



SIERRA LEONE CIVIL AVIATION AUTHORITY

ADVISORY CIRCULAR

SLCAA-AC-PEL033-Rev. 00

EFFECTIVE DATE: 31st JULY 2021

Commercial Pilot - Helicopter Skill Test Standards

Director General
Sierra Leone Civil Aviation Authority

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FOREWORD

The Sierra Leone Civil Aviation Authority (SLCAA) has developed skill test standards for airmen licences and ratings and these are published as Advisory Circulars (ACs). This AC establishes the standards for the Commercial Pilot licence skill tests for helicopters. The Authority inspectors and designated pilot flight test examiners shall conduct skill tests in compliance with these standards. Flight instructors and applicants should find these standards helpful in skill test preparation. Other ACs have been developed for other airmen licences and can be obtained from the SLCAA website: <http://www.slcaa.gov.sl>

Information considered directive in nature is described in this skill test AC in terms such as “shall” and “must”, indicating the actions are mandatory. Guidance information is described in terms such as “should” and “may” indicating the actions are desirable or permissive, but not mandatory.

The Sierra Leone Civil Aviation Regulations (SLCARs) can be obtained from the SLCAA at the address listed below. SLCARs Part 1A covers the requirements for personnel licensing.

This Skill Test Standard may be downloaded from the SLCAA website at <http://www.slcaa.gov.sl> Subsequent changes to the Skill Test Standard will also be available on the SLCAA web site.

Comments regarding this publication should be sent to: Sierra Leone Civil Aviation Authority
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SECTION ONE: INSTRUCTIONS

1.1 GENERAL

The SLCAA has developed this skill test AC as the standard that shall be used by SLCAA inspectors and designated flight test examiners when conducting instrument rating skill tests. Flight instructors are expected to use this book when preparing applicants for skill tests. Applicants should be familiar with this book and refer to these standards during their training.

1.2 PURPOSE

The purpose of this AC is to prescribe the standards that shall be used by SLCAA Inspectors and designated flight test examiners when conducting the Commercial Pilot - Helicopter skill test. Flight instructors are expected to use this document when preparing applicants for skill tests. Applicants should be familiar with this document and refer to these standards during their training.

1.3 SKILL TEST STANDARD CONCEPT

The SLCARs specify the areas in which knowledge and skill must be demonstrated by the applicant before the issuance of a licence or rating. The SLCARs provide the flexibility to permit the SLCAA to publish Skill Test Standards (STS) containing the AREAS OF OPERATION and specific TASKS in which pilot competency shall be demonstrated. The SLCAA will revise this STS whenever it is determined that changes are needed in the interest of safety. Adherence to the provisions of the regulations and the STS is mandatory for evaluation of pilot applicants.

1.4 SKILL TEST DESCRIPTION

- (1) This AC contains the Commercial Pilot – Helicopter skill test standards. The Commercial Pilot—Helicopter Skill Test Standards include the AREAS OF OPERATION and TASKs for the issuance of an initial Commercial Pilot Licence and for the addition of category and/or class ratings to that licence.
- (2) AREAS OF OPERATION are phases of the skill test arranged in a logical sequence within each standard. They begin with preflight preparation and end with post flight procedures. The examiner may conduct the skill test in any sequence that results in a complete and efficient test; however, the ground portion of the skill test shall be accomplished before the flight portion.
- (3) TASKS are titles of knowledge areas, flight procedures, or maneuvers appropriate to an AREA OF OPERATION.
- (4) NOTE is used to emphasize special considerations required in the AREA OF OPERATION or TASK.
- (7) REFERENCE identifies the publication(s) that describe(s) the TASK. Descriptions of TASKS are not included in the standards because this information can be found in the current issue of the listed references. Publications other than those listed may be used for references if their content conveys substantially the same meaning as the referenced publications. The STSs are based on the following references:

SLCARs Part 1A	Personnel Licensing
SLCARs Part 8A	Airworthiness
SLCARs Part 9	Air Operator Certification and Operation
SLCARs Part 25	Aircraft Instruments and Equipment
FAA-H-8083-1	Aircraft Weight and Balance Handbook
SLCARs Part 9	Air Operator Certification and Operation
NOTAMS	Notices to Airmen

IMC	Instrument Meteorological Conditions
IPC	Instrument Proficiency Check
LAHSO	Land and Hold Short Operations
LCD	Liquid Crystal Display
LDA	Localizer-type Directional Aid
LED	Light Emitting Diode
LOC	Localizer
LORAN	Long Range Navigation
MAP	Missed Approach Point
SLCARS	Sierra Leone Civil Aviation Regulations
ACA	Minimum Descent Attitude
METAR	Aviation Routine Weather Report
MLS	Microwave Landing System
NAVAID	Navigational Aid
NDB	Non-Directional Beacon
NOTAM	Notice to Airmen
NPA	Non-precision Approach
PA	Precision Approach
RAIM	Receiver Autonomous Integrity Monitoring
RMI	Radio Magnetic Indicator
RNAV	Area navigation
SAS	Stability Augmentation System
SDF	Simplified Directional Facility
SID	Standard Instrument Departure
SIGMET	Significant Meteorological Advisory
SRM	Single Pilot Resource Management
STAR	Standard Terminal Arrival
STS	Skill Test Standards
TCAS	Traffic Alert and Collision Avoidance System
VDP	Visual Descent Point
VHF	Very High Frequency
VNAV	Vertical Navigation
VOR	Very High Frequency Ominidirectional Range

1.5 USE OF THE SKILL TEST STANDARDS

- (1) The Skill Test Standards are designed to evaluate competency in both knowledge and skill. Commercial pilots are professionals engaged in various flight activities for compensation or hire. Because of their professional status, they should exhibit a significantly higher level of knowledge and skill than the private pilot. Although some TASKs listed are similar to those in the Private Pilot Helicopter Skill Test Standards, the wording used in the Commercial Pilot Helicopter Skill Test Standards reflects a higher level of competency expected of a commercial pilot applicant in performing these similar TASKs.
- (2) The SLCAA requires that all skill tests be conducted in accordance with the appropriate STS and the policies set forth in Section 1. Applicants shall be evaluated in ALL TASKs included in the AREAS OF OPERATION of the appropriate STS (unless noted otherwise).
- (3) An applicant, who holds at least a commercial pilot licence seeking an additional helicopter category rating and/or class rating at the commercial pilot level will be evaluated in the AREAS OF OPERATION and TASKs listed in the Additional Rating Task Table. At the discretion of the examiner, an evaluation of the applicant's competence in the remaining AREAS OF OPERATION and TASKs may be conducted.

