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FLIGHT TEST GUIDE

Private and Commercial Pilot Licence

Helicopter

Third Edition

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FLIGHT TEST GUIDE
Private and Commercial Pilot Licence
Helicopter

This flight test guide sets out the techniques, procedures and the marking criteria to be used by Civil Aviation Inspectors and Pilot Examiners for the conduct of the flight test required to demonstrate the skill requirements for the issuance of the Private or Commercial Pilot Licence – Helicopter.

Flight instructors are expected to use this guide when preparing candidates for flight tests. Candidates should be familiar with this guide and refer to the qualification standards during their training, while keeping in mind that the standards expressed are minimum standards for the skill requirement.

Detailed descriptions and explanations of the exercises as numbered on the flight test report can be found by referring to the corresponding chapter number in the *Helicopter Flight Training Manual* published under the authority of Transport Canada.

Definitions

"**flight test item**" means a task, manoeuvre or item listed on the flight test report.

"**examiner**" means a Pilot Examiner accredited under section 4.3 of Part 1 of the *Aeronautics Act* or a Civil Aviation Inspector authorized to conduct this flight test.

"ground items" are items labelled as ground item and are performed prior to all air items.

"air items" are all items not labelled as ground item.

Vertical sidebars at the right margin indicate text with changes from the previous edition that may affect the performance standard expected, the evaluation of the flight test item and text changes for the purpose of clarification. Grammatical corrections are not indicated.

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http://www.tc.gc.ca/civilaviation/general/flttrain/Planes/menu.htm

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GENERAL

Admission to a Flight Test

In order to be admitted to a flight test required for the issue of a Private or Commercial Pilot Licence - Helicopter, the candidate will present:

(a) a valid original government-issued photo identification with signature;

(b) a valid flight crew permit, licence or foreign pilot licence issued by a contracting state;

(c) proof of meeting the medical standards for the licence sought;

(d) a letter from a qualified flight instructor certifying that:

  (i) a pre-test evaluation has been completed with the candidate;

  (ii) the candidate is considered to have reached a sufficient level of competency to complete the flight test for the pilot licence sought; and

  (iii) the instructor recommends the candidate for the flight test.

(e) in the case of a candidate for a Commercial helicopter flight test, proof of having successfully completed the required written examination, and a letter from a flight instructor certifying that the candidate has satisfactory knowledge of the subject area or areas in which a weakness was indicated by the Written Examination results and Feedback report.

(f) evidence of having completed:

  (i) in the case of a candidate for a private pilot flight test, no less than 35 hours flight time in helicopters (refer. 421.14); or

  (ii) in the case of a candidate for a commercial pilot flight test, no less than 75% of the total flight time required for the licence.

Note: Holders of valid Private and Commercial Pilot Licences issued by a contracting state of the International Civil Aviation Organization are exempt from the requirement of a written recommendation, if the flight test is for the purpose of obtaining the equivalent Canadian licence. Canadian Forces applicants who are qualified to pilot wings standard shall not be required to submit the letter.

Note: It is <u>recommended</u> that the candidate for a private helicopter flight test have successfully completed the required written examination for the license and has satisfactory knowledge of the subject area(s) in which a weakness was indicated by the Written Examination Results and Feedback Report.

Admission to a Partial Flight Test

Prior to admission to a partial flight test following failure of a flight test, the candidate will provide:

(a) a valid original government-issued photo identification with signature;

(b) a valid flight crew permit, licence or foreign pilot licence issued by a contracting state;

(c) proof of meeting the medical standards for the licence sought;

(d) a copy of the flight test report for the previously failed flight test; and

(e) a letter signed by the holder of a valid Flight Instructor Rating - Helicopter, dated within 30 days prior to the partial flight test, certifying that:

(i) the candidate has received further training on the failed flight test item(s), and is considered to have reached a sufficient level of competency to successfully complete the flight test; and

(ii) the instructor recommends the candidate for the flight test.

Letters of Recommendation

Letters of recommendation must be dated within 30 days prior to the flight test and, in the case of a candidate recommended by a Class 4 flight instructor, the letter must be co-signed by the supervising instructor. In the case of a re-test, the person who conducted the additional training will sign the letter of recommendation.

Aircraft and Equipment Requirements

The candidate will provide:

(a) a helicopter that:

(i) has a flight authority pursuant to CAR 507 and that authority has no operating limitations that prohibit the performance of the required manoeuvres, including full-on autorotations;

(ii) meets the requirements of CAR Standard 425.23 - Training Aircraft Requirements - subsections (1), (2) (3) and (4) of the *Personnel Licensing and training Standards*; and

(iii) is equipped with suitable radio and two-way intercom voice communication.

(b) appropriate current aeronautical charts and *Canada Flight Supplement*; and

(c) an effective means of excluding outside visual reference to simulate instrument flight conditions while maintaining a safe level of visibility for the examiner.

Liability Insurance

A proof of insurance would be required prior booking the flight test stating that the Pilot Examiner is covered while conducting a flight test**.** In accordance with Section 606.02 of the *Canadian Aviation Regulations*, all privately and commercially registered aircraft are required to carry passenger liability insurance. It is important to note that this insurance does not necessarily cover the Pilot Examiner while conducting a flight test.

Flight Test

All of the flight test items required by the flight test report and described in this guide must be successfully completed and the minimum pass mark for the Private Pilot Licence of **70** (50%) or for the Commercial Pilot Licence of **104** (70%) must be achieved.

All flight tests will be conducted in weather conditions that do not present a hazard to the operation of the helicopter, the helicopter is airworthy and the candidate and helicopter's documents, as required by the *Canadian Aviation Regulations*, are valid. It is the sole responsibility of the examiner to make the final decision as to whether or not any portion or the entire flight test may be conducted.

Ground flight test items **2A, 2B, 2C** and **20A** will be assessed before the flight portion of the flight test.

Repeated Flight Test Item

An item or manoeuvre will not be repeated unless one of the following conditions applies:

(a) **Discontinuance:** Discontinuance of a manoeuvre for valid safety reasons; i.e., a go-around or other procedure necessary to modify the originally planned manoeuvre.

(b) **Collision Avoidance:** Examiner intervention on the flight controls to avoid another aircraft, which the candidate could not have seen due to position or other factors.

(c) **Misunderstood Requests:** Legitimate instances when candidates did not understand an examiner's request to perform a specific manoeuvre. A candidate's failure to understand the nature of a specified manoeuvre being requested does not justify repeating an item or manoeuvre.

(d) **Other Factors:** Any condition under which the examiner was distracted to the point that he or she could not adequately observe the candidate's performance of the manoeuvre (radio calls, traffic, etc.).

Note: These provisions have been made in the interest of fairness and safety and do not mean that instruction, practice, or the repeating of an item or manoeuvre, unacceptably demonstrated, is permitted during the flight test evaluation process.

Incomplete Flight Test

If the test is not completed due to circumstances beyond the candidate's control, the subsequent flight test will include the flight test items not completed on the original flight test and will be completed within the 30 days of the original letter of recommendation.

The following process will apply:

(a) a copy of the incomplete Flight Test Report must be given to the candidate;

(b) the flight test may be completed at a later date;

(c) the test may be completed by the same or another examiner;

(d) the original letter of recommendation remains valid;

(e) flight test items already assessed will not be re-tested, but items already demonstrated during the initial flight, and repeated for the purpose of the second flight, may be re-assessed as (1) if the candidate does not meet the aim of an item or displays unsafe or dangerous flying;

(f) the original flight test report may be used to complete the test, if completed by the same examiner and within 5 days of the initial flight test but, in all cases, if the test is completed by another examiner a separate report must be submitted; and

(g) the candidate is permitted to complete additional training while awaiting completion of the test.

