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Flight Test Guide

Commercial Pilot Licence

Aeroplane

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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 authorized 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, while keeping in mind that the standards expressed are minimum finishing standards for the skill requirement.

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

Compliance with this flight test guide will meet the requirements of CAR Standard 428 – Schedule 4 of the Personnel Licensing and Training Standards, respecting the Conduct of Flight Tests.

Definitions

'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.

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

'ground items' are the planning and preparatory tasks performed prior to the pre-flight inspection of the aeroplane.

'air items' are tasks or manoeuvres performed with the aeroplane, including the pre-flight inspection, start-up, run-up, taxiing and emergency procedures.

'flight at minimum controllable airspeed' means a speed at which a stall is imminent if there is any further increase in angle of attack, load factor, or a reduction in power.

'proficiency' means having a high degree of competence or skill; expertise; being prepared to handle any situation with which you might reasonably be presented during a flight.

'**soft-field**' means a grass, unpaved, improvised, soft or rough take-off or landing surface that may present variable rolling resistance or may present a risk of damage to the landing gear, if soft-field technique is not used when operating on soft or rough surfaces.

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. Nevertheless, a full review of the document is highly encouraged.

Ce document est aussi disponible en français.

Changes in this Edition

1. Several heavy vertical lines along the right margin indicate editorial changes for increased clarity or to denote changes to the flight test.
2. Definitions refined for “flight near minimum controllable airspeed”, “soft field” and “proficiency”.
3. Who is “Pilot-in-Command” is expanded to comply with the amendments to CAR sections 401.19 to 401.27 inclusively.

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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) a photo identification with signature;

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

(c) proof of meeting the medical standards for the Commercial Pilot Licence,

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

(i) training for all of the exercises in the Flight Training Manual and the Flight Instructor Guide from Ex. 1 thru to Ex. 25 and Exercises 29 and 30, including Ex. 13 has been completed;

(ii) a pre-test evaluation of all required flight test exercises was completed with the candidate;

(iii) the candidate is considered to have reached a sufficient level of proficiency to complete the flight test for the issuance of the Commercial Pilot Licence - Aeroplane; and

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

(e) evidence of having completed no less than 75% of the total flying experience required for application for a Commercial Pilot Licence - Aeroplane;

(f) proof of having successfully completed the required written examination and a letter from a qualified instructor certifying that a review of subject area(s) identified as having deficiencies by the *Written Examination and Feedback Report* has been carried out and the candidate meets the proficiency standards for the Commercial Pilot Licence. **This requirement does not apply to candidates enrolled in an approved CPL(A), CPL(A)/IR or ATP(A) integrated course**.

Note: Items (d), (e) and (f) above may be incorporated on the same letter of recommendation but with separate signatures for each certification. Refer to the sample at the end of this document.

Admission to a Partial Flight Test

A partial flight test must be conducted within 30 days of the original letter of recommendation. Prior to admission to a partial flight test, the candidate will provide 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 dated within 30 days prior to the partial flight test, 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 proficiency to successfully complete the flight test; and

(iii) is recommended by the instructor 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 the holder of a Class 4 flight instructor rating; the letter must be co-signed by the supervising instructor. In the case of a partial flight test, the person who conducted the additional training will sign the letter of recommendation.

Aeroplane 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) current editions of appropriate aeronautical paper charts and the latest *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.

Liability Insurance

Pilot examiners will not accept a verbal statement from candidates indicating liability insurance coverage has been arranged. The candidate must provide proof of insurance indicating that the examiner is covered prior to the conduct of the flight test.

Flight Test

All of the flight test items described in this guide must be completed, except items 23A, B, C and D in the case of a candidate enrolled in an approved CPL(A), CPL(A)/IR or ATP(A) integrated course who has successfully completed a VFR Navigation Progress Test.

The minimum pass marks for the Commercial Pilot Licence are **93** (70%) or **81** for Integrated CPL(A), CPL(A)IR or ATP(A) candidates, where the VFR Navigation Progress Test has been successfully completed.

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

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 re-assessed as "1" (fail) if their aim is not achieved or safety is compromised.

Items **2A, 2B, 2C and 23A** are ground flight test items and will be completed and assessed before the flight 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 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 letter of recommendation.

The following process will apply:

(a) a copy of the incomplete flight test report must be given to the candidate;

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

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

(d) the original letter of recommendation remains valid;

(e) flight test items already assessed will not be re-tested, but items already demonstrated during the initial flight and repeated for the purpose of the second flight, may be re-assessed as "1" if their aim is not achieved;

(f) the original flight test report form may be used to complete the test;

(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 the item with a "1", and a complete re-test will be required if the candidate compromises safety by:

(a) displaying unsafe or dangerous flying that is not linked to a lack of proficiency or training; or

(b) demonstrating a pattern of failing to use effective visual scanning techniques to check for traffic before and while performing visual manoeuvres.

