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Flight Test Guide

Instrument Rating

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FLIGHT TEST GUIDE

INSTRUMENT RATING

This flight test guide sets out the techniques, procedures and the marking criteria to be used by Transport Canada Civil Aviation Inspectors and Pilot Examiners for the conduct of the flight test required for the issuance of the Instrument Rating.

It is also intended for the use of flight test candidates, flight training units, flight instructors.

Definitions

'flight test item' means a task, manoeuvre or exercise listed on the flight test report.

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

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For more information and to download copies of this guide, visit our web site at:

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

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GENERAL

Admission to Flight Test - Initial

In order to be admitted to a flight test required for the initial issue of an Instrument Rating, and to meet the requirements of CAR Standard 421.14, the candidate will present:

- (a) photo identification;
- (b) a valid Pilot Licence;
- (c) proof that the written examination (INRAT) has been successfully completed within the previous 24 months (CAR 421.46(2)(a) – *Knowledge*);
- (d) proof that the training and experience requirements (CAR 421.46(2)(b) – *Experience*) have been met; and
- (e) a completed Application for Endorsement of a Rating (form 26-0083), including a written recommendation (Part C of 26-0083), from a qualified person, for the flight test required for the issuance of the Instrument Rating. Part C of form 26-0083, Application for Endorsement of a Rating, need not be completed for foreign pilots who hold valid instrument ratings.

Admission to Flight Test - Renewal

In order to be admitted to a flight test required for the renewal of an Instrument Rating, the candidate will present:

- (a) photo identification;
- (b) a valid Pilot Licence; and
- (c) proof of holding, or having held within the previous 24 months, a valid Canadian Instrument Rating.

Note: If the Instrument Rating has been expired for more than 24 months, the requirements for admission to an initial flight test must be met.

Admission to a Complete Re-test

For admission to a re-test following failure of a flight test for the **initial** issue of an Instrument Rating, the candidate will conform to the requirements set out in “Admission to Flight Test-Initial”.

For admission to a re-test following the failure of a flight test for a **renewal** of an Instrument Rating, the candidate will present a letter of recommendation signed by a qualified person as specified in CAR 425.21(9) stating that the candidate is considered competent to complete a flight test. If a Canadian Forces pilot or the holder of a foreign instrument rating fails an Instrument Rating flight test, Part C of 26-0083 must be completed prior to any re-test.

Admission to a Partial Flight Test

A partial flight test must be conducted within 30 days following the date of the failed complete flight test.

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

- (a) a copy of the flight test report for the previously failed flight test; and
- (b) a letter, signed by a qualified person as specified in CAR 425.21(9) stating that the candidate:
 - (i) has received further training on the failed flight test item(s);
 - (ii) is considered to have reached a sufficient level of competency to successfully complete the flight test; and
 - (iii) is recommended by the instructor or qualified person for the partial flight test.

Aircraft and Equipment Requirements

The candidate will provide:

- (a) an aircraft to be used for an Instrument Rating flight test will meet the following requirements:
 - (i) aeroplanes will be approved for IFR flight operations in the AFM/POH or AFM/POH Supplement (CAR 602.07 – *Aircraft Operating Limitations*);
 - (ii) helicopters will:
 - (a) be equipped with suitable radio and two-way intercom voice communication.
 - (b) be approved for Day or Night VFR; or
 - (c) when flown on an IFR Flight Plan, be approved for IFR flight operations in the AFM/POH or AFM/POH Supplement (CAR 602.07 – *Aircraft Operating Limitations*);
 - (iii) aircraft will be equipped in accordance with CAR 425.23 - *Training Aircraft Requirements*, subsections (1), (2) and (7) of the *Personnel Licensing Standards*. Subsection (7) refers to CAR 605.18 – *Power-driven Aircraft – IFR*;
 - (iv) where an observer’s seat is occupied by an examiner, it will:
 - (a) be equipped with a safety harness installed in accordance with the *Airworthiness Standards*;
 - (b) be located to permit an unobstructed view of the aircraft instruments, radios and navigation equipment; and
 - (c) be equipped to monitor intercom and air to ground and air to air radio communications.
- (b) if the flight test is conducted in a simulator, a Level A or higher flight simulator approved in accordance with the *Aeroplane and Rotorcraft Simulator Manual* (TP9685)
- (c) appropriate current enroute, terminal and approach charts for the area where the flight test is to occur and a current *Canada Flight Supplement*.
- (d) an effective means of excluding outside visual reference to simulate instrument flight conditions, while maintaining a safe level of visibility for the examiner or safety pilot.

