT CHARACTERISTICS

Objective. To determine that the applicant—

1) Exhibits adequate knowledge of specific flight characteristics appropriate to the specific aeroplane, as identified by FSB Reports, such as Dutch Rolls for certain aircraft.
2) Uses proper technique to enter into, operate within, and recover from specific flight situations.

6.6 TASK: RECOVERY FROM UNUSUAL ATTITUDES

Objective. To determine that the applicant—

1) Exhibits adequate knowledge of recovery from unusual attitudes.
2) Recovers from nose-high unusual attitudes, using proper pitch, bank, and power techniques.
3) Recovers from nose-low unusual attitudes, using proper pitch, bank, and power techniques.

SECTION 7 AREA OF OPERATION: INSTRUMENT PROCEDURES

7.1 TASK: STANDARD TERMINAL ARRIVAL/FLIGHT MANAGEMENT SYSTEM PROCEDURES

Objective. To determine that the applicant—

1) In actual or simulated instrument conditions, exhibits adequate knowledge of En Route Low and High Altitude Charts, STARs/FMSPs,

TASKS B through F are not required if the applicant holds a private pilot or commercial pilot certificate and is seeking a type rating limited to VFR.

Instrument Approach Procedure Charts (IAP), and related pilot and controller responsibilities.

2) Uses the current and appropriate navigation publications for the proposed flight.

3) Selects and correctly identifies all instrument references, flight director and autopilot controls, and navigation and communications equipment associated with the arrival.

4) Performs the aeroplane checklist items appropriate to the arrival.

5) Establishes communications with ATC, using proper phraseology.

6) Complies, in a timely manner, with all ATC clearances, instructions, and restrictions. Advises ATC if unable to comply with ATC clearances or instructions.

7) Exhibits adequate knowledge of two-way communications failure procedures.

8) Intercepts, in a timely manner, all courses, radials, and bearings appropriate to the procedure, route, ATC clearance, or as directed by the examiner.

9) Adheres to airspeed restrictions and adjustments required by the directives, ATC, the POH, the AFM, or the examiner.

10) Establishes, where appropriate, a rate of descent consistent with the aeroplane operating characteristics and safety.

11) Maintains the appropriate airspeed/V-speed within ±10 knots, but not less than V_{REF}, if applicable; heading ±10°; altitude within ±100 feet; and accurately tracks radials, courses, and bearings.

12) Complies with the provisions of the Profile Descent, STAR, and other arrival procedures, as appropriate.

7.2 TASK: HOLDING

Objective. To determine that the applicant—

1) In actual or simulated instrument conditions, exhibits adequate knowledge of holding procedures for standard and non-standard, published and non-published holding patterns. If appropriate, demonstrates adequate knowledge of holding endurance, including, but not necessarily limited to, fuel on board, fuel flow while holding, fuel required to alternate, etc.

2) Changes to the recommended holding airspeed appropriate for the aeroplane and holding altitude, so as to cross the holding fix at or below maximum holding airspeed.

3) Recognizes arrival at the clearance limit or holding fix.

4) Follows appropriate entry procedures for a standard, nonstandard, published, or non-published holding pattern.

5) Complies with ATC reporting requirements.

6) Uses the proper timing criteria required by the holding altitude and ATC or examiner's instructions.

7) Complies with the holding pattern leg length when a distance measuring equipment (DME) distance is specified.

8) Uses the proper wind-drift correction techniques to accurately maintain the desired radial, track, courses, or bearing.

9) Arrives over the holding fix as close as possible to the "expect further clearance" time.

10) Maintains the appropriate airspeed/V-speed within ±10 knots, altitude within ±100 feet, headings within ±10°; and accurately tracks radials, courses, and bearings.

7.3 TASK: PRECISION APPROACHES (PA)

Objective. To determine that the applicant—

1) Exhibits adequate knowledge of the precision instrument approach procedures with all engines operating, and with one engine inoperative.

2) Accomplishes the appropriate precision instrument approaches as selected by the examiner.

