

**Safety Regulation Group  
Personnel Licensing Department**



## **Joint Aviation Requirements Flight Crew Licensing**

### **Notes for the Guidance of Applicants taking the Initial Instrument Rating Skill Test (Aeroplanes)**

**Standards Document 1, Version 06**

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## Foreword

This document sets out the requirements for applicants taking the Instrument Rating Skill Test (IRT) for the grant of an Instrument Rating (IR) (Aeroplanes). The information will help applicants prepare for this flight test, but it must be remembered that aspects mentioned here are of a general nature only and do not give precise details of each exercise or manoeuvre.

Nothing in the document is intended to conflict with the UK Air Navigation Order or other legislation, which remains the primary authority. Whilst every effort is made to ensure that all information in this document is correct the CAA reserves the right to amend this document as required to reflect changes in practice required for the effectiveness of the test. These notes incorporate the UK licensing requirements for an IR (Aeroplanes) and align with JAR-FCL 1.

This document is available for all those engaged in training and testing for the initial issue of the IR. This, and other Standards Documents, are also available on the SRG Safety Net web site and will be distributed to users without charge.

If, after reading this document, you still have queries about the IRT, please contact the Personnel Licensing Department, or one of the Regional Flight Test Centres:

Civil Aviation Authority  
Personnel Licensing Department  
Approvals Support  
Aviation House  
Gatwick Airport South  
West Sussex RH6 0YR  
Tel No: 01293 573700 Fax no: 01293 573996

### Regional Flight Test Centres

Bournemouth	01202 576621	Leeds	0113 2506625
Bristol	01275 475226	Oxford	01865 841199
Cranfield	01234 750111 Ext 5586		

## Joint Aviation Authority (JAA)

The Civil Aviation Authorities of certain European States (the Joint Aviation Authorities (JAA) have developed common aviation regulation requirements, known as Joint Aviation Requirements (JAR). Joint Aviation Requirements for Flight Crew Licensing (JAR-FCL 1) detail the requirements for all aeroplane pilot licences. JAR-FCL licences will enable the holder to pilot aircraft registered in any JAA member state.

## Part 1 General Information

- 1.1 If the IRT is taken in a multi-engine aeroplane then no further test is required for single engine IR privileges. If the IRT is taken in a single engine aeroplane then a further IRT is required for the multi-engine aeroplane.
- 1.2 A pilot who is current in multi-pilot operations may take the IRT in an aeroplane certified within JAR-FCL for multi-pilot operations. Annex 4 to these notes will cover the required procedures.
- 1.3 An Instrument Rating (Aeroplanes) is valid for 12 months.
- 1.4 JAR-FCL directs that an IR(A) may be revalidated up to 3 months before the rating expires, without any reduction from the original date of expiry. If the IR is valid for use in single-pilot aeroplanes, the revalidation shall be completed in a single-pilot aeroplane. If the IR(A) is restricted for use in multi-pilot operations only, the revalidation shall be completed in a multi-pilot aeroplane. A multi-pilot IR(A) is not valid on single-pilot aeroplanes (and vice-versa).
- 1.5 Throughout these notes the following editorial practices and definitions shall apply:
- "Shall" and "Must" are used to indicate a mandatory requirement.
  - "Expect" and "Should" are used to indicate strong obligation.
  - "May" is used to indicate discretion.
  - "Examiner" is used to indicate a person who is authorised by the CAA to conduct the appropriate skill test.
  - "Applicant" is used to indicate a person who is seeking the issue or renewal of a pilot's licence or rating.
  - A Skill Test is a demonstration of skill for the initial licence issue, licence renewal, rating issue or rating renewal. Such tests include oral examination and flight test as appropriate.
  - "He/She". The pronoun 'he' is used throughout for ease of reading.

## Part 2 Preparation, Provision of Aeroplanes and Test Bookings

### 2.1 Flight Test Preparation

#### 2.1.1 Requirements

It is important that all of the pre-test requirements are completed before entry into the Flight Test Programme so that test slots are not wasted. A cancellation fee equivalent to the test fee may be charged if a test is cancelled due to a pre-test requirement not being completed.