Note: Helicopter operations in accordance with *Instrument Flight Rules* (IFR) are only allowed in helicopters that meet the requirements of CAR 602.07– *Aircraft Operating Limitations*. These helicopters are generally complex multi-crew, multi-engine aircraft that are not operationally practical or financially feasible for Instrument Rating training and testing. The likelihood of a newly endorsed pilot departing into IMC with an IFR certified helicopter without a more experienced pilot-in-command is very remote. Therefore, it is considered acceptable normal practice to simulate IFR flight in VMC with less complex helicopters that are restricted to VFR operations only.

Simulators

A flight test may be conducted in an Level A or higher flight simulator approved in accordance with TP 9685 — *Aeroplane and Rotorcraft Simulator Manual*.

Flight Test

A candidate who holds a valid Pilot Licence, including a valid flight crew licence or rating issued by a contracting state or a Canadian military flight crew permit, licence or rating, may exercise the privileges of an Instrument Rating for the sole purpose of the candidate's Instrument Rating flight test.

All of the required flight test items on the flight test report must be completed and the minimum pass mark for the Instrument Rating flight test of **39** (60%) must be achieved.

Flight tests are conducted when weather conditions do not present a hazard to the operation of the aircraft, the aircraft is airworthy and the candidate and aircraft's documents, as required by the *Canadian Aviation Regulations*, are valid. It is the sole responsibility of the examiner to make the final decision as to whether or not all or any portion of the flight test may be conducted. Autopilots may be used during the test but at least one of the approaches must be hand-flown.

Ground flight test items **1A** and **1B** will be assessed before the flight portion of the flight test.

Suitable air traffic services and radio navigation facilities will be available to complete the flight test.

Whenever practicable, flight tests for the Instrument Rating should be conducted in accordance with a filed IFR flight plan. The direct interaction between the candidate and ATS in an IFR controlled environment makes the test more valid.

Ground flight test items are those items or tasks performed prior to Exercise 1C.

Air flight test items are Exercise 1C and those items, tasks or manoeuvres performed following initial movement of the aircraft, including emergency procedures.

Repeated Flight Test Item

A flight test item or manoeuvre will not be repeated unless one of the following conditions applies:

- (a) **Discontinuance:** Discontinuance of a manoeuvre for valid safety reasons; i.e., a go-around or other procedure necessary to modify the originally planned manoeuvre.
- (b) **Collision Avoidance:** Examiner intervention on the flight controls to avoid another aircraft, which the candidate could not have seen due to position or other factors.
- (c) **Misunderstood Requests:** Legitimate instances when candidates did not understand an examiner's request to perform a specific manoeuvre. A candidate's failure to understand the nature of a specified manoeuvre being requested does not justify repeating an item or manoeuvre.
- (d) **Other Factors:** Any condition under which the examiner was distracted to the point that he or she could not adequately observe the candidate's performance of the manoeuvre (radio calls, traffic, etc.).

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

Incomplete Flight Test

If the test is not completed due to circumstances beyond the candidate's control, the subsequent flight test will include the flight test items not completed on the original flight test and will be completed within the 30 days of the original recommendation in an aircraft of the same Instrument Rating group.

The following process will apply:

- (a) a copy of the Flight Test Report must be given to the candidate;
- (b) the flight test may be completed at a later date;
- (c) the test may be completed by the same or another examiner;
- (d) the original recommendation remains valid;
- (e) flight test items already assessed will not be re-tested, but items already demonstrated during the initial flight, and repeated for the purpose of the second flight, may be re-assessed as "Below Standard" (1) if the candidate demonstrates unsafe or dangerous flying;
- (f) the original flight test report may be used to complete the test, or two separate reports may be submitted;
- (g) the candidate is permitted to complete additional training while awaiting completion of the test.

If the initial flight test included one failed air item, the partial flight test for that exercise may be conducted during the subsequent flight test flight, after the candidate has completed all of the required exercises, provided:

- (a) the minimum pass mark has been achieved;
- (b) no additional items were failed during the subsequent flight test; and
- (c) a letter of recommendation for the partial flight test was received prior to the flight.

