

PRIVATE PILOT Skill Test Standards

for

Helicopter



January 2009



Paramaribo, January 20th, 2009

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Decision Director CASAS

Subject: The Private Pilot Skill Test Standards for Helicopter

FOREWORD

The Private Pilot Skill Test Standards for Helicopter book has been published by the CASAS to establish the standards for the private pilot licensing skill test for the helicopter category. CASAS inspectors and designated pilot examiners shall conduct SKILL TESTS in compliance with these standards. Flight instructors and applicants should find these standards helpful during training and when preparing for the SKILL TEST.

/s/ January 20th, 2009

V.L.Hanenberg
Director CASAS

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SECTION ONE

General Information

The Civil Aviation Safety Authority Suriname (CASAS) has developed this document as the standard that shall be used by CASAS inspectors and designated pilot examiners when conducting private pilot—helicopter (PPH) skill tests. 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.

Terms, such as "shall" and "must" are directive in nature and when used in this document indicate that an action is mandatory. Guidance information is described in terms of "should" and "may" indicating the actions are desirable or permissive, but not mandatory.

The CASAS gratefully acknowledges the valuable assistance provided by many individuals and organizations throughout the aviation community who contributed their time and talent in assisting with the revision of these Skill Test Standards (STS).

This STS may be downloaded from the CASAS website at <http://www.casas.sr>. Subsequent changes to this STS will also be available on CASAS web site and then later incorporated into a printed revision.

Comments regarding this publication should be sent to:

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Skill Test Standards Concept

Civil Aviation Regulations Suriname (CARS) Part 2 specifies the AREAS OF OPERATION in which knowledge and skill must be demonstrated by the applicant before the issuance of a Private Pilot Licence: Helicopter Category. The CARS provide the flexibility to permit the CASAS to publish STS containing the AREAS OF OPERATION and specific TASKS in which pilot competency shall be demonstrated. The CASAS shall revise this STS whenever it is determined that changes are needed in the interest of safety. ***Adherence to the provisions of the CARS and the STS is mandatory for the evaluation of private pilot applicants.***

Skill Test Book Description

This test book contains the Private Pilot Licence: Helicopter Category and for adding a Helicopter Category to an existing private pilot licence.

The Private Pilot-Helicopter Skill Test Standards includes the AREAS OF OPERATION and TASKS for the issuance of an initial private pilot licence and for the addition of category ratings and/or class ratings to that licence.

AREAS OF OPERATION are phases of the skill test arranged in a logical sequence within each standard. They begin with Preflight Preparation and end with Postflight Procedures. The inspector or examiner may conduct the skill test in any sequence that will result in a complete and efficient test; ***however the ground portion of the skill test shall be accomplished before the flight portion.***

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

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

REFERENCE identifies the publication(s) that describe(s) the TASK. Descriptions of TASKS are not included in these standards because this information can be found in the current issue of the listed reference. Publications other than those listed may be used for references if their content conveys substantially the same meaning as the referenced publications.

These skill test standards are based on the following references:

CARS Part 2	Personnel Licensing
CARS Part 5	Airworthiness
CARS Part 8	Operations
FAA-H-8083-1	Aircraft Weight and Balance Handbook
FAA-H-8083-21	Rotorcraft Flying Handbook
FAA-H-8083-25	Pilot's Handbook of Aeronautical Knowledge
FAA AC 00-6	Aviation Weather
FAA AC 00-45	Aviation Weather Services
FAA AC 61-84	Role of Preflight Preparation
FAA AC 90-87	Helicopter Dynamic Rollover
FAA AC 90-95	Unanticipated right yaw in helicopters
FAA AC 91-13	Cold Weather Operations of Aircraft
FAA AC 91-32	Safety in and Around Helicopters
FAA AC 91-42	Hazards of Rotating Propeller and Helicopter Rotor Blades
AIM	Aeronautical Information Manual – United States
AFD	Airport Facility Directory
NOTAMS	Notices to Airmen
POH	Pertinent Pilot's Operating Handbooks
RFM	Rotorcraft Flight Manual
Other	Navigation Charts

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

The Objective includes:

1. Specifically what the applicant should be able to do;
2. Conditions under which the TASK is to be performed; and
3. Acceptable performance standards.