- (4) If the applicant holds two or more category or class ratings at least at the private level, and the rating table indicates differing required TASKs, the “least restrictive” entry applies. For example, if “ALL” and “NONE” are indicated for one AREA OF OPERATION, the “NONE” entry applies. If “B” and “B, C” are indicated, the “B” entry applies.
- (5) In preparation for each skill test, the examiner shall develop a written “plan of action” for each skill test. The “plan of action” is a tool, for the sole use of the examiner, to be used in evaluating the applicant. The plan of action need not be grammatically correct or in any formal format. The plan of action must contain all of the required AREAS OF OPERATION and TASKs and any optional TASKs selected by the examiner. The “plan of action” shall incorporate one or more scenarios that will be used during the skill test. The examiner should try to include as many of the TASKs into the scenario portion of the test as possible, but maintain the flexibility to change due to unexpected situations as they arise and still result in an efficient and valid test. Any TASK selected for evaluation during a skill test shall be evaluated in its entirety.
- (6) The examiner is not required to follow the precise order in which the AREAS OF OPERATION and TASKs appear in this book. The examiner may change the sequence or combine TASKs with similar Objectives to have an orderly and efficient flow of the skill test. For example, lost procedures may be combined with radio navigation. The examiner's “plan of action” should include the order and combination of TASKs to be demonstrated by the applicant in a manner that will result in an efficient and valid test.
- (7) The examiner is expected to use good judgment in the performance of simulated emergency procedures. The use of the safest means for simulation is expected. Consideration must be given to local conditions (both meteorological and topographical), at the time of the test, as well as the applicant's, workload, and the condition of the aircraft used. If the procedure being evaluated would jeopardize safety, it is expected that the applicant will simulate that portion of the maneuver.

1.6 SPECIAL EMPHASIS AREAS

- (1) Flight test examiners shall place special emphasis upon areas of aircraft operations considered critical to flight safety. Among these are:
 - (a) Positive aircraft control;
 - (b) Positive exchange of the flight controls procedure (who is flying the aircraft);
 - (c) Collision avoidance;
 - (d) Wake turbulence avoidance;
 - (e) Runway incursion avoidance; (
 - f) CFIT;
 - (g) Wire strike avoidance;
 - (h) ADM and risk management;
 - (i) Checklist usage; and
 - (j) Other areas deemed appropriate to any phase of the skill test.
- (2) Although these areas may not be specifically addressed under each TASK, they are essential to flight safety and will be evaluated during the skill test. In all instances, the applicant's actions will relate to the complete situation.

1.7 SKILL TEST PREREQUISITES

An applicant for a Commercial Pilot - Helicopter skill test is required to:

- (a) Meet the applicable requirements in SLCAR Part 2 for a Commercial Pilot – Helicopter rating;
- (b) Hold the appropriate medical certificate; (c) Pass the required knowledge test; and
- (d) Instructor Authorisation: Obtain a written endorsement from an authorised instructor certifying that the applicant has met the flight training requirements for the skill test. The endorsement shall also state that the instructor finds the applicant competent to pass the skill test and that the applicant has satisfactory knowledge of the subject area(s) in which a deficiency was indicated by the Airman Knowledge Test Report.

1.8 AIRCRAFT AND EQUIPMENT REQUIRED FOR THE SKILL TEST

The commercial pilot applicant is required by SLCARs Part 2 to provide an airworthy, certificated aircraft for use during the practical test. This section further requires that the aircraft must:

- (1) Be of Nigerian, foreign or military registry of the same category, class, and type, if applicable, for the certificate and/or rating for which the applicant is applying;
- (2) Have fully functioning dual controls, except as provided in SLCARs Part 2; and
- (3) be capable of performing ALL AREAS OF OPERATION appropriate to the rating sought and have no operating limitations, which prohibit its use in any of the AREAS OF OPERATION, required for the practical test.

1.9 USE OF SLCAA-APPROVED FLIGHT SIMULATION TRAINING DEVICE (RESERVED)

1.10 FLIGHT INSTRUCTOR RESPONSIBILITY

- (1) An appropriately rated flight instructor is responsible for training the pilot applicant to acceptable standards in all subject matter areas, procedures, and maneuvers included in the TASKS within the appropriate skill test standard.
- (2) Because of the impact of their teaching activities in developing safe, proficient pilots, flight instructors should exhibit a high level of knowledge, skill, and the ability to impart that knowledge and skill to students. Additionally, the flight instructor must certify that the applicant is able to perform safely as a pilot and is competent to pass the required skill test.
- (3) Throughout the applicant’s training, the flight instructor is responsible for emphasizing the performance of effective visual scanning, collision avoidance, and runway incursion avoidance procedures.

1.11 EXAMINER RESPONSIBILITY

- (1) The examiner conducting the skill test is responsible for determining that the applicant meets the acceptable standards of knowledge and skill of each TASK within the appropriate skill test standard. Since there is no formal division between the “oral” and “skill” portions of the skill test, this becomes an ongoing process throughout the test. To avoid unnecessary distractions, oral questioning should be used judiciously at all times, especially during the flight portion of the skill test.
- (2) Examiners shall test to the greatest extent practicable the applicant’s correlative abilities rather than mere rote enumeration of facts throughout the skill test.
- (3) If the examiner determines that a TASK is incomplete, or the outcome uncertain, the examiner may require the applicant to repeat that TASK, or portions of that TASK. This

provision has been made in the interest of fairness and does not mean that instruction, practice, or the repeating of an unsatisfactory TASK is permitted during the licensing process.

- (4) During the flight portion of the skill test, the examiner shall evaluate the applicant's use of visual scanning, and collision avoidance procedures.
- (5) The word "examiner" is used throughout the standard to denote either the SLCAA Inspector or SLCAA-designated pilot examiner who conducts an official skill test.

1.12 SATISFACTORY PERFORMANCE

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

- (a) Perform the TASKS specified in the AREAS OF OPERATION for the licence or rating sought within the approved standards;
- (b) Demonstrate mastery of the aircraft with the successful outcome of each TASK Performed never seriously in doubt;
- (c) Demonstrate satisfactory proficiency and competency within the approved standard;
- (d) Demonstrate sound judgment and ADM; and
- (e) Demonstrate single-pilot competence if the aircraft is type certificated for single-pilot operations.

1.13 UNSATISFACTORY PERFORMANCE

- (1) The tolerances represent the performance expected in good flying conditions. 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.
- (2) 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 licence or rating sought. The test may be continued ONLY with the consent of the applicant. If the test is discontinued, the applicant is entitled credit for only those AREAS OF OPERATION and their associated TASKS that were satisfactorily performed. However, during the retest, and at the discretion of the examiner, any TASK may be re-evaluated, including those previously passed.
- (3) Typical areas of unsatisfactory performance and grounds for disqualification are:
 - (a) Any action or lack of action by the applicant that requires corrective intervention by the examiner to maintain safe flight
 - (b) Failure to use proper and effective visual scanning techniques when applicable, to clear the area before and while performing maneuvers.
 - (c) Consistently exceeding tolerances stated in the Objectives.
 - (d) Failure to take prompt corrective action when tolerances are exceeded
- (4) When a Notice of Denial is issued, the examiner shall record the applicant's unsatisfactory performance in terms of the AREA OF OPERATION and specific TASK(S) not meeting the standard appropriate to the skill test conducted. The AREA(S) OF OPERATION/TASK(S) not tested and the number of skill test failures shall also be recorded. If the applicant fails the skill test because of a special emphasis area, the Notice of Denial shall indicate the associated TASK. For example, AREA OF OPERATION VIII, Settling-With-Power, failure to use proper collision avoidance procedures.

- (5) In the case of a retest after failure, an applicant may be given credit for those areas of operations successfully completed on the previous skill test, provided the previous test was conducted within 60 days before the retest. If the previous test was conducted more than 60 days before the retest, the examiner must test the applicant in all AREAS OF OPERATION and all TASKS.

