



SIERRA LEONE CIVIL AVIATION AUTHORITY

ADVISORY CIRCULAR

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Private 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 Private Pilot licence skill tests for helicopters. Sierra Leone 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
3rd Floor NDB Building
21/23, Siaka Stevens Street.
Freetown, Sierra Leone

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 Private Pilot-Helicopter skill tests. Flight instructors are expected to use this AC 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 Private 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

SLCAR Part 1A specifies the areas in which knowledge and skill must be demonstrated by the applicant before the issuance of a licence or rating. SLCARs provide the flexibility to permit the SLCAA to publish skill test standards (STSs) 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 Private Pilot Licence – Helicopter Skill Test Standards.
- (2) AREAS OF OPERATION are phases of the skill test arranged in a logical sequence within each standard. They begin with pre-flight 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 manoeuvres appropriate to an AREA OF OPERATION.
- (4) NOTE is used to emphasise special considerations required in the AREA OF OPERATION or TASK.
- (5) 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 Parts 6A	Operations
SLCARs Part 8	Airworthiness
SLCARs Part 22	General Policies, Procedures, and Definitions
SLCARs Part 25	Instruments and Equipment
SLCARs Part 26	Air Operator Certification

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- (6) The OBJECTIVE lists the important elements that must be satisfactorily performed to demonstrate competency in a TASK. The OBJECTIVE includes:
 - (a) Specifically what the applicant should be able to do
 - (b) The conditions under which the TASK is to be performed
 - (c) The acceptable standards of performance

(7) The following abbreviations have the meanings shown:

ADF	Automatic Direction Finder
ADM	Aeronautical Decision Making
AIRMETs	Airman’s Meteorological Advisories
APV	Approach with Vertical Guidance
ATC	Air Traffic Control
ATIS	Automatic Terminal Information Service
ATS	Air Traffic Service
SLCAA	Sierra Leone Civil Aviation Authority
CDI	Course Deviation Indicator
CFIT	Controlled Flight into Terrain
CRM	Crew Resource Management
DA	Decision Altitude
DH	Decision Height
DME	Distance Measuring Equipment
DP	Departure Procedure
FDC	Flight Data Centre
FMS	Flight Management System
FSTD	Flight Simulation Training Device
GLS	GNSS Landing System
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
GPWS	Ground Proximity Warning System
IAP	Instrument Approach Procedure

IFR	Instrument Flight Rules
ILS	Instrument Landing System
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
SIGMETs	Significant Meteorological Advisories
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

- (8) This STS uses the term “examiner” to refer to either a qualified SLCAA inspector or designated pilot examiner when giving a skill test.

1.5 USE OF THE SKILL TEST STANDARDS

- (1) The skill test standards are designed to evaluate competency in both knowledge and skill.
- (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 private pilot licence seeking an additional category rating and/or class rating at the private pilot level shall 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 applicants

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 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 document. 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, holding procedures may be combined with an approach or missed approach procedures if a holding entry is part of the procedure.
- (7) The examiner is expected to use good judgement 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 applicants workload, and the condition of the aircraft used. If the procedure being evaluated would jeopardise safety, it is expected that the applicant shall simulate that portion of the manoeuvre.

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) Stall/spin awareness;
 - (d) Collision avoidance;
 - (e) Wake turbulence avoidance;
 - (f) Runway incursion avoidance;
 - (g) CFIT;
 - (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 critically evaluated during the skill test. In all instances, the applicant’s actions must relate to the complete situation.
- (3) Prior to the test, the examiner must explain, and the applicant must understand, the examiner’s role regarding air traffic control, crew resource management, and the duties and responsibilities of the examiner through all phases of the skill test.

1.7 SKILL TEST PREREQUISITES

An applicant for a PPL – Helicopter Skill Test is required to:

- (1) Meet the applicable requirements in SLCAR Part 1A for a Private Pilot Licence – Helicopter rating;
- (2) Hold the appropriate medical certificate;
- (3) Pass the required knowledge test; and
- (4) **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 instrument rating applicant is required to provide an airworthy, certificated aircraft for use during the skill test. Further, the aircraft must:

- (1) Be of Sierra Leone, foreign or military registry of the same category, class, and type, if applicable, for the licence and/or rating for which the applicant is applying
- (2) Have fully functioning dual controls, except as provided in SLCAR Part 1A
- (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 skill 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 manoeuvres included in the TASKS within the appropriate skill test standard.
- (2) Because of the impact of their teaching activities in developing safe, proficient pilots, flight instructors should exhibit a high level of knowledge, skill, and the ability to impart that knowledge and skill to students. Additionally, the flight instructor must certify that the applicant is able to perform safely as a pilot and is competent to pass the required skill test.
- (3) Throughout the applicants training, the flight instructor is responsible for emphasising 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 applicants 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 applicants use of visual scanning, and collision avoidance procedures, when appropriate.

