

AIRLINE TRANSPORT PILOT Skill Test Standards

for

Helicopter



January 2009



Paramaribo, January 20th, 2009

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Decision Director CASAS

Subject: The Airline Transport Pilot Skill Test Standards for Helicopter

FOREWORD

The Airline Transport Pilot Skill Test Standards for Helicopter book has been published by the CASAS to establish the standards for the Airline Transport Pilot 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 in SKILL TEST preparation.

/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 airline transport pilot—helicopter (ATPL-H) 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 or rating. 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 airline transport pilot applicants.***

Skill Test Book Description

This test book contains the Airline Transport pilot STS for helicopter. The Airline Transport Pilot Helicopter STS includes the AREAS OF OPERATION and TASKS for the issuance of an initial airline transport 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, some of which have been adopted in cooperation with the FAA.

CARS Part 2	Personnel Licensing
CARS Part 8	Operations
FAA-H-8083-15	Instrument Flying Handbook
FAA-H-8083-21	Rotorcraft Flying Handbook
FAA AC 00-6	Aviation Weather
FAA AC 00-45	Aviation Weather Services
FAA AC 60-22	Aeronautical Decision Making
FAA AC 61-84	Role of Preflight Preparation
FAA AC 120-51	Crew Resource Management Training
FAA AC 120-63	Helicopter Simulator Qualification
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
FSB Reports	FAA Flight Standardization Board reports
AFD	Airport Facility Directory
AIM	Aeronautical Information Manual – United States
IAP	Instrument Approach Procedures Charts
NOTAMS	Notices to Airmen
POH	Pertinent Pilot's Operating Handbooks
RFM	Rotorcraft Flight Manual
SID	Standard Instrument Departure
STAR	Standard Terminal Arrivals

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 Airline Transport Pilot Skill Test Standards have been designed to evaluate competency in both knowledge and skill. These tasks apply to the applicant who seeks an airline transport pilot license, the addition of a category, class, or aircraft type rating on that license; and to the applicant who holds a private or commercial pilot licence (must have proper category/class rating) and is seeking the addition of an aircraft type rating on that licence.

With certain exceptions, some described by NOTES, all TASKS are required. However, when a particular ELEMENT is not appropriate to the aircraft or its equipment, that ELEMENT, at the discretion of the examiner, may be omitted. Examples of ELEMENT exceptions are integrated flight systems for aircraft not so equipped, operation of landing gear in fixed gear aircraft, multiengine tasks in single-engine aircraft, or other situations where the aircraft operation is not compatible with the requirement of the ELEMENT.

Examiners must develop a written plan of action that includes the order and combination of TASKS to be demonstrated by the applicant in a manner that results in an efficient and valid test. Although TASKS with similar Objectives may be combined to conserve time, the Objectives of all TASKS must be demonstrated and evaluated at some time during the skill test. It is of utmost importance that the examiner accurately evaluate the applicant's ability to perform safely as a pilot. The examiner may simulate/act as air traffic control (ATC) while conducting the skill test.

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. Use of available automation;
6. Communication management;
7. Crew resource management;
8. Aeronautical decision making and risk management; and
9. 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. The examiner's role regarding ATC, crew resource management, and the duties and

responsibilities of the examiner through all phases of the skill test must be explained to and understood by the applicant, prior to the test.

Skill Test Prerequisites: Airline Transport Pilot Helicopter

An applicant for the Airline Transport Pilot Helicopter Skill Test is required by CARS Part 2: 2.3.3.4; 2.3.3.4.2; and Implementing Standards (IS)

2.2.1, 2.2.4.3, 2.3.1.7, 2.3.3.4.4.2, and 2.10.1.8 to:

1. Be at least 21 years of age;
2. Demonstrate the ability to speak and understand the English language used for radio telephony communications in SURINAME;
3. Have passed the appropriate airline transport pilot knowledge test since the beginning of the 24th month before the month in which he or she takes the skill test;
4. Have satisfactorily accomplished the required training and obtained the aeronautical experience prescribed;
5. Possess a current Class 1 medical certificate;
6. Have an endorsement from an authorized instructor certifying that the applicant has received and logged training time in preparation for the skill test, and is prepared for the skill test; and
7. Also 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: 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 authorized 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 sought.

Skill Test Prerequisites: Type Rating

An applicant for an aircraft type rating skill test is required by CARS 2.3.2.4 to:

1. Hold or concurrently obtain an instrument rating that is appropriate to the aircraft category or class rating sought;
2. Have an endorsement in his or her logbook or training record from an authorised instructor that the applicant has been competent in the required aeronautical knowledge and flight instruction areas;
3. Pass the required knowledge test unless the applicant holds an aeroplane, helicopter, powered-lift or airship category rating on their pilot licence;
4. Pass the required knowledge and skill test at the airline transport pilot licence level, applying crew resource management concepts, applicable to the aircraft category, class and type rating being sought;
5. Applicants seeking a private or commercial licence in an aircraft that requires a type rating shall also complete the applicable portions of either the PPL or CPL skill test in conjunction with the ATPL skill test.
6. Perform the skill test under instrument flight rules unless the aircraft used for the skill test is not capable of the instrument manoeuvres and procedures required for the skill test in which case the applicant may obtain a type rating limited to VFR only and remove the VFR only limitation for each aircraft type in which the applicant demonstrates compliance with the ATPL skill test under normal conditions.

An applicant for a Type Rating limited to VFR shall be tested in the areas of

Aircraft and Equipment Required for the Skill Test

The applicant for a skill test is required to provide an appropriate and airworthy aircraft for use during the skill test.

The CARS further require 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.

NOTE: The skill test must be performed in actual or simulated instrument conditions, unless the skill test cannot be accomplished under instrument flight rules because the aircraft's type certificate makes the aircraft incapable of operating under instrument flight rules.

Use of CASAS-Approved Flight Simulation Training Device

CARS 2.2.6.3

In the AREA OF OPERATION labelled "PREFLIGHT PREPARATION," the TASKS are knowledge only. These TASKS do not require the use of a flight simulation training device (FSTD) or an aircraft to accomplish, but they may be used.

Each inflight manoeuvre or procedure must be performed by the applicant in an FSTD or an aircraft. Appendix 1 of this practical test standard should be consulted to identify the manoeuvres or procedures that may be accomplished in an FSTD or flight simulator. The level of FSTD or flight simulator required for each manoeuvre or procedure will also be found in appendix 1.

When accomplished in an aircraft, certain task elements may be accomplished through "simulated" actions in the interest of safety and practicality, but when accomplished in an FSTD these same actions would not be "simulated." For example, when in an aircraft, a simulated engine fire may be addressed by retarding the throttle to idle, simulating the shutdown of the engine, simulating the discharge of the fire suppression agent, and simulating the disconnection of associated electrics, hydraulics, pneumatics, etc. However, when the same emergency condition is addressed in an FSTD or a flight simulator, all TASK elements must be accomplished as would be expected under actual circumstances. Similarly, safety of flight precautions taken in the aircraft for the accomplishment of a specific manoeuvre or procedure (such as altitude in powerplant failure, setting maximum airspeed for a rejected takeoff) need not be taken when an FSTD or a flight simulator is used.