#### 2.1.2 Ground examinations and training

Applicants shall have passed the associated theoretical knowledge examinations before undergoing the flight test though, with prior approval, exceptions may be made by the CAA for applicants undertaking a course of integrated training. Instruction for the associated theoretical examinations shall always have been completed before the flight test is taken. Students commencing modular IR courses must hold the night qualification prior to commencing IR training.

#### 2.1.3 Flight training

The applicant for the IRT shall have satisfactorily completed any training necessary in the same type/class of aeroplane being used for the flight test.

#### 2.1.4 Certificate of competence - Form 170A

Applicants for the IRT must have obtained a F170A before attempting the flight test. At the end of an approved course or period of training at a Flight Training Organisation (FTO) the F170A is issued by an authorised instructor at that FTO when he is satisfied that the required standard has been reached to pass the test. The F170A signatory must also certify that he has inspected the applicant's personal flying logbook and that the applicant possesses the appropriate training/experience. Applicants on Integrated Training Courses are not to be presented for test until their training is within 5 hours of their approved syllabus requirements. Applicants from Modular Courses must have completed all specified training before testing. Any previous attempts at the IRT that the applicant has made shall also be indicated on F170A. The FTO responsible for the applicant's training may also be required to produce his training record to the Examiner. The F170a will remain valid for two series. A new, flown F170a will be required before attempting the third or subsequent Series.

#### 2.1.5 Experience

Applicants for the IRT shall hold a PPL(A) including a Night qualification or a CPL(A) and shall have completed at least 50 hours cross-country flight time as PIC in aeroplanes or helicopters of which at least 10 hours shall be in aeroplanes.

#### 2.1.6 Previous tests - F173

Applicants who have previously attempted the IRT must produce to the Examiner the previous test result FCL 173 which shows the reasons for failure and any re-training requirement.

- 2.1.7 **Synthetic Training Devices (STDs)**  
Certain approved courses may include training in STDs. Applicants should be aware that each simulator or training device must have been approved for the IR course by the CAA and is awarded a qualitative credit that specifies the maximum hours which applicants may claim towards their instrument training.
- 2.1.8 **Medicals**  
Applicants must be in possession of a JAA Class 1 medical certificate at the time of the test. PPL (IR) applicants require JAA Class 2. The medical certificate shall be shown to the Examiner. If the certificate is out of date the Examiner may still conduct the test, but the applicant is to be aware that, regardless of the outcome, he will not be permitted to use his licence or rating until the certificate is revalidated. UK armed forces personnel must hold a valid and current military aircrew medical category.
- 2.1.9 **Flight Radiotelephony Operators (FRTO) Licence**  
An applicant will be required to hold an FRTO licence or have passed the required examinations prior to attempting the IRT.
- 2.2 Provision of Aeroplanes**
- 2.2.1 Applicants must provide an aeroplane for the IRT which has been approved by the CAA for the purpose. Details regarding the approval of aeroplanes are given in Standards Document 7 - "Approval of Aeroplanes for use on Flight Tests conducted by CAA Flight Examiners".
- 2.2.2 Applications for the approval of an aeroplane shall be made to PLD, Approvals Support, at Gatwick. Further advice about aeroplane approval may be sought from the CAA Flight Examiners at the local Regional Test Centres.
- 2.2.3 The Certificate for Aircraft Approval, F176, will normally remain valid for 12 months. The FTO will be responsible for maintaining the approval. It is not normally possible to approve or re-approve an aeroplane on the day of the flight test.
- 2.2.4 The CAA shall not be responsible for the provision of insurance for the applicant taking the IRT. However, it is necessary for the aircraft operator to maintain an insurance policy which adequately covers the aircraft, applicant and the Examiner during the conduct of the flight test.
- 2.3 Test Booking**
- 2.3.1 Application for test must be made through the FTO conducting the training, to PLD, Approvals Support Section at Gatwick. Tests are normally arranged for a date within 10 working days of the date of application. The fee for the IRT is prescribed in the CAA Scheme of Charges for Personnel Licensing which is available on the CAA web-site. Fees must be paid at the time of the booking. Applicants will be required to show evidence of payment for their test before a flight will be made.