If the initial flight test included one or two failed air items, the partial flight test for these items may be conducted during the subsequent flight test flight, after the candidate has completed all of the required items, provided:

(a) the minimum pass mark has been achieved;

(b) no additional items were failed during the subsequent flight test; and

(c) a letter of recommendation for the partial flight test was received prior to the flight.

Failure of a Flight Test

Provided that the applicable pass mark has been achieved and there are no more than two failed air items, the candidate will be eligible for a **partial flight test** and the skill requirements for licence issuance may be met by completing a partial flight test of the item or items assessed "1".

One or a combination of the following conditions will be considered as a failure to the flight test:

(a) failure of one or more ground items (2A, 2B, 2C and 20A) will require a complete re-test and preclude the air portion of the flight test;

(b) failure to obtain the minimum pass mark constitutes failure of the flight test and requires a complete re-test;

(c) failure of one or two air item(s) will require a partial flight test on those items and the failure of a third air item will require a complete re-test;

(d) during a partial flight test the failure to one item requires a complete re-test;

(e) a complete re-test is required if the partial flight test is not completed within 30 days of the original flight test;

(f) a complete re-test is required if the candidate is displaying unsafe or dangerous flying that is not linked to a skill, lack of training or competency; and

(g) A complete re-test is required if the candidate demonstrates a pattern of failing to use proper visual scanning techniques to check for traffic before and while performing visual manoeuvres.

Following a failed flight test the candidate will obtain a copy of the flight test report, this will permit the candidate to meet the requirements for admission in the case of a partial flight test.

For a partial flight test, the candidate will be required to successfully perform the air item(s) assessed as "1" on the original complete flight test. Flight test items not associated with the items(s) to be retested, but repeated for the purpose of the second flight, may be re-assessed as "1" if their aim is not achieved or safety is compromised. No more than one partial flight test will be allowed for each complete flight test.

Following a failed flight test that required a complete re-test, the candidate should not show or submit a copy of the previously failed complete flight test report to the examiner.

If not satisfied with the outcome of the flight test, a candidate may wish to file a written complaint regarding the conduct of a flight test or the performance of an examiner with the Transport Canada Regional Office responsible for that pilot examiner. In order to succeed with a complaint, the applicant will have to satisfy Transport Canada that the test was not properly conducted. Mere dissatisfaction with the flight test result is not enough. After due consideration of the individual case, the Regional Superintendent – Flight Training, may authorize a re-test to be conducted, without prejudice (with a clean record in regard to the disputed flight test), by a Civil Aviation Inspector or alternate pilot examiner. Should the complaint not be addressed to the candidate's satisfaction, the procedure to be followed is outlined in "Civil Aviation Issues Reporting System (CAIRS). The document can be found at:

http://www.tc.gc.ca/wcms-sgcw/civilaviation/cairs-755.htm

Use of Flight Simulator or Flight Training Device

For a partial flight test, and at the discretion of the examiner, a Level B or higher flight simulator or a flight training device (min. Level 2)approved in accordance with CAR 606.03, Synthetic Flight Training Equipment, may be used to re-test Exercise 20E, Radio Navigation.

Pre-Flight Briefing

Pilot examiners are required to brief test candidates on the following details:

(a) **The sequence of test items.** There is no need for the candidate to memorize this sequence, as the examiner will give instructions for each item.

(b) **If in doubt - ask**! Candidates who do not clearly understand what they are being asked to do should feel free to ask. It may be that the examiner was not clear in giving instructions.

(c) **Who is pilot-in-command**? The candidate will act as Pilot-in-Command according to the privileges listed in CARs 401.19 and 401.27.

(d) **The roles of the candidate and examiner in the event of an actual emergency?** A briefing by the examiner should detail the actions to be taken by the candidate and examiner in the event of an actual emergency.

(e) **How to transfer control.** There should never be any doubt as to who is flying the helicopter, so proper transfer of control using phrases such as, "You have control", and "I have control", is expected during a flight test. A visual check is recommended to verify that the exchange has occurred.

(f) **Method of simulating emergencies.** A briefing by the examiner should, in a general sense, specify the methods used to simulate emergencies. For example, it can be verbal for a chip indicator, a communication failure, etc or an action by blocking the pedals for stuck pedals, turning the hydraulic switch to the OFF position, etc. Engine failures will only be simulated in accordance with the manufacturer's recommendations or, in their absences, by reducing the power to idle.

Note: The practice of pulling circuit breakers will not be used during a flight test.

Flight Management

Flight management refers to the effective use of all available resources, including working with such groups as dispatchers, other crewmembers, maintenance personnel, and air traffic controllers. The poor performance of a manoeuvre or task can often be explained by weaknesses in flight management competencies.

Problem Solving and Decision Making

(a) anticipates problems far enough in advance to avoid crisis reaction

(b) uses effective decision-making process

(c) makes appropriate inquiries

(d) prioritizes tasks to gain maximum information input for decisions

(e) makes effective use of all available resources to make decisions

(f) considers "downstream" consequences of the decision being considered

Situational Awareness

(a) actively monitors weather, aircraft systems, instruments, ATC communications

(b) avoids "tunnel vision" - awareness that factors such as stress can reduce vigilance

(c) stays "ahead of the aircraft" in preparing for expected or contingency situations

(d) remains alert to detect subtle changes in the environment

Communication

(a) provides thorough briefings

(b) asks for information and advice

(c) communicates decisions clearly

(d) asserts one's position appropriately

Workload Management

(a) organizes cockpit resources well

(b) recognizes overload in self

(c) eliminates distractions during high workload situations

(d) maintains ability to adapt during high workload situations

Errors

Error: means an action or inaction by the flight crew that leads to a variance from operational or flight crew intentions or expectations.

Minor Error

An action or inaction that is inconsequential to the completion of a task, procedure or manoeuvre, even if certain elements of the performance vary from the recommended best practices.

Major Error

An action or inaction that can lead to an undesired aircraft state or a reduced safety margin, if improperly managed; or an error that does not lead to a safety risk, but detracts measurably from the successful achievement of the defined aim of a sequence/item.

Critical Error

An action or inaction that is mismanaged and consequently leads to an undesired aircraft state or compromises safety such as:

- non-compliance with CARs or non-adherence to mandated Standard Operating Procedures (SOP); or
- repeated improper error management or uncorrected and unrecognized threats, which risk putting the aircraft in an undesired state; or
- repeated major errors or the non-performance of certain criteria prescribed in the *Performance Criteria** that are essential to achieving the *Aim** of a test sequence/item.

* defined in the Flight Test Guide.

Deviations

***Deviation*:** means a variance in precision with respect to a specified tolerance published for a manoeuvre within a test item or sequence, which is a result of pilot error or faulty handling of the aircraft.

Minor Deviation

A deviation that does not exceed a specified tolerance.

Major Deviation

A deviation that exceeds a specified tolerance or repeated minor deviations without achieving stability.

Critical Deviation

A major deviation that is repeated, excessive or not corrected, such as:

- repeated non-adherence to specified tolerance limits; or
- more than doubling the specified value of a tolerance limit; or
- not identifying and correcting major deviations.

4-POINT MARKING SCALE

When applying the 4-point scale, award the mark that best describes the weakest element(s) applicable to the candidate's performance of the particular test sequence/item demonstrated.

