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PILOT PROFICIENCY CHECK AND AIRCRAFT TYPE RATING

Flight Test Guide (Helicopter)

Second Edition

TC-1002342

Canada

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FOREWARD

This manual contains procedures and guidelines on the conduct of Pilot Proficiency Checks (PPCs) for the use of Civil Aviation Safety Inspectors (CASIs) and Approved Check Pilots (ACPs).

Transport Canada Civil Aviation (TCCA) issuing authorities approve ACPs and authorize them to conduct PPCs. When performing their duties, ACPs act as delegates of the Minister according to subsection 4.3(1) of the *Aeronautics Act* and must follow the procedures specified in this manual.

There are significant changes in all areas in the Second Edition and it is impractical to highlight individual changes. Reading this document in entirety is recommended.

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ACRONYMS

ACP - Approved Check Pilot
AAE - Above Aerodrome Elevation
AOM - Aircraft Operating Manual
ATC - Air Traffic Control
ATPL - Airline Transport Pilot Licence, AA – Aeroplane; AH – Helicopter
CAP - Canada Air Pilot
CARs - Canadian Aviation Regulations
CASI - Civil Aviation Safety Inspector
CASS - Commercial Air Service Standards
CDP - Critical Decision Point
COM - Company Operations Manual
CRM - Crew Resource Management
DA - Decision Altitude
DH - Decision Height
ECL - Emergency Checklist
EFB - Electronic Flight Bag
ETA - Estimated Time of Arrival
FAF - Final Approach Fix
FAWP - Final Approach Waypoint
FLIP - Flight Information Publication
FMS - Flight Management System
FOM - Flight Operations Manual
FSTD - Flight Simulation Training Device
FTD - Flight Training Device
FTR – Flight Test Report
GNSS - Global Navigation Satellite System
GPS - Global Positioning System
IAP - Instrument Approach Procedure
IFR - Instrument Flight Rules
IMC - Instrument Meteorological Conditions
MAP - Missed Approach Point
MDA - Minimum Descent Altitude
MEL - Minimum Equipment List
NM - Nautical Mile
PF - Pilot Flying
PIC - Pilot-in-Command
PM - Pilot Monitoring
POI - Principal Operations Inspector

PPC - Pilot Proficiency Check
RAIM - Receiver Autonomous Integrity Monitoring
RCAP – Restricted Canada Air Pilot
RFM - Rotorcraft Flight Manual
RNP - Required Navigation Performance
RVR - Runway Visual Range
SCDA - Stabilized Constant Descent Angle
SIC - Second-in-Command
SID - Standard Instrument Procedure
SOP - Standard Operating Procedure
STAR - Standard Terminal Arrival
TEM - Threat and Error Management
VFR - Visual Flight Rules
VMC - Visual Meteorological Conditions

DEFINITIONS

Aircraft PPC - A PPC that is conducted entirely in an aircraft.

Approved Check Pilot (ACP) - A person holding an official authorization to conduct flight checks on behalf of the Minister of Transport pursuant to Part 1, Section 4.3(1) of the *Aeronautics Act*.

Air Operator - means the holder of an air operator certificate under Part VII of the CARs or the holder of a private operator registration document under Subpart 604 of the CARs.

Civil Aviation Safety Inspector (CASI) - A Transport Canada inspector who is trained and authorized to conduct flight checks.

Commercial Air Service Standards (CASS) - CARs Standards published under the authority of the Minister that apply in respect of commercial air services operated by air operators. Referred to as the CARs Standard(s) in this guide.

Conduct - To take an active role in all phases of a flight check, including pre-flight preparation, the briefing, the control and pace of the various sequences, the assessment of the flight check candidate's performance, the debrief and the completion of the required documents including certification of the candidate's licence.

Crew Resource Management (CRM) - The effective utilization of all available resources to achieve safe and efficient operations. The objective of CRM is to enhance communications, human factors and management skills of the crew members concerned. Emphasis is placed on the non-technical aspects of crew performance.

Deviation – A quantifiable measurement of a variation in precision from a specified flight test exercise tolerance. Deviations are incorporated in the aircraft handling skill element of the 4-Point Marking Scale.

Error - A qualitative assessment of an action or inaction by a flight crew that leads to a variation from flight crew intentions or expectations. Errors are incorporated in the technical skills and knowledge element of the 4-Point Marking Scale.

Examiner – For the purposes of this guide, an examiner is an ACP or CASI who is conducting a PPC.

Final Approach Segment – For the purposes of this guide, is considered to be the portion of an instrument approach between the Final Approach Fix (FAF) and the Missed Approach Point.

Final Approach Track – For the purposes of this guide, is considered to be the entire portion of an instrument approach between the Initial Fix (IF) and the Missed Approach Point.

Flight Check - In this manual, refers to a PPC.

Flight Test Exercise - A manoeuvre, task or item listed in this guide.

Flight Simulation Training Device (FSTD) - A Transport Canada-approved full-flight simulator or flight training device as defined in the Aeroplane and Rotorcraft Simulator Manual (TP9685) and certified in accordance with Section 606.03 of the CARs.

IFR PPC – A PPC conducted under instrument flight rules (IFR) that contains the required manoeuvres to issue an initial instrument rating or meet recency requirements for the holder of an instrument rating. An IFR PPC may also include a VFR portion with VFR manoeuvres.

IFR-Related Sequence - A flight test exercise that is associated with instrument flight procedures such as, but not limited to, flight planning, standard instrument departures (SIDs), holds, standard terminal arrival routes (STARs), instrument approaches and missed approaches.

Instrument Proficiency Check (IPC) - A recurring event to confirm retention of a level of proficiency that meets the standards of performance required for the issuance of an instrument rating. Refer to Advisory Circular (AC) 401-004.

MINIMA – The published Decision Height, Decision Altitude, or Minimum Descent Altitude, as applicable, for an instrument approach.

Non-Technical Skill Elements - Refers to cooperation, leadership and managerial skills, situational awareness and decision making. Non-technical skill elements are incorporated in the 4-point marking scale.

Pilot Flying (PF) - The term pilot flying (PF) refers to the pilot responsible for managing the current and projected flight path of the aircraft in a multi-crew cockpit.

Pilot-In-Command (PIC) - In relation to an aircraft, the pilot having responsibility and authority for the operation and safety of the aircraft during flight time.

Pilot Monitoring (PM) - The term pilot monitoring (PM) replaces pilot not flying (PNF). The PM is responsible for monitoring the current and future projected flight path vector of the aircraft in a multi-crew cockpit.

Pilot Not Flying (PNF) – Pilot not flying (PNF) has been replaced by pilot monitoring (PM) in this guide.

Pilot Proficiency Check (PPC) - A flight check conducted by an approved check pilot (ACP) or Civil Aviation Safety Inspector (CASI) in accordance with the appropriate PPC Schedule specified in Part VII Standards of the CARs.

Plan of Action – Terminology adopted from the Federal Aviation Administration (FAA). A plan of action is similar to a scripted PPC, but less formal. It contains a list of planned flight test exercises from the appropriate PPC Schedule and may also include one or more scenarios that group several required flight test exercises together.

RFM – The Rotorcraft Flight Manual is published by the aircraft manufacturer and contains information such as Operating Limitations, Normal Procedures, Emergency Procedures, Performance Data and Weight and Balance.

Safety Pilot - In the case of a multi-crew aircraft, a training pilot or a pilot who holds a valid PPC on the same type of aircraft on which the candidate is being checked.

Scripted PPC - A document that governs the events presented to candidates during a PPC that is conducted in a simulator. The script provides a detailed plan for the execution of flight test exercises (i.e., manoeuvres) in accordance with the Part VII Standard of the CARs– PPC Schedule. Additional information such as Air Traffic Control (ATC) communications and simulator device instructions are provided.