It is important to understand that whether accomplished in an FSTD, a flight simulator, or the aircraft, all TASKS and TASK elements for each manoeuvre or procedure will have the same performance criteria applied for determination of overall satisfactory performance.

Flight Instructor Responsibility

An appropriately rated flight instructor is responsible for training the airline transport 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 airline transport pilot skill test standards.

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.

Throughout the applicant's training, the flight instructor is responsible for emphasizing the performance of effective visual scanning, collision avoidance, and runway incursion avoidance procedures.

Examiner 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 AREAS OF OPERATION in 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. 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.

For aircraft requiring only one pilot, the examiner may not assist the applicant in the management of the aircraft, radio communications, tuning and identifying navigational equipment, and using navigation charts. If the examiner is qualified and current in the specific make and model aircraft that is certified for two or more crewmembers, he or she may occupy a duty position. If the examiner occupies a duty position on an aircraft that requires that requires two or more crewmembers, the examiner must fulfil the duties of that position. Moreover, when occupying a required duty position, the examiner shall perform crew resource management functions as briefed and requested by the applicant.

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

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

Consistently exceeding tolerances stated in the TASK Objective, or failure to take prompt, corrective action when tolerances are exceeded, is indicative of unsatisfactory performance. The tolerances represent the performance expected in good flying conditions. Any action, or lack thereof, by the applicant which requires corrective intervention by the examiner to maintain safe flight shall be disqualifying.

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.

NOTE: It is vitally important that the applicant, safety pilot, and examiner use proper and effective scanning techniques to observe all other traffic in the area to ensure the area is clear before performing any manoeuvres.

If, in the judgment of the examiner, the applicant's performance of any TASK is unsatisfactory, the associated AREA OF OPERATION is failed and therefore, the skill test is failed. Examiners shall not repeat TASKS that have been attempted and failed. The examiner or applicant may discontinue the test at any time after the failure of a TASK which makes the applicant ineligible for the licence or rating sought. The skill test will be continued only with the consent of the applicant. In such cases, it is usually better for the examiner to continue with the skill test to complete the other TASKS. If the examiner determines that the entire skill test must be repeated, the skill test should not be continued but should be terminated immediately. If the skill test is either continued or discontinued, the applicant is entitled to credit for those AREAS OF OPERATION satisfactorily performed, if

the remainder of the skill test is completed within 60 days of when the skill test was discontinued. However, during the retest and at the discretion of the examiner, any AREA OF OPERATION may be re-evaluated including those previously passed. Whether the remaining parts of the practical test are continued or not after a failure, a notice of disapproval must be issued.

When 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 or practice is permitted during the certification process. When practical, the remaining TASKS of the skill test phase should be completed before repeating the questionable TASK. If the second attempt to perform a questionable TASK is not clearly satisfactory, the examiner shall consider it unsatisfactory.

If the skill test must be terminated for unsatisfactory performance and there are other AREAS OF OPERATION which have not been tested or still need to be repeated, a notice of disapproval shall be issued listing the specific AREAS OF OPERATION which have not been successfully completed or tested.

This STS uses the terms "AREA OF OPERATION" and "TASK" to denote areas in which competency must be demonstrated. When a notice of disapproval is issued, the examiner shall record the applicant's unsatisfactory performance in terms of the AREA OF OPERATION and specific TASK(S) not meeting the standard appropriate to the skill test conducted. The AREA(S) OF OPERATION/TASK(S) not tested and the number of skill test failures shall also be recorded.

If the applicant fails the skill test because of a special emphasis area, the Notice of 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 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 TASK's 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 behaviour, 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: flight operations officers, 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 training, there must always be a clear understanding between students and flight instructors 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 the instructor wishes the student to take control of the aircraft, he or she will say, "You have the flight controls." The student acknowledges immediately by saying, "I have the flight controls." The flight instructor again says, "You have the flight controls." When control is returned to the instructor, 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 _____

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,
CASAS-Approved Helicopter Flight Manual

PERSONAL EQUIPMENT

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

Appropriate Publications:

- Current AIP (applicable portions),
- Airport Facility Directory

PERSONAL RECORDS

Identification - Photo/Signature ID
Pilot Licence
Current and Appropriate Medical Certificate
Completed Airman Licence and/or Rating Application with
Instructor's Signature (if applicable)
Airman Written Test Report, if applicable
Pilot Logbook with Appropriate Instructor Endorsements
Notice of Disapproval (if applicable)
Approved School Graduation Certificate (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
- Current Medical Certificate of the appropriate level for the privileges sought
- Completed CASAS Form PEL002, Application for Flight Crew Licence, Rating, Authorization or Validation Certificate with Authorized Instructor's Signature
- Current Aviation Knowledge Test Report, if applicable
- Logbook with appropriate Instructor endorsements, if applicable, or other appropriate documentation, as applicable
- CASAS PEL004, Notice of Denial (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

AREAS OF OPERATIONS

I. PREFLIGHT PREPARATION

- A. EQUIPMENT EXAMINATION
- B. PERFORMANCE AND LIMITATIONS

II. PREFLIGHT PROCEDURES

- A. PREFLIGHT INSPECTION
- B. POWERPLANT START
- C. TAXIING
- D. PRE-TAKEOFF CHECK

III. TAKEOFF AND DEPARTURE PHASE

- A. NORMAL AND CROSSWIND TAKEOFF
- B. INSTRUMENT TAKEOFF
- C. POWERPLANT FAILURE DURING TAKEOFF
- D. REJECTED TAKEOFF
- E. INSTRUMENT DEPARTURE

IV. INFLIGHT MANEUVERS

- A. STEEP TURNS
- B. POWERPLANT FAILURE – MULTIENGINE
HELICOPTER
- C. POWERPLANT FAILURE – SINGLE-ENGINE
HELICOPTER
- D. RECOVERY FROM UNUSUAL ATTITUDES
- E. SETTLING WITH POWER

V. INSTRUMENT PROCEDURES

- A. INSTRUMENT ARRIVAL
- B. HOLDING
- C. PRECISION INSTRUMENT APPROACHES
- D. NONPRECISION INSTRUMENT APPROACHES
- E. MISSED APPROACH

VI. LANDINGS AND APPROACHES TO LANDINGS

- A. NORMAL AND CROSSWIND APPROACHES AND
LANDINGS
- B. APPROACH AND LANDING WITH SIMULATED
POWERPLANT FAILURE – MULTIENGINE HELICOPTER
- C. REJECTED LANDING

VII. NORMAL AND ABNORMAL PROCEDURES

- A. NORMAL AND ABNORMAL PROCEDURES

VIII. EMERGENCY OPERATIONS

- A. EMERGENCY PROCEDURES

IX. POST-FLIGHT PROCEDURES

- A. AFTER LANDING PROCEDURES

B. PARKING AND SECURING

APPENDIX 1: STS TASKS PERMITTED IN FSTD

- A. CONDITIONS OF FSTD USE
- B. USE OF CHART
- C. CHART – TASK AND FSTD LEVEL

Added Rating Table?

