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Competency Check (Private Operators)

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COMPETENCY CHECK

for

Aeroplane and Helicopter

FOREWORD

This flight test guide contains procedures and guidelines for the conduct of Competency Checks for the aeroplane and helicopter categories required under Subpart 604 of the Canadian Aviation Regulations. This guide is for use by Civil Aviation Safety Inspectors (CASI) and individuals qualified to conduct this test, as well as pilot candidates.

DEFINITIONS

Aircraft Flight Manual or Rotorcraft Flight Manual refers to the manual published by the helicopter manufacturer that contain the Limitations, Normal Procedures, Emergency and Malfunction Procedures, Performance data, Weight and Balance, etc. [*Manuel de l'aéronef or Manuel de vol du giravion*]

Approved Check Pilot means a pilot holding an official authorization to conduct Pilot Proficiency Checks on behalf of the Minister of Transport pursuant to Part 1, Section 4.3(1) of the *Aeronautics Act*. [*Pilot vérificateur agréé*]

Authorized Person means a person who is delegated the authority to issue type ratings and/or instrument ratings by signing the additional privileges section on the back of the candidate's license or by completing the Certification of an Additional Privilege Card (26-0267). [*Personne autorisée*]

Civil Aviation Safety Inspector means a Transport Canada Inspector who is trained and authorized to conduct flight checks and monitors. [*Inspecteur de la sécurité de l'aviation civile*]

Conduct means 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, completion of the flight test report and the debriefing. [*Diriger*]

Current means having recent experience on the aircraft category and the type necessary to conduct a credible (or reliable or trustworthy) the competency check. [*À jour*]

Examiner means a Pilot Examiner, an Approved Check Pilot, a Civil Aviation Safety Inspector or a person that meets the requirements of CAR 604.143(4)(c)(iii) or a person that meets the requirements of CAR 604.143(5). [*Examineur*]

Flight Test Report mean Flight Test Report – Pilot Proficiency Check [Aeroplane (Form 26-0249) or Helicopter (Form 26-0279)]. [*Rapport de test en vol*]

Operator means private operator. [*Exploitant*]

Private Operator means the holder of private operator registration document. [*Exploitant privé*]

Pilot Examiner (PE) means a pilot holding an official authorization to conduct flight tests on behalf of the Minister of Transport pursuant to Part 1, Section 4.3(1) of the *Aeronautics Act*. [*Pilote examineur*]

Plan of action means a sequence of flight test items to be covered. [*Plan d'action*]

Qualified Person means a person that has the pertinent licence and rating(s) and the necessary skill, experience and knowledge to conduct the assigned duty. [*Personne qualifiée*]

Safety Pilot means the pilot that occupies the second pilot seat during the Competency Check to ensure the safety of the flight and is qualified and current on that aircraft. [*Pilote de sécurité*]

Scripted competency check means a document based on this guide that governs the events presented to candidates during a competency check conducted in a simulator. The script provides a detailed plan of action for the competency check. [*Scénario pour la vérification de compétence*]

Special Authorization means an authorization issued by the Minister under subsection 604.05(2) that permits the carrying out of an activity referred to in Division IV or an activity in respect of which the Minister has established requirements under subsection 604.74(1). [*Autorisation spéciale*]

Standard Operating Procedures means procedures established by Operator, which enable the crewmembers to operate the aircraft within the limitations specified in the private operator's operations manual. [*Procédures d'utilisation normalisées*]

TCE/ACP - An ACP who gains their qualification on the basis of their FAA (Part 142) training center evaluator (TCE) qualification and experience. [TCE/ACP]

Threats are defined as events that occur beyond the influence of the pilot(s), increase operational complexity that must be managed to maintain the margins of safety. [*Menaces*]

Training Pilot means a pilot who has been designated by the private operator to act as a flight instructor or flight instructor - simulator. [Pilote d'entraînement]

Vbroc (for helicopters) means the best rate of climb speed. [*Vbroc*]

VFR Competency Check means a Competency Check that evaluates only the exercises that are not designated as an "Instrument Rating Exercise".

Vital action means an action that must be taken by flight crew to alleviate a situation that could jeopardize safety of flight. The action will be taken in a timely manner consistent with the AFM/RFM or SOP as appropriate. [*Action vitale*]

Vtos (for helicopters) means the minimum speed for a positive rate of climb with one engine inoperative [Vtos]

ABBREVIATIONS

AFM – Aircraft Flight Manual

APU – Auxiliary Power Unit

ATC – Air Traffic Control

ATS – Air Traffic Services

COM – Company Operations Manual

DA – Decision Altitude

DH – Decision Height

DME – Distance Measuring Equipment

EFIS – Electronic Flight Instrument System

EGPWS – Enhanced Ground Proximity Warning System

ETA – Estimated Time of Arrival

FAF – Final Approach Fix

FAWP – Final Approach Way Point

FMS – Flight Management System

GNSS – Global Navigation Satellite System

GPWS – Ground Proximity Warning System

IFR – Instrument Flight Rules

ILS – Instrument Landing System

IMC – Instrument Meteorological Conditions

INS – Inertial Navigation System

LOC – Localizer

LORAN – Long Range Navigation System

LVOP – Limited Visibility Operations Plan
MAP – Missed Approach Point
MDA – Minimum Descent Altitude
MEL – Minimum Equipment List
NDB – Non-directional Beacon
NOTAM – Notice to Airmen
RNAV – Radio Area Navigation
RVOP – Reduced Visibility Operations Plan
RVR – Runway Visual Range
SIGMET - Significant Meteorological Information
SOP – Standard Operating Procedures
TAWS – Terrain Avoidance Warning System
TCAS – Traffic Collision Avoidance System
VFR – Visual Flight Rules
VMC – Visual Meteorological Conditions
VOR – VHF Omnidirectional Range

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CHAPTER 1 - GENERAL

1.1 ADMISSION TO A COMPETENCY CHECK

A pilot employed by the holder of a Private Operator Registration Document must receive a written recommendation signed by the Chief Pilot or delegate training pilot dated within 30 days prior to a Competency Check (PCC). In the case of a re-check, the person who conducted the additional training will sign the letter of recommendation. A pilot candidate meeting the requirements of paragraph 604.143(1)(e) **does not require** a competency check pursuant to subsection 604.140(2).

A complete Competency Check is required under the following circumstances:

- (a) The pilot candidate is new to the Company Flight Operations;
- (b) The pilot candidate requires an initial type rating qualification on the aeroplane type to be flown;
- (c) The pilot candidate must successfully complete a PCC at the completion of his/her training where a Private Operator has implemented the application criteria of Global Exemption NCR-033-2016 from subsection 604.140(2) and from paragraph 604.143(1)(e) (training to proficiency without a PCC), if the candidate demonstrated major errors or deviations during Phase 1 of "training to proficiency",.

Photo Identification

One of the following photo identification is acceptable as photo identification:

- (a) a valid Aviation Document Booklet (ADB), or
- (b) valid and original government-issued photo identification with signature

Pilot Licence, Medical and Radio Certificate

The following is required:

- (a) a valid Aviation Document Booklet (ADB) with a valid category one (1) medical certification meeting the medical standards for the licence; or
- (b) Where an Aviation Document Booklet (ADB) is not available, the candidate will be required to produce a Temporary Licence (Form 26-0265) and a Temporary Medical Certificate (Form 26-0055); and
- (c) a Restricted Radio Operator Certificate - Aeronautical (ROC-A)

For a PCC that includes an initial Group 1 Instrument Rating

- (a) Proof of having successfully completed the written examination INRAT Instrument Rating (Aeroplane) within the previous 24 months.
- (b) The proof of having completed the experience requirements set out in CAR 421.46(2)(b).
- (c) The PPC recommendation must indicate that the candidate is recommended for an initial group 1 or 3 Instrument Rating in accordance with CAR 421.14(3).
- (d) For an initial group 1 or 3, one precision approach is mandatory.

The successful completion of a competency check is one of the prerequisites for the issuance of an instrument rating. Once all of the prerequisites are met, the candidate may apply for the instrument rating. (Form 26-0083).

For a PCC that includes an initial Group 4 Instrument Rating

- (a) Proof of having successfully completed the written examination INRAT Instrument Rating (Helicopter) within the previous 24 months.
- (b) The proof of having completed the experience requirements set out in CAR 421.46(2)(b).
- (c) The PPC recommendation must indicate that the candidate is recommended for an initial group 4 Instrument Rating in accordance with CAR 421.14(3).
- (d) For an initial group 4, one precision approach is mandatory.

The successful completion of a competency check is one of the prerequisites for the issuance of an instrument rating. Once all of the prerequisites are met, the candidate may apply for the instrument rating. (Form 26-0083).

For a PCC that includes a new Type Rating on an aeroplane that is required to be operated with two flight crew members

- (a) The candidate shall have completed a ground and flight training program on the aeroplane type.
- (b) The proof of having successfully completed the Type Rating - Aeroplane written examination (IATRA) or Airline Transport Pilot Licence - Aeroplane (ATPL-A) written examination (SAMRA AND SARON) within the previous 24 months.
- (c) The candidate shall have completed a minimum of 250 hours pilot flight time on aeroplanes.
- (d) The PCC recommendation must indicate that the candidate is recommended for a new type rating in accordance with CAR 421.14(3).
- (e) The successful completion of a competency check is one of the prerequisites for the issuance of a type rating. Once all the prerequisites are met, the candidate may apply for the type rating. (Form 26-0083).

For a PCC that includes a new Type Rating on a helicopter that requires two pilots

- (a) The candidate shall have completed a ground and flight training program on the helicopter type.
- (b) The proof of having successfully completed the Type Rating – Helicopter written examination (HATRA) or Airline Transport Pilot Licence – Helicopter (ATPL-H) written examination (HAMRA AND HARON) within the previous 24 months.
- (c) The candidate shall have completed a minimum of 166 hours pilot flight time on helicopters.
- (d) The PCC recommendation must indicate that the candidate is recommended for a new type rating in accordance with CAR 421.14(3).

The successful completion of a competency check is one of the prerequisites for the issuance of a type rating. Once all the prerequisites are met, the candidate may apply for the type rating. (Form 26-0083)

For a PCC that includes the ATPL-H skill requirement

- (a) The proof of having successfully completed the ATPL-H written examination (HAMRA AND HARON) within the previous 24 months.
- (b) The Competency Check that includes the ATPL-H skill requirement has to be completed as pilot-in-command of a helicopter required to be operated with a co-pilot.

The successful completion of a competency check is one of the prerequisites for the issuance of an ATPL-H. Once all the prerequisites are met, the candidate may apply for the ATPL-H or Restricted ATPL-H – Aerial Work Only (Form 26-0796)

1.2 GRADING METHODOLOGY

When assessing the knowledge and skills of a competency check candidate, an individual conducting a competency check will use the 4-point marking scale illustrated later in this chapter. A numerical value of 4, 3, 2, or 1 will be awarded as a mark for a competency check sequence that best describes the weakest element(s) applicable to the candidate's performance of that sequence.

The following six (6) competency check elements cover all the critical areas of flight checking.

These elements are divided into two main groups:

- (a) Two (2) technical elements:
 - (i) Aeroplane handling;
 - (ii) Technical skills and knowledge;
- (b) Four (4) non-technical elements (NOTECHS):
 - (i) Cooperation;
 - (ii) Leadership and managerial skills;
 - (iii) Situational awareness;
 - (iv) Decision-making

The six (6) elements as a basis for assessment are further explained as follows:

- (a) **Aeroplane Handling** – Quality and accuracy in flying the aeroplane; smoothness, coordination and appropriateness of control inputs; the use of approved techniques or procedures; the performance relative to specified tolerances; actions taken when deviations occur; magnitude of deviations; promptness of corrections.
- (b) **Technical Skills and Knowledge** – Practical use and understanding of aeroplane systems, automation interface and operating procedures; practical use and understanding of all applicable information necessary for safe flight such as performance data, charts, weather information and physiological factors; display of technical competency as necessary to complete tasks safely and efficiently by adherence to Standard Operating Procedures (SOP) and regulatory requirements.
- (c) **Cooperation** – Fostering of a cooperative work environment and open communication atmosphere; seeking and providing feedback; support of others; offering assistance; suggesting solutions in conflict situations; concentrating on correct actions and not on correcting individuals.
- (d) **Leadership and Managerial Skills** – Subscribing to SOP compliance and striving for top crew performance; goals and plans clearly stated and confirmed; plans updated or amended with appropriate consultation; effectiveness of workload management and task distribution among crewmembers; proper prioritization of tasks.
- (e) **Situational Awareness** – Awareness of aeroplane status and operating environment; awareness of time and space; active monitoring and vigilance; use of outside resources when necessary; gathering and dissemination of relevant information; pro-active anticipation of potential threats, contingencies and future events; timely identification of errors and proper appreciation of potential consequences.
- (f) **Decision Making** – Proper definition and diagnosis of a problem or situation; generation of options; proper assessment of risks associated with alternative options; confirmation of selected option; review of anticipated outcome.

1.2.1 CORE PRINCIPLES IN THE ASSESSMENT OF NON-TECHNICAL SKILLS (NOTECHS)

Effective non-technical skills are important contributors to Crew Resource Management (CRM) and greatly enhance a pilot or crew's competency to identify potential threats and avoid errors, or detect them and mitigate their consequences. Communication skills are seen as an essential component to all non-technical elements and as such do not constitute a separate skills set in the context of NOTECHS.

Assessment of non-technical elements is always based on observable behaviors. An individual conducting a competency check must not presume what is going on in a candidate's mind. Behavior must be observed directly or inferred from crew interaction. Examples of behaviors that can be directly observed or inferred by crew interaction are as follows:

- (a) Active monitoring of weather, aeroplane systems, instruments and Air Traffic Services (ATS) communications;
- (b) Sharing of relevant information;
- (c) Statement and acknowledgement of goals and plans;
- (d) Proper communication and acknowledgement with respect to workload distribution;
- (e) Prioritization of secondary operational tasks;
- (f) Recognition of situations leading to task saturation;
- (g) Proper planning of time and space with respect to aeroplane maneuvering or the completion of procedures;
- (h) Recognition and acknowledgement of aeroplane status and mode changes;
- (i) Use of recommended terminology as per SOP with no or limited chatter;
- (j) Recognition and avoidance of potential distractions caused by automation or crew workload.

Conversely, poor non-technical skills tend to contribute to ineffective CRM and usually lead to errors and overall poor technical performance. Therefore, an assessment of (1) for a competency check sequence will be based on the unsatisfactory performance of a technical manoeuvre, procedure or task, which may be rooted in the display of one or more ineffective non-technical skills. In a flight crew concept therefore, NOTECHS should form part of the assessment for every required competency check sequence.

1.2.2 DEVIATIONS AND ERRORS

Deviations and errors are incorporated in the 4-Point Marking Scale.

Deviations

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

Deviation Severity	Description
Minor Deviation	A deviation that <u>does not exceed</u> a specified tolerance.
Major Deviation	A deviation that <u>exceeds</u> a specified tolerance or repeated minor deviations without achieving stability.
Critical Deviation	A deviation that is characterized by one of the following: <ul style="list-style-type: none"> • repeated non-adherence to a specified tolerance; • not identifying and correcting a major deviation; or • more than doubling a specified tolerance.

Errors

An error is a qualitative assessment of an action or inaction by a flight crew that leads to a variation from operational or flight crew intentions or expectations.

Errors are incorporated in all skill elements of the 4-Point Marking Scale.

Error Severity	Description
Minor Error	An action or inaction that is <u>inconsequential</u> to the completion of a task, procedure, or manoeuvre.
Major Error	An action or inaction that is <u>consequential</u> to the completion of a task, procedure, or manoeuvre that <u>could lead to</u> an undesired aircraft state (UAS), if not correctly managed.
Critical Error	An action or inaction that is <u>consequential</u> to the completion of a task, procedure, or manoeuvre that <u>led to</u> an undesired aircraft state (UAS)

1.3 FOUR-POINT MARKING SCALE – GRADING MATRIX

In applying this four-level marking scale, the examiner must assign the grade that most closely matches the weakest element (s) of the candidate's performance in the sequence or element of the test demonstrated

Assessment Matrix

		4	3	2	1
Technical Skill Elements	Aircraft Handling <small>(Refer to Flight Test Exercise Performance Criteria)</small>	<ul style="list-style-type: none"> • Excellent quality and accuracy • Regulatory compliance • Safety of flight assured • No deviation(s) 	<ul style="list-style-type: none"> • Adequate quality and accuracy • Regulatory compliance • Safety of flight maintained • Minor deviation(s) 	<ul style="list-style-type: none"> • Inadequate quality and accuracy • Regulatory compliance • Safety of flight reduced • Major deviation(s) 	<ul style="list-style-type: none"> • Unacceptable quality and accuracy • Regulatory non-compliance • Safety of flight compromised • Critical deviation(s)
	Technical Skills and Knowledge <small>(Refer to Flight Test Exercise Performance Criteria)</small>	<ul style="list-style-type: none"> • Excellent practical understanding • Excellent in following SOPs, rules and regulations • No error(s) 	<ul style="list-style-type: none"> • Adequate practical understanding • Adequate in following SOPs, rules and regulations • Minor error(s) 	<ul style="list-style-type: none"> • Inadequate practical understanding • Inadequate in following SOPs, rules and regulations • Major error(s) 	<ul style="list-style-type: none"> • Unacceptable practical understanding • Unacceptable in following SOPs, rules and regulations • Critical error(s)
Non-Technical Skill Elements	Cooperation	<ul style="list-style-type: none"> • Excellent team building and maintaining • Excellent consideration of others • Excellent support of others • Excellent solving conflicts 	<ul style="list-style-type: none"> • Adequate team building and maintaining • Adequate consideration of others • Adequate support of others • Adequate solving conflicts 	<ul style="list-style-type: none"> • Inadequate team building and maintaining • Inadequate consideration of others • Inadequate support of others • Inadequate solving conflicts 	<ul style="list-style-type: none"> • Unacceptable team building and maintaining • Unacceptable consideration of others • Unacceptable support of others • Unacceptable solving conflicts
	Leadership and Managerial Skills	<ul style="list-style-type: none"> • Excellent use of authority and assertiveness • Excellent providing and maintaining standards • Excellent planning and coordination • Excellent workload management 	<ul style="list-style-type: none"> • Adequate use of authority and assertiveness • Adequate providing and maintaining standards • Adequate planning and coordination • Adequate workload management 	<ul style="list-style-type: none"> • Inadequate use of authority and assertiveness • Inadequate providing and maintaining standards • Inadequate planning and coordination • Inadequate workload management 	<ul style="list-style-type: none"> • Unacceptable use of authority and assertiveness • Unacceptable providing and maintaining standards • Unacceptable planning and coordination • Unacceptable workload management
	Situational Awareness	<ul style="list-style-type: none"> • Excellent system awareness • Excellent environmental awareness • Excellent awareness of time and anticipation of future events 	<ul style="list-style-type: none"> • Adequate system awareness • Adequate environmental awareness • Adequate awareness of time and anticipation of future events 	<ul style="list-style-type: none"> • Inadequate system awareness • Inadequate environmental awareness • Inadequate awareness of time and anticipation of future events 	<ul style="list-style-type: none"> • Unacceptable system awareness • Unacceptable environmental awareness • Unacceptable awareness of time and anticipation of future events
	Decision-Making	<ul style="list-style-type: none"> • Excellent problem definition / diagnosis • Excellent option generation • Excellent risk assessment & option selection • Excellent outcome review 	<ul style="list-style-type: none"> • Adequate problem definition / diagnosis • Adequate option generation • Adequate risk assessment & option selection • Adequate outcome review 	<ul style="list-style-type: none"> • Inadequate problem definition / diagnosis • Inadequate option generation • Inadequate risk assessment & option selection • Inadequate outcome review 	<ul style="list-style-type: none"> • Unacceptable problem definition / diagnosis • Unacceptable option generation • Unacceptable risk assessment & option selection • Unacceptable outcome review

1.4 ACCEPTABLE ASSESSMENT OF A COMPETENCY CHECK

The assessment of an acceptable competency check is deemed to meet the skill requirements associated with an initial instrument rating or the resetting of the recency requirements for the instrument rating in accordance with CAR 401.05(3).

The assessment of an acceptable competency check is deemed to meet the skill requirements associated with a specific type rating.

Authorized Persons may sign off temporary privileges for ratings following the completion of a FLIGHT CREW PERMIT/LICENSE - APPLICATION FOR ENDORSEMENT OF A RATING (Form 26-0083).

1.5 UNACCEPTABLE ASSESSMENT OF A COMPETENCY CHECK

A competency check will receive an unacceptable assessment when any of the following conditions apply:

- (a) when any individual competency check sequence has been assessed a mark of “(1)”; or
- (b) when the assessment of competency check sequences has reached a number of five marks of “(2)”.

When an individual conducting a competency check determines that a pilot has reached an unacceptable performance threshold (from awarding a mark of 1 or five marks of 2) during the course of a competency check, the competency check must be immediately terminated.

1.6 COMPETENCY CHECK RE-ATTEMPT

Remedial Training and Recommendation

Prior to a complete competency check re-attempt, the candidate shall receive remedial training on all items assessed a mark of one (1) or (2).

Following remedial training, a recommendation from a training pilot that the candidate is ready to complete a competency check re-attempt must be provided.

Note: When an original flight check is assessed as unsuccessful, no credit from that flight check may be applied to the re-attempt event.

1.7 COMPETENCY CHECK RESULTS

The purpose of the Privacy Act is to extend the present laws of Canada that protect the privacy of individuals with respect to personal information about themselves held by a government institution and that provide individuals with a right of access to that information.

Section 8(2)(a) of the Act, allows personal information disclosure...”for the purpose for which the information was obtained or compiled by the institution or for a use consistent with that purpose”. TC gathers flight test information to maintain the safety of aviation in Canada. The specific purposes are to measure whether the candidate meets the minimum skill standard for the PCC or rating, whether the recommending training pilot is performing competently as an instructor, and whether the Operator’s Training Program is performing in accordance with the CASS.

In accordance with 8(2)(a) of the Privacy Act, the candidate for the competency check may receive a copy of the flight test report and the examiner who conducted the check may retain a copy. The training pilot who recommended the candidate for the competency check and the Chief Pilot responsible for the quality of training for the Private Operator may also receive a copy. Except as provided by the Privacy Act, Transport Canada will not disclose specific information about the results of a flight test to anyone but the individuals named on the flight test report.

