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FLIGHT TEST GUIDE

Commercial Pilot Licence

AEROPLANE

Second Edition

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FLIGHT TEST GUIDE

COMMERCIAL PILOT LICENCE

AEROPLANE

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

Flight instructors are expected to use this guide when preparing candidates for flight tests. Candidates should be familiar with this guide and refer to the qualification standards during their training.

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

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.

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

For more information, visit our web site at:

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

Également disponible en français

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- Form 2: Recommendation for Partial Flight Test - Commercial Pilot Licence

GENERAL

Admission to the Flight Test

For admission to a flight test required for the issuance of a Commercial Pilot Licence – Aeroplane, or a complete re-test, and to meet the requirements of CAR Standard 421.14, the candidate will present:

- (a) photo identification;
- (b) a valid permit, licence or foreign pilot licence issued by a contracting state;
- (c) proof of meeting the medical standards for the Commercial Pilot Licence,
- (d) a letter from a qualified flight instructor certifying that:
 - (i) the instructor has personally completed a pre-flight test evaluation with the candidate;
 - (ii) the candidate is considered to have reached a sufficient level of competency to complete the flight test for the issuance of the Commercial Pilot Licence,
 - (iii) the instructor recommends the candidate for the flight test.
- (e) evidence of having completed:
 - (i) no less than 150 hours flight time, or
 - (ii) in the case of a candidate enrolled in a CPL(A) or CPL(A)/IR integrated program, no less than 140 hours flight time.

Note: It is recommended that the candidate have successfully completed the required written examination and have satisfactory knowledge of the subject area(s) in which a weakness was indicated by the *Written Examination Results and Feedback Report*.

Admission to a Partial Flight Test

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 meet the requirements of paragraphs (a), (b) and (c) above, and present:

- (a) a copy of the flight test report for the previously failed flight test; and
- (b) a letter, signed by the holder of a valid Flight Instructor Rating – Aeroplane who conducted the additional training, certifying 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 for the partial flight test.

Letters of Recommendation

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

Aircraft and Equipment Requirements:

The candidate will provide:

- (a) an aeroplane for the flight test that:
 - (i) has a flight authority pursuant to CAR 507 and that authority has no operating limitations that prohibit the performance of the required manoeuvres, including intentional spins;
 - (ii) meets the requirements of CAR Standard 425.23 Training Aircraft Requirements - subsections (1), (2), (3) and (4) of the *Personnel Licensing Standards*.
- (b) appropriate current aeronautical charts and *Canada Flight Supplement*.
- (c) an effective means of excluding outside visual reference to simulate instrument flight conditions, while maintaining a safe level of visibility for the examiner.

Note: More than one aeroplane may be provided to satisfy the requirements of the flight test, if evidence of having received instruction on each type of aeroplane is presented.

Flight Test

All of the flight test items required by the flight test report and described in this guide must be completed and the minimum pass mark for the Commercial Pilot Licence of 93 (70%) (81 for Integrated CPL(A)) must be achieved.

All flight tests will be 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 any portion or all of the flight test may be conducted.

Where a second aeroplane is used to demonstrate Exercise 13 - Spinning, flight test items already demonstrated during the initial flight, but repeated for the purpose of the second flight, may be reassessed as "Below Standard" (fail) if their aim is not achieved or safety is compromised.

Ground flight test items are those exercises or tasks performed prior to the pre-flight inspection of the aircraft.

Air flight test items are those exercises, tasks or manoeuvres performed with the aircraft, including the pre-flight inspection, start-up, run-up, taxiing and emergency procedures.

Items **2A to 2C and 23A** are ground flight test items and will be assessed before the air portion of the flight test.

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

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

Incomplete Flight Test

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

The following process will apply:

- (a) a copy of the flight test report must be given to the candidate;
- (b) the flight test may be completed at a later date;
- (c) the test may be completed by the same or another examiner;
- (d) the original letter of recommendation remains valid;
- (e) flight test items already assessed will not be re-tested, but items already demonstrated during the initial flight, and repeated for the purpose of the second flight, may be re-assessed as "Below Standard" (1) if the candidate displays unsafe or dangerous flying;
- (f) the original flight test report form may be used to complete the test, or two separate forms 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 or two failed air items, the partial flight test for these items may be conducted during the subsequent flight test flight, after the candidate has completed all of the required items, provided:

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

Failure of a Flight Test

Failure to obtain the minimum pass mark or the failure of any flight test item constitutes failure of the flight test. The failure of any ground item requires a complete re-test and precludes the air portion of the flight test. Ground items are not eligible for a partial flight test. The failure of one or two air items will require a partial flight test on those items, and the failure of a third air item will require a complete re-test.

The examiner will stop a test, assess it "Below Standard", and a complete re-test will be required if the candidate compromises safety by:

- (a) displaying unsafe or dangerous flying; or
- (b) demonstrating a pattern of failing to use proper visual scanning techniques to check for traffic before and while performing visual manoeuvres.

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

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

Partial Flight Test

Provided that the applicable pass mark has been achieved and there are no more than two failed air flight test items, the skill requirement for licence issue may be met by completing a partial flight test of the item or items assessed “Below Standard”.

The candidate will be required to successfully perform the air item(s) assessed as “Below Standard” on the complete flight test. Flight test items not associated with the item(s) 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 safety is compromised.

The partial flight test must be completed within 30 days of the original complete flight test. No more than one partial re-test will be allowed for each complete flight test.

Use of Flight Simulator or Flight Training Device

For a partial flight test, and at the discretion of the examiner, a flight training device (min. Level 2) approved in accordance with CAR 606.03, Synthetic Flight Training Equipment, may be used to re-test Exercise 24D, Radio Navigation. A Level 3, 5 or 6 flight training device that reproduces the aeroplane type used for the failed flight test may be used to re-test Exercise 29, Emergency Procedures.

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 two air items during a complete flight test;
- (d) failure of an air 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 flight test; or
- (g) a partial flight test is not completed within 30 days of the original complete flight test.

Note: The candidate should not show or submit a copy of the previously failed flight test report to the examiner.