Abbreviations

ADM	Aeronautical Decision Making
AGL	Above Ground Level
AMEL	Aeroplane Multi Engine Land
AMES	Aeroplane Multi Engine Sea
ASEL	Aeroplane Single Engine Land
ASES	Aeroplane Single Engine Sea
ASOS	Automated Surface Observing System
ATC	Air Traffic Control
ATIS	Automated Terminal Information System
ATS	Air Traffic Service
AWOS	Automated Weather Observing System
CARS	Civil Aviation Regulations Suriname
CASAS	Civil Aviation Safety Authority Suriname
CFIT	Controlled Flight into Terrain
CRM	Crew Resource Management
ETA	Estimated Time of Arrival
FA	Area Weather Forecast
FAA	Federal Aviation Administration
FDC	Flight Data Center
ILS	Instrument Landing System
MEL	Minimum Equipment List
METAR	Aviation Routine Weather Report
NOTAM	Notice to Airmen
RAIM	Receiver Autonomous Integrity Monitoring
RPM	Revolutions Per Minute
STS	Skill Test Standards
TAF	Terminal Area Forecast
VFR	Visual Flight Rules

Use of Skill Test Standards

The Private Pilot Licence, Helicopter Category Skill Test Standards are designed to evaluate competency in both knowledge and skill.

The CASAS requires that all skill tests be conducted in accordance with the appropriate skill test standards and the policies set forth therein. Applicants shall be evaluated in ALL TASKS included in each AREAS OF OPERATION of the appropriate skill test standard, unless otherwise noted.

An applicant who holds at least a private pilot licence seeking an additional rotorcraft 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 applicant's competence in the remaining AREAS OF OPERATION and TASKS may be conducted.

If the applicant holds two or more category or class ratings at the private level, and the ratings 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.

In preparation for each skill test, the examiner shall develop a written "plan of action." The "plan of action" shall include all TASKS in each AREA OF OPERATION, unless noted otherwise. If the elements in one TASK have already been evaluated in another TASK, they need not be repeated. For example, the "plan of action" need not include evaluating the applicant on complying with markings, signals, and clearances at the end of the flight, if that element was sufficiently observed at the beginning of the flight.

The "plan of action" shall incorporate one or more scenarios that will be used during the practical 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 practical test shall be evaluated in its entirety.***

The examiner is not required to follow the precise order in which the AREAS OF OPERATION and TASKS appear in this 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, Radio Communications and ATS Light Signals may be combined with Traffic Patterns. The examiner's "plan of action" shall include the order and combination of TASKS to be demonstrated by the applicant in a manner that will result in an efficient and valid test.

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 manoeuvre.

Special Emphasis Areas

Examiners shall place special emphasis upon areas of aircraft operations considered critical to flight safety. Among these are:

1. Positive aircraft control;
2. Procedures for positive exchange of the flight controls (who is flying the helicopter);
3. Collision avoidance;
4. Wake turbulence avoidance;
5. Runway incursion avoidance;
6. Controlled flight into terrain (CFIT);
7. Wire strike avoidance;
8. Aeronautical decision making (ADM) and risk management;
9. Checklist usage; and
10. Other areas deemed appropriate to any phase of the skill test.

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.

Skill Test Prerequisites: Private Pilot Licence: Helicopter Category

An applicant for the Private Pilot Licence: Helicopter Category Skill Test is required by CARS 2.3.3.2 to:

1. Be at least 17 years of age;
2. Be able to speak and understand the English language used for radio telephony communications in SURINAME;
3. Hold a current Class 2 Medical Certificate as issued under CARS 2.3.3.2.
4. Have passed the appropriate private pilot knowledge test since the beginning of the 24th month before the month in which he or she takes the skill test;
5. Have completed the experience and flight instruction requirements appropriate to the aircraft category;
6. Have received an endorsement from an authorized instructor who certifies the applicant is prepared for the required skill test; and
7. Have an endorsement certifying that the applicant has demonstrated satisfactory knowledge of the subject areas in which the applicant was deficient on the airman knowledge test.