1.14 DISCONTINUANCE OF A SKILL TEST

When a skill test is stopped for reasons other than unsatisfactory performance (i.e., equipment failure, weather, or illness), the SLCAA airman licence and/or rating application and, if applicable, the Airman Knowledge Test Report shall be returned to the applicant. The examiner at that time shall prepare, sign, and issue a Letter of Discontinuance to the applicant. The Letter of Discontinuance should identify the AREAS OF OPERATION and their associated TASKS of the skill test that were successfully completed. The applicant shall be advised that the Letter of Discontinuance shall be presented to the examiner when the skill test is resumed and made part of the licensing file.

1.15 Aeronautical Decision Making and Risk Management

- (1) The examiner shall evaluate the applicant's ability throughout the skill test to use good aeronautical decision-making procedures in order to evaluate risks. The examiner shall accomplish this requirement by developing scenarios that incorporate as many TASKS as possible to evaluate the applicant's risk management in making safe aeronautical decisions. For example, the examiner may develop a scenario that incorporates weather decisions and performance planning.
- (2) The applicant's ability to utilise all the assets available in making a risk analysis to determine the safest course of action is essential for satisfactory performance. The scenarios should be realistic and within the capabilities of the aircraft used for the skill test.

1.16 CREW RESOURCE MANAGEMENT

- (1) CRM refers to the effective use of all available resources; human resources, hardware, and information. Human resources includes all other groups routinely working with the cockpit crew (or if a single-pilot operation, the pilot) who are involved in decisions that are required to operate a flight safely. These groups include, but are not limited to, flight operations officers, cabin crew members, maintenance personnel, and air traffic controllers. CRM is not a single TASK. CRM is a set of skill competencies which must be evident in all TASKS in this skill test standard as applied to the single-pilot or the multi-crew operation. CRM competencies, grouped into three clusters of observable behaviour, are:
 - (a) COMMUNICATIONS PROCESSES AND DECISIONS
 1. Briefing/debriefing
 2. Inquiry/advocacy/assertiveness
 3. Self-critique
 4. Communication with available personnel resources
 5. Decision making
 - (b) BUILDING AND MAINTENANCE OF A FLIGHT TEAM
 1. Leadership/followership
 2. Interpersonal relationships
 - (c) WORKLOAD MANAGEMENT AND SITUATIONAL AWARENESS
 1. Preparation/planning
 2. Vigilance
 3. Workload distribution
 4. Distraction avoidance
 5. Wake turbulence avoidance

- (2) CRM deficiencies almost always contribute to the unsatisfactory performance of a TASK. Therefore, the competencies provide an extremely valuable vocabulary for debriefing. For debriefing purposes, an amplified list of these competencies, expressed as behavioural markers, these markers consider the use of various levels of automation in-flight management systems.
- (3) The standards for each CRM competency as generally stated and applied are subjective. Conversely, some of the competencies may be found objectively stated as required operational procedures for one or more TASKS. Examples of the latter include briefings, radio calls, and instrument approach callouts. Whether subjective or objective, application of CRM competencies is dependent upon the composition of the crew.

1.17 SINGLE-PILOT RESOURCE MANAGEMENT

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

1.18 HOW THE EXAMINER APPLIES CREW RESOURCE MANAGEMENT

- (1) Examiners are required to exercise proper CRM competencies in conducting tests as well as expecting the same from applicants.
- (2) Pass/fail judgements based solely on CRM issues must be carefully chosen since they may be entirely subjective. Those pass/fail judgements which are not subjective apply to CRM-related procedures in SLCAA-approved operations manuals that must be accomplished, such as briefings to other crew members. In such cases, the operator (or the aircraft manufacturer) specifies what should be briefed and when the briefings should occur. The examiner may judge objectively whether the briefing requirement was or was not met. In those cases where the operator (or aircraft manufacturer) has not specified a briefing, the examiner shall require the applicant to brief the appropriate items from the following note. The examiner may then judge objectively whether the briefing requirement was or was not met.
- (3) The majority of aviation accidents and incidents are due to resource management failures by the pilot/crew; fewer are due to technical failures. Each applicant shall give a crew briefing before each take-off/departure and approach/landing. If the operator or aircraft manufacturer has not specified a briefing, the briefing shall cover the appropriate items, such as runway, SID/STAR/IAP, power settings, speeds, abnormals or emergency prior to or after take-off, emergency return intentions, missed approach procedures, FAF, altitude at FAF, initial rate of descent, DH/MDA, time to missed approach, and what is expected of the other crew members during the take-off/SID and approach/landing. If the first take-off/departure and approach/landing briefings are satisfactory, the examiner may allow the applicant to brief only the changes during the remainder of the flight.

1.19 APPLICANT USE OF CHECKLISTS

Throughout the skill test, the applicant is evaluated on the use of an appropriate checklist. Proper use is dependent on the specific TASK being evaluated. The situation may be such that the use of the checklist, while accomplishing elements of an OBJECTIVE, would be either unsafe or impracticable, especially in a single-pilot operation. In this case, a review of the checklist after the

elements have been accomplished would be appropriate. Division of attention and proper visual scanning should be considered when using a checklist.

1.20 USE OF DISTRACTIONS DURING SKILL TESTS

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

1.21 POSITIVE EXCHANGE OF FLIGHT CONTROLS

- (1) During flight, there must always be a clear understanding between pilots of who has control of the aircraft. Prior to flight, a briefing should be conducted that includes the procedure for the exchange of flight controls. A positive three-step process in the exchange of flight controls between pilots is a proven procedure and one that is strongly recommended.
- (2) When one pilot wishes to give the other pilot control of the aircraft, he or she will say, “You have the flight controls.” The other pilot acknowledges immediately by saying, “I have the flight controls.” The first pilot again says “You have the flight controls.” When control is returned to the first pilot, follow the same procedure. A visual check is recommended to verify that the exchange has occurred. There should never be any doubt as to who is flying the aircraft.

1.22 RATING TASK TABLE

- (1) The following table indicates the areas of operations required during a skill test to add a helicopter rating to an existing commercial pilot licence.

Addition of an Helicopter rating to an existing Commercial Pilot Licence							
Required TASKs are indicated by either the TASK letter(s) that apply(s) or an indication that all or none of the TASKs must be tested based on the notes in each AREA OF OPERATION.							
COMMERCIAL PILOT RATING(S) HELD							
Areas Of operation	ASEL	ASES	AMEL	AMES	Glider	Balloon	Airship
I	F,G	F,G	F,G,	F,G,	F,G,I,J	F,G,I,J	F,G
II	ALL	ALL	ALL	ALL	ALL	ALL	ALL
III	B,C	B,C	B,C	B,C	ALL	ALL	B,C
IV	ALL	ALL	ALL	ALL	ALL	ALL	ALL
V	ALL	ALL	ALL	ALL	ALL	ALL	ALL
VI	ALL	ALL	ALL	ALL	ALL	ALL	ALL
VII	NONE	NONE	NONE	NONE	B,C,D	B,C,D	NONE

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VIII	B,D,E	ALL	ALL	ALL	ALL	ALL	ALL
IX	ALL	ALL	ALL	ALL	ALL	ALL	ALL
X	ALL	ALL	ALL	ALL	ALL	ALL	ALL
XI	ALL	ALL	ALL	ALL	ALL	ALL	ALL

Legend:

ASEL – Aeroplane single-engine land

ASES – Aeroplane single-engine sea

AMEL – Aeroplane multi-engine land

AMES – Aeroplane multi-engine sea

**SECTION TWO: COMMERCIAL PILOT LICENCE –HELICOPTER SKILL TEST
STANDARDS**

**1.1 APPLICANT'S SKILL TEST CHECKLIST (HELICOPTER)
APPOINTMENT WITH EXAMINER**

EXAMINER'S NAME _____

LOCATION _____

DATE/TIME _____

ACCEPTABLE AIRCRAFT

Aircraft Documents:

Airworthiness Certificate

Registration Certificate

Operating Limitations

Aircraft Maintenance Records:

Logbook Record of Airworthiness Inspections and AD Compliance

Pilot's Operating Handbook, SLCAA-Approved

Helicopter Flight Manual

FCC Station License

PERSONAL EQUIPMENT

View-Limiting Device

Current Aeronautical Charts

Computer and Plotter

Flight Plan Form

Flight Logs

Current AIM, Airport Facility Directory, and Appropriate

Publications

PERSONAL RECORDS

Identification - Photo/Signature ID Pilot Certificate

Current and Appropriate Medical Certificate

Completed Airman Licence and/or

Rating Application with Instructor's Signature (if applicable)

Airman Written Test Report, or

Computer Test Report

Pilot Logbook with Appropriate Instructor Endorsements

Notice of Disapproval (if applicable)

Approved School Graduation Certificate (if applicable)

Examiner's Fee (if applicable)

**1.2 EXAMINER'S SKILL TEST CHECKLIST
(HELICOPTER)**

APPLICANT'S NAME _____

LOCATION _____

DATE/TIME _____

I. PREFLIGHT PREPARATION

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

II. PREFLIGHT PROCEDURES

- A. PREFLIGHT INSPECTION
- B. COCKPIT MANAGEMENT
- C. ENGINE STARTING AND ROTOR ENGAGEMENT
- D. BEFORE TAKEOFF CHECK

III. AIRPORT AND HELIPORT OPERATIONS

- A. RADIO COMMUNICATIONS AND
ATC LIGHT SIGNALS
- B. TRAFFIC PATTERNS
- C. AIRPORT AND HELIPORT
MARKINGS AND LIGHTING

IV. HOVERING MANEUVERS

- A. VERTICAL TAKEOFF AND LANDING
- B. SLOPE OPERATIONS
- C. SURFACE TAXI
- D. HOVER TAXI
- E. AIR TAXI

V. TAKEOFFS, LANDINGS, AND GO-AROUNDS

- A. NORMAL AND CROSSWIND TAKEOFF AND CLIMB
- B. NORMAL AND CROSSWIND APPROACH
- C. MAXIMUM PERFORMANCE TAKEOFF AND CLIMB
- D. STEEP APPROACH
- E. ROLLING TAKEOFF
- F. SHALLOW APPROACH AND RUNNING/ROLL-ON LANDING

G. GO-AROUND

VI. PERFORMANCE MANEUVERS

A. RAPID DECELERATION

B. 180° AUTOROTATION

VII. NAVIGATION

A. PILOTAGE AND DEAD RECKONING

B. RADIO NAVIGATION AND RADAR SERVICES

C. DIVERSION

D. LOST PROCEDURES

VIII. EMERGENCY OPERATIONS

A. POWER FAILURE AT A HOVER

B. POWER FAILURE AT ALTITUDE

C. SYSTEMS AND EQUIPMENT MALFUNCTIONS

D. SETTLING-WITH-POWER

E. LOW ROTOR RPM RECOVERY

F. DYNAMIC ROLLOVER

G. GROUND RESONANCE

H. LOW G CONDITIONS

I. EMERGENCY EQUIPMENT AND SURVIVAL GEAR

IX. SPECIAL OPERATIONS

A. CONFINED AREA OPERATION

B. PINNACLE/PLATFORM OPERATIONS

X. POST-FLIGHT PROCEDURES

AFTER LANDING AND SECURING

1.3 AREA OF OPERATION: PRE-FLIGHT PREPARATION

I. AREA OF OPERATION: PRE-FLIGHT PREPARATION

A. TASK: CERTIFICATES AND DOCUMENTS

References: SLCAR Parts 1A, 6, and 8A; POH/RFM

Objective: To determine that the applicant exhibits knowledge of the elements related to Certificates and documents by:

- (1) EXPLAINING.
 - (a) Commercial pilot certificate privileges, limitations, and recent flight experience requirements
 - (b) Medical certificate class and duration
 - (c) Pilot logbook or flight records
- (2) LOCATING AND EXPLAINING.
 - (a) Airworthiness and registration certificates
 - (b) Operating limitations, placards, POH/RFM, and instrument markings
 - (c) Weight and balance data and equipment list
 - (d) Airworthiness directives, appropriate records

B. TASK: AIRWORTHINESS REQUIREMENTS

REFERENCES: SLCAR Part 6

Objective: To determine that the applicant exhibits knowledge of the elements related to airworthiness requirements by:

- (1) EXPLAINING.
 - (a) Required instruments and equipment for day/night VFR
 - (b) Procedures and limitations for determining airworthiness of the helicopter with inoperative instruments and equipment with and without an MEL
 - (c) Requirements and procedures for obtaining a special flight permit
- (2) LOCATING AND EXPLAINING.
 - (a) Airworthiness directives
 - (b) Compliance records
 - (c) Maintenance/inspection requirements
 - (d) Appropriate record keeping

C. TASK: WEATHER INFORMATION

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to weather information by analysing available weather reports, charts, and forecasts from various sources with emphasis on:
 - (a) METAR, TAF, and FA
 - (b) Surface analysis chart
 - (c) Wind shear reports
 - (d) Winds and temperature aloft chart
 - (e) AWOS, ASOS, and ATIS reports
 - (f) Significant weather prognostic charts
- (2) Makes a competent “go/no-go” decision based on available weather information.

D. TASK: CROSS-COUNTRY FLIGHT PLANNING

NOTE: *In-flight demonstration of cross-country procedures by the applicant is tested under AREA OF OPERATION: NAVIGATION.*

REFERENCES: NOTAMs; AIM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to cross-country flight planning by presenting and explaining a pre-planned VFR cross-country flight, as previously assigned by the examiner. On the day of the practical test, the flight plan should be to the first fuel stop necessary, based on maximum allowable passenger, baggage, and/or cargo loads using real-time weather.
- (2) Uses appropriate and current aeronautical charts.
- (3) Properly identifies airspace, obstructions, and terrain features, including discussion of wire strike avoidance techniques.
- (4) Selects easily identifiable en route checkpoints.
- (5) Selects most favourable altitudes, considering weather conditions and equipment capabilities.
- (6) Computes headings, flight time, and fuel requirements.
- (7) Selects appropriate navigation systems/facilities and communication frequencies.
- (8) Extracts and applies pertinent information from NOTAMs, Aerodrome/Facility Directory, and other flight publications.
- (9) Completes a navigation log and simulates filing a VFR flight plan.

E. TASK: NATIONAL AIRSPACE SYSTEM

REFERENCES: SLCAR Part 6; AIC

Objective: To determine that the applicant exhibits knowledge of the elements related to the

National Airspace System by explaining:

- (1) Basic VFR weather minima – for all classes of airspace.
- (2) Airspace classes – their operating rules, pilot certification, and helicopter equipment requirements for the following:
 - (a) Class A
 - (b) Class B
 - (c) Class C
 - (d) Class D
 - (e) Class E
 - (f) Class G
- (3) Special use airspace and other airspace areas.