Pre-Test Briefing

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

- (a) **The sequence of flight test items.** There is no need for the candidate to memorize this sequence, as the examiner will give instructions for each item.
- (b) **If in doubt - Ask!** Candidates who do not clearly understand what they are being asked to do should feel free to ask. It may be that the examiner was not clear in giving instructions.
- (c) **Who is pilot-in-command?** The 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 using phrases such as “You have control” and “I have control” is expected during a flight test. A visual check is recommended to verify that the exchange has occurred.
- (f) **Ground References.** Intended touchdown zones and specific touchdown points. For the short or soft field approach and landing, the examiner will clearly specify the simulated surface conditions, obstacles on approach, runway threshold and length of surface available to the candidate.
- (g) **Method of simulating emergencies.** What method will be used? Verbal? 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. The moving of the mixture control to idle cut-off will only be used where specifically recommended by the manufacturer.

Note: The practice of closing a fuel valve, shutting off magneto switches or the pulling of 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

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, choice of runways and clearing the engine during prolonged glides 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 the 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 may 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 exercise 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. The recommended climb and approach to landing airspeeds may be corrected for actual weights as depicted in available POH/AFM performance charts or tables, or, in their absence, in accordance with *Airworthiness Manual* Chapter 523 section 523.63 *Climb, General* or section 523.73 *Reference Landing Approach Speed*.

Throughout the flight test, the candidate is evaluated on the use of an appropriate checklist. Division of attention and proper visual scanning should be considered when using a 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. It is acceptable for certain items to be verified from memory.

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

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, 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

EX. 2 AEROPLANE FAMILIARIZATION AND PREPARATION FOR FLIGHT

A. Documents and Airworthiness

Aim

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

Description

The candidate will determine the validity of all documents required on board the aeroplane and determine that required maintenance certifications have been completed.

Performance Criteria

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

- (a) ensure that flight authorization is confirmed and encompasses the requirements of the proposed flight in accordance with the applicable operational control system;
- (b) determine if the required documents on board are valid;
- (c) determine if the maintenance release ensures aeroplane serviceability and currency of inspection for the proposed period of flight;
- (d) determine the remaining number of flying hours before the next service or maintenance task;
- (e) ensure that any conditions or limitations on the maintenance release can be complied with;
- (f) determine the impact of deferred defects on aeroplane operations for the proposed flight;
- (g) explain the process for dealing with aeroplane unserviceabilities discovered during a flight.

B. Aeroplane Performance

Aim

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

Description

The candidate will be required to explain and state approved operating procedures, performance capabilities and limitations of the aeroplane to be used on the flight test. The candidate will quote from memory certain performance airspeeds and demonstrate a practical operational knowledge of those speeds. Other aeroplane performance data, such as static take-off power RPM, may be determined using the POH/AFM.

Performance Criteria

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

- (a) state from memory the following:
 - (i) the best angle of climb speed;
 - (ii) the best rate of climb speed;
 - (iii) manoeuvring speed;

- (b) calculate for the proposed flight test flight:
- (i) take-off distance required to clear a 50 foot or existing obstacle;
 - (ii) landing distance required to clear a 50 foot or existing obstacle;
 - (iii) the power setting proposed for the planned enroute cruising flight (percentage, manifold pressure and RPM) and the expected cruise speed in KTAS;
 - (iv) the available flight time with the fuel load and power settings proposed for the navigation flight;
 - (v) the final approach speed corrected for the predicted landing weight using available charts or tables for weights that are less than maximum take-off weight or, in their absence 1.3 V_{so} KIAS using the following formula:

Note: $1.3 V_{so} \text{ KCAS (max. gross wt.)} \times \sqrt{\frac{\text{Landing Wt.}}{\text{Gross Wt.}}} = 1.3 V_{so} \text{ KCAS (predicted landing weight)}$

Convert KIAS to and from KCAS by using the POH/AFM airspeed calibration chart. Applying the formula to *indicated airspeeds* (KIAS) will result in a speed that is too slow.

C. Weight and Balance, Loading

Aim

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

Description

The candidate will be required, using actual weights, to apply the approved weight and balance data and complete accurate computations for an assigned practical load requirement that addresses all or most of the passenger and baggage stations applicable to the aeroplane to be used in the test, including take-off weight, landing weight and the zero fuel (no fuel) weight. If a loading graph or computer is available with the aeroplane, it may be utilized.

Knowledge of weight and balance graphs and envelopes, and the effect of various centre of gravity locations on the aeroplane flight characteristics will be demonstrated. Practical knowledge of how to correct a situation in which the centre of gravity is out of limits or in which the gross weight has been exceeded as well as the ability to amend a calculation will be demonstrated.

Performance Criteria

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

- (a) determine if the take-off, landing and zero-fuel weights, as well as the computed centre of gravity and the lateral fuel balance are within permissible limits;
- (b) demonstrate practical knowledge of how to correct a situation in which the centre of gravity is out of limits and/or in which the gross weight is exceeded.
- (c) explain the effect of various centre of gravity locations on aeroplane flight characteristics.

D. Pre-Flight Inspection (Air Item)

Aim

To determine that the candidate can complete internal and external checks in accordance with the POH/AFM and demonstrate practical knowledge of the aircraft.

Description

The candidate will determine that the aeroplane is in a safe condition for the intended flight.

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

After the candidate has completed the pre-flight inspection, questions relating to the flight test aircraft will be asked. The candidate should be able to explain what appropriate action would be taken if an unsatisfactory item were detected or described by the examiner during the pre-flight inspection. The candidate should demonstrate knowledge of the consequences if such items were undetected.

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

Note: The external and internal checks must at least cover all of the items specified by the manufacturer.

Performance Criteria

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

- (a) use an orderly procedure to inspect the aeroplane including at least those items listed by the manufacturer or aeroplane owner;
- (b) identify and verify switches, circuit breakers/fuses;
- (c) confirm that there is sufficient fuel and oil for the intended flight;
- (d) describe the appropriate action to take for any unsatisfactory item, detected or described by the examiner;
- (e) verify the location and security of baggage and required equipment;
- (f) organize and arrange material and equipment in a manner that makes the items readily available;
- (g) perform an effective passenger safety briefing that will include:
 - (i) use of seat belts
 - (ii) the location and use of emergency exits
 - (iii) emergency locator transmitter, fire extinguisher
 - (iv) passenger considerations for aircraft evacuation;
 - (v) action to take in the event of an emergency landing
 - (vi) smoking limitations
 - (vii) items specific to the aeroplane type being used
 - (viii) other items for use in an emergency.