Skill Test Prerequisites: Helicopter Category Added Rating

An applicant for a helicopter category added rating is required by CARS 2.3.2.2(c) to:

1. Meet the requirements of CARS Part 2 appropriate to the privileges for which the category rating is sought;
2. Have an endorsement in his/her logbook or training record from an authorised instructor that the applicant has been found competent in the required aeronautical knowledge and flight instruction areas;
3. Pass the required knowledge test unless the applicant holds an aeroplane, powered-life or airship category rating on either a private or commercial pilot licence; and
4. Pass the required skill test for the category, and if applicable, class rating being sought.

Aircraft and Equipment Required for the Skill Test

The private pilot Helicopter applicant is required by CARS Part 2 to provide an airworthy, licensed aircraft for use during the skill test. The appendix further requires that the aircraft must:

1. Be of National, 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 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 skill test.

Flight Instructor Responsibility

An appropriately rated flight instructor is responsible for training the private pilot applicant to acceptable standards in **ALL** subject matter areas, procedures, and manoeuvres included in the TASKS within each AREA OF OPERATION in the appropriate private pilot skill test standard.

Because of the impact of their teaching activities in developing safe, proficient pilots, flight instructors should exhibit a high level of knowledge, skill, and the ability to impart that knowledge and skill to students. Additionally, the flight instructor must certify that the applicant is able to perform safely as a private pilot and is competent to pass the required skill test.

Throughout the applicant's training, the flight instructor is responsible for emphasizing the performance of effective visual scanning and collision avoidance , and runway incursion avoidance procedures. These areas are covered, in part, in FAA AC 90-48, Pilot's Role in Collision Avoidance; FAA-H-8083-25, Pilot's Handbook of Aeronautical Knowledge; and the Aeronautical Information Manual.

Examiner¹ Responsibility

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 practical test, this becomes an ongoing process throughout the test. Oral questioning, to determine the applicant's knowledge of TASKS and related safety factors, should be used judiciously at all times, especially during the flight portion of the skill test.

Examiners shall test to the greatest extent practicable the applicant's correlative abilities rather than mere rote enumeration of facts throughout the skill test.

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 certification process.

Throughout the flight portion of the skill test, the examiner shall evaluate the applicant's use of visual scanning, collision and runway incursion avoidance procedures.

¹ The word 'examiner' denotes either the CASAS inspector or CASAS designated pilot examiner who conducts the skill test.

Satisfactory Performance

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

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 judgment and ADM; and
5. Demonstrate single-pilot competence if the aircraft is type certificated for single-pilot operations.

Unsatisfactory Performance

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.

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.

Typical areas of unsatisfactory performance and grounds for disqualification are:

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

When a notice of disapproval is issued, the examiner shall record the applicant's unsatisfactory performance in terms of the AREA(S) 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, Manoeuvring During Slow Flight, failure to use proper collision avoidance procedures.

Discontinuance of a Skill Test

When a skill test is discontinued for reasons other than unsatisfactory performance (i.e., equipment failure, weather, or illness) CASAS, 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 certification file.

Aeronautical Decision Making and Risk Management

The examiner shall evaluate the applicant's ability throughout the practical 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.

The applicant's ability to utilize 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 practical test.

Crew Resource Management (CRM)

CRM refers to the effective use of all available resources; human resources, hardware, and information. Human resources includes all other groups routinely working with the cockpit crew (or pilot) who are involved in decisions that are required to operate a flight safely. These groups include, but are not limited to: flight operations officers, cabin crewmembers, 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 practical test standard as applied to the single pilot or the multicrew operation. CRM competencies, grouped into three clusters of observable behavior, are:

1. COMMUNICATIONS PROCESSES AND DECISIONS
 - a. Briefing
 - b. Inquiry/Advocacy/Assertiveness
 - c. Self-Critique
 - d. Communication with Available Personnel Resources
 - e. Decision Making

2. BUILDING AND MAINTENANCE OF A FLIGHT TEAM

- a. Leadership/Followership
- b. Interpersonal Relationships

3. WORKLOAD MANAGEMENT AND SITUATIONAL AWARENESS

- a. Preparation/Planning
- b. Vigilance
- c. Workload Distribution
- d. Distraction Avoidance
- e. Wake Turbulence Avoidance

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, may be found in FAA AC 120-51, Crew Resource Management Training, as amended. These markers consider the use of various levels of automation in flight management systems.

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 are dependent upon the composition of the crew.