Failure of a Flight Test

Failure to achieve the minimum pass mark or the failure of any flight test item constitutes failure of the flight test.

The failure of any ground item will require a complete re-test and preclude the air portion of the flight test. Ground items are not eligible for a partial flight test.

The failure of an air item will require a partial flight test on that item, and the failure of a second air item will require a complete re-test.

Where the holder of a valid instrument rating fails a flight test required for the renewal of the rating, the examiner will initiate the suspension process by drawing a line through the rating privileges on the holder's licence (both English and French) and write "Instrument Rating Suspended" followed by the examiners signature and the date. The examiner will contact the Regional Office no later than the next working day to report the failure. The Regional Office will then issue a formal notice of suspension to the candidate.

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

Partial Flight Test

Provided the applicable pass mark has been achieved and there is no more than one failed air item, the skill requirement for the issuance of the instrument rating may be met by completing a partial flight test of the item assessed “Below Standard”.

The candidate will be required to successfully perform the air item assessed as “Below Standard” on the previous complete flight test. Flight test items not associated with the failed exercise to be retested, but repeated for the purpose of the second flight, may be re-assessed as “Below Standard” if their aim is not achieved, or unsafe or dangerous flying are demonstrated.

The partial flight test will be completed within 30 days of the original complete flight test in an aircraft of the same instrument rating group. No more than one partial flight test will be allowed for each complete flight test.

Complete Re-Test

A complete re-test will be required in the following situations:

- (a) the required pass mark is not obtained during a complete flight test;
- (b) failure of any ground item;
- (c) failure of more than one air item during a complete flight test;
- (d) failure of a flight test item during a partial flight test;
- (e) dangerous flying;
- (f) a demonstrated pattern of failing to use proper visual scanning techniques is displayed during the visual flight portions of the flight test; or
- (g) a partial flight test is not completed within 30 days of the original complete flight test.

Instrument Rating Groups

The group of instrument rating issued must correspond to the aircraft or simulator type used for the instrument rating flight test.

Subject to the privileges of the candidate's licence, an instrument rating may be issued valid for:

Group 1 (all aeroplanes) if the flight test was conducted in a multi-engine aeroplane other than a center-thrust multi-engine aeroplane;

Group 2 (all center-thrust multi-engine and single engine aeroplanes) if the flight test was conducted in a center-thrust multi-engine aeroplane;

Group 3 (all single engine aeroplanes) if the flight test was conducted in a single engine aeroplane; or

Group 4 (all helicopters) if the flight test was conducted in a helicopter.

Validity Periods

An instrument rating is valid for 24 months from the first day of the month following a flight test subject to currency provisions. If a flight test for renewal of an instrument rating is passed within 90 days prior to its expiry, the renewed rating will be valid to the same date as if the test was done immediately prior to the expiry date.

Examiners are authorized to endorse pilot licences with instrument rating privileges. These endorsements are valid for 90 days from the date of the endorsement or until a new updated licence is issued.

Pre-Test Briefing

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

- (a) **The sequence of test items to be covered.** There is no need for the candidate to memorize the sequence, as the examiner will give instructions for each item.
- (b) **If in doubt -- ask!** Candidates who do not clearly understand what they are being asked to do should feel free to ask. It may be that the examiner wasn't clear in giving instructions.
- (c) **Who is pilot-in-command?** The pilot-in-command should be the flight test candidate and, if the examiner is a Transport Canada employee, it will always be the flight test candidate.
- (d) **Who will do what in the event of an actual emergency?** A briefing by the candidate should detail the actions to be taken by the candidate and examiner in the event of an actual emergency.
- (e) **How to transfer control.** There should never be any doubt as to who is flying the aircraft so proper transfer of control through the words "You have control" and "I have control" is expected during a flight test. A visual check is recommended to verify that the exchange has occurred.
- (f) **Method of simulating emergencies.** What method will be used? Verbal? Simulated zero thrust setting? For Groups 1, 2 and 4 rating, engine failures will only be simulated in accordance with the manufacturer's recommendations, or in their absence by closing the throttle or by reducing power to flight idle. No simulated engine failure will be initiated below 500 feet AGL. In the case of a multi-engine aircraft, care must be exercised to stay within normal operating limits when simulating an engine failure.