3) Establishes two-way communications with ATC using the proper communications phraseology and techniques, or, directs co-pilot/safety pilot to do so, as appropriate for the phase of flight or approach segment.

- Two precision approaches, utilizing NAVAID equipment for centerline and glideslope guidance, must be accomplished in simulated or actual instrument conditions to DA/DH.
- At least one approach must be flown manually without the use of an autopilot.
- The second approach may be flown via the autopilot, if appropriate, and if the DA/DH altitude does not violate the authorized minimum altitude for autopilot operation.
- Manually flown precision approaches may use raw data displays or may be flight director assisted, at the discretion of the examiner.

4) Complies, in a timely manner, with all clearances, instructions, and procedures.

5) Advises ATC anytime the applicant is unable to comply with a clearance.

6) Establishes the appropriate aeroplane configuration and airspeed/V-speed considering turbulence, wind shear, microburst conditions, or other meteorological and operating conditions.

- For multiengine aeroplanes at least one manually controlled precision approach must be accomplished with a simulated failure of one powerplant.
- The simulated powerplant failure should occur before initiating the final approach segment and must continue to touchdown or throughout the missed approach procedure.
- As the markings on localizer/glide slope indicators vary, a one-quarter scale deflection of either the localizer, or glide slope indicator is when it is displaced one-fourth of the distance that it may be deflected from the on glide slope or on localizer position.

7) Completes the aeroplane checklist items appropriate to the phase of flight or approach segment, including engine out approach and landing checklists, if appropriate.

8) Prior to beginning the final approach segment, maintains the desired altitude ±100 feet, the desired airspeed within ±10 knots, the desired heading within ±5°; and accurately tracks radials, courses, and bearings.

A stabilized approach is characterized by a constant angle, constant rate of descent approach profile ending near the touchdown point, where the landing maneuver begins.

9) Selects, tunes, identifies, and monitors the operational status of ground and aeroplane navigation equipment used for the approach, or correctly programs and monitors the RNAV equipment to display the proper course/track.

10) Applies the necessary adjustments to the published DA/DH and visibility criteria for the aeroplane approach category as required, such as—

(a) Notices to Airmen, including Flight Data Center (FDC) Procedural NOTAMs.

(b) Inoperative aeroplane and ground navigation equipment.

(c) Inoperative visual aids associated with the landing environment.

(d) National Weather Service (NWS) reporting factors and criteria.

11) Establishes a predetermined rate of descent at the point where the electronic glide slope begins, which approximates that required for the aeroplane to follow the glide slope.

12) Maintains a stabilized final approach, from the precision final approach fix to DA/DH, allowing no more than one-quarter scale deflection of either the glide slope or localizer indications, and maintains the desired airspeed within ±5 knots.

13) A missed approach or transition to a landing must be initiated at DA/DH.

14) Immediately initiates and executes the missed approach when at the DA/DH, if the required visual references for the runway are not unmistakably visible and identifiable.

15) Transitions to a normal landing approach (missed approach for seaplanes) only when the aeroplane is in a position from which a descent to a landing on the runway can be made at a normal rate of descent using normal maneuvering.

16) Maintains localizer and glide slope within one-quarter-scale deflection of the indicators during the visual descent from DA/DH to a point over the runway where the glide slope must be abandoned to accomplish a normal landing.

7.4 TASK: NONPRECISION APPROACHES (NPA)

Objective. To determine that the applicant—

1) Exhibits adequate knowledge of nonprecision approach procedures representative of those the applicant is likely to use.

2) Accomplishes the nonprecision instrument approaches selected by the examiner.

3) Establishes two-way communications with ATC as appropriate to the phase of flight or approach segment and uses proper communications phraseology and techniques.

4) Complies with all clearances issued by ATC.