Seat Substitute - A pilot that is qualified and current on type that has been assigned to occupy a pilot seat during a multi-crew PPC for the sole purpose of providing competent support to the candidate being evaluated.

Second-In-Command (SIC) - In relation to an aircraft, a pilot who reports to the pilot-in-command (PIC) on an aircraft type certificated for, or in operations requiring more than one required pilot flight crewmember.

Simulator PPC - A PPC conducted in a full-flight simulator.

Special Authorization - The authorizations, conditions and limitations associated with the air operator certificate (AOC) and subject to the conditions in the operations manual. The term special authorization replaces operations specification (Ops Spec).

Standard Operating Procedure(s) (SOPs) - procedures established by an operator enabling the crewmembers to operate the aircraft within the limitations specified in the RFM, AOM and/or COM.

Technical Skill Elements - In this manual, refers to aircraft handling and technical skills and knowledge. Technical skill elements are incorporated in the 4-Point Marking Scale.

Threat and Error Management (TEM) - Threat and error management (TEM) can be considered defensive flying. It equips a pilot with skills and behaviour to recognize and avoid problems which if ignored or left unattended could result in an undesired aircraft state (UAS) and possibly lead to an incident or accident. TEM proposes that threats, errors and even undesired aircraft states (such as an altitude deviation) are everyday occurrences that pilots must manage to maintain safety. TEM is central to contemporary CRM.

VFR PPC - A pilot proficiency check conducted under visual flight rules (VFR) that has no IFR-related manoeuvres. A VFR PPC is deemed to meet the requirement for VFR operations only.

GENERAL

INTRODUCTION

Scope and Purpose

1. This Flight Test Guide contains the scope of exercises that may be conducted during a PPC. A PPC can be used for the purposes of meeting the CARs requirement for initial or recurrent proficiency checks, issuing or maintaining an instrument rating, issuing an ATPL-H license, adding a type rating to a license and completing a 'qualifying flight' for a type rating on a helicopter with a minimum flight crew requirement of one pilot.

Associated Document – ACP Manual (TP6533)

2. The aim, description and performance criteria for each flight test exercise is described in this guide. This information must be read in conjunction with the **Principles of Evaluation** and **Conduct of the Flight Check** sections in the ACP Manual, which will guide the examiner in the conduct of the flight check and assist with the assessment of technical and non-technical skills.

Mandatory versus Non-Mandatory Exercises

3. It may not be necessary to complete all exercises in this guide during a PPC. As stated in the helicopter PPC Schedule for all subparts “the person conducting the check **may** request any manoeuvre or procedure from the Schedule to determine the proficiency of the candidate”. The intent of this statement is to allow the selection of flight text exercises that are relevant to the purpose of the PPC and the candidate’s circumstances. This requires consideration of how the PPC is being conducted (aircraft or simulator), the candidate’s industry segment and experience level and the purpose of the PPC (initial, renewal, instrument rating, ATPL-H, etc.).
4. To ensure the above-stated flexibility is applied in a reasonable and consistent manner, and to ensure that a sufficient scope of exercises are conducted to adequately assess a candidate’s competency, some exercises have been designated as mandatory. Refer to each exercise to determine whether the exercise is mandatory or optional for the PPC being conducted. Optional exercises should be included in the PPC as appropriate based on the purpose of the PPC, the candidate’s circumstances and the need to confirm a candidate’s competency in any area that an air operator or TCCA deems necessary.

Documenting PPC Exercises

5. For quality assurance and oversight purposes, air operators shall use a list, Scripted PPC or Plan of Action to identify and document the flight test exercises that will be included in all company PPCs. This information can be included in the COM or documented in any other manner that is acceptable to an operator’s POI. Although POI approval of an operator’s planned list of flight text exercises is not required, documenting the exercises will provide POIs with a mechanism to maintain oversight and readily confirm that the appropriate exercises are being included in PPCs. An operator’s documented list(s) of exercises shall also be used during a PPC that is conducted by an ACP who is not employed by the air operator.
6. An operator may choose to have more than one list of flight test exercises to accommodate the unique aspects of various types of PPCs. For example, the exercises selected for a candidate who conducts both IFR and VFR operations, such Emergency Medical Services (EMS), will likely differ from the exercises selected for a candidate employed in an IFR passenger service. Similarly, the exercises for an initial PPC could differ from a recurrent PPC.

Candidate Preparation

7. Examiners should encourage candidates undergoing a PPC to review this guide prior to the PPC at the earliest opportunity. This Flight Test Guide is available at:
<http://www.tc.gc.ca/eng/civilaviation/publications/menu.htm>

CONDUCTING THE PPC

Recommendation for a PPC

1. A candidate must be recommended for a PPC by the Chief Pilot or delegate after the completion of all required training. The PPC must be conducted within 30 days of the completion of training.

Preparation for the PPC

2. Prior to the PPC, the examiner should review the contents of section 6 of the ACP Manual, "Conduct of the Flight Check". The examiner must have a thorough understanding of the information in this section, which includes topics such as aim of the flight check, candidate eligibility requirements, aircraft and simulator requirements, simulator operation, seat assignments and seat substitutes, repeating a flight test exercise, managing an incomplete or unsuccessful flight check and briefing and debriefing a flight check.

Seats Normally Occupied / Seat Dependent Operations

3. In a two (pilot) crew cockpit there are three levels of assignment:
 - a. Left Seat versus Right Seat;
 - b. PF versus PM; and
 - c. PIC versus SIC.

In most helicopter operations, it is common practice for the PIC and SIC to routinely occupy the left or right seat on a rotating or ad hoc basis. In these instances, pilot proficiency is not tied to seat position. Recognizing this, PIC and SIC candidates have the option of occupying either seat during a PPC unless the RFM or company procedures identify a specific seat for PIC and SIC.

Assessment of Flight Test Exercises

4. Section 5 of the ACP Manual, "Principles of Evaluation", provides the examiner with guidance on evaluation errors and tendencies, the assessment of technical and non-technical skills and use of the 4-point marking scale. Do not assign a grade on the Flight Test Report for any exercise that was not completed during the PPC.

The individual criterion listed in the Performance Criteria for each flight test exercise are not to be interpreted as mandatory assessment items. Although an examiner will be able to observe and assess most if not all of the individual criterion for each exercise, this will not always be the case.

Flight Test Tolerances

5. The following flight test tolerances apply to all exercises, as applicable: (for Steep Turn tolerances, refer to exercise 11 Steep Turns):

Item	Tolerances
VOR/LOC/ILS or RNAV Approaches	Remain within ½ scale deflection
NDB Approaches	Bearing must remain within +/- 5°
Assigned Headings, Tracks and Bearings	Remain within +/- 10 degrees
Altitudes during normal flight	Remain within +/- 100 feet
Altitudes during instrument approaches and altitudes associated with the intermediate or final segments	Remain at or above minimum altitudes and 0 feet below
Altitude at MDA	Maintain accurate altitude control at an MDA with 0 feet below
Airspeed during normal flight	Remain within +/- 10 knots
Airspeed during an instrument approach	Remain within +/- 10 knots

6. The above tolerances apply to normal flight under ideal conditions and do not consider situations that require an examiner's discretion to account for abnormal flight / emergency conditions.

FLIGHT TEST EXERCISES

1. TECHNICAL KNOWLEDGE

Mandatory – All PPCs

Aim

To assess the candidate's knowledge of aircraft systems, components, limitations, normal, abnormal and emergency procedures.