4	Performance is well executed considering existing conditions: • Aircraft handling is smooth and positive with a high level of precision. • Technical skills indicate a thorough knowledge of procedures, aircraft systems, limitations and performance characteristics. • Situational awareness is indicated by continuous anticipation and vigilance. • Flight management skills are exemplary and threats are consistently anticipated, recognized and well managed. • Safety margins are maintained through consistent and effective management of aircraft systems and mandated operational protocols.
3	Performance is observed to include minor errors: • Aircraft handling with appropriate control input includes minor deviations. • Technical skills indicate an adequate knowledge of procedures, aircraft systems, limitations and performance characteristics to successfully complete the task. • Situational awareness is adequately maintained as candidate responds in a timely manner to cues and changes in the flight environment to maintain safety while achieving the aim of the sequence/item. • Flight management skills are effective. Threats are anticipated and errors are recognized and recovered. • Safety margins are maintained through effective use of aircraft systems and mandated operational protocols.
2	Performance is observed to include major errors: • Aircraft handling is performed with major deviations and/or an occasional lack of stability, over/under control or abrupt control input. • Technical skills reveal deficiencies either in depth of knowledge or comprehension of procedures, aircraft systems, limitations and performance characteristics that do not prevent the successful completion of the task. • Situational awareness appears compromised as cues are missed or attended too late or the candidate takes more time than ideal to incorporate cues or changes into the operational plan. • Flight management skills are not consistent. Instrument displays, aircraft warnings or automation serve to avert an undesired aircraft state by prompting or remedying threats and errors that are noticed late. • Safety margins are not compromised, but poorly managed.
1	Performance is observed to include critical errors or the *Aim* of the test sequence/item is not achieved: • Aircraft handling is performed with critical deviations and/or a lack of stability, rough use of controls or control of the aircraft is lost or in doubt. • Technical skills reveal unacceptable levels of depth of knowledge or comprehension of procedures, aircraft systems, limitations and performance characteristics that prevent a successful completion of the task. • Lapses in situational awareness occur due to a lack of appropriate scanning to maintain an accurate mental model of the situation or there is an inability to integrate the information available to develop and maintain an accurate mental model. • Flight management skills are ineffective, indecisive or noncompliant with mandated published procedures and/or corrective countermeasures are not effective or applied. • Safety margins are compromised or clearly reduced.

Flight Test Results

The *Privacy Act* protects the privacy of individuals with respect to personal information about themselves held by a government institution. A flight test measures the performance of the candidate for the flight test, the instructor who recommended the candidate, through identification of the Flight Training Unit responsible for the training the performance of the Chief Flight Instructor of that unit and, the examiner conducting the flight test. All of these are identified on the flight test report.

Personal information may be disclosed in accordance with Section 8(2)(*a*) of the *Privacy Act*, which allows disclosure…"for the purpose for which the information was obtained or compiled by the institution or for a use consistent with that purpose". The purpose for which flight test information is obtained is to ensure the safety of aviation in Canada. The specific purposes are to measure whether the candidate meets the minimum skill standard for the licence or rating, whether the recommending instructor is performing competently as an instructor, whether the Flight Training Unit is performing in accordance with the general conditions of the operator certificate and whether the examiner is conducting the test in accordance with the standards.

In accordance with 8(2)(*a*) of the *Privacy Act*, a copy of the flight test report will be given to the candidate for a flight test and a copy will be retained by the examiner who conducted the flight test. A copy may also be given to the instructor who recommended the candidate for the flight test and to the chief flight instructor responsible for the quality of flight training at the Flight Training Unit where the training was conducted. Specific information about the results of a flight test will not be given by Transport Canada to anyone but the individuals named on the flight test report, except in accordance with the *Privacy Act*

Assessment of Flight Test Performance

The "*Performance Criteria*" section of each flight test item prescribes the marking criteria. These criteria assume no unusual circumstances as well as operation of the helicopter in accordance with the manufacturer's specifications, recommendation and configurations in the Pilot's Operating Handbook/Aircraft Flight Manual (POH/AFM) or other approved data.

Throughout the flight test, the candidate 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 a written checklist in flight, while accomplishing the elements of an "*Aim"*, would be either unsafe or impractical. The first duty of the flying pilot is to flight the aircraft, for this reason division of attention and proper visual scanning should be considered when completing checks.

Consideration will be given to unavoidable deviations from the published criteria due to weather, traffic or other situations beyond the reasonable control of the candidate. To avoid the need to compensate for such situations, tests should be conducted under normal conditions whenever possible.

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FLIGHT TEST ITEMS

Airmanship

The candidate's airmanship will be assessed along with the performance criteria in determining the mark awarded for each item. During the entire flight the helicopter shall be operated in accordance with the operating limitations as stated in CAR 602.07. Other airmanship elements such as lookout, consideration for other aircraft on the ground and in the air and choice of departure or arrival path will be important parts of each item assessed. The candidate will be expected to demonstrate good airmanship and complete accurate checks during the flight test.

Item Ex. 2 - Preparation for Flight

A. Documents and Airworthiness (Ground Item)

Aim

To determine that the candidate can correctly assess the validity of documents required on board and, from these documents, determine that the aircraft is airworthy.

Description

The candidate will determine the validity of all documents required to be carried on board the helicopter and, determine that the required maintenance has been completed.

Performance Criteria

Assessment will be based on the candidate's ability to:

(a) ensure that flight authorization is confirmed and, encompasses the requirements of the proposed flight in accordance with the applicable operational control system;

(b) determine if the documents required on board are valid;

(c) determine, for the proposed flight, if there are a sufficient number of flying hours before an inspection or a maintenance task is due and to determine, in some cases, if the time remaining is sufficient before any calendar items are due;

(d) determine the helicopter's serviceability in regard to a maintenance release and if any condition or limitation is applicable following the release;

(e) explain the process for dealing with helicopter unserviceabilities discovered during the pre-flight inspection or during a flight; and

(f) determine the impact on the proposed flight if the helicopter is found to be unserviceable during the pre-flight or has a deferred defects affecting the flight or requires equipment configuration changes.

B. Helicopter Performance and Limitations (Ground Item)

Aim

To determine that the candidate understands the approved operating procedures, performance capabilities and limitations of the helicopter being used for the flight test.

Description

The candidate will be required to explain and state approved operating procedures, performance capabilities and limitations for the helicopter to be used on the flight test. Certain essential limitations will be quoted from memory or, if required, with the help of the placard. Other helicopter performance data may be determined from the Pilot Operating Handbook (POH) or Rotorcraft Flight Manual (RFM).

Performance Criteria

Assessment will be based on the candidate's ability to:

(a) quote from memory or, if required, with the help of appropriate placards:

  (i) the following airspeed limitations, as appropriate to the type:

    (A) maximum speed in autorotation,

    (B) Never Exceed Airspeed (VNE) with different configurations, such as weight, altitude, power settings [with or without door(s)] etc.;

  (ii) the rotor RPM limitation with power on and power off;

  (iii) the power plant limitations, as appropriate to the type:

    (A) engine RPM,

    (B) manifold pressure,

    (C) torquemeter,

    (D) turbine temperature; and

    (E) gas producer.

(b) readily determine other operational data from the POH or RFM.

C. Weight and Balance, Loading (Ground Item)

Aim

To determine that the candidate can correctly complete weight and balance calculations for the helicopter used for the flight test.

Description

The candidate will be required, using actual weights, to apply the approved weight and balance data for the helicopter used in the test, and complete accurate practical computations for the actual flight test, including takeoff and landing weights and, if applicable, the zero fuel weight.

Knowledge of weight and balance graphs and envelopes, and the effect of various centres of gravity locations on the helicopter flight characteristics will be demonstrated. Practical knowledge of how to correct a situation in which the centre of gravity is out of limits or in which the gross weight is exceeded will be demonstrated.

Performance Criteria

Assessment will be based on the candidate's ability to:

(a) determine if the take-off and landing weights, centre of gravity and, if applicable, zero-fuel weight, are within permissible limits for the intended flight;

(b) demonstrate practical knowledge of how to correct a situation in which the centre of gravity is out of limits, and/or in which the gross weight is exceeded; and

(c) explain the effect of various centre of gravity locations on helicopter flight characteristics.