Following a failed flight test that qualifies for a partial re-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 Technical Team Lead responsible for 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 an alternate pilot examiner. Should the complaint not be addressed to the candidate's satisfaction, the procedure to follow is outlined in "Civil Aviation Issues Reporting System (CAIRS).

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 "1".

The candidate will be required to successfully perform the air item(s) assessed as "1" on the complete flight test. Flight test items not associated with the items(s) to be retested, but repeated for the purpose of the second flight, may be re-assessed as "1" if the aim is not achieved or safety is compromised.

The partial flight test must be completed within 30 days of the original letter of recommendation. 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 Level A or higher full-flight simulator or a flight training device (min. Level 2) approved in accordance with CAR 606.03 - *Synthetic Flight Training Equipment*, may be used to re-test Exercise 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/Malfunctions*.

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) displaying unsafe flying or dangerous behaviour that is not linked to a skill, lack of training or proficiency;

(f) a demonstrated pattern of failing to use effective visual scanning techniques is displayed during the flight test; or

(g) a partial flight test is not completed within 30 days of the original letter of recommendation.

Note: In the case of a complete retest, the candidate will not show or submit a copy of the previously failed flight test report to the examiner.

Pre-Flight Briefing

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 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 was not clear in giving instructions.

(c) **Who is pilot-in-command?** The examiner will be the pilot-in-command (PIC), pursuant to CAR sections 401.03 and subparagraph 401.26(c)(ii)(B) – **Private Pilot Licence - Aeroplane - Privileges**, as amended in 2014. In all cases, the examiner reserves the right to exercise all reasonable duty of care to ensure safe flight by intervening or taking control of an aircraft when any action or lack of action by the candidate seriously jeopardizes flight safety or if a breach of regulation is imminent.

(i) Pursuant to the *Aeronautics Act*: "pilot-in-command" means, in relation to an aircraft, the pilot having responsibility and authority for the operation and safety of the aircraft during flight time.

(ii) The responsibility and authority of an examiner, while conducting any flight test, is illustrated by the following non-exhaustive list. The examiner:

(A) determines the route of the aircraft;

(B) establishes the conditions for the takeoff and landing;

(C) directs the candidate when conducting air exercises;

(D) manipulates the flight and power controls at their own discretion when preparing for certain exercises;

(E) intervenes, when necessary and at any time, to ensure the safe continuation of the flight;

(F) makes decisions with respect to the continuation or termination of the flight.

(iii) If the examiner performs the duties listed in the short list above, by default the examiner effectively is the Pilot-in-Command. In any case, the examiner, as the most qualified on board and may be held responsible for any negligence or for not exercising all reasonable duty of care as any other reasonable person in the same position would have exercised.

(d) **Who will do what in the event of an actual emergency?** Although the examiner is PIC, the candidate, who is role-playing as a PIC with a passenger, shall provide a briefing to the examiner detailing the actions to be taken by the candidate and examiner in the event of an actual emergency. The examiner may question or supplement the briefing as required to ensure the highest possible level of safety 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) **Ground References.** 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. The candidate will specify the intended touchdown zones and specific touchdown points.

(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. Electronic flight display failures may be simulated in accordance with the manufacturer's *Guide for DPEs and CFIs* or POH/AFM Supplements as appropriate to the aeroplane type.

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 and will be assessed. The candidate will be expected to demonstrate good airmanship and complete accurate checks on a continuing basis and demonstrate the smooth and coordinated use of flight and power controls.

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.

A copy of the flight test report may be given to the candidate for a flight test and the examiner who conducted the flight test will retain a copy. In accordance with 8(2)(a) of the *Privacy Act*, 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 effective visual scanning should be considered when using a checklist. Correct 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.

Errors

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

Minor Error

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

Major Error

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

Critical Error

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

- Non-compliance with CARS or non-adherence to mandated standard operating procedures; or
- Repeated improper error management or uncorrected and unrecognized threats, which risk putting the aircraft in an undesired state; or
- Repeated major errors or the non-performance of certain criteria prescribed in the *Performance Criteria* that are essential to achieving the *Aim** of a test sequence/item.

Deviations

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

Minor Deviation

A minor deviation is defined as a deviation that does not exceed a specified tolerance.

Major Deviation

A major deviation is defined as a deviation that exceeds a specified tolerance or repeated minor deviations without achieving stability.

Critical Deviation

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

- Repeated non-adherence to specified tolerance limits; or
- More than doubling the specified value of a tolerance limit; or
- Not identifying and correcting major deviations.

4-POINT MARKING SCALE

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

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

Ex. 2 Aeroplane Familiarization and Preparation for Flight

A. Documents and Airworthiness (Ground Item)

Aim

To correctly assess the validity of documents required on board and, and from these documents determine that the aeroplane 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 competency to:

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

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

(c) determine if the maintenance release ensures aeroplane serviceability and inspection requirements 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 (Ground Item)

Aim

To understand the recommended operating procedures, performance capabilities and approved limitations of the aeroplane being used for the flight test.