E. Engine Starting and Run-up, Use of Checklists

Aim

To determine that the candidate can complete engine start, warm-up, run-up, correctness of control movements and systems checks in accordance with the checklists or placards provided by the aircraft manufacturer or owner, completing at least those items in the POH/AFM.

Description

The candidate will use recommended procedures for engine starting, warm-up and run-up and check aeroplane systems and equipment to determine that the aeroplane is airworthy and ready for flight. The candidate will take appropriate action with respect to unsatisfactory conditions encountered or specified by the examiner.

Performance Criteria

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

- (a) demonstrate an awareness of other persons and property before and during engine start;
- (b) use the appropriate checklist provided by the manufacturer or aeroplane owner;
- (c) demonstrate sound judgement and operating practices in those instances where specific instructions or checklist items are not published.
- (d) accurately complete the engine and aeroplane system checks;
- (e) check flight controls for freedom of operation and correct movement.
- (f) determine that the radio navigation aids to be used on the flight test are serviceable;
- (g) take appropriate action with respect to unsatisfactory conditions.

F. Operation of Aircraft Systems

Aim

To determine that the candidate can operate aircraft systems in accordance with the POH/AFM.

Description

The candidate will be expected to demonstrate practical knowledge of the operation of systems installed on the aeroplane being used for the flight test. Use of these systems will be evaluated both on the ground and in the air.

Performance Criteria

Assessment will be based on the candidate's ability to operate the aeroplane systems in accordance with the POH/AFM and explain the operation of at least three of the following systems, as specified by the examiner:

- (a) primary flight controls and trim
- (b) carburetor heat
- (c) mixture
- (d) propeller
- (e) fuel, oil and hydraulic
- (f) electrical
- (g) flaps
- (h) landing gear
- (i) brakes
- (j) avionics
- (k) pitot-static, vacuum/pressure system and associated flight instruments
- (l) heater and environmental
- (m) de-icing and anti-icing

EX. 4 TAXIING

Aim

To determine that the candidate can safely manoeuvre the aeroplane and avoid unnecessary interference with movement of other traffic.

Description

The candidate will be expected to taxi the aircraft to and from the runway in use and as otherwise required during the test. Provided that traffic and other conditions permit, the candidate will taxi along taxiway centrelines, where they exist. The candidate will position the flight controls appropriately for wind conditions. During calm wind conditions, the examiner will specify a wind speed and direction in order to test this ability.

While taxiing, the candidate will confirm the proper functioning of the flight instruments. Should the candidate omit the flight instrument checks, the examiner will ask the candidate to complete these checks prior to take-off.

Performance Criteria

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

- (a) perform a brake check;
- (b) demonstrate proficiency by maintaining correct and positive aeroplane control.
- (c) safely manoeuvre the aeroplane, considering other traffic on aprons and manoeuvring areas;
- (d) use appropriate taxiing speeds;
- (e) maintain proper spacing from other aeroplanes, obstructions and persons;
- (f) adhere to local taxi rules, procedures and Air Traffic Control clearances and instructions;
- (g) confirm the proper functioning of the flight instruments;
- (h) accomplish the applicable checklist items and perform recommended procedures;
- (i) identify and correctly interpret airport, taxiway and runway signs, markings and lighting;
- (j) after landing, clear the runway/landing area and taxi to suitable parking/refuelling area;
- (k) maintain constant vigilance and aeroplane control during taxi operation;
- (l) park the aeroplane properly, considering the safety of nearby persons or property.

EX. 9 STEEP TURN

Aim

To determine the candidate's ability to perform a level and coordinated steep turn.

Description

At an operationally safe altitude and at an airspeed specified by the examiner, the candidate will be asked to execute a steep turn through 180°, with an angle of bank of 45°, then without pause, reverse the turn to roll out on the original heading. The candidate will specify the selected altitude and initial heading prior to entering the turn.

Performance Criteria

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

- (a) maintain an effective lookout;
- (b) roll into and out of turns, using smooth and coordinated pitch, bank, yaw and power control;

- (c) maintain the specified altitude (± 100 feet) and airspeed (± 10 knots);
- (d) maintain the bank angle of 45° ($\pm 5^\circ$) while in smooth stabilized flight;
- (e) reverse the direction of turn and repeat the manoeuvre in the opposite direction;
- (f) roll out of the turn (at approximately the same rate as used to roll into the turn) at the reversal heading and the entry heading ($\pm 10^\circ$);
- (g) divide attention appropriately between outside visual references and instrument indications.

EX. 11 SLOW FLIGHT

Aim

To determine the candidate's ability to establish and manoeuvre the aircraft in slow flight, maintain flight control, prevent a stall and recover promptly and smoothly to normal flight on command.

Description

At an operationally safe altitude that would allow recovery from an inadvertent stall at or above 2,000 feet AGL or the minimum altitude recommended by the manufacturer, whichever is higher, the candidate will establish and manoeuvre the aircraft in slow flight with aircraft configuration as specified by the examiner.

Performance Criteria

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

- (a) complete appropriate safety precautions before entering slow flight;
- (b) establish and maintain an airspeed that is 5 knots above the stall speed indicated by the appropriate arc or specified in the POH/AFM;
- (c) demonstrate coordinated straight and level flight and level turns, at specific angles of bank up to 30° ;
- (d) maintain an effective lookout;
- (e) maintain specified altitudes (± 100 feet), headings ($\pm 10^\circ$) and angles of bank ($\pm 5^\circ$);
- (f) roll out on specified headings ($\pm 10^\circ$);
- (g) maintain an effective lookout;
- (h) prevent a stall and, on command, recover promptly and smoothly to normal flight.

Note: One of the objectives of slow flight is to determine if the candidate can sense the performance of the wing at high angles of attack. Flight at 5 knots above the indicated stall speed for the configuration is ideal. The use of power and actual weights less than gross weight lower the *actual* stall speed enough to allow safe operation if the published indicated stall speed is used as a reference. An increase in airspeed while turning or in turbulence is acceptable as the stall speed increases in these conditions. Avoid prolonged periods in slow flight to prevent possible overheating of some engine components.

EX. 12 STALL

Aim

To determine that the candidate can recognize the indications of the approach to either departure or arrival stalls, can enter a full stall and can accomplish a positive and smooth recovery, with a minimum loss of altitude.