- The applicant must accomplish at least two nonprecision approaches (one of which must include a procedure turn or, in the case of an RNAV approach, a Terminal Arrival Area (TAA) procedure) in simulated or actual weather conditions.
- At least one nonprecision approach must be flown without the use of autopilot and without the assistance of radar vectors. (The yaw damper and flight director are not considered parts of the autopilot for purpose of this part).
- The examiner will select nonprecision approaches that are representative of the type that the applicant is likely to use.
- The choices must utilize two different types of navigational aids. Some examples of navigational aids for the purpose of this part are— NDB, VOR, LOC, LDA, GPS, or RNAV.

5) Advises ATC or the examiner any time the applicant is unable to comply with a clearance.

6) Establishes the appropriate aeroplane configuration and airspeed, and completes all applicable checklist items.

7) Maintains, prior to beginning the final approach segment, the desired altitude ±100 feet, the desired airspeed ±10 knots, the desired heading ±5°; and accurately tracks radials, courses, and bearings.

The requirements for conducting a GPS approach for the purpose of this test.

8) Selects, tunes, identifies, and monitors the operational status of ground and aeroplane navigation equipment used for the approach.

9) Applies the necessary adjustments to the published Minimum Descent Altitude (MDA) and visibility criteria for the aeroplane approach category when required, such as—

(a) Notices to Airmen, including Flight Data Center Procedural NOTAMs.

(b) Inoperative aeroplane and ground navigation equipment.

(c) Inoperative visual aids associated with the landing environment.

(d) National Weather Service (NWS) reporting factors and criteria.

10) Establishes a rate of descent that will ensure arrival at the MDA (at, or prior to reaching, the visual descent point (VDP), if published) with the aeroplane in a position from which a descent from MDA to a landing on the intended runway can be made at a normal rate using normal maneuvering.

11) Allows, while on the final approach segment, not more than quarter-scale deflection of the Course Deviation Indicator (CDI) or ±5° in the case of the RMI or bearing pointer, and maintains airspeed within ±5 knots of that desired.

12) Maintains the MDA, when reached, within -0, +50 feet to the missed approach point.

13) Executes the missed approach at the missed approach point if the required visual references for the intended runway are not unmistakably visible and identifiable at the missed approach point.

14) Executes a normal landing from a straight-in or circling approach when instructed by the examiner.

7.5 TASK: CIRCLING APPROACH

Objective. To determine that the applicant—

1) Exhibits adequate knowledge of circling approach categories, speeds, and procedures to a specified runway.

2) In simulated or actual instrument conditions to MDA, accomplishes the circling approach selected by the examiner.

3) Demonstrates sound judgment and knowledge of the aeroplane maneuvering capabilities throughout the circling approach.

4) Confirms the direction of traffic and adheres to all restrictions and instructions issued by ATC.

5) Descends at a rate that ensures arrival at the MDA at, or prior to, a point from which a normal circle-to-land maneuver can be accomplished.

6) Avoids descent below the appropriate circling MDA or exceeding the visibility criteria until in a position from which a descent to a normal landing can be made.

7) Maneuvers the aeroplane, after reaching the authorized circling approach altitude, by visual references to maintain a flightpath that permits a normal landing on a runway that requires at least a 90° change of direction, from the final approach course, to align the aircraft for landing.

8) Performs the procedure without excessive maneuvering and without exceeding the normal operating limits of the aeroplane (the angle of bank should not exceed 30°).

9) Maintains the desired altitude within -0, +100 feet, heading/track within ±5°, the airspeed/V-speed within ±5 knots, but not less than the airspeed as specified in the POH or the AFM.

10) Uses the appropriate aeroplane configuration for normal and abnormal situations and procedures.

11) 1Turns in the appropriate direction, when a missed approach is dictated during the circling approach, and uses the correct procedure and aeroplane configuration.

12) Performs all procedures required for the circling approach and aeroplane control in a smooth, positive, and timely manner.

7.6 TASK: MISSED APPROACH

Objective. To determine that the applicant—

1) Exhibits adequate knowledge of missed approach procedures associated with standard instrument approaches.

2) Initiates the missed approach procedure promptly by the timely application of power, establishes the proper climb attitude, and reduces drag in accordance with the approved procedures.

3) Reports to ATC, beginning the missed approach procedure.