D. Pre-Flight Inspection (Air Item)

Aim

To determine that the candidate can complete internal and external checks in accordance with the Pilot Operating Handbook (POH), Rotorcraft Flight Manual (RFM) approved check list to determine if the helicopter is serviceable for the intended flight and demonstrate a practical knowledge of the procedures to follow if a defect is discovered. The candidate will be expected to visually or by other means confirm that there is sufficient fuel and oil for the intended flight.

Description

The candidate will determine that the helicopter is ready for the intended flight.

All required equipment and documents will be located and, so far as can be determined by pre-flight inspection, the helicopter will be confirmed to be airworthy. Visual checks for fuel quantity, proper fuel, fuel contamination and oil level will be carried out in accordance with the POH or RFM. If the aircraft design precludes a visual check, fuel sheet, fuel logs, or other credible procedures may be used to confirm the amount of fuel actually on board.

The candidate should be able to explain what appropriate action should be taken if an unsatisfactory item is detected during the pre-flight inspection. The candidate should demonstrate knowledge of the consequences if such items were undetected.

The candidate will conduct an oral passenger safety briefing. Should the candidate omit the passenger safety briefing, the examiner will ask the candidate to provide a briefing.

Performance Criteria

Assessment will be based on the candidate's ability to:

(a) use an orderly procedure to inspect the helicopter, including at least those items listed by the manufacturer and the helicopter owner;

(b) verify that the helicopter is in a condition for safe flight;

(c) demonstrate knowledge of how to deal with unsatisfactory items, if found;

(d) identify and verify the location and the due dates of the safety equipment and ensure that the equipment and the baggage are secure;

(e) organize and arrange material and equipment in a manner that makes items readily available; and

(f) deliver an effective passenger safety briefing which will include:

- (i) location of the safety card;
- (ii) safety tip related to embarking, disembarking and movement around a helicopter;
- (iii) use of seat belts;
- (iv) action to take in the event of an emergency landing;
- (v) emergency exits, emergency locator transmitter, fire extinguisher and other items for use in an emergency;
- (vi) smoking limitations; and
- (vii) items specific to the helicopter type being used.

E. Knowledge of Systems and Components (Air Item)

Aim

To determine that the candidate has a practical knowledge of the location and basis function of major engine and rotor(s) drive system components and other aircraft systems.

Description

After the candidate has completed the pre-flight inspection, the examiner will ask a few questions relating to the flight test aircraft. The candidate is expected to be able to name, locate and describe the basic function of some of the major components and systems installed in the helicopter.

Performance Criteria

Assessment will be based on the candidate's ability to name, locate and describe the basic function of three (3) major components or systems, specified by the examiner, appropriate to the type and related to the following list:

(a) engine
(b) rotor drive system
(c) primary flight controls and trim
(d) carburetor heat
(e) mixture
(f) fuel, oil, and hydraulic systems
(g) electrical system
(h) landing gear
(i) cargo hook
(j) avionics
(k) pitot-static system and associated flight instruments
(l) heater and environmental
(m) de-icing and anti-icing
(n) auto-pilot
(o) stability augmentation system
(p) any other ancillary control or system particular to the helicopter.

F. Engine Starting, Run-up, Cooldown and Shutdown

Aim

To determine that the candidate can verify the control movements and complete a start, a warm-up, a run-up, and systems checks in accordance with the Pilot Operating Handbook (POH) or Rotorcraft Flight Manual (RFM) and at the end of the flight follow the recommended procedures for engine cooldown and shutdown.

Description

The candidate will use the checklists provided by the aircraft manufacturer, or owner/operator, and use recommended procedures for engine starting, warm-up, run-up and checking helicopter systems and equipment, to determine that the helicopter is airworthy and ready for flight. The candidate will demonstrate by taking the appropriate action that he knows the procedures to follow to correct with respect to unsatisfactory conditions encountered, or simulated by the examiner. Following the flight, the candidate is expected to use a checklist and follow the recommended procedures for engine cool down and shutdown.

Performance Criteria

Assessment will be based on the candidate's ability to:

(a) use the appropriate checklist provided by the manufacturer or helicopter owner/operator;

(b) check flight controls for freedom of operation and for the appropriate movement of the surfaces, if this has not been done during the pre-flight inspection ;

(c) demonstrate an awareness of other persons and property before and during engine start;

(d) accurately complete the engine and helicopter systems checks;

(e) take appropriate action with respect to actual or simulated unsatisfactory conditions;

(f) follow the recommended procedure for engine cooldown and shutdown; and

(g) note start and shutdown times.

Item Ex. 3 - Use of Ancillary Controls and Aircraft Systems

Aim

To determine the candidate's practical knowledge in the use of ancillary controls and the aircraft systems, installed on the helicopter, in accordance with the Pilot Operating Handbook (POH) or Rotorcraft Flight Manual (RFM).

Description

The candidate will be expected, in accordance with the POH/RFM, to demonstrate a practical knowledge for the correct utilisation of ancillary controls and systems installed in the helicopter that are required for the flight or by the examiner. Use of these controls and systems will be evaluated both on the ground and in the air.

Performance Criteria

Assessment will be based on the candidate's ability to operate the controls and systems installed in the helicopter accordance with the POH/HFM.

(a) compensation systems (trim, SCAS, etc.)

(b) carburetor heat

(c) mixture

(d) landing gear

(e) cargo hook

(f) avionics

(g) pitot-static system and associated flight instruments

(h) heater, air conditioning and ventilating equipment

(i) de-icing and anti-icing

(j) any other ancillary control or system particular to the helicopter.

Item Ex. 9 - Takeoff to and Landing from the Hover

Aim

To determine the candidate's ability to safely take off and land without exceeding any aircraft operating limitation. During the takeoff the candidate is expected to perform the take-off check appropriate to the type.

Description

The candidate will be required to demonstrate normal takeoffs and landings on firm level ground, facing into or out of wind. The take-off check will be carried out to establish that the skids are free, control response is normal, the helicopter is within centre of gravity limits and there is sufficient power available for the intended hover. The pre-take-off and seating checks will be carried out to ensure a safe takeoff and landing.

Performance Criteria

Assessment will be based on the candidate's ability to:

(a) perform a pre-take off check;

(b) perform a take-off check;

(c) take off with negligible drift or yaw;

(d) land with negligible drift or yaw; and

(e) perform a seating check appropriate to the surface and the type of helicopter.

Item Ex. 10 - Hover, Hover Taxi and Hovering Turns

Aim

To determine the candidate's ability to safely hover, hover taxi and turn the helicopter through 360º while maintaining a safe height, without exceeding the helicopter's limitations.

Description

The candidate is expected to demonstrate:

(a) hovering;

(b) hover taxiing at a safe speed, in any direction whether facing into or out of the wind;

(c) hovering sideways and rearwards at a safe speed, whether facing into or out of the wind; and

(d) hovering turn at a constant and safe rate of turn.

The candidate is expected to perform all manoeuvres at a safe height, and as accurately as reasonably possible for the existing conditions as appropriate to the helicopter type. These manoeuvres will be assessed throughout the flight test whenever the candidate has to manoeuvre the helicopter close to the ground.

Performance Criteria

Assessment will be based on the candidate's ability to:

(a) maintain a proper look-out for the avoidance of obstacles and traffic.

(b) maintain a constant height over the surface;

(c) maintain good directional control or, when requested by examiner, a constant heading;

(d) verify the clearance for the tail rotor before a turn;

(e) maintain a given position when in hover or hovering turn;

(f) in a hovering turn to maintain a controlled and moderate rate of turn;

(g) anticipate and compensate for the effect of the wind when hover taxiing; and

(h) maintain an appropriate speed, when hover taxiing or hovering sideways.