1.12 SATISFACTORY PERFORMANCE

The ability of an applicant to safely perform the required TASKS is based on:

- (1) Perform the TASKS specified in the AREAS OF OPERATION for the licence or rating sought within the approved standards;
- (2) Demonstrate mastery of the aircraft with the successful outcome of each TASK performed never seriously in doubt;
- (3) Demonstrate satisfactory proficiency and competency within the approved standards;
- (4) Demonstrate sound judgement and ADM; and
- (5) Demonstrate single-pilot competence if the aircraft is type certificated for single-pilot operations.
- (6) “Knowledge” means the applicant can describe in general or specific terms a response to the examiner’s question.
- (7) “Satisfactory knowledge” means the applicant’s answer contains at least 70 percent of the reference answer to the examiner’s question (“textbook answer”) and if the applicant’s actions followed his/her response, the safety of the aeroplane would never seriously be in doubt.

1.13 UNSATISFACTORY PERFORMANCE

- (1) The tolerances represent the performance expected in good flying conditions. If, in the judgement 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. The examiner will issue a Notice of Denial to the applicant.
- (2) The examiner or applicant may stop 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 manoeuvres.
 - (c) Consistently exceeding tolerances stated in the OBJECTIVES.
 - (d) Failure to take prompt corrective action when tolerances are exceeded.
- (4) When the Notice of Denial is issued, the examiner shall record the applicants 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 Disapproval 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) 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 applicant's 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 applicants risk management in making safe aeronautical decisions. For example, the examiner may develop a scenario that incorporates weather decisions and performance planning.
- (2) The applicant 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 (CRM)

- (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 SITUATION AWARENESS

1. Preparation/p
 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.
- (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 (SRM)

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 CRM/SRM

- (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’S 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 applicants 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

The following table indicates the AREAS OF OPERATION required during a skill test for an additional rating in another aircraft category.

ADDITION OF AN HELICOPTER RATING TO AN EXISTING PRIVATE 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.							
PRIVATE PILOT RATING(S) HELD							
AREAS OF OPERATION	ASEL	ASES	AMEL	AMES	GLIDER	BALLOON	AIRSHIP
I	E, F,G	E, F,G	E, F,G	E, F,G	E, F,G	E, F,G	E, 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	B, C, D

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VIII	ALL	ALL	ALL	ALL	ALL	ALL	ALL
IX	NONE	NONE	NONE	NONE	ALL	ALL	ALL
X	ALL	ALL	ALL	ALL	ALL	ALL	ALL

Note: Except as noted, all TASKS are required for initial issuance of a Private Pilot – Helicopter rating.

**SECTION TWO: PRIVATE 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 Licence

PERSONAL EQUIPMENT

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 Licence

Current and Appropriate Medical Certificate

Completed Form, 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.** Airworthiness Requirements
- C.** Weather Information
- D.** Cross-Country Flight Planning
- E.** National Airspace System
- F.** Performance and Limitations
- G.** Operation of Systems
- H.** Aeromedical Factors

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/Heliport Runway, Helipad and Taxiway Signs, Markings, and Lighting

IV. HOVERING MANEUVERES

- 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.** Confined Area Operations
- G.** Pinnacle/Platform Operations
- H.** Shallow Approach and Running Roll-On Landing
- I.** Go-Around

VI. PERFORMANCE MANEUVERS

- A.** Rapid Deceleration
- B.** Straight in Autorotation
- C.** Straight in 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.** Antitorque System Failure
- G.** Dynamic Rollover
- H.** Ground Resonance
- I.** Low G Conditions
- J.** Emergency Equipment and Survival Gear

IX. NIGHT OPERATION

- A.** Night Preparation

X. POST-FLIGHT PROCEDURES

- A.** After Landing and Securing

1.3 AREAS OF OPERATION

I. AREA OF OPERATION: PRE-FLIGHT PREPARATION

Note: The examiner shall develop a scenario based on real time weather to evaluate TASKs C, D, E, and F.