(Will need to check as this is not in the FAA PTS)

Aircraft Type Ratings Limited to VFR

Pilot applicants who wish to add a type rating, limited to VFR, to their certificate must take a skill test that includes the following items, as listed in Section Two of this document:

Section One: PREFLIGHT PREPARATION

I. AREA OF OPERATION: PREFLIGHT PREPARATION.

- A. Equipment examination.
- B. Performance and limitations.

Section Two: PREFLIGHT PROCEDURES, INFLIGHT MANEUVERS, AND POSTFLIGHT PROCEDURES

II. AREA OF OPERATION: PREFLIGHT PROCEDURES.

- A. Preflight inspection.
- B. Powerplant start.
- C. Taxiing.
- D. Pretakeoff checks.

III. AREA OF OPERATION: TAKEOFF AND DEPARTURE PHASE.

- A. Normal and crosswind takeoff.
- B. Powerplant failure during takeoff. (TASK C)
- C. Rejected takeoff. (TASK D)

IV. AREA OF OPERATION: INFLIGHT MANEUVERS.

- A. Steep turns.
- B. Powerplant failure—multiengine helicopter.
- C. Powerplant failure—single-engine helicopter.
- D. Recovery from unusual attitudes.
- E. Settling-with-power.

V. AREA OF OPERATION: INSTRUMENT PROCEDURES. (Not applicable)

VI. AREA OF OPERATION: LANDINGS AND APPROACHES TO LANDINGS.

- A. Normal and crosswind approaches and landings.
 - B. Approach and landing with simulated powerplant failure—multiengine helicopter.
 - C. Rejected landing.
- VII. AREA OF OPERATION: NORMAL AND ABNORMAL PROCEDURES.
- VIII. AREA OF OPERATION: EMERGENCY PROCEDURES.
- IX. AREA OF OPERATION: POSTFLIGHT PROCEDURES.
- A. After-landing procedures.
 - B. Parking and securing.

I. AREA OF OPERATION: PREFLIGHT PREPARATION

A. TASK: EQUIPMENT EXAMINATION

REFERENCES: CARs Part 2; Pilot's Operating Handbook, RFM.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge appropriate to the helicopter; its systems and components; its normal, abnormal, and emergency procedures; and uses the correct terminology with regard to the following items—
 - a. landing gear—indicators, brakes, tires, nosewheel steering, skids, and shocks.
 - b. powerplant—controls and indications, induction system, carburetor and fuel injection, exhaust and turbocharging, cooling, fire detection/protection, mounting points, turbine wheels, compressors, and other related components.
 - c. fuel system—capacity; drains; pumps; controls; indicators; crossfeeding; transferring; jettison; fuel grade, color and additives; fueling and defueling procedures; and emergency substitutions, if applicable.
 - d. oil system—capacity, grade, quantities, and indicators.
 - e. hydraulic system—capacity, pumps, pressure, reservoirs, grade, and regulators.
 - f. electrical system—alternators, generators, battery, circuit breakers and protection devices, controls, indicators, and external and auxiliary power sources and ratings.
 - g. environmental systems—heating, cooling, ventilation, oxygen and pressurization, controls, indicators, and regulating devices.
 - h. avionics and communications—autopilot; flight director; Electronic Flight Indicating Systems (EFIS); Flight Management System(s) (FMS); Doppler Radar; Inertial Navigation Systems (INS); Global Positioning System (GPS/DGPS/WGPS); VOR, NDB, ILS/MLS, RNAV systems and components; indicating devices; transponder; and emergency locator transmitter.
 - i. ice protection—anti-ice, deice, pitot-static system protection, windshield, airfoil surfaces, and rotor protection.
 - j. crewmember and passenger equipment—oxygen system, survival gear, emergency exits, evacuation procedures and crew duties, and quick donning oxygen mask for crewmembers and passengers.
 - k. main/tail rotor systems—transmissions, gear boxes, oil/fluid levels, tolerances, rotor brake if installed, and limitations.

- I. pitot-static system with associated instruments and the power source for the flight instruments.
2. Exhibits adequate knowledge of the contents of the Pilot's Operating Handbook or RFM with regard to the systems and components listed in paragraph 1 (above); the Minimum Equipment List (MEL), if appropriate; and the Operations Specifications, if applicable.

B. TASK: PERFORMANCE AND LIMITATIONS

REFERENCES: CARS Parts 2 and 8; Pilot's Operating Handbook, RFM.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of performance and limitations, including a thorough knowledge of the adverse effects of exceeding any limitation.
2. Demonstrates proficient use of (as appropriate to the helicopter) performance charts, tables, graphs, or other data relating to items such as—
 - a. takeoff performance—all engines, engine(s) inoperative.
 - b. climb performance—all engines, engine(s) inoperative, and other engine malfunctions.
 - c. service ceiling—all engines, engines(s) inoperative.
 - d. cruise performance.
 - e. fuel consumption, range, and endurance.
 - f. descent performance.
 - g. go-around from rejected landings.
 - h. hovering in and out of ground effect.
 - i. other performance data (appropriate to the helicopter).
3. Describes (as appropriate to the helicopter) the performance airspeeds used during specific phases of flight.
4. Describes the effects of meteorological conditions upon performance characteristics and correctly applies these factors to a specific chart, table, graph or other performance data.
5. Computes the centre-of-gravity location for a specific load condition (as specified by the examiner), including adding, removing, or shifting weight.
6. Determines if the computed centre of gravity is within the forward, aft, and lateral (if applicable) centre-of-gravity limits for takeoff and landing.
7. Demonstrates good planning and knowledge of procedures in applying operational factors affecting helicopter performance.

II. AREA OF OPERATION: PREFLIGHT PROCEDURES

A. TASK: PREFLIGHT INSPECTION

REFERENCES: CARs Parts 2 and 8; Pilot's Operating Handbook, RFM.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of the preflight inspection procedures, while explaining briefly—
 - a. the purpose of inspecting the items which must be checked.
 - b. how to detect possible defects.
 - c. the corrective action to take.
2. Exhibits adequate knowledge of the operational status of the helicopter by locating and explaining the significance and importance of related helicopter documents such as—
 - a. airworthiness and registration certificates.
 - b. operating limitations, handbooks, and manuals.
 - c. minimum equipment list (MEL) (if appropriate).
 - d. weight and balance data.
 - e. maintenance requirements, tests, and appropriate records applicable to the proposed flight or operation; and maintenance that may be performed by the pilot or other designated crewmember.
3. Uses the approved checklist to systematically inspect the helicopter externally and internally.
4. Uses the challenge-and-response (or other approved) method with the other crewmember(s), where applicable, to accomplish the checklist procedures.
5. Verifies the helicopter is safe for flight by emphasizing (as appropriate to the helicopter) the need to look at and explain the purpose of inspecting items such as—
 - a. powerplant, including controls and indicators.
 - b. fuel quantity, grade, type, contamination safeguards, and servicing procedures.
 - c. oil quantity, grade, and type.
 - d. hydraulic fluid quantity, grade, type, and servicing procedures.
 - e. oxygen quantity, pressures, servicing procedures, and associated systems and equipment for crew and passengers.