Description

At an operationally safe altitude that allows recovery at or above 2,000 feet AGL, or the minimum height recommended by the manufacturer, whichever is higher, the stall manoeuvre will be entered from practical flight situations such as approach to landing, simulated overshoot or climbing or descending turns. The examiner will specify the aeroplane configuration in the scenario for the stall demonstration.

Performance Criteria

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

- (a) complete appropriate safety precautions before entering a stall;
- (b) establish the configuration and power as specified by the examiner;
- (c) transition smoothly to a pitch attitude that will induce a stall;
- (d) recognize the onset of the stall by identifying the first aerodynamic buffeting or decay of control effectiveness;
- (e) stall the aeroplane;
- (f) maintain directional control;
- (g) promptly and smoothly recover using control applications in the proper sequence;
- (h) retract flaps to the recommended setting and retract landing gear (where applicable) after a positive rate of climb is established, or as recommended by the manufacturer;
- (i) accelerate to at least V_x or the speed recommended by the manufacturer, whichever is higher, before a final flap retraction;
- (j) avoid secondary stall, excessive airspeed or excessive altitude loss;
- (k) return to the altitude, heading and airspeed specified by the examiner.

EX. 13 SPINNING

Aim

To determine that the candidate can enter a spin, maintain full pro-spin control input until the command for recovery is given, or until recognition that the aircraft is no longer spinning and a spiral dive is developing, if that occurs, and can accomplish a prompt, correct and positive recovery without excessive loss of altitude or exceeding any airframe limitations.

Description

At an operationally safe altitude that allows recovery at or above 2,000 feet AGL, or the minimum height recommended by the manufacturer, whichever is higher, the candidate will be required to enter a spin and commence recovery action upon command of the examiner, or immediately upon recognizing that the aircraft is no longer spinning and a spiral dive is developing. The command to recover will be given after one half to one turn of rotation has been completed. This manoeuvre may be requested from various flight conditions.

Note: Proper spin entry technique and **full** pro-spin control input that nonetheless results in the development of a spiral dive is acceptable, if the candidate announces “Spiral Dive” and uses the correct recovery for a spiral dive.

Performance Criteria

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

- (a) complete appropriate safety precautions before entering the spin;
- (b) enter the spin manoeuvre with correct and effective control application, in the proper sequence for the type of aeroplane;
- (c) hold the aeroplane in the spin manoeuvre by maintaining correct and full control application until the command to recover is given; or
- (d) recognize and **announce** a developing spiral dive, if it occurs; and
- (e) recover, using appropriate control application in the proper sequence;
- (f) avoid a secondary stall.
- (g) avoid recovery airspeeds above normal operating airspeeds (green arc);
- (h) avoid excessive altitude loss; and
- (i) avoid exceeding any airframe limitations.

EX. 15 SLIPPING

Aim

To determine that the candidate can demonstrate a slipping manoeuvre safely and effectively to lose altitude.

Description

The candidate will be required to demonstrate a forward slip or a slipping turn to lose altitude. Slipping may be assessed during any of the landing approaches, including the precautionary or forced landing approaches.

Performance Criteria

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

- (a) smoothly establish an effective slip;
- (b) maintain a slip appropriate to the flight profile and crosswind conditions, where they exist;
- (c) in the case of a forward slip, maintain the intended flight path.
- (d) recover smoothly to coordinated flight;

Note: Any significant skidding manoeuvre is unacceptable.

EX. 16 TAKEOFF

The candidate will demonstrate:

- (a) a soft-field takeoff; and
- (b) a short-field obstacle-clearance takeoff to clear an actual or simulated obstacle.

Where practicable, the short-field takeoff should be based on the previously calculated performance. If possible, at least one of the takeoffs should be completed under crosswind conditions.

Note 1: The candidate must be able to explain the operational necessity for any variation from the recommended speed, e.g. gusty or crosswind conditions.

Note 2: Prior to take-off, in the interest of better cockpit co-ordination, the candidate will complete a crew briefing with the examiner on the intended departure procedure, takeoff considerations and procedures to be used in the event of an actual engine failure during the takeoff and initial climb.

A. Soft Field Takeoff

Aim

To determine the candidate's ability to safely take off from a soft or unprepared surface using the correct procedure and technique for the actual or simulated wind conditions, runway surface and length, and to assess the possibility of further conditions such as wind shear and wake turbulence.

Description

For the purpose of this exercise, the examiner will specify simulated conditions for the soft-field takeoff such as surface conditions, obstacles to be cleared and available runway length.

Performance Criteria

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

- (a) perform an effective passenger safety review;
- (b) complete appropriate checklists;
- (c) specify a GO/NO GO decision point to the examiner;
- (d) position the flight controls and flaps for the existing or simulated conditions;
- (e) check for traffic and taxi onto the take-off surface at a safe speed and, without stopping, advance the throttle smoothly to take-off power (ATC instructions must be complied with);
- (f) confirm that take-off power has been achieved;
- (g) establish and maintain a pitch attitude that will effectively and efficiently transfer the weight of the aeroplane from the wheels to the wings;
- (h) maintain directional control during the take-off roll;
- (i) lift off at the slowest airspeed commensurate with safety in existing conditions;
- (j) remain in ground effect after takeoff while accelerating to the recommended climb speed or V_y ;
- (k) establish the pitch attitude for the recommended climb speed and maintain that speed (+10/-5 knots);
- (l) retract the landing gear (where applicable) at a safe height;
- (m) retract flaps (where applicable) at a safe height;
- (n) maintain take-off power to a safe height, then, where applicable, set climb power ($\pm 0.5''$ MP, ± 50 RPM);
- (o) maintain proper drift correction in the climb;
- (p) complete appropriate checks.

B. Short Field Takeoff (Maximum Performance) - Performance Criteria

Aim

To determine the candidate's ability to safely take off from a short field and clear an obstacle using the correct procedure and technique for the actual or simulated wind conditions, runway length and obstacles to be cleared, and to assess the possibility of further conditions such as wind shear and wake turbulence.

Description

For the purpose of this exercise, the examiner will specify simulated conditions, available runway length and obstacles to be cleared for the short-field takeoff.