Note: The practice of closing fuel valves, shutting off magneto switches or pulling circuit breakers will not be used during a flight test.

Flight Management

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

Problem Solving and Decision Making

- (a) anticipates problems far enough in advance to avoid crisis reaction
- (b) uses effective decision-making process
- (c) makes appropriate inquiries
- (d) prioritizes tasks to gain maximum information input for decisions
- (e) makes effective use of all available resources to make decisions
- (f) considers “downstream” consequences of the decision being considered

Situational Awareness

- (a) actively monitors weather, aircraft systems, instruments, ATC communications
- (b) avoids “tunnel vision” - awareness that factors such as stress can reduce vigilance
- (c) stays “ahead of the aircraft” in preparing for expected or contingency situations
- (d) remains alert to detect subtle changes in the environment

Communication

- (a) provides thorough briefings
- (b) asks for information and advice
- (c) communicates decisions clearly
- (d) asserts one’s position appropriately (Multi-crew)

Workload Management

- (a) organizes cockpit resources well
- (b) recognizes overload in self
- (c) eliminates distractions during high workload situations
- (d) maintains ability to adapt during high workload situations

Airmanship

The candidate’s airmanship will be assessed along with other factors in determining the mark awarded for each item. Items such as looking out for other aircraft, use of checklists, consideration for other aircraft on the ground and in the air, choice of run-up areas and choice of runways will be assessed. The candidate will be expected to demonstrate good airmanship and complete accurate checks on a continuing basis.

Flight Test Results

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

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

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

Assessment of Flight Test Performance

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

Where variances exist between the owner/operator's published Standard Operating Procedures (SOP) and the manufacturer's recommendations, the candidate should follow the SOP and be able to explain the logic for significant variances.

Throughout the flight test, the candidate is evaluated on the use of an appropriate checklist. Proper use is dependent on the specific task being evaluated. The situation may be such that the use of the written checklist, while accomplishing the elements of an "*Aim*", would be either unsafe or impractical. In this case, a review of the checklist after the elements have been accomplished would be appropriate. Division of attention and proper visual scanning should be considered when using a checklist.

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

4-Point Marking Scale

Single Pilot Flight Test or Pilot Proficiency Check

When applying the 4-point scale, award the mark that best describes the weakest element(s) applicable to the candidate's performance. Remarks to support mark awards of 1 or 2 must link to a safety issue, a qualification standard (*performance criteria*), or an approved technique or procedure.

4. Above Standard	Performance remains well within the qualification standards and flight management skills are excellent.	<p>Performance is ideal under existing conditions.</p> <p>Aircraft handling is smooth and precise.</p> <p>Technical skills and knowledge exceed the required level of competency.</p> <p>Behaviour indicates continuous and highly accurate situational awareness.</p> <p>Flight management skills are excellent.</p> <p>Safety of flight is assured. Risk is well mitigated.</p>
3. Standard	Minor deviations occur from the qualification standards and performance remains within prescribed limits.	<p>Performance meets the recognised standard yet may include deviations that do not detract from the overall performance.</p> <p>Aircraft handling is positive and within specified limits.</p> <p>Technical skills and knowledge meet the required level of competency.</p> <p>Behaviour indicates that situational awareness is maintained.</p> <p>Flight management skills are effective.</p> <p>Safety of flight is maintained. Risk is acceptably mitigated.</p>
2. Basic Standard	Major deviations from the qualification standards occur, which may include momentary excursions beyond prescribed limits but these are recognized and corrected in a timely manner.	<p>Performance includes deviations that detract from the overall performance, but are recognized and corrected within an acceptable time frame.</p> <p>Aircraft handling is performed with limited proficiency and/or includes momentary deviations from specified limits.</p> <p>Technical skills and knowledge reveal limited technical proficiency and/or depth of knowledge.</p> <p>Behaviour indicates lapses in situational awareness that are identified and corrected.</p> <p>Flight management skills are effective but slightly below standard.</p> <p>Safety of flight is not compromised. Risk is poorly mitigated.</p>
1. Below Standard	Unacceptable deviations from the qualification standards occur, which may include excursions beyond prescribed limits that are not recognized or corrected in a timely manner.	<p>Performance includes deviations that adversely affect the overall performance, are repeated, have excessive amplitude, or for which recognition and correction are excessively slow or nonexistent, or the aim of the task was not achieved.</p> <p>Aircraft handling is rough or includes uncorrected or excessive deviations from specified limits.</p> <p>Technical skills and knowledge reveal <u>unacceptable</u> levels of technical proficiency and/or depth of knowledge.</p> <p>Behaviour indicates lapses in situational awareness that are <u>not</u> identified or corrected.</p> <p>Flight management skills are ineffective.</p> <p>Safety of flight is compromised. Risk is unacceptably mitigated.</p>

