



**/// CIVIL AVIATION AUTHORITY
OF NEW ZEALAND**

CPL Cross-Country Flight Test

Aeroplane/Helicopter

Revision 1: December 2009

Introduction

This guide sets out the procedures, techniques and marking criteria for the demonstration of skill required for the successful completion of the cross-country flight test required for the issue of a New Zealand Commercial Pilot's Licence, (Aeroplane and Helicopter).

The guide describes an acceptable means of compliance for use in conjunction with the syllabus prescribed in CAA Advisory Circular 61-5. Category A or B flight instructors are expected to use this guide when conducting the "CPL cross-country flight test".

Flight instructors conducting CPL cross-country training and the candidate should be familiar with this guide and refer to the competency standards during training.

Change Notice

Editorial (under "Advice to instructors" on page 3).

Contents

General	3
Eligibility	3
Conduct of the flight test	3
Briefing	3
Advice to instructors	3
Assessment of Performance	4
Marking Scale	4
Incomplete flight test	4
Records	4
Flight Preparation	5
Pre-flight planning	5
Weight and balance	6
Documents and airworthiness	7
Pre-flight inspection	8
General knowledge	9
In Flight Procedures	10
Departure and arrival	10
Cruising flight	11
En-route navigation	12
Engine failure (cruise flight)	13
Low level diversion	14
Engine failure after take-off (Aeroplane only)	15
Precautionary landing	16
Post flight procedures	17
Post flight	17

General

Eligibility

In order to be eligible for the CPL cross-country flight test the candidate shall:

- Provide proof of identification in the form of a licence or other official document bearing the signature and photograph of the candidate;
- Supply logbook records showing completion of cross-country training in accordance with the syllabus in AC 61-5 Appendix II, certified by the supervising instructor;
- Successfully complete this demonstration within a maximum of 12 months from the first dual cross-country exercise carried out.

Conduct of the flight test

An appropriately type rated Category A or B flight instructor shall only conduct the cross-country flight test when the training is complete, the aircraft is airworthy, the training records are correctly certified and the candidate's documents, as required by the New Zealand Civil Aviation Rules, are valid.

Briefing

The Category A or B flight instructor conducting the test is required to brief the candidate on the following details:

1. The route to be flown (other than the unplanned diversion). The route may be given in advance (as if the instructor was chartering the aircraft for the flight).
2. Who is pilot-in-command? The pilot-in-command is the candidate. If the flight instructor intervenes in any way in the interest of safety the demonstration is a fail and may only be continued for training purposes at the request of the candidate.
3. Simulated emergencies. What method will be used? Verbal?
4. The role of the instructor in the event of an actual emergency. Who will fly the aircraft? What assistance is expected from the non-flying pilot?

Advice to instructors

In relation to point 1 above:

For the purpose of decision making assessment, an unacceptable destination, a departure time that infringes ECT or a request to fly in inappropriate weather may be initially requested (role playing an operationally uninformed member of the public).

Ensure the nominated route is triangular requiring a minimum 2 hours 30 minutes (Aeroplane), 2 hours (Helicopter) flight time and includes flight over varied terrain, flight in controlled airspace and provides for an overhead rejoin at an uncontrolled aerodrome; as required by the syllabus.

Unavoidable deviations from the flight plan due to weather, traffic or other situations beyond the reasonable control of the candidate should be fully explored to assess threat and error management, situational awareness and decision making.

In relation to point 2 above:

In applying CRM principles, it is acceptable for the candidate to utilise the flight instructor as a passenger to advise sighting other aircraft, hold maps and documents or pass items on request.

Assessment of Performance

The "Performance Criteria" section of each element of the cross-country flight prescribes the marking criteria.