Description

A candidate's technical knowledge is assessed during an oral examination. Given that candidates complete a written examination as part of the technical training, the oral examination should not be exhaustive. It should consist of a sampling of questions to confirm the candidate's technical competence and adequacy of technical training.

Questions on limitations should focus primarily on 'must-know' (memory) information that is not readily displayed on a placard or instrument marking in the cockpit. Avoid asking highly-technical questions on subject matter that a pilot is not reasonably expected to know. Candidates can refer to reference material that is normally available in the cockpit to respond to questions, except in cases where the examiner determines that it wouldn't be practical, or there would be insufficient time, for the candidate to search for the information during flight.

The technical oral exam should consist of 5 – 10 questions for each candidate and is considered successful if the candidate answers a minimum of 70 percent of the questions correctly. Technical Knowledge is to be graded with a mark of one (1) if the oral exam is unsuccessful.

Performance Criteria

Assess the candidate's ability to adequately describe:

- a) major aircraft components / systems, including autopilot and FMS and/or other navigation systems. Focus on areas that have the greatest practical benefit.
- b) normal (system) operating procedures;
- c) aircraft operating limitations;
- d) system malfunctions, corrective / emergency procedures and use of MEL;
- e) crewmember and passenger equipment (survival gear, emergency exits, evacuation procedures and crew duties); and
- f) settling with power, vortex ring state and dynamic rollover. These are mandatory items that must be individually addressed to ensure that candidates are aware of the causes, flight characteristics, prevention and appropriate recovery procedures.

2. FLIGHT PLANNING (FLP)

Mandatory – All PPCs

Aim

To assess the candidate's proficiency to plan a flight in accordance with the applicable regulations and company policies using performance charts, weight and balance calculations and applicable weather information.

Description

For PPCs conducted in an aircraft (versus simulator), the examiner may be able to observe some or all of the pre-flight preparations to assess some elements of this exercise. This should be accompanied by questions to the extent required to ensure that flight planning competencies have been adequately assessed in accordance with the performance criteria defined below.

For PPCs conducted in a simulator, the candidate shall be presented with a sufficient sampling of oral questions and/or practical exercises to confirm the candidate has the required flight planning competencies to safely plan a flight. The completion of flight plans, log cards and weight and balance is optional for checks conducted in a simulator and "as required" for checks conducted in an aircraft, unless an initial instrument rating is being issued. The completion of a flight plan and log card is required for a PPC that involves the issuance of an initial instrument rating (aircraft and simulator).

Candidates can refer to reference material to respond to questions, except in cases where the examiner determines that a question targets basic knowledge that a candidate is reasonably expected to know without access to reference material. The candidate will be provided with applicable weather reports, charts and performance tables that are required to respond to a question.

The flight planning oral exam should consist of 5 – 10 questions for each candidate and is considered successful if the candidate provides the correct answer to at least 70% of the questions.

Performance Criteria

Assess the candidate's ability to accurately:

- a) retrieve, interpret and apply the applicable weather products and NOTAMS to the flight;
- b) complete and interpret aircraft performance calculations that are required during pre-flight planning in accordance with company practices;
- c) calculate departure fuel requirements;
- d) calculate aircraft weight and balance as applicable, or orally respond to related questions;
- e) complete a flight plan and log card in accordance with governing regulations and company policies or orally respond to related questions; and
- f) demonstrate the required knowledge of all applicable regulations and company policies that should be considered during pre-flight planning, such as aerodrome operating restrictions (visibility), take-off minima, take-off alternates and destination alternates.

3. PRE-FLIGHT (PRF)

Mandatory – Initial PPCs in an Aircraft or Simulator; and Recurrent PPCs in an Aircraft
Optional – Recurrent PPCs in a Simulator

Aim

To assess the candidate's proficiency to complete the pre-flight check and determine whether the helicopter is safe for flight.

Description

The candidate conducts an exterior and interior inspection of the helicopter in accordance with the pre-flight check procedures stated in the RFM.

When a flight check is completed in a simulator and a helicopter is not available to complete the pre-flight check, this exercise can be completed through the use of any visual aid that is deemed suitable by the examiner.

The candidate must conduct an oral passenger safety briefing, except when the briefing is normally conducted by a company qualified person or approved video.

Performance Criteria

Assess the candidate's ability to:

- a) conduct a pre-flight check in an orderly manner in accordance with the RFM and SOPs, while explaining the purpose of inspecting an item when asked to do so by the examiner;
- b) demonstrate knowledge of how to document and report an unserviceable helicopter in accordance with company procedures;
- c) demonstrate an understanding of the MEL, if applicable;
- d) confirm that all required aircraft documents are on-board and valid;
- e) demonstrate proficiency in the completion and understanding of the aircraft journey log, including competency in assessing inspection due dates/hours, maintenance release and any applicable operating limitations;
- f) demonstrate knowledge of aircraft servicing procedures and elementary work that can be performed by the pilot;
- g) conduct a visual check or other means of verification (fuel slip or log) to confirm that the on-board fuel quantity / grade are satisfactory and that there is no fuel contamination;
- h) confirm that the safety equipment inspection dates have not expired and that equipment/baggage is secure;
- i) deliver an oral passenger safety briefing that includes the briefing items stated in the company SOPs; and
- j) check the general area around the helicopter for hazards to personnel and the helicopter.

4. ENGINE START/DEPART (ESD)

Mandatory – Initial PPCs in an Aircraft or Simulator; and Recurrent PPCs in an Aircraft

Optional – Recurrent PPCs in a Simulator – In accordance with the conditions below

Aim

To assess the candidate's proficiency to apply the correct engine start and systems checks procedures.

Description

The candidate is required to demonstrate the proper use of checklists and procedures for pre-start, engine(s) start, rotor engagement, powering-up helicopter equipment, systems checks and the set-up and verification of radio and navigation equipment. This exercise ends when the helicopter begins to move under its own power.

For a recurrent PPC in a simulator, the PPC can commence with the engines running ("quick start") unless the examiner or candidate requests a full-start procedure. The use of quick start is not permitted during a PPC that is an initial or involves the issuance of a type rating. If a quick start is carried out, it is permissible to conduct aircraft and systems checks based on the assumption that the start is the second of the day. When using quick start, remind the pilot(s) of their responsibility to ensure that relevant before-start checklist items are not overlooked.

For a two-crew PPC that is an initial or involves the issuance of a type rating, the full start procedure is only required for the first PPC candidate. The examiner has the discretion to stipulate whether the start is to be treated as the first or second start of the day. The PPC for the second candidate can commence with engines running and systems checks considered complete, unless the candidate requests a full start procedure.

Performance Criteria

Assess the candidate's ability to:

- a) ensure ground safety procedures are followed during the before-start, start and after-start phases;
- b) ensure the appropriate use of ground crew personnel during the start procedures;
- c) accurately complete all items of the start procedures, systems checks and navigation set-up and verification by systematically following the approved checklist items for the before-start, start and after-start phases;
- d) ensure that all systems are within the acceptable operating range and the helicopter is safe for flight;
- e) use the challenge-and-response (or other approved) method with the other crewmember(s), where applicable, to complete checklist procedures;
- f) divide attention inside and outside of the cockpit;
- g) coordinate with ground crew and ensure adequate clearance prior to moving any devices, such as door, hatches and flight control surfaces;
- h) complete the before-taxi checks and any applicable hover/power checks prior to commencing taxi; and
- i) obtain and correctly interpret applicable ATC clearances.

5. TAXI-OUT/HOVER (TXO)

Mandatory – All PPCs (with relief for a two-crew PPC, as noted below)

Aim

To assess the candidate's proficiency to conduct hover manoeuvres and taxi on or above the ground to the point of departure.