Performance Criteria

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

- (a) perform an effective passenger safety review;
- (b) complete appropriate checklists;
- (c) specify a GO/NO GO decision point to the examiner;
- (d) position the flight controls and flaps for the actual or simulated conditions;
- (e) check for traffic and taxi into position for maximum utilization of available take-off distance;
- (f) advance the throttle smoothly to take-off power while holding brakes, or as recommended by the manufacturer;
- (g) confirm static take-off power has been achieved;
- (h) maintain directional control during the take-off roll;
- (i) rotate at the recommended airspeed (+10/-5 knots), lift off and accelerate to the recommended obstacle clearance airspeed;
- (j) establish the pitch attitude for the recommended obstacle clearance airspeed or V_x , and maintain that speed (+10/-5 knots) until any actual or simulated obstacle is cleared or until reaching 50 feet AGL;
- (k) retract the landing gear (where applicable) at a safe height;
- (l) retract flaps (where applicable) at a safe height;
- (m) maintain take-off power to a safe height, then, where applicable, set climb power (± 0.5 " MP, ± 50 RPM);
- (n) maintain directional control and proper drift correction in the climb;
- (o) complete appropriate checks.

EX. 17 CIRCUIT

Aim

To determine that the candidate can operate the aeroplane in a safe manner in the vicinity of a controlled and/or uncontrolled aerodrome.

Description

The candidate will demonstrate correct circuit procedures, including departure and joining procedures for both controlled and uncontrolled aerodromes. When the location of the flight test does not allow demonstration of both uncontrolled and controlled aerodrome circuit procedures, the examiner will assess the candidate by questioning about the procedures that cannot be demonstrated. The ability to comply with MF procedures and ATC clearances or instructions while maintaining separation from other aircraft will be demonstrated.

Performance Criteria

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

- (a) fly an accurate circuit maintaining correct position and separation from other aircraft;
- (b) comply with actual or simulated ATC clearances or instructions;
- (c) comply with circuit entry and departure procedures;
- (d) comply with established circuit patterns;
- (e) transmit the required radio calls;
- (f) correct for wind drift to maintain proper ground track;
- (g) remain oriented with the runway/landing area in use;
- (h) maintain circuit altitude (± 100 feet) and an appropriate airspeed (± 10 knots);
- (i) complete appropriate checklists;
- (j) apply the applicable noise abatement and wake turbulence avoidance procedures, as required;
- (k) comply with other procedures that may be in effect at the time.

EX. 18 APPROACH AND LANDING

The candidate will demonstrate:

- (a) a power-off 180° accuracy approach and landing from circuit height; and
- (b) a short field landing over an actual or simulated obstacle; or a soft field landing; and
- (c) an overshoot.

Assessment of approaches and landings will be based on the candidate's ability to select the proper approach profile for the actual or simulated conditions. Where practicable, at least one of the landings will be based on the previously calculated performance. If possible, at least one of the landings should be completed under crosswind conditions.

The candidate will be expected to use the correct procedure and technique for the actual wind conditions, landing surface and length or those specified by the examiner, to assess the possibility of further conditions such as wind shear and wake turbulence, and to execute overshoot procedures.

Note: The candidate must be able to explain the necessity for any variation from recommended speeds, e.g. gusty or crosswind conditions.

A. Power-off 180° Accuracy Approach and Landing – Performance Criteria

Aim

To determine the candidate's ability to execute a gliding approach, without power, from circuit height and land safely on a specified touchdown point with a degree of accuracy.

Description

The power-off 180° accuracy approach and landing will be initiated from normal circuit height or at the height assigned by ATC. Ideally, the candidate would close the throttle and initiate the glide on the downwind leg abeam the specified touchdown point but, if traffic does not permit, the gliding descent from circuit height may be delayed until later in the circuit. The candidate will close the throttle and establish a gliding approach from circuit height that results in an accurate touchdown and landing.

Performance Criteria

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

- (a) consider wind conditions, landing surface and obstacles;
- (b) specify an appropriate touchdown point;
- (c) close the throttle from normal circuit height;
- (d) establish a gliding approach at the recommended speed (+10/-5 knots);
- (e) complete cockpit checks;
- (f) extend landing flap and lower landing gear, if retractable, when landing is assured;
- (g) touch down in a normal landing attitude at the specified touchdown point (+400/-50 feet);

Note: One (1) engine clearing will be allowed **before descending through 500 feet AGL**. In very cold conditions, the use of some power and flaps while maintaining the same airspeed and a normal gliding rate of descent is acceptable.

B. Short-Field and Soft-Field Landings

Aim

To determine the candidate's ability to execute a short-field approach and landing over an actual or simulated obstacle or a soft-field landing as recommended by the POH/AFM or published best practices.

Description

For the short or soft field approach and landing, the examiner will clearly specify the simulated surface conditions, obstacles on approach, landing threshold and length of surface available to the candidate. Should the candidate realize, prior to the landing flare, that a short-field landing couldn't be achieved in the intended touchdown zone, an overshoot for a second attempt is acceptable.

B. 1 Short Field Approach and Landing over an Obstacle - Performance Criteria

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

- (a) perform an effective passenger safety review;
- (b) consider the wind conditions and actual or simulated landing surface and obstructions;
- (c) specify a specific touchdown point;
- (d) execute the initial approach using recommended airspeeds and configurations;
- (e) fly a final approach profile that clears any actual or simulated obstacle, and results in the appropriate configuration and one of the following speeds at a height of 50 feet:
 - (i) the recommended final approach speed, corrected for the actual landing weight in accordance with POH charts or tables (+10/-5 knots); or in the absence of charts or tables
 - (ii) 1.3 V_{so} corrected for the landing weight as determined in Ex.2B (+10/-5 knots); or
 - (iii) the minimum safe speed for existing conditions e.g. gusty or crosswind conditions.
- (f) make smooth, timely and correct control application during the landing flare and touchdown;

- (g) touch down at the specified touchdown point (+100/–50 feet) with no side drift, and with the longitudinal axis aligned with and over the runway centreline/landing path, in accordance with the POH/AFM or best accepted practice for the aeroplane type;
- (h) maintain crosswind correction and directional control throughout the approach and landing;
- (i) apply brakes, without excessive lockup or skidding, and stop safely in the shortest distance;
- (j) complete appropriate checks.