Flight test reports need not be submitted to Transport Canada, except upon written request, and must be treated as personal information and stored in a secure location.

CHAPTER 2 – COMPETENCY CHECK (AEROPLANE)

Note: The decimal numbers used in the section titles found in this chapter correspond to the flight sequence numbers used on Transport Canada form 26-0249 (Pilot Proficiency Check Flight Test Report – Aeroplane).

THE COMPETENCY CHECK

Each item has an “Aim”, a “Description” and “Performance criteria”. The “Aim” of each item expresses the mandatory knowledge and/or skill to ensure acceptable levels of safety that shall be met in accordance with the regulations. The “Description” details how the item will be conducted in order to determine the proficiency of the candidate. The “Performance Criteria” are standards that assess the competency of the candidate to adhere to approved procedures and measure the qualities of airmanship in selecting a course of action.

The aim of each item embodies the regulation CAR 602.07 that specifies that “no person shall operate an aircraft, unless, it is operated in accordance with the operating limitations”. A performance criteria’s item that is missed or poorly done will be marked appropriately but it does not necessarily result in a failure, unless it is also embodied within the Aim of the competency check item.

Competency checks are conducted when weather conditions do not present a hazard to the operation of the aeroplane, the aeroplane is airworthy and the candidate’s and the aeroplane’s documents are valid, as required by the Canadian Aviation Regulations. It is the sole responsibility of the Examiner to make the final decision as to whether or not the weather conditions do not present a hazard to the operation of the aeroplane to conduct the competency check.

Some operations require a crew of two pilots for a VFR operation. In those cases, approximately half of the competency check items should be evaluated while the candidate is flying with a co-pilot and the other half as a single-pilot. The selection of the items to be flown as crew of two pilots and the ones to be flown as a single-pilot should be divided in a way to evaluate the competency of the candidate to fly as a crew as well as a single-pilot. The single-pilot portion will be conducted without the assistance of the other pilot or the Examiner.

When the full competency check or VFR only competency check is conducted with a crew of two pilots, the use of SOPs is recommended and Item 20 (Pilot Monitoring (PM) Duties) will always be evaluated.

A competency check could be unsuccessful for one member of the crew or both, depending on the competency of each member of the crew in meeting the competency check requirements.

When the aeroplane is equipped with some of the following systems: autopilot, Flight Director, Flight Management System(s) (FMS), the candidate will demonstrate practical knowledge operating the systems.

If the candidate is or will be authorized, in accordance with the operations manual of the company, to conduct an approach that is described in a Special Authorization or that is subject to an exemption to the regulations, the competency check will include the type of approach specified in the special authorization or the exemption to the regulations.

When a scripted competency check is being used, the candidate will be given adequate time to prepare the scripted trip.

When a competency check is completed in a simulator, Item 3 PRE-FLIGHT INSPECTION must be completed in a satisfactory manner in accordance with the appropriate schedule.

Competency checks conducted in a simulator will be evaluated, as if they were conducted in an aeroplane.

PRE-COMPETENCY CHECK BRIEFING

Examiners are required to brief competency check candidates on the following details:

- (a) The candidate is familiar with the content of the PCC - Flight Test Guide.
- (b) On the sequence of test items to be covered or plan of action and that there is no need for the candidate to memorize the sequence or the plan of action, as the Examiner will give instructions for each item.
- (c) If in doubt -- ask! Candidates who do not clearly understand what they are being asked to do should feel free to ask for clarification. It may be that the Examiner wasn't clear in giving instructions.
- (d) When the competency check is conducted in an aeroplane, who will do what in the event of an actual emergency or a system malfunction? To be discussed and agreed upon prior to the flight.
- (e) How to transfer control. There should never be any doubt as to who is flying the aeroplane so proper transfer of control through the words "You have control" and "I have control" is expected during a competency check. A visual check is recommended to verify that the exchange has occurred.
- (f) For an IFR competency check conducted in an aeroplane if the Examiner does not report "field in sight" at the appropriate minimums, the candidate is expected to execute a missed approach.
- (g) The use of automation will be restricted during at least one of the approaches of the competency check.
- (h) The method of simulating emergencies or a system malfunctions when the competency check is conducted in an aeroplane. A briefing by the Examiner must specify the methods used to simulate emergencies. For example, it can be verbal for a chip detector, a communication failure, or an action by the Examiner. In all cases when an emergency or a system malfunction is simulated, the Examiner will make it clear that it is a simulation.
- (i) In aeroplanes, engine failures will only be simulated in accordance with the manufacturer's recommendations or, in their absences, by reducing the power to idle. The practice of pulling circuit breakers will not be used during a competency check.
- (j) For competency check in a simulator, a simulated malfunction or emergency procedure will be handled as if it was real.
- (k) Failures of electronic flight or map displays may be simulated in accordance with the training and testing recommendations and/or the handbooks supplied by the equipment manufacturer. In aeroplanes, the Examiner will apply discretion as to the wisdom of creating a simulated failure, based on the existing flight conditions, in order to ensure safety of flight.
- (l) Before activating the simulator, a Simulator Safety Briefing must be completed (Exits, emergency equipment, etc.).
- (m) Any differences between the simulator and the aeroplane that may affect the performance of the flight crew will be discussed.
- (n) Operational restrictions must be addressed before commencing the competency check.
- (o) Advise the candidate that there will be note-taking during the competency check.
- (p) That some deviations or errors during the competency check will not necessarily mean an end to the competency check.
- (q) To ask at the end of the pre-flight check briefing, if the candidate has any questions.

AEROPLANE OR FULL-FLIGHT SIMULATOR REQUIREMENTS

A competency check that includes an instrument procedures portion of one of the schedules may be conducted in an aeroplane or in a Level C or higher full-flight simulator (FFS).

Aeroplane Requirements

Except as otherwise noted, an aeroplane used for Competency Checks will have a valid and current Canadian or Foreign Flight Authority in accordance with CAR 507 and meet the requirements of CAR 605.06 – Aircraft Equipment Standards and Serviceability and meet the following requirements:

- (a) be equipped with suitable radio for air to ground and air to air radio communications and two-way intercom voice communication for the pilot(s);
- (b) be equipped to monitor intercom and air to ground and air to air radio communications for the Examiner;
- (c) be equipped with a safety harness for all occupied seats and installed in accordance with the Airworthiness Standards;
- (d) All required equipment must be serviceable and the maintenance requirements current or acceptable in accordance with the Minimum Equipment List (MEL);
- (e) For a competency check that requires the instrument procedures portion the aeroplane will meet the following requirements:
 - (i) be approved for IFR flight operations in accordance with the AFM;
 - (ii) be operated in accordance with CAR 602.07 – Aircraft Operating Limitations; and;
 - (iii) meet the equipment requirements of CAR 605.18 - Power-driven Aircraft – IFR and, if conducted in IMC be able, in the event of the failure at any stage of the flight of any items of that equipment including any associated flight instrument display, to:
 - (A) proceed to the destination aerodrome or proceed to another aerodrome that is suitable for landing; and
 - (B) complete an instrument approach and, if necessary, conduct a missed approach procedure, where the aeroplane is operated in IMC.
 - (iv) GNSS equipment used for navigation must be certified and approved installations that meet the requirements for RNP APCH approaches or any other function, such as use in lieu of a DME or an NDB. For the LPV approach, GNSS (WAAS) receivers must be certified and approved installations. Databases for GNSS or FMS units used in the aeroplane must be current; and
 - (v) have the transponder, including any associated altitude sensing reporting mechanisms, tested and recertified within the previous 24 months in accordance with CAR 625 Appendix C and CAR 571 Appendices B and F.

Simulator Requirements

A full-flight simulator used for a competency check shall be a Level C or higher.

The full-flight simulator must be approved in accordance with the Aeroplane and Rotorcraft Simulator Manual (TP 9685) and pursuant to Part VI of the Canadian Aviation Regulations, shall have a certificate issued by Transport Canada; as per CAR 606.03.

The following website will provide you a list of the Approved Aircraft Simulators:
<http://wwwapps.tc.gc.ca/saf-sec-sur/2/CAS-SAC/aasftddevsaal.aspx?lang=eng>

Where the competency check is conducted in a full-flight simulator, the Examiner must either be trained in the use of the device or must monitor the candidate's performance while an individual that has been trained to operate the device operates it in accordance with an agreed-upon script or plan of action.

A simulator must have approved seats for all observers. Observer seats will be secured to the floor of the flight simulator fitted with positive restraint devices and be of sufficient integrity to safely restrain the occupant during any known or predicted motion system excursion.

If headphones are worn during the competency check a two-way intercom voice communication for the pilot(s) and ACP or CASI is required.

If the simulator has recorded an unserviceability or a defect, the Examiner will refer to the Simulator Component Inoperative Guide found in the Aeroplane and Rotorcraft Simulator Manual (TP 9685), the CARs, the aeroplane MEL and/or AFM to determine if the competency check can proceed.

If the competency check is conducted in a full-flight simulator, when electronic databases have not yet been updated, the deficiency must be recorded and deferred. The matching charts must be retained until the deficiency has been rectified.

OTHER EQUIPMENT

The relevant current documentation will be available for the competency check such as:

- (a) Rotary Flight Manual;
- (b) Operations Manual;
- (c) Minimum equipment list;
- (d) Canada Flight Supplement or equivalent foreign document;
- (e) Canada Air Pilot or equivalent foreign approach plates;
- (f) Restricted Canada Air Pilot, if required;
- (g) Enroute Charts;
- (h) Terminal Area charts;
- (i) VFR navigational Charts;
- (j) Appropriate Checklists;
- (k) Current electronic databases;

CREW AND EXAMINER REQUIREMENTS

The Examiner must be qualified and current on the aeroplane type in accordance with the personnel licensing standards and the ACP manual or IPB 2016-05.

For a single pilot IFR competency check, the candidate must have met the CAR 703.86/723.86.

During a single pilot IFR competency check, Item 20 [Pilot Monitoring (PM) Duties] will be evaluated while the auto-pilot is in operation.

When the competency check is conducted in a:

- (a) multi-crew certified aeroplane, the first officer must be qualified on the aeroplane type, qualified as a training pilot and be current on the aeroplane type;
- (b) simulator, the first officer must be qualified on the aeroplane type and be current on the aeroplane type;
- (c) multi-crew certified aeroplane or a simulator and the observer seat is occupied by an ACP or a CASI, it will be located to permit an unobstructed view of the aeroplane instruments, radios and navigation equipment;
- (d) multi-crew certified aeroplane, the plan of action describing the simulated emergency manoeuvres to be performed during the flight will be given to the first officer/training pilot before the flying portion of the competency check.

COMPETENCY CHECK

THE FOLLOW FLIGHT MANAGEMENT PERFORMANCE CRITERIA WILL BE EVALUATED DURING EACH FLIGHT ITEM OF THE COMPETENCY CHECK.

Performance Criteria

- (a) Cooperation with other crew member, ATC, dispatch, etc.
- (b) For multi-crew flight checks:
 - (i) leadership, the Pilot-in-Command competency to direct other crewmembers (Leadership) in their duties as required; and
 - (ii) managerial skills, the effectiveness in using Cockpit Resource Management (CRM).
- (c) Managerial skill, the effectiveness of workload management in regard to Single-pilot Resource Management (SRM)
- (d) Situational awareness of the aeroplane systems, the time, anticipation of the future events, consciousness of the environment and divides attention inside and outside the cockpit when VMC (Exception is made for division of attention to the outside during the time that the candidate is in simulated instrument flight conditions).
- (e) Decision-making in identifying problems, generating options, making risk assessments to choose an option and review the decision.
- (f) Be familiar with the available information that is appropriate to the intended flight as per CAR 602.71.
- (g) The AIM of each flight item must be completed in accordance with the CAR 602.07.Aircraft Operating Limitations.

CAR 602.07 - No person shall operate an aircraft unless it is operated in accordance with the operating limitations

- (a) *set out in the aircraft flight manual, where an aircraft flight manual is required by the applicable standards of airworthiness;*
- (b) *set out in a document other than the aircraft flight manual, where use of that document is authorized pursuant to Part VII;*
- (c) *indicated by markings or placards required pursuant to section 605.05; or*
- (d) *prescribed by the competent authority of the state of registry of the aircraft.*

EXERCISES

1 TECHNICAL KNOWLEDGE

Aim

To demonstrate a practical knowledge of selected systems, components, normal, abnormal and emergency procedures and operate aeroplane systems in accordance with the AFM.

Description

The Examiner will assess the candidate's knowledge of the aeroplane limitations, performance and normal operation in accordance with the AFM, including the normal, abnormal, alternate and emergency operating procedures and limitations relating thereto. The assessment will include the applicable AFM supplements.

Limitations that are necessary to know during the flight and that could only be found in the AFM will be quoted from memory. If a limitation refers to a placard or an instrument marking that is in plain view during the flight, the candidate will be permitted to refer to the AFM to answer the question from the Examiner

The equipment knowledge assessment is optional when the pilot's training record contains a valid written examination, from initial or recurrent training.

Performance Criteria

Assessment of the candidate's competency to explain the operation of the following systems as applicable:

- (a) landing gear;
- (b) powerplant;
- (c) propellers;
- (d) fuel system;
- (e) oil system;
- (f) hydraulic system;
- (g) electrical system;
- (h) environmental systems;
- (i) avionics and communications (autopilot; flight director; EFIS; FMS; LORAN; Doppler Radar; INS; GNSS; VOR, NDB, ILS systems and components; indicating devices; transponder; TCAS; GPWS/EGPWS/TAWS if applicable and emergency locator transmitter);
- (j) ice protection;
- (k) crewmember and passenger equipment (oxygen system, survival gear, emergency exits, evacuation procedures, crew duties, quick-donning oxygen mask for crewmembers and passengers);
- (l) flight controls (ailerons, elevator(s), rudder(s), winglets, canards, control tabs, balance tabs, stabilizer, flaps, spoilers, leading edge flaps/slats and trim systems);
- (m) pitot-static system with associated instruments and the power source for the flight instruments; and
- (n) systems and components listed above with regard to the AFM, the MEL, if appropriate, and Special Authorizations, if applicable.

2 FLIGHT PLANNING (FLP)

Aim

To correctly plan a flight utilizing performance charts, weight and balance calculations, conforming to the VFR or IFR flight rules as applicable and retrieving and interpreting aviation weather information necessary for the safe conduct of the flight.

Description

Flight planning will include assessment of the candidate's competency to retrieve and interpret the alphanumeric data and graphical weather products listed in the performance criteria and demonstrate a practical knowledge in utilizing the weather information to plan a flight.

The candidate will extract and use pertinent information of current aeronautical charts, Canada Flight Supplement, Canada Air Pilot, Aeronautical Information Circulars (AIC) and AIP Canada (ICAO) supplements and other publications

The candidate will demonstrate a practical knowledge for the preparation of an operational flight plan, a VFR flight plan or a flight itinerary or, if the flight check includes an instrument portion, a flight log and IFR flight plan.

The candidate will demonstrate a practical knowledge by responding to the Examiner asking questions about regulatory requirements, IFR procedures (if the competency check includes an instrument portion), Company Operations Manual and the Private Operators Registration Document, and approved Specific Authorizations (Ops Specs).

The candidate will take into consideration the aeroplane limitations data and performance in preparing a weight and balance calculation and will demonstrate knowledge of the effect of various centers of gravity locations on the aeroplane flight characteristics as well as the practical knowledge of how to correct a situation in which the center of gravity is out of limits.

Note: The flight planning assessment is optional when the pilot's training record contains a valid written examination, from initial or recurrent training.

Performance Criteria

Assessment of the candidate's competency to:

- (a) demonstrate a practical knowledge of performance and limitations, including the adverse effects of exceeding any limitation;
- (b) demonstrate proficient use of (as appropriate to the aeroplane) performance charts, tables, graphs, or other data relating to items, such as:
 - (i) accelerate-stop distance
 - (ii) accelerate-go distance
 - (iii) takeoff performance—all engines, engine(s) operating
 - (iv) climb performance including segmented climb performance with all engines operating; with one or more engine(s) inoperative and with other engine malfunctions, as may be appropriate
 - (v) service ceiling—all engines, engine(s) inoperative, including drift down, if appropriate
 - (vi) cruise performance
 - (vii) fuel consumption, range, and endurance
 - (viii) descent performance
 - (ix) go-around from rejected landings
 - (x) other performance data (appropriate to the aeroplane)
- (c) describe (as appropriate to the aeroplane) the airspeeds used during specific phases of flight;

- (d) describe the effects of meteorological conditions upon performance characteristics and to correctly apply these factors to a specific chart, table, graph, or other performance data;
- (e) compute the center-of-gravity location for a specific load condition (as specified by the examiner), including adding, removing, or shifting weight;
- (f) determine if the computed center-of-gravity is within the forward and aft center-of-gravity limits, and that lateral fuel balance is within limits for takeoff and landing for the proposed flight;
- (g) demonstrate acceptable planning and knowledge of procedures in applying operational factors affecting aeroplane performance;
- (h) select an appropriate route, altitude and alternate;
- (i) locate and apply information essential to the flight;
- (j) obtain and correctly interpret applicable NOTAM information;
- (k) calculate the estimated time enroute and total fuel requirement based on factors such as power settings, operating altitude or flight level, wind and fuel reserve requirements;
- (l) determine that the required performance for the planned flight is within the aeroplane's capability and operating limitations;
- (m) make a competent "GO/NO-GO" decision based on available information for the planned flight;
- (n) complete a flight plan in a manner that reflects the conditions of the proposed flight;
- (o) demonstrate sufficient practical operational knowledge of the regulatory requirements relating to instrument and visual flying, as applicable; and
- (p) retrieve and interpret items such as weather reports and forecasts; pilot and radar reports; surface analysis charts; significant weather prognostics; winds and temperatures aloft; freezing level charts, NOTAMS, WAAS NOTAMs and SIGMETs.

3 PRE-FLIGHT (PRF)

Aim

To systematically complete internal and external checks in accordance with the AFM and SOPs to ensure that the aeroplane is ready for the intended flight. The candidate will also demonstrate knowledge of how to deal with irregularities, if found.

Description

The pre-flight begins with flight crew arrival at an aeroplane for the purpose of flight and ends when the crew departs the parking position and/or starts the engine(s).

The candidate will determine that the aeroplane is ready for the intended flight. The pre-flight aeroplane inspection will include a visual inspection of the exterior and interior of the aeroplane, locating each required item and explaining the purpose of the inspection in accordance with the AFM and SOPs.

Note: When the competency check is conducted in a simulator, the pre-flight portion of the check will be conducted on an aeroplane, if available, or with the help of visual aids. Visual aids will be able to illustrate every pre-flight item listed in the AFM and the major components and systems listed in the Performance Criteria.

The candidate will carry out in accordance with the AFM a visual check for fuel quantity, proper grade of fuel, fuel contamination and oil levels. If, due to aeroplane design, the AFM does not prescribe a visual check of fuel levels, the candidate will use fuel chits, fuel logs or other credible procedures to confirm the amount of fuel on board the aeroplane. In addition, the candidate will demonstrate programming and use of available flight management, navigation and guidance systems.

At the request of the individual conducting the competency check, the candidate will conduct an oral passenger safety briefing where applicable.

Performance Criteria

Assessment of the candidate's competency to:

- (a) demonstrate an adequate knowledge of the pre-flight inspection procedures, while explaining briefly the purpose of inspecting the items, which must be checked, how to detect possible defects and the corrective action to take;
- (b) demonstrate adequate knowledge of the operational status of the aeroplane by locating and explaining the significance and importance of related documents, such as airworthiness and registration certificates, operating limitations, handbooks, and manuals, minimum equipment list (MEL) (if appropriate), weight and balance data and maintenance requirements, tests, and appropriate records applicable to the proposed flight or operation; and maintenance that may be performed by the pilot or other designated crewmember;
- (c) use the approved checklist to inspect the aeroplane externally and internally;
- (d) use the challenge-and-response (or other approved) method with the other crewmember(s), where applicable to accomplish the checklist procedures;
- (e) verify the aeroplane is safe for flight by emphasizing (as appropriate) the need to look at and explain the purpose of inspecting items, such as:
 - (i) powerplant, including controls and indicators
 - (ii) fuel quantity, grade, type, contamination safeguards, and servicing procedures
 - (iii) oil quantity, grade, and type
 - (iv) hydraulic fluid quantity, grade, type, and servicing procedures
 - (v) oxygen quantity, pressures, servicing procedures, and associated systems and equipment for crew and passengers
 - (vi) hull, landing gear, float devices, brakes, and steering system
 - (vii) tires for condition, inflation, and correct mounting, where applicable
 - (viii) fire protection/detection systems for proper operation, servicing, pressures, and discharge indications
 - (ix) pneumatic system pressures and servicing
 - (x) ground environmental systems for proper servicing and operation
 - (xi) auxiliary power unit (APU) for servicing and operation
 - (xii) flight control systems including trim, spoilers, and leading/trailing edge
 - (xiii) anti-ice, deice systems, ice warning systems, servicing, and operation
- (f) coordinate with ground crew and ensure adequate clearance prior to moving any devices, such as door, hatches and flight control surfaces;
- (g) comply with the provisions of the appropriate Special Authorizations, if applicable, as they pertain to the particular aeroplane and operation;
- (h) demonstrate proper operation of all applicable aeroplane systems;
- (i) note any discrepancies, determine if the aeroplane is airworthy and safe for flight, or takes the proper corrective action with respect to unsatisfactory conditions identified; and
- (j) check the general area around the aeroplane for hazards to the safety of the aeroplane and personnel.

4 ENGINE START/DEPART (ESD)

Aim

To complete the correct engine start procedures including the use of an APU or external power source under various atmospheric conditions, conducting warm-up, run-up and system checks, recognize normal and abnormal situations and take proper action in the event of a malfunction.

Description

Engine start/depart begins when the flight crew takes action to have the aeroplane moved from the parked position and/or takes switch action to energize the engine(s).

The candidate will demonstrate the proper use of the pre-start, start and pre-taxi checklists and check the appropriate radio communications, navigation and electronic equipment and selection of the appropriate communications and navigation frequencies prior to flight.