F. TASK: PERFORMANCE AND LIMITATIONS

REFERENCES: POH/RFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to performance and limitations by explaining the use of charts, tables, and data to determine performance and the adverse effects of exceeding limitations.
- (2) Computes weight and balance. Determines the computed weight and centre of gravity is within the helicopter operating limitations and if the centre of gravity will remain within limits during all phases of flight.
- (3) Demonstrates the use of appropriate performance charts, tables, and data.
- (4) Describes the effects of various atmospheric conditions on the helicopter's performance.
- (5) Understands the cause and effects of retreating blade stall.
- (6) Considers circumstances when operating within "avoid areas" of the height/velocity diagram.
- (7) Is aware of situations that lead to loss of tail rotor/anti-torque effectiveness (unanticipated yaw).

G. TASK: OPERATION OF SYSTEMS

REFERENCES: POH/AFM

Objective: To determine that the applicant exhibits knowledge of the elements related to the appropriate normal operating procedures and limitations of the following systems by explaining:

- (1) Primary flight controls, trim, and, if installed, stability control
- (2) Powerplant
- (3) Main rotor and anti-torque
- (4) Landing gear, brakes, steering, skids, or floats, as applicable
- (5) Fuel, oil, and hydraulic
- (6) Electrical
- (7) Pilot-static, vacuum/pressure and associated flight instruments, if applicable
- (8) Environmental
- (9) Anti-icing, including carburettor heat, if applicable
- (10) Avionics equipment

H. TASK: AEROMEDICAL FACTORS

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

- (1) The symptoms, causes, effects, and corrective actions of at least three (3) of the following:
 - (a) Hypoxia
 - (b) Hyperventilation
 - (c) Middle ear and sinus problems
 - (d) Spatial disorientation

- (e) Motion sickness
 - (f) Carbon monoxide poisoning
 - (g) Stress and fatigue
 - (h) Dehydration
- (2) The effects of alcohol and drugs, including over-the-counter drugs.
 - (3) The effects of nitrogen excesses during scuba dives upon a pilot and/or passenger inflight.

I. TASK: PHYSIOLOGICAL ASPECTS OF NIGHT FLYING

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

- (1) The function of various parts of the eye essential for night-vision.
- (2) Adaptation of the eye to changing light.
- (3) Correct use of the eye to accommodate changing light.
- (4) Coping with illusions created by various light conditions.
- (5) Effects of the pilots physical condition on visual acuity.
- (6) Methods for increasing vision effectiveness.

J. TASK: LIGHTING AND EQUIPMENT FOR NIGHT FLYING

REFERENCES: POH/RFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to lighting and equipment for night flying by explaining:
 - (a) The types and uses of various personal lighting devices.
 - (b) The required equipment and location of external navigation lighting of the helicopter.
 - (c) The meaning of various aerodrome, heliport, and navigation lights, the method of determining their status, and the procedure for airborne activation of runway lights.
- (2) Locates and identifies switches, spare fuses, and circuit breakers pertinent to night operations.

II. AREA OF OPERATION: PRE-FLIGHT PROCEDURES

A. TASK: PRE-FLIGHT INSPECTION

REFERENCES: POH/RFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to a pre-flight inspection. Including, which items must be inspected, the reasons for checking each item, and how to detect possible defects.
- (2) Inspects the helicopter with reference to an appropriate checklist.
- (3) Verifies that the helicopter is in condition for safe flight.

B. TASK: COCKPIT MANAGEMENT

REFERENCES: SLCAR Part 6; POH/RFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to cockpit management procedures.
- (2) Ensures all loose items in the cockpit and cabin are secured.
- (3) Organises material and equipment in an efficient manner so they are readily available.
- (4) Briefs the occupants on the use of safety belts, shoulder harnesses, doors, rotor blade avoidance, and emergency procedures.

C. TASK: ENGINE STARTING AND ROTOR ENGAGEMENT

REFERENCES: POH/RFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to correct engine starting procedures. Including, the use of an external power source, starting under various atmospheric conditions, awareness of other persons and property during start, and the effects of using

incorrect starting procedures.

- (2) Ensures proper rotor blade clearance, and frictions flight controls, as necessary.
- (3) Utilises the appropriate checklist for starting procedures.

D. TASK: BEFORE TAKE-OFF CHECK

REFERENCES: POH/RFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to the before take-off check. Including the reasons for checking each item and how to detect malfunctions.
- (2) Positions the helicopter properly considering other aircraft, wind, and surface conditions.
- (3) Divides attention inside and outside the cockpit.
- (4) Ensures that the engine temperature and pressure are suitable for run-up and take-off.
- (5) Accomplishes the before take-off check and ensures that the helicopter is in safe operating condition.
- (6) Reviews take-off performance airspeeds, take-off distances, departure, and emergency procedures.
- (7) Avoids runway incursions and/or ensures no conflict with traffic prior to take-off.

III. AREA OF OPERATION: AERODROME AND HELIPORT OPERATIONS

A. TASK: RADIO COMMUNICATIONS AND ATC LIGHT SIGNALS

REFERENCES: SLCAR Part 6;

Objective: To determine that the applicant:

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

B. TASK: TRAFFIC PATTERNS

REFERENCES: SLCAR Part 6; POH/RFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to traffic patterns. Including procedures at aerodromes and heliports with and without operating control towers, prevention of runway incursions collision avoidance, wake turbulence avoidance, and wind shear.
- (2) Complies with proper traffic pattern procedures.
- (3) Maintains proper spacing from other traffic or avoids the flow of fixed wing aircraft.
- (4) Corrects for wind drift to maintain proper ground track.
- (5) Maintains orientation with runway/landing area.
- (6) Maintains traffic pattern altitude ± 100 feet, and appropriate airspeed, ± 10 knots.

C. TASK: AERODROME/HELIPORT RUNWAY, HELIPAD, AND TAXIWAY SIGNS, MARKINGS, AND LIGHTING

REFERENCES: SLCAR Part 6; AIC

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to aerodrome/heliport runway, and taxiway operations with emphasis on runway incursion avoidance.
- (2) Properly identifies and interprets aerodrome/heliport, runway, and taxiway signs, markings, and lighting.

IV. AREA OF OPERATION: HOVERING MANOEUVRES

A. TASK: VERTICAL TAKE-OFF AND LANDING

REFERENCES: POH/RFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to a vertical take-off to a hover and landing from a hover.
- (2) Ascends to and maintains recommended hovering altitude, and descends from

recommended hovering altitude in headwind, crosswind, and tailwind conditions.

- (3) Maintains RPM within normal limits.
- (4) Establishes recommended hovering altitude, $\pm 1/2$ of that altitude within 10 feet of the surface; if above 10 feet, ± 5 feet.
- (5) Avoids conditions that might lead to loss of tail rotor/anti-torque effectiveness.
- (6) Keeps forward and sideward movement within 2 feet of a designated point, with no aft movement.
- (7) Descends vertically to within 2 feet of the designated touchdown point.
- (8) Maintains specified heading, $\pm 10^\circ$.