Description

The candidate will be required to explain 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 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 competency to:

(a) state from memory and explain the practical application for the following speeds :

  (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:

1.3 V_{SO} **KCAS** (*max. gross wt.*) x $\sqrt{\frac{LandingWt.}{GrossWt.}}$ = 1.3 V_{SO} **KCAS** (*predicted landing weight*)

Note 1: Convert KIAS to and from KCAS by using the POH/AFM airspeed calibration chart. Always apply a KCAS to the above formula**.**

Note 2: Although some manufacturers do provide the desired data, CAR 523 (FAR 23) does not mandate manufacturers of aircraft with a gross weight of 6000 lbs or less to provide approach and landing speed and landing performance data for other than gross weight. Nevertheless, the competence to determine and demonstrate the optimal airspeed for runway threshold crossing at a speed of 1.3 V_{SO} (certification standard), adjusted for landing weight, is an essential element of knowledge and competence for Commercial Pilots hoping to transition to aeroplanes with gross weights greater than 6000 lbs that have the data in their AFMs and are operationally required to adjust speeds accordingly.

C. Weight and Balance, Loading (Ground Item)

Aim

To correctly complete the weight and balance calculations for the aeroplane used for the test, as required for the planned 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 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 centers of gravity locations on the aeroplane flight characteristics will be demonstrated. Practical knowledge of how to correct a situation in which the center of gravity is out of limits or in which the gross weight has been exceeded as well as the competency to amend a calculation will be demonstrated.

Performance Criteria

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

(a) determine if the take-off, landing and zero-fuel weights, as well as the computed center of gravity are within permissible limits;

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

(c) explain the effect of various center of gravity locations on aeroplane flight characteristics.

D. Pre-Flight Inspection (Air Item)

Aim

To complete internal and external checks in accordance with the POH/AFM and demonstrate a practical knowledge of the aeroplane to determine that the aeroplane is in a safe condition for the intended flight.

Description

The candidate will determine that the aeroplane is ready for the intended flight and, as can reasonably be determined by pre-flight inspection, confirmed to be airworthy. The external and internal checks must cover at least all of the items specified by the manufacturer. All required equipment and documents will be located and safely stowed. 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 aeroplane design precludes a visual check of fuel levels, fuel chits, fuel logs or other credible procedures may be used to confirm the amount of fuel actually on board. The candidate will state the available flight time at the intended cruising speed with the actual fuel on board.

After the candidate has completed the pre-flight inspection, questions relating to the flight test aeroplane 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.

Performance Criteria

Assessment will be based on the candidate's proficiency 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) state the flight endurance at the intended cruising speed and altitude with the fuel quantity on board;

(e) verify that the aeroplane is in a condition for safe flight;

(f) describe the appropriate action to take for any unsatisfactory item, detected or described by the examiner;

(g) verify the location and security of baggage and required equipment;

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

(i) 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 aeroplane 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 to consider during an emergency.

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

Aim

To 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 to determine that the aeroplane is airworthy and ready for flight.

Description

The candidate will use recommended procedures and good airmanship for engine starting, warm-up, run-up and checking of aeroplane systems and equipment in accordance with the checklists or placards provided by the aircraft manufacturer or owner, completing at least those items in the POH/AFM to determine that the aeroplane is airworthy and ready for flight. The candidate will take appropriate action with respect to unsatisfactory conditions encountered or simulated by the examiner.

Performance Criteria

Assessment will be based on the candidate's proficiency 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 operate the installed aeroplane systems in accordance with the POH/AFM or manual supplements.

Description

The candidate will be expected to demonstrate practical knowledge of the operation of systems installed in 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 proficiency to operate the aeroplane systems in accordance with the POH/AFM and explain the operation of 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 systems

(f) electrical systems

(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 safely manoeuvre the aeroplane and avoid unnecessary interference with the movement of other traffic.

Description

The candidate will be expected to taxi the aeroplane 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 proficiency.

While taxiing, the candidate will confirm the correct 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 the takeoff.

Performance Criteria

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

(a) perform a brake check;

(b) position flight controls as appropriate for the actual or simulated wind conditions;

(c) demonstrate proficiency by maintaining correct and positive aeroplane control on the ground.

(d) safely manoeuvre the aeroplane, considering other traffic on aprons and manoeuvring areas;

(e) use appropriate taxiing speeds;

(f) maintain a safe distance from other aeroplanes, obstructions and persons;

(g) adhere to local taxi rules, procedures and Air Traffic Control clearances and instructions;

(h) confirm the correct functioning of the flight instruments;

(i) accomplish the applicable checklist items and perform recommended procedures;

(j) identify and correctly interpret airport, taxiway and runway signs, markings and lighting;

(k) after landing, clear the runway/landing area and taxi to suitable parking/refuelling area;

(l) maintain constant vigilance and aeroplane control during taxi operation;

(m) park the aeroplane, considering the safety of nearby persons or property.

Ex. 9 Steep Turns

Aim

To safely perform level and coordinated steep turns.