- The applicant must perform two missed approaches with one being from a precision approach (ILS, MLS, or GLS).
- One complete published missed approach must be accomplished.
- Additionally, in multiengine aeroplanes, a missed approach must be accomplished with one engine inoperative (or simulated inoperative).
- The engine failure may be experienced anytime prior to the initiation of the approach, during the approach, or during the transition to the missed approach attitude and configuration.

4) Complies with the appropriate missed approach procedure or ATC clearance.

5) Advises ATC any time the applicant is unable to maneuver the aeroplane to comply with a clearance.

6) Follows the recommended aeroplane checklist items appropriate to the go-around procedure for the aeroplane used.

7) Requests clearance, if appropriate, to the alternate airport, another approach, a holding fix, or as directed by the examiner.

- Going below the MDA or DA/DH, as appropriate, prior to the initiation of the missed approach, is considered unsatisfactory performance.
- However, satisfactory performance may be concluded if the missed approach is properly initiated at DA/DH and the aeroplane descends below DA/DH only because of the momentum of the aeroplane transitioning from a stabilized approach to a missed approach.

8) Maintains the desired altitudes ±100 feet, airspeed ±5 knots, heading ±5°; and accurately tracks courses, radials, and bearings.

SECTION 8 AREA OF OPERATION: LANDINGS & APPROACHES TO LANDINGS

8.1 TASK: NORMAL & CROSSWIND APPROACHES & LANDINGS

Objective. To determine that the applicant—

1) Exhibits adequate knowledge of normal and crosswind approaches and landings including recommended approach angles, airspeeds, V-speeds, configurations, performance limitations, wake turbulence, LAHSO, and safety factors (as appropriate to the aeroplane).

2) Establishes the approach and landing configuration appropriate for the runway and meteorological conditions, and adjusts the powerplant controls as required.

3) Maintains a ground track that ensures the desired traffic pattern will be flown, taking into account any obstructions and ATC or examiner instructions.

4) Verifies existing wind conditions, makes proper correction for drift, and maintains a precise ground track.

- Notwithstanding the authorizations for the combining of maneuvers and for the waiver of maneuvers, the applicant must make at least three actual landings (one to a full stop).
- These landings must include the types listed in this AREA OF OPERATION; however, more than one type may be combined where appropriate (i.e., crosswind and landing from a precision approach or landing with simulated powerplant failure, etc.).
- For all landings, touchdown should be 500 to 3,000 feet past the runway threshold, not to exceed one-third of the runway length, with the runway centerline between the main landing gear.
- An amphibian type rating must bear the limitation "LIMITED TO LAND" or "LIMITED TO SEA," as appropriate, unless the applicant demonstrates proficiency in both land and sea operations.

5) 5. Maintains a stabilized approach and the desired airspeed/Vspeed within ±5 knots.

6) Accomplishes a smooth, positively controlled transition from final approach to touchdown.

7) Maintains positive directional control and crosswind correction during the after-landing roll.

- In an aeroplane with a single powerplant, unless the applicant holds a commercial pilot certificate, he or she must accomplish three accuracy approaches and spot landings from an altitude of 1,000 feet or less, with the engine power lever in idle and 180° of change in direction.
- The aeroplane must touch the ground in a normal landing attitude beyond and within 200 feet of a designated line or point on the runway.
- At least one landing must be from a forward slip.

8) Uses spoilers, prop reverse, thrust reverse, wheel brakes, and other drag/braking devices, as appropriate, in such a manner to bring the aeroplane to a safe stop.

9) Completes the applicable after-landing checklist items in a timely manner and as recommended by the manufacturer.

8.2 TASK: LANDING FROM A PRECISION APPROACH

Objective. To determine that the applicant—

1) Exhibits awareness of landing in sequence from a precision approach.

2) Considers factors to be applied to the approach and landing such as displaced thresholds, meteorological conditions, NOTAMs, and ATC or examiner instructions.

3) Uses the aeroplane configuration and airspeed/V-speeds, as appropriate.