Performance Criteria

Assessment will be based on the candidate's proficiency 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) perform all items of the start procedures by systematically following the approved checklist items for the before-start, start, and after-start phases;
- (d) demonstrate sound judgment and operating practices in those instances where specific instructions or checklist items are not published;
- (e) use of the challenge-and-response (or other approved) method with the other crewmember(s), where applicable, to accomplish the checklist procedures;
- (f) coordinate with ground crew and ensures adequate clearance prior to moving any devices, such as door, hatches, and flight control surfaces;
- (g) demonstrate adequate knowledge of the pre-takeoff checks by stating the reason for checking the items outlined on the approved checklist and explaining how to detect possible malfunctions;
- (h) divide attention properly inside and outside cockpit;
- (i) ensure that all systems are within their normal operating range prior to beginning, during the performance of, and at the completion of those checks required by the approved checklist;
- (j) explain, as may be requested by the individual conducting the competency check, any normal or abnormal system operating characteristic or limitation, and the corrective action for a specific malfunction;
- (k) determine if the aeroplane is safe for the proposed flight or requires maintenance;
- (l) determine the aeroplane's takeoff performance, considering such factors as wind, density altitude, weight, temperature, pressure altitude, and runway condition and length;
- (m) determine airspeeds/V-speeds and properly sets all instrument references, flight director and autopilot controls, and navigation and communications equipment;
- (n) review procedures for emergency and abnormal situations, which may be encountered during takeoff, and states the corrective action required of the pilot in command and other concerned crewmembers;
- (o) perform an avionics and navigation equipment cockpit check; and
- (p) obtain and correctly interpret the takeoff and departure clearance as issued by ATC.

5 TAXI-OUT (TXO)

Aim

To manoeuvre the aeroplane safely on the ground and avoid unnecessary interference with the movement of other traffic as appropriate to the aeroplane including pushback or power-back, as applicable.

Description

Taxi-out begins when the crew moves the aeroplane under its own power and ends when thrust is increased for the purpose of taking off.

The candidate will taxi the aeroplane to and from the runway in use and as otherwise required during the competency check. While taxiing, the candidate will follow taxiing procedures including, where appropriate, sailing and docking. In addition, the taxi check will include the use of the taxiing checklist, taxiing in compliance with clearances and instructions issued by the appropriate air traffic control unit or by the individual conducting the competency check.

Where a second-in-command undergoes a competency check, the individual conducting the competency check will evaluate taxiing to the extent practicable from the second-in-command position.

Performance Criteria

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

- (a) demonstrate adequate knowledge of safe taxi procedures (as appropriate to the aeroplane including push-back or powerback, as may be applicable);
- (b) demonstrate proficiency by maintaining correct and positive aeroplane control;
- (c) maintain proper spacing with other aircraft, obstructions, and persons;
- (d) accomplish the applicable checklist items and perform recommended procedures;
- (e) maintain desired track and speed;
- (f) perform an instrument and flight control check;
- (g) comply with instructions/clearances issued by ATC (or the examiner simulating ATC);
- (h) observe runway hold lines, localizer and glide slope critical areas and other surface control markings and lighting;
- (i) maintain constant vigilance and aeroplane control during taxi operation to prevent runway incursion; and
- (j) demonstrate procedures for RVOP and LVOP, where applicable.

6 TAKE-OFF (TOF)

Aim

To take off safely using the correct technique and procedure for the actual wind conditions, runway surface and length, and to assess the possibility of further conditions such as wind shear and wake turbulence.

Description

The takeoff begins when the crew increases the thrust for the purpose of taking off and ends when an Initial Climb is established (35 feet above runway elevation) or the crew initiates a "Rejected Takeoff".

The candidate will demonstrate a normal (i.e. standard take-off configuration with all engines operating) take-off performed in accordance with the AFM. The candidate will demonstrate an instrument takeoff in the same manner as the normal takeoff with simulated instrument conditions established at or after reaching an altitude of 400 feet above the airport elevation. The instrument takeoff is not required where the Private Operator Registration Document authorizes operations under day VFR only, or the operator assigns the pilot to day VFR flight only. Where practicable, the candidate will demonstrate, one crosswind takeoff performed in accordance with the AFM, where applicable.

For competency checks conducted in a simulator, the candidate will demonstrate a takeoff in a minimum 10-kt crosswind in addition to an instrument takeoff at the minimum visibility approved for the operator.

Where an operator has RVR 1200 or RVR 600 take-off limits authority, the candidate will demonstrate one such takeoff to the lowest limit as appropriate to his flight crew position.

Note: The individual conducting the competency check may combine any or of these takeoffs.

Performance Criteria

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

- (a) demonstrate adequate knowledge of normal and crosswind takeoffs and climbs including (as appropriate to the aeroplane) airspeeds, configurations, and emergency/abnormal procedures;
- (b) note any surface conditions, obstructions, or other hazards that might hinder a safe takeoff;
- (c) verify and correctly apply correction for the existing wind component to the takeoff performance;
- (d) complete required checks prior to starting takeoff to verify the expected powerplant performance;
- (e) align the aeroplane on the runway centerline;
- (f) apply the controls correctly to maintain longitudinal alignment on the centerline of the runway prior to initiating and during the takeoff;
- (g) adjust the powerplant controls as recommended by the AFM or other approved guidance for the existing conditions;
- (h) monitor powerplant controls, settings, and instruments during takeoff to ensure all predetermined parameters are maintained;
- (i) adjust the controls to attain the desired pitch attitude at the predetermined airspeed/V-speed to attain the desired performance for the particular takeoff segment;
- (j) perform the required pitch changes and, as appropriate, perform or call for and verify the accomplishment of, gear and flap retractions, power adjustments, and other required pilot-related activities at the required airspeed/V-speeds within the tolerances established in the AFM;
- (k) use the applicable noise abatement and wake turbulence avoidance procedures, as required;
- (l) accomplish or call for and verify the accomplishment of the appropriate checklist items;
- (m) maintain the appropriate climb segment airspeed/V-speeds; and
- (n) maintain the desired heading within $\pm 10^\circ$ and the desired airspeed/V-speed within +10/-5 knots or the appropriate Vspeed range.

7 REJECTED TAKEOFF (RTO)

Aim

To recognize an abnormal situation necessitating a rejected takeoff and to carry out an appropriate procedure in accordance with the AFM and/or SOPs.

Description

When performed in a simulator, the candidate will demonstrate a rejected take-off before reaching lift-off speed or if conducted in the aeroplane, the candidate will verbally explain this manoeuvre during the briefing. Where an operator has RVR 1200 or RVR 600 take-off limits authority, the candidate may demonstrate one such rejected takeoff to the lowest limit as appropriate to his flight crew position.

For competency checks conducted in a simulator, the candidate will demonstrate a rejected takeoff from a speed of not less than 90% of the calculated V1 or less, if appropriate to the aeroplane type.

Performance Criteria

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

- (a) demonstrate adequate knowledge of the technique and procedure for accomplishing a rejected takeoff after powerplant/system(s) failure/warnings, including related safety factors;
- (b) take into account, prior to beginning the takeoff, operational factors which could affect the manoeuvre, such as Takeoff Warning Inhibit Systems or other aeroplane characteristics, runway length, surface conditions, wind, obstructions that could affect take-off performance and could adversely affect safety;
- (c) align the aeroplane on the runway centerline;
- (d) perform all required pre-takeoff checks as required by the appropriate checklist items;
- (e) adjust the powerplant controls as recommended for the existing conditions;
- (f) apply the controls correctly to maintain longitudinal alignment on the centerline of the runway;
- (g) reject the takeoff if, in a single-engine aeroplane the powerplant failure occurs prior to becoming airborne, or in a multiengine aeroplane, the powerplant failure occurs at a point during the takeoff where the abort procedure can be initiated and the aeroplane can be safely stopped on the remaining runway/stopway. If a flight simulator is not used, the powerplant failure will be explained by the candidate prior to the flight;
- (h) reduce the power smoothly and promptly, if appropriate to the aeroplane, when powerplant failure is recognized;
- (i) use spoilers, prop reversing, thrust reversing, wheel brakes, and other drag/braking devices, as appropriate, maintaining positive control in such a manner as to bring the aeroplane to a safe stop; and
- (j) accomplish the appropriate powerplant failure or other procedures and/or checklists as set forth in the AFM or SOPs.

8 INITIAL CLIMB (ICL)

Aim

To comply with initial climb departure procedures as cleared.

Description

The initial climb sequence starts at 35 feet above runway elevation and ends when the aeroplane is in a clean configuration and accelerates to an appropriate enroute climb speed.

The candidate will complete the initial climb procedures, the departure procedures and establish the aeroplane on the enroute course, as cleared, in accordance with VFR, as applicable. In addition, the candidate will demonstrate the proper programming and use of an FMS, as applicable.

Performance Criteria

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

- (a) transition smoothly and accurately from visual meteorological conditions to actual or simulated instrument meteorological conditions, where applicable;
- (b) monitor powerplant controls, settings, and instruments during the initial climb to ensure all predetermined parameters are maintained;
- (c) adjust the controls to attain the desired pitch attitude at the predetermined airspeed/V-speed to attain the desired performance for the particular takeoff and climb segment;
- (d) perform the required pitch changes and, as appropriate, perform or call for and verify the accomplishment of, gear and flap retractions, power adjustments, and other required pilot-related activities at the required airspeed/V-speed within the tolerances established in the AFM and SOP's;
- (e) use the applicable noise abatement and wake turbulence avoidance procedures, as required;

- (f) complete or call for and verify the completion of the appropriate checklist items;
- (g) maintain the desired heading within $\pm 10^\circ$ and the desired airspeed/V-speed within $+10/-5$ knots or the appropriate Vspeed range; and
- (h) comply with ATC clearances and instructions issued by ATC (or the individual conducting the competency check and simulating ATC).

9 ENROUTE CLIMB (ECL)

Aim

To comply with enroute departure procedures as cleared.

Description

The enroute climb sequence starts when the aeroplane is in a clean configuration and has accelerated to an appropriate enroute climb speed and ends when the aeroplane has levelled off for the purpose of cruise flight.

The candidate will establish the aeroplane on the enroute course, as cleared, in accordance with VFR or IFR, as applicable.

Performance Criteria

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

- (a) establish communications with ATC, using proper phraseology;
- (b) select, identify and use the appropriate communications and navigation systems associated with the proposed departure phase;
- (c) perform the aeroplane checklist items relative to the phase of flight;
- (d) intercept, in a timely manner, all tracks, radials and bearings appropriate to the procedure, route or clearance;
- (e) adhere to departure, noise abatement and transition procedures or ATC instructions;
- (f) comply, in a timely manner, with all instructions and airspace restrictions;
- (g) maintain proper aeroplane control and flight within operating configurations and limitations;
- (h) maintain assigned headings within ± 10 degrees;
- (i) maintain assigned tracks and bearings within ± 10 degrees;
- (j) maintain altitude within ± 100 feet;
- (k) exhibit adequate knowledge of two-way radio communications failure procedures; and
- (l) conduct the enroute climb phase to a point where the transition to the cruise environment is complete.

10 CRUISE (CRZ)

Aim

To establish the aeroplane in cruising flight at the pre-planned power settings in accordance with the AFM and to determine the candidate's proficiency to comply with enroute procedures as cleared.

Description

The cruise phase begins when the crew establishes the aeroplane at a defined speed and predetermined constant initial or final cruise altitude and proceeds in the direction of a destination and ends with the beginning of Descent for the purpose of an approach.

The candidate will establish the aeroplane in cruising flight in accordance with the performance charts in the AFM, placards displayed in the aeroplane or any other means authorized by the manufacturer. In addition, the candidate will maintain the aeroplane on the enroute course and comply with enroute

procedures, as cleared, in accordance with VFR or IFR, as applicable. The candidate will demonstrate the correct programming and use of an FMS, as applicable.

Performance Criteria

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

- (a) select and use the appropriate communications frequencies;
- (b) select and identify the navigation aids associated with the proposed enroute phase;
- (c) perform the aeroplane checklist items relative to the phase of flight;
- (d) intercept, in a timely manner, all tracks, radials and bearings appropriate to the route or clearance;
- (e) adhere to the enroute procedures;
- (f) maintain proper aeroplane control and flight within operating limitations;
- (g) maintain assigned heading, tracks or bearings within ± 10 degrees, and altitude within ± 100 feet;
- (h) set the power levers / throttle(s), propeller and mixture controls at the pre-planned power setting, as recommended by the AFM;
- (i) synchronize propellers, where applicable;
- (j) apply any additional measures recommended by the manufacturer with respect to aeroplane configuration or other considerations; and
- (k) confirm cruise performance and demonstrate good decision-making to deal with the consequences of variances from the expected performance, ETA revision, fuel management.

11 STEEP TURNS

Aim

To safely perform coordinated level steep turns.

Description

At an operationally safe altitude recommended by the manufacturer, training syllabus, or other training directive, but in no case lower than 3,000 feet AGL, the candidate will execute at least one steep turn in each direction with a bank angle of 45° and a change in heading of at least 180° but not more than 360° . The candidate will specify the selected altitude, airspeed and initial heading before entering the turn.

For competency checks conducted in a simulator, the individual conducting the competency check need not evaluate steep turns when the competency check is for a fly-by-wire aeroplane and steep turns were acceptably demonstrated during training.

Performance Criteria

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

- (a) divide attention appropriately between outside visual references and instrument indications;
- (b) roll into and out of turns, using smooth and coordinated pitch, bank and power control to maintain the specified altitude within ± 100 feet and the desired airspeed within ± 10 knots;
- (c) establish the recommended entry airspeed;
- (d) maintain the bank angle of 45° within $\pm 10^\circ$ while in smooth stabilized flight;
- (e) after 180° of turn, roll out of the turn at approximately the same rate used to roll into the turn and reverse the direction of turn and repeat the manoeuvre in the opposite direction;
- (f) roll out of the turn at the reversal heading and the entry heading within $\pm 10^\circ$; and
- (g) avoid any indication of an approaching stall, abnormal flight attitude, or exceeding any structural or operating limitation during any part of the manoeuvre.

12 APPROACHES TO STALL

Aim

To recognize and recover promptly and correctly from an approach to a stall in various configurations and avoid a stall.

Description

For the purpose of this manoeuvre, an approach to a stall may be identified at:

- (a) the first indication of aerodynamic buffeting, a lack of pitch authority, a lack of roll control, an inability to arrest a descent rate; and/or
- (b) the activation of stall warning devices, stick shaker and/or stick pusher devices (where installed).

When performed in an aeroplane, approaches to stall should take place with a clearly visible horizon during daylight conditions and with sufficient clearance from the ground and/or cloud. Approaches to stalls should be conducted at an altitude of at least 5000 feet AGL, and if above cloud at an altitude of at least 2000 feet above the cloud tops, or by using increased clearance requirements where specified by aeroplane manufacturers or operators.

Competency checks require the following approaches to the stall:

- (a) one in the *take-off* configuration, except where a zero-flap take-off configuration is normally used in that model and type of aeroplane;
- (b) one in a *clean* configuration, at a medium or high altitude; and
- (c) one in a *landing* configuration.

With respect to a competency check conducted in a simulator, one of the approaches to stall will be performed while in a turn with a bank angle of between 15° and 30°.

For competency checks conducted in a simulator, an individual conducting a competency check need not evaluate approaches to stalls when the competency check applies to a fly-by-wire aeroplane and approaches to stalls have been satisfactorily demonstrated during training.

Performance Criteria

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

- (a) recognize the first indication of an approach to a stall (as listed in the Description section above);
- (b) disconnect autopilot and autothrottle (if installed and engaged);
- (c) apply nose down pitch control until indications of stall and/or stall warning significantly diminish or disappear, and trim as needed;
- (d) roll to wings level using ailerons and apply rudder only as necessary to control sideslip;
- (e) add or adjust power/thrust as needed;
- (f) carry out configuration changes as recommended and ensure that speed brakes/spoilers (if installed) are retracted;
- (g) recover to a safe airspeed and stabilized flight; and
- (h) ensure that the aeroplane is in a suitable configuration by checking pertinent items from an appropriate checklist.

13 HOLDING

Aim

To safely establish the aeroplane in a holding pattern in accordance with an actual or simulated ATC clearance.

Description

The holding sequence starts when a holding clearance is issued and ends when the aeroplane has exited the holding pattern.

In actual or simulated instrument conditions, the candidate must demonstrate adequate knowledge of a holding procedure for a standard or non-standard, published or non-published holding pattern. If appropriate, the candidate must demonstrate adequate knowledge of holding endurance, including, but not necessarily limited to, fuel on board, fuel flow while holding, fuel required to alternate, etc.

Based on an actual or simulated clearance, the candidate will select a suitable entry procedure, enter the hold and establish the aeroplane in the holding pattern as cleared. Also, the candidate will demonstrate the proper programming and use of an FMS as applicable.

Performance Criteria

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

- (a) change to the recommended holding airspeed appropriate for the aeroplane and holding altitude, so as to cross the holding fix at or below maximum holding airspeed;
- (b) recognize arrival at the clearance limit or holding fix and initiate entry into the holding pattern;
- (c) follow appropriate entry procedures for a standard, non-standard, published, or non-published holding pattern;
- (d) report entering the hold;
- (e) comply with ATC reporting requirements;
- (f) use the proper timing criteria required by the holding altitude and ATC or examiner's instructions;
- (g) comply with the holding pattern leg length when a DME distance is specified;
- (h) use the proper wind-drift correction techniques to accurately maintain the desired radial, track, courses, or bearing;
- (i) arrive over the holding fix as close as possible to the "expect further clearance" time;
- (j) maintain the appropriate airspeed/V-speed within ± 10 knots, altitude within ± 100 feet, and accurately tracks radials, courses, and bearings within $\pm 10^\circ$ or within $\frac{1}{2}$ scale deflection of the course deviation indicator, as applicable; and
- (k) maintain proper aeroplane control and flight within operating configurations and limitations while in the hold.

14 DESCENT (DST)

Aim

To safely comply with visual or instrument arrival procedures, as cleared.

Description

Descent begins when the crew departs the cruise altitude for the purpose of an approach at a **particular destination** and ends when the crew initiates changes in aeroplane configuration and/or speeds to facilitate an approach to a particular runway.

The candidate will complete the arrival procedures, as cleared, in accordance with Instrument Flight Rules or Visual Flight Rules, as applicable. In addition, the candidate will demonstrate the proper programming and use of an FMS, as applicable.

Performance Criteria

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

- (a) demonstrate adequate knowledge of En Route Low and High Altitude Charts, STAR/FMS Procedures, Instrument Approach Procedure Charts, VFR Charts, as applicable, and related pilot and controller responsibilities;
- (b) select and identify the navigation aids associated with the proposed arrival phase;
- (c) select and correctly identify all instrument references, flight director and autopilot controls, and navigation and communications equipment associated with the arrival;
- (d) perform the aeroplane checklist items appropriate to the arrival;
- (e) select and establish communications with ATC, using proper phraseology;
- (f) comply, in a timely manner, with all ATC clearances, instructions, and restrictions;
- (g) demonstrate adequate knowledge of two-way communications failure procedures;
- (h) intercept, in a timely manner, all tracks, radials and bearings appropriate to the procedure, route, ATC clearance, or as directed by the individual conducting the competency check;
- (i) correctly adhere to visual or instrument arrival procedures;
- (j) adhere to airspeed restrictions and adjustments required by regulations, ATC, the AFM, SOPs or the individual conducting the competency check;
- (k) establish, where appropriate, a rate of descent consistent with the aeroplane operating characteristics and safety;
- (l) maintain the appropriate airspeed/V-speed within ± 10 knots, altitude within ± 100 feet, and accurately tracks radials, courses, and bearings within $\pm 10^\circ$ or within $\frac{1}{2}$ scale deflection of the course deviation indicator;
- (m) comply with the provisions of the Profile Descent, STAR, and other arrival procedures, as appropriate; and
- (n) maintain proper aeroplane control and flight within operating limitations.

15-16 APPROACH (APR)

Aim

To safely fly a stabilized precision and non-precision instrument approach in accordance with the published instrument approach procedure.

Description

The approach begins when the crew initiates changes in aeroplane configuration and/or speeds enabling the aeroplane to manoeuvre for the purpose of approaching a particular runway, and ends when the aeroplane is in the landing configuration and the crew is dedicated to land on that runway. It may also end by the crew initiating an "initial climb" or "go-around" phase.

The candidate will demonstrate at least two instrument approaches performed in accordance with procedures and limitations in the Canada Air Pilot or in the equivalent foreign publications, or in the operator's approved approach procedure for the approach facility used. Where practicable, the candidate will fly one precision approach and one non-precision approach, and conditions permitting, where authorised in SOPs, a circling approach. For multiengine aeroplanes competency checks, the candidate will complete at least one approach with a simulated failure of one powerplant, preferably flown manually. The simulated powerplant failure should occur before initiating the final approach segment and must continue to touchdown or throughout the missed approach procedure.

For competency checks conducted in a simulator, one of the approaches will be a precision, and one a non-precision approach. In addition, where authorized to conduct circling approaches in their Company Operations Manual (COM), the flight crew will demonstrate during an initial competency check and

annually thereafter one approach and manoeuvre to land using a scene approved for circling. The candidates will demonstrate the proper programming and use of an FMS, as applicable.

Note: On a competency check that will generate an initial Instrument Rating, a precision approach is mandatory.

Note: On a competency check, at least one approach procedure will be based on the GNSS.

Note: 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 Minimum Descent Altitude (MDA) at a distance from the Missed Approach Point (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 such heights compromises the approach design safety factor.

Non-Precision Instrument Approach (2D)

Performance Criteria

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

- (a) select and comply with the non-precision instrument approach procedure to be performed;
- (b) establish two-way communications with ATC using the proper communications phraseology and techniques or, if appropriate, directs co-pilot/safety pilot to do so, as required for the phase of flight or approach segment;
- (c) comply in a timely manner, with all clearances, instructions, and procedures issued by ATC and advise accordingly if unable to comply;
- (d) select, tune, identify, confirm and monitor the operational status of ground and aeroplane navigation equipment to be used for the approach procedure;
- (e) establish the appropriate aeroplane configuration and airspeed/V-speed considering turbulence, wind shear, microburst conditions, or other meteorological and operating conditions;
- (f) complete the aeroplane check list items appropriate to the phase of flight or approach segment, including engine out approach and landing checklist, as appropriate;
- (g) apply altitude corrections to all minimum altitudes depicted on the approach chart used when aerodrome temperatures are 0 degrees Celsius or colder in accordance with the General Section of the Canada Air Pilot;
- (h) prior to final approach course, maintain declared altitudes (± 100 feet) without descending below applicable minimum altitudes, and maintain headings (± 10 degrees);
- (i) apply necessary adjustment to the published MDA and visibility criteria for the aeroplane approach category when required, such as NOTAMS, inoperative aeroplane and ground navigation equipment, inoperative visual aids associated with the landing environment;
- (j) on the intermediate and final segments of the final approach course:
 - (i) maintain lateral tracking within $\frac{1}{2}$ scale deflection of the course deviation indicator or within 5 degrees of the desired track in the case of an NDB approach;
 - (ii) fly the approach in a stabilized manner without descending below the applicable minimum altitudes depicted on the approach chart (+as required/-0 feet);
 - (iii) descend to and 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.
- (k) maintain declared approach airspeeds (+10/-5 knots);
- (l) initiate the missed approach procedure, if the required visual references for the intended runway are not obtained at the MAP; or
- (m) continue to a normal landing from a straight-in or circling approach as required.