Description

Prior to entering the turn, the examiner will specify the airspeed, the altitude and the initial heading to be used for this flight test item. The candidate will be asked to execute a steep turn through 180º, with an angle of bank of 45º, then without pause, reverse the turn to roll out on the original entry heading.

Performance Criteria

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

(a) perform and maintain an effective lookout before and during the turn;

(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 45º (±5º) while in the stabilized portion of the turn;

(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 and entry headings (±10º);

(g) divide attention appropriately between outside visual references and instrument indications.

Ex. 11 Slow Flight

Aim

To establish the aeroplane in flight near minimum controllable airspeed, as indicated by intermittent stall warnings or aerodynamic buffet, maintain flight control and manoeuvre near that speed while preventing a stall and safely recover promptly and smoothly to normal flight on command of the examiner.

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 aeroplane in flight near minimum controllable airspeed. The candidate may increase airspeed slightly while turning or in turbulence conditions.

Performance Criteria

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

(a) complete appropriate safety precautions before entering slow flight;

(b) maintain an effective lookout;

(c) establish and maintain the aeroplane in flight near minimum controllable airspeed as indicated by a near-constant stall warning or aerodynamic buffeting, with an aeroplane configuration appropriate for that speed range;

(d) demonstrate coordinated straight and level flight and a level turn, with an angle of bank of **30** degrees in flight near minimum controllable airspeed;

(e) prevent a stall;

(f) maintain specified altitudes (±100 feet), headings (±10°) and angles of bank (±5°);

(g) roll out on specified headings (±10°); and

(h) on command, recover promptly and smoothly to normal flight.

Ex. 12 Stall

Aim

To recognize indications of the approach to a stall, enter a full stall and safely execute a positive recovery, without excessive loss of altitude.

Description

The candidate will be asked to perform one cross-controlled stall, an overshoot stall or a climbing-turn stall. The examiner will specify the aeroplane configuration for the stall scenario. Intentional stalls will be entered 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.

Performance Criteria

Assessment will be based on the candidate's proficiency 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 reasonable pitch attitude that will induce a stall;

(d) **recognize and announce** 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 effectively recover using control applications in the correct sequence;

(h) avoid a secondary stall and excessive altitude loss;

(i) if applicable, retract flaps as recommended by the manufacturer and retract landing gear after a positive rate of climb is established; and

(j) return to the altitude, heading and airspeed specified by the examiner.

Ex. 13 Spinning

Aim

To demonstrate an incipient spin manoeuvre and execute an effective recovery upon command of the examiner, using the technique recommended in the POH or POH Supplement.

Description

The spin manoeuvre may be requested from various flight conditions. The command to recover can be expected after at least one quarter (1/4) turn of spin rotation.

Intentional spins will only be conducted with aeroplanes that are certified for and loaded in accordance with the requirements for the utility or aerobatic categories. Intentional spins will be entered 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.

Performance Criteria

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

(a) complete appropriate safety precautions before entering the spin;

(b) enter the spin manoeuvre with effective control application, in the correct sequence recommended for the type of aeroplane;

(c) hold full pro-spin control inputs until the command to recover is given; and

(d) recover, using appropriate control application in the correct sequence;

(e) avoid a secondary stall.

(f) avoid excessive recovery airspeed;

(g) avoid excessive altitude loss; and

(h) avoid exceeding any operating limitation of the aeroplane.

Ex. 15 Slipping

Aim

To demonstrate safe and effective slipping manoeuvres to increase a rate of descent or for crosswind landing conditions.

Description

The candidate will be required to demonstrate a forward slip or a slipping turn to increase a rate of descent or a sideslip to correct for crosswind conditions during a landing. 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 proficiency to:

(a) smoothly establish an effective slip;

(b) perform a slip appropriate to the flight profile or crosswind conditions;

(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 takeoff to clear an actual or simulated obstacle.

Where practicable, the short-field takeoff should be based on the previously calculated performance. If wind conditions permit, 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, such as 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 safely take off from an actual or simulated grass, gravel or rough surface using the correct procedure and technique for the actual or simulated wind conditions, runway surface and length, and assess the possibility of further conditions such as wind shear and mechanical turbulence.

Description

For the purpose of this exercise, the examiner will specify simulated conditions such as surface conditions, obstacles and available runway length. The candidate is expected to use the soft-field take-off technique described in the Flight Training Manual or as recommended in the POH/AFM for the aeroplane type used.

Performance Criteria

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

(a) review passenger safety (Example; seat belt secure, door locked);

(b) complete appropriate checklists;

(c) position the flight controls and configure the aeroplane for the existing or simulated conditions;

(d) specify a GO/NO GO decision point to the examiner;

(e) check for traffic and taxi onto the take-off surface at a safe speed while keeping the nose wheel as light as possible 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) maintain directional control during the take-off roll;

(h) establish and maintain a pitch attitude that will effectively and efficiently transfer the weight of the aeroplane from the wheels to the wings;

(i) lift off at the slowest airspeed commensurate with safety in existing conditions;

(j) remain in ground effect and accelerate to V_X or V_Y, as obstacles may dictate;

(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 and above the recommended minimum speed;

(n) maintain take-off power to a safe height, then, where applicable, set climb power (±0.5" MP, ±50

RPM);

(o) maintain directional control and apply drift correction in the climb;

(p) complete appropriate checks.