Description

Assessment of the taxi begins when the helicopter moves under its own power and ends when the helicopter is in position for departure. The candidate will taxi the helicopter to the point of departure in accordance with ATC or examiner instructions.

Hover manoeuvres will be assessed during the taxi as applicable and throughout the PPC whenever the candidate is required to maintain a stationary hover, carry out hover turns or manoeuvre the helicopter sideward or rearward. The examiner has the flexibility to scale hover manoeuvres to the extent required, in or out of wind, to ascertain that the candidate has the required level of competence. In the case of an experienced pilot undergoing a recurrent PPC, there may be no requirement to introduce any hover manoeuvres beyond those that would normally occur during a routine flight.

The incorporation of a simulated engine failure in the hover or during air taxi is optional for all PPCs. If this option is exercised, refer to exercise 23 (Engine Failure) for the applicable description and performance criteria.

For a two-crew PPC in a simulator, the full taxi procedure must be completed for the first candidate. For the second candidate, the helicopter can be pre-positioned in any suitable location to commence the PPC, including the threshold of a runway. For this option, remind the crew of their responsibility to complete the appropriate checklists to ensure that all helicopter systems are properly configured prior to departure.

For an IFR PPC in a simulator, a reduced or low visibility taxi must be conducted, as applicable based on the operator's authority. For a two-crew PPC, the above-stated flexibility applies, meaning the reduced or low visibility taxi procedure must be completed for the first candidate. There is no requirement to demonstrate a reduced or low visibility taxi during the second candidate's PPC unless the examiner determines there is value in doing so.

For a PPC that is an initial or includes the issuance of a type rating, a candidate must be assessed as the PF during a taxi procedure. This assessment can occur during the taxi-out or during the taxi-in (Ground Arrival).

Performance Criteria

Assess the candidate's ability to:

- a) demonstrate safe taxi procedures appropriate to the helicopter and mindful of environmental conditions;
- b) maintain the desired track and safe taxi height (as applicable) and speed;
- c) maintain stable control and safe turn rates during all hover maneuvers;
- d) maintain proper spacing on other aircraft, obstructions, and persons;
- e) accomplish the applicable checklist items and any applicable instrument checks, while maintaining adequate situational awareness (radio and visual);
- f) comply with instructions/clearances issued by ATC;
- g) observe low visibility taxi routes, runway hold lines, localizer and glide slope critical areas and other surface control markings and lighting; and
- h) comply with any applicable sterile cockpit procedures and CRM practices that are stated in company SOPs.

6. TAKE-OFF (TOF)

Mandatory – All PPCs (with relief for a two-crew PPC, as noted below)

Aim

To assess the candidate's proficiency to conduct a VFR or IFR take-off.

Description

The assessment of the take-off ends when the helicopter has been placed in a stable climb, (with all immediate emergency actions completed, if applicable), at an altitude no less than 35 feet above the point of departure, or upon completion of a rejected takeoff, if applicable.

The following sequences must be completed for this exercise. The examiner can combine any of the sequences to the extent possible during the PPC:

- a) a VFR or IFR take-off performed in accordance with the RFM with a minimum crosswind component of 10 knots (winds permitting);
- b) for an IFR PPC in a simulator, a take-off must be demonstrated at the lower of 1200 RVR or the minimum visibility approved for the operator;
- c) for an IFR PPC, the helicopter must be in simulated or actual IMC upon reaching an altitude of 200 feet AAE; and
- d) for a multi-engine helicopter, a take-off with continued flight must be demonstrated as follows:
Simulator: With an engine failure at CDP plus 10 knots; and
Helicopter: With a simulated engine failure at a safe altitude and speed.

Performance Criteria

Assess the candidate's ability to:

- a) select the most appropriate runway or departure point and direction as applicable, taking into consideration environmental and performance factors and any other applicable safety consideration;
- b) accurately complete the before take-off checklist and brief the other crew member(s) on the departure, as applicable;
- c) complete all necessary radio calls using the appropriate terminology and comply with any applicable ATC instructions and clearances (including noise abatement / wake turbulence restrictions);
- d) lift into the hover with no significant drift or yaw, and confirm that power, centre of gravity, and control responses are as expected and within limits;
- e) manage power, speed and height appropriately throughout the initial take-off phase in accordance with the RFM departure profile / height and velocity chart and power limitations;
- f) apply appropriate handling techniques to maintain a stable departure profile that adheres to the intended departure track/path;
- g) maintain heading, track and airspeed within allowable tolerances and in compliance with any applicable ATC clearance;
- h) respond appropriately to any abnormal situation(s) encountered during take-off;
- i) maintain the minimum required rate of climb for safe flight / ATC compliance; and
- j) comply with company SOPs, including the correct use of 'standard calls'.

Note: The description and performance criteria for engine-failure during take-off is addressed in exercise 23 of this guide (Engine Failures).

7. REJECTED TAKE-OFF (RTO)

Mandatory – IFR PPC (simulator only) and VFR PPC

Aim

To assess the candidate's proficiency to recognize an abnormal situation necessitating a rejected takeoff and safely execute the manoeuvre.

Description

A simulated or actual (simulator) malfunction is to be introduced just prior to CDP to prompt the candidate to carry out a rejected take-off. For an IFR departure, this exercise is only required during PPCs conducted in a simulator and must be carried out at the minimum visibility approved for the operator.

For VFR departures, this exercise should be conducted during the departure from a confined area or a similarly challenging departure scenario, or from a runway or open area that requires a rapid deceleration.

Given that the purpose of this exercise is to assess a rejected take-off, the requirement to carry out the actions associated with the malfunction after the helicopter has landed is optional. It is suffice to have the candidate verbally explain the follow-on actions that would be carried out.

Performance Criteria

Assess the candidate's ability to:

- a) demonstrate adequate knowledge of the technique, procedures and safety considerations to accomplish a rejected takeoff after powerplant / system(s) failure/warnings;
- b) complete immediate emergency checklist actions that may be required;
- c) maintain stable control of the helicopter;
- d) manage power, speed, descent rate and helicopter alignment in a manner that facilitates a safe landing on the desired landing area with minimal drift or yaw;
- e) demonstrate accurate control of the helicopter after landing, which may require the application of brakes, power or cyclic inputs to maintain control;
- f) comply with company SOPs, including the correct use of 'standard calls'; and
- g) communicate with the other crewmember(s) / ATC as required, ensuring the event is brought to a safe end.

8-9. INITIAL CLIMB (ICL) / ENROUTE CLIMB (ECL)

Mandatory – All PPCs

Aim

To assess the candidate's proficiency to conduct an initial and en-route climb.

Description

For this exercise, climbs up to 1000 feet AAE are assessed as initial climbs and climbs above this altitude are assessed as en-route climbs. If there is no en-route climb during the PPC, which may be the case for a VFR PPC, do not grade the en-route climb on the FTR.

For an IFR PPC in an aircraft that involves the use of automation during a departure (autopilot / coupling), the candidate must:

- a) demonstrate competency in the use of the autopilot / coupling during the departure in accordance with the procedures specified in the company SOPs and/or RFM. This objective will be met once the aircraft is coupled to automation and has reached an altitude of 1000 feet AAE or higher; and
- b) demonstrate the ability to hand-fly a climb sequence that is no less than 1000 feet, which terminates with a hand-flown level-off at a planned altitude.

The assessment of hand-flying must be conducted entirely in simulated or actual IMC and can be accomplished by introducing a malfunction that prevents the use of the autopilot(s), or by asking the candidate to hand-fly any climb segment during the PPC.