- f. skid tubes or landing gear, brakes, and steering system, where applicable.
 - g. tires for condition, inflation, and correct mounting, where applicable.
 - h. fire protection/detection systems for proper operation, servicing, pressures, and discharge indications.
 - i. pneumatic system pressures and servicing.
 - j. ground environmental systems for proper servicing and operation.
 - k. auxiliary power unit (APU) for servicing and operation.
 - l. flight control systems including trim, rotor blades, and associated components.
 - m. main rotor and anti-torque systems.
 - n. anti-ice, deice systems, servicing, and operation.
- 6. Coordinates with ground crew and ensures adequate clearance prior to moving any devices such as doors or hatches.
 - 7. Complies with the provisions of the appropriate Operations Specifications, if applicable, as they pertain to the particular helicopter and operation.
 - 8. Demonstrates proper operation and verification of all helicopter systems.
 - 9. Notes any discrepancies, determines if the helicopter is airworthy and safe for flight, or takes the proper corrective action.
 - 10. Checks the general area around the helicopter for hazards to the safety of the helicopter and personnel.

B. TASK: POWERPLANT START

REFERENCES: Part 61; Pilot's Operating Handbook, RFM.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of the correct powerplant start procedures including the use of an external power source, starting under various atmospheric conditions, normal and abnormal starting limitations, and the proper action required in the event of a malfunction.
2. Ensures the ground safety procedures are followed during the before-start, start, and after-start phases.
3. Ensures the use of appropriate ground crew personnel during the start procedures.
4. Performs all items of the start procedures by systematically following the approved checklist items for the before-start, start, and after-start phases.
5. Demonstrates sound judgment and operating practices in those instances where specific instructions or checklist items are not published.

C. TASK: TAXIING

REFERENCES: CARs Part 2; Pilot's Operating Handbook, RFM.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of safe and appropriate taxi procedures.
2. Demonstrates proficiency by maintaining correct and positive helicopter control such as hover height (when within 10 feet of the surface, maintains $\pm\frac{1}{2}$ of the hover altitude; when above 10 feet, maintains ± 5 feet of the hovering altitude), turns, and speed. This includes hovering taxi (maintains within 2 feet of desired track), air taxiing (maintains altitude within 10 feet of desired); and in helicopters with wheels, includes ground taxiing. In helicopters equipped with float devices, this includes water taxiing, approaching a buoy, and docking.
3. Maintains proper spacing on other aircraft and persons taking into consideration rotorwash and flying debris. Avoids conditions that may cause loss of tail rotor/antitorque effectiveness.
4. Accomplishes the applicable checklist items and performs recommended procedures.
5. Maintains desired and appropriate track and speed.
6. Complies with instructions issued by ATC (or the examiner simulating ATC).

7. Observes runway hold lines, localizer and glide slope critical areas, and other surface control markings and lighting.
8. Maintains constant vigilance and control of the helicopter during taxi operation.

D. TASK: PRETAKEOFF CHECKS

REFERENCES: CARs Part 2; Pilot's Operating Handbook, RFM.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of the pretakeoff checks by stating the reason for checking the items outlined on the approved checklist and explaining how to detect possible malfunctions.
2. Divides attention inside and outside cockpit.
3. Ensures that all systems are within their normal operating range prior to beginning, during the performance of, and at the completion of those checks required by the approved checklist.
4. Explains, as may be requested by the examiner, any normal or abnormal system operating characteristic or limitation; and the corrective action for a specific malfunction.
5. Determines if the helicopter is safe for the proposed flight or requires maintenance.
6. Determines the helicopter's takeoff performance, considering such factors as wind, density altitude, helicopter weight, temperature, pressure altitude, and departure route or routing.
7. Determines airspeeds/V-speeds and properly sets all instrument references, flight director and autopilot controls, and navigation and communications equipment.
8. Reviews procedures for emergency and abnormal situations which may be encountered during takeoff, and states the corrective action required of the pilot in command and other concerned crewmembers.
9. Obtains and correctly interprets the takeoff and departure clearance as issued by ATC.

III. AREA OF OPERATION: TAKEOFF AND DEPARTURE PHASE

A. TASK: NORMAL AND CROSSWIND TAKEOFF

REFERENCES: CARs Part 2; Pilot's Operating Handbook, RFM.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of normal and crosswind takeoffs and climbs including (as appropriate to the helicopter) airspeeds, configurations, and emergency/ abnormal procedures. Performs all required pretakeoff checks as required by the appropriate checklist items.
2. Adjusts the powerplant controls as recommended by the FAA-approved guidance for the existing conditions.
3. Notes any obstructions or other hazards in the takeoff path.
4. Verifies and correctly applies the existing wind component to the takeoff performance.
5. Completes required checks prior to starting takeoff to verify the expected powerplant performance.
6. Aligns the helicopter on the runway centreline, or with the takeoff path.
7. Applies the controls correctly to maintain longitudinal alignment on the centreline of the runway or intended flightpath, prior to initiating and during the takeoff.
8. Sets power smoothly and positively to a predetermined value.
9. Monitors powerplant controls, settings, and instruments during takeoff to ensure all predetermined parameters are met.
10. Accelerates through effective translational lift to normal climb speed.
11. Uses the applicable noise abatement and wake turbulence avoidance procedures, as required.
12. Accomplishes the appropriate checklist items.
13. Maintains the appropriate climb segment airspeed/V-speeds.
14. Maintains the desired heading within $\pm 5^\circ$ and the desired airspeed/V-speed within ± 5 knots.

B. TASK: INSTRUMENT TAKEOFF

REFERENCES: CARS Part 2; FAA-H-8083-15; Pilot's Operating Handbook, RFM, AIM.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of an instrument takeoff with instrument meteorological conditions simulated at or before reaching an altitude of 100 feet (30 meters) AGL. If accomplished in a flight simulator, visibility should be no greater than one-quarter (1/4) mile, or as specified by operator specifications.
2. Takes into account, prior to beginning the takeoff, operational factors which could affect the manoeuvre such as helicopter characteristics, takeoff path, surface conditions, wind, obstructions, and other related factors that could adversely affect safety.
3. Accomplishes the appropriate checklist items to ensure that the helicopter systems applicable to the instrument takeoff are operating properly.
4. Sets the applicable flight instruments to the desired setting prior to initiating the takeoff.
5. Transitions smoothly and accurately from visual meteorological conditions to actual or simulated instrument meteorological conditions.
6. Maintains the appropriate climb attitude.
7. Maintains desired heading within $\pm 5^\circ$ and desired airspeeds within ± 5 knots.
8. Complies with ATC clearances and instructions issued by ATC (or the examiner simulating ATC).

C. TASK: POWERPLANT FAILURE DURING TAKEOFF

REFERENCES: CARs Part 2; FAA-H-8083-21, AC 120-62; Pilot's Operating Handbook, RFM.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of the procedures used during powerplant failure on takeoff, the appropriate reference airspeeds, and the specific pilot actions required.
2. Takes into account, prior to beginning the takeoff, operational factors which could affect the manoeuvre such as helicopter characteristics, takeoff path, surface conditions, wind, obstructions, and other related factors that could adversely affect safety.