B. Short-Field Takeoff (Maximum Performance)

Aim

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

Description

For the purpose of this exercise, the examiner will clearly specify simulated conditions, such as available runway length and obstacles to be cleared for the short-field takeoff. The candidate is expected to use the maximum take-off performance technique recommended in the POH/AFM for the aeroplane type used.

Performance Criteria

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

(a) review passenger safety (Example; seat belt secure, door locked);

(b) complete appropriate checklists;

(c) position the flight controls and configure the aeroplane for the actual or simulated conditions;

(d) specify a GO/NO GO decision point to the examiner;

(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;

(g) confirm static take-off power has been achieved;

(h) maintain directional control during the take-off roll;

(i) rotate at the recommended airspeed, lift off and accelerate to the recommended obstacle clearance airspeed (V_X);

(j) establish the pitch attitude for the recommended obstacle clearance airspeed, 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 and above the minimum recommended flap retraction speed;

(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 apply drift correction in the climb;

(o) complete appropriate checks.

Ex. 17 Circuit

Aim

To 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 competence to comply with MF/ATF 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 proficiency to:

(a) fly an accurate circuit while maintaining a safe 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 the desired ground track;

(g) remain oriented with the runway/landing area in use;

(h) maintain circuit altitude (±100 feet) and an appropriate airspeed;

(i) complete appropriate checklists;

(j) avoid wake turbulence and follow applicable noise abatement 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 180º 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 proficiency to select the proper approach profile for the actual or simulated conditions. Where practicable, one of the landings should be based on the previously calculated performance. If conditions and traffic permit, at least one of the landings should be completed under crosswind conditions. "Touch and Go" landings are not permitted for the evaluation of landings or takeoffs.

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 180º Accuracy Approach and Landing

Aim

To safely execute a gliding approach from circuit height, without power, and land safely on a specified touchdown point with a degree of accuracy.

Description

The power-off 180º accuracy approach and landing will be initiated from normal or assigned circuit height and result in a gliding approach from circuit height to an accurate touchdown and landing. **The candidate is expected to 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.

Performance Criteria

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

(a) review passenger safety (Example; seat belt secure, door locked);

(b) consider wind conditions, landing surface and obstacles;

(c) specify a touchdown point that will permit a safe landing;

(d) complete appropriate checklists;

(e) close the throttle from normal circuit height;

(f) establish a gliding approach at the recommended speed (+10/–5 knots);

(g) complete before-landing checks;

(h) 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 safely execute a short-field approach over an actual or simulated obstacle and land on a specified touchdown point with a degree of accuracy, using the technique recommended by the POH/AFM or to execute a soft-field landing using recognized 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 could not be achieved in the intended touchdown zone, it is acceptable for the candidate to overshoot for a second attempt.

The candidate is expected to use the soft-field landing technique described in the Flight Training Manual or the maximum performance (short-field) technique recommended in the POH/AFM for the aeroplane type used.

B. 1 Short Field Approach and Landing over an Obstacle

Performance Criteria

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

(a) review passenger safety (Example; seat belt secure, door locked);

(b) consider wind conditions and actual or simulated landing surface and obstacles;

(c) specify a 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, such as gusty or crosswind conditions.
(f) maintain crosswind correction and directional control throughout the approach and landing;
(g) make smooth, timely and correct control application during the landing flare and touchdown;
(h) touch down at the specified touchdown point (+100/–50 feet) in accordance with the POH/AFM or best accepted practice for the aeroplane type;
(i) touch down with no drift and with the longitudinal axis aligned with and within 10 feet of the centre of the landing surface;
(j) apply brakes, without excessive lockup or skidding, and stop safely in the shortest distance;
(k) complete appropriate checks.

B. 2 Soft-Field Approach and Landing

Performance Criteria

Assessment will be based on the candidate's proficiency to:
(a) review passenger safety (Example; seat belt secure, door locked);
(b) consider wind conditions, landing surface and obstacles;
(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;
  (ii) 1.3 V_{SO} corrected for the landing weight; or
  (iii) the minimum safe speed for existing conditions, such as 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/landing surface;
(h) touch down using power as necessary to achieve and maintain the landing attitude for the slowest possible touch down on the main wheels;
(i) keep the nose wheel off the ground as long as possible with appropriate use of power and elevator control, while decelerating in consideration of the remaining length of available runway;
(j) complete appropriate checks.

C. - Overshoot

Aim

To safely execute an overshoot as recommended by the POH/AFM or published best practices.

Description

The overshoot will be carried out on command of the examiner or, if necessary may be initiated by the candidate, and will be assessed from any of the landing approaches, the forced landing or precautionary landing.