Marking Scale

Ideal	Performance is without errors under existing conditions. Aircraft handling is smooth and accurate. Decision making meets a higher than expected level of competency. Behaviour indicates continuous and highly accurate situational awareness. Flight management skills and threat and error management are excellent. Safety of the flight is assured.
Competent	Performance includes minor errors that are corrected promptly. Aircraft handling is smooth and within specified tolerances. Decision making meets the expected level of competency. Behaviour indicates that situational awareness has been maintained. Flight management skills and threat and error management are effective. Safety of the flight is maintained.
Not yet competent (requires further training)	Performance includes significant errors that are <u>not</u> recognised or are <u>not</u> corrected promptly. Aircraft handling is rough or includes uncorrected or excessive deviations from specified tolerances. Decision making <u>does not</u> meet an acceptable level of competency. Behaviour indicates lapses in situational awareness that are <u>not</u> identified or corrected. Flight management skills and/or threat and error management are ineffective. Safety of the flight is jeopardised.

Incomplete flight test

If the flight test cannot be completed owing to circumstances beyond the candidate's control, the subsequent flight test shall include those flight manoeuvres required to demonstrate the decision making processes not completed on the original flight.

Records

On completion of a successful cross-country flight test the Category A or B flight instructor shall endorse the candidate's logbook in accordance with AC 61-5 Appendix II.

Flight Preparation

Pre-flight planning

Aim

To determine that the candidate has a practical knowledge of VFR flight planning.

Description

The candidate will be required to prepare a navigation log and flight plan for the nominated route within approximately one hour.

Performance Criteria

The candidate will:

- Make full use of relevant weather;
- Apply NOTAM's and AIP supplements to the proposed route;
- Choose appropriate tracks and altitudes for the route;
- Prepare the map for navigation in line with CRM principles;
- Prepare a navigation log to include tracks, headings, distance, ground speed, ETA's and fuel calculations (in accordance with Part 135 operational requirements);
- Complete and file an Airways or appropriate flight following flight plan;
- Utilise a SARWATCH.

Weight and balance

Aim

To determine that the candidate can competently complete weight and balance calculations for the flight.

Description

The candidate will be required to complete accurate computations for the flight using actual weights for take-off and landing.

Performance Criteria

The candidate will:

- Determine if the centre of gravity is within permissible limits for take-off and landing;
- Demonstrate a practical knowledge of how to correct a situation in which the centre of gravity is out of limits and/or a weight limit is exceeded (should this occur or be simulated by the instructor to assess decision making, TEM and/or situational awareness).

Documents and airworthiness

Aim

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

Description

The candidate shall determine the validity of all documents required to be carried on board and determine that required maintenance certification has been completed.

Performance Criteria

The candidate will:

- Determine that the documents required on board are valid;
- Determine the number of flying hours before the next service or maintenance task is due;
- Ensure that any conditions or limitations on the technical log can be complied with;
- Apply TEM to the impact of deferred defects and the MEL on the proposed flight;
- Apply TEM to the process for dealing with aircraft un-serviceability's discovered or simulated during the flight.

Pre-flight inspection

Aim

To determine that the candidate can competently complete internal and external checks in accordance with the approved checklist to verify that the aircraft is ready for the intended flight.

Description

The candidate shall determine that the aircraft is ready for the intended flight. All equipment appropriate to the flight e.g. lifejackets, survival equipment and documents shall be located and, so far as can be determined by pre-flight inspection, the aircraft shall be confirmed to be airworthy. Checks for fuel quantity, proper grade of fuel, fuel contamination and oil level shall be carried out in accordance with the POH/AFM.

Performance Criteria

The candidate will:

- Conduct the pre-flight inspection in accordance with the POH/AFM;
- Confirm that there is sufficient fuel and oil for the intended flight;
- Verify that the aircraft is in a condition for safe flight;
- Secure loose articles and arrange documents and equipment in a manner that makes the items readily available in accordance with CRM principles;
- Supervise the passenger on the apron area (including embarking and disembarking);
- Perform an effective passenger safety briefing which shall include (as appropriate):
 - the location and use of emergency exits and equipment (emergency locator transmitter, fire extinguisher);
 - smoking limitations;
 - use of seat belts;
 - action to take in the event of an emergency landing;
 - passenger considerations for aircraft evacuation;
 - items specific to the aircraft type being used;
 - other items for use in an emergency;
 - a tone and manner of delivery that is professional and appropriate to the flight.