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FLIGHT TEST EXERCISES

1. Pre-flight

1. A. Obtaining Weather Information

Aim

To determine the ability of the candidate to retrieve and interpret aviation weather information necessary for the safe conduct of the flight in accordance with the Instrument Flight Rules.

Description

The candidate will retrieve and interpret aviation weather information for the route of flight assigned for the flight test.

Performance Criteria

Assessment will be based on the candidate's ability to retrieve and interpret items such as:

- (a) weather reports and forecasts;
- (b) pilot and radar reports;
- (c) surface analysis charts;
- (d) significant weather prognostics;
- (e) winds and temperatures aloft;
- (f) freezing level charts; and
- (g) SIGMETs

1. B. Flight Planning

Aim

To determine the ability of the candidate to plan a flight conforming to the Instrument Flight Rules.

Description

The candidate will plan a flight to a given destination. The candidate will prepare a flight log, weight and balance calculations and an IFR flight plan.

Performance Criteria

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

- (a) select an appropriate route, altitude and alternate;
- (b) locate and apply information essential to the flight;
- (c) obtain and correctly interpret applicable NOTAM information;
- (d) 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;
- (e) calculate the aircraft weight and balance for the planned flight;
- (f) determine that the required performance for the planned flight is within the aircraft's capability and operating limitations;
- (g) make a competent "GO/NO-GO" decision based on available information for the planned flight;
- (h) complete a flight plan in a manner that reflects the conditions of the proposed flight; and
- (i) demonstrate sufficient knowledge of the regulatory requirements relating to instrument flying.

1. C. Cockpit Checks

Aim

To determine the ability of the candidate to complete the cockpit checks necessary for a safe flight under Instrument Flight Rules (IFR), including checks of aircraft systems related to IFR operations.

Description

The candidate will complete all checks necessary for an IFR flight in accordance with published SOPs or POH/AFM.

Performance Criteria

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

- (a) perform the pre-flight instrument, avionics and navigation equipment cockpit checks;
- (b) determine that the aircraft is properly equipped and serviceable for safe instrument flight;
- (c) take appropriate action with respect to unsatisfactory conditions identified; and
- (d) complete checks applicable to anti-icing, de-icing or ice warning systems.

2. IFR Operational Knowledge

Aim

To determine that the candidate has sufficient operational knowledge of IFR procedures to safely conduct the assigned flight under Instrument Flight Rules.

Description

The candidate will demonstrate a practical operational knowledge of IFR procedures by responding to a brief series of oral questions posed by the examiner.

Performance Criteria

Assessment will be based on the candidate's ability to demonstrate sufficient practical operational knowledge of IFR procedures to ensure a safe flight.

3. Air Traffic Control Clearances

Aim

To determine the ability of the candidate to obtain and read back clearances.

Description

Based on actual or simulated clearances, the candidate will obtain and read back clearances throughout the flight.

Performance Criteria

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

- (a) establish two-way communications with the proper controlling agency/ radio station, using proper phraseology;
- (b) obtain and read back clearances received; and
- (c) when necessary, request clarification, verification or change, if unable to comply.

4. Departure

Aim

To determine the ability of the candidate to comply with departure procedures as cleared.

Description

The candidate will complete the departure procedures and establish the aircraft on the enroute course, as cleared, in accordance with the Instrument Flight Rules. The candidate will control the aircraft solely with reference to flight instruments.

Performance Criteria

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

- (a) select and use the appropriate communications frequencies;
- (b) select and identify the navigation aids associated with the proposed departure phase;
- (c) perform the aircraft 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) maintain proper aircraft control and flight within operating limitations;
- (g) maintain assigned headings (± 10 degrees);
- (h) maintain assigned tracks and bearings (± 10 degrees); and
- (i) maintain altitude (± 100 feet).