Performance Criteria

Assessment will be based on the candidate's proficiency to:
(a) overshoot on command or 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;
(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 (±0.5" MP, ±50 RPM);
(g) complete the appropriate checks.

Ex. 21 Precautionary Landing

Aim

To safely evaluate an unfamiliar aerodrome or landing area as a prospective place to land.

Description

The examiner will outline a scenario requiring a landing at an unfamiliar aerodrome or landing surface. The candidate must select a suitable landing area, , determine the landing path, determine the appropriate pre-cautionary procedure to be used and use a planned procedure to fly an accurate approach. While an actual landing may not be required, the final 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 proficiency to:

(a) select a suitable airstrip or other area on which a safe landing could be made;
(b) comply with circuit procedures at an aerodrome;
(c) make appropriate radio calls (simulated or actual);
(d) evaluate the wind conditions, landing surface and obstacles;
(e) select the most suitable touchdown zone;
(f) establish a circuit at an appropriate distance from the airstrip/landing area;
(g) remain oriented with the airstrip/landing area in use;
(h) review passenger safety for landing (Example; seat belt secure, door locked);
(i) configure the aeroplane as recommended in the POH/AFM for the precautionary approach and low-level inspection, as required, while in straight and level flight;
(j) execute a stabilized approach for the low-level inspection at the recommended airspeed (+10/–5 knots);
(k) overfly the landing area in stabilized level flight at a safe height and airspeed that will permit an effective assessment of surface conditions;
(l) determine the suitability of the intended landing surface;
(m) indicate the type of landing to be used and perform a final approach in a manner that would permit touching down within the selected touchdown zone;
(n) maintain crosswind correction and directional control throughout the approaches and the landing;
(o) complete appropriate checks.

Note: The candidate must communicate the intended height for the low-level inspection and explain the operational necessity for any variation from recommended speeds, such as for gusty or crosswind conditions.

Ex. 22 Forced Landing

Aim

To plan, manage and safely carry out a successful approach to a suitable landing area, in the event of an engine failure.

Description

Engine failure will be simulated without advance warning by the examiner by closing the throttle to idle or by bringing the power lever to flight idle and declaring **"Simulated Engine Failure"**. While accomplishing the required emergency procedures, the candidate must demonstrate good decision-making ability and the competence to perform a safe approach to a suitable landing area in a manner indicating that a safe landing could be made if the approach were continued to the ground. Unless the intent is to execute an actual landing on a suitable surface, 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 proficiency to:

(h) control the aeroplane and initially establish the recommended best glide speed (+10/-5 knots);

(i) specify a suitable landing area and touchdown zone;

(j) fly an organized approach to the selected touchdown zone, considering aircraft altitude, wind conditions, terrain, obstructions and other factors;

Note 1: After initially establishing the recommended glide speed, **the candidate may vary the airspeed and flight profile, as required to achieve a successful and safe approach**, without exceeding any aeroplane limitations.

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.

B. Cockpit Management

Performance Criteria

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

(a) complete the basic vital actions from memory;

(b) follow-up with a placard or checklist for "Engine Failure In Flight" emergency procedures, if time permits;

(c) simulate an appropriate radio call, if time permits; and

(d) perform an effective passenger emergency safety review

Note: The candidate is 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 power to achieve a normal power-off gliding descent angle and airspeed.

Ex. 23 Pilot Navigation

Note: *Items 23A, B, C and D, Pilot Navigation are not required when the candidate is enrolled in a CPL(A), CPL(A)/IR or ATP(A) integrated course.*

A. Pre-Flight Planning Procedures (Ground Item)

Aim

To efficiently plan a VFR cross-country flight, demonstrate practical knowledge of cross-country flight planning and, if flight-planning software was used, to demonstrate the competence to manually recalculate one leg based on a scenario such as a significant upper wind change or altitude change.

Description

The examiner will ask the candidate to plan a VFR cross-country flight of at least 2.5 hours cruising range to an assigned destination, including an intermediate refuelling stop. Preliminary planning and paper chart preparation may be done prior to the day of the test.

Final flight planning will be completed based on real time weather, and a loading scenario with all passenger seats occupied as well as a significant baggage load, as specified by the examiner.

Software or online flight planning may be used for the planning and generation of a navigation log.

Performance Criteria

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

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

(b) correctly 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 cruising altitudes, considering weather conditions, terrain and equipment capabilities;

(i) prepare a chart and navigational log, including estimated headings, fuel requirements and time en route, either manually or with flight-planning software;

(j) provide an estimate of the amount of fuel (in litres) expected to be ordered at the intermediate refuelling stop;

(k) make a competent "GO/NO-GO" decision based on available information for the planned cross-country flight;

(l) complete an ICAO VFR flight plan demonstrate knowledge of how to file a VFR flight plan;

(m) complete planning, preparations and calculations, **excluding** weight and balance computations for the actual flight, within 45 minutes; and

(n) if flight-planning software was used, to manually recalculate one leg of the flight plan (with E6B or equivalent) based on a scenario specified by the examiner during the evaluation of the ground portion of the flight test.