A. TASK: CERTIFICATES AND DOCUMENTS

References: SLCARs Part 1A, 6, 8 POH/RFM

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

- (1) EXPLAINING:
 - (a) Private pilot licence 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, instrument markings, and POH/RFM
 - (c) Weight and balance data and equipment list

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

References: SLCAR Part 6

Objective: To determine that the applicant:

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

D. TASK: CROSS-COUNTRY FLIGHT PLANNING

References: SLCAR Part 6

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 skill test, the final flight plan shall be to the first fuel stop, based on maximum allowable passengers, 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 the 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) Applies pertinent information from FDC NOTAMs, AFD, 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

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 licensing, 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/HFM

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 helicopters operating limitations and if the weight and 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 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/HFM

Objective: To determine that the applicant exhibits knowledge of the elements related to the operation of systems on the helicopter provided for the flight test by explaining at least three (3) of the following systems:

- (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) Pitot-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, drugs, and over-the-counter drugs.
- (3) The effects of excesses nitrogen during scuba dives upon a pilot or passenger in-flight.

II. AREA OF OPERATION: PRE-FLIGHT PROCEDURES

A. TASK: PRE-FLIGHT INSPECTION

References: POH/HFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to pre-flight inspection. This shall include 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 the helicopter is in condition for safe flight.

B. TASK: COCKPIT MANAGEMENT

References: SLCAR Part 6; POH/HFM

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/HFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to correct engine starting procedures. This shall include the use of an external power source, starting under various atmospheric conditions.
- (2) Positions the helicopter properly considering structures, surface conditions, other aircraft, and the safety of nearby persons and property.
- (3) Utilises the appropriate checklist for starting procedure.

D. TASK: BEFORE TAKE-OFF CHECK

References: POH/HFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to the before take-off check. This shall include 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/HFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to traffic patterns. This shall include 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 in use.
- (6) Maintains traffic pattern altitude, ± 100 feet and the appropriate airspeed, ± 10 knots.

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

References: SLCAR Part 6

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/HFM

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) Maintains position within 4 feet of a designated point, with no aft movement.
- (7) Descends vertically to within 4 feet of the designated touchdown point.
- (8) Maintains specified heading, $\pm 10^\circ$.

B. TASK: SLOPE OPERATIONS

References: POH/HFM

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 if 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, $\pm 10^\circ$.

C. TASK: SURFACE TAXI

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

References: POH/HFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to surface taxiing.
- (2) Surface taxis 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 4 feet of a specified point.
- (8) Maintains specified track within ± 4 feet.

D. TASK: HOVER TAXI

References: POH/HFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to hover taxiing.
- (2) Hover taxis 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 ± 4 feet of a designated reference on straight legs.
- (5) Maintains constant rate of turn at pivot points.
- (6) Maintains position within 4 feet of each pivot point during turns.
- (7) Makes a 360° pivoting turn, left and right, stopping within 10° of a specified heading.
- (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/HFM

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, ± 10 feet.

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

Note: The examiner shall select task A, B, C, D, E, and at least one other TASK.

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

References: POH/HFM

Note: If a calm wind weather condition exists, the applicants knowledge of the crosswind elements shall be evaluated through oral testing; otherwise a crosswind take-off and climb shall be demonstrated.

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, ± 10 knots.
- (5) Maintains proper ground track with crosswind correction, if necessary.
- (6) Remains aware of the possibility of wind shear and/or wake turbulence.

B. TASK: NORMAL AND CROSSWIND APPROACH

References: POH/HFM

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

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 touchdown point.
- (5) Establishes and maintains the normal approach angle, and proper 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, if necessary.
- (9) Arrives over the touchdown point, on the surface or at a stabilised hover, ± 4 feet.
- (10) Completes the prescribed checklist, if applicable.

C. TASK: MAXIMUM PERFORMANCE TAKE-OFF AND CLIMB

References: POH/HFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to a 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, ± 10 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.

D. TASK: STEEP APPROACH

References: POH/HFM

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 a steep 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, ± 4 feet.