- If circumstances beyond the control of the applicant prevent an actual landing, the examiner may accept an approach to a point where, in his or her judgment, a safe landing and a full stop could have been made, and credit given for a missed approach.
- Where a simulator approved for landing from a precision approach is used, the approach may be continued through the landing and credit given for one of the landings required by this AREA OF OPERATION.

4) Maintains, during the final approach segment, glide slope and localizer indications within applicable standards of deviation, and the recommended airspeed/V-speed ±5 knots.

5) Applies gust/wind factors as recommended by the manufacturer, and takes into account meteorological phenomena such as wind shear, microburst, and other related safety of flight factors.

6) Accomplishes the appropriate checklist items.

7) Transitions smoothly from simulated instrument meteorological conditions (IMC) at a point designated by the examiner, maintaining positive aeroplane control.

8) Accomplishes a smooth, positively controlled transition from final approach to touchdown.

9) Maintains positive directional control and crosswind correction during the after-landing roll.

10) Uses spoilers, prop reverse, thrust reverse, wheel brakes, and other drag/braking devices, as appropriate, in such a manner to bring the aeroplane to a safe stop after landing.

11) Completes the applicable after-landing checklist items in a timely manner and as recommended by the manufacturer.

8.3 TASK: APPROACH & LANDING WITH (SIMULATED) POWERPLANT FAILURE: MULTIENGINE AEROPLANE

Objective. To determine that the applicant—

1) Exhibits adequate knowledge of the flight characteristics and controllability associated with maneuvering to a landing with (a) powerplant(s) inoperative (or simulated inoperative) including the controllability factors associated with maneuvering, and the applicable emergency procedures.

- In aeroplanes with three powerplants, the applicant must follow a procedure (if approved) that approximates the loss of two powerplants, the center and one outboard powerplant.
- In other multiengine aeroplanes, the applicant must follow a procedure, which simulates the loss of 50 percent of available powerplants, the loss being simulated on one side of the aeroplane.

2) Maintains positive aeroplane control. Establishes a bank of approximately 5°, if required, or as recommended by the manufacturer, to maintain coordinated flight, and properly trims for that condition.

3) Sets powerplant controls, reduces drag as necessary, correctly identifies and verifies the inoperative powerplant(s) after the failure (or simulated failure).

4) Maintains the operating powerplant(s) within acceptable operating limits.

5) Follows the prescribed aeroplane checklist, and verifies the procedures for securing the inoperative powerplant(s).

6) Proceeds toward the nearest suitable airport.

7) Maintains, prior to beginning the final approach segment, the desired altitude ±100 feet, the desired airspeed ±10 knots, the desired heading ±5°; and accurately tracks courses, radials, and bearings.

8) Establishes the approach and landing configuration appropriate for the runway or landing area, and meteorological conditions; and adjusts the powerplant controls as required.

9) Maintains a stabilized approach and the desired airspeed/Vspeed within ±5 knots.

10) Accomplishes a smooth, positively-controlled transition from final approach to touchdown.

11) Maintains positive directional control and crosswind corrections during the after-landing roll.

12) Uses spoilers, prop reverse, thrust reversers, wheel brakes, and other drag/braking devices, as appropriate, in such a manner to bring the aeroplane to a safe stop after landing.

13) Completes the applicable after-landing checklist items in a timely manner, after clearing the runway, and as recommended by the manufacturer.

8.4 TASK: LANDING FROM A CIRCLING APPROACH

Objective. To determine that the applicant—

1) Exhibits adequate knowledge of a landing from a circling approach.

2) Selects, and complies with, a circling approach procedure to a specified runway.

3) Considers the environmental, operational, and meteorological factors, which affect a landing from a circling approach.

4) Confirms the direction of traffic and adheres to all restrictions and instructions issued by ATC.

5) Descends at a rate that ensures arrival at the MDA at, or prior to, a point from which a normal circle-to-land maneuver can be accomplished.

6) Avoids descent below the appropriate circling MDA or exceeding the visibility criteria until in a position from which a descent to a normal landing can be made.