Performance Criteria

Assess the candidate's ability to:

- a) transition smoothly and accurately from VMC to IMC, where applicable;
- b) accurately complete the after take-off checklist and ensure the helicopter is in the proper configuration with ancillary systems activated, as applicable (such as anti-ice systems);
- c) complete all necessary radio calls using appropriate terminology and comply with any applicable ATC instructions and clearances (including noise abatement restrictions);
- d) apply appropriate handling techniques, and select any applicable automation and navigation selections to maintain a stable and accurate climb profile that adheres to the intended track/path;
- e) maintain heading, track, airspeed and altitudes within allowable flight check tolerances and in compliance with any applicable ATC clearance;
- f) demonstrate stable aircraft control while hand-flying the helicopter, remaining within allowable flight check tolerances for heading, track, airspeed and altitudes;
- g) manage power appropriately throughout the climb in accordance with the SOPs and RFM power limitations;
- h) monitor instrumentation, systems and automation and respond appropriately to any faults or abnormal situation(s);
- i) maintain the minimum required rate of climb for safe flight / ATC compliance;
- j) demonstrate competency in the use of any systems related to aircraft automation, such as autopilot(s), Flight Director, FMS, or GPS; and
- k) comply with company SOPs, including the correct use of 'standard calls'.

10. CRUISE (CRZ)

Mandatory – All PPCs

Aim

To assess the candidate's proficiency to establish the helicopter in cruise flight with the proper configuration, power and navigation settings.

Description

For a VFR PPC that is conducted no higher than circuit altitude, 'cruise' flight is considered to be level-flight at circuit altitude.

For an IFR PPC, the cruise phase of an IFR PPC must be of a sufficient duration to allow the examiner to adequately assess en-route procedures.

Performance Criteria

Assess the candidate's ability to:

- a) level-off within allowable tolerances at the planned altitude for cruise flight;
- b) complete required radio calls using appropriate terminology and comply with any applicable ATC instructions and clearances;
- c) accurately complete the cruise checklist and ensure the helicopter is in the proper configuration with any required ancillary systems activated (such as anti-ice systems);
- d) select and monitor automation and navigation systems/sources as applicable to adhere to the intended track/path and en-route procedures;
- e) intercept all applicable tracks, radials and bearings in a timely manner;
- f) maintain heading, track, airspeed and altitudes within allowable flight check tolerances and in compliance with any applicable ATC clearance;
- g) if applicable, demonstrate stable aircraft control while hand-flying the helicopter, remaining within allowable flight check tolerances for heading, track, airspeed and altitudes;
- h) manage power appropriately in accordance with the SOPs and RFM power limitations;
- i) monitor instrumentation, systems and automation and respond appropriately to any abnormal situation(s);
- j) demonstrate competency in the use of any systems related to aircraft automation, such as autopilot(s), Flight Director and FMS, as applicable;
- k) comply with company SOPs, including the correct use of 'standard calls'; and
- l) assess performance, weather and any other situational factors that may affect ETA, fuel management/range, arrival at destination, etc. and demonstrate appropriate decision making.

11. STEEP TURNS

Mandatory – Initial PPCs.

Optional – Recurrent PPCs (see description section for conditions).

Aim

To assess the candidate's proficiency to perform level and coordinated steep turns.

Description

At an operationally safe altitude the candidate will execute at least one steep turn in each direction with a bank angle of 30 degrees. The heading change for each turn must be at least 180° and no more than 360°. The examiner will specify the altitude, airspeed and initial heading before each turn. The turns are to be manually flown and executed primarily through the use of visual references in VMC for a VFR PPC and flight instruments in actual or simulated IMC for an IFR PPC.

For all recurrent PPCs, steep turns are optional if they were completed during training to the standard defined below.

Performance Criteria

Assess the candidate's ability to:

- a) exercise good CRM by briefing and leveraging the assistance of the PM (as applicable) to provide calls related to bank, airspeed, heading and power to facilitate aircraft handling;
- b) smoothly roll into the turn and accurately establish the target bank angle and airspeed;
- c) divide attention appropriately between outside visual references and flight instruments for a turn in VMC;
- d) divide attention appropriately between flight instruments for a turn in IMC;
- e) maintain the target bank angle within ± 10 degrees, the specified altitude within ± 200 feet and the desired airspeed within ± 10 knots;
- f) smoothly roll out of the turn on the desired heading (± 15 degrees), airspeed and altitude; and
- g) demonstrate stable control of the helicopter.

12. HOLDING

Mandatory – IFR PPC

Aim

To assess the candidate's proficiency to establish the aircraft in a holding pattern using an actual or simulated clearance.

Description

Based on a hold clearance, the candidate must select a suitable entry procedure for the hold and establish the helicopter in the appropriate pattern. The candidate must demonstrate adequate situational awareness of holding endurance, to include consideration of fuel required to destination and alternate (as applicable). The examiner can validate this by asking the candidate to provide an estimate of the maximum time that the helicopter can remain in the hold.

For a two-crew PPC the full hold procedure must be completed by at least one candidate. For the second candidate the hold procedure can be abbreviated at the examiner's discretion once the candidate has completed the following minimum actions:

- a) programmed the hold in the FMS or GPS unit; and
- b) verbalized the appropriate hold entry, direction and sector.

Performance Criteria

Assess the candidate's ability to:

- a) properly interpret and read back the hold clearance;
- b) select and identify the navigation aids associated with the hold, as applicable;
- c) determine the appropriate entry procedure and brief the PM on the hold, as applicable;
- d) accurately program the GPS or FMS for the hold, as applicable;
- e) enter the hold appropriately and establish the airspeed and configuration specified in SOPs;
- f) comply with ATC reporting requirements;
- g) apply the proper timing or distance criteria, as applicable, and wind-drift correction to maintain the proper holding pattern;
- h) maintain airspeed, altitude, headings/tracks/course within the applicable flight test tolerances;
- i) demonstrate adequate situational awareness of endurance in the hold, to include consideration of fuel required to destination and alternate (as applicable);
- j) conduct the necessary checklist(s), preparation and briefing during the hold, as applicable, to facilitate the transition to the next segment of flight upon leaving the hold (i.e. set up and brief an instrument approach procedure, if applicable); and
- k) take appropriate action when cleared to leave the hold, or seek further clearance at the Expect Further Clearance time.

13. DESCENT (DST)

Mandatory – All PPCs

Aim

To assess the candidate's proficiency to complete the descent segment of a visual or instrument arrival at the planned destination.

Description

The candidate will complete the descent procedures and profile associated with a VFR or IFR arrival, as applicable, at the planned destination / landing zone.

For a VFR PPC there is less to assess in the descent phase in comparison to an IFR PPC and some items in the performance criteria will not be applicable.

Performance Criteria

Assess the candidate's ability to:

- a) appropriately plan the descent taking into consideration any relevant factors such as weather, company procedures, distance to go, desired descent rate, speed, fuel, noise abatement, VFR or IFR charts/routings (STARS), altitude restrictions, ATC direction/routings, etc.;
- b) interpret and appropriately apply applicable information contained in FLIPs (VFR or IFR publications / charts);
- c) tune, identify and monitor applicable navigation aids associated with the proposed descent/arrival phase;
- d) accurately complete the applicable checklist(s) and ensure the helicopter is in the proper configuration with ancillary systems activated, as applicable (such as anti-ice systems);
- e) complete required radio calls using appropriate terminology and comply with applicable ATC instructions and clearances;
- f) apply the appropriate handling techniques and select any applicable automation and navigation selections to maintain a stable and accurate descent profile that adheres to the intended track/path and ATC clearance(s);
- g) maintain heading, track, airspeed and altitudes within allowable flight check tolerances and in compliance with any applicable ATC clearance;
- h) monitor instrumentation, systems and automation and respond appropriately to any faults or abnormal situation(s);
- i) demonstrate competency in the use of any systems related to aircraft automation, such as autopilot(s), Flight Director, FMS, or GPS; and
- j) comply with company SOPs, including the correct use of 'standard calls'.