5. Enroute

Aim

To determine the ability of the candidate to comply with enroute procedures as cleared.

Description

The candidate will maintain the aircraft on the enroute course and comply with enroute procedures, as cleared, in accordance with the Instrument Flight Rules. The candidate will control the aircraft solely with reference to flight instruments.

Performance Criteria

Assessment will be based on the candidate's ability 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 aircraft 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 aircraft control and flight within operating limitations;
- (g) maintain assigned headings (± 10 degrees);
- (h) maintain assigned tracks and bearings (± 10 degrees); and
- (i) maintain altitude (± 100 feet).

6. Arrival

Aim

To determine the ability of the candidate to comply with arrival procedures as cleared.

Description

The candidate will complete the arrival procedures, as cleared, in accordance with the Instrument Flight Rules. The candidate will control the aircraft solely with reference to flight instruments.

Performance Criteria

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

- (a) select and use the appropriate communications frequencies;
- (b) select and identify the navigation aids associated with the proposed arrival phase;
- (c) perform the aircraft 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) correctly adhere to the arrival procedures;
- (f) maintain proper aircraft control and flight within operating limitations;
- (g) maintain assigned headings (± 10 degrees);
- (h) maintain assigned tracks and bearings (± 10 degrees); and
- (i) maintain altitude (± 100 feet).

7. Holding

Aim

To determine the ability of the candidate to establish the aircraft in a holding pattern in accordance with an actual or simulated ATC clearance.

Description

Based on an actual or simulated clearance, the candidate will select a suitable entry procedure, enter the hold and establish the aircraft in the holding pattern. The candidate will control the aircraft solely with reference to flight instruments.

Performance Criteria

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

- (a) recognize arrival at the holding fix and initiate entry into the holding pattern;
- (b) use a suitable entry procedure as specified in the Instrument Procedures Manual;
- (c) report entering the hold;
- (d) use the proper timing criteria, where applicable;
- (e) comply with leg lengths when a DME distance is specified;
- (f) assess and use proper wind correction procedures;
- (g) maintain the designated track or course (± 10 degrees) or within $\frac{1}{2}$ scale deflection of the course deviation indicator, as applicable;
- (h) maintain declared airspeed (± 10 knots);
- (i) maintain altitude (± 100 feet); and
- (j) maintain proper aircraft control and flight within operating limitations.

8. Approaches

The candidate will perform 2 of the following types of approaches. Except where limited by aircraft equipment or lack of approach facilities, these approaches will be done on different types of facilities. On an initial Instrument Rating flight test, a precision approach is mandatory. One approach should be demonstrated with a simulated failed engine for Groups 1, 2 instrument rating qualifications and for Group 4 qualification, if conducted on a multi-engine helicopter.

When aerodrome temperatures are 0°C or colder, altitude corrections will be applied to all minimum altitudes depicted on the approach chart used. Refer: CAP – General Pages.

8. A. VOR/ LOC/ LOC BC Instrument Approach

Aim

To determine the ability of the candidate to fly a successful VOR/ LOC/ LOC BC approach.

Description

After transitioning to the approach facility, the candidate will fly the approach without descending below the applicable minimum altitudes depicted on the approach chart. The candidate will control the aircraft solely with reference to flight instruments.

Performance Criteria

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

- (a) select and comply with the VOR/ LOC/ LOC BC instrument approach procedure to be performed;
- (b) select, tune, identify and confirm the operational status of ground and aircraft navigation equipment to be used for the approach procedure;
- (c) establish the appropriate aircraft configuration and airspeed and complete the aircraft check list items for each phase of flight;
- (d) prior to final approach course, maintain declared altitudes (± 100 feet) without descending below applicable minimum altitudes and maintain headings (± 10 degrees);
- (e) on the intermediate and final segments of the final approach course:
 - (i) maintain VOR/ LOC/ LOC BC tracking within $\frac{1}{2}$ scale deflection of the course deviation indicator;
 - (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 Minimum Descent Altitude (MDA) and track to the Missed Approach Point (MAP) or to the recommended minimum visibility that would permit completion of the visual portion of the approach with minimal manoeuvring;
- (f) maintain declared approach airspeeds (+10/-5 knots);
- (g) initiate the missed approach procedure, if the required visual references for the intended runway are not obtained at the MAP.