Item Ex. 11 - Engine Failure at the Hover or Hover Taxi

Aim

To determine the candidate's ability to execute a safe landing following an engine failure at the hover or hover taxi.

Description

The candidate will position the helicopter in a hover or hover-taxi over a suitable landing site, as directed by the examiner, and land safely after the examiner has simulated an engine failure.

Performance Criteria

Assessment will be based on the candidate's ability to land the helicopter:

(a) with negligible yaw;

(b) with negligible sideways drift;

(c) with negligible rearwards drift;

(d) in a level attitude;

(e) with the proper application of the collective; and

(f) with a smooth touch down.

Item Ex. 12 - Transitions

Aim

To determine the candidate's ability to safely execute all departures follow by a climb from and approaches to a hover, without exceeding the helicopter's limitations.

Description

The candidate is expected to smoothly and safely accelerate the helicopter to a climb or decelerate from a descent, without using excessive power and attitude changes. The candidate must demonstrate awareness of the Height Velocity Diagram.

Transitions will be normally assessed during other items in the flight test, such as the circuit.

Performance Criteria

(a) During a departure followed by a climb from the hover, while facing into wind or as closely as possible, assessment will be based on the candidate's ability to:

- (i) control drift, yaw, and sink;
- (ii) avoid abrupt or unusual attitudes;
- (iii) avoid abrupt power changes;
- (iv) avoid unnecessarily high power demand;
- (v) demonstrate an awareness of the Height Velocity Diagram; and
- (vi) maintain the required heading and airspeed.

(b) During an approach to the hover, while facing into wind or as closely as possible, assessment will be based on the candidate's ability to:

- (i) establish and maintain a normal approach angle and rate of closure;
- (ii) control drift and yaw;
- (iii) maintain the required heading ;
- (iv) demonstrate an awareness of the Height Velocity Diagram;
- (v) avoid situations that may result in vortex ring state;
- (vi) avoid situations that may result in settling with maximum-available power and/or overpitching; and
- (vii) arrive at a predetermined point at a normal hover height appropriate to the helicopter type.

Item Ex. 13 - Autorotation 2 (Upper Air)

Tested in conjunction with Item Ex. 18

Item Ex. 14 - Malfunctions and Emergency Procedures

Aim

To determine that the candidate can react appropriately to emergencies or abnormal flight situations in regard to the safety of passenger(s), the crew and to minimize aircraft damage, as much as possible.

Description

The candidate is expected to respond correctly to the simulated emergency procedures or abnormal conditions in accordance with the Pilot Operating Handbook (POH) or Rotorcraft Flight Manual (RFM) and/or Flight Training Manual), as appropriate to the type. Assessment may be carried out during any portion of the flight test.

The Private Pilot Licence (PPL) candidate will be evaluated on two simulated emergencies or malfunctions and the Commercial Pilot Licence (CPL) candidate will be evaluated on three emergencies or malfunctions, as specified by the examiner.

Performance Criteria

Assessment will be based on the candidate's ability to:

a) identify the emergency or malfunction;

b) analyze the situation;

c) take appropriate action in accordance with the emergency or malfunction procedure;

d) simulate an appropriate radio call; and

e) advise the passenger(s) accordingly.

Note 1 At least one emergency procedure should be simulated while airborne for the PPL and two emergency procedures for the CPL. Some of the other emergency procedures or abnormal conditions may be tested on the ground with the engine shut down.

Note 2: When a landing is accomplished following a simulated in-flight emergency to an unknown surface, the condition of the landing surface must be assessed from a hover before a safe landing can be accomplished.

Item Ex. 15 - The Circuit

Aim

To determine, that the candidate can operate the helicopter in a safe manner in the vicinity of a controlled and uncontrolled heliport or aerodrome in accordance with the regulations, without exceeding the helicopter's limitations.

Description

Proper circuit procedures, including departure and joining procedures for controlled and/or uncontrolled aerodromes will be demonstrated. The ability to comply with ATC clearances or instructions while maintaining separation from other aircraft will be demonstrated.

When the location of the flight test does not allow a demonstration of both controlled and uncontrolled circuit procedures, the examiner will question the candidate about the procedures that are not demonstrated.

Performance Criteria

Assessment will be based on the candidate's ability to:

(a) adhere to known or published traffic patterns including departure, arrival, or other special procedures in effect at the time.

(b) maintain the known or published safe altitude within ±100 feet;

(c) fly an accurate circuit maintaining the appropriate position and separation from other aircraft; and

(d) comply with ATC clearances, or instructions.

Item Ex. 16 - Sideways and Rearwards Flight

Tested in conjunction with Item Ex. 10

Item Ex. 17 - Deceleration and Steep Turn

Aim

To determine the candidate's ability to perform a deceleration followed by a steep turn of at least 30º, while maintaining level flight without exceeding the helicopter's limitations.

Description

The examiner will present a scenario requiring a deceleration and a steep turn for avoidance of an obstacle or operational need. The examiner will specify an entry heading and an altitude prior to the start of the manoeuvre. The recommended height for the manoeuvre is approximately 500 feet AGL, but not be less than 300 feet AGL.

The candidate is expected to execute, from cruise speed and a specified altitude, a deceleration to a speed between 50 and 60 knots (or MPH) while maintaining an altitude within ±200 feet, followed immediately by a steep turn with at least 30°, but not exceeding 45°, of bank through a 180° change of heading to the reciprocal of the entry heading (±20°). The candidate is expected to remain within 200 feet of the entry altitude and an indicated airspeed ranging between 40 to 70 knots (or MPH) during the turn. An airspeed within ±10 knots (or MPH) of the speed range may be acceptable as a major error if corrected in a timely manner by the candidate. A speed deviation more than 10 knots (or MPH) above or below the speed range will be deemed to be a critical deviation. The turn will be terminated with a return to cruise speed at an altitude within ±200 feet of the entry altitude.

Performance Criteria

Assessment will be based on the candidate's ability to:

a) maintain an effective lookout;

b) enter a smooth and coordinated deceleration;

c) enter a smooth and coordinated steep turn;

d) maintain the specified altitude ±200 feet throughout the manoeuvre;

e) maintain a speed ranging between 40 and 70 knots (or MPH) during the turn;

f) maintain a minimum angle of bank of 30º but not exceeding 45° during the turn;

g) initiate a timely roll out on the reciprocal heading of the original entry heading (±20°) and return to cruise speed.

Item Ex. 18 - Autorotations

A. - Engine Failure at Altitude

Aim

To determine that, in the event of an engine failure, the candidate has the ability to safely enter autorotation without excessive loss of rotor RPM and to perform a safe autorotational approach to a suitable landing area and execute a safe overshoot, without exceeding any aircraft limitations.

Description

Engine failure will be simulated, without advance warning, by the examiner in accordance with the method recommended by the manufacturer. While accomplishing the required emergency procedure, the candidate will be expected to use good decision-making and fly a safe approach to a suitable landing area, in a manner that would permit a safe landing if the approach were continued to the ground.

The candidate is expected to carry out an overshoot at a safe altitude when requested by the examiner. Assessment of the overshoot is integral to this manoeuvre and will be based on the correct application of power, establishing a positive rate of climb and control of airspeed and direction.

Performance Criteria

Assessment will be based on the candidate's ability to react to a simulated engine failure by:

(a) entering an autorotation while maintaining rotor RPM;

(b) selecting a suitable area for landing;

(c) varying airspeed, RPM and flight profile as necessary to reach the selected landing area;

(d) simulating a "Mayday" call if the time permitted; and

(e) demonstrating awareness of the Height/Velocity Diagram.