When using a Constant Descent Final Approach (CDFA) or an Stabilized Constant Descent Approach (SCDA) technique while conducting the final approach segment of a non-precision approach to straight-in minima, the candidate will be assessed on his/her proficiency to:

- (a) use temperature corrections to MDA / Decision Altitude (DA) and other published altitudes, during cold weather operations;
- (b) verify altitude and waypoint information, when supplied from a navigation database, against an independent source if available;
- (c) compute a stable approach path that approximates an optimum descent angle in accordance with SOPs, by using any aeroplane computer-generated approach path systems or other methods of computing stable approach paths to the target touchdown point, for example by determining an appropriate descent angle or descent rate;
- (d) brief the anticipated procedure in accordance with SOPs, and in particular any additional altitude margin to the MDA, where applicable;
- (e) maneuver the aeroplane so as to commence the final approach segment in the proper configuration and at an appropriate indicated airspeed, in accordance with SOPs;
- (f) overfly any step-down fix between the Final Approach Fix (FAF) and the MAP at or above the minimum altitude;
- (g) carry out a continuous descent, without level-offs, to be flown based on the descent angle obtained from the approach chart or as determined by the flight crew member(s);
- (h) meet all criteria for a stabilized approach by 1000 feet AGL under Instrument Meteorological Conditions (IMC) or 500 feet AGL under Visual Meteorological Conditions (VMC), or as defined by SOPs, in a timely manner;
- (i) maintain an appropriate vertical profile to a point in space which will permit a safe landing with minimum manoeuvring if the required visual reference to continue to land has been established;
- (j) initiate a missed approach if any stabilized approach parameter is not met by the applicable limit as established under criterion (h), or if the required visual reference necessary to continue to land has not been established, upon reaching the earlier of:
 - (i) MDA / DA; or
 - (ii) the MAP.
- (k) commence the horizontal (lateral) navigation portion of the published missed approach procedure at the MAP.

The exemption to paragraph 602.128(2)(b) authorizes pilots-in-command of IFR aircraft operated by holders of an air operator certificate or a private operator registration document to descend below the minimum descent altitude (MDA), when conducting a non-precision approach, even if the required visual reference necessary to continue the approach to land has not been established. This exemption is required in order to accommodate the altitude loss below MDA that will likely occur during a missed approach, following a stabilized constant descent angle (SCDA) non-precision approach.

Note: An operator need not take advantage of the exemption in order to implement SCDA procedures.

If not meeting the additional training requirements of that exemption however, flight crews must be mindful to add an appropriate altitude margin to MDA if using it as a DA during an SCDA profile, so as to avoid flying below MDA should a missed approach be initiated because visual references to continue the approach to land have not materialized. The exemption is subject to the following conditions:

- (a) *The pilot-in-command of Instrument Flight Rule (IFR) aircraft shall conduct a final approach descent with a planned SCDA from the final approach fix (FAF) to a nominal landing runway threshold crossing height of 50 feet;*
- (b) *The pilot-in-command of Instrument Flight Rule (IFR) aircraft shall initiate a missed approach upon reaching the earliest of either the MDA or the missed approach point (MAP), where the required visual reference necessary to continue the approach to land has not been established;*

- (c) The pilot-in-command **of Instrument Flight Rule (IFR) aircraft** shall not conduct an SCDA approach on procedures requiring a remote altimeter setting correction;
- (d) The pilot-in-command **of Instrument Flight Rule (IFR) aircraft** shall conduct the instrument approach procedure to straight-in minima, and the final approach course must not be more than 15 degrees from the runway centerline; and
- (e) The pilot-in-command **of Instrument Flight Rule (IFR) aircraft** operated by the holder of an air operator certificate or a private operator registration document shall not fly that aircraft unless all of the requirements set out in **Appendix A** of this exemption are met.

GNSS Approach (2D)

Performance Criteria

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

- (a) select and comply with the GNSS instrument approach procedure to be performed;
- (b) establish two-way communications with ATC using the proper communications phraseology and techniques or, if appropriate, directs co-pilot/safety pilot to do so, as required for the phase of flight or approach segment;
- (c) comply in a timely manner, with all clearances, instructions, and procedures issued by ATC and advise accordingly if unable to comply;
- (d) retrieve the GNSS approach from the database, conduct a Receiver Autonomous Integrity Monitoring (RAIM) check or a multi-sensor check and verify the approach waypoints used for the approach procedure;
- (e) establish the appropriate aeroplane configuration and airspeed/V-speed considering turbulence, wind shear, microburst conditions, or other meteorological and operating conditions;
- (f) complete the aeroplane check list items appropriate to the phase of flight or approach segment, including engine out approach and landing checklist, as appropriate;
- (g) apply altitude corrections to all minimum altitudes depicted on the approach chart used when aerodrome temperatures are 0 degrees Celsius or colder in accordance with the General Section of the Canada Air Pilot;
- (h) prior to final approach course, maintain declared altitudes (± 100 feet) without descending below applicable minimum altitudes and maintain headings (± 10 degrees);
- (i) apply necessary adjustment to the published MDA and visibility criteria for the aeroplane approach category when required, such as NOTAMS, inoperative aeroplane and ground navigation equipment, inoperative visual aids associated with the landing environment;
- (j) take appropriate action in the event that a RAIM alert is displayed when the aeroplane is established on the final approach course;
- (k) on the intermediate and final segments of the final approach course:
 - (i) maintain GNSS track bar within $\frac{1}{2}$ scale deflection;
 - (ii) fly the approach in a stabilized manner without descending below the applicable minimum altitudes depicted on the approach chart (+as required/-0 feet);
 - (iii) announce the approach active mode within 2 nm prior to reaching the Final Approach Waypoint (FAWP) inbound;
- (l) descend to and accurately maintain the MDA and track to the Missed Approach Waypoint (MAWP) 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;
- (m) maintain the declared approach airspeeds within +10/-5 knots; and
- (n) initiate the missed approach procedure when the required visual references for the intended runway are not obtained at the MAWP; or
- (o) continue to a normal landing from a straight-in or circling approach as required.

Precision Instrument Approach (3D - ILS or LPV)

NOTE – Flight test form 26-0249 does not provide for an LPV circle on Approach lines 15 and 16. Until such time as the form is amended to reflect this change among others, the ILS circle must be used when the precision approach requirement is met by way of an approach to LPV minimums. A short statement to that effect should be drafted in the REMARKS section of the form.

Performance Criteria

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

- (a) select and comply with the ILS or LPV instrument approach procedure to be performed;
- (b) establish two-way communications with ATC using the proper communications phraseology and techniques or, if appropriate, directs co-pilot/safety pilot to do so, as required for the phase of flight or approach segment;
- (c) comply in a timely manner, with all clearances, instructions, and procedures issued by ATC and advise accordingly if unable to comply;
- (d) select, tune, identify and confirm the operational status of ground and aeroplane navigation equipment to be used for the approach procedure, and in the case of an LPV approach, retrieve and validate the procedure from the appropriate database and conduct a RAIM check or similar operational check in accordance with SOPs;
- (e) consider any restrictions in reference to WAAS NOTAMs;
- (f) establish the appropriate aeroplane configuration and airspeed/V-speed considering turbulence, wind shear, microburst conditions, or other meteorological and operating conditions;
- (g) complete the aeroplane check list items appropriate to the phase of flight or approach segment, including engine out approach and landing checklist, as appropriate;
- (h) apply altitude corrections to published altitudes depicted on the approach chart used when aerodrome temperatures are 0 degrees Celsius or colder in accordance with the General Section of the Canada Air Pilot;
- (i) prior to final approach course, maintain declared or assigned altitudes within ± 100 feet without descending below applicable minimum altitudes and maintain headings within ± 10 degrees;
- (j) apply necessary adjustment to the published Decision Height (DH) or Decision Altitude (DA) and visibility criteria for the aeroplane approach category when required, considering items such as NOTAMS, inoperative aeroplane and ground navigation equipment, inoperative visual aids associated with the landing environment;
- (k) on final approach course, allow no more than $\frac{1}{2}$ scale deflection of the localizer and/or glideslope / glide path indications;
- (l) during an approach to LPV minimums, confirm meeting Required Navigation Performance (RNP) criteria, such as an approach-active mode for example, prior to reaching the Final Approach Waypoint (FAWP) inbound on the final approach course, in accordance with SOPs;
- (m) during an approach to LPV minimums, take appropriate action in the event that RNP criteria are no longer met when the aeroplane is established on the final approach course;
- (n) maintain declared approach airspeeds within $+10/-5$ knots;
- (o) maintain a stabilized descent to the DH or DA to permit completion of the visual portion of the approach and landing with minimal manoeuvring; and
- (p) initiate the missed approach procedure, upon reaching the DH/DA, when the required visual references for the intended runway are not obtained.

Circling Approach

Performance Criteria

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

- (a) demonstrate adequate knowledge of circling approach categories, speeds, and comply with procedures to a specified runway;
- (b) in simulated or actual instrument conditions to MDA, accomplish the circling approach selected by the individual conducting the competency check;
- (c) demonstrate sound judgment and knowledge of the aeroplane manoeuvring capabilities throughout the circling approach;
- (d) confirm the direction of traffic and adhere to all restrictions and instructions issued by ATC;
- (e) descend at a rate that ensures arrival at the MDA or prior to a point from which a normal circle-to-land manoeuvre can be accomplished;
- (f) avoid descent below the appropriate circling MDA or exceed the visibility criteria until in a position (generally within 30° of the extended runway centerline) from which a descent to a normal landing can be made;
- (g) manoeuvre the aeroplane, after reaching the authorized circling approach altitude, by visual references to the aerodrome or runway environment and maintain a flight path that permits a normal landing on a runway that is not aligned with the final approach course;
- (h) perform the procedure without excessive manoeuvring and without exceeding the normal operating limits of the aeroplane (the angle of bank should not exceed 30° and the rate of descent should be consistent with normal operations);
- (i) maintain the desired altitude within -0, +100 feet, heading/track within $\pm 10^\circ$, the airspeed/Vspeed within +10/-5 knots, but not less than the airspeed as specified in the AFM;
- (j) use the appropriate aeroplane configuration in accordance with the AFM and/or SOPs for normal and abnormal situations and procedures, where applicable;
- (k) turn in the appropriate direction, when a missed approach is dictated during the circling approach, and uses the correct procedure and aeroplane configuration; and
- (l) perform all procedures required for the circling approach and aeroplane control in a smooth, positive, and timely manner.

NOTE – A circling manoeuvre is the term used to describe the manoeuvring required to suitably position an aeroplane for landing on a particular runway, following the conduct of an instrument approach to a different runway or to the same runway when that runway is not suitably aligned for a straight-in landing.

17A GO-AROUND (GOA)

Aim

To safely carry out a successful missed approach under IFR or go-around under VFR, as applicable.

Description

The go-around begins when the crew rejects the descent to the planned landing runway during the "approach" phase and ends after speed and configuration are established at a defined maneuvering altitude or to continue the climb for the purpose of cruise.

Following an instrument approach, the candidate will conduct a missed approach at any time from intercepting final approach to touch down on the runway. Except where ATC amends it, the candidate must follow the published missed approach profile.

Performance Criteria

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

- (a) demonstrate adequate knowledge of missed approach procedures associated with standard instrument approaches;
- (b) initiate the missed approach procedure promptly by the timely application of power, establish the proper climb attitude, and reduces drag in accordance with the approved procedures;
- (c) report beginning the missed approach procedure to ATC;
- (d) comply with the published or alternate missed approach procedure;
- (e) report with ATC anytime the aeroplane is unable to comply with a clearance, restriction, or climb gradient;
- (f) follow the recommended aeroplane check list items appropriate to the go-around procedure;
- (g) request a clearance, if appropriate, to the alternate airport, another approach, a holding fix, clearance limit, or as directed by the individual conducting the competency check;
- (h) maintain recommended airspeeds within +10/-5 knots;
- (i) maintain heading, track or bearing within ± 10 degrees; and
- (j) climb to and maintain the published missed approach altitude, or as cleared by ATC or the examiner within ± 100 feet.

17B REJECTED LANDING AT 50 FT.

Aim

To safely carry out a successful rejected landing.

Description

The candidate will conduct a rejected landing after having completed the instrument portion of the approach with the runway in sight, the aeroplane configured for landing and in final descent to the runway. This manoeuvre will be initiated at approximately 50 feet above the runway and near the runway threshold. The individual conducting the competency check may combine the rejected landing with the missed approach.

Performance Criteria

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

- (a) demonstrate adequate knowledge of a rejected landing procedure including the conditions that dictate a rejected landing, the importance of a timely decision, the recommended airspeed/V-speeds, and also the applicable "clean-up" procedure;
- (b) make a timely decision to reject the landing for actual or simulated circumstances and make appropriate notification when safety-of-flight is not an issue;
- (c) apply the appropriate power setting for the flight condition and establish a pitch attitude necessary to obtain the desired performance;
- (d) retract the wing flaps/drag devices and landing gear, if appropriate, in the correct sequence and at a safe altitude, establish a positive rate of climb and the appropriate airspeed/V-speed within +10/-5 knots;
- (e) trim the aeroplane as necessary, and maintain the proper ground track during the rejected landing procedure; and
- (f) complete the appropriate checklist items in a timely manner in accordance with approved procedures.

18 LANDING (LDG)

Aim

To safely carry out a normal or crosswind landing and, where practical, a landing from an instrument approach by visual descent from an approach MDA or DA.

Description

Landing begins when the aeroplane is in the landing configuration and the crew is dedicated to touch down on a specific runway and ends when the speed permits the aeroplane to be maneuvered by means of taxiing for the purpose of arriving at a parking area. It may also end by the crew initiating a “go-around” phase from a rejected landing.

The candidate will demonstrate:

- (a) one normal (in a normal landing configuration with all engines operating) landing which, where practical, be conducted without external or internal glideslope information;
- (b) one landing from an instrument approach and, where prevailing conditions prevent an actual landing, an approach to a point where a landing could have been made. This is not required where the private operator registration document authorizes operations under day VFR only, or the operator assigns the pilot to day VFR flights only;
- (c) one crosswind landing, where practicable, under existing meteorological, runway and airport traffic conditions;
- (d) one landing and manoeuvring to that landing with a simulated failure of 50 percent of the available engines; and
- (e) one landing under simulated circling approach conditions except that where prevailing conditions prevent a landing, an approach to a point where a landing could have been made.

Note: Any of the landings and approaches to landings specified in this section may be combined. A minimum of **two** landings is required.

Performance Criteria

Assessment will be based on the candidate’s proficiency to:

- (a) demonstrate adequate knowledge of normal and crosswind approaches and landings including recommended approach angles, airspeeds, V-speeds, configurations, performance limitations, and ATC or examiner instructions;
- (b) consider factors to be applied to the approach and landing such as displaced thresholds, meteorological conditions, NOTAMs, wake turbulence, wind shear, microburst, gust/wind factors, visibility, runway surface, braking conditions, and other related safety factors (as appropriate to the aeroplane);
- (c) establish the approach and landing configuration appropriate for the runway and meteorological conditions, and adjust the powerplant controls as required;
- (d) perform the aeroplane checklist items relative to the phase of flight;
- (e) maintain a ground track that ensures the desired traffic pattern will be flown, taking into account any obstructions and ATC or instructions from the individual conducting the competency check;
- (f) verify existing wind conditions, make proper correction for drift, and maintain a precise ground track;
- (g) maintain a stabilized approach and the desired airspeed/V-speed within +10/-5 knots.
- (h) execute a landing from an approach MDA or DA when the required visual references for the intended runway are obtained;
- (i) accomplish a smooth, positively controlled transition from final approach to touchdown or to a point in the opinion of the individual conducting the competency check that a safe full stop landing could be made;

- (j) maintain positive directional control and crosswind correction during the after-landing roll;
- (k) use spoilers, prop reversing, thrust reversing, wheel brakes, and other drag/braking devices, as appropriate, in such a manner to bring the aeroplane to a safe stop; and
- (l) complete the applicable after-landing checklist items in a timely manner and as recommended by the manufacturer.

19-20 GROUND ARRIVAL / FLIGHT CLOSE (FLC)

Aim

To safely conduct after landing taxi in, arrival/engine shutdown, post-flight and flight close procedures, as appropriate.

Description

The candidate will demonstrate the proficiency to manoeuvre the aeroplane under its own power to an arrival area for parking, shut down the engine(s) and ancillary systems and conduct required post flight procedures such as securing the aeroplane.

Performance Criteria

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

- (a) demonstrate proficiency by maintaining correct and positive control;
- (b) consider the safety of nearby persons or property by maintaining proper look-out, spacing between aeroplane and obstructions;
- (c) complete the applicable checklist items and performs the recommended procedures;
- (d) maintain the desired taxi speed;
- (e) comply with instructions issued by ATC (or the examiner simulating ATC);
- (f) observe runway hold lines, localizer and glide slope critical areas, and other surface control markings and lighting to prevent a runway incursion;
- (g) maintain constant vigilance and aeroplane control during the taxi operation; and
- (h) record forms/logs and flight time/discrepancies.

NOTE: The assessment of these combined sequences should be recorded solely under Item 19 – Ground Arrival.

21 PNF/PILOT MONITORING DUTIES

Aim

To demonstrate proper division of PNF/PM duties in accordance with the COM and SOPs.

Description

Each pilot will demonstrate PNF/PM duties sufficient to determine compliance with and knowledge of aeroplane procedures and SOPs. This will include normal and abnormal procedures while operating as PNF/PM.

Flight crew may be required to conduct PNF/PM duties from a seat position that they do not normally occupy (competency check with two Captains). In this situation, the training unit will have provided PNF training to the candidates in the seat they will occupy during the competency check.

When a single flight crewmember must be assessed in a multi-crew environment, the individual conducting the competency check must allow for the assessment of the pilot's PNF skills by providing exposure to situations requiring good crew coordination between the assisting pilot as PF and the competency check candidate as PNF in accordance with SOPs and instructions found in the operator's Operations Manual. Examples of such situations include both normal and abnormal operations, such as:

- (a) a normal take-off, visual circuit (where possible) and landing, an instrument approach with a circling manoeuvre (if applicable) to a landing, a visual go-around manoeuvre or a missed approach procedure (if applicable); and
- (b) a simulated power loss or an emergency procedure and/or abnormal situation.

Performance Criteria

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

- (a) adhere to PNF/PM duties assigned to crew position as outlined in the COM and/or SOP's;
- (b) complete necessary duties assigned by the pilot flying;
- (c) maintain crew discipline during normal and abnormal procedures;
- (d) demonstrate familiarity with the procedures contained in the Quick Reference Handbook (QRH) or paper checklist;
- (e) demonstrate FMS inputs, as applicable;
- (f) maintain situational awareness as a crew member;
- (g) effectively share cockpit workload; and
- (h) maintain crew awareness, or attention to flight mode annunciations.

22A ENGINE FAILURE

Aim

To safely maintain control of the aeroplane and carry out the appropriate engine failure procedures in accordance with the AFM and/or SOPs.

Description

The pilot will demonstrate the proficiency to maintain control and safely handle malfunctions from a simulated engine failure. The engine failures in this section exclude an engine failure on the runway followed by a rejected take-off, and an engine failure on initial climb.

Engine Failure – Multi-Engine Aeroplane

Performance Criteria

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

- (a) recognize an engine failure or the need to shut down an engine as simulated by the individual conducting the competency check;
- (b) complete engine failure vital action checks from memory;
- (c) maintain positive aeroplane control and establish a bank of approximately 5°, if required, or as recommended by the manufacturer to maintain coordinated flight and properly trim for that condition;
- (d) set powerplant controls, reduce drag as necessary, correctly identify and verify the inoperative powerplant(s) after the failure (or simulated failure);
- (e) maintain the operating powerplant(s) within acceptable operating limits;
- (f) establish the best engine-inoperative airspeed as appropriate to the aeroplane and condition of flight;
- (g) establish and maintain the recommended flight attitude and configuration for the best performance for all manoeuvring necessary for the phase of flight;
- (h) follow the prescribed aeroplane checklist, and verify the procedures for securing the inoperative powerplant(s);

- (i) determine the cause for the powerplant(s) failure and if a restart is a viable option;
- (j) maintain desired altitude within ± 100 feet, when a constant altitude is specified and is within the capability of the aeroplane;
- (k) maintain the desired airspeed within ± 10 knots;
- (l) maintain the desired heading within $\pm 10^\circ$ of the specified heading;
- (m) demonstrate proper powerplant restart procedures (if appropriate) in accordance with an approved procedure/checklist or the manufacturer's recommended procedures and pertinent checklist items; and
- (n) monitor all functions of the operating engine and make necessary adjustments.

Engine Failure – Single-Engine Aeroplane

Performance Criteria

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

- (a) demonstrate adequate knowledge of the flight characteristics, approach and forced (emergency) landing procedures, and related procedures to use in the event of a powerplant failure (as appropriate to the aeroplane);
- (b) maintain positive control throughout the manoeuvre;
- (c) establish and maintain the recommended best glide airspeed, ± 10 knots, and configuration during a simulated powerplant failure;
- (d) select a suitable airport or landing area and touchdown zone, which is within the performance capability of the aeroplane;
- (e) establish a proper flight pattern to the selected airport or landing area, taking into account altitude, wind, terrain, obstructions, and other pertinent operational factors;
- (f) follow the emergency checklist items appropriate to the aeroplane;
- (g) determine the cause for the simulated powerplant failure (if altitude permits) and if a restart is a viable option;
- (h) simulate an appropriate radio call, when time permits;
- (i) perform an effective passenger emergency safety review; and
- (j) use configuration devices, such as landing gear and flaps in a manner recommended by the manufacturer.