B. TASK: SLOPE OPERATIONS

REFERENCES: POH/RFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to slope operations.
- (2) Selects a suitable slope, approach, and direction considering wind effect, obstacles, dynamic rollover avoidance, and discharging passengers.
- (3) Properly moves towards the slope.
- (4) Maintains RPM within normal limits.
- (5) Makes a smooth positive descent to touch the upslope skid on the sloping surface.
- (6) Maintains positive control while lowering the downslope skid or landing gear to touchdown.
- (7) Recognises when the slope is too steep and abandons the operation prior to reaching cyclic control stops.
- (8) Makes a smooth transition from the slope to a stabilised hover parallel to the slope.
- (9) Properly moves away from the slope.
- (10) Maintains the specified heading throughout the operation, $\pm 5^\circ$.

C. TASK: SURFACE TAXI

NOTE: This TASK applies to only helicopters equipped with wheel-type landing gear.

REFERENCES: POH/AFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to surface taxiing.
- (2) Surface taxies the helicopter from one point to another under headwind, crosswind, and tailwind conditions, with the landing gear in contact with the surface, avoiding conditions that might lead to loss of tail rotor/anti-torque effectiveness.
- (3) Properly uses cyclic, collective, and brakes to control speed while taxiing.
- (4) Properly positions nosewheel/tailwheel, if applicable, locked or unlocked.
- (5) Maintains RPM within normal limits.
- (6) Maintains appropriate speed for existing conditions.
- (7) Stops helicopter within ± 2 feet of a specified point.
- (8) Maintains specified track within ± 2 feet.

D. TASK: HOVER TAXI

REFERENCES: FAA-H-8083-21; AIM, POH/RFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to hover taxiing.
- (2) Hover taxies over specified ground references, demonstrating forward, sideward, and rearward hovering and hovering turns.
- (3) Maintains RPM within normal limits.
- (4) Maintains specified ground track within ± 2 feet on straight legs.
- (5) Maintains constant rate of turn at pivot points.
- (6) Maintains position within ± 2 feet of each pivot point during turns.
- (7) Makes 90° , 180° , and 360° pivoting turns, stopping within 10° of specified headings.
- (8) Maintains recommended hovering altitude, $\pm 1/2$ of that altitude within 10 feet of the

surface, if above 10 feet, ± 5 feet.

E. TASK: AIR TAXI

REFERENCES: POH/RFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to air taxiing.
- (2) Air taxis the helicopter from one point to another under headwind and crosswind conditions.
- (3) Maintains RPM within normal limits.
- (4) Selects a safe airspeed and altitude.
- (5) Maintains desired track and groundspeed in headwind and crosswind conditions, avoiding conditions that might lead to loss of tail rotor/anti-torque effectiveness.
- (6) Maintains a specified altitude, ± 5 feet.

V. AREA OF OPERATION: TAKE-OFFS, LANDINGS, AND GO-AROUNDS

A. TASK: NORMAL AND CROSSWIND TAKE-OFF AND CLIMB

NOTE: If a calm wind weather condition exists, the applicant's knowledge of the crosswind elements must be evaluated through oral testing; otherwise a crosswind take-off and climb must be demonstrated.

REFERENCES: POH/RFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to normal and crosswind take-off and climb, including factors affecting performance, to include height/velocity information.
- (2) Establishes a stationary position on the surface or a stabilised hover, prior to take-off in headwind and crosswind conditions.
- (3) Maintains RPM within normal limits.
- (4) Accelerates to manufacturers recommended climb airspeed, ± 5 knots.
- (5) Maintains proper ground track with crosswind correction, as necessary.
- (6) Remains aware of the possibility of wind shear and/or wake turbulence.

B. TASK: NORMAL AND CROSSWIND APPROACH

NOTE: If a calm wind weather condition exists, the applicant's knowledge of the crosswind elements must be evaluated through oral testing; otherwise a crosswind approach and landing must be demonstrated.

REFERENCES: POH/RFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to normal and crosswind approach.
- (2) Considers performance data, to include height/velocity information.
- (3) Considers the wind conditions, landing surface, and obstacles.
- (4) Selects a suitable termination point.
- (5) Establishes and maintains the normal approach angle, and rate of closure.
- (6) Remains aware of the possibility of wind shear and/or wake turbulence.
- (7) Avoids situations that may result in settling-with-power.
- (8) Maintains proper ground track with crosswind correction, as necessary.
- (9) Arrives at the termination point, on the surface or at a stabilised hover, ± 2 feet.

C. TASK: MAXIMUM PERFORMANCE TAKE-OFF AND CLIMB

REFERENCES: POH/RFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to maximum performance take-off and climb.
- (2) Considers situations where this manoeuvre is recommended and factors related to take-off and climb performance, to include height/velocity information.
- (3) Maintains RPM within normal limits.
- (4) Utilises proper control technique to initiate take-off and forward climb airspeed attitude.

- (5) Utilises the maximum available take-off power.
- (6) After clearing all obstacles, transitions to normal climb attitude, airspeed, ± 5 knots, and power setting.
- (7) Remains aware of the possibility of wind shear and/or wake turbulence.
- (8) Maintains proper ground track with crosswind correction, as necessary.

D. TASK: STEEP APPROACH

REFERENCES: POH/RFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to a steep approach.
- (2) Considers situations where this manoeuvre is recommended and factors related to a steep approach, to include height/velocity information.
- (3) Considers the wind conditions, landing surface, and obstacles.
- (4) Selects a suitable termination point.
- (5) Establishes and maintains the recommended approach angle, (15° maximum) and proper rate of closure.
- (6) Avoids situations that can result in settling-with-power.
- (7) Remains aware of the possibility of wind shear and/or wake turbulence.
- (8) Maintains proper ground track with crosswind correction, if necessary.
- (9) Arrives at the termination point, on the surface or at a stabilised hover, ± 2 feet.

E. TASK: ROLLING TAKE-OFF

NOTE: This TASK applies only to helicopters equipped with wheel-type landing gear.

REFERENCES: POH/RFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to a rolling take-off.
- (2) Considers situations where this manoeuvre is recommended and factors related to take-off and climb performance, to include height/velocity information.
- (3) Maintains RPM within normal limits.
- (4) Utilises proper preparatory technique prior to initiating take-off.
- (5) Initiates forward accelerating movement on the surface.
- (6) Transitions to a normal climb airspeed, ± 5 knots, and power setting.
- (7) Remains aware of the possibility of wind shear and/or wake turbulence.
- (8) Maintains proper ground track with crosswind correction, if necessary.
- (9) Completes the prescribed checklist, if applicable.

F. TASK: SHALLOW APPROACH AND RUNNING/ROLL-ON LANDING

REFERENCES: POH/RFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to shallow approach and running/roll-on landing, including the purpose of the manoeuvre, factors affecting performance data, to include height/velocity information, and effect of landing surface texture.
- (2) Maintains RPM within normal limits.
- (3) Considers obstacles and other hazards.
- (4) Establishes and maintains the recommended approach angle, and proper rate of closure.
- (5) Remains aware of the possibility of wind shear and/or wake turbulence.
- (6) Maintains proper ground track with crosswind correction, if necessary.
- (7) Maintains a speed that will take advantage of effective translational lift during surface contact with landing gear parallel with the ground track.
- (8) Utilises proper flight control technique after surface contact.
- (9) Completes the prescribed checklist, if applicable.