The assessment will also be based on the candidate's ability to carry out an overshoot by:

(a) the application of the power;

(b) establishing a positive rate of climb;

(c) control of the airspeed; and

(d) control of the direction.

B. - Landing or Power Recovery to the Hover/Hover-Taxi

Aim

To determine, the candidate's ability to enter an autorotation safely without excessive loss of rotor RPM and perform a safe autorotational approach and landing to a pre-selected touchdown zone, without exceeding any aircraft limitations.

Description

The candidate will be required to carry out two autorotations, one of which will include a 180-degree turn, towards a rectangular pre-selected touchdown zone that is 300 feet long by 100 wide for PPL or 200 feet long by 100 feet wide for CPL candidates.

A touchdown within 100 feet beyond the pre-selected touchdown zone boundary may be acceptable as a major error and assessed "2", if correct landing technique is used by the candidate. A touchdown more than 100 feet beyond the pre-selected touchdown zone boundary will be deemed to be a critical deviation.

The autorotation will be initiated above a zone that has previously been assessed as suitable for practice autorotational landings. The autorotation will be commenced from cruise at a safe height, but in no instance lower than 500 feet above ground. The autorotations will terminate, at the discretion of the examiner, in either a landing (Full-on), or a power recovery to the hover/hover-taxi.

Performance Criteria

Assessment will be based on the candidate's ability to:

(a) enter an autorotation while maintaining rotor RPM;

(b) vary airspeed, RPM and flight profile as necessary to reach the selected landing area;

(c) demonstrate awareness of the Height/Velocity Diagram profiles;

(d) demonstrate awareness on a power recovery of the danger of vortex ring, of settling with maximum-available power and /or overpitching;

(e) flare at the height recommended for the type of helicopter under the prevailing ground and weather conditions;

(f) apply the appropriate amount of collective pitch to arrest the descent and cushion the helicopter onto the ground for a full-on or to a hover/hover taxi for a power recovery;

(g) maintain directional control in the flare and touch down; and

(h) land within the pre-selected touchdown zone;

Note 1: A full-on autorotation will only be carried out on known suitable landing surfaces.

Note 2: Where applicable, the Flight Training Unit or aircraft owner's policy regarding minimum wind requirements for full-on autorotations will be respected, when the wind is less than 10 knots.

Item Ex. 19 - Practice Forced Approaches

Tested in Conjunction with Item Ex. 14 and/or 18

Item Ex. 20 - Pilot Navigation

A. Flight Planning (Ground Item)

Aim

To determine that the candidate can, in a timely manner, effectively plan and prepare a safe VFR cross-country flight.

Description

The examiner will ask the candidate to plan a VFR cross-country flight, with one or more intermediate stops, to an assigned destination at least 2 hours cruising range distance in the helicopter being used for the flight test.

Preliminary flight planning and map preparation such as initial route selection, map preparation, determination of tracks, selection of possible alternates, and initial flight log entries may be done prior to the day of the flight test. Final flight planning will be completed based on real-time weather and a loading scenario specified by the examiner. Software or online flight planning may be used for the planning and generation of a flight log.

During the evaluation, the examiner will present an alternative scenario for one of the legs of the cross-country flight that will require a brief recalculation of the flight log but without the help of software or online flight planning. This will evaluate the candidate's ability to perform manual flight planning calculations.

Performance Criteria

Assessment will be based on the candidate's ability to:

(a) use appropriate and current aeronautical charts and other flight publications, to extract and record pertinent information;

(b) select an efficient route;

(c) retrieve and interpret weather information, and NOTAMs, appropriate for the intended flight;

(d) prepare a navigation chart and flight log;

(e) verification of the appropriate Aeronautical Information Circulars (AIC) and AIP Canada (ICAO) supplements;

(f) obtain pertinent operational information about the en route and destination airports and/or heliports;

(g) accurately calculate headings, estimated ground speed, fuel requirements, and time en route;

(h) accurately prepare weight and balance computations for the departure and the intermediate stop(s);

(i) determine the appropriate departure procedure; or

(j) determine the most operationally efficient departure procedure, in the case of a candidate for a Commercial Pilot Licence;

(k) make a competent "go/no go" decision based on available information;

(l) accurately complete a VFR flight plan;

(m) recalculate, with alternative scenario, one leg of the cross-country flight without the help of software or online flight planning.

(n) complete the preparation (s) of the cross country flight within the following time periods:

(i) where no preliminary flight planning and initial flight log was completed prior the beginning of the flight test, within one (1) hour and fifteen (15) minutes for the Private Pilot Licence or one (1) hour for the Commercial Pilot Licence; or

(ii) where preliminary flight planning and initial flight log was completed prior the beginning of the flight test, within forty five (45) minutes for the Private Pilot Licence and thirty (30) minutes for the Commercial Pilot Licence.

B. Departure Procedure

Aim

To determine, that the candidate can perform a safe and efficient departure in compliance with a clearance, instruction or local procedure.

Description

When requested by the examiner, the candidate will be expected to depart on the planned cross-country flight in compliance with a clearance, instruction or local procedure, as applicable. Radio navigational aids (including GPS) will not be used for this procedure.

Performance Criteria

Assessment will be based on the candidate's ability to:

(a) activate the flight plan with ATS or simulate activation with the examiner;

(b) use an efficient departure procedure to intercept the pre-planned track;

(c) comply with all departure clearances and instructions;

(d) note en route departure time;

(e) set the heading indicator by reference to the magnetic compass, or other acceptable means;

(f) complete appropriate checks; and

(g) determine the estimated time of arrival (ETA) for the first turning point or destination.

C. En Route Procedure

Aim

To determine, that the candidate can navigate safely and efficiently to a predetermined destination.

Description

After setting heading, the flight will continue until the candidate, using visual navigation techniques and informing the examiner of the appropriate correction if required, determines the timing required to fly to the first turning point or destination. Radio navigation aids will not be used for this procedure.

Performance Criteria

Assessment will be based on the candidate's ability to:

(a) use good cockpit management;

(b) navigate by applying systematic navigation techniques;

(c) maintain the planned cruising altitude within ±200 feet, and headings with sufficient accuracy to ensure predictable flight progress can be made;

(d) demonstrate an organized method which would correct any existing track error; and

(e) provide within 15 minutes from the time of setting heading:

  (i) the position of the aircraft;

  (ii) a revised ETA for the first turning point or destination; and

  (iii) confirm the fuel requirements.

D. Alternative Destination

Aim

To determine that the candidate can safely and efficiently perform the required in-flight planning to navigate to an alternate destination selected by the examiner.

Description

When requested by the examiner, the candidate will demonstrate the ability to navigate to an alternate, **assuming that the original point of departure for the cross-country is the only refuelling point**. A part or all of the flight to the alternate destination will be conducted at approximately 500 feet above ground or a minimum safe altitude. While en route, the altitude and the heading may be altered, to maintain a minimum safe altitude because of obstacles such as mountains, hills, water surfaces, built up areas, livestock, or structures. The candidate is expected to make the examiner aware of intentional changes in altitude and/or heading.

The candidate's ability to proceed to an alternate using mental dead reckoning and geographic features such as roads, railway, powers lines, rivers, lakes, hills and mountains, if they are available, will be assessed. Rulers, notched pencils, protractors, computers, or radio navigation aids will not be used for this procedure.

The navigation to an alternate destination will be successfully completed, when the candidate has identified the point of arrival by means of a geographic feature.

Performance Criteria

Assessment will be based on the candidate's ability to:

(a) establish the helicopter without undue delay on a track or follow a geographic feature that will lead to the alternate destination;

(b) in addition, in the case of a candidate for a Commercial Pilot Licence, establish the helicopter on course in an operationally and efficient manner;

(c) maintain declared altitudes (±200 feet);

(d) provide an estimated time of arrival (±5 minutes) and the requirements in fuel to reach the alternate destination and return to the original point of departure for the cross-country; and

(e) establish or simulate a communication with ATS or the operating base to inform them of the intention to proceed toward an alternate destination.