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 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.

8. B. NDB Instrument Approach

Aim

To determine the ability of the candidate to fly a successful NDB approach.

Description

After transitioning to the approach facility, the candidate will intercept the specified final approach course not descending below the minimum altitudes depicted on the approach chart. The candidate will control the aircraft solely with reference to flight instruments.

Performance Criteria

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

- (a) select and comply with the NDB instrument approach procedure to be performed;
- (b) select, tune, identify, confirm and monitor the operational status of ground and aircraft navigation equipment to be used for the approach procedure;
- (c) establish the appropriate aircraft configuration and airspeed and complete the aircraft check list items for each phase of flight;
- (d) prior to final approach course, maintain declared altitudes (± 100 feet) without descending below applicable minimum altitudes and maintain headings (± 10 degrees);
- (e) on the intermediate and final segments of the final approach course:
 - (i) maintain tracking within 5 degrees of the designated track;
 - (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 Minimum Descent Altitude (MDA) and track to the Missed Approach Point (MAP) or to the recommended minimum visibility that would permit completion of the visual portion of the approach with minimal manoeuvring;
- (f) maintain the declared approach airspeeds (+10/-5 knots); and
- (g) initiate the missed approach procedure, if the required visual references for the intended runway are not obtained at the MAP.

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 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.

8. C. ILS Instrument Approach

Aim

To determine the ability of the candidate to fly a successful ILS approach.

Description

After transitioning to the approach facility, the candidate will intercept the localizer and glideslope, then, descend to the decision height (DH) as specified on the approach chart. The candidate will control the aircraft solely with reference to flight instruments.

Performance Criteria

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

- (a) select and comply with the ILS instrument approach procedure to be performed;
- (b) select, tune, identify and confirm the operational status of ground and aircraft navigation equipment to be used for the approach procedure;
- (c) establish the appropriate aircraft configuration and airspeed and complete the aircraft check list items for each phase of flight;
- (d) prior to final approach course, maintain declared or assigned altitudes (± 100 feet) without descending below applicable minimum altitudes and maintain headings (± 10 degrees);
- (e) on final approach course, allow no more than $\frac{1}{2}$ scale deflection of the localizer and/or glideslope indications;
- (f) maintain declared approach airspeeds (+10/-5 knots);
- (g) descend to the Decision Height (DH) to permit completion of the visual portion of the approach and landing with minimal manoeuvring; and
- (h) initiate the missed approach procedure, upon reaching the DH, when the required visual references for the intended runway are not obtained.

8. D. GPS/ RNAV Instrument Approach

Aim

To determine the ability of the candidate to fly a successful GPS/ RNAV approach.

Description

The candidate will intercept the specified final approach course without descending below the minimum altitudes depicted on the approach chart. The candidate will control the aircraft solely with reference to flight instruments.

Performance Criteria

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

- (a) select and comply with the GPS instrument approach procedure to be performed;
- (b) retrieve the GPS approach from the database;
- (c) verify the approach waypoints used for the approach procedure;
- (d) establish the appropriate aircraft configuration and airspeed and complete the aircraft check list items for each phase of flight;
- (e) prior to final approach course, maintain declared altitudes (± 100 feet) without descending below applicable minimum altitudes and maintain headings (± 10 degrees);
- (f) take appropriate action in the event that a RAIM alert is displayed when the aircraft is established on the final approach course;
- (g) on the intermediate and final segments of the final approach course:
 - (i) maintain GPS 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;
 - (iv) descend to and accurately maintain the Minimum Descent Altitude (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 minimal manoeuvring;
- (h) maintain the declared approach airspeeds (+10/-5 knots); and
- (i) initiate the missed approach procedure when the required visual references for the intended runway are not obtained at the MAWP.

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 MDA at a distance from the MAWP 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.

9. Missed Approach

Aim

To determine the ability of the candidate to carry out a missed approach.

Description

Following a VOR, LOC, LOC BC, NDB, GPS/RNAV or ILS approach, the candidate will carry out a missed approach. The candidate will control the aircraft solely with reference to flight instruments.