7) Accomplishes the appropriate checklist items.

8) Maneuvers the aeroplane, after reaching the authorized circling approach altitude, by visual references, to maintain a flightpath that requires at least a 90° change of direction, from the final approach course, to align the aircraft for landing.

9) Performs the maneuver without excessive maneuvering and without exceeding the normal operating limits of the aeroplane. The angle of bank should not exceed 30°.

10) Maintains the desired altitude within +100, -0 feet, heading within ±5°, and approach airspeed/V-speed within ±5 knots.

11) Uses the appropriate aeroplane configuration for normal and abnormal situations and procedures.

12) Performs all procedures required for the circling approach and aeroplane control in a timely, smooth, and positive manner.

13) Accomplishes a smooth, positively controlled transition to final approach and touchdown or to a point where in the opinion of the examiner that a safe full stop landing could be made.

14) Maintains positive directional control and crosswind correction during the after-landing roll.

15) Uses spoilers, prop reverse, thrust reverse, wheel brakes, and other drag/braking devices, as appropriate, in such a manner to bring the aeroplane to a safe stop.

16) Completes the appropriate after-landing checklist items, after clearing the runway, in a timely manner and as recommended by the manufacturer.

8.5 TASK: ROUGH WATER APPROACH & LANDING

Applicable To:: AMES/ASES

Objective. To determine that the applicant—

1) Exhibits knowledge of the elements related to a rough water approach and landing.
2) Considers the wind conditions, surrounding terrain, water depth, debris, and other watercraft.

- If a rough water condition does not exist, the applicant's knowledge of rough water elements must be evaluated through oral testing.
- The applicant's skill must be evaluated by simulating the TASK.

3) Selects a suitable approach direction and touchdown area.
4) Establishes the recommended approach and landing configuration and adjusts power and pitch attitude as required.
5) Ensures that the landing gear and water rudders are retracted, if applicable.
6) Maintains a stabilized approach and recommended airspeed with gust factor applied, ±5 knots.
7) Contacts the water at the correct pitch attitude and touchdown speed.
8) Makes smooth, timely, and correct power and control application during the landing while remaining alert for a goaround should conditions be too rough.
9) Maintains positive after-landing control.
10) Completes appropriate checklists.

8.6 TASK: GLASSY WATER APPROACH & LANDING

Applicable To:: AMES/ASES

Objective. To determine that the applicant—

1) Exhibits knowledge of the elements related to a glassy water approach and landing.
2) Considers the surrounding terrain, visual attitude references, water depth, debris, and other watercraft.

- If a glassy water condition does not exist, the applicant's knowledge of glassy water elements must be evaluated through oral testing.
- The applicant's skill must be evaluated by simulating the TASK.

3) Selects a suitable approach path and touchdown area.
4) Ensures that the landing gear and water rudders are retracted, if applicable.
5) Establishes the recommended approach and landing configuration and adjusts power and pitch attitude as required.
6) Maintains a slightly nose-high stabilized approach at the recommended airspeed, ±5 knots and descent rate from last altitude reference, until touchdown.
7) Makes smooth, timely, and correct power and control adjustments to maintain proper attitude and rate of descent to touchdown.
8) Contacts the water at the correct pitch attitude and slows to idle taxi speed.
9) Completes appropriate checklists.

8.7 TASK: CONFINED-AREA APPROACH & LANDING

Applicable To:: AMES/ASES

Objective. To determine that the applicant—

1) Exhibits knowledge of the elements related to a confined area approach and landing.

2) Considers the wind conditions, surrounding terrain, surface condition, water depth, debris, and other watercraft.

- This TASK simulates an approach and landing to a small pond, which would require a spiral approach, wings level landing, and step turn upon landing; and a straight ahead approach and landing to a narrow waterway with obstructions at either end.
- The examiner must evaluate both landing situations for this TASK.

3) Selects a suitable approach path and touchdown area.

4) Establishes the recommended approach and landing configuration and airspeed, and adjusts pitch attitude and power as required.

5) Ensures that the landing gear and water rudders are retracted, if applicable.