G. TASK: GO-AROUND

REFERENCES: POH/AFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to a go-around and when it is necessary.
- (2) Makes a timely decision to discontinue the approach to landing.
- (3) Maintains RPM within normal limits.
- (4) Establishes proper control input to stop descent and initiate climb.
- (5) Retracts the landing gear, if applicable, after a positive rate-of-climb indication.
- (6) Maintains proper ground track with crosswind correction, if necessary.
- (7) Transitions to a normal climb airspeed, ± 5 knots.
- (8) Completes the prescribed checklist, if applicable.

VI. AREA OF OPERATION: PERFORMANCE MANOEUVRES

NOTE: The examiner must select TASK A and at least one other TASK.

A. TASK: RAPID DECELERATION

REFERENCES: Helicopter Flight Manual

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to rapid deceleration.
- (2) Maintains RPM within normal limits.
- (3) Properly coordinates all controls throughout the execution of the manoeuvre.
- (4) Maintains an altitude that will permit safe clearance between the tail boom and the surface.
- (5) Decelerates and terminates in a stationary hover at the recommended hovering altitude.
- (6) Maintains heading throughout the manoeuvre, $\pm 5^\circ$.

B. TASK: STRAIGHT-IN AUTOROTATION

REFERENCES: POH/RFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to a straight-in autorotation terminating with a power recovery to a hover.
- (2) Selects a suitable touchdown area.
- (3) Initiates the manoeuvre at the proper point.
- (4) Establishes proper aircraft trim and autorotation airspeed, ± 5 knots.
- (5) Maintains rotor RPM within normal limits.
- (6) Compensates for wind speed and direction as necessary to avoid undershooting or overshooting the selected landing area.
- (7) Utilises proper deceleration, collective pitch application to
- (8) Comes to a hover within 100 feet of a designated point.

C. TASK: 180° AUTOROTATION

REFERENCES: POH/RFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to a 180° autorotation terminating with a power recovery to a hover.
- (2) Selects a suitable touchdown area.
- (3) Initiates the manoeuvre at the proper point.
- (4) Establishes proper aircraft trim and autorotation airspeed, ± 5 knots.
- (5) Maintains rotor RPM within normal limits.
- (6) Compensates for wind speed and direction as necessary to avoid undershooting or overshooting the selected landing area.
- (7) Utilises proper deceleration, collective pitch application to a hover.
- (8) Comes to a hover within 100 feet of a designated point.

D. TASK: APPROACH AND LANDING WITH SIMULATED POWERPLANT FAILURE – MULTIENGINE HELICOPTER

Note: In a multi-engine helicopter manoeuvring to a landing, the applicant should follow a procedure that simulates the loss of one powerplant.

REFERENCES: POH/RFM

Objective: To determine that the applicant:

- (1) Exhibits adequate knowledge of manoeuvring to a landing with a powerplant inoperative, including the controllability factors associated with manoeuvring, and the applicable emergency procedures.
- (2) Selects a suitable touchdown point.
- (3) Maintains, prior to beginning the final approach segment, the desired altitude ± 100 feet, the desired airspeed ± 10 knots, the desired heading $\pm 5^\circ$, and maintains desired track.
- (4) Establishes the approach and landing configuration appropriate for the runway or landing area, and adjusts the powerplant controls as required.
- (5) Maintains a normal approach angle and recommended airspeed to the point of transition to touchdown.
- (6) Terminates the approach in a smooth transition to touchdown.
- (7) Completes the after-landing checklist items in a timely manner, after clearing the landing area, and as recommended by the manufacturer.

VII. AREA OF OPERATION: NAVIGATION

A. TASK: PILOTAGE AND DEAD RECKONING

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to pilotage and dead reckoning.
- (2) Follows the preplanned course by reference to landmarks.
- (3) Identifies landmarks by relating the surface features to chart symbols.
- (4) Navigates by means of precomputed headings, groundspeeds, and elapsed time.
- (5) Corrects for, and records, the differences between pre-flight fuel, groundspeed, and heading calculations and those determined en route.
- (6) Verifies the helicopter position within three (3) nautical miles of the flight planned route.
- (7) Corrects for, and records, the differences between pre-flight fuel, groundspeed, and heading calculations and those determined en route.
- (8) Maintains the appropriate altitude, ± 100 feet and established heading, $\pm 10^\circ$.

B. TASK: RADIO NAVIGATION AND RADAR SERVICES

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to radio navigation and ATC radar services.
- (2) Selects and identifies the appropriate facilities or coordinates, as appropriate.
- (3) Locates the helicopter position relative to the navigation facilities or coordinates, as appropriate.
- (4) Intercepts and tracks a given radial or bearing.
- (5) Locates position using cross radials, coordinates, or bearings.
- (6) Recognises and describes the indication of station or way point passage.
- (7) Recognises signal loss and takes appropriate action.
- (8) Uses proper communication procedures when utilising ATC radar services.
- (9) Maintains the appropriate altitude, ± 100 feet (30 meters).

C. TASK: DIVERSION

REFERENCES: AIM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to procedures for diversion.
- (2) Selects an appropriate alternate aerodrome or heliport and route.
- (3) Promptly diverts towards the alternate aerodrome or heliport.
- (4) Makes an accurate estimate of heading, groundspeed, arrival time, and fuel consumption to the alternate aerodrome or heliport.
- (5) Maintains the appropriate altitude, ± 100 feet and established heading, $\pm 10^\circ$.

D. TASK: LOST PROCEDURES

REFERENCES:

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to lost procedures.
- (2) Selects an appropriate course of action.
- (3) Maintains an appropriate heading, and climbs, if necessary.
- (4) Attempts to identify prominent landmark(s).
- (5) Uses navigation systems/facilities and/or contacts an ATC facility for assistance as appropriate.
- (6) Plans a precautionary landing if deteriorating weather and/or fuel exhaustion is impending.

VIII. AREA OF OPERATION: EMERGENCY OPERATIONS

Note: TASKS F through I are knowledge only TASKS.

A. TASK: POWER FAILURE AT A HOVER

REFERENCES: POH/RFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to power failure at a hover.
- (2) Determines that the terrain below the aircraft is suitable for a safe touchdown.
- (3) Performs autorotation from a stationary or forward hover into the wind at recommended altitude, and RPM, while maintaining established heading, $\pm 5^\circ$.
- (4) Touches down with minimum sideward movement, and no rearward movement.
- (5) Exhibits orientation, division of attention, and proper planning.

B. TASK: POWER FAILURE AT ALTITUDE

NOTE: Simulated power failure at altitude must be given over areas where actual touchdowns can safely be completed in the event of an actual powerplant failure.

REFERENCES: POH/RFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to power failure at altitude.
- (2) Establishes an autorotation and selects a suitable landing area.
- (3) Establishes proper aircraft trim and autorotation airspeed, ± 5 knots.
- (4) Maintains rotor RPM within normal limits.
- (5) Compensates for wind speed and direction as necessary to avoid undershooting or overshooting the selected landing area.
- (6) Terminates approach with a power recovery at a safe altitude when directed by the examiner.