B. Departure Procedure

Aim

To safely execute an organized and efficient departure for a cross-country flight.

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 proficiency to:

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

(b) note take-off 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) reset the heading indicator and complete appropriate checks.

C. En Route Procedure

Aim

To effectively apply systematic navigation techniques in order to ensure that arrival at the destination is predictable.

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.

Note: Radio navigation aids or GPS are not to be used during the execution of this item.

Performance Criteria

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

(a) set power, lean mixture and manage fuel and engine cooling as recommended in the POH/AFM for the desired performance;

(b) verify that planned cruise performance has been achieved, i.e. power and KTAS;

(c) maintain cruising altitude (±100 feet), and heading (±10°);

(d) maintain a navigation log that accurately reflects the progress of the flight;

(e) navigate by applying systematic navigation techniques (not simply track crawling); and

(f) within 15 minutes after setting heading, demonstrate an organized method to:

  (i) verify the position of the aeroplane;

  (ii) revise headings to correct any existing track error to maintain the aeroplane position within 1 nautical mile of the planned route;

  (iii) confirm or revise the ETA for the first turning point or destination with a degree of accuracy that would make arrival within 5 minutes predictable; and

  (iv) confirm fuel requirements to reach the destination or first refuelling stop.

D. Diversion to an Alternate

Aim

To safely carry out a diversion to a suitable alternate destination using mental in-flight planning, dead reckoning and map reading.

Description

In response to a scenario presented by the examiner, the candidate will demonstrate the competence 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. **The CPL candidate will use dead reckoning for navigation, as though over barren terrain**. The following of geographical features, such as rivers or roads will not be allowed on this Commercial Pilot Licence flight test. Rulers, notched pencils, protractors, devices such as ForeFlight or computers will not be used for this procedure.

The candidate is expected to initiate the diversion without undue delay by quickly determining a track to follow, an approximate heading and an approximate time enroute to avoid the need to loiter in a holding pattern.

When practicable, a part or all of the diversion will be conducted at a height of approximately 500 feet above ground or at the minimum safe altitude, whichever is higher. The candidate may change altitudes to suit the topography or the scenario and is expected to communicate intentional altitude changes to the examiner. Estimated en route and arrival times may be approximate but should have a reasonable degree of accuracy. The diversion will be continued until at least the stage where the aeroplane is established on the proposed track to the alternate; in a manner demonstrating that arrival at the destination is predictable.

Note: Radio navigation aids or GPS are not to be used during the execution of this item.

Performance Criteria

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

(a) perform the following tasks without undue delay:

  (i) identify and record present position;

  (ii) select an appropriate alternate destination and route;

  (iii) estimate an initial heading to fly, based on a track;

  (iv) estimate the approximate time en route to the alternate destination; and

  (v) estimate the approximate available flight time that will remain with the fuel on board upon arrival at the destination (Example: 2 hours+15 minutes);

(b) intercept the proposed track and divert toward the alternate destination;

(c) identify the highest Maximum Elevation Figure (MEF) along the selected route and determine a minimum safe altitude for the actual route;

(d) select an aeroplane configuration and airspeed appropriate for the actual or simulated conditions, if those conditions include poor visibility (for optimum "see and avoid");

(e) provide an initial ETA when setting heading and confirm or revise that time while en route;

(f) maintain an appropriate selected airspeed (±10 knots)

(g) maintain selected headings (±10°);

(h) maintain declared altitudes (±100 feet);

(i) simulate communication with ATS to inform of intention to divert

.Ex. 24 Instrument Flying and Use of Radio Navigation Aids

Note: *Items 24A, B, C and **D** will require the candidate to wear a suitable view-limiting device.*

A. Full Panel

Aim

To safely control and manoeuvre the aeroplane by reference to a full panel of flight instruments or a primary flight displays.

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) descend at a constant rate;

(f) 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 proficiency to control and manoeuvre the aeroplane using correct instrument scanning and interpretation, within:

(a) ±10º of assigned headings;

(b) ±100 feet of assigned altitudes;

(c) ±10 knots of assigned airspeeds;

(d) ±100 feet per minute of assigned rates of descent, when established;

(e) ±10º of assigned angles of bank.

B. Limited Panel

Aim

To safely control the aeroplane in straight and level flight and while turning by reference to flight instruments, but without reference to the attitude indicator and the heading indicator, in the case of a traditional instrument panel; or, without reference to a primary flight display and multi-function display (**standby instruments and magnetic compass only**), in the case of a technically-advanced aeroplane. The turn will not be less than 90º or more than 180º.

Description

Using limited panel, the candidate will:

(a) maintain straight and level flight; and, when requested by the examiner

(b) execute a continuous, coordinated turn, in the shortest direction, to a heading specified by the examiner.

Note: One (1) heading correction will be allowed to more precisely achieve the specified heading.

Performance Criteria

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

(a) ±15º of specified heading;

(b) ±100 feet of assigned altitude;

(c) ±10 knots of assigned airspeed.