E. TASK: ROLLING TAKE-OFF

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

References: POH/HFM

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, ± 10 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: CONFINED AREA OPERATION

References: POH/HFM

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.

G. TASK: PINNACLE/PLATFORM OPERATIONS

References: POH/HFM

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.

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

References: POH/HFM

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.

I. TASK: GO-AROUND

References: POH/HFM

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, ± 10 knots.
- (8) Completes the prescribed checklist, if applicable.

VI. AREA OF OPERATION: PERFORMANCE MANOEUVRES

Note: The examiner shall select TASK A and at least one other TASK.

A. TASK: RAPID DECELERATION

References: POH/HFM

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, $\pm 10^\circ$.

B. TASK: STRAIGHT-IN AUTOROTATION

References: POH/HFM

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 windspeed 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 200 feet of a designated point.

C. TASK: 180° AUTOROTATION

References: POH/HFM

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 windspeed 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 200 feet of a designated point.

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) Arrives at the en route checkpoints within five (5) minutes of the initial or revised ETA and provides a destination estimate.
- (8) Maintains the appropriate altitude, ± 200 feet and established heading, $\pm 15^\circ$.

B. TASK: NAVIGATION SYSTEMS AND RADAR SERVICES

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to radio navigation and ATC radar services.
- (2) Demonstrates the ability to use an airborne electronic navigation system.
- (3) Locates the helicopter position using the navigation system.
- (4) Intercepts and tracks a given course, radial or bearing, as appropriate.
- (5) Recognises and describes the indication of station or waypoint passage if appropriate.
- (6) Recognises signal loss and takes appropriate action.
- (7) Uses proper communication procedures when utilising radar services.
- (8) Maintains the appropriate altitude, ± 200 feet and headings $\pm 15^\circ$.

C. TASK: DIVERSION

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to 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, ± 200 feet and established heading, $\pm 15^\circ$.

D. TASK: LOST PROCEDURES

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) Identifies 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/HFM

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, $\pm 10^\circ$.
- (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

References: POH/HFM

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

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 windspeed 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/HFM

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 skill test, in at least three 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/HFM

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 recovers at the onset of settling-with-power.
- (4) Utilises the appropriate recovery procedure.

E. TASK: LOW ROTOR RPM RECOVERY

References: POH/HFM

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

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: ANTI-TORQUE SYSTEM FAILURE

References: POH/HFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to anti-torque system failure by describing:
 - (a) The aerodynamic indications of the types of possible system failure(s) associate with the helicopter.
 - (b) Manufacturers recommended procedures for dealing with the different types of system(s) failure.

G. TASK: DYNAMIC ROLLOVER

References: POH/HFM

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.

H. TASK: GROUND RESONANCE

References: POH/HFM

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.

I. TASK: LOW G CONDITIONS

References: POH/HFM

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.

J. TASK: EMERGENCY EQUIPMENT AND SURVIVAL GEAR

References: POH/HFM

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 aboard the helicopter.

IX. AREA OF OPERATION: NIGHT OPERATION

A. TASK: NIGHT PREPARATION

References: POH/HFM

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

- (1) Physiological aspects of night flying as it relates to vision.
- (2) Lighting systems identifying aerodromes/heliports, runways, taxiways and obstructions, and pilot controlled lighting.
- (3) Helicopter lighting systems.
- (4) Personal equipment essential for night flight.
- (5) Night orientation, navigation, and chart reading techniques.
- (6) Safety precautions and emergencies unique to night flying.

X. AREA OF OPERATION: POST-FLIGHT PROCEDURES

A. TASK: AFTER LANDING AND SECURING

References: POH/HFM

Objective: To determine that the applicant:

- (1) Exhibits knowledge of the elements related to after-landing, parking and securing procedures
- (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.
- (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.

- Notes:**
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	FLIGHT SIMULATION DEVICE LEVEL										
	1	2	3	4	5	6	7	A	B	C	D
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. Antitorque System Failure	--	--	--	--	--	--	--	--	--	--	--
G. Dynamic Rollover	--	--	--	--	--	--	--	--	--	--	--
H. Ground Resonance	--	--	--	--	--	--	--	--	--	--	--

Private Pilot Helicopter Skill Test Standards

I. Low G Conditions	--	--	--	--	--	--	--	--	--	--	--
J. Emergency Equipment and Survival Gear	-	-	-	-	-	-	-	-	-	-	-