22B POWER LOSS ON INITIAL CLIMB

Aim

To safely recover from an engine failure at the most critical stage of flight.

Description

This power loss sequence begins when the powerplant failure is introduced and ends when the aeroplane is in a clean configuration and accelerates to an appropriate enroute climb speed.

For a multi-engine aeroplane competency check conducted in a simulator, the pilot will demonstrate a takeoff with failure of the critical engine introduced at a speed greater than V_1 and at an altitude of less than 50 feet AGL or at a speed as close as possible to, but greater than V_1 when V_1 and V_2 , or V_1 and V_R are identical;

For a multi-engine aeroplane competency check conducted in the aeroplane, the pilot will demonstrate a simulated engine failure after a takeoff at a safe altitude and no lower than $V_2 + 10$ airspeed or appropriate for the aeroplane type under the prevailing conditions.

Performance Criteria

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

- (a) recognize the simulated engine failure promptly;
- (b) control the aeroplane;
- (c) set the power controls and reduce drag by using control application in the proper sequence;
- (d) identify and verify the inoperative engine;
- (e) bank toward the operating engine, as recommended for best performance;
- (f) maintain directional control within ± 10 degrees of assigned heading;
- (g) establish a positive rate of climb, if the aeroplane is capable;
- (h) accelerate to and maintain one engine inoperative airspeed/V speeds and trim the aeroplane, as required;
- (i) locate the necessary controls and switches to carry out and complete the emergency procedures in accordance with the approved emergency procedures checklist (Engine Failure during Takeoff or Overshoot) by:
 - (i) completing prescribed engine failure vital action checks from memory if required;
 - (ii) completing the emergency drill in accordance with the emergency checklist; and
 - (iii) completing engine shutdown checks and other necessary checks in accordance with the appropriate emergency checklist(s); and
 - (iv) monitoring the operating engine and take appropriate action to keep the operating engine parameters within limitations.

23-27 ABNORMALS / EMERGENCIES

Aim

To complete recommended checks and procedures in accordance with the AFM, or other applicable publications in the event of system malfunctions or other emergencies.

Description

System malfunctions will consist of a selection adequate to determine that the pilot has the knowledge and proficiency to safely handle malfunctions. The candidate will be required to demonstrate the use of as many simulated abnormal and emergency procedures as is necessary to confirm that the pilot has an adequate knowledge and proficiency to perform these procedures.

Performance Criteria

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

- (a) demonstrate adequate knowledge of the emergency procedures appropriate to the approved AFM (as may be determined by the individual conducting the competency check) relating to the particular aeroplane type;
- (b) promptly identify the malfunctions;
- (c) promptly apply correct checks and procedures in accordance with the AFM, or other approved publication;
- (d) consider and apply any restrictions or limitations to the operation of a system(s) and procedures in order to continue the flight;
- (e) demonstrate knowledge and discipline in the use of the electronic checklist and alerting system, as applicable; and
- (f) develop a reasonable course of action for the remainder of the flight..

CHAPTER 3 – COMPETENCY CHECK (HELICOPTER)

Note: The decimal numbers used in the section titles found in this chapter correspond to the flight sequence numbers used on Transport Canada form 26-0279 (Pilot Proficiency Check Flight Test Report – Helicopter).

THE COMPETENCY CHECK PROCESS

Each item has an “Aim”, a “Description” and “Performance criteria”. The “Aim” of each item expresses the mandatory knowledge and/or skill to ensure acceptable levels of safety that shall be met in accordance with the regulations. The “Description” details how the item will be conducted in order to determine the proficiency of the candidate. The “Performance Criteria” are standards that assess the candidate’s flight management competencies in selecting a course of action and to adhere to approved procedures.

The aim of each items embodies the regulation CAR 602.07 that specifies that “no person shall operate an aircraft, unless, it is operated in accordance with the operating limitations”. A performance criteria’s item that is missed or poorly done will be marked appropriately but it does not necessarily result in a failure, unless it is also embodied within the Aim of the competency check item.

Competency checks are conducted when weather conditions do not present a hazard to the operation of the helicopter. The helicopter is airworthy and the candidate’s and the helicopter’s documents are valid, in accordance with the Canadian Aviation Regulations. It is the sole responsibility of the examiner to make the final decision as to whether or not the weather conditions do not present a hazard to the operation of the helicopter to conduct the competency check.

When conducting a competency check on a helicopter that requires a minimum crew of one pilot, when the flight is VFR, and of two pilots, when the flight is IFR, the competency check will be divided into two parts. The VFR portion of the competency check will be conducted with a crew of one pilot without the assistance of another pilot or the examiner and the instrument procedures portion will be conducted with a crew of two pilots.

For operation requirements, some operators operate a single-pilot certified helicopter with a minimum crew of 2 pilots. In those cases, approximately half of the competency check items should be evaluated while the candidate is flying with a co-pilot and the other half as a single-pilot. The selection of the items to be flown as crew of two pilots and the ones to be flown as a single-pilot should be divided in a way to evaluate the competency of the candidate to fly as a crew as well as a single-pilot. The single-pilot portion will be conducted without the assistance of the other pilot or the examiner.

When the full competency check or VFR only competency check is conducted with a crew of two pilots, the use of SOPs will be mandatory and exercise 20 (Pilot Monitoring (PM) Duties) will be evaluated during the full competency check as well as during a VFR only competency check.

During a single pilot IFR competency check, exercise 20 [Pilot Monitoring (PM) Duties] will be evaluated while the auto-pilot is in operation.

When a competency check is conducted as a crew of two pilots, the first officer duties as PM or PF will have to meet the competency check pass mark. When a first officer does not meet the competency check requirement, his or her PCC will be suspended.

A competency check could be unsuccessful for one member of the crew or both, depending on the competency of each member of the crew in meeting the competency check requirements.

When the helicopter is equipped of some of the following systems: autopilot, Flight Director, Flight Management System(s) (FMS), the candidate will have to demonstrate practical knowledge to operate the systems.

If the candidate is or will be authorized, in accordance with the operations manual of the company, to conduct an approach that is described in an operations specification or that meets an exemption to the regulations, the competency check will include the type of approach specified in the operation specification or the exemption to the regulation.

When a scripted competency check is being used, the candidate will be given adequate time to prepare the scripted trip.

When a competency check is completed in a simulator, Exercise 3 PRE-FLIGHT INSPECTION must be completed in a satisfactory manner in accordance with this Flight Test Guide.

Competency checks conducted in a simulator will be evaluated, as if they were conducted in a helicopter.

PRE-COMPETENCY CHECK BRIEFING

Examiners are required to brief competency check candidates on the following details:

- (a) The candidate is familiar with the content of the PCC - Flight Test Guide.
- (b) On the sequence of test items to be covered or plan of action and that there is no need for the candidate to memorize the sequence or the plan of action, as the examiner will give instructions for each item.
- (c) If in doubt -- ask! Candidates who do not clearly understand what they are being asked to do should feel free to ask for clarification. It may be that the examiner wasn't clear in giving instructions.
- (d) When the competency check is conducted in a helicopter, who will do what in the event of an actual emergency or a system malfunction? To be discussed and agreed upon prior of the flight.
- (e) How to transfer control. There should never be any doubt as to who is flying the helicopter so proper transfer of control through the words "You have control" and "I have control" is expected during a competency check. A visual check is recommended to verify that the exchange has occurred.
- (f) For an IFR competency check conducted in a helicopter if the examiner does not report "field in sight" at the appropriate minimums, the candidate is expected to execute a missed approach.
- (g) The use of automation will be restricted during at least one of the approaches of the competency check.
- (h) Method of simulating emergencies or a system malfunctions when the competency check is conducted in a helicopter. A briefing by the examiner must specify the methods used to simulate emergencies. For example, it can be verbal for a chip detector, a communication failure, or an action by the examiner like blocking the pedals to simulate stuck pedals, turning the hydraulic switch to the OFF position, etc. In all cases when an emergency or a system malfunction is simulated, the examiner will make it clear that it is a simulation.
- (i) In helicopters, engine failures will only be simulated in accordance with the manufacturer's recommendations or, in their absences, by reducing the power to idle. In cases where a helicopter is equipped with an OEI training mode switch or training module that can simulate single-engine performance, it is permitted and encouraged to make use of that equipment. The practice of pulling circuit breakers will not be used during a competency check.
- (j) For competency check in a simulator, a simulated malfunction or emergency procedure will be handled as if it was real.
- (k) Failures of electronic flight or map displays may be simulated in accordance with the training and testing recommendations and/or the handbooks supplied by the equipment manufacturer. In helicopters, the examiner will apply discretion and judgment in regard of creating a simulated failure, based on the existing flight conditions, in order to ensure safety of flight.
- (l) Before activating the simulator, a Simulator Safety Briefing must be completed (Exits, emergency equipment, etc.).
- (m) Any differences between the simulator and the aircraft that may affect the performance of the flight crew will be discussed.
- (n) Operational restrictions must be addressed before commencing the competency check.
- (o) Advise the candidate that they will be note-taking during the competency check.
- (p) That some deviations or errors during the competency check will not necessarily mean an end to the competency check.
- (q) To ask at the end of the pre-flight check briefing, if the candidate has any questions.

HELICOPTER OR FULL-FLIGHT SIMULATOR REQUIREMENTS

A competency check that includes instrument procedures may be conducted in a helicopter or in a full-flight simulator (FFS).

Helicopter Requirements

Except as otherwise noted, a helicopter used for Competency Checks will have a valid and current Canadian or Foreign Flight Authority in accordance with CAR 507 and meet the requirements of CAR 605.06 – Aircraft Equipment Standards and Serviceability and meet the following requirements:

- (a) be equipped with suitable radio for air to ground and air to air radio communications and two-way intercom voice communication for the pilot(s);
- (b) be equipped to monitor intercom and air to ground and air to air radio communications for the examiner;
- (c) be equipped with a safety harness for all occupied seats and installed in accordance with the Airworthiness Standards;
- (d) All required equipment must be serviceable and the maintenance requirements current;
- (e) For a competency check that requires the instrument procedures portion:
 - (i) the helicopter will be approved for IFR flight operations in accordance RFM, CAR 602.07 – Aircraft Operating Limitations and meet the equipment requirement of CAR 605.18 - Power-driven Aircraft – IFR;
 - (ii) if conducted in IMC, be able in the event of the failure at any stage of the flight of radio navigation equipment , including any associated flight instrument display, to:
 - (A) proceed to the destination aerodrome or proceed to another aerodrome that is suitable for landing; and
 - (B) complete an instrument approach and, if necessary, conduct a missed approach procedure.
 - (iii) for satellite-based approaches, GNSS use must be certified for IFR flight, the installation must approved and the databases must be current.
 - (iv) have the transponder, including any associated altitude sensing reporting mechanisms, tested and recertified within the previous 24 months in accordance with CAR 625 Appendix C and CAR 571 Appendices B and F.

Simulator Requirements

A full-flight simulator used for a competency check shall be a Level C or higher.

The full-flight simulator must be approved in accordance with the Aeroplane and Rotorcraft Simulator Manual (TP 9685) and pursuant to Part VI of the Canadian Aviation Regulations, shall have a certificate issued by Transport Canada; as per CAR 606.03.

The following website will provide you a list of the Approved Aircraft Simulators:

<http://wwwapps.tc.gc.ca/saf-sec-sur/2/CAS-SAC/aasftddevsaal.aspx?lang=eng>

Where the competency check is conducted in a full-flight simulator, the examiner must either be trained in the use of the device or must monitor the candidate's performance while an individual that has been trained to operate the device operates it in accordance with an agreed-upon script or plan of action.

A simulator must have approved seats for all observers. Observer seats will be secured to the floor of the flight simulator fitted with positive restraint devices and be of sufficient integrity to safely restrain the occupant during any known or predicted motion system excursion.

If headphones are worn during the competency check, a two-way intercom voice communication for the pilot(s) and the examiner is required.

If the simulator has recorded an unserviceability or a defect, the examiner will refer to the Simulator Component Inoperative Guide found in the *Aeroplane and Rotorcraft Simulator Manual (TP 9685)*, the CARs, the aircraft MEL and/or RFM to determine if the competency check can proceed.

If the competency check is conducted in a full-flight simulator, when electronic databases have not yet been updated, the deficiency must be recorded and deferred. The matching charts must be retained until the deficiency has been rectified;

CREW AND EXAMINER REQUIREMENTS

The examiner must be qualified and current on the helicopter type in accordance with the personnel licensing standards.

In a single-pilot certified helicopter, the examiner, who is also the safety pilot, will occupy a pilot seat and every items of the single pilot VFR or IFR competency check will be conducted without the assistance of the examiner.

When the competency check is conducted in a:

- (a) multi-crew certified helicopter, the first officer, who is also the safety pilot, must be qualified as a training pilot and qualified and current on the helicopter type.
- (b) simulator, the first officer must be qualified and current on the helicopter type.
- (c) multi-crew certified helicopter or a simulator and the observer seat is occupied by an examiner, it will be located to permit an unobstructed view of the helicopter or simulator instruments, radios and navigation equipment.
- (d) multi-crew certified helicopter, the plan of action describing the simulated emergency manoeuvres to be performed during the flight will be given to the first officer/training pilot before the flying portion of the competency check.

OTHER EQUIPMENT

The relevant current documentation will be available for the competency check such as:

- (a) Rotorcraft Flight Manual;
- (b) Operations Manual;
- (c) Minimum equipment list;
- (d) Canada Flight Supplement or equivalent foreign document;
- (e) Canada Air Pilot or equivalent foreign document;
- (f) Restricted Canada Air Pilot;
- (g) Enroute Charts;
- (h) Terminal Area charts;
- (i) VFR navigational Charts;
- (j) Appropriate Checklists;
- (k) Current electronic databases;
- (l) etc.

COMPETENCY CHECK EXERCISES

The exercises will be identified as follow:

“**All PCC**” for all the competency checks

“**IFR**” for the competency checks that include an instrument portion

“**Single-engine**” for the competency checks on single-engine only

“**Multi-engine**” for the competency checks on multi-engine only

“**Multi-crew**” for the competency checks with a co-pilot

“**Single-pilot**” for the competency checks with only one pilot

THE FOLLOW FLIGHT MANAGEMENT PERFORMANCE CRITERIA WILL BE EVALUATED DURING EACH FLIGHT ITEM OF THE COMPETENCY CHECK.

Performance Criteria

- (a) Cooperation with other crew member, ATC, dispatch, etc.
- (b) For multi-crew competency check:
 - (i) leadership, the Pilot-in-Command competency to direct other crewmembers in their duties as required; and
 - (ii) managerial skills, the effectiveness in using Cockpit Resource Management.
- (c) Managerial skill, the effectiveness of workload management in regard to Single-pilot Resource Management (SRM)
- (d) Situational awareness of the helicopter systems, the time, anticipation of the future events, consciousness of the environment and divides attention inside and outside the cockpit when VMC (Exception is made for division of attention to the outside during the time that the candidate in simulated instrument flight conditions).
- (e) Decision-making in identifying problems, generating options, making risk assessments to choose an option and review the decision.
- (f) Be familiar with the available information that is appropriate to the intended flight as per CAR 602.71.
- (g) The AIM of each flight items must be completed in accordance with the CAR 602.07.Aircraft Operation Limitations.

CAR 602.07 - No person shall operate an aircraft unless it is operated in accordance with the operating limitations

- (a) *set out in the aircraft flight manual, where an aircraft flight manual is required by the applicable standards of airworthiness;*
- (b) *set out in a document other than the aircraft flight manual, where use of that document is authorized pursuant to Part VII;*
- (c) *indicated by markings or placards required pursuant to section 605.05; or*
- (d) *prescribed by the competent authority of the state of registry of the aircraft.*

1 TECHNICAL KNOWLEDGE (GROUND ITEM) (All PCC)

Aim

To ascertain that the candidate has an adequate practical technical knowledge of the helicopter and expertise to recover from unwanted flight anomalies to assure the safety of the flight.

Description

The examiner will assess the candidate's knowledge of the helicopter limitations, performance and normal operation in accordance with the RFM. The assessment will include the applicable RFM supplements.

Limitations that are necessary to know during the flight and that could only be found in the RFM will be quoted from memory. If a limitation refers to a placard or an instrument markings that is in plain view during the flight, candidate will be permitted to refer to the RFM to answer the question from the examiner.

Some questions regarding "in flight" necessary knowledge related to normal procedures and performances such as Height Velocity Diagram or Envelope, wind limitations or other procedures and performances specific to the type may also be asked without reference to the RFM. The candidate will be allowed to refer to the RFM for the use of performance charts.

Pilots must demonstrate a practical knowledge of settling with power, vortex-ring state, dynamic rollover and loss of tail rotor effectiveness to show that they are aware of the causes, prevention and appropriate recovery procedures as well as the applicable flight characteristics peculiar to the helicopter type and configuration.

Performance Criteria

Assessment of the candidate's competency to explain the operation of the following systems:

- (a) to quote from memory numbers or time limitations that are not indicated on the instruments or by placards pertaining to :
- (i) speed, with power on and power off in different configurations and different conditions such as weight, altitude, power settings, etc.;
 - (ii) rotor(s) RPM, with power on and power off
 - (iii) transmission torque
 - (iv) the power plant limitations:
 - (A) engine RPM,
 - (B) manifold pressure,
 - (C) torque,
 - (D) turbine temperature; and
 - (E) gas producer.
- (b) to describe normal procedures, the practical use of the performance data including supplements and to describe the effects of meteorological conditions upon the performance in regard to the:

Note: For multi-engine helicopters, the evaluation includes with all engines operative and with one or more engine(s) inoperative.

- (i) the following memory items:
 - (A) wind limitations;
 - (B) fuel consumption;
- (ii) following items:
 - (A) range, and endurance;
 - (B) Height Velocity Diagram or Envelope;
 - (C) hovering in and out of ground effect;

- (D) take-off performance;
 - (E) rate of climb;
 - (F) service ceiling;
 - (G) Other procedures and performances specific to the type and/or configuration.
- (c) to describe the cause, prevention and appropriate recovery procedures as well as the applicable flight characteristics peculiar to the helicopter type and configuration associated with:
- (i) settling with power;
 - (ii) vortex ring state;
 - (iii) dynamic rollover; and
 - (iv) loss of tail rotor effectiveness.

2 FLIGHT PLANNING (GROUND ITEM) (All PCC)

Aim

To ascertain that the candidate has the competency to plan a flight utilizing performance charts, weight and balance calculations, conforming to the VFR or IFR flight rules as applicable and retrieving and interpreting aviation weather information necessary for the safe conduct of the flight.

Description

Flight planning will include assessment of the candidate's competency to retrieve and interpret the alphanumeric data and graphical weather products listed in the performance criteria and demonstrate a practical knowledge in utilizing the weather information to plan a flight.

The candidate will extract and use pertinent information of current aeronautical charts, Canada Flight Supplement, Canada Air Pilot, Aeronautical Information Circulars (AIC) and AIP Canada (ICAO) supplements and other publications

The candidate will demonstrate a practical knowledge for the preparation of an operational flight plan, a VFR flight plan or a flight itinerary or, if the competency check includes an instrument portion, a flight log and IFR flight plan.

The candidate will demonstrate a practical knowledge by responding to the examiner asking questions about regulatory requirements, IFR procedures (if the competency check includes an instrument portion), Company Operations Manual and the Private Operators Registration Document, and approved Specific Authorizations (Ops Specs).

The candidate will take into consideration the helicopter limitations data and performance in preparing a weight and balance calculation and will demonstrate knowledge of the effect of various centers of gravity locations on the helicopter flight characteristics as well as the practical knowledge of how to correct a situation in which the center of gravity is out of limits.

Note: *The flight planning assessment is optional when the pilot's training record contains a valid written examination, from initial or recurrent training.*

Performance Criteria

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

- a) retrieve and interpret the alphanumeric data and graphical weather products such as:
 - (i) weather reports and forecasts (METAR/TAF);
 - (ii) graphic area forecast (GFA);
 - (iii) surface analysis chart; (SFC)
 - (iv) radar and satellite imagery
 - (v) WXCams (weather observation by camera)
 - (vi) significant weather prognostic charts; (SIGWX)

- (vii) upper level winds and temperatures forecast (FD);
 - (viii) AIRMETs/SIGMETs;
 - (ix) PIREPS;
 - (x) appropriate Aeronautical Information Circulars (AIC);
 - (xi) appropriate AIP Canada (ICAO) supplements; and
 - (xii) NOTAMs interpretation.
- b) demonstrate practical knowledge of:
- (i) planning a flight utilizing the weather information appropriately;
 - (ii) use of the appropriate flight publications, to extract and record pertinent information;
 - (iii) the regulatory requirements related to the flight and particularly in regard to:
 - (A) visual flight rules;
 - (B) Altimeter-setting regions;
 - (C) fuel requirements as appropriate to the flight (Day VFR, night VFR and/or IFR);
 - (D) operating in the vicinity of an aerodrome (MF, ATF, etc.);
 - (E) minimum flight altitude;
 - (F) cruising altitude;
 - (G) Emergency equipment requirement;
 - (iv) demonstrate practical knowledge of the Company Operations Manual and Special Authorizations;
 - (v) obtaining pertinent operational information enroute to and at the destination (airports or heliports);
 - (vi) to accurately prepare a weight and balance, determine if centres of gravity are within permissible limits during the intended flight and demonstrate how to correct a situation in which the center of gravity is out of limits;
 - (vii) determining that the required performance for a planned flight is within the helicopter's capability and operating limitations;
 - (viii) completing a VFR flight plan, flight itinerary or operational flight plan; or
 - (ix) completing a flight log and an IFR flight plan; and
 - (x) make a competent "GO/NO-GO" decision based on available information for the planned flight.
- (c) (In addition for competency checks that include IFR procedures) demonstrate a practical knowledge of IFR procedures and Instrument flight rules, such as;
- (i) Aerodrome Operating Restrictions - Visibility
 - (ii) take-off minima;
 - (iii) take-off minima – weather below landing minima;
 - (iv) departure procedures including SIDs;
 - (v) enroute procedures (including the selection of an appropriate route);
 - (vi) icing encounters;
 - (vii) missed approach and departure procedures - climb gradient;
 - (viii) alternate weather minima;
 - (ix) arrival procedures including STARs;

- (x) approach ban;
- (xi) landing minima;
- (xii) altitude correction chart (cold temperature correction); and
- (xiii) approach charts.