General knowledge

Aim

In relation to the intended flight, to determine by questioning that the candidate understands AIP supplements, NOTAM's, weather reports and forecasts, aircraft performance, the MEL and lost procedures.

Description

The instructor will refer to the NOTAM's, AIP supplements, weather reports and forecasts as provided by the candidate for the intended flight and ensure a professional level of understanding of the information contained therein.

The instructor will question the candidate on the procedure to be adopted in the event of becoming lost and the associated decision making processes.

Performance Criteria

The candidate will:

- Demonstrate a professional level of understanding in relation to information contained in NOTAM's, AIP supplements, weather reports and forecasts;
- Explain the procedure to be adopted in the event of becoming lost and the associated decision making process.
- Explain the application of the MEL.

In Flight Procedures

Departure and arrival

Aim

To determine that the candidate can comply with standard procedures for joining the traffic pattern, including an overhead rejoin procedure, use entry and exit lanes and comply with the requirements of flight in controlled and other airspace.

Description

The candidate shall use entry and exit lanes, make an overhead rejoin and obtain clearances to enter controlled airspace (as appropriate, without instructor intervention).

Performance Criteria

The candidate will:

- Use entry and/or exit lanes where appropriate;
- Carry out a standard overhead rejoin when appropriate;
- Obtain and comply with a clearance to enter controlled airspace as and when applicable;
- Maintain situational awareness, apply TEM and verbalise decision making (for the benefit of assessment by the instructor and without comment from the instructor).

Note:

Flight into controlled airspace without a clearance is assessed Not Yet Competent regardless of overall performance.

Cruising flight

Aim

To determine that the candidate can establish cruising flight in accordance with the POH/AFM.

Description

The candidate will establish the aircraft in the recommended cruise in accordance with the performance charts in the POH/AFM, displayed placards, or any other means authorised by the manufacturer.

Performance Criteria

The candidate will:

- Maintain assigned heading(s) $\pm 10^\circ$ and altitude ± 100 feet;
- Achieve the recommended cruise for existing conditions as recommended by the POH/AFM;
- Apply any additional measures recommended by the manufacturer with respect to aircraft configuration, leaning or other considerations;
- Confirm cruise performance;
- Complete appropriate cruise checks.

En-route navigation

Aim

To determine that the candidate takes a professional approach to cross-country navigation techniques.

Description

The candidate shall maintain an in-flight log to revise ETA and maintain awareness of fuel burnt and in reserve.

Apply visual flight rules (VFR) to maintain visual meteorological conditions (VMC) at the altitude flown within and outside controlled airspace.

Maintain situational awareness through map reading and calculate corrections to regain track as applicable.

Performance Criteria

The candidate will:

- Maintain an in-flight log (from which the flight can be reconstructed);
- Maintain an awareness of fuel consumption and fuel remaining (the instructor may ask for a fuel remaining estimate at any time, either as a quantity or flight time);
- Revise ETA as required;
- Use standard radiotelephony phraseology, make position reports as required and follow standard transponder procedures;
- Conduct the flight under Visual Flight Rules (VFR);
- Conduct a TAS check (at instructor discretion);
- Apply map reading principles and calculate corrections to regain track as applicable;
- Modify the route as appropriate, considering passenger comfort under the conditions experienced and the flights objectives.

Note:

Flight that infringes VMC is assessed Not Yet Competent regardless of overall performance.

The candidate must not be permitted access to GNSS information or moving map displays as it is vital that the basic principles of VFR navigation are understood before employing technology to decrease work load.

Engine failure (cruise flight)

Aim

To determine that the candidate can maintain control and carry out the forced landing procedure after an engine failure during cruising flight with the outcome never in serious doubt.

Description

At cruising altitude the instructor will simulate an engine failure. The candidate will be expected to control the aircraft and carry out a forced landing.

Performance Criteria – Control

The candidate will:

- Control the aircraft;
- Recognise the simulated engine failure promptly;
- Carry out the recommended forced landing procedure;
- Maintain airspeed within ± 5 knots of the recommended airspeed.