14-15. APPROACH (APR)

Mandatory – All PPCs

Aim

To assess the candidate's proficiency to conduct a VFR or instrument approach to a runway or landing site.

Description

The following **minimum** sequences must be completed for this exercise. The examiner can combine any sequences to the extent possible during the PPC.

- a) For a VFR PPC:
 - i) A steep VFR approach to a hover or landing on a runway or other landing site. The approach can be combined with another manoeuvre, such as confined area or sloping ground; and
 - ii) for multi-engine helicopters, an approach with one engine inoperative for the entire final approach segment until landing on a runway or other landing site.
- b) For an IFR PPC:
 - i) two instrument approaches that are published in the CAP, RCAP or equivalent foreign publication, or that are approved company approach procedures, flown to the lower of the published or company approved minima in simulated or actual IMC. Where practicable, a precision and non-precision approach will be conducted, and with a minimum crosswind component of 10 knots (winds permitting);
 - ii) one of the instrument approaches must be hand-flown (without using any 'coupled' modes of automation), flown to the lower of the published or company approved minima in simulated or actual IMC. Hand-flying shall commence no later than the point the helicopter is established on the final track and continue until touchdown or until the helicopter is established in a missed approach;
 - iii) for multi-engine helicopters, an approach with one engine inoperative for the entire final approach segment until landing;
 - iv) at least one missed approach procedure and one landing after transition from an instrument approach procedure; and
 - v) the inclusion of a VFR approach during an IFR PPC is optional.

Notes:

- (1) Simulated or actual weather is to be at or below minima, as applicable, for all instrument approaches;
- (2) It is permissible to hand-fly an approach associated with an operator's approval (Special Authorization or Exemption), such as ILS 100' DH / RVR 1200 and ILS 100' DH / RVR 600, to meet the requirement to hand-fly an instrument approach;
- (3) A precision approach is mandatory during an **Initial** Instrument Rating flight test; and
- (4) Reference to the Flight Director Command Bars is permissible during a hand-flown approach.

Performance Criteria

Assess the candidate's ability to:

For a VFR Approach:

- a) appropriately plan the approach taking into consideration any relevant factors such as wind, obstacles, traffic, obscuring phenomena in the landing zone, noise abatement and ATC direction/routings;

- b) accurately complete the applicable checklist, provide an approach briefing (if applicable), and ensure the helicopter is in the proper configuration for landing;
- c) complete required radio calls using appropriate terminology and comply with applicable ATC instructions and clearances;
- d) apply appropriate handling techniques to maintain coordinated flight and a constant approach angle and rate of closure, making timely corrections as required;
- e) demonstrate an awareness of height / velocity limitations;
- f) avoid situations that could result in “vortex ring state” or “settling with power”;
- g) monitor instrumentation and systems and respond appropriately to any faults or abnormal situation(s); and
- h) comply with company SOPs, including the correct use of ‘standard calls’ as applicable.

For a Non-Precision Instrument Approach

- a) for a GNSS approach, load or confirm the correct loading of the approach from the database, verify approach waypoints, and conduct a RAIM check (as applicable);
- b) for other than a GNSS approach, tune, identify and monitor the operational status of the applicable ground and aircraft navigation equipment for the approach procedure;
- c) conduct an approach briefing (as applicable) to adequately prepare the PM for the approach, to include consideration of NOTAMS, temperature corrections to MDA, MDA incursions for an SCDA, and crew actions at minima;
- d) accurately complete the applicable checklist(s) and ensure the helicopter is in the proper configuration with ancillary systems appropriately configured, as applicable (such as gear, anti-ice systems);
- e) correctly interpret and fly the instrument approach in accordance with the applicable approach chart;
- f) complete required radio calls using appropriate terminology and comply with applicable ATC instructions and clearances;
- g) comply with applicable stabilized approach criteria specified in SOPs;
- h) in the case of an SCDA, compute a stable approach path / optimum descent angle and fly a continuous descent without a level off and without going below the minimum specified altitudes at any fix between the FAF and MAP;
- i) maintain heading, track, airspeed and altitudes within allowable flight check tolerances and in compliance with the approach procedure and any applicable ATC clearance;
- j) monitor instrumentation, systems and automation and respond appropriately to any faults or abnormal situation(s), including a RAIM alert;
- k) respond appropriately to any instances that RNP is not being met for a GNSS approach, such as the failure of ‘approach’ mode to activate prior to the FAWP;
- l) demonstrate competency in the use of any systems related to aircraft automation, such as autopilot(s), Flight Director, FMS, or GPS;
- m) comply with company SOPs, including the correct use of ‘standard calls’;
- n) accurately maintain the MDA and track to the MAP or to the recommended minimum visibility that would permit completion of the visual portion of the approach with a normal rate of descent and minimal manoeuvring, or, in the case of an SCDA, maintain an appropriate vertical profile to a point in space which will permit a safe landing with minimal manoeuvring;
- o) initiate the missed approach procedure if the required visual references for the intended runway are not obtained at the MAP; and
- p) execute a normal landing if the required visual references are obtained.

Note 1: The candidate may fly at altitudes higher than the applicable minimum altitudes depicted on the approach chart, but descent during the final segment of the approach should result in reaching the MDA at a distance from the MAP approximately equal to the recommended minimum visibility. The minimum altitudes depicted on the approach chart represent hard approach floor heights above terrain or other obstacles determined during the approach design process. Descent below these altitudes compromises the approach design safety factor, except in the circumstances described below in Note 2.

Note 2: In accordance with the exemption to CAR 602.128(2)(b), a pilot may descend below the MDA which is likely to occur during a missed approach following an SCDA approach. This exemption is subject to the following conditions:

- i. the pilot-in-command will conduct a final approach with an SCDA from the final approach fix to a normal landing runway threshold crossing height of 50 feet;
- ii. the pilot-in-command will initiate a missed approach upon reaching the earliest of either the MDA, or the MAP, or the required visual reference necessary to continue to land has not been established;
- iii. an SCDA approach will not be conducted on procedures requiring remote altimeter setting correction;
- iv. the instrument approach procedure flown is to straight-in minima, and the final approach course will not be more than 15 degrees from runway centreline; and
- v. the pilot-in-command and the air operator will maintain compliance with the schedule attached to the exemption which pertains to a training program, Standard Operating Procedures and Required Aircraft Equipment.

An air operator can elect to implement SCDA procedures without applying the above exemption. Without use of this exemption, flight crews must add an appropriate altitude margin to MDA if using it as a DA during an SCDA profile in order to avoid flying below MDA in the event of a missed approach.

For a Precision Instrument Approach (ILS or LPV)

- a) tune, identify and monitor the operational status of the applicable ground and aircraft navigation equipment for the approach procedure;
- b) for an LPV approach, load or confirm the correct loading of the approach from the database, verify approach accuracy and conduct a RAIM check (as applicable);
- c) conduct an approach briefing (as applicable) to adequately prepare the PM for the approach, to include consideration of NOTAMS, temperature corrections to DH / DA, and crew actions at minima;
- d) accurately complete the applicable checklist(s) and ensure the helicopter is in the proper configuration with ancillary systems appropriately configured (such as gear, anti-ice systems);
- e) correctly interpret and fly the instrument approach in accordance with the applicable approach chart;
- f) complete required radio calls using appropriate terminology and comply with applicable ATC instructions and clearances;
- g) comply with applicable stabilized approach criteria specified in SOPs;
- h) maintain track, airspeed and altitudes within allowable flight check tolerances and in compliance with the approach procedure and any applicable ATC clearance;
- i) monitor instrumentation, systems and automation and respond appropriately to any faults or abnormal situation(s), including a RAIM alert;

- j) respond appropriately to any instances that RNP is not being met during an LPV approach, such as the failure of 'approach' mode to activate prior to the FAWP;
- k) demonstrate competency in the use of any systems related to aircraft automation, such as autopilot(s), Flight Director, FMS, or GPS;
- l) comply with company SOPs, including the correct use of 'standard calls';
- m) maintain a stabilized descent to the DH / DA to permit completion of the visual portion of the approach and landing with minimal manoeuvring;
- n) initiate the missed approach procedure upon reaching the DH / DA if the required visual references for the intended runway are not obtained; and
- o) execute a normal landing if the required visual references are obtained.