How the Examiner Applies CRM

Examiners are required to exercise proper CRM competencies in conducting tests as well as expecting the same from applicants.

Pass/Fail judgments based solely on CRM issues must be carefully chosen since they may be entirely subjective. Those Pass/Fail judgments which are not subjective apply to CRM-related procedures in CASAS-approved operations manuals that must be accomplished, such as briefings to other crewmembers. 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.

NOTE: 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 takeoff/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

takeoff, 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 crewmembers during the takeoff/SID and approach/landing. If the first takeoff/departure and approach/landing briefings are satisfactory, the examiner may allow the applicant to brief only the changes, during the remainder of the flight.

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 emphasized in multi-crewmember operations except that only one crewmember (the pilot) is involved. Human resources "...includes 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 practical test standard as applied to single-pilot operation.

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 impractical, 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.

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 applicant's ability to utilize proper control technique while dividing attention both inside and/or outside the cockpit, the examiner shall cause realistic distractions during the flight portion of the skill test to evaluate the applicant's ability to divide attention while maintaining safe flight.

Positive Exchange of Flight Controls

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.

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.

SECTION TWO

APPLICANT'S SKILL TEST CHECKLIST (HELICOPTER)

APPOINTMENT WITH EXAMINER:

EXAMINER'S NAME: _____

LOCATION: _____

DATE/TIME: _____

I. ACCEPTABLE AIRCRAFT

- Aircraft Documents:
 - Airworthiness Licence
 - Registration Licence
 - Operating Limitations
- Aircraft Maintenance Records:
 - Logbook Record of Airworthiness Inspections and AD Compliance
- Pilot's Operating Handbook, CASAS-Approved Helicopter Flight Manual

II. PERSONAL EQUIPMENT

- View-Limiting Device
- Current Aeronautical Charts
- Computer and Plotter
- Flight Plan Form
- Flight Logs
- Current and Appropriate Flight Information Publications

III. PERSONAL RECORDS

- Identification-Photo/Signature ID
- Pilot Licence Currently Held
- Current and Appropriate Medical Certificate
- Completed CASAS Form PEL002, Application For Flight Crew Licence, Rating, Authorization or Validation Certificate with authorized instructor's signature (If applicable)
- Original Aviation Knowledge Test Report
- Pilot Logbook or Aviation Training Organization (ATO) document containing an authorized instructor's endorsement certifying the applicant is prepared for the required skill test.
- CASAS Form PEL004, Notice of Disapproval (if applicable)
- Examiner's Fee (if applicable)

EXAMINER'S SKILL TEST CHECKLIST: HELICOPTER

APPLICANT'S NAME: _____

LOCATION: _____

DATE/TIME: _____

A. APPLICANT'S CREDENTIALS, DOCUMENTATION AND RECORDS

- Identification - Photo/Signature ID
- Pilot Licence, if applicable
- Current Second Class Medical Certificate
- Completed CASAS Form PEL002, Application for Flight Crew Licence, Rating, Authorization or Validation Certificate with Authorized Instructor's Signature (if applicable)
- Current Aviation Knowledge Test Report, if applicable
- (Pilot) Logbook with appropriate Instructor endorsements, if applicable, or other appropriate documentation, as applicable
- CASAS PEL004, Notice of Disapproval (if applicable)
- Approved Training Organization (ATO) Graduation Certificate (if applicable)
- Examiner's Fee (if applicable)

B. ACCEPTABLE AIRCRAFT AND/OR SIMULATION DEVICE

- Approved Simulation Device
- Approved Aircraft, with appropriate documents and manuals, as approved by the Director

Additional Rating Task Table

Addition of a Rotorcraft/Helicopter rating to an existing Private Pilot Certificate									
Area of Operation	Required TASKS are indicated by either the TASK letter(s) that apply(s) or an indication that all or none of the TASKS must be tested.								
PRIVATE PILOT RATING(S) HELD									
	ASEL	ASES	AMEL	AMES	RG	Non-Power Glider	Power Glider	Free Balloon	Airship
I	E,F,G	E,F,G	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	ALL	ALL
III	B,C	B,C	B,C	B,C	ALL	ALL	ALL	ALL	B,C
IV	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
V	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
VI	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
VII	NONE	NONE	NONE	NONE	B	B,C,D	B,C,D	B,C,D	NONE
VIII	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL
IX	NONE	NONE	NONE	NONE	NONE	ALL	ALL	ALL	ALL
X	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL

SKILL TEST STANDARDS AREAS OF OPERATION

I. PREFLIGHT PREPARATION

- A. Licences and Documents
- B. Airworthiness Requirements
- C. Weather Information
- D. Cross-Country Flight Planning
- E. National Airspace System
- F. Performance and Limitations
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- A. Preflight Inspection
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- D. Before Takeoff Check

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- A. Radio Communications and ATS Light Signals
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- 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 MANOEUVRES

- A. Rapid Deceleration
- B. Straight in Autorotation
- C. 180° Autorotation

VII. NAVIGATION

- A. Pilotage and Dead Reckoning
- B. Navigation Systems 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

- Night Preparation

X. POSTFLIGHT PROCEDURES

- A. After Landing and Securing

I. AREA OF OPERATION: PREFLIGHT PREPARATION

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

A. TASK: LICENCES AND DOCUMENTS

REFERENCES: CARS Parts 2, 5, and 8; POH/RFM; FAA-H-8083-21; FAA-H-8083-25.

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

1. Explaining-
 - a. Private pilot licence privileges, limitations, and recent flight experience requirements.
 - b. Medical licence class and duration.
 - c. Pilot logbook or flight records.

2. Locating and explaining-
 - a. Airworthiness and registration licences.
 - b. Operating limitations, placards, instrument markings, and POH/RFM.
 - c. Mass and balance data and equipment list.

B. TASK: AIRWORTHINESS REQUIREMENTS

REFERENCES: CARS Part 8; FAA-H-8083-21.

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: CARS Part 8; AIP; FAA-H-8083-25; FAA AC 00-6.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to weather information by analyzing weather reports, charts, and forecasts from various sources with emphasis on-
 - a. METAR, TAF, and FA.
 - b. Surface analysis chart.
 - c. Radar summary chart.
 - d. Winds and temperature aloft chart.
 - e. Significant weather prognostic charts.
 - f. Automated Aviation Weather Reports and Terminal Information Service

2. Makes a competent "go/no-go" decision based on available weather information.

D. TASK: CROSS-COUNTRY FLIGHT PLANNING

REFERENCES: CARS Part 8; AIP, NOTAMS, Navigation Charts, AFD; FAA-H-8083-25.

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 most favourable altitudes considering weather conditions and equipment capabilities.
6. Computes headings, flight time, and fuel requirements.
7. Selects appropriate navigation system/facilities and communication frequencies.
8. Applies pertinent information from NOTAMs, AFD, and other flight publications.
9. Completes a navigation log and simulates filing a VFR flight plan.

E. TASK: NATIONAL AIRSPACE SYSTEM

REFERENCES: CARS Part 8, AIP; Navigation Charts.

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

1. Basic VFR weather minimums-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 G.
3. Special use and other airspace areas.

F. TASK: PERFORMANCE AND LIMITATIONS

REFERENCES: POH; RFM; FAA-H-8083-1; FAA-H-8083-21.

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 mass and balance. Determines the computed mass and centre of gravity is within the helicopter's operating limitations and if the mass and centre of gravity will remain within limits during all phases of flight.
3. Demonstrates use of the 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/antitorque effectiveness (unanticipated yaw).

G. TASK: OPERATION OF SYSTEMS

REFERENCES: POH; RFM; FAA-H-8083-21

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 Antitorque.
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 carburetor heat, if applicable.
10. Avionics Equipment.

H. TASK: AEROMEDICAL FACTORS

REFERENCES: National Aeromedical Publications; FAA-H-8083-25

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 medications.
3. The effects of excesses nitrogen during scuba dives upon a pilot or passenger in flight.

II. AREA OF OPERATION: PREFLIGHT PROCEDURES

REFERENCES: POH; RFM; FAA-H-8083-21

A. TASK: PREFLIGHT INSPECTION

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to preflight 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: CARS Part 8; 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. Organizes material and equipment in an efficient manner so they are readily available.
4. Briefs 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; FAA-H-8083-21; FAA AC 91-42.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to recommended engine starting procedures. This shall include the use of an external power source and 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. Utilizes the appropriate checklist for starting procedure.