C. TASK: SYSTEMS AND EQUIPMENT MALFUNCTIONS

REFERENCES: POH/RFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to causes, indications, and pilot actions for various systems and equipment malfunctions.
- (2) Analyses the situation and takes action, appropriate to the helicopter used for the practical test, in at least four of the following areas:
 - (a) Engine/oil and fuel
 - (b) Hydraulic, if applicable
 - (c) Electrical
 - (d) Carburettor or induction icing
 - (e) Smoke and/or fire
 - (f) Flight control/trim
 - (g) Pilot static/vacuum and associated flight instruments, if applicable
 - (h) Rotor and/or anti-torque
 - (i) Various frequency vibrations and the possible components that may be affected
 - (j) Any other emergency unique to the helicopter flown

D. TASK: SETTLING-WITH-POWER

REFERENCES: POH/RFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to settling-with-power.
- (2) Selects an altitude that will allow recovery to be completed no less than 1,000 feet AGL or, if applicable, the manufacturers recommended altitude, whichever is higher.
- (3) Promptly recognises and announces the onset of settling-with-power.
- (4) Utilises the appropriate recovery procedure.

E. TASK: LOW ROTOR RPM RECOVERY

NOTE: The examiner may test the applicant orally on this TASK if helicopter used for the practical test has a governor that cannot be disabled.

REFERENCES: Appropriate Manufacturer Safety Notices; POH/RFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to low rotor RPM recovery, including the combination of conditions that are likely to lead to this situation.
- (2) Detects the development of low rotor RPM and initiates prompt corrective action.
- (3) Utilises the appropriate recovery procedure.

F. TASK: DYNAMIC ROLLOVER

REFERENCES: POH/RFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to the aerodynamics of dynamic rollover.
- (2) Understands the interaction between the anti-torque thrust, crosswind, slope, CG, cyclic and collective pitch control in contributing to dynamic rollover.
- (3) Explains preventive flight technique during take-offs, landings, and slope operations.

G. TASK: GROUND RESONANCE

REFERENCES: POH/RFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to a fully articulated rotor system and the aerodynamics of ground resonance.
- (2) Understands the conditions that contribute to ground resonance.
- (3) Explains preventive flight technique during take-offs and landings.

H. TASK: LOW G CONDITIONS

REFERENCES: Helicopter Flight Manual

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to low G conditions.
- (2) Understands and recognises the situations that contribute to low G conditions.
- (3) Explains proper recovery procedures.

I. TASK: EMERGENCY EQUIPMENT AND SURVIVAL GEAR

REFERENCES: POH/RFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to emergency equipment and survival gear appropriate to the helicopter environment encountered during flight.
- (2) Identifies appropriate equipment that should be on board the helicopter.

IX. AREA OF OPERATION: SPECIAL OPERATIONS

A. TASK: CONFINED AREA OPERATION

REFERENCES: POH/RFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to confined area operations.
- (2) Accomplishes a proper high and low reconnaissance.
- (3) Selects a suitable approach path, termination point, and departure path.

- (4) Tracks the selected approach path at an acceptable approach angle and rate of closure to the termination point.
- (5) Maintains RPM within normal limits.
- (6) Avoids situations that can result in settling-with-power.
- (7) Terminates at a hover or on the surface, as conditions allow.
- (8) Accomplishes a proper ground reconnaissance.
- (9) Selects a suitable take-off point, considers factors affecting take-off and climb performance under various conditions.

B. TASK: PINNACLE/PLATFORM OPERATIONS

REFERENCES: POH/RFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to pinnacle/platform operations.
- (2) Accomplishes a proper high and low reconnaissance.
- (3) Selects a suitable approach path, termination point, and departure path.
- (4) Tracks the selected approach path at an acceptable approach angle and rate of closure to the termination point.
- (5) Maintains RPM within normal limits.
- (6) Terminates at a hover or on the surface, as conditions allow.
- (7) Accomplishes a proper ground reconnaissance.
- (8) Selects a suitable take-off point, considers factors affecting take-off and climb performance under various conditions.

X. AREA OF OPERATION: POST-FLIGHT PROCEDURES

A. TASK: AFTER LANDING AND SECURING

REFERENCES: POH/RFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to after-landing, parking, and securing.
- (2) Minimises the hazardous effects of rotor downwash during hovering.
- (3) Parks in an appropriate area, considering the safety of nearby persons and property.
- (4) Follows the appropriate procedure for engine shutdown.
- (5) Completes the appropriate checklist.
- (6) Conducts an appropriate post-flight inspection and secures the aircraft.

APPENDIX : TASK VS. FLIGHT SIMULATION DEVICE CREDIT

A.1 TASK VS. SIMULATION DEVICE CREDIT

Examiners conducting the instrument rating skill tests with flight simulation devices should consult appropriate documentation to ensure that the device has been approved for training, testing, or checking. The documentation for each device should reflect that the following activities have occurred:

- (1) The device must be evaluated, determined to meet the appropriate standards, and assigned the appropriate Qualification level by the National Simulator Program Manager. The device must continue to meet qualification standards through continuing evaluations as outlined in the appropriate advisory circular (AP). For Aeroplane flight training devices (FTDs), AP 120-45 (as amended), Aeroplane Flight Training Device Qualifications, will be used. For simulators, AP 120-40 (as amended), Aeroplane Simulator Qualification, will be used.
- (2) The SLCAA must approve the device for training, testing, and checking the specific flight TASKS listed in this appendix.
- (3) The device must continue to support the level of participant or applicant performance required by this skill test standard.

NOTE: Users of the following chart are cautioned that use of the chart alone is incomplete. The description and OBJECTIVE of each TASK as listed in the body of the skill test standard, including all NOTES, must also be incorporated for accurate simulation device use.

A.2 USE OF CHART

X Creditable.

A Creditable if appropriate systems are installed and operating.

NOTE: (1) Level 1 FTDs that have been issued a letter authorising their use by SLCAA, may continue to be used only for those TASKS originally found acceptable. Use of Level 1, 2, or 3 FTDs may not be used for aircraft requiring a type rating.

(2) If a FTD or a simulator is used for the skill test, the instrument approach procedures conducted in that FTD or simulator are limited to one precision and one non-precision approach procedure.

(3) Post-flight procedures means, closing flight plans, checking for discrepancies and malfunctions, and noting them on a log or maintenance form.

A.3 FLIGHT SIMULATION TRAINING DEVICE LEVEL

FLIGHT TASK AREAS OF OPERATION	FLIGHT SIMULATION DEVICE LEVEL										
	1	2	3	4	5	6	7	A	B	C	D
VII. Navigation											
A. Pilotage and Dead Reckoning	--	--	--	--	--	--	--	--	--	X	X
B. Radio Navigation and Radar Services	--	--	--	--	--	--	--	--	--	X	X
C. Diversion	--	--	--	--	--	--	--	--	X	X	--
D. Lost Procedures	--	--	--	--	--	--	--	--	--	X	X
VIII. Emergency Operations**											
A. Power Failure at a Hover	--	--	--	--	--	--	--	--	--	X	X
B. Power Failure at Altitude	--	--	--	--	--	--	--	--	--	X	X
C. Systems and Equipment Malfunctions	--	--	--	--	--	--	--	--	--	X	X
D. Settling-with-power	--	--	--	--	--	--	--	--	--	X	X
E. Low Rotor RPM Recovery	--	--	--	--	--	--	--	--	--	X	X
F. Dynamic Rollover	--	--	--	--	--	--	--	--	--	--	--
G. Ground Resonance	--	--	--	--	--	--	--	--	--	--	--
H. Low G Conditions	--	--	--	--	--	--	--	--	--	--	--
I. Emergency Equipment and Survival Gear	--	--	--	--	--	--	--	--	--	--	--