3. Maintains the helicopter aligned with the runway heading or takeoff path appropriate for climb performance and terrain clearance when powerplant failure occurs.
4. Single-Engine Helicopters: Establishes a power-off descent approximately straight-ahead, if the powerplant failure occurs after becoming airborne. The failure of the powerplant should be simulated during a normal takeoff (no lower than 500 feet or 150 meters AGL).
5. Multiengine Helicopters: Continues the takeoff if the powerplant failure occurs at a point where the helicopter can continue to a specified airspeed and altitude at the end of the runway commensurate with the helicopter's performance capabilities and operating limitations. The failure of one powerplant should be simulated during a normal takeoff:
 - a. At an appropriate airspeed that will allow continued climb performance in forward flight; or
 - b. At an appropriate airspeed that is 50 percent of normal cruise speed, if there is no published single-engine airspeed for that type helicopter.
6. Maintains (in a multiengine helicopter), after a simulated powerplant failure and after a climb has been established, the desired heading within $\pm 5^\circ$ and desired airspeed within ± 5 knots.

D. TASK: REJECTED TAKEOFF

REFERENCES: CARS Part 2; FAA-H-8083-21, FAA AC 120-62; Pilot's Operating Handbook, RFM.

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

1. Exhibits adequate knowledge of the technique and procedure for accomplishing a rejected takeoff after powerplant/system(s) failure/warnings, including related safety factors.
2. Takes into account, prior to beginning the takeoff, operational factors which could affect the manoeuvre such as helicopter characteristics, takeoff path, surface conditions, wind, obstructions, and other related factors that could adversely affect safety.
3. Aligns the helicopter on the runway centreline or takeoff path.
4. Performs all required pretakeoff checks as required by the appropriate checklist items.
5. Increases power smoothly and positively, if appropriate to the helicopter, to a predetermined value based on existing conditions.
6. Maintains directional control on the runway heading or takeoff path.

7. Aborts the takeoff if, in a single-engine helicopter, the powerplant (or other) failure occurs prior to becoming airborne; or in a multiengine helicopter, the powerplant (or other) failure occurs at a point during the takeoff where the abort procedure can be initiated and the helicopter can be safely landed and stopped.
8. Reduces the power smoothly and promptly, if appropriate to the helicopter, when powerplant failure is simulated. In a wheeled helicopter, the failure will be simulated at a reasonable airspeed determined after giving due consideration to the helicopter's characteristics, Height Velocity Diagram, length of landing area, surface conditions, wind direction and velocity, and any other factors that may adversely affect safety.
9. Maintains positive control, and accomplishes the appropriate powerplant failure procedures as recommended by the appropriate checklist.

E. TASK: instrument DEPARTURE

REFERENCES: CARs Part 2; FAA-H-8083-15; Pilot's Operating Handbook, RFM, AIP.

Objective. To determine that the applicant:

1. In actual or simulated instrument conditions, exhibits adequate knowledge of SIDs, En Route Low and High Altitude Charts, STARs, and related pilot/controller responsibilities.
2. Uses the current and appropriate navigation publications for the proposed flight.
3. Selects and uses the appropriate communications frequencies, and selects and identifies the navigation aids associated with the proposed flight.
4. Performs the appropriate checklist items.
5. Establishes communications with ATC, using proper phraseology.
6. Complies, in a timely manner, with all instructions and airspace restrictions.
7. Exhibits adequate knowledge of two-way radio communications failure procedures.
8. Intercepts, in a timely manner, all courses, radials, and bearings appropriate to the procedure, route, clearance, or as directed by the examiner.
9. Maintains the appropriate airspeed within ± 10 knots, headings within $\pm 10^\circ$, altitude within ± 100 feet (30 meters); and accurately tracks a course, radial, or bearing.
10. Conducts the departure phase to a point where, in the opinion of the examiner, the transition to the en route environment is complete.

IV. AREA OF OPERATION: INFLIGHT MANEUVERS

A. TASK: STEEP TURNS

REFERENCES: CARs Part 2; FAA H-8083-15; Pilot's Operating Handbook, RFM.

Objective. To determine that the applicant:

1. In actual or simulated instrument conditions, exhibits adequate knowledge of steep turns (if applicable to helicopter) and the factors associated with performance; and, if applicable, angle of bank, and pitch and power requirements.
2. Selects an altitude recommended by the manufacturer, training syllabus, or other training directive.
3. Establishes the recommended entry airspeed.
4. Rolls into a coordinated turn of 180° or 360° with a bank as appropriate, not to exceed 30°. Maintains the bank angle within $\pm 5^\circ$ while in smooth, stabilized flight.
5. Applies smooth coordinated pitch, bank, and power to maintain the specified altitude within ± 100 feet (30 meters) and the desired airspeed within ± 10 knots.
6. Rolls out of the turn (at approximately the same rate as used to roll into the turn) within $\pm 10^\circ$ of the entry or specified heading, stabilizes the helicopter in a straight-and-level attitude or, at the discretion of the examiner, reverses the direction of turn and repeats the manoeuvre in the opposite direction.
7. Avoids any indication of abnormal flight attitude, or exceeding any structural, rotor, or operating limitation during any part of the manoeuvre.

B. TASK: Powerplant Failure—Multiengine Helicopter

REFERENCES: CARs Part 2; Pilot's Operating Handbook, RFM.

NOTE: When this TASK is accomplished in an approved flight simulator, the engine shutdown and restart may be performed in conjunction with another procedure or manoeuvre, and at any location or altitude at the discretion of the examiner.

When this task is accomplished in the helicopter, the engine failure and restart procedure shall be simulated. This TASK shall be performed by reducing the power to idle on the selected engine. This task must be initiated at an altitude from which a safe landing can be made in the event of actual engine problems.

When authorized and conducted in a flight simulator, shutdown may be performed in conjunction with any procedure or manoeuvre, and at any location or altitude at the discretion of the examiner.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of the flight characteristics and controllability associated with manoeuvring with powerplant(s) inoperative (as appropriate to the helicopter).
2. Sets powerplant controls, correctly identifies and verifies the inoperative powerplant(s) after the simulated failure.
3. Maintains positive helicopter control.
4. Determines the reason for the powerplant(s) failure.
5. Follows the prescribed helicopter checklist, and verifies the procedures for securing the inoperative powerplant(s). Determines if a restart is a viable option.
6. Maintains the operating powerplant(s) within acceptable operating limits.
7. Maintains desired altitude within ± 100 feet (30 meters), when a constant altitude is specified and is within the capability of the helicopter.
8. Maintains the desired airspeed within ± 10 knots.
9. Maintains the desired heading within $\pm 10^\circ$ of the specified heading.
10. Demonstrates proper powerplant restart procedures in accordance with CASAS approved procedure/checklist or the manufacturer's recommended procedures and pertinent checklist items.