B. 2 Soft-Field Approach and Landing - Performance Criteria

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

- (a) perform an effective passenger safety review;
- (b) consider the wind conditions, landing surface and obstructions;
- (c) select the most suitable touchdown zone;
- (d) execute the initial approach using recommended airspeeds and configurations;
- (e) fly a final approach profile that clears any actual or simulated obstacle, and results in the appropriate configuration and one of the following speeds at a height of 50 feet:
 - (i) the recommended final approach speed, corrected for the actual landing weight in accordance with POH charts or tables (+10/–5 knots); or in the absence of charts or tables
 - (ii) 1.3 V_{so} corrected for the landing weight as determined in Ex.2B (+10/–5 knots); or
 - (iii) the minimum safe speed for existing conditions e.g. gusty or crosswind conditions.
- (f) maintain crosswind correction and directional control throughout the approach and landing;
- (g) touch down in the first one third (1/3) of the runway, with no side drift and with the aeroplane's longitudinal axis aligned with and over the runway centreline/landing path;
- (h) touch down softly using power as necessary to achieve the landing attitude for the slowest possible touch down on the main wheels, while preventing nose wheel or tail cone contact with the ground;
- (i) maintain the required nose-up control during the landing roll;
- (j) complete appropriate checks.

C. - Overshoot - Performance Criteria

Aim

To determine the candidate's ability to execute an overshoot as recommended by the POH/AFM or published best practices.

Description

The overshoot may be called for by the examiner and assessed from any of the landing approaches, the forced landing or precautionary landing.

Performance Criteria

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

- (a) make a timely decision to discontinue the approach to landing;
- (b) promptly and smoothly apply maximum allowable power and establish the pitch attitude that will stop the descent;
- (c) retract flaps in stages or as recommended by the manufacturer;
- (d) retract the landing gear (where applicable) after a positive rate of climb is established, or as recommended by the manufacturer;
- (e) accelerate to and maintain the recommended climb speed (+10/–5 knots);
- (f) maintain maximum allowable power to a safe manoeuvring height then, where applicable, set climb power ($\pm 0.5''$ MP, ± 50 RPM);
- (g) complete the appropriate checks.

EX. 21 PRECAUTIONARY LANDING

Aim

To determine the candidate's ability to safely carry out the procedure for evaluating an unfamiliar airstrip or a landing area where the suitability of the landing surface is unknown.

Description

The examiner will outline a scenario requiring a landing. This may be a landing at an airstrip of unknown condition or some other reason dictating a landing on an unknown surface. The candidate must select a suitable landing area, determine the landing path and use a planned procedure to fly an accurate approach. While an actual landing may not be required, the approach flown should be such that a successful landing could have been accomplished in the pre-selected touchdown zone.

Performance Criteria

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

- (a) conduct a precautionary landing in a timely manner before simulated or actual conditions deteriorate to an unsafe stage;
- (b) select a suitable airstrip or other area on which a safe landing could be made;
- (c) comply with circuit procedures at an aerodrome;
- (d) make appropriate radio calls (simulated or actual);
- (e) evaluate the wind conditions, landing surface and obstructions;
- (f) select the most suitable touchdown zone;
- (g) establish circuit at an appropriate distance from the airstrip/landing area;
- (h) correct for wind drift to maintain proper ground track;
- (i) remain oriented with the airstrip/landing area in use;
- (j) perform an effective passenger safety review;
- (k) maintain and hold circuit altitude (± 100 feet) and an appropriate airspeed (± 10 knots);
- (l) establish the recommended approach configuration;
- (m) maintain a stabilized approach and recommended airspeed (+10/-5 knots);
- (n) overfly the landing area in stabilized flight and maintain a safe obstacle clearance altitude (+100/-50 feet) and a recommended airspeed (+10/-5 knots) that will permit an effective assessment of surface conditions;
- (o) indicate the type of landing to be used and perform a final approach in a manner that would permit touch down within the selected touchdown zone;
- (p) maintain crosswind correction and directional control throughout the approach and landing;
- (q) complete appropriate checks.

Note: The candidate must be able to explain the operational necessity for any variation from recommended speeds, e.g. gusty or crosswind conditions.

EX. 22 FORCED LANDING

Aim

To determine that the candidate can, in the event of an engine failure, plan, manage and safely carry out a successful landing on a suitable landing area.

Description

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

An overshoot will be carried out when requested by the examiner at an operationally safe altitude.

A. Control/Approach - Performance Criteria

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

- (a) control the aeroplane and establish the recommended best glide speed (+10/-5 knots);
- (b) specify a suitable landing area and touchdown zone;
- (c) vary airspeed, descent, and flight profile as necessary to reach key points;
- (d) fly an organized approach to the selected touchdown zone, considering aircraft altitude, wind conditions, terrain, obstructions and other factors.

B. Cockpit Management - Performance Criteria

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

- (a) complete checks in accordance with a placard or checklist for 'Engine Failure In Flight' emergency procedures;
- (b) simulate an appropriate radio call; and
- (c) perform an effective passenger emergency safety review;

Note 1: The candidate will be expected to clear the engine at appropriate intervals during the descent. In very cold conditions, it is acceptable for the candidate to configure the aeroplane by lowering some flap and using some residual power to achieve a normal power-off gliding descent angle and airspeed.

Note 2: A change of field is acceptable from an altitude or point in the approach where a landing could still have been made on the original landing site.

Ex. 23 Pilot Navigation

Note: *Exercise 23, Pilot Navigation is not required when the candidate is enrolled in a CPL(A) or CPL(A)/IR integrated training course and has successfully completed the VFR Navigation Progress Test.*

A. Pre-Flight Planning Procedures

Aim

To determine that the candidate can efficiently plan a VFR cross-country flight and demonstrate practical knowledge by explaining elements related to cross-country flight planning.

Description

On the day of the flight test, the examiner will ask the candidate to plan a VFR cross-country flight to an assigned destination at least 2 hours cruising range distance in the aeroplane being used for the flight test.

Flight planning will be completed based on real time weather, all passenger seats occupied and baggage load as specified by the examiner.

Note: Cross-country flights for the CPL flight test are not assigned in advance. Software-generated flight planning is not acceptable for this test.