6) Maintains a stabilized approach and recommended approach airspeed with gust factor applied, ±5 knots.

7) Makes smooth, timely, and correct power and control application during the roundout and touchdown.

8) Touches down smoothly at the recommended airspeed and pitch attitude, beyond and within 100 feet of a specified point/area.

9) Maintains crosswind correction and directional control throughout the approach and landing.

10) Completes appropriate checklists.

8.8 TASK: REJECTED LANDING

Objective. To determine that the applicant—

1) Exhibits adequate knowledge of a rejected landing procedure including the conditions that dictate a rejected landing, the importance of a timely decision, LAHSO considerations, the recommended airspeed/V-speeds, and also the applicable "clean-up" procedure.

- The maneuver may be combined with instrument, circling, or missed approach procedures, but instrument conditions need not be simulated below 100 feet above the runway.
- This maneuver should be initiated approximately 50 feet above the runway or landing area and approximately over the runway threshold or as recommended by the AFM.

2) Makes a timely decision to reject the landing for actual or simulated circumstances and makes appropriate notification when safety-of-flight is not an issue.

3) Applies the appropriate power setting for the flight condition and establishes a pitch attitude necessary to obtain the desired performance.

For those applicants seeking a VFR only type rating in an aeroplane not capable of instrument flight, and where this maneuver is accomplished with a simulated engine failure, it should not be initiated at speeds or altitudes below that recommended in the POH.

4) Retracts the wing flaps/drag devices and landing gear, if appropriate, in the correct sequence and at a safe altitude, establishes a positive rate of climb and the appropriate airspeed/V-speed within ±5 knots.

5) Trims the aeroplane as necessary, and maintains the proper ground track during the rejected landing procedure.

6) Accomplishes the appropriate checklist items in a timely manner in accordance with approved procedures.

7) Reports reject to ATC in a timely manner, after executing reject procedures.

8.9 TASK: LANDING FROM A NO FLAP OR A NONSTANDARD FLAP APPROACH

Objective. To determine that the applicant—

1) Exhibits adequate knowledge of the factors, which affect the flight characteristics of an aeroplane when full or partial flaps, leading edge flaps, and other similar devices become inoperative.

2) Uses the correct airspeeds/V-speeds for the approach and landing.

- This maneuver need not be accomplished for a particular aeroplane type if the Administrator has determined that the probability of flap extension failure on that type aeroplane is extremely remote due to system design.
- The examiner must determine whether checking on slats only and partial-flap approaches are necessary for the skill test.

3) Maintains the proper aeroplane pitch attitude and flightpath for the configuration, gross weight, surface winds, and other applicable operational considerations.

4) Uses runway of sufficient length for the zero or nonstandard flap condition.

5) Maneuvers the aeroplane to a point where a touchdown at an acceptable point on the runway and a safe landing to a full stop could be made.

6) After landing, uses spoilers, prop reverse, thrust reverse, wheel brakes, and other drag/braking devices, as appropriate, in such a manner to bring the aeroplane to a safe stop.

SECTION 9 AREA OF OPERATION: NORMAL & ABNORMAL PROCEDURES

9.1 TASK: NORMAL & ABNORMAL PROCEDURES

Objective. To determine that the applicant—

1) Exhibits adequate knowledge of the normal and abnormal procedures of the systems, subsystems, and devices relative to the aeroplane type (as may be determined by the examiner); knows immediate action items to accomplish, if appropriate, and proper checklist to accomplish or to call for, if appropriate.

2) Demonstrates the proper use of the aeroplane systems, subsystems, and devices (as may be determined by the examiner) appropriate to the aeroplane, such as—

   (a) Powerplant.

   (b) Fuel system.

   (c) Electrical system.

   (d) Hydraulic system.

   (e) Environmental and pressurization systems.

   (f) Fire detection and extinguishing systems.

   (g) Navigation and avionics systems.

   (h) Automatic flight control system, electronic flight instrument system, and related subsystems.

   (i) Flight control systems.

   (j) Anti-ice and deice systems.