C. TASK: Powerplant Failure—Single-Engine Helicopter

REFERENCES: CARS Parts 2; FAA-H-8083-21; Pilot's Operating Handbook, RFM.

NOTE: No simulated powerplant failure shall be given by the examiner in a helicopter when an actual touchdown could not be safely completed should it become necessary, nor when an autorotative descent might constitute a violation of the CFR's. The examiner shall direct the applicant to terminate this TASK in a power recovery at an altitude high enough to assure that a safe touchdown could be accomplished in the event an actual powerplant failure should occur during recovery procedures.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of the flight characteristics, approach and forced (emergency) landing procedures, and related procedures to use in the event of a powerplant failure (as appropriate to the helicopter).
2. Enters autorotation promptly when the examiner simulates a powerplant failure by—
 - a. lowering the collective as necessary to maintain rotor RPM within acceptable limits,
 - b. establishing and maintaining the recommended autorotation airspeed within ± 5 knots, and
 - c. maintaining proper longitudinal trim.
3. Selects a suitable airport or landing area which is within the performance capability of the helicopter.
4. Establishes a proper flight pattern to the selected airport or landing area, taking into account altitude, wind, terrain, obstructions, and other pertinent operational factors. Avoids undershooting or overshooting the selected landing area.
5. Determines the cause for the simulated powerplant failure (if altitude permits) and if a restart is a viable option.
6. Performs the emergency memory checklist items appropriate to the helicopter.
7. Maintains positive helicopter control throughout the manoeuvre.

8. Uses helicopter configuration devices (such as landing gear) in a manner recommended by the manufacturer and/or approved by the FAA.
9. Terminates the autorotation by performing a power recovery, at a safe altitude or as briefed by the examiner, prior to the flight.

D. TASK: RECOVERY FROM UNUSUAL ATTITUDES

REFERENCES: CASAS Part 2; FAA-H-8083-15; Pilot's Operating Handbook, Flight Manual.

Objective. To determine that the applicant:

1. In actual or simulated instrument conditions, exhibits adequate knowledge of recovery from unusual attitudes.
2. Recovers from both nose-high and nose-low unusual attitudes, using proper pitch, bank, and power techniques.

E. TASK: SETTLING-WITH-POWER

REFERENCES: CARs Part 2; FAA-H-8083-21; Pilot's Operating Handbook, Flight Manual.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of the conditions which contribute to, and may result in, "settling-with-power."
2. Describes the relationship of gross weight, RPM, and density altitude to the severity of the vertical rate of descent.
3. At an altitude above 1,500 feet (450 meters) AGL or as recommended by the manufacturer if it is higher, demonstrates entry into "settling-with-power," using the recommended procedures in the correct sequence.
4. Recovers immediately at the first indication of "settling-with-power," using the recommended procedures in the correct sequence.
5. Demonstrates smooth, positive helicopter control and prompt recovery techniques.

V. AREA OF OPERATION: INSTRUMENT PROCEDURES

A. TASK: INSTRUMENT ARRIVAL

REFERENCES: CARs Part 2; Pilot's Operating Handbook, RFM, AIM; En Route Low and High Altitude Charts, Profile Descent Charts, STARs, Instrument Approach Procedure Charts.

Objective. To determine that the applicant:

1. While in actual or simulated instrument conditions, exhibits adequate knowledge of En Route Low and High Altitude Charts, STARs, Instrument Approach Procedure Charts, and related pilot and controller responsibilities.
2. Uses the current and appropriate navigation publications for the proposed flight.
3. Selects and correctly identifies the appropriate navigation frequencies and facilities associated with the area arrival.
4. Performs the helicopter checklist items appropriate to the area arrival.
5. Establishes communications with ATC, using proper phraseology.
6. Complies, in a timely manner, with all ATC clearances, instructions, and restrictions.
7. Exhibits adequate knowledge of two-way communications failure procedures.
8. Intercepts, in a timely manner, all courses, radials, and bearings appropriate to the procedure, route, ATC clearance, or as directed by the examiner.
9. Adheres to airspeed restrictions and adjustments required by regulations, ATC, the RFM, or the examiner.
10. Establishes, where appropriate, a rate of descent consistent with the helicopter operating characteristics and safety.
11. Maintains the appropriate airspeed/V-speed within ± 10 knots; heading $\pm 10^\circ$; altitude within ± 100 feet (30 meters); and accurately tracks radials, courses, and bearings.
12. Complies with the provisions of the Profile Descent, STAR, and other arrival procedures, as appropriate.

B. TASK: Holding

REFERENCES: CARS Part 2; Pilot's Operating Handbook, RFM, AIM; En Route Low and High Altitude Charts, STARs, Instrument Approach Procedure Charts.

Objective. To determine that the applicant:

1. While in actual or simulated instrument conditions, exhibits adequate knowledge of holding procedures for standard and non-standard, published and non-published holding patterns. If appropriate, demonstrates adequate knowledge of holding endurance, including, but not necessarily limited to, fuel on board, fuel flow while holding, fuel required to alternate, etc.
2. Changes to the recommended holding airspeed appropriate for the helicopter and holding altitude, so as to cross the holding fix at or below maximum holding airspeed.
3. Recognizes arrival at the clearance limit or holding fix.
4. Remains within protected airspace.
5. Complies with ATC reporting requirements.
6. Uses the proper timing criteria required by the holding altitude and ATC or examiner's instructions.
7. Complies with the holding pattern leg length when a DME distance is specified.
8. Arrives over the holding fix as close as possible to the "expect further clearance" time.
9. Maintains the appropriate airspeed/V-speed within ± 10 knots, altitude within ± 100 feet (30 meters); headings within $\pm 10^\circ$; and accurately tracks radials, courses, and bearings.

C. TASK: PRECISION INSTRUMENT APPROACHES

REFERENCES: CARS Part 2; FAA-H-8083-15; Pilot's Operating Handbook, RFM, AIP; Instrument Approach Procedure Charts.

NOTE: Two precision approaches must be accomplished in actual or simulated instrument conditions.

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

when it is displaced one-fourth of the distance that it may be deflected from the on glide slope or on localizer position.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of the precision instrument approach procedures with all engines operating, and with one engine inoperative.
2. Establishes two-way communications with ATC as appropriate to the phase of flight or approach segment and uses the proper communications phraseology and techniques.
3. Accomplishes the appropriate precision instrument approach procedure as selected by the examiner.
4. Complies, in a timely manner, with all clearances, instructions, and procedures.
5. Advises ATC anytime the helicopter is unable to comply with a clearance.
6. Establishes the appropriate helicopter configuration and airspeed/V-speed considering turbulence, wind shear, microburst conditions, or other meteorological and operating conditions.
7. Completes the helicopter checklist items appropriate to the phase of flight or approach segment.
8. Prior to beginning the final approach segment, maintains the desired altitude ± 100 feet (30 meters), the desired airspeed within ± 10 knots, the desired heading within $\pm 5^\circ$; and accurately tracks radials, courses, and bearings.
9. Selects, tunes, identifies, and monitors the operational status of ground and helicopter navigation equipment used for the approach.
10. Applies the necessary adjustments to the published Decision Height and visibility criteria for the helicopter approach category as required, such as—
 - a. FDC and Class II NOTAMs.
 - b. Inoperative helicopter and ground navigation equipment.
 - c. Inoperative visual aids associated with the landing environment.
 - d. National Weather Service reporting factors and criteria.
11. Establishes a predetermined rate of descent at the point where the electronic glide slope begins which approximates that required for the helicopter to follow the glide slope.
12. Maintains a stabilized final approach, arriving at Decision Height with no more than one-quarter scale deflection of the localizer, or the glide slope indicators and the airspeed/V-speed within ± 5 knots of that desired.
13. Avoids descent below the Decision Height before initiating a missed approach procedure or transitioning to a landing.