Performance Criteria

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

- (a) use appropriate and current aeronautical charts and other current flight publications to extract and record pertinent information;
- (b) properly identify airspace, obstructions, terrain features and map symbols;
- (c) obtain pertinent information about the en route and destination airports;
- (d) retrieve and interpret weather information and NOTAMs relevant to the intended flight;
- (e) determine the acceptability of the departure and destination runways under existing or forecast conditions;
- (f) select a safe and efficient route;
- (g) prepare contingency plans for intermediate or alternate destinations;
- (h) select the most favourable and appropriate altitudes, considering weather conditions and equipment capabilities;
- (i) prepare a chart and navigational log, including estimated headings, ground speed, fuel requirements and time en route;
- (j) make a competent "GO/NO-GO" decision based on available information for the simulated cross-country flight;
- (k) correctly complete and present an ICAO VFR flight plan;
- (l) complete planning, preparations and calculations, excluding weight and balance computations, within 45 minutes.
- (m) demonstrate practical knowledge of how to determine certain key elements of flight planning such as estimated time enroute and fuel requirements.

B. Departure Procedure

Aim

To determine that the candidate can perform an organized and efficient departure.

Description

When requested by the examiner, the candidate will be expected to safely depart on the cross-country flight, as planned.

Performance Criteria

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

- (a) set the heading indicator by reference to the magnetic compass or other acceptable means;
- (b) note takeoff time;
- (c) use an organized and efficient procedure to intercept the pre-planned track;
- (d) comply with all departure clearances and instructions;
- (e) activate the flight plan with ATS or simulate an activation with the examiner;
- (f) note set heading time;
- (g) provide an estimated time of arrival (ETA) for the first turning point or destination;
- (h) complete appropriate checks.

C. En Route Procedure

Aim

To determine that the candidate can effectively apply systematic navigation techniques.

Description

After setting heading, the flight will continue until the candidate, using systematic navigation techniques, establishes the heading and timing required to fly to the first turning point or destination.

Performance Criteria

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

- (a) use good cockpit management;
- (b) correctly use materials and equipment;
- (c) verify that planned cruise performance has been achieved, i.e. power and KTAS;
- (d) maintain accurate records that reflect the progress of the flight;
- (e) maintain cruising altitudes (± 100 feet), and headings ($\pm 10^\circ$);
- (f) navigate by applying systematic navigation techniques;
- (g) verify the position of the aircraft within 15 minutes after setting heading;
- (h) demonstrate an organized method that would:
 - (i) revise headings to correct any existing track error to maintain the aircraft position within 1 nautical mile of the route;
 - (ii) confirm or revise the ETA for the first turning point or destination with a degree of accuracy that would make arrival within 3 minutes predictable; and
 - (iii) confirm fuel requirements.

D. Diversion to an Alternate

Aim

To determine that the candidate can perform the required in-flight planning and, using mental dead reckoning, safely carry out a diversion to a suitable alternate destination.

Description

When requested by the examiner, the candidate will demonstrate the ability to select a suitable alternate destination that is within the actual or a simulated fuel range of the aeroplane. The candidate will carry out a diversion towards the selected destination, or alternatively in the interest of flight test efficiency, towards another destination selected by the examiner.

When practicable and where terrain permits, a part or all of the diversion should be conducted at approximately 500 feet above ground or a minimum safe altitude, whichever is higher. The candidate may change altitudes to suit the topography and will declare intentional changes of altitude to the examiner.

The candidate's ability to proceed to an alternate destination using mental dead reckoning will be assessed. Rulers, notched pencils, protractors, computers or radio navigation aids will not be used for this procedure.

The diversion will be continued until at least the stage where a revised estimated time of arrival (ETA) is determined, as required, and the aeroplane is established on the proposed track towards the alternate in a manner demonstrating that arrival at the destination is predictable.

Performance Criteria

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

- (a) perform the following tasks expeditiously:
 - (i) identify and record present position;
 - (ii) select an appropriate alternate destination and route;
 - (iii) identify the highest Maximum Elevation Figure (MEF) along the selected route and determine a minimum safe altitude for the actual route;
 - (iv) select an aircraft configuration and airspeed appropriate for the actual or simulated conditions (for optimum 'see and avoid');
 - (v) estimate initial heading, arrival time and fuel consumption to the alternate destination;
- (b) divert toward the alternate destination;
- (c) maintain the selected airspeed (± 10 knots) and selected headings ($\pm 10^\circ$);
- (d) maintain declared altitudes (± 100 feet);
- (e) provide an ETA that is sufficiently accurate to indicate that the diversion could be conducted as planned;
- (f) establish or simulate communication with ATS to inform of intention to divert.

Note: The practice of following a geographical feature towards an alternate destination is reserved for the Private Pilot Licence flight test. Although the route may have to circumnavigate high terrain, where it exists, a practical demonstration of mental dead-reckoning skills is required on the CPL flight test.

EX. 24 INSTRUMENT FLYING AND USE OF RADIO NAVIGATION AIDS

Note: *This exercise will require the applicant to supply a suitable view-limiting device.*

A. Full Panel

Aim

To determine that the candidate is able to control and manoeuvre the aeroplane by reference to all available flight instruments.

Description

The candidate will be required to fly the aeroplane solely by reference to flight instruments. The candidate will be asked to:

- (a) maintain co-ordinated straight and level flight;
- (b) change airspeed in straight and level flight and level turns;
- (c) climb at a constant airspeed;
- (d) descend at a constant airspeed;
- (e) climb at a constant rate;
- (f) descend at a constant rate;
- (g) perform climbing, descending and level turns at various assigned angles of bank to assigned headings and altitudes.

Performance Criteria

Assessment will be based on the candidate's ability to control and manoeuvre the aeroplane using proper instrument scanning and interpretation, within:

- (a) $\pm 10^\circ$ of assigned headings;
- (b) ± 100 feet of assigned altitudes;
- (c) ± 10 knots of assigned airspeeds;
- (d) ± 100 feet per minute of assigned rates of climb or descent when established;
- (e) $\pm 10^\circ$ of assigned angles of bank.

B. Limited Panel

Aim

To determine that the candidate is able to control and manoeuvre the aeroplane by reference to flight instruments, but without reference to the attitude indicator and the heading indicator.

Description

Using limited panel, the candidate will:

- (a) maintain straight and level flight, and
- (b) conduct a rate-one timed turn, in the shortest direction, to a heading specified by the examiner.

Note: The turn will not be less than 90° or more than 180°. One heading correction will be allowed.

Performance Criteria

Assessment will be based on the candidate's ability to control and manoeuvre the aeroplane using proper instrument scanning and interpretation, within:

- (a) $\pm 15^\circ$ of assigned heading;
- (b) ± 100 feet of assigned altitude;
- (c) ± 10 knots of assigned airspeed.