3. PRE-FLIGHT (All PCC)

Aim

To determine the candidate's competency to systematically complete internal and external checks in accordance with the RFM and SOPs to ensure that the helicopter is ready for the intended flight. The candidate will also demonstrate knowledge of how to deal with irregularities, if found.

Description

The candidate will systematically conduct an interior and exterior pre-flight check in accordance with the RFM. The helicopter pre-flight check will include locating and making a visual check, while explaining what is being checked and why it is being checked. The candidate will demonstrate practical knowledge of elementary work that could be performed by the pilot including certain Airworthiness Directives (ADs). The candidate will also demonstrate knowledge of how to deal with irregularities and, if applicable, familiarity with the Minimum Equipment List (MEL).

The candidate will determine the validity of all documents required to be carried on board the helicopter and determine that the helicopter is serviceable in regard to maintenance and if any condition or limitation is applicable.

The candidate will demonstrate basis knowledge of the aircraft by responding to the examiner asking questions on the components and a practical use and understanding of the aircraft systems including their limitation and automation interface, if relevant.

The pre-flight will also include a visual check of the fuel quantity, proper grade of fuel, fuel contamination and oil levels in accordance with the RFM. If, due to aircraft design, the RFM does not prescribe a visual check of fuel levels, the candidate will use a fuel sheet, a fuel log or other credible procedures to confirm the amount of fuel on board the helicopter.

Note: When the competency check is conducted in a simulator, the pre-flight portion of the check will be conducted on an aircraft, if available, or with the help of visual aids. Visual aids will be able to illustrate every pre-flight item listed in the RFM and the major components and systems listed in the Performance Criteria.

At the request of the individual conducting the competency check, the candidate will conduct an oral passenger safety briefing where applicable.

Performance Criteria

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

- (a) demonstrate an adequate knowledge of the pre-flight inspection procedures, while explaining briefly the purpose of inspecting the items, which must be checked, how to detect possible defects and the corrective action to take;
- (b) demonstrate adequate knowledge of the operational status of the helicopter by locating and explaining the significance and importance of related documents, such as airworthiness and registration certificates, operating limitations, handbooks, and manuals, minimum equipment list (MEL) (if appropriate), weight and balance data and maintenance requirements, tests, and appropriate records applicable to the proposed flight or operation; and maintenance that may be performed by the pilot or other designated crewmember;
- (c) use the approved checklist to inspect the helicopter externally and internally;
- (d) use the challenge-and-response (or other approved) method with the other crewmember(s), where applicable to accomplish the checklist procedures;
- (e) verify the helicopter is safe for flight by emphasizing (as appropriate) the need to look at and explain the purpose of inspecting items, such as:

- (i) powerplant, including controls and indicators
 - (ii) fuel quantity, grade, type, contamination safeguards, and servicing procedures
 - (iii) oil quantity, grade, and type
 - (iv) hydraulic fluid quantity, grade, type, and servicing procedures
 - (v) oxygen quantity, pressures, servicing procedures, and associated systems and equipment for crew and passengers
 - (vi) hull, landing gear, float devices, brakes, and steering system
 - (vii) tires for condition, inflation, and correct mounting, where applicable
 - (viii) fire protection/detection systems for proper operation, servicing, pressures, and discharge indications
 - (ix) pneumatic system pressures and servicing
 - (x) ground environmental systems for proper servicing and operation
 - (xi) auxiliary power unit (APU) for servicing and operation
 - (xii) flight control systems including trim
 - (xiii) anti-ice, deice systems, ice warning systems, servicing, and operation
- (f) comply with the provisions of any appropriate Special Authorizations, as they pertain to the particular helicopter and operation;
- (g) demonstrate proper operation of all applicable helicopter systems;
- (h) determine the helicopter's serviceability in regard to whether a sufficient number of flying hours remain before an inspection is due;
- (i) determine if the time remaining is sufficient before any calendar item is due;
- (j) determine the helicopter's serviceability in regard to a maintenance release and if any condition or limitation is applicable following the release;
- (k) demonstrate knowledge of the elementary work that may be performed by the pilot(s), including certain Airworthiness Directives (ADs);
- (l) identify and verify the location and the due dates of the safety equipment and ensure that the equipment and the baggage are secure
- (m) conduct a visual or other credible procedure to confirm the amount of fuel on board the helicopter, the proper type or grade of fuel and verification for fuel contamination;
- (n) note any discrepancies, determine if the helicopter is airworthy and safe for flight, or takes the proper corrective action with respect to unsatisfactory conditions identified; and
- (o) deliver an effective passenger safety briefing that includes:
- (i) location of the safety card;
 - (ii) safety tip related to embarking, disembarking and movement around a helicopter;
 - (iii) use of seat belts;
 - (iv) actions 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.
- (p) check the general area around the helicopter for hazards to the safety of the helicopter and personnel.

4 START AND SHUTDOWN (All PCC)

Aim

To safely complete the start and shutdown procedures in accordance with the RFM limitations.

Description

When conducting the competency check on a simulator, the start and shutdown will be conducted as if they were conducted on a helicopter.

For this item the start will include the pre-start, the starting of the engine(s) and rotor(s), the powering and verification of the helicopter systems, the set-up and verification of the radio communication and navigation equipment.

The start portion of this competency check's exercise will normally begin when the pilot(s) carries out the pre-start procedure and will terminate before the pre-takeoff or pre-taxi checks. In some cases, a pre-start item may be performed prior to beginning the pre-start procedure, but such an item will still be part of the start.

The shutdown portion of competency check exercise will begin after the landing sitting check or immobilizing the helicopter after taxiing with the intention of shutting down the helicopter engine(s) and will terminate when the engine(s) and the rotor(s) are stopped, all systems and radios have been shut down and the helicopter electrical power is turned off.

The candidate will conduct the start and shutdown procedures so they systematically include all items listed in the RFM and the company checklist. In the case of a multi-crew flight, the start and shutdown will be conducted using a challenge-and-response method or another approved method with other flight crew member(s).

The candidate will demonstrate the appropriate initial actions to correct unsatisfactory conditions, encountered or simulated by the examiner, in accordance to the RFM and the emergency check list. The candidate will also demonstrate practical knowledge of the use of an auxiliary power unit (APU) or external power source..

Performance Criteria

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

- (a) ensure ground safety procedures are followed during each step of the start and shutdown;
- (b) coordinate with ground crew and ensure adequate clearance prior to moving any devices, such as door, hatches, and flight control surfaces;
- (c) demonstrate practical knowledge of the use of an auxiliary power unit (APU) or external power source.
- (d) follow systematically a type of checklist that include all items listed in the RFM and the company checklist;
- (e) for multi-crew flying, use a challenge-and-response (or other approved) method with other flight crewmember(s);
- (f) divide attention properly inside and outside cockpit;
- (g) taking the appropriate initial vital actions to correct unsatisfactory conditions, encountered or simulated by the examiner;
- (h) demonstrate accuracy in conducting the system checks;
- (i) demonstrate sound judgment and operating practices in those instances where specific instructions or checklist items are not published;
- (j) conduct a verification of the radio communication, navigation equipment and any other equipment particular to the helicopter;
- (k) set up the radio communication, navigation equipment and any other equipment particular to the helicopter for the departure of the intended flight;

- (l) ensure that all systems are within their normal operating range prior to beginning, during the performance of, and at the completion of those checks required by the approved checklist;
- (m) explain, as may be requested by the individual conducting the competency check, any normal or abnormal system operating characteristic or limitation; and the corrective action for a specific malfunction;
- (n) verify power availability and any other limitation particular to the type;
- (o) determine if the helicopter is safe for the proposed flight or requires maintenance;
- (p) determine the helicopter's take-off performance, considering such factors as wind, density altitude, weight, temperature, and pressure altitude;
- (q) determine airspeeds/V-speeds and properly sets all instrument references, flight director and autopilot controls, and navigation and communications equipment;
- (r) review procedures for emergency and abnormal situations, which may be encountered during takeoff, and state the corrective action required by the pilot in command and other concerned crewmembers;
- (s) perform an avionics and navigation equipment cockpit check;
- (t) request liftoff clearance and, if appropriate, an IFR clearance;
- (u) obtain and correctly interpret the takeoff and departure clearance as issued by ATC; and
- (v) record time up and time down, as appropriate to the flight.

5 TAKEOFF AND LANDING (All PCC)

Aim

To safely take off and land, in accordance with the regulations and the helicopter operating limitations.

Description

Every takeoff and landing will be assessed throughout the flight test whenever the candidate has to take off and land.

The candidate will turn on any ancillary system(s) required for the flight before taking off, as required for the existing conditions.

The candidate will demonstrate normal takeoffs and landings from or to a level ground, facing into or out of wind. The pre-takeoff or pre-taxiing check will be carried out to ensure that the helicopter is in an appropriate condition or configuration for taking off. During the takeoff, a take-off check will be carried out to establish that there is sufficient power available for the intended hover, the undercarriage is free from the ground, the helicopter is within center of gravity limits and control response is normal.

On landing, a seating check will be carried out to ensure that the surface can support the full weight of the helicopter and remain level.

All checklist item will be completed accordingly.

Performance Criteria

Assessment of the candidate's proficiency to:

- (a) demonstrate knowledge of procedures for Reduced Visibility Operations Plan (RVOP) and Low Visibility Operations Plan (LVOP), where applicable;
- (b) demonstrate adequate knowledge of safe taxi procedures (as appropriate to the helicopter);
- (c) maintain proper spacing from other aircraft, obstructions, and persons;
- (d) complete the applicable checklist items and perform recommended procedures;
- (e) turn on ancillary system(s), as required for the flight;
- (f) perform pre-take-off checks;

- (g) comply with instructions/clearances issued by ATC (or the examiner simulating ATC);
- (h) observe runway hold lines, localizer and glide slope critical areas and other surface control markings and lighting;
- (i) maintain constant vigilance and helicopter control during taxi operation to prevent runway incursion;
- (j) complete the take-off checks during the takeoff;
- (k) take off or land with negligible drift or yaw;
- (l) demonstrate proficiency by maintaining accurate and positive helicopter control during the manoeuvres ;
- (m) perform a seating check appropriate to the surface and the type of helicopter.

6. HOVER MANOEUVRES AND TAXIING (ALL PCC)

Aim

To safely maintain a hover, conduct hover manoeuvres, hover taxi and, if applicable, taxi on the surface, in accordance with the regulations and the helicopter operating limitations.

Description

These manoeuvres, in or out of ground effect, will be assessed throughout the competency check whenever the candidate has to maintain the helicopter in hover, carry out 360-degree turns in hover, manoeuvre the helicopter sideward or rearward or hover taxi and, if applicable, taxi on the surface.

Out-of-wind stationary hovering will be required, if wind conditions or helicopter limitations permit.

All checklist items should be completed accordingly.

While taxiing, the candidate will follow taxiing procedures in compliance with clearances and instructions issued by the appropriate air traffic control unit or by the examiner.

For a competency check that includes the instrument procedures portion, a flight instrument check will be performed while in hover or taxiing on the ground. Instrument checks that require a hover height other than a normal hover height for the helicopter will be performed only during the departure. Airspeed instrument check will also be performed on departure.

While hovering or hover-taxiing, the candidate is expected to perform all hovering manoeuvres at a safe height, appropriate to the helicopter type, and as accurately as reasonably possible for the existing conditions. The candidate is also expected to maintain a safe distance between the helicopter and any obstacles. Taxiing on the surface will be in accordance to the RFM limitations appropriate to the type..

Where an operator has Runway Visual Range (RVR) 1200 or RVR 600 take-off limits authority, the candidate will demonstrate one such takeoff to the lowest limit as appropriate to his flight crew position.

Performance Criteria

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

- (a) perform taxi checks, if applicable;
- (b) note any surface conditions, obstructions, or other hazards that might hinder a safe takeoff;
- (c) complete required checks prior to starting takeoff to verify the expected powerplant performance;
- (d) verify and correctly apply correction for the existing wind component to the take-off performance;
- (e) demonstrate proficiency by maintaining accurate and positive helicopter control during all manoeuvres;
- (f) monitor powerplant controls, settings, and instruments during takeoff to ensure all predetermined parameters are maintained;
- (g) perform instrument checks that include avionics and navigation equipment, as applicable;
- (h) demonstrate a practical knowledge of airport and heliport taxi procedures;

- (i) comply with instructions/clearances issued by ATC (or the examiner simulating ATC);
- (j) maintain proper spacing from other aircraft, persons, obstacles and flying debris during all manoeuvres;
- (k) conduct all hovering turns at a constant and safe rate of turn;
- (l) maintain the appropriate height above the surface to cope with possible malfunctions;
- (m) hover taxiing at a safe speed, whether facing into or out of the wind; and
- (n) demonstrate awareness of conditions that may cause loss of tail rotor effectiveness
- (o) demonstrate adequate knowledge of normal and crosswind takeoffs and climbs including (as appropriate to the helicopter) airspeeds, configurations, and emergency/abnormal procedures;
- (p) perform the required pitch changes and, as appropriate, perform or call for and verify gear retractions, power adjustments, and other required pilot-related activities at the required airspeed/V-speeds within the tolerances established in the RFM; and
- (q) complete or call for and verify the completion of the appropriate checklist items.

7. VFR DEPARTURE (All PCC)

Aim

To safely conduct a VFR departure in accordance with the regulations and the helicopter operating limitations while considering the wind conditions.

Description

The evaluation of this item begins when the helicopter is in position for departure and ends when reaching 400 feet AGL or level altitude, if lower than 400 feet AGL. Every VFR departure will be evaluated during the competency check.

The candidate will turn on any ancillary system(s) required for the flight before the departure, as required for the present conditions.

The candidate is expected to smoothly and safely accelerate the helicopter to a climb from a hover or the ground, in the case of a departure without hover. This manoeuvre should be accomplished without using excessive power and attitude changes.

The evaluation will take in consideration, the candidate's risk management competency of conducting a departure in regard to the wind direction, wind velocity and the Height Velocity Diagram or Envelope.

During or following the departure, as appropriate, a flight instrument check should be conducted.

When flying as a crew, a departure briefing will be conducted prior the departure.

Performance Criteria

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

- (a) turn on ancillary system(s), as required for the flight;
- (b) choose the safest departure path available;
- (c) take into consideration the wind direction and velocity and apply the appropriate procedure;
- (d) if the departure is from a runway, maintain the helicopter over the runway during the departure or state the reason for not maintaining the helicopter over the runway;
- (e) establish communication with the relevant Air Traffic Service and use proper communication phraseology and techniques;
- (f) complete the appropriate checks before and during the departure including, if applicable, a crew briefing;
- (g) comply in a timely manner, with all clearances and instructions issued by ATC or simulated by the examiner and advise accordingly if unable to comply;

- (h) ensure that the power available is sufficient;
- (i) maintain accurate and positive helicopter control during the departure;
- (j) maintain coordinated flight;
- (k) monitor the helicopter instruments, to ensure all predetermined parameters are maintained;
- (l) avoid unnecessarily high power demand;
- (m) demonstrate an awareness of the Height Velocity Diagram or Envelope;
- (n) maintain a declared safe airspeed (± 10 mph or knots); and
- (o) maintain the declared direction of flight.

8. IFR DEPARTURE (IFR)

Aim

To safely conduct an instrument departure in accordance with a clearance given by ATC or a simulated clearance given by the examiner, the regulations and the helicopter operating limitations

Description

The evaluation of this item will commence as soon as the helicopter is in position for departure and will end when reaching 400 feet AGL. Every instrument departure will be evaluated during the competency check.

Instrument checks that were not performed because of required higher than normal hover height will be performed during the departure as well as the airspeed check.

The candidate will turn on any ancillary system(s) before the departure, as required for the existing conditions.

After conducting the appropriate radio communication and pre-departure check, the candidate will complete the departure procedures as cleared in accordance with the Instrument Flight Rules. The candidate will control the helicopter solely with reference to flight instruments once in flight at or before reaching an altitude of 200 feet AAE, unless otherwise specified in a departure procedure.

When the candidate is or will be authorized to conduct a Special Authorization departure that is described in the Company's Registration Document, such a departure will be required during the competency check.

During or following the departure, as appropriate, a flight instruments check will be conducted.

If the competency check is conducted in a simulator, the departure visibility will be set at 1200 RVR (1/4 SM) or, if the operator operates under the Special Authorization (Operations Specification 014), the departure visibility will be set at 600 RVR (1/8 SM). In addition, for competency checks conducted in a simulator, the candidate will demonstrate a takeoff in a minimum 10 knots crosswind.

The evaluation will take into consideration the candidate's risk management competency for conducting a departure in regard to the wind direction, wind velocity and Height Velocity Diagram or Envelope.

When the helicopter is equipped with some of the following systems: autopilot, Flight Director, Flight Management System(s) (FMS), the candidate will have to demonstrate a practical knowledge to operate the systems.

Performance Criteria

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

- (a) turn on ancillary system(s), as required for the flight;
- (b) confirm that the communication frequency, the navigation equipment and the flight instruments are set for the intended departure and contingency;
- (c) establish communication with the relevant Air Traffic Service and use the proper communications phraseology and techniques;
- (d) complete the appropriate crew briefing;

- (e) if the departure is from other than a runway, choose the safest take-off path available;
- (f) if the departure is from a runway, align the helicopter with the runway centerline;
- (g) if the departure is from a runway, maintain the helicopter over the runway for the visual part of the departure or state the reason for not maintaining the helicopter over the runway;
- (h) take into consideration the wind direction and velocity and apply the appropriate procedure;
- (i) ensure that the power available is sufficient;
- (j) maintain coordinated flight;
- (k) complete the before and during departure checks;
- (l) monitor the helicopter instruments, to ensure all predetermined parameters are maintained;
- (m) avoid unnecessarily high power demand;
- (n) comply in a timely manner, with all clearances and instructions issued by ATC or simulated by the examiner and advise accordingly if unable to comply;
- (o) demonstrate knowledge of V_{TOSS} and V_{BROC} speeds (on a multi-engine helicopter)
- (p) maintain accurate and positive helicopter control during the departure;
- (q) maintain assigned or published headings or tracks ($\pm 10^\circ$);
- (r) maintain a declared safe airspeed (± 10 mph or knots);
- (s) maintain at least the minimum required rate of climb; and
- (t) demonstrate a practical knowledge while operating the following relevant system(s), if equipped : autopilot, Flight Director, Flight Management System(s) (FMS).

9. REJECTED DEPARTURE (All PCC)

Aim

To safely reject a departure in accordance with the RFM and the SOP's following an abnormal situation.

Description

The rejected takeoff item is completed after the helicopter has landed.

If the appropriate procedure required a shutdown of the engine(s) or the shutdown of vital systems, the shutdown of the engine(s) or the system will only be mentioned. When the item is performed in a simulator, the entire shutdown procedure will be completed.

The candidate will have to demonstrate knowledge of the technique to be used, based on the reason to reject the takeoff. When the rejected takeoff is the result of a simulated malfunction, the malfunction procedures will be evaluated in one of the malfunction and emergency procedure items.

A rejected departure, for VFR only competency check should be conducted during the departure from a confined area or similar departures.

Performance Criteria

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

- (a) continue flying the helicopter;
- (b) demonstrate knowledge of the appropriate technique to use, taking into consideration the wind direction and velocity, obstacles and surface conditions;
- (c) maintain accurate and positive helicopter control;
- (d) determine, in a timely manner, a suitable landing area;
- (e) avoiding situations that may result in settling with maximum-available power and/or overpitching;
- (f) landing with negligible drift or yaw;

- (g) perform a seating check appropriate to the type of helicopter;
- (h) use the wheel brakes appropriately;

In addition for engine failure on Multi-Engines

- (a) recognize the simulated failure of one of the engine in a timely manner;
- (b) identify the inoperative engine;
- (c) take appropriate vital actions, in accordance with RFM and SOP, considering if the failure was before or after Critical Decision Point (CDP);
- (d) complete prescribed engine failure initial action checks;
- (e) complete the remaining checklist items at the appropriate time and in a timely manner;

10. CLIMBS/LEVEL FLIGHT/ DESCENT (All PCC)

Aim

To safely initiate and conduct climbs, level flight and descents, in accordance with the regulations and the helicopter operating limitations.

Description

The evaluation of this item will commence following a departure and will end when established on an approach. Every climb, level flight and descent will be evaluated during the competency check. Climbs, level flight and descents will be conducted in accordance with the Visual or Instrument Flight Rules, as applicable.

The candidate will turn on any ancillary system(s) before the departure, as required for the existing conditions.

During the climbs, a constant airspeed as recommended by the RFM or SOPs and a positive rate of climb will be maintained. If an airspeed other than the one recommended by the RFM or SOPs is maintained, the candidate must state the reason for the difference in airspeed.

During level flight, the candidate will maintain a constant power setting or constant airspeed setting as recommended by the RFM or SOPs. In some operational circumstances, the constant airspeed may be lower than recommended by the RFM or SOPs, but in those cases a declared airspeed is maintained. When a declared airspeed is maintained, the candidate must state the reason for the declared airspeed.

During a descent, if a higher than usual rate of descent is maintained or an inordinate higher or lower airspeed is used, the candidate must state the reason for the difference in rate of descent or airspeed.

For instrument flying, a heading, a published track or radial, instructed by ATC or requested by the examiner will be maintained. For the VFR part of a competency check or a complete VFR only competency check, a heading or a direction requested by the examiner or declared by the candidate will be maintained.

When the helicopter is equipped with some of the following systems: autopilot, Flight Director, Flight Management System(s) (FMS), the candidate will have to demonstrate practical knowledge to operate the systems.

The candidate will comply with the enroute procedures as cleared or declared, as applicable.