16. GO-AROUND (GOA)

Mandatory – IFR PPC

Aim

To assess the candidate's proficiency to carry out a successful instrument missed approach procedure.

Description

Following an instrument approach, the candidate will conduct a missed approach from any point on the final approach segment prior to landing. The candidate must follow the published or amended missed approach procedure.

At least one missed approach procedure must be conducted during an IFR PPC.

Performance Criteria

Assess the candidate's ability to:

- a) promptly initiate the missed approach at minimums by applying sufficient power to establish the required rate of climb;
- b) correctly interpret and fly the missed approach in accordance with the applicable procedure and any applicable ATC instructions and clearances;
- c) complete required radio calls and seek further clearance(s), as applicable, using appropriate terminology;
- d) accurately complete the applicable checklist and ensure the helicopter is in the proper configuration with ancillary systems appropriately configured, (such as gear, anti-ice systems);
- e) maintain track, airspeed and altitudes within allowable flight check tolerances and in compliance with the missed approach procedure and applicable ATC clearances;
- f) monitor instrumentation, systems and automation and respond appropriately to any faults or abnormal situation(s); and
- g) demonstrate competency in the use of any systems related to aircraft automation, such as autopilot(s), Flight Director, FMS, or GPS.

17. CONFINED AREA

Mandatory – VFR PPC
Optional – IFR PPC

Aim

To assess the candidate's proficiency to safely conduct an approach to a landing in a confined area that has limited maneuverability.

Description

The examiner will select a confined area or ask the candidate to choose an appropriate area that offers limited maneuverability and is suitable for landing (or low hover). The examiner must be satisfied that the size of the selected area is in compliance with the air operator's policy and is suitable to meet the intent of the exercise.

A steep approach could be included as part of this maneuver to satisfy flight test exercise 14 (Approach) in this guide. Exercises 18 (Sloping Ground) and 7 (Rejected Take-off) can also be included, if appropriate, during the confined area exercise.

To simulate a desired take-off weight, the examiner may choose to specify a maximum available power for the departure from the confined area.

Performance Criteria

Assess the candidate's ability to:

- a) conduct a reconnaissance of the area while maintaining an appropriate altitude, airspeed and lookout for traffic;
- b) select a suitable approach path and landing spot, taking into consideration the size, shape, slope, and surface of the area, obstacles, direction of the wind and sun and available areas for undershoot / overshoot;
- c) assess the power requirements prior to entering the confined area to determine that sufficient power is available to land and take-off;
- d) maintain an appropriate airspeed, approach angle, rate of closure and rate of descent during the approach;
- e) avoiding situations that could lead to vortex ring state, settling with power and loss of tail-rotor effectiveness;
- f) maintain appropriate obstacle clearance during the approach/landing;
- g) land (or hover) at the desired/briefed location, applying proper techniques as applicable to counter obscuring phenomenon such as sand or snow;
- h) demonstrate awareness of the applicable height / velocity envelope; and
- i) prior to departure, select a suitable route, complete required checks/briefing, and manage power appropriately during the departure, remaining clear of obstacles.

18. SLOPING GROUND

Mandatory – VFR PPC

Optional – IFR PPC

Aim

To assess the candidate's proficiency to land and takeoff on a sloped surface.

Description

The examiner may choose an appropriate landing area or ask the candidate to select a suitable area.

This exercise may be conducted in conjunction with exercise 18, Confined Area or any other exercise that involves a take-off and landing.

Performance Criteria

Assess the candidate's ability to:

- a) determine that the slope gradient is within the helicopter's landing limitations;
- b) land and take-off with negligible drift or yaw while maintaining clear of obstacles;
- c) keep the main rotor disk level, as appropriate to type, while lowering the helicopter to the ground after initial contact;
- d) keep the tail clear of obstacles and the ground;
- e) avoid exceeding the maximum roll and pitch limitations stated in the RFM;
- f) perform an effective seating check;
- g) keep the main rotor disk level, as appropriate to type, while applying power to take-off until the helicopter breaks contact with the ground; and
- h) demonstrate slow and deliberate control movements throughout the manoeuvre, avoiding abrupt handling that could lead to dynamic rollover.

19. LANDING (LDG)

Mandatory – All PPCs

Aim

To assess the candidate's proficiency to conduct a landing following a VFR or IFR flight.

Description

The following sequences must be completed for this exercise. The examiner can combine any of the sequences to the extent possible during the PPC:

- a) a landing following a visual approach or instrument approach with a minimum crosswind component of 10 knots (where practicable and winds permitting). A VFR landing can be combined with a confined area or sloping ground manoeuvre;
- b) for an IFR PPC, a visual transition to landing from an instrument approach and, where prevailing conditions prevent a landing, an approach to a point where a landing could have been made. The simulated or actual weather must be at minima for the approach flown.
- c) for multi-engine helicopters, a landing with one engine inoperative (simulated or actual); and
- d) where an operator has authority to conduct instrument approaches to lower than the published minima, the candidate will demonstrate a landing in a simulator with weather at the lowest limit applicable to the candidate's crew position.

Performance Criteria

Assess the candidate's ability to:

- a) adequately anticipate and mitigate risks associated with turbulence, wind shear, crosswinds, whiteout or brownout conditions, and unfavourable runway or landing surface conditions;
- b) configure the helicopter appropriately for landing, with any applicable checklist items completed;
- c) complete a smooth transition to visual flight from minima when the required visual references for landing are obtained;
- d) execute the short-final segment of the approach and landing in accordance with the profile and procedures stated in the RFM and SOPs;
- e) touchdown near or on the intended landing spot with negligible drift or yaw;
- f) maintain the desired directional control during the roll-out after landing;
- g) perform a seating check as appropriate to the type of helicopter and landing surface; and
- h) complete after-landing actions, checklist items and radio calls as applicable.

Note: The description and performance criteria for engine-failure during take-off is addressed in exercise 23 of this guide (Engine Failures)

20. GROUND ARRIVAL

Optional – All PPCs

Aim

To assess the candidate's proficiency to conduct taxi, arrival and engine shutdown.

Description

Although this is an optional exercise, it must be assessed if a ground arrival is carried out during the PPC, which will normally be the case whenever a PPC is conducted in the helicopter (versus simulator). Assessment of the ground arrival includes the taxi to the final parking spot and completing shut-down procedures.

For a PPC that is an initial or includes the issuance of a type rating, a candidate must be assessed as the PF during a taxi procedure. This assessment can occur during the Taxi-Out / Hover exercise or during the taxi-in portion of the Ground Arrival exercise.

Performance Criteria

Assess the candidate's ability to:

- a) complete checklist items and radio calls as applicable;
- b) taxi in a controlled manner in accordance with the procedures in the RFM and SOPs;
- c) taxi in accordance with the applicable ATC clearance, remaining on approved taxiways without any incursions on runways or areas not approved for taxi;
- d) remain vigilant, avoiding obstacles and traffic and ensuring that rotor downwash (as applicable) does not cause damage or harm to persons or property;
- e) complete engine shutdown procedures in accordance with the RFM and company SOPs.