Performance Criteria – Cockpit Checks

The candidate will:

- Complete engine failure vital action checks from memory;
- Attempt to determine the probable cause of the (simulated) engine failure.

Performance Criteria – Decision Making

The candidate will:

- Verbalise (for the instructor's benefit) the choice of field and the approach plan;
- Commence the overshoot on the instructor's command.

At a safe height:

- Describe appropriate subsequent actions; and
- Describe the decision making process used (at instructor discretion so that situational awareness, TEM and decision making can be fairly assessed by the instructor).

Low level diversion

Aim

To determine the candidate's decision making processes and their ability to calculate/estimate heading, distance and ETA to a suitable diversion destination.

Description

The candidate shall carry out a low level diversion when confronted by conditions/operational requirements or a simulation (at instructor discretion) that makes a diversion desirable;

Performance Criteria

The candidate will:

- Analyse the situation and take appropriate action;
- Nominate a suitable diversion aerodrome with regard to fuel, daylight, weather and/or operational requirements;
- Calculate/estimate (as applicable) heading to steer, distance to go and ETA to the diversion aerodrome;
- Update weather and NOTAM's (if available/applicable);
- Set heading in a timely manner and maintain the in flight log;
- Amend flight following/SARTIME details (as appropriate).

Note:

The candidate should be asked to verbalise their decision making processes (without comment by the instructor) so that situational awareness, TEM and decision making can be fairly assessed by the instructor.

This exercise may be commenced off the en-route forced landing or as a result of a (simulated) lowering cloud base (assess the candidate's procedures to maintain VMC during the simulation).

Descent below 500 feet AGL is assessed Not Yet Competent regardless of overall performance.

For helicopters, an aerodrome is still nominated as the diversion destination for the purpose of assessing the candidate's navigation skills e.g. heading, ETA etc.

Engine failure after take-off (Aeroplane only)

Aim

To determine that the candidate can maintain control of the aircraft following an engine failure after take-off at an unfamiliar aerodrome and carry out the appropriate emergency actions.

Description

At an operationally safe height or the manufacturer's recommended minimum height, whichever is higher, the instructor will simulate an engine failure.

Performance Criteria – Control

The candidate will:

- Recognise the simulated engine failure promptly;
- Control the aircraft;
- Select a suitable landing area;
- Carry out the recommended procedure until prompted by the instructor to overshoot.

Performance Criteria – Cockpit Checks

The candidate will:

- Complete engine failure vital action checks from memory.

Performance Criteria – Decision Making

The candidate will:

- Verbalise field choice and vital actions.

At a safe height:

- Describe appropriate subsequent actions; and
- Describe the decision making process used (at instructor discretion so that situational awareness, TEM and decision making can be fairly assessed by the instructor).

Precautionary landing

Aim

To determine that the candidate can select a suitable field, carry out an inspection and position the aircraft for a precautionary landing.

Description

The candidate will be given a scenario that requires a precautionary landing to be carried out as the best available option. The candidate will be required to demonstrate the correct procedure and techniques within a reasonable time limit.

Performance Criteria

The candidate will:

- Consider the wind conditions, landing surface and obstructions etc;
- Carry out a field inspection(s) as required;
- Establish the recommended approach and landing configuration;
- Establish a stabilised approach at the recommended airspeed;
- Make smooth, timely, and correct control applications throughout the inspection and approach;
- Complete appropriate checks;
- Verbalise decision making processes (without comment by the instructor so that situational awareness, TEM and decision making can be fairly assessed by the instructor).

Post flight procedures

Post flight

Aim

To determine that the candidate carries out their post flight responsibilities competently.

Description

The candidate will complete the post flight actions without prompting and reconstruct the flight from the flight log at instructor request.

Performance Criteria

The candidate will:

- Supervise the passenger on the apron area;
- Terminate the flight plan and any SARWATCH;
- Record and notify any defects;
- Record flight times appropriately;
- Leave the aircraft in an appropriate state, consistent with a professional approach.

Performance Criteria – Checks

The candidate will:

- Complete the aircraft post flight inspection.

Performance Criteria – Critique

The candidate will:

- Reconstruct the flight from the flight navigation log.