Performance Criteria

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

- (a) turn on ancillary system(s), if required;
- (b) select and use the appropriate communications frequencies and use the proper communications phraseology and techniques;
- (c) comply, in a timely manner, with all clearances and instructions issued by ATC or simulated by the examiner and advise accordingly if unable to comply;
- (d) accomplish or call for and verify the completion of the appropriate checklist item for that phase of flight;

- (e) maintain coordinated flight;
- (f) maintain the published, instructed or declared headings, tracks or radial (± 10 degrees) or maintain the instructed or declared direction;
- (g) adjusts the controls to attain the desired pitch attitude at the predetermined airspeed/V-speed to attain the desired performance for the particular takeoff and climb segment;
- (h) maintain the recommended or declared airspeed (± 10 mph or knots);
- (i) maintain a least a minimum rate of climb;
- (j) set the power setting as recommended by the RFM or the SOPs, as applicable;
- (k) monitor powerplant controls, settings, and instruments during the initial climb to ensure all predetermined parameters are maintained;
- (l) maintain the minimum altitudes and distances, in accordance with the regulations;
- (m) adhere to the enroute procedures;
- (n) maintain a normal rate of descent or state the reason for an abnormal rate of descent;
- (o) manage and confirm fuel requirement;
- (p) demonstrate practical knowledge in operating the following relevant system(s), if equipped : autopilot, Flight Director, Flight Management System(s) (FMS);
- (q) apply any additional measures recommended by the manufacturer with respect to aircraft configuration or other considerations;

In addition for competency check that includes an instrument procedure portion

- (a) select and identify the navigation aids, as applicable;
- (b) transition smoothly and accurately from visual meteorological conditions to actual or simulated instrument meteorological conditions, as applicable;
- (c) complete or call for and verify the completion of gear retraction, power adjustments, and other required pilot-related activities at the required airspeed/V-speeds within the tolerances established in the RFM and SOPs;
- (d) intercept, in a timely and in an efficient manner, all headings, tracks and radials appropriate to the procedure and route, as applicable;
- (e) maintain the desired heading within $\pm 10^\circ$ and the desired airspeed/V-speed within $+10/-5$ knots or the appropriate V-speed range;
- (f) terminate the climb to the instructed or declared altitude within ± 100 feet or to the minimum published altitude +as required/ -0 feet;
- (g) maintain the instructed or declared altitude within ± 100 feet or to the published minimum altitude +as required/ -0 feet;
- (h) terminate the descent to the instructed or declared altitude within ± 100 feet or the published minimum altitude +as required/ -0 feet; and
- (i) comply with ATC clearances and instructions issued by ATC (or the individual conducting the competency check simulating ATC).
- (j) revise ETA, as applicable.

11. STEEP TURNS (All PCC)

Aim

To safely perform steep turns, in accordance with the regulations and the helicopter operating limitations.

Description

Within a safe area that is clear of other aircraft traffic and at an operationally safe altitude recommended by the manufacturer, training syllabus, or other training directive, the candidate will execute two steep turns.

Both turns will achieve a heading change of at least of 180 degrees but not more than 360 degrees. One of the steep turns will be conducted to the right and the other one to left. Both steep turns will be completed from a specified heading or an outside point of reference, at an operationally safe altitude specified by the examiner.

The turn itself should be accomplished primarily through the use of visual references. The candidate is expected to maintain a good lookout for other traffic or obstacles during the turn and ensure that none present a flight hazard. Instrument scan for the purpose of ensuring desired flight parameters are maintained should only account for approximately 10 percent of the time.

Step Turn Not Restricted to an Angle of Bank of 30 Degrees

The candidate is expected to establish and maintain an angle of bank between 30 and 45 degrees. The angle of bank may be determined using an attitude indicator or the helicopter airframe angle with the horizon.

During these turns, a constant altitude will be maintained within ± 150 feet and a constant airspeed maintained within ± 10 knots (or MPH). The constant airspeed to maintain will be appropriate to the helicopter type and determined by the examiner. This airspeed must be between the best rate of climb airspeed (V_{BROC}) and maximum speed of 80 knots (or MPH). For a helicopter with a slow cruise airspeed, the specified speed will be closer to V_{BROC} in comparison to helicopters with a faster cruise airspeed.

Step Turn Restricted to an Angle of Bank of 30 Degrees

When an operator's SOP restricts the angle of bank to maximum of 30 degrees, the candidate must establish and maintain an angle of bank of 30 degrees ± 5 degrees. The angle of bank will be determined using the attitude indicator.

During these turns, a constant airspeed of 100 knots (or MPH) will be maintained within ± 10 knots (or MPH). A constant altitude will be maintained within ± 100 feet. The altitude to maintain will be specified by the examiner prior to the commencement of the steep turns.

Performance Criteria

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

- (a) maintain an effective lookout for other traffic during the turn;
- (b) primarily use outside visual references during the turn;
- (c) enter a smooth and coordinated steep turn;
- (d) initiate a timely roll-out on an outside point of reference or a specified heading determined in advance; and
- (e) maintain the selected airspeed within ± 10 knots (or MPH).

Criteria Steep Turns Not Restricted to an Angle of Bank of 30 Degrees

- (a) maintain the specified altitude within ± 150 feet throughout the turn; and
- (b) maintain a bank angle of between 30 and 45 degrees.

Criteria Steep Turns Restricted to an Angle of Bank of 30 Degrees

- (a) maintain the specified altitude within ± 100 feet throughout the turn; and
- (b) maintain a bank angle of 30 degrees ± 5 degrees

12. HOLDING (IFR)

Aim

To safely enter and maintain a holding pattern in the protected airspace in accordance with the holding clearance and helicopter operating limitations

Description

Based on a clearance issued by ATC or a simulated clearance given by the examiner, the candidate will select a suitable entry procedure, enter and establish the helicopter in the holding pattern. The candidate will demonstrate adequate knowledge of holding endurance including, but not limited to, total fuel remaining on board, fuel available for holding, fuel required to the alternate destination and as well as reserve fuel.

When the helicopter is equipped of some of the following systems: autopilot, Flight Director, Flight Management System(s) (FMS), the candidate will have to demonstrate practical knowledge to operate the systems.

Performance Criteria

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

- (a) select and identify the navigation aids associated with the holding;
- (b) select and use the appropriate communications frequencies;
- (c) read back an ATC holding clearance or simulated holding clearance given by the examiner ;
- (d) use a suitable entry procedure that assures manoeuvring within the protected airspace;
- (e) use an efficient entry procedure without undue delay;
- (f) use the proper communications phraseology and techniques, as required for the phase of flight;
- (g) report crossing the fix entering the hold , if required by ATC or in the simulated instruction from the examiner ;
- (h) report established in the hold, if required by ATC or if required in the simulated instruction from the examiner ;
- (i) use the proper timing criteria, where applicable, or comply with leg lengths when a DME distance is specified;
- (j) anticipate and further assess the effect of wind and apply effective drift and timing correction techniques;
- (k) maintain the designated track or course (± 10 degrees) or within $\frac{1}{2}$ scale deflection of the course deviation indicator, as applicable (Terminal Mode sensitivity if with GPS);
- (l) maintain the declared airspeed (± 10 knots);
- (m) maintain coordinated flight;

Note: 90 knots is a suggested speed for holding.

- (n) maintain assigned altitudes (± 100 feet);
- (o) comply with further clearance time limit or the authorization time limit;
- (p) provide the examiner with a reasonably accurate estimate of the maximum holding time available based on the IFR flight plan and the fuel on board;
- (q) demonstrate practical knowledge in operating the following relevant system(s), if equipped : autopilot, Flight Director, Flight Management System(s) (FMS); and
- (r) leave the holding pattern efficiently without undue delay

13. VFR APPROACHES (All PCC)

Aim

To safely carry out a visual approach in accordance with clearances, instructions, the regulations and the helicopter operating limitations.

Description

The approach begins when the helicopter is on the final descent to any surface with the intention to land or to come to a hover. At least two visual approaches will be conducted.

The candidate will demonstrate:

- (a) one normal visual approach to a landing or a hover. This approach could be combined with another item as long as a normal approach is conducted; and
- (b) one steep visual approach to a landing or a hover. This approach could be combined with another item as long as the approach is deemed to be more than a descent angle of 13°. A steep approach could be evaluated during the confined area item, if the approach is deemed to be of around 13°.

The evaluation will take into consideration, the candidate's risk management competency of conducting an approach in regard of the wind direction, wind velocity and Height Velocity Diagram or Envelope.

Performance Criteria

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

- (a) perform the checklist items relative to the phase of flight;
- (b) take into consideration the wind direction and velocity;
- (c) demonstrate an awareness of the Height Velocity Diagram or Envelope;
- (d) establish and maintain a normal approach angle and rate of closure;
- (e) control drift and yaw;
- (f) maintain the required heading;
- (g) demonstrate proficiency by maintaining accurate and positive helicopter control during the manoeuvres.
- (h) avoid situations that may result in vortex ring state;
- (i) avoid situations that may result in settling with maximum-available power and/or overpitching; and
- (j) arrive at a predetermined point at a normal hover height appropriate to the helicopter type.

14 TO 16 IFR APPROACHES

The candidate will perform at least two (2) instrument approaches. When the candidate is or will be authorized to conduct a Special Authorization approach that is described in the Company's Registration Document, such an approach will be required during the competency check.

At least one of the approaches must be hand-flown (uncoupled) during the competency check.

These approaches will be done on different types of facilities at the same or another aerodrome. On an initial Group 4 Instrument Rating, a precision approach is mandatory. An LPV approach can be substituted to demonstrate ILS approach proficiency, if the LPV DA is equal to or less than 300 feet HAT.

For recurrent competency checks, where one approach is conducted with vertical guidance or GNSS, the other approach should be a non-precision approach with a traditional ground-based navigational aid, such as LOC, VOR or NDB. Approaches may be flown with vectors from ATC, where available, or by flying a full-procedure approach. If the helicopter has an approved IFR GNSS installation, one of the approaches should be an RNAV (GNSS) approach.

When aerodrome temperatures are 0°C or colder, altitude corrections are expected to be applied to all minimum altitudes depicted on the approach chart used. If cold temperature altitude corrections are not applied and minimum altitudes are flown, there is a great possibility that the legs are being flown below the actual minimums. Minimum altitudes shall be respected in accordance to CAR 602.124. Therefore if cold temperature corrections are not applied and the leg is flown below actual minimum, the approach will be evaluated as a "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.

All intermediate and final segments of non-precision approaches with approach slopes of 3.5 degrees or less may be flown using a Constant Descent Angle (CDA) profile from the highest intermediate segment altitude to the minimum descent altitude (MDA). The use of step-down approach techniques where CDA profiles are possible and practical will be considered a minor error (3), except if justified by a valid circumstance concerning the safety of the flight. When altitude corrections are applied during temperatures of 0°C or colder, manual correction of each segment of the Distance/Altitude Table of the CDA profile will be difficult and could induce errors. Without proper equipment, it would be a valid circumstance to not proceed with the CDA profile. To avoid questioning the validity of such circumstances, a remark should be entered on the Flight Test Report.

Where a major deviation has occurred during the approach, but safety has not been compromised, the candidate may initiate a missed approach for one additional attempt at the approach. A second attempt to an approach will be evaluated with the same criteria as the first one with the exception that the maximum mark would be a "2". The candidate is allowed only one (1) second attempt for an approach item.

Where safety has been compromised or unacceptable performance has been demonstrated, including but not limited to, descent below a published minimum descent altitude due to pilot error or poor technique, the approach will be evaluated as a "1" despite the initiation of a missed approach by the candidate.

According to global exemption (NCR 004-2005) to CAR 602.128(2)(b), a pilot may descend below the MDA, which is likely to occur during a missed approach following a stabilized constant descent angle non-precision approach. This exemption is subject to the following conditions:

- (a) the pilot-in-command will conduct a final approach with a planned stabilized constant descent angle (SCDA) from the final approach fix to a normal landing runway threshold crossing height of 50 feet;
- (b) the pilot-in-command will initiate a missed approach upon reaching the earliest of either the Decision Altitude (Minimum Descent Altitude), or the missed approach point, if the required visual reference necessary to continue to land has not been established;

- (c) a SCDA approach will not be conducted on procedures requiring remote altimeter setting correction;
- (d) 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
- (e) the pilot-in-command and the air operator will maintain compliance with the schedule attached to Aircraft Equipment.

Note: Item 25 may be completed during one of the following approaches

PRECISION APPROACH (ILS OR LPV)

Aim

To safely fly a precision approach in accordance with the published instrument approach procedure, the regulations and the helicopter operating limitations.

Description

The approach begins when one of the following comes first: intercepting an arc, crossing the first waypoint or NAVAID, at the interception of the radial of Final Approach Course or when given the first radar vector by ATC and will end when starting the transition to landing or initiated a missed approach.

After transitioning to the approach facility or after receiving vectors from ATC, the candidate will fly the intended approach depicted in the Canada Air Pilot Instrument Procedure or in the equivalent foreign publication or approved company approach procedure to the missed approach point (MAP) or to a landing. The candidate will control the helicopter solely by reference to flight instruments.

Note: An LPV approach is technically classed as a non-precision approach, but may be substituted for the ILS demonstration of precision-approach skills.

Performance Criteria

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

- (a) select and use the appropriate communications frequencies;
- (b) select and comply with the ILS or LPV instrument approach procedure to be performed;
- (c) select, tune, identify and confirm the operational status of ground and helicopter navigation equipment to be used for the approach procedure;
- (d) intercept, in a timely and efficient manner, all headings, tracks, radials, and bearings appropriate to the approach;
- (e) use the proper communications phraseology and techniques, as required for the phase of flight;
- (f) comply in a timely manner, with all clearances and instructions issued by ATC or simulated by the examiner and advise accordingly, if unable to comply;
- (g) establish the appropriate configuration (power setting and airspeed) and vary accordingly considering turbulence, wind shear, microburst, or other meteorological and operating conditions;
- (h) apply necessary adjustment to the published DH or DA and visibility criteria, as required, because of NOTAMS, inoperative helicopter and/or ground navigation equipment or inoperative visual aids associated with the landing environment;
- (i) maintain altitudes as published or as declared ± 100 feet corrected for cold temperature, if temperatures are 0 degrees Celsius or colder;
- (j) maintain radar vectoring altitudes assigned ± 100 feet;
- (k) maintain headings ± 10 degrees, prior the interception of the final approach;
- (l) allow no more than $\frac{1}{2}$ scale deflection of the localizer or glideslope indications, on the final approach course;
- (m) ensure transition to approach active mode within 2 nm prior the Final Approach Waypoint (FAWP), during an LPV approach on the final approach course;

- (n) take appropriate actions in the event that a RAIM alert is displayed when the aircraft is established on the final approach course, during an LPV approach;
- (o) maintain declared approach airspeeds within ± 10 knots;
- (p) maintain coordinated flight;
- (q) complete appropriate checklists;
- (r) make the decision at DH or DA to continue the descent or initiate the missed approach; and
- (s) demonstrate practical knowledge in operating the following relevant system(s): autopilot, Flight Director, Flight Management System(s) (FMS), if equipped.

NON-PRECISION APPROACH (VOR, LOC, NDB OR NDB/ARA)

Aim

To safely fly a non-precision approach in accordance with the published instrument approach procedure, the regulations and the helicopter operating limitations.

Description

The approach begins when one of the following come first: intercepting an arc, at the crossing of a NAVAID for a procedure turn, at the interception of the final approach radial or track or when given the first radar vector by ATC and will end when starting the transition to landing or initiated a missed approach.

After transitioning to the approach facility or after receiving vectors from ATC, the candidate will fly the intended approach depicted in the Canada Air Pilot Instrument Procedure or in the equivalent foreign publication or approved company approach procedure to the missed approach point (MAP) or to a landing. The candidate will control the helicopter solely by reference to flight instruments

Performance Criteria

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

- (a) select and use the appropriate communications frequencies
- (b) select and comply with the VOR, LOC or NDB instrument approach procedure to be performed;
- (c) select, tune, identify, confirm and monitor the operational status of ground and helicopter navigation equipment to be used for the approach procedure;
- (d) intercept, in a timely and efficient manner, all headings, tracks, radials, and bearings appropriate to the approach;
- (e) use the proper communications phraseology and techniques, as required for the phase of flight;
- (f) comply in a timely manner, with all clearances and instructions issued by ATC or simulated by the examiner and advise accordingly, if unable to comply;
- (g) establish the appropriate configuration (power setting and airspeed) and vary accordingly considering turbulence, wind shear, microburst or other meteorological and operating conditions;
- (h) use CDFA/SCDA profiles, when possible and practical;
- (i) apply necessary adjustment to the published Minimum Descent Altitude (MDA), as required, because of NOTAMS, inoperative helicopter and/or ground navigation equipment or inoperative visual aids associated with the landing environment;
- (j) maintain altitudes, as cleared or as declared, ± 100 feet corrected for cold temperature, if temperatures are 0 degrees Celsius or colder;
- (k) maintain headings ± 10 degrees, prior the interception of the final approach;
- (l) maintain declared approach airspeeds within ± 10 knots;
- (m) maintain coordinated flight;
- (n) complete appropriate checklists; and

- (o) on the intermediate and final segments of the final approach course:
 - (i) maintain lateral tracking within ½ scale deflection of the course deviation or within 5 degrees of the specified track in the case of an NDB approach;
 - (ii) fly the approach in a relatively stable manner using a CDFA final approach profile where possible, without descending below the applicable minimum altitudes depicted on the approach chart (+as required/ –0 feet);
 - (iii) descend to and accurately maintain the Minimum Descent Altitude (MDA) until obtaining the required visual reference or reaching the Missed Approach Point (MAP) or in accordance with the NCR 004-2015 exemption; and
- (p) demonstrate practical knowledge in operating the following relevant system(s): autopilot, Flight Director, Flight Management System(s) (FMS), if equipped

NON-PRECISION APPROACH (LNAV/VNAV OR LNAV)

Aim

To safely fly a non-precision approach in accordance with the published instrument approach procedure, the regulations and the helicopter operating limitations.

Description

The approach begins when one of the following come first: crossing the first approach waypoint or when given the first radar vector by ATC and will end when starting the transition to landing or initiated a missed approach.

After transitioning to the approach or after receiving vectors from ATC, the candidate will fly the intended approach depicted in the Canada Air Pilot Instrument Procedure or in the equivalent foreign publication or approved company approach procedure to the missed approach point (MAP) or to a landing. The candidate will control the helicopter solely by reference to flight instruments.

NOTE - With respect to GNSS approaches, the RNAV dot on form 26-0279 must be filled if the approach flown is a stand-alone RNAV (GNSS) approach; the GPS dot must be filled if the GNSS approach flown is designed around a ground-based navigation aid with a GNSS overlay approach built into it

Performance Criteria

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

- (a) select and use the appropriate communications frequencies;
- (b) retrieve the RNAV approach to be used for the approach procedure;
- (c) select the approach waypoints and comply with the RNAV instrument approach procedure to be performed;
- (d) intercept, in a timely and efficient manner, the appropriate waypoint for the approach;
- (e) use the proper communications phraseology and techniques, as required for the phase of flight;
- (f) comply in a timely manner, with all clearances and instructions issued by ATC or simulated by the examiner and advise accordingly, if unable to comply;
- (g) establish the appropriate configuration and airspeed considering turbulence, wind shear, microburst or other meteorological and operating conditions;
- (h) use CDFA/SCDA profiles, when possible and practical;
- (i) apply necessary adjustments to the published Minimum Descent Altitude (MDA) and visibility criteria, as required, because of NOTAMS, cold temperatures, inoperative helicopter equipment and/or inoperative visual aids associated with the landing environment;
- (j) maintain altitudes, as cleared or as declared, (± 100 feet) corrected for cold temperature, if temperatures are 0 degrees Celsius or colder;
- (k) maintain headings (± 10 degrees), prior the interception of the final approach;

- (l) maintain the declared approach airspeed within ± 10 Knots;
- (m) maintain coordinated flight;
- (n) take appropriate actions in the event that a RAIM alert is displayed when the helicopter is established on the final approach course;
- (o) complete appropriate checklists;
- (p) on the intermediate and final segments of the final approach course:
 - (i) maintain GNSS track bar within $\frac{1}{2}$ scale deflection;
 - (ii) fly the approach in a relatively stable manner using a CDFA final approach profile where possible, without descending below the applicable minimum altitudes depicted on the approach chart (+as required/ -0 feet);
 - (iii) confirm the approach mode is active within the 2 nm prior to reaching the Final Approach Waypoint (FAWP) inbound;
 - (iv) descend to and accurately maintain the Minimum Descent Altitude (MDA) until obtaining the required visual reference or reaching the Missed Approach Waypoint (MAWP) or in accordance with the NCR 004-2015 exemption.
- (q) demonstrate practical knowledge in operating the following relevant system(s): autopilot, Flight Director, Flight Management System(s) (FMS), if equipped

17. MISSED APPROACH (IFR)

Aim

To safely carry out a missed approach in accordance with the published instrument approach procedure, as published or as modified by ATC, the regulations and the helicopter operating limitations.

Description

The missed approach begins when the crew rejects the descent during the approach to the planned landing runway or helipad and ends when the missed approach procedure published or modified by ATC or the examiner has been completed.

Following an instrument approach, the candidate will conduct a missed approach. The candidate must follow the published missed approach profile, except where amended by ATC or the examiner.

Where a major deviation has occurred during the approach, but safety has not been compromised, the candidate may initiate a missed approach for one additional attempt at the approach. A second attempt to an approach will be evaluated with the same criteria as the first one with the exception that the maximum mark would be a "2". The candidate is allowed only one (1) second attempt for approach items.

In addition, the candidate will demonstrate the proper programming and use of Flight Management Systems, as applicable.

Performance Criteria

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

- (a) initiate the missed approach, if the required visual references are not obtained, upon reaching the DH/DA or at the MAP/MAWP;
- (b) select and use the appropriate communications frequencies;
- (c) report beginning the missed approach procedure;
- (d) use the proper communications phraseology and techniques, as required for the phase of flight;
- (e) establish the appropriate configuration (power setting and airspeed);
- (f) comply in a timely manner, with all clearances and instructions issued by ATC or simulated by the examiner and advise accordingly, if unable to comply;

- (g) intercept, in a timely and efficient manner, all headings, tracks, radials, and bearings appropriate to the missed approach;
- (h) request, as appropriate, another approach clearance, a clearance to an alternate airport or as directed by the examiner ;
- (i) maintain recommended airspeeds (± 10 knots);
- (j) maintain coordinated flight;
- (k) maintain headings, tracks or bearings (± 10 degrees);
- (l) complete the applicable checklist and perform recommended procedures;
- (m) climb to and maintain the published missed approach altitude, or as cleared by ATC or the examiner (± 100 feet); and
- (n) demonstrate practical knowledge in operating the following relevant system(s): autopilot, Flight Director, Flight Management System(s) (FMS), if equipped.

18. VISUAL TRANSITION TO LANDING (IFR)

Aim

To safely carry out a visual descent from the MDA or DH/DA and execute a safe landing in accordance with the regulations and the helicopter operating limitations.