Note: The candidate for a Commercial Pilot Licence is expected to initiate navigation toward the alternate destination without undue delay and in an operationally and efficient manner. This will require extensive ground training and practice to improve the candidate's ability to quickly determine a heading and a time enroute without the need to loiter in a holding pattern.

E. Radio Navigation (Commercial Only)

Aim

To determine that the candidate can operate the radio navigational aids and navigate towards or away from a ground-based facility or to a pre-determined destination or waypoint.

Description

The candidate will be expected to demonstrate practical knowledge on only one of the following radio navigational aids, GPS, VOR or ADF.

If using a GPS, it must be secured in a manner that will not interfere with normal or emergency operation and permit easy operation during flight.

In the case of the GPS, the candidate will be expected to select a waypoint, determine the present position then navigate to the selected waypoint without excessive bearing deviation. While navigating en route the candidate will be expected, to create a user waypoint, as if for future use.

In the case of VOR or ADF, the candidate will be expected to tune, identify and confirm the selected radio facility. The candidate will then determine the present position relative to the ground-based facility and track towards or away from it without excessive bearing deviation.

The required track will be maintained until station or waypoint passage. In the case where it is not practicable to fly to the station, because of distance, the examiner may terminate the tracking at an appropriate point and determine further knowledge with oral questioning.

Performance Criteria

Assessment will be based on the candidate's ability to:

(a) tune and identify the station in a timely manner, in the case of VOR or ADF;

(b) select a waypoint in a timely manner, in the case of GPS;

(c) determine the aircraft position from the station in the case of a VOR or an ADF;

(d) determine the aircraft position and distance from the waypoint in the case of GPS;

(e) maintain track within ±10º for VOR or ADF, or for GPS, within 1 nautical mile;

(f) create a user waypoint in a timely manner, in the case of GPS; and

(g) identify or describe station or waypoint passage.

Item Ex. 22 - Minimum Safe Altitude Operations

(Tested mainly in conjunction with Ex. 20D)

Aim

To assess the candidate's ability to fly safely at low level, while remaining compliant with applicable regulations.

Description

Low flying is usually used for operational purposes and may be associated with certain weather conditions such as strong winds, low ceilings, low visibility or whiteout. The examiner will assess the candidate's knowledge of the procedures and techniques to be used in marginal weather conditions during low-level operations.

During some flight test items, the candidate will be required to fly at low level employing safe low altitude techniques. Particular attention will be given to flight near structures (buildings, power lines, towers, etc.), built-up areas, livestock, and rising terrain.

Performance Criteria

Assessment will be based on the candidate's ability to:

(a) choose the best route in regard to obstacles and the possibility of an emergency situation;

(b) brief the passenger(s) appropriately with regard to the type of low flying to be undertaken, such as advising the pilot of obstacles;

(c) keep a good lookout for obstacles, birds and other aircraft;

(d) use correct technique when crossing an obstacle;

(e) avoid the caution zones depicted on the manufacturer's Height Velocity Diagram except when necessary for the operation

(f) use good piloting technique to compensate for high wind, updraft, downdraft and mechanical turbulence; and

(g) demonstrate appropriate action in the event of encountering poor weather or white-out conditions or demonstrate knowledge of preventive techniques for such encounters by answering brief oral questions.

Item Ex. 23 - Sloping Ground Operations

Aim

To determine the candidate's ability to operate a helicopter safely when landing on, taking off from, and manoeuvring over an area of sloping ground.

Description

The candidate will be expected to manoeuvre land on and take off from a suitable area of sloping ground that may be selected by the examiner. This item may be carried out in conjunction with other items that required a landing and a take-off.

Performance Criteria

Assessment will be based on the candidate's ability to:

(a) assess the selected sloping ground to determine if a landing is possible;

(b) hover-taxi and manoeuvre appropriately over the area to determine the best position for a landing;

(c) co-ordinate the flight controls to perform a smooth landing and takeoff;

(d) determine during touchdown if a complete landing is still possible; and

(e) perform an effective seating check.

Item Ex. 24 - Advanced Takeoffs and Landings

Aim

To determine the candidate's ability to safely take off and land, in an operational environment, without exceeding any aircraft limitation.

Description

The candidate will be required to demonstrate:

(a) a minimum of one of the following advanced takeoffs:

  (i) a no-hover takeoff,

  (ii) a ground effect takeoff,

  (iii) an obstacle clearance takeoff; or

  (iv) a vertical takeoff.

(b) following an approach, a minimum of one of the following advanced landings:

  (i) an approach to a no-hover landing on a pre-determined spot; or

  (ii) a run-on landing.

Pre-takeoff and seating checks will be performed in a manner that is appropriate for the requested takeoff and landing. The examiner may specify simulated conditions, including surface conditions (snow, dust, etc.), obstacles to be cleared or an emergency for the takeoffs or landings. These manoeuvres may be assessed in conjunction with other items.

Performance Criteria

Assessment will be based on the candidate's ability to:

(a) perform the appropriate pre-takeoff checks;

(b) perform the appropriate checks during the takeoff ;

(c) take off and land using the appropriate techniques and procedures considering the existing conditions or simulated conditions specify by the examiner ;

(d) take off with negligible drift or yaw;

(e) land with negligible drift or yaw;

(f) land on the precise landing point specified by the examiner (e.g. runway numbers); and

(g) perform a seating check appropriate to the type of helicopter.

Item Ex. 25 - Confined Areas

Aim

To determine the candidate's ability to plan and safely perform a confined-area operation, while maintaining a safe altitude, airspeed and distance from obstacles, without exceeding any aircraft limitations.

Description

The examiner may present an operational scenario that requires the candidate to find a landing site. The candidate will execute a reconnaissance, an approach to a hover within a confined area, some manoeuvring, a landing, a takeoff, a departure and a rejected departure. Depending on the existing conditions and at the examiner's discretion, the rejected departure may be executed in another location that requires a similar departure.

Note: The landings and takeoffs in confined areas will be evaluated in the Item Ex. 9, 23 or 24, as appropriate to the type of landing or takeoff required.

Performance Criteria

Assessment will be based on the candidate's ability to:

(a) carry out a reconnaissance flight in a manner that allows a:

- (i) inspection to assess the proposed landing area and its surroundings;
- (ii) assessment of the wind direction and velocity;
- (iii) preliminary assessment, if there is sufficient power for the intended operation;
- (iv) selection of a suitable direction and route of approach, considering terrain, obstacles, wind and weather conditions; and
- (v) selection of a suitable overshoot route, considering terrain, obstacles, wind and weather conditions, if the approach to the confined area has to be rejected.

(b) execute an approach, while still assessing the confined area, to a hover within the confined area by:

- (i) controlling direction;
- (ii) maintaining a normal rate of closure;
- (iii) controlling the angle of approach;
- (iv) controlling the rate of descent;
- (v) confirming , before entering the confined area, that there is sufficient power;
- (vi) avoiding potential situations that may result in settling with maximum-available power and/or overpitching; and
- (vii) avoiding potential situations that may result in loss of tail rotor effectiveness.

(c) manoeuvre the helicopter to the best landing point, if required, and accomplish a landing and a takeoff at that location and manoeuvre the helicopter, if required, to the best departure point while using:

- (i) the recommended height above the ground;
- (ii) the appropriate techniques;
- (iii) the controls smoothly and accurately.