   (k) Aeroplane and personal emergency equipment.

(l) Other systems, subsystems, and devices specific to the type aeroplane, including make, model, and series.

SECTION 10 AREA OF OPERATION: EMERGENCY PROCEDURES

10.1 TASK: EMERGENCY PROCEDURES

Objective. To determine that the applicant—

1) Exhibits adequate knowledge of the emergency procedures (as may be determined by the examiner) relating to the particular aeroplane type.
2) Demonstrates the proper emergency procedures (as must be determined by the examiner) relating to the particular aeroplane type, such as—
   (a) Emergency descent (maximum rate).
   (b) Inflight fire and smoke removal.
   (c) Rapid decompression.
   (d) Emergency evacuation.
   (e) Airframe icing.
   (f) Others (as may be required by the AFM).
3) Demonstrates the proper procedure for any other emergency outlined (as determined by the examiner) in the appropriate approved AFM.

SECTION 11 AREA OF OPERATION: POSTFLIGHT PROCEDURES

11.1 TASK: AFTER-LANDING PROCEDURES

Objective. To determine that the applicant—

1) Exhibits adequate knowledge of safe after landing, taxi, ramping, anchoring, docking, and mooring procedures, as appropriate.
2) Demonstrates proficiency by maintaining correct and positive control. In aeroplanes equipped with float devices, this includes water taxiing, approaching a buoy, sailing, and docking.
3) Maintains proper spacing on other aircraft, obstructions, and persons.
4) Accomplishes the applicable checklist items and performs the recommended procedures.
5) Maintains the desired track and speed.
6) Complies with instructions issued by ATC (or the examiner simulating ATC).
7) Observes runway hold lines, localizer and glide slope critical areas, and other surface control markings and lighting to prevent a runway incursion.
8) Maintains constant vigilance and aeroplane control during the taxi operation.

11.2 TASK: ANCHORING

Applicable To:: AMES/ASES

Objective. To determine that the applicant—

1) Exhibits knowledge of the elements related to anchoring in lakes, rivers, and tidal areas.
2) Selects a suitable area for anchoring considering seaplane movement, water depth, tides, wind, and weather changes.
3) Uses an adequate number of anchors and lines of sufficient strength and length to ensure the seaplane's security.

11.3 TASK: DOCKING & MOORING

Applicable To:: AMES/ASES

Objective. To determine that the applicant—

1) Exhibits knowledge of the elements related to docking or mooring.
2) Approaches the dock or mooring buoy in the proper direction considering speed, hazards, wind, and water current.
3) Ensures seaplane security.

11.4 TASK: BEACHING

Applicable To:: AMES/ASES

Objective. To determine that the applicant—

1) Exhibits knowledge of the elements related to beaching.
2) Selects a suitable area for beaching, considering water depth, current, tide, and wind.
3) Approaches from the proper direction and at a suitable speed for the beach condition.
4) Beaches and secures the seaplane in a manner that will protect it from harmful effects of wind, waves, and changes in water level.
5) Departs the beach in a safe manner, considering wind, current, traffic, and hazards.

11.5 TASK: RAMPING

Applicable To:: AMES/ASES

Objective. To determine that the applicant—

1) Exhibits knowledge of the elements related to ramping.
2) Approaches the ramp from the proper direction and at a safe speed, considering current, wind, and type of ramp.
3) Ramps the seaplane at the proper speed and attitude.
4) Secures the seaplane on the ramp in a manner that will protect it from the harmful effects of wind, waves, and changes of water level.
5) Departs the ramp in a manner that does not endanger other persons or watercraft in the area.
6) Re-enters the water.

11.6 TASK: PARKING & SECURING

Objective. To determine that the applicant—

1) Exhibits adequate knowledge of the parking, and the securing aeroplane procedures.

2) Demonstrates adequate knowledge of the aeroplane forms/logs to record the flight time/ discrepancies.

3) Demonstrates adequate knowledge of any installed and auxiliary aircraft security equipment, as appropriate.

End of Advisory Circular