C. Recovery from Unusual Attitude

Aim

To safely and promptly recover from an unusual attitude by reference to flight instruments, but without reference to the attitude indicator and the heading indicator in the case of a traditional instrument panel or; without reference to a primary flight display and multi-function display (**standby instruments only**) in the case of a technically-advanced aeroplane.

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 or standby instruments only, the candidate will promptly recover with minimum loss of altitude from one unusual attitude.

Performance Criteria

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

(a) on command, recognize the unusual flight attitude by reference to available flight instruments;

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

(c) promptly recover to stabilized level flight using correct instrument cross-check and interpretation.

D. Radio Navigation

Note: *A view-limiting device **will be worn** for this flight test item.*

Aim

To tune, identify and confirm a selected radio facility or waypoint and effectively navigate, using radio navigation aids, while flying the aeroplane by sole reference to a full panel of flight instruments or a primary flight display and multi-function display.

Description

The candidate will determine the position of the aeroplane relative to a VOR, NDB or GPS waypoint specified by the examiner and fly a procedure that will establish the aeroplane on an OBS track or bearing to or from that facility or waypoint specified by the examiner. The required track will be maintained until station or waypoint passage has been identified or described by the candidate. If a GPS receiver is used, the candidate will select "Terminal Mode" (1 NM sensitivity), if it is not already in that mode.

Demonstrating proficiency for this item by sole reference to flight instruments will confirm the competence to control an aeroplane and navigate effectively on a dark night away from built-up areas.

Performance Criteria

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

(a) tune and identify the station, in the case of VOR or NDB;

(b) apply a systematic method, using radio navigation aids, to determine the aeroplane's position relative to a GPS waypoint, a VOR or an NDB;

(c) determine and apply an interception procedure which will establish the aeroplane on the required track specified by the examiner;

(d) maintain the specified track within ±10º, or for GPS, within 1 nautical mile; and

(e) identify or describe station or waypoint passage.

(f) maintain flight with the following level of accuracy:

(i) ±15º of the selected heading;

(ii) ±200 feet of the assigned altitude;

Ex. 29 Emergency Procedures/Malfunctions

Aim

To react promptly and correctly to actual or simulated 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. The candidate is expected to complete any applicable vital actions by memory and follow up by consulting the appropriate emergency checklist.

Assessment may be carried out during any portion of the flight test. At least one of the emergencies/malfunctions listed below should be simulated in flight.

Performance Criteria

Assessment will be based on the candidate's proficiency to analyze a situation and take appropriate action by carrying out vital action memory items for the applicable procedure and following up with the appropriate emergency checklist for any three (3) of the following simulated emergencies or 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) airframe icing

(j) electrical malfunction

(k) avionics failures:

- (i) attitude/heading reference system (AHRS) failure
- (ii) display failure
- (iii) navigational aid failure
- (iv) warnings and cautions

(l) landing gear malfunction

(m) brake failure or seizure

(n) flap failure

(o) door opening in flight

(p) emergency descent

(q) any other emergency or malfunction 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 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 aeroplane. The candidate must demonstrate the competence 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 proficiency to:

(a) select frequencies for the facilities used;

(b) demonstrate a practical knowledge of the radio/avionics installation in the aeroplane;

(c) transmit using recommended phraseology;

(d) acknowledge and comply with radio communications and ATC instructions;

(e) explain the correct procedure for radio communications failure;

(f) demonstrate a practical knowledge of ATC light signals;

(g) demonstrate or explain the correct procedure for obtaining emergency radar assistance or a Special VFR clearance;

(h) explain how to obtain weather information from a radio facility;

(i) explain how to give a clear and accurate VFR position report;

(j) explain how to use correct emergency communication procedures.

RECOMMENDATION FOR FLIGHT TEST - COMMERCIAL PILOT LICENCE

Name of Candidate (Print)	Licence Number

Flight Experience (Hours)		Enrolled - Integrated CPL Course (circle applicable)
Dual	Solo	Yes / No CPL(A) CPL(A)/IR ATP(A)

I, the undersigned instructor, certify that the above named candidate meets the minimum experience requirements of section 421.14 of the *Personnel Licensing Standards*. I further certify that training for all of the exercises in the Flight Training Manual and the Flight Instructor Guide from Ex. 1 thru to Ex. 25 and Exercises 29 and 30, including Ex. 13 has been completed and a pre-test evaluation of all required flight test items has been completed with the candidate.

I consider the candidate to have reached a sufficient level of proficiency to complete the flight test required for the issuance of a Commercial Pilot Licence - Aeroplane and hereby recommend the candidate for the flight test, as I am qualified through the privileges of my pilot licence to make this recommendation.

☐ The candidate is enrolled in a CPL(A), CPL(A)/IR or ATP(A) integrated course and 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**

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

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

RECOMMENDATION FOR PARTIAL FLIGHT TEST – COMMERCIAL PILOT LICENCE

Name of Candidate (Print)	Licence Number
Total Flight Experience (Hours) 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 proficiency 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	