14. Initiates immediately the missed approach procedure, when at the Decision Height, and the required visual references for the runway or intended landing area are not distinctly visible and identifiable.
15. Transitions to a normal landing approach only when the helicopter is in a position from which a descent to a landing on the runway or intended landing area can be made at a normal rate of descent using normal manoeuvring.

D. TASK: NONPRECISION INSTRUMENT APPROACHES

REFERENCES: CARs Part 2; FAA-H-8083-15; Pilot's Operating Handbook, RFM, AIM; Instrument Approach Procedure Charts.

NOTE: The applicant must accomplish at least two nonprecision approaches (one of which must include a procedure turn) in simulated or actual weather conditions approach using two different approach systems. At least one nonprecision approach must be flown manually without receiving radar vectors. The examiner will select nonprecision approaches that are representative of that which the applicant is likely to use. The choices must utilize two different systems; i.e., NDB and one of the following: VOR, LOC, LDA, GPS, or LORAN.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of nonprecision approach procedures representative of those the applicant is likely to use.
2. Establishes two-way communications with ATC as appropriate to the phase of flight or approach segment and uses proper communications phraseology and techniques.
3. Accomplishes the nonprecision instrument approach procedures selected by the examiner.
4. Complies with all clearances issued by ATC.
5. Advises ATC or the examiner any time the helicopter is unable to comply with a clearance.
6. Establishes the appropriate helicopter configuration and airspeed, and completes all applicable checklist items.
7. Maintains, prior to beginning the final approach segment, the desired altitude ± 100 feet (30 meters), the desired airspeed ± 10 knots, the desired heading $\pm 5^\circ$; and accurately tracks radials, courses, and bearings.
8. Selects, tunes, identifies, and monitors the operational status of ground and helicopter navigation equipment used for the approach.
9. Applies the necessary adjustments to the published Minimum Descent Altitude and visibility criteria for the helicopter approach category when required, such as—

- a. Notices to Airmen, including Flight Data Centre Procedural NOTAMs.
 - b. Inoperative helicopter and ground navigation equipment.
 - c. Inoperative visual aids associated with the landing environment.
 - d. National Weather Service reporting factors and criteria.
10. Establishes a rate of descent that will ensure arrival at the Minimum Descent Altitude with the helicopter in a position from which a descent to a landing on the intended runway or landing area can be made at a normal rate using normal manoeuvring.
 11. Allows, while on the final approach segment, not more than quarter-scale deflection of the Course Deviation Indicator (CDI) or $\pm 5^\circ$ in the case of the RMI or bearing pointer, and maintains airspeed within ± 5 knots of that desired.
 12. Maintains the Minimum Descent Altitude, when reached, within -0, +50 feet (-0, +15 meters) to the missed approach point.
 13. Executes the missed approach procedure if the required visual references for the intended runway are not distinctly visible and identifiable at the missed approach point.
 14. Executes a normal landing from a straight-in approach.

NOTE: If TASK D, Nonprecision Instrument Approaches, is performed in a training device (other than an FTD or flight simulator) and the applicant has completed an approved training course for the helicopter type involved, not more than one of the required instrument procedures may be observed by a person qualified to act as an instructor or check airman under that approved training program. The instrument approach is considered to begin when the helicopter is over the initial approach fix for the procedure being used and ends when the helicopter touches down on the runway or landing area, or when transition to a missed approach configuration is completed. Instrument conditions need not be simulated below the minimum altitude for the approach being accomplished.

E. TASK: MISSED APPROACH

REFERENCES: CARs Part 2; FAA-H-8083-15; Pilot's Operating Handbook, RFM, AIM; Instrument Approach Procedure Charts.

NOTE: The applicant must be required to perform at least two missed approach procedures with at least one missed approach from a precision approach (ILS, MLS, or GPS). A complete approved missed approach procedure must be accomplished at least once and a simulated powerplant

failure (in a multiengine helicopter) will be required during one of the missed approaches.

Going below the MDA or DH, as appropriate, prior to the initiation of the missed approach procedure shall be considered unsatisfactory performance, except in those instances where the required visual references for the runway or intended landing area are distinctly visible and identifiable at the MDA or DH.

Objective. To determine that the applicant:

1. While in actual or simulated instrument conditions, exhibits adequate knowledge of missed approach procedures associated with standard instrument approaches.
2. Initiates the missed approach procedure promptly by the timely application of power, establishes the proper climb attitude, and reduces drag in accordance with the approved procedures.
3. Reports to ATC, beginning the missed approach procedure.
4. Complies with the appropriate missed approach procedure or ATC clearance.
5. Advises ATC any time the helicopter is unable to comply with a clearance.
6. Follows the recommended helicopter checklist items appropriate to the go-around procedure for the helicopter used.
7. Requests clearance, if appropriate, to the alternate airport, another approach, a holding fix, or as directed by the examiner.
8. Maintains the desired altitudes ± 100 feet (30 meters), airspeed ± 5 knots, heading $\pm 5^\circ$, and accurately tracks courses, radials, and bearings.

VI. AREA OF OPERATION: LANDINGS AND APPROACHES TO LANDINGS

NOTE: Notwithstanding the authorizations for the combining of manoeuvres and for the waiver of manoeuvres, the applicant must make at least four landings to a hover or to the ground. These landings must include the types listed in this AREA OF OPERATION; however, more than one type may be combined where appropriate (i.e., crosswind and landing from a precision approach or landing with simulated powerplant failure, etc.).

A. TASK: NORMAL AND CROSSWIND APPROACHES AND LANDINGS

REFERENCES: CARs Part 2; FAA-H-8083-21; Pilot's Operating Handbook, RFM.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of normal and crosswind approaches and landings including recommended approach angles, airspeeds, V-speeds, configurations, performance limitations, wake turbulence, and safety factors (as appropriate to the helicopter).
2. Establishes the approach and landing configuration appropriate for the runway or designated landing area and meteorological conditions, and adjusts the powerplant controls as required.
3. Maintains a ground track, within $\pm 5^\circ$, that ensures the desired traffic pattern will be flown, taking into account any obstructions and ATC or examiner instructions.
4. Verifies existing wind conditions, makes proper correction for drift, and maintains a precise ground track.
5. Maintains a normal approach angle and recommended airspeed and a normal rate of closure to the point of transition to a hover or touchdown.
6. Terminates the approach in a smooth transition to a hover or to a touchdown within 2 feet (.6 meter) of the designated point. (If a hover termination is specified, it will be within ± 2 feet (.6 meter) of recommended hovering altitude.)
7. Completes the applicable after-landing checklist items in a timely manner and as recommended by the manufacturer.