D. TASK: BEFORE TAKEOFF CHECK

REFERENCES: POH; RFM; FAA-H-8083-21.

Objective. To determine that the applicant:

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

III. AREA OF OPERATION: AERODROME AND HELIPORT OPERATIONS

REFERENCES: CARS Part 8; AIP; FAA-H-8083-25

A. TASK: RADIO COMMUNICATIONS AND ATC LIGHT SIGNALS

Objective. To determine that the applicant:

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

B. TASK: TRAFFIC PATTERNS

REFERENCES: CARS Part 8, AIP; POH; RFM; FAA-H-8083-21

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 the proper ground track.
5. Maintains orientation with the runway/landing area in use.
6. Maintains traffic pattern altitude, ± 100 feet (30 meters), and the appropriate airspeed, ± 10 knots.

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

REFERENCES: CARS Part 8, AIP; FAA-H-8083-25

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 TAKEOFF AND LANDING

REFERENCES: POH; RFM; FAA-H-8083-21; FAA AC 90-95.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a vertical takeoff 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/antitorque 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; RFM; FAA-H-8083-21

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 toward 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. Recognizes 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 stabilized 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; RFM; AIP; FAA-H-8083-21.

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/antitorque 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 positive control while lowering the downslope skid or landing gear to touchdown.
7. Maintains appropriate speed for existing conditions.
8. Stops helicopter within 4 feet of a specified point.
9. Maintains specified track within ± 4 feet.

D. TASK: HOVER TAXI

REFERENCES: POH; RFM; AIP; FAA-H-8083-21.

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; RFM; AIP; FAA AC 90-95

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/antitorque effectiveness.
6. Maintains a specified altitude, ± 10 feet.

V. AREA OF OPERATION: TAKEOFFS, 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 TAKEOFF AND CLIMB

REFERENCES: POH; RFM; FAA-H-8083-21

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

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a normal and crosswind takeoff and climb, including factors affecting performance, to include height/velocity information.
2. Establishes a stationary position on the surface or a stabilized hover, prior to takeoff in headwind and crosswind conditions.
3. Maintains RPM within normal limits.
4. Accelerates to manufacturer's 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

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

REFERENCES: POH; RFM; FAA-H-8083-21.

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a 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 stabilized hover, ± 4 feet.
10. Completes the prescribed checklist, if applicable.

C. TASK: MAXIMUM PERFORMANCE TAKEOFF AND CLIMB

REFERENCES: POH; RFM; FAA-H-8083-21

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a maximum performance takeoff and climb.
2. Considers situations where this manoeuvre is recommended and factors related to takeoff and climb performance, to include height/velocity information.
3. Maintains RPM within normal limits.
4. Utilizes proper control technique to initiate takeoff and forward climb airspeed attitude.
5. Utilizes the maximum available takeoff 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; RFM; FAA-H-8083-21

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 stabilized hover, ± 4 feet.

E. TASK: ROLLING TAKEOFF

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

REFERENCES: POH; RFM; FAA-H-8083-21

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to a rolling takeoff.
2. Considers situations where this manoeuvre is recommended and factors related to takeoff and climb performance, to include height/velocity information.
3. Maintains RPM within normal limits.
4. Utilizes proper preparatory technique prior to initiating takeoff.
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; RFM; FAA-H-8083-21

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 takeoff point, considers factors affecting takeoff and climb performance under various conditions.

G. TASK: PINNACLE/PLATFORM OPERATIONS

REFERENCES: POH; RFM; FAA-H-8083-21

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 takeoff point, considers factors affecting takeoff and climb performance under various conditions.

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

REFERENCES: POH; RFM; FAA-H-8083-21

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. Utilizes proper flight control technique after surface contact.
9. Completes the prescribed checklist, if applicable.

I. TASK: GO-AROUND

REFERENCES: POH; RFM; FAA-H-8083-21

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; RFM; FAA-H-8083-21

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; RFM; FAA-H-8083-21

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. Utilizes 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; RFM; FAA-H-8083-21

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. Utilizes 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

REFERENCES: FAA-H-8083-25; FAA AC 61-84

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's 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

REFERENCES: FAA-H-8083-25; AIP: Navigation Equipment Operations Manuals; FAA AC 61-84.