Description

The candidate will brief the examiner and the first officer, in multi-crew certified helicopter, regarding the procedure to be used for the transition from the instrument approach to the landing. The briefing should be done prior the Final Approach Fix.

In the case of a tailwind landing, the briefing should include the proposed manner to compensate for the wind during the downwind landing or the proposed manner to turn into wind for the landing.

The candidate will then execute a visual descent from MDA or DH or DA and the appropriate transition to a normal landing, as briefed.

The evaluation will take in consideration, the candidate's risk management competency of conducting the transition to landing in regard of the wind direction, wind velocity and Height Velocity Diagram or Envelope.

Performance Criteria

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

- (a) brief the examiner and the first officer, in multi-crew certified helicopter, regarding the procedure to be used for the transition;
- (b) confirm the direction of traffic and adhere to all restrictions and instructions issued by ATC or the examiner;
- (c) take into consideration weather factors such as turbulence, wind shear, wind, visibility and whiteout or brownout conditions;
- (d) take action respecting NOTAMs, wake turbulence, runway surface or landing pad surface and other operational considerations;
- (e) execute a transition to a landing from the MDA or DH/DA as briefed, when the required visual references for the intended runway or landing pad are obtained;
- (f) where the clear intent is to land downwind:
 - (i) consider the actual weight of the helicopter;
 - (ii) consider the power available;
 - (iii) demonstrate an awareness of the Height Velocity Diagram or Envelope;
 - (iv) avoid situations that may result in vortex ring state;

- (v) avoid situations that may result in settling-with-power and/or over-pitching; and
 - (vi) arrive at a predetermined point at a normal hover height appropriate to the helicopter type.
- (g) where the clear intent is to complete a manoeuvring procedure for landing into wind after a downwind approach:
- (i) consider the manoeuvring capabilities of the helicopter;
 - (ii) maintain visual reference in all times;
 - (iii) demonstrate an awareness of the Height Velocity Diagram or Envelope;
 - (iv) avoid situations that may result in vortex ring state;
 - (v) avoid situations that may result in settling-with-power and/or over-pitching; and
 - (vi) arrive at a predetermined point at a normal hover height appropriate to the helicopter type.
- (h) where a circling approach is carried out:
- (i) comply with the appropriate circling approach procedure;
 - (ii) maintain speed according to Category A or COPTER
 - (iii) manoeuvre the helicopter, between the cloud ceiling and the minimum authorized circling approach altitude, by visual references to maintain a flight path that permits a normal landing on a runway not aligned with the final approach course flown;
 - (iv) perform the procedure without excessive manoeuvring (the angle of bank should not exceed 30°);
 - (v) accurately maintain the authorized minimum circling approach altitude (+as required/ -0 feet) and maintain recommended airspeed within ± 10 knots, until in a position from which a descent to a normal landing can be safely executed; and
- (i) when a missed approach is dictated during the circling approach, turn in the appropriate direction, use the appropriate airspeed and follow the missed approach procedure for the approach flown.

20. PILOT MONITOR (PM) DUTIES (MULTI-CREW OR IFR SINGLE-PILOT)

Aim

To monitor the flying pilot (PF) in accordance with the Company Operations Manual and the SOP's for a safe flight in accordance with the regulations and the helicopter operating limitations.

Description

For a multi-crew, the competency as PM will be evaluated as part of the competency check. The competency will be evaluated in accordance with the Company Operations Manual and/or SOP's.

To be able to evaluate the competency of the candidate to monitor the control actions of the flying pilot and to conduct other duties, the first officer will be flying while the candidate being assessed will assume the duties of PM.

During this part of the evaluation, the first officer will either conduct a takeoff, followed by a departure and a climb to level flight or from level flight proceed to a descent followed by an approach to a landing. During the evaluation of the candidate's competency as PM, at least one malfunction will be simulated where the candidate will have to carry out the duty of a PM while monitoring the control actions of the pilot flying (PF).

During the evaluation, in addition to the main duty of monitoring the PF and making standard calls, the PM will assist the PF in sharing the cockpit workload during normal and emergency procedures, monitor the engines and drive system for normal operation and complete the appropriate checklist.

The evaluation will focus on the most valuable resource in the cockpit, which is the other pilot and that decisions by the pilot-in-command should be made using all the information available including ideas and suggestions from both pilots.

The candidate is expected to be able to conduct the PM duties from either the right seat or the left seat.

Note: One of the factors that has contributed to a number of helicopter accidents is that the PM was busy doing something else than monitoring the PF during a critical phase of flight. During a critical phase of flight such as takeoff, departure, turn, arrival, landing, etc. the main PM duty is to monitor the control actions of the PF.

Performance Criteria

Assessment will be based on the candidate's proficiency during normal and abnormal procedures to

- (a) monitor the PF;
- (b) monitor instrumentation for normal operation;
- (c) establish two-way communications with ATC using the proper communications phraseology and techniques, when required;
- (d) assist the PF, when required;
- (e) share ideas or suggestions, when appropriate;
- (f) effectively share the cockpit workload;
- (g) maintain situational awareness as a flight crew member;
- (h) operate the various helicopter systems at the request of the PF;
- (i) complete the appropriate checklist items when required in a timely manner; and
- (j) perform or demonstrate knowledge in the use of the emergency or malfunction checklist.

21. CONFINED AREA (ALL PCC)

Aim

To safely conduct a confined area procedure in accordance with the regulations and the helicopter operating limitations.

Description

The confined area exercise begins when the pilot initiates the procedure required to land in the confined area and ends when reaching 400 feet AGL or a level altitude, if lower than 400 feet AGL, after the departure.

The candidate will execute a reconnaissance, an approach to a hover within a confined area, some manoeuvring, a landing, a takeoff, and a departure.

A rejected departure, for VFR only competency checks, should be conducted during the departure from a confined area. Depending on existing conditions and at the examiner's discretion, the rejected departure may be executed in another location that requires a similar departure. In all cases, a rejected departure will be evaluated in Item 9.

The landings and takeoffs in confined areas will be evaluated in Item 5 and the manoeuvring in hover will be evaluated in item 6.

A steep approach could be evaluated during the confined area item, if the approach is deemed to be of more than a descent angle of 13°. Sloping Ground may also be evaluated during the confined area item, if a landing is conducted on a sloping ground.

The evaluation will take into consideration, the candidate's risk management competency of conducting an approach in regard to the wind direction, wind velocity and Height Velocity Diagram or Envelope.

To simulate a maximum takeoff weight, the examiner will specified a maximum power limitation to be used during the departure from the confined area.

Performance Criteria

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

- (a) conduct a reconnaissance of the confined area:

 - (i) while maintaining an appropriate altitude and airspeed;
 - (ii) maintain coordinated flight;
 - (iii) determine that the size of the confined area is suitable;
 - (iv) determine the most appropriate direction and route of approach considering the wind direction and velocity, the surrounding terrain, obstacles and any other constraints;
 - (v) determine the most suitable landing site;
 - (vi) conduct a preliminary assessment as to whether there is sufficient power available for the intended approach;
 - (vii) selection of a suitable overshoot route, considering terrain, obstacles and wind, 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) taking into account the existing weather conditions that could restrict the visibility such as rain, snow, the sun, etc.
 - (ii) controlling direction;
 - (iii) maintaining coordinated flight;
 - (iv) maintaining a normal rate of closure;
 - (v) controlling the angle of approach;
 - (vi) controlling the rate of descent;
 - (vii) confirming, before entering the confined area, the wind direction and velocity;
 - (viii) confirming, before entering the confined area, that there is sufficient power;
 - (ix) avoiding potential situations that may result in settling with maximum-available power and/or overpitching;
 - (x) demonstrating awareness to conditions that may cause loss of tail rotor effectiveness; and
 - (xi) demonstrating an awareness of the Height Velocity Diagram or Envelope;

- (c) execute a departure by:

 - (i) determining the suitable direction and route of departure considering terrain, obstacles, wind and weather conditions;
 - (ii) ensuring that the power available is sufficient;
 - (iii) completing a crew briefing, if applicable;
 - (iv) completing the appropriate checks before and during the departure;
 - (v) avoiding unnecessarily high power demand;
 - (vi) maintaining accurate and positive helicopter control during the departure;
 - (vii) maintaining coordinated flight;
 - (viii) monitoring the helicopter instruments, to ensure all predetermined parameters are maintained;
 - (ix) departing while making appropriate corrections, as required, in regard to terrain, wind, weather conditions and aircraft performance; and

- (x) demonstrating awareness to potential situations that may result in loss of tail rotor effectiveness.

22. SLOPING GROUND (ALL PCC)

Aim

To safely land and takeoff on sloping ground in accordance with the regulations and the helicopter operating limitations.

Description

This exercise begins with the selection of a suitable area and ends when the helicopter is no longer over the sloping ground.

The sloping ground may be selected by the examiner.

This item may be carried out in conjunction with other items that require a landing and a takeoff.

Performance Criteria

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

- (a) assess the selected sloping ground to determine if a safe landing is possible;
- (b) manoeuvre while maintaining the proper spacing from obstacles and the ground;
- (c) keep the main rotor disk level, as in hover, while lowering the aircraft to the ground after the initial contact;
- (d) determine during touchdown if a complete landing is still possible;
- (e) land and take off with negligible drift or yaw;
- (f) perform an effective seating check;
- (g) keep the main rotor disk level, as in hover, while taking off until breaking contact with the ground; and
- (h) demonstrate proficiency by maintaining accurate and positive helicopter control during the manoeuvres.

23. ENGINE FAILURE IN HOVER OR HOVER TAXI (ALL PCC)

Aim

To safely land following an engine failure in accordance with the helicopter operating limitations.

Description

The examiner will choose a suitable landing site where a simulated engine failure can be conducted. From a hover or a hover taxi, the examiner will simulate an engine failure by setting the engine to idle.

On multi-engine helicopters, the engine failure will be simulated by setting one engine to idle or using the OEI training mode switch or training module that can simulate single-engine, if it is functional.

Performance Criteria

Assessment will be based on the candidate's proficiency 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;
- (f) within the operating limitations;

(g) with a smooth touchdown;

In addition for engine failure on Multi-Engine helicopters

(h) promptly recognize the simulated failure of one of the engines; and

(i) take appropriate initial vital actions, in accordance with RFM and SOP.

24. ENGINE FAILURE AFTER CDP (MULTI-ENGINE)

Aim

To safely continue a climb in forward flight following an engine failure or any other malfunction that requires flying without the assistance of one of the engines in accordance to the regulations and the helicopter operating limitations.

Description

During the departure at a speed above CDP +10 knots or MPH, the examiner will simulate an engine failure or any other malfunction that requires flying without the assistance of one of the engines. The candidate will be expected to conduct the initial vital actions and continue the departure to a climb in forward flight.

The examiner will choose a safe departure area where an engine failure could be conducted. The engine failure will be simulated at the discretion of the examiner by setting one engine to idle or using the OEI training mode switch or training module that can simulate single-engine, if it is functional.

When the competency check is conducted in a simulator, the malfunction will be introduced by the simulator operator without verbal warning.

Performance Criteria

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

(a) continue flying the helicopter;

(b) maintain coordinated flight;

(c) identify or confirm the malfunction;

(d) complete the initial actions in a timely manner;

(e) maintain the remaining engine(s) within the operating limitations;

(f) make the appropriate radio call according to the malfunction;

(g) simulate activation of ELT, if required;

(h) complete the remaining emergency or malfunction checklist, in a timely manner;

(i) consider if a restart is a viable option;

(j) advise the passenger(s) accordingly

(k) maintain the desired altitude within ± 100 feet, when a constant altitude is specified;

(l) maintain the desired airspeed within ± 10 knots;

(m) maintain the desired heading within $\pm 10^\circ$ of the specified heading; and

(n) monitor all functions of the operating engine and make necessary adjustments.

25. ENGINE FAILURE AT CRUISE WITH APPROACH AND LANDING (MULTI-ENGINE)

Aim

To safely proceed for an approach and a landing following an engine failure at cruise altitude or any other malfunctions that require flying without the assistance of one of the engines in accordance to the regulations and the helicopter operating limitations.

Description

At cruise altitude following an engine failure or any other malfunction that requires flying without the assistance of one of the engines, the candidate will be required to carry out an approach and a landing.

This item may be completed following one of the IFR approaches of Items 14 to 16.

At a safe altitude, the examiner will simulate an engine failure or a malfunction that will require simulating shutting down one of the engines. At the discretion of the examiner, the engine failure will be directly simulated by the examiner or following a malfunction that requires shutting down the engine by the candidate.

The engine failure will be simulated by setting one engine to idle or using the OEI training mode switch or training module that can simulate single-engine, if it is functional.

When the competency check is conducted in a simulator, the malfunction will be introduced by the simulator operator without verbal warning. The candidate will enter and conduct an autorotation in accordance with the RFM. The autorotation will be terminated by a landing.

Performance Criteria

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

- (a) continue flying the helicopter;
- (b) maintain coordinated flight;
- (c) identify or confirm the malfunction;
- (d) complete the initial actions in a timely manner;
- (e) maintain the remaining engine(s) within the operating limitations;
- (f) simulate activation of ELT, if required;
- (g) complete the remaining emergency or malfunction checklist, in a timely manner;
- (h) make the appropriate radio call according to the malfunction;
- (i) consider if a restart is a viable option;
- (j) advise the passenger(s) accordingly;
- (k) maintain the desired altitude within ± 100 feet, when a constant altitude is specified;
- (l) maintain the desired airspeed within ± 10 knots;
- (m) maintain the desired heading within $\pm 10^\circ$ of the specified heading;
- (n) lower the landing gear, if required; and
- (o) monitor all functions of the operating engine and make necessary adjustments.

26 - 27 AUTOROTATIONS INTO WIND AND 180° TURN (SINGLE ENGINE)

Aim

To safely enter into autorotation without excessive loss of rotor RPM and to perform a safe autorotation in accordance to the helicopter operating limitations.

Description

The candidate will be required to carry out at least two autorotations to a pre-determined area. At least one approach shall require a turn during autorotation descent through at least 180 degrees. The autorotation will terminate in a touchdown or power recovery in accordance with the Company Operations Manual.

One of the entries into autorotation may be initiated by the candidate following a simulated component failure that requires an autorotation other than an engine failure. At least one of the entries into autorotation will be following an engine failure and will be initiated by the examiner.

When an autorotation is terminated by a power recovery, the height where the flare is terminated should be similar to the height where the flare of a complete autorotation is terminated. The action of adding power during a power recovery will not be assessed, as it is neither a normal nor emergency flight manoeuvre required during a real autorotation.

The boundary of the pre-determined area will be establish prior to proceeding with the autorotation. The boundary should not be of more than 200 feet long and 100 feet wide.

A touchdown within 100 feet beyond the pre-selected touchdown zone boundary may be acceptable as a major deviation 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 and assessed "4". A touchdown on zone boundary may be acceptable as a minor deviation and assessed "3", if correct landing technique is used by the candidate.

Note: Autorotations will only be carried out on known suitable landing surfaces.

Performance Criteria

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

- (a) enter an autorotation without excessive loss of rotor RPM;
- (b) control the rotor RPM;
- (c) vary airspeed, RPM and flight profile as necessary to reach the pre-determined area;
- (d) maintain coordinated flight;
- (e) lower the landing gear, if required;
- (f) simulate activation of ELT;
- (g) complete initial actions;
- (h) make the appropriate radio call according to the malfunction;
- (i) advise the passenger(s) accordingly
- (j) attain the RFM recommended speed to conduct the flare;
- (k) flare at the height recommended for the type of helicopter under the prevailing ground, wind and weather conditions;
- (l) maintain directional control in the flare and touch down;
- (m) 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;
- (n) achieve a correct attitude for the touchdown;
- (o) land or come to a hover within the boundary of the pre-determined area; and

- (p) if conducting a power recovery, demonstrate awareness of the Height Velocity Diagram or Envelope, the danger of vortex ring, of settling with maximum-available power and /or overpitching.

28. DRIVE TRAIN FAILURE (MULTI-ENGINE)

Aim

To safely enter into autorotation following a drivetrain failure without excessive loss of rotor RPM and to perform a safe autorotation in accordance with the helicopter operating limitations.

Description

The examiner will simulate a drivetrain failure.

When the competency check is conducted in a helicopter, the examiner will verbally announce that a simulated drivetrain failure has just occurred. The item's main objective is to evaluate the candidate's competency, to enter and conduct an autorotation following a failure that has no alternative but to enter into autorotation. The candidate will enter and conduct an autorotation in accordance with the RFM. The autorotation will be terminated by a landing or a power recovery in accordance with the Company Operations Manual.

When an autorotation is terminated by a power recovery after a flare, the height where the flare is terminated should be similar to the height where the flare of a complete autorotation is terminated.

The action of adding power during a power recovery will not be assessed, as it is neither a normal nor emergency flight manoeuvre required during a real autorotation. As adding power during a power recovery will not be evaluated, this action could be conducted by the examiner.

Note 1: Autorotation will only be carried out on known suitable landing surfaces.

When the competency check is conducted in a simulator, the malfunction will be introduced by the simulator operator without verbal warning. The candidate will enter and conduct an autorotation in accordance with the RFM. The autorotation will be terminated by a landing.

Note 2: The touch down landing following an autorotation conducted in a simulator, might be unrealistic compared to the real helicopter because of programming limitations. Therefore it is incumbent upon the examiner to evaluate the candidate's performance of the last part of the autorotation in a manner as if it was conducted in a real helicopter.

The boundary of the pre-determined area will be establish prior to proceeding with the autorotation. The boundary should not be of more than 200 feet long and 100 feet wide.

Performance Criteria

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

- (a) enter into autorotation without excessive loss of rotor RPM;
- (b) control the rotor RPM;
- (c) vary airspeed, RPM and flight profile as necessary to reach the pre-determined area;
- (d) maintain coordinated flight, if the malfunction permits;
- (e) simulate activation of ELT;
- (f) complete initial actions;
- (g) make the appropriate radio call according to the malfunction;
- (h) advise the passenger(s) accordingly;
- (i) attain the RFM recommended speed to conduct the flare;
- (j) maintain directional control in the flare and touch down, if the malfunction permits;
- (k) lower the landing gear, if required;
- (l) maintain the RFM recommended speed before the flare;

- (m) flare at the height recommended for the type of helicopter under the prevailing ground, wind and weather conditions;
- (n) 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;
- (o) achieve a correct attitude for the touchdown;
- (p) land or come to a hover within the boundary of the pre-determined area; and
- (q) if conducting a power recovery, demonstrate awareness of the Height Velocity Diagram or Envelope, the danger of vortex ring, of settling with maximum-available power and /or overpitching.

29 AND 30. MALFUNCTION OR EMERGENCY PROCEDURES (ALL PCC)

Aim

To determine that the candidate will react in accordance with the RFM, Emergency Checklist for initial vital actions to emergencies or abnormal flight situations in regard to the safety of passengers, crew and to minimize aircraft damage, as much as possible.

Description

The candidate is expected to respond correctly to a simulated emergency situation or malfunction in accordance with the RFM and SOP, as appropriate to the type.

The malfunction or emergency procedure evaluated during one of those two items will be considered as a major emergency and the other as a minor emergency.

Even if is difficult to define, a major emergency is basically a malfunction that does not permit the continuation of the flight. If a malfunction can be secured and permits the continuation of the flight, it will be considered as a minor malfunction. In some cases, a minor malfunction has the potential to become a major emergency.

Where the competency check includes instrument procedures, the major simulated emergency situation or malfunction should be divided equally between the instrument and VFR portion of the competency check, as much as possible.

When conducted in a helicopter:

The examiner will initiate a simulated major emergency situation or malfunction during any portion of the competency check, when it is safe to conduct the simulation. The examiner will determine if helicopter performance, weather conditions and other factors permit the safe conduct of simulated major emergency situations or malfunctions in flight. Some major emergency situations may be impossible to be demonstrated on an aircraft, in those cases, the candidate will show knowledge of the proper procedures to follow.

When conducted in a simulator:

The simulator operator will initiate the major emergency situation or malfunction during any portion of the competency check, as directed by the examiner.

Instrument portion of competency check (human factors):

Emergency procedures may also include incapacitation or disorientation of one of the flight crewmembers. Examiners may simulate incapacitation of the first officer or simulate an unusual helicopter attitude following some type of disorientation.

The following lists some of the system malfunctions that may be assessed:

- (a) fire in flight (engine, electric, baggage compartment, etc.);
- (b) cabin smoke or fumes;
- (c) fire while on the ground;

- (d) anti-torque failure or malfunctions;
- (e) engine control malfunctions [governor or FADEC failure (overspeed or underspeed)]
- (f) hot battery;
- (g) engine, transmission, freewheeling or tail rotor chips;
- (h) fuel filter(s);
- (i) generator or alternator failure or overheat;
- (j) alternator failure;
- (k) engine hot start;
- (l) environmental systems;
- (m) inverter failure;
- (n) landing gear extension problem;
- (o) instrument malfunction or failure;
- (p) clutch malfunction;
- (q) radio and navigation equipment malfunction;
- (r) stabilization system failure;
- (s) engine or transmission low oil pressure or high temperature;
- (t) engine restart in-flight;
- (u) electrical system malfunction;
- (v) hydraulic system malfunction;
- (w) fuel system malfunction;
- (x) emergency descent;
- (y) auto-pilot malfunction or failure; and
- (z) any other system, subsystems or optional equipment installed on the helicopter.

Performance Criteria

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

- (a) continue flying the helicopter;
- (b) identify or confirm the malfunction;
- (c) demonstrate knowledge of the initial actions in a timely manner;
- (d) perform or demonstrate knowledge in the use of the emergency or malfunction checklist in a timely manner;
- (e) apply the correct procedure, if an immediate action is required;
- (f) apply the correct procedure, if a landing as soon as possible is required;
- (g) make appropriate radio calls about the situation and intentions;
- (h) simulate activation of ELT, if required;
- (i) advise the passenger(s) accordingly;
- (j) lower the landing gear, if required;
- (k) if the flight is to be continued, consider and apply any restrictions or limitations to the operation of any helicopter systems and procedures;
- (l) develop a reasonable course of action for the remainder of the flight;

In addition for human factors emergency procedures

- (m) unsure that the flight control travel are not restricted by the incapacitated pilot;
- (n) recognize unusual flight attitudes by reference to flight instruments;
- (o) apply smooth, coordinated control application in the correct sequence;
- (p) recover with minimum loss of altitude; and
- (q) following the recovery, maintain stabilized level flight using correct instruments cross-check and interpretation.