(d) execute a departure by:

(i) determining the suitable direction and route of departure considering terrain, obstacles, wind and weather conditions;

(ii) completing a meaningful pre-departure check;

(iii) departing while making appropriate corrections, as required, in regard to terrain, wind, weather conditions and aircraft performance; and

(iv) avoiding potential situations that may result in loss of tail rotor effectiveness.

(e) execute a rejected departure by:

(i) smooth and accurate use of controls;

(ii) determining, in a timely manner, a suitable landing area;

(iii) avoiding situations that may result in settling with maximum-available power and/or overpitching;

(iv) landing with negligible drift or yaw; and

(v) performing a seating check appropriate to the type of helicopter.

Item Ex. 30 - Instrument Flying

Note: *This item will require a suitable view-limiting device.*

Aim

To determine the candidate's knowledge on how to anticipate and avoid instrument meteorological conditions (IMC) when flying VFR and to evaluate his ability to maintain control by reference to the flight instruments while manoeuvring the helicopter in simulated IMC conditions.

A. Full Panel

Description

The candidate will be asked questions, based on a scenario from the examiner, to determine knowledge for the anticipation and recognition of potential situations that could lead into marginal or instrument meteorological conditions (IMC) and how to proceed in those situations.

The candidate will be required to fly the helicopter by reference to a full panel of flight instruments with a view-limiting device that simulates IMC conditions. The flight will be conducted without the assistance of a stability augmentation system, except when required by the Helicopter Flight Manual.

Private Pilot

The candidate will be asked in a coordinated manner to:

(a) maintain straight and level flight for 2 minutes; then

(b) execute a level, rate-one turn through 180 degrees to a reciprocal compass heading; then

(c) on completion, maintain a straight and level flight for a further 2 minutes.

Commercial Pilot

The candidate will be asked in a coordinated manner to:

(a) maintain a straight and level flight for 2 minutes; then

(b) execute a rate-one turn climb at a specific airspeed to an pre-determinate altitude and heading; then

(c) after maintaining a straight and level flight of at least 15 seconds, execute a rate-one turn descent at a specific airspeed to a pre-determinate heading and altitude while maintaining a rate of descent of less than 1000 feet /minute; then

(d) maintain a straight and level flight for 1 minutes.

Performance Criteria

For a private pilot flight test, assessment will be based on the candidate's ability to:

(a) describe methods of anticipating potential IMC conditions;

(b) describe appropriate manoeuvres to avoid an imminent entry in IMC conditions; and

(c) control and manoeuvre the helicopter within:

(i) ±20º of the assigned heading;

(ii) ±200 feet of the assigned altitude;

(iii) ±20 knots of the assigned airspeed; and

(iv) an angle of bank not to exceed 30º .

For a commercial pilot flight test, assessment will be based on the candidate's ability to:

(a) describe methods of anticipating potential IMC conditions;

(b) describe appropriate manoeuvres to avoid an imminent entry in IMC conditions; and

(c) control and manoeuvre the helicopter within:

(i) ±15ºof the assigned heading;

(ii) ±150 feet of the assigned altitude;

(iii) ±15 knots of the assigned airspeed;

(iv) ±200 feet/minute of the required rate of descent when established; and

(v) ±10º of the specified angle of bank.

B. Recovery from an Unusual Attitude

Aim

To determine the Private or Commercial Pilot Licence candidate's ability to control the helicopter and recover from an unusual attitude without exceeding any aircraft limitations, solely by reference to the flight instruments.

Description

The examiner will take control and fly the helicopter into an unusual attitude, then transfer control and call for "recovery".

The **private** pilot candidate will be required to promptly recover with a minimum loss of altitude from one unusual attitude by using the flight instruments and without stability augmentation systems, except when required by the POH or RFM.

The **commercial** pilot candidate will be required to promptly recover with minimum loss of altitude from one unusual attitude by using a limited panel, without reference to the attitude indicator or the heading indicator and without stability augmentation systems, except when required by the POH or RFM.

Performance Criteria

Assessment will be based on the candidate's ability to:

(a) on command, recognize unusual flight attitudes by reference to flight instruments;

(b) apply smooth, coordinated control application in the correct sequence;

(c) recover with minimum loss of altitude; and

(d) after recovering, maintain a stabilized level flight using correct instruments cross-check and interpretation.

Item Ex. 31 – Radio Communication

Aim

To determine, that the candidate's ability to use the installed radio equipment. The candidate is expected to be able to communicate his or her intentions and understand the information, clearances or instructions received from air traffic services. The candidate is also required to make all mandatory communication calls.

Description

The candidate must demonstrate the ability to:

(a) determine and use the appropriate frequencies during the flight or explain the correct procedures for the use of radio communication equipment available on board the aircraft;

(b) obtain information relevant to the flight including ATIS, where available;

(c) initiate communication, where required;

(d) respond and act upon received communication with traffic and/or procedures information or ATC clearances and instructions; and

(e) obtain or explain how to obtain a Special VFR clearance and radar assistance.

The examiner will also assess the candidate's ability to obtain weather information, NOTAMs or other details pertinent to the flight.

Where it is not possible to establish radio communication with an ATC or ATS unit, the examiner may simulate the communications.

Performance Criteria

Assessment will be based on the candidate's ability to:

(a) select and use the required frequencies;

(b) use correct radio procedures including receiving ATIS, where available;

(c) act accordingly upon receiving a communication;

(d) demonstrate, or explain, the correct procedure for obtaining radar assistance and a Special VFR clearance;

(e) demonstrate or explain how to obtain information such as weather and NOTAM from a radio facility.

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RECOMMENDATION FOR FLIGHT TEST

Private/Commercial Pilot Licence-Helicopter

Name of Candidate (Print)	Licence/Permit Number
Flight Experience Dual: Solo:	Flight Test ☐ Private ☐ Commercial

I, the undersigned instructor, certify that the above named candidate meets the minimum experience requirements of section 421.14 of the *Personnel Licensing Standards* and a pre-test evaluation of all flight test items has been conducted with the candidate.

I consider the above named candidate to have reached a sufficient level of competency to complete the flight test required for the issuance of the Pilot Licence – Helicopter, indicated above, and hereby recommend the candidate for the flight test, as I am qualified through the privileges of my pilot licence to make this recommendation.

Name of Instructor Recommending Test (Print)	Class	Licence Number
Signature	Date	Flight Training Unit
Name of Supervising Instructor (if recommending instructor is Class 4) (Print)		Licence Number
Signature	Date	

I, the undersigned instructor, certify that the candidate has successfully completed the written examination for the Commercial Pilot Licence and that I have reviewed the subject area(s) in which the *Written Examination and Feedback Report* indicated a deficiency with the candidate, as required by CAR 421.14(3)(b). I further certify that the candidate now meets the knowledge requirements of the Commercial Pilot Licence for the subject area(s) in which a deficiency was noted.

Date Examination Successfully Completed:		
Name of Instructor Conducting Examination Review (Print)	Class	Licence Number
Signature	Date	

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RECOMMENDATION FOR PARTIAL FLIGHT TEST

Private/Commercial Pilot Licence-Helicopter

Name of Candidate (Print)	Licence/Permit Number
Flight Experience Dual Solo	Flight Test ☐ Private ☐ Commercial

I, the undersigned instructor, have conducted a review and given additional training for the following flight test item(s) _____with the above named candidate.

I consider the candidate to have reached a sufficient level of competency to successfully complete the flight test for the issuance of the Pilot Licence – Helicopter, indicated above, and hereby recommend the candidate for the partial flight test.

I further certify that I am qualified through the privileges of my pilot licence to make this recommendation.

Name of Instructor Recommending Test (Print)	Class	Licence Number
Signature	Date	Flight Training Unit
Name of Supervising Instructor (if recommending instructor is Class 4) (Print)		Licence Number
Signature	Date	