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's position using the navigation system..
4. Intercepts and tracks a given course, radial or bearing, as appropriate.
5. Recognizes and describes the indication of station or waypoint passage, if appropriate.
6. Recognizes signal loss and takes appropriate action.
7. Uses proper communication procedures when utilizing radar services.
8. Maintains the appropriate altitude, ± 200 feet and headings $\pm 15^\circ$.

C. TASK: DIVERSION

REFERENCES: FAA-H-8083-21; AIP

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 toward 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

REFERENCES: FAA-H-8083-21; AIP

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; RFM; FAA-H-8083-21

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; RFM; FAA-H-8083-21

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 MALFUNCTION

REFERENCES: POH; RFM; FAA-H-8083-21

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to causes, indications, and pilot actions for various systems and equipment malfunctions.
2. Analyzes the situation and takes action, appropriate to the helicopter used for the practical test, in at least three of the following areas—
 - a. engine/oil and fuel.
 - b. hydraulic, if applicable.
 - c. electrical.
 - d. carburetor or induction icing.
 - e. smoke and/or fire.
 - f. flight control/trim.
 - g. pitot static/vacuum and associated flight instruments, if applicable.
 - h. rotor and/or antitorque.
 - 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; FAA-H-8083-21

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 manufacturer's recommended altitude, whichever is higher.
3. Promptly recognizes and recovers at the onset of settling-with-power.
4. Utilizes the appropriate recovery procedure.

E. TASK: LOW ROTOR RPM RECOVERY

REFERENCES: POH; RFM; Appropriate Manufacturer's Safety Notices; FAA-H-8083-21

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.

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. Utilizes the appropriate recovery procedure.

F. TASK: ANTITORQUE SYSTEM FAILURE

REFERENCES: POH; RFM; FAA-H-8083-21

Objective. To determine that the applicant:

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

G. TASK: DYNAMIC ROLLOVER

REFERENCES: POH; RFM; FAA-H-8083-21

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 antitorque thrust, crosswind, slope, CG, cyclic, and collective pitch control in contributing to dynamic rollover.
3. Explains preventive flight technique during takeoffs, landings, and slope operations.

H. TASK: GROUND RESONANCE

REFERENCES: POH; RFM; FAA-H-8083-21

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 takeoffs and landings.

I. TASK: LOW G CONDITIONS

REFERENCES: POH; RFM; FAA-H-8083-21

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to low G conditions.
2. Understands and recognizes the conditions that contribute to low G conditions.
3. Explains proper recovery procedures.

J. TASK: EMERGENCY EQUIPMENT AND SURVIVAL GEAR

REFERENCES: POH; RFM; FAA-H-8083-21

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 OPERATIONS

A. TASK: NIGHT PREPARATION

REFERENCES: POH; RFM; FAA-H-8083-21; FAA-H-8083-25

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: POSTFLIGHT PROCEDURES

A. TASK: AFTER LANDING AND SECURING

REFERENCES: POH; RFM; FAA-8083-21

Objective. To determine that the applicant:

1. Exhibits knowledge of the elements related to after-landing, parking and securing procedures.
2. Minimizes 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 postflight inspection and secures the aircraft.

Appendix 1

STS TASKS PERMITTED IN FLIGHT SIMULATION TRAINING DEVICES

A. CONDITIONS OF FSTD USE

Examiners conducting flight engineer practical tests with FSTDs should consult appropriate documentation to ensure that the device has been approved for training and checking the TASKS in question. 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 CASAS. The device must continue to meet the qualification standards through continuing evaluations as outlined in the appropriate advisory material. For flight simulation training devices, ICAO Document 9625, Manual of Criteria for the Qualification of Flight Simulators, will be used.
2. The CASAS must approve the device for specific TASKS.
3. The device must continue to support the level of student 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.

B. USE OF CHART

X	Creditable
X1	Creditable only if accomplished in conjunction with a running takeoff or running landing, as appropriate

NOTE:

1. The Helicopter may be used for all TASKS
2. Level C FSTDs may be used as indicated only if the applicant meets established prerequisite experience requirements.

C. CHART – TASK AND FSTD LEVEL

Area of Operations/TASK	FSTD LEVEL	
	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