Performance Criteria

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

- (a) promptly initiate the missed approach;
- (b) report beginning the missed approach procedure;
- (c) comply with the published missed approach procedure or an alternate procedure assigned by ATC;
- (d) notify ATC anytime aircraft performance is insufficient to comply with a clearance, restriction, or climb gradient;
- (e) follow the check list items appropriate to the go-around procedure;
- (f) request another approach clearance, a clearance to an alternate airport/clearance limit or as directed by the examiner;
- (g) maintain recommended airspeeds (+10/-5 knots);
- (h) maintain heading, track or bearing (± 10 degrees); and
- (i) climb to and maintain the published missed approach altitude, or as cleared by ATC or the examiner (± 100 feet).

10. Transition to Landing

Aim

To determine the ability of the candidate to carry out a visual descent to landing from an approach MDA or DA; or, if required within the conduct of the approach, complete a successful circling approach.

Description

The candidate will carry out a visual descent and landing from an approach MDA or DA without excessive manoeuvring; and/or, after completion of an instrument approach to circling minima, carry out a circling approach to landing.

Performance Criteria

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

- (a) execute a landing from an approach MDA or DA when the required visual references for the intended runway are obtained;
- (b) take action respecting NOTAMs, wake turbulence, runway surface, braking conditions and other operational considerations; and/or
- (c) select and comply with the appropriate circling approach procedure considering the manoeuvring capabilities of the aircraft;
- (d) take into consideration weather factors such as turbulence, wind shear, wind and visibility;
- (e) confirm the direction of traffic and adhere to all restrictions and instructions issued by ATC or the examiner; and
- (f) stay within the visibility criteria and not descend below circling MDA until positioned for a safe descent to a normal landing.

11. Emergency Procedures

Note: The examiner will test the candidate on three emergency procedures or system malfunctions. At least one engine failure exercise will be tested for the Group 1, Group 2 and Group 4 (Multi) Instrument Rating qualifications.

11. A. Engine Failure

Aim

To determine the ability of the candidate to maintain control of the aircraft, carry out the appropriate engine failure drill after an engine failure on a multi-engine aircraft during any phase of flight.

Description

The candidate will identify the failed engine and simulate shutting down the failed engine, complete the engine failure check list drill and, if inbound, execute an approach with asymmetric thrust during an Ex. 8 approach to a safe landing. The candidate will control the aircraft solely with reference to flight instruments.

Performance Criteria

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

- (a) recognize an engine failure or the need to shut down an engine as simulated by the examiner;
- (b) maintain control of the aircraft and adhere to the engine inoperative operating limitations for the aircraft;
- (c) set all engine controls, reduce drag, and identify and verify the inoperative engine;
- (d) establish the best engine inoperative airspeed as appropriate to the aircraft and trim the aircraft;
- (e) verify the completion of prescribed check list procedures for securing the inoperative engine, if necessary;
- (f) maintain, where applicable, the specified altitude (± 100 feet) and desired heading (± 10 degrees);
- (g) establish and maintain the recommended flight attitude and configuration for the best performance for all manoeuvring necessary for the phase of flight; and
- (h) monitor all functions of the operating engine and make necessary adjustments.

11. B. C. D. Systems Malfunctions and Emergency Procedures

Aim

To determine the ability of the candidate to complete recommended checks and procedures in accordance with the POH, AFM, or other applicable publications in event of system malfunctions or other emergency situations.

Description

The candidate will complete the recommended checks and procedures based on simulated malfunctions or other simulated emergency situations initiated by the examiner.

These situations will be applicable to the aircraft being used for the test. These items may be tested on the ground or in flight, however; at least one exercise will be tested in flight. Nevertheless, the examiner will determine if aircraft performance, weather conditions and other factors permit the safe conduct of the items in flight.

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

- (a) electrical system;
- (b) hydraulic system;
- (c) a mechanical system;
- (d) vacuum system;
- (e) heating and ventilation systems; and
- (f) radio and navigation equipment

Performance Criteria

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

- (a) promptly identify the malfunction;
- (b) promptly apply correct checks and procedures in accordance with the POH/AFM, or other approved publication;
- (c) consider and apply any restrictions or limitations to the operation of a system(s) and procedures in order to continue the flight; and
- (d) develop a reasonable course of action for the remainder of the flight.

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