B. TASK: APPROACH AND LANDING WITH SIMULATED POWERPLANT FAILURE—MULTIENGINE HELICOPTER

REFERENCES: CARs Part 2; FAA-H-8083-21; Pilot's Operating Handbook, RFM.

NOTE: In a multiengine helicopter manoeuvring to a landing, the applicant should follow a procedure that simulates the loss of one powerplant.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of manoeuvring to a landing with a powerplant inoperative, including the controllability factors associated with manoeuvring, and the applicable emergency procedures.
2. Proceeds toward the nearest suitable airport or landing area.
3. Maintains, prior to beginning the final approach segment, the desired altitude ± 100 feet (30 meters), the desired airspeed ± 10 knots, the desired heading $\pm 5^\circ$, and accurately tracks courses, radials, and bearings.
4. Establishes the approach and landing configuration appropriate for the runway or landing area, and meteorological conditions; and adjusts the powerplant controls as required.
5. Maintains a normal approach angle and recommended airspeed to the point of transition to touchdown.
6. Terminates the approach in a smooth transition to touchdown.
7. Completes the after-landing checklist items in a timely manner, after clearing the runway, and as recommended by the manufacturer.

C. TASK: REJECTED LANDING

REFERENCES: CARs Part 2; FAA-H-8083-21; Pilot's Operating Handbook, RFM; FAA FSB Report.

NOTE: The manoeuvre may be combined with instrument or missed approach procedures, but instrument conditions need not be simulated below 100 feet (30 meters) above the runway or landing area. This manoeuvre should be initiated approximately 50 feet (15 meters) above the runway and approximately over the runway threshold or as recommended by the FSB Report.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of a rejected landing procedure, including the conditions that dictate a rejected landing, the importance of a timely decision, the recommended airspeed/V-speeds, and also the applicable "clean-up" procedure.
2. Makes a timely decision to reject the landing for actual or simulated circumstances.
3. Applies the appropriate power setting for the flight condition and establishes a pitch attitude necessary to obtain the desired performance.
4. Adjusts helicopter configuration and retracts the landing gear, if appropriate, in the correct sequence and at a safe altitude, establishes a positive rate of climb and the appropriate airspeed/V-speed within ± 5 knots.
5. Trims the helicopter as necessary, and maintains the proper ground track, within $\pm 5^\circ$, during the rejected landing procedure.
6. Accomplishes the appropriate checklist items in a timely manner in accordance with approved procedures.

VII. AREA OF OPERATION: NORMAL AND ABNORMAL PROCEDURES

REFERENCES: CARs Part 2; FAA-H-8083-21; Pilot's Operating Handbook, RFM.

Objective. To determine that the applicant:

1. Possesses adequate knowledge of the normal and abnormal procedures of the systems, subsystems, and devices relative to the helicopter type (as may be determined by the examiner).
2. Demonstrates the proper use of the helicopter's systems, subsystems, and devices (as may be determined by the examiner) appropriate to the helicopter, such as—
 - a. powerplant.
 - b. fuel system.
 - c. electrical system.
 - d. hydraulic system.
 - e. environmental system.
 - f. fire detection and extinguishing systems.
 - g. navigation and avionics systems.
 - h. automatic flight control system, electronic flight instrument system, and related subsystems.
 - i. flight control systems.
 - j. anti-ice and deice systems.
 - k. helicopter and personal emergency equipment.
 - l. loss of tail rotor effectiveness.
 - m. other systems, subsystems, and devices specific to the type helicopter.

VIII. AREA OF OPERATION: EMERGENCY PROCEDURES

REFERENCES: CARs Part 2; Pilot's Operating Handbook, RFM.

Objective. To determine that the applicant:

1. Possesses adequate knowledge of the emergency procedures (as may be determined by the examiner) relating to the particular helicopter type.
2. Demonstrates the proper emergency procedures (as must be determined by the examiner) relating to the particular helicopter type, including—
 - a. inflight fire and smoke removal.
 - b. emergency descent.
 - c. autorotation, with a power recovery.
 - d. ditching.
 - e. emergency evacuation.
3. Demonstrates the proper procedure for any other emergency outlined (as must be determined by the examiner) in the appropriate approved helicopter RFM.

IX. AREA OF OPERATION: POSTFLIGHT PROCEDURES

A. TASK: AFTER-LANDING PROCEDURES

REFERENCES: Pilot's Operating Handbook, RFM.

Objective. To determine that the applicant:

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

B. TASK: PARKING AND SECURING

REFERENCES: Pilot's Operating Handbook, RFM.

Objective. To determine that the applicant:

1. Exhibits adequate knowledge of the parking and the securing helicopter procedures.
2. Demonstrates adequate knowledge of the helicopter forms/logs to record the flight time/discrepancies.

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		
	B	C	D
II. Preflight Procedures			
A. Preflight Procedures (cockpit only)	X	X	X
B. Powerplant Start	X	X	X
C.1. Taxiing - Ground	X	X	X
C.2. Taxiing - Hover		X	X
D. Pretakeoff Checks	X	X	X
III. Takeoff and Departure Phase			
A. Normal and Crosswind Takeoff	X1	X	X
B. Instrument Takeoff	X1	X	X
C. Powerplant Failure During Takeoff	X1	X	X
D. Rejected Takeoff	X1	X	X
E. Instrument Departure	X	X	X
IV. Inflight Manoeuvres			
A. Steep Turns	X	X	X
B. Powerplant Failure – Multiengine Helicopters	X	X	X
C. Powerplant Failure – Single Engine Helicopters	X	X	X
D. Recovery From Unusual Attitudes	X	X	X
E. Settling With Power		X	X
V. Instrument Procedures			
A. Instrument Arrival	X	X	X
B. Holding	X	X	X
C.1. Precision Instrument Approach (Normal)	X	X	X
C.2. Precision Instrument Approach (Manual/Powerplant Failure)	X	X	X
D. Nonprecision Instrument Approaches	X	X	X
E.1. Missed Approach (Normal)	X	X	X
E. 2. Missed Approach (Powerplant Failure)	X	X	X
VI. Landings and Approaches to Landings			
A. Normal and Crosswind Approaches and Landings	X1	X	X
B. Approach and Landing with Simulated Powerplant Failure – Multiengine Helicopter	X1	X	X
C. Rejected Landing	X	X	X
VII. Normal and Abnormal Procedures (*1)			
A. Powerplant	X	X	X
B. Fuel System	X	X	X
C. Electrical System	X	X	X
D. Hydraulic System	X	X	X
E. Environmental System(s)	X	X	X

(*1) Evaluation of normal and abnormal procedures can usually be accomplished in conjunction with other events and does not normally require a specific event to test the applicant's use of the aircraft systems and devices. An applicant's performance must be evaluated on the maintenance of the helicopter control, the ability to recognize and analyze abnormal indications, and the ability to apply corrective procedures in a timely manner.