21. FLIGHT CLOSE (FLC)

Optional – All PPCs

Aim

To assess the candidate's proficiency to complete the applicable post-flight administrative procedures.

Description

Although this is an optional exercise, it must be assessed if any elements of the flight close exercise are conducted during the PPC. Assessment includes the closure of flight plans / itinerary, recording of flight time and aircraft defects in the aircraft journey log and any other relevant flight close procedures that are specified by the company that are observed by the examiner.

The lowest score that can be assigned to this flight test exercise is "2".

Performance Criteria

Assess the candidate's ability to:

- a) comply with the procedures and protocols that apply to the closure of a flight plan / itinerary;
- b) accurately record flight time(s) and defects in the aircraft journey log; and
- c) complete any other relevant flight close procedure that is specified by the company in the COM, SOPs or company document.

22. PM DUTIES

Mandatory – Two-Crew PPCs

Aim

To assess the candidate's proficiency to demonstrate competency in the conduct of PM duties.

Description

Each pilot will demonstrate the ability to carry out PM duties in accordance with the COM, SOPs and sound CRM practices during normal and abnormal situations.

The performance of PM duties must be of sufficient duration to allow the examiner to assess competency and must include the assessment of PM duties during normal flight, flight that involves a malfunction requiring the use of the ECL and, for an IFR PPC, flight that includes the conduct of an instrument approach. The foregoing requirements are also applicable when a seat-substitute is being used, which means the seat-substitute will be required to conduct PF duties while the other pilot is being assessed in the PM role.

Performance Criteria

Assess the candidate's ability to:

- a) complete PM duties in accordance with the COM and/or SOPs;
- b) complete duties assigned by the PF;
- c) demonstrate competency in the use of applicable reference material in the cockpit, such as checklists, ECL, FLIPs, and EFB;
- d) demonstrate competency in the use of helicopter systems, such as programming an FMS or GPS, selecting/programming radios, selection of automation, etc.;
- e) demonstrate knowledge of standard calls;
- f) adhere to sterile cockpit procedures where applicable;
- g) where assigned, carry out timely communication with ATC or other agencies as applicable, using appropriate terminology and radio procedures;
- h) contribute to Threat and Error Management by demonstrating an ongoing awareness of the status of automation, relevant aircraft systems, flight instruments, environmental factors, or any other relevant factors and advise the PF of any concerns; and
- i) complete all duties in a manner that enhances CRM.

23. ENGINE FAILURE (MULTI-ENGINE)

Mandatory – Multi-Engine PPCs

Aim

To assess the candidate's proficiency to maintain control of the aircraft and carry out the appropriate engine failure procedures when there is at least one remaining engine in operation.

Description

For multi-engine helicopters, an engine failure must be included in the conduct of the following flight test exercises (with at least one remaining engine in operation): Take-off (6), Approach (14-15) and Landing (19). Refer to each of these exercises for information on how to incorporate the engine failure in the manoeuvre and under what circumstances an engine failure must be conducted. The performance criteria defined below is applicable to all engine failures in all phases of flight where there is at least one remaining engine in operation.

For an engine failure in a single-engine helicopter, and a total loss of engine power in a multi-engine helicopter, refer to flight test exercise 24 (Autorotation).

Performance Criteria

Assess the candidate's ability to:

- a) recognize an engine failure or the need to shut down an engine;
- b) complete immediate actions for an engine failure as applicable in accordance with the ECL, RFM and SOPs;
- c) demonstrate stable aircraft handling and make prompt corrections, as necessary, to track, airspeed, altitudes, and rate of climb/descent to remain within a safe flight envelope, allowable flight check tolerances and applicable ATC clearance(s);
- d) maintain the operating engine(s) within acceptable operating limits;
- e) determine the cause of the engine failure and demonstrate the correct re-start procedure if a re-start is appropriate;
- f) evaluate impacts on operational factors such as range, flight profile/altitude, flight plan, approach, and landing and adjust accordingly;
- g) establish and maintain an appropriate altitude, speed, configuration and flight profile for the phase of flight;
- h) complete all required follow-on actions / checklists in accordance with the ECL, RFM and SOPs; and
- i) communicate appropriately with ATC, to include a request for any special services that may be required (fire/crash response) at the destination.

24. AUTOROTATION

Mandatory – Single-engine PPC

Optional – Multi-engine PPC

Aim

To assess the candidate's proficiency to establish an autorotation terminating in a landing or power recovery.

Description

The candidate will demonstrate the ability to establish a stable autorotation following the actual or simulated loss of complete engine power or failure of the driveshaft / tail rotor system. The examiner will define a specific landing area and initiate the actual or simulated engine or driveshaft / tail rotor failure, or ask the candidate to initiate the simulated failure when the candidate believes that the designated landing area is within reach.

An autorotation conducted in an aircraft will terminate in a touchdown or power recovery based on the direction provided by the air operator. For an autorotation conducted in a simulator, the landing can be difficult to assess because of modelling challenges. It is not uncommon to encounter a 'red screen' (crash) during the touchdown in situations where the landing would have been considered acceptable and nothing beyond a 'hard landing'. For this reason, the grading of an autorotation in a simulator is to focus on the entry into the autorotation, the descent and pilot handling at the bottom end of the autorotation. If the landing results in a 'red screen', the landing should only be considered 'unsuccessful' if it is clear that pilot handling and techniques were inappropriate and the landing would have likely resulted in major aircraft damage and serious injury or loss of life.

Performance Criteria

Assess the candidate's ability to:

- a) recognize an engine or tail rotor failure in a timely manner;
- b) take the required immediate actions and control Nr, airspeed and attitude;
- c) identify a suitable landing area;
- d) establish a stable descent in coordinated flight, maintaining Nr and speed within RFM limits;
- e) adjust Nr, speed and heading as required during the descent to arrive at the desired landing area;
- f) complete any applicable checklist items and configure the helicopter appropriately for landing;
- g) determine the cause of the engine failure(s) and demonstrate the correct re-start procedure if a re-start is appropriate and altitude permits;
- h) maintain an appropriate speed prior to the flare and initiate the flare at the appropriate time and height;
- i) adopt an appropriate attitude for landing and raise the collective as required to control Nr and cushion the landing; and
- j) touchdown at an appropriate speed, attitude and rate of descent that ensures a safe outcome, with negligible drift or yaw.

25-28. ABNORMAL/EMERGENCIES

Mandatory – All PPCs

Aim

To assess the candidate's proficiency to respond to a system malfunction or other abnormal situation in an effective manner.

Description

The candidate will be exposed to abnormal and emergency procedures to the extent necessary to confirm that the pilot can manage or resolve such events in an effective manner. A minimum of two malfunctions / abnormal events must be conducted during the PPC, which is in addition to any mandatory engine failure events that must be conducted as part of another flight test exercise.

The events will be of sufficient complexity to allow the examiner to observe the candidate's decision making skills, proper use of the emergency checklist and, for a two-crew PPC, the demonstration of effective CRM.

Performance Criteria

Assess the candidate's ability to:

- a) correctly identify malfunctions or abnormal situations in a timely manner;
- b) promptly complete any required 'immediate actions', as specified in an emergency checklist;
- c) demonstrate competency in the use of emergency checklists, MELs, SOPs or any other reference material that is applicable to the event;
- d) assess the inter-relationship that a technical malfunction may have with other systems, as applicable;
- e) consider and apply any restrictions or limitations to the operation of a system(s);
- f) demonstrate effective decision making skills by selecting an appropriate course of action; and
- g) demonstrate effective CRM, as applicable.