C. Recovery from Unusual Attitude

Aim

To determine that the candidate is able to promptly recover from an unusual attitude by reference to flight instruments, but without reference to the attitude indicator and the heading indicator.

Description

The examiner will take control and fly the aeroplane into an unusual attitude, either nose-up or nose-down, then transfer control to the candidate and call for recovery. Using limited panel, the candidate will promptly recover with minimum loss of altitude from one unusual attitude.

Performance Criteria

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

- (a) recognize unusual flight attitudes by reference to available flight instruments;
- (b) promptly recover to stabilized level flight using proper instrument cross-check and interpretation
- (c) apply smooth, coordinated control application in the proper sequence
- (d) recover with minimum loss of altitude and without excessive airspeed

D. Radio Navigation

Note: *A view-limiting device will not be used on this part of the flight test.*

Aim

To determine that the candidate is able to tune, identify and confirm the selected radio facility or waypoint and navigate effectively, using radio navigation aids.

Description

The candidate will determine the position of the aeroplane and fly a procedure that will establish the aeroplane on a track specified by the examiner. The candidate will be asked to track to or from a VOR or NDB or GPS waypoint. The required track will be maintained until station or waypoint passage has been identified or described by the candidate.

Performance Criteria

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

- (a) tune and identify the station, if applicable;
- (b) apply a systematic method, using radio navigation aids, to determine aircraft position on the VFR chart;
- (c) expeditiously determine and apply an interception procedure which will establish the aeroplane on the required track;
- (d) maintain track within $\pm 10^\circ$, or for GPS, within 1 nautical mile;
- (e) identify or describe station or waypoint passage.

Ex. 29 Emergency Procedures/Malfunctions

Aim

To determine that the candidate can react promptly and correctly to emergencies and system or equipment malfunctions.

Description

The candidate will demonstrate adequate knowledge of the procedures to be used in the event of an emergency or a malfunction for the installed systems, subsystems and devices. Assessment may be carried out during any portion of the flight test.

Performance Criteria

Assessment will be based on the candidate's ability to analyze a situation, take appropriate action and follow the applicable memory items, emergency checklist items and/or procedures for any three (3) of the following simulated emergencies/malfunctions, as specified by the examiner:

- (a) partial power loss
- (b) rough engine operation or overheat
- (c) loss of oil pressure
- (d) fuel starvation
- (e) electrical fire
- (f) vacuum system failure
- (g) pitot or static blockage
- (h) cabin fire
- (i) icing
- (j) electrical malfunctions
- (k) landing gear malfunctions
- (l) brake failure or seizure
- (m) flap failure
- (n) door opening in flight
- (o) emergency descent
- (p) any other emergency unique to the aeroplane flown

It is the responsibility of the examiner to determine if aeroplane performance, weather conditions and other factors permit the safe conduct of an emergency procedure in flight or on the ground with the engine running. Some of the items may be tested on the ground with the engine shut down

EX. 30 RADIO COMMUNICATION

Aim

To determine that the candidate can communicate with Air Traffic Service facilities and obtain assistance from those facilities to permit the safe and efficient conduct of the flight.

Description

The candidate will demonstrate or explain the correct procedures for the use of radio communication equipment available on board the aircraft. The candidate must demonstrate the ability to obtain information relevant to the flight and to obtain, respond to and act upon ATC clearances and instructions.

Where suitable air traffic services are not available, the examiner may play the role of air traffic services.

Performance Criteria

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

- (a) select frequencies for the facilities used;
- (b) use recommended phraseology;
- (c) acknowledge and comply with radio communications and ATC instructions;
- (d) use correct procedure for simulated radio communications failure;
- (e) comply with or demonstrate a practical knowledge of ATC light signals;
- (f) demonstrate or explain the correct procedure for obtaining DF steers, emergency radar assistance and/or a Special VFR clearance;
- (g) obtain weather information from a radio facility;
- (h) give a clear and accurate VFR position report;
- (i) use correct emergency communication procedures.

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RECOMMENDATION FOR FLIGHT TEST

COMMERCIAL PILOT LICENCE

Name of Candidate (Print)	Licence Number									
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">Flight Experience</td> <td style="width: 50%; border: none;">Enrolled - Integrated CPL Course (circle applicable)</td> </tr> <tr> <td style="border: none; text-align: center;"> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">Dual</td> <td style="width: 50%; border: none;">Solo</td> </tr> </table> </td> <td style="border: none; text-align: center;"> <table style="width: 100%; border: none;"> <tr> <td style="width: 33%; border: none;">Yes / No</td> <td style="width: 33%; border: none;">CPL(A)</td> <td style="width: 33%; border: none;">CPL(A)/IR</td> </tr> </table> </td> </tr> </table>	Flight Experience	Enrolled - Integrated CPL Course (circle applicable)	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">Dual</td> <td style="width: 50%; border: none;">Solo</td> </tr> </table>	Dual	Solo	<table style="width: 100%; border: none;"> <tr> <td style="width: 33%; border: none;">Yes / No</td> <td style="width: 33%; border: none;">CPL(A)</td> <td style="width: 33%; border: none;">CPL(A)/IR</td> </tr> </table>	Yes / No	CPL(A)	CPL(A)/IR	
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Dual	Solo									
Yes / No	CPL(A)	CPL(A)/IR								

I, the undersigned instructor, certify that the above named candidate meets the minimum experience requirements of section 421.14 of the *Personnel Licensing Standards* and certify having personally conducted a pre-test evaluation of all flight test items with the above named candidate. I consider the candidate to have reached a sufficient level of competency to complete the flight test required for the issuance of the Commercial Pilot Licence - Aeroplane and hereby recommend the candidate for the flight test.

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

Where the candidate is enrolled in an integrated CPL course, he/she has successfully completed the VFR Navigation Progress Test.

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

RECOMMENDATION FOR PARTIAL FLIGHT TEST COMMERCIAL PILOT LICENCE

Name of Candidate (Print)	Licence Number
Flight Experience Dual Solo	Flight Training Unit

I have conducted a review of the test item(s) _____ and have completed additional training with this candidate.

I consider the candidate to have reached a sufficient level of competency to successfully complete the flight test for the issuance of the Commercial Pilot Licence - Aeroplane and hereby recommend the candidate for the partial flight test.

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

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