### **Part 3 Conduct of the Test**

- 3.1 Preview of Events**
- 3.1.1 This section outlines those items that the Examiner considers as he constructs the profile. Section 3.2 will give details of the content of the Initial Briefing; Section 3.3 and 3.4 describe the Planning and Weather considerations that are required. Sections 3.5 to 3.7 detail the Main Briefing, Flight and Debrief.
- 3.1.2 The skill test for the grant of the IR will be conducted by a Flight Examiner or Inspector employed by the CAA. The test schedule and standards required are set by the JAA and the CAA. The Examiner will conduct each test to meet the required schedule and achieve a meaningful, fair and valid assessment. He will determine the flight profile in order to cover all required sections of the test and will expect the applicant to conduct the flight in a practical and expeditious manner. Flight profiles may vary depending upon many influences outside the control of the Examiner such as ATC requirements, weather conditions, serviceability of navigation or approach aids etc. However, the Examiner will ensure that the applicant is given every opportunity by giving clear and unhurried instructions and will check that the applicant has understood what he has been asked to do.
- 3.1.3 Applicants must remain adaptable and flexible without compromising safety and it is important that they clearly understand the briefing before the flight. The Examiner's assessment will take into account each section, procedure or manoeuvre of the flight as well as the overall conduct, management, airmanship and general captaincy.
- 3.1.4 The IRT is divided into six main sections:
- |           |                                |
|-----------|--------------------------------|
| Section 1 | Departure                      |
| Section 2 | General Handling – Instruments |

Section 3	En-route IFR
Section 4*	Precision Approach and go-around or landing
Section 5*	Non-precision approach and go-around or landing
Section 6	Simulated Asymmetric Flight

Note: \*Either of Section 4 or 5 must be flown following an ATC procedural clearance.

3.1.5 All sections of the test are to be completed in the course of one flight. The sequence of sections may vary depending on circumstances and the Examiner's briefing will include the expected profile. Examiners are responsible for ensuring an efficient test but applicants must remain flexible, particularly if weather conditions, ATC 'slot' times or availability of approach aids etc. subsequently dictate a different scenario during the flight. When deciding the route the Examiner will generally arrange the test profile such that the flight can be completed within approximately 90 - 120 minutes. Applicants should not necessarily expect to fly any of the regular local routes used during training as the test is intended to be a practical exercise to a destination and/or alternate airfield, normally within 150 nms.

3.1.6 A practical example of the test schedule may be to assume a flight from base aerodrome via a Standard Instrument Departure (SID) to join controlled airspace. At least part of Section 3 of the test must be conducted in UK Class 'A' airspace where possible or along a published route in Controlled Airspace. Exceptionally, in certain areas where a routing including Class 'A' airspace is not possible without an excessively long flight, Class 'D' airspace may be acceptable. The flight continues with radar vectors to an instrument approach (normally ILS) which is completed in assumed minimum operating weather conditions. Following a go-around from this instrument approach an engine emergency will be simulated followed by a diversion to a pre-planned alternative airfield for a holding pattern. A procedural asymmetric non-precision approach and go-around into an asymmetric visual circuit, or circling approach, will follow. Where the non-precision approach is to a runway from which a circle to land is required then that would be the requirement, again asymmetric. The general instrument flying manoeuvres, Section 2 of the profile may be completed during the transit between bases, or at the end of the flight. However, it is not always possible to follow this profile and the sequencing of the test sections and selection of suitable airfields is at the Examiner's discretion. The Examiner may require either approach to be asymmetric and one must be procedural.

3.1.7 The IRT is very demanding. It is appreciated that even the most 'professional' or 'talented' pilots can make mistakes particularly if attention to accuracy is relaxed for a few moments. This does not necessarily mean that a failure should result.

3.1.8 The following notes reflect the style and sequence of the briefing that the applicant may expect to hear. However, the Examiner may make variations in the delivery of the briefing and may have to modify the sequence in which items are briefed and flown.

3.1.9 Where the test is for multi-pilot operations, the differences in test schedule and the Examiners briefing are shown in Appendix 4 to this document.

3.1.10 The Examiner may stop the test at any stage if he considers that the applicant's demonstration of skill and/or knowledge requires a complete retest.

## 3.2 Initial Briefing

3.2.1 The purpose of the initial briefing is to check that the applicant has completed the necessary training and experience requirements, establish the aim of the flight test and check that he is aware of those planning resources that he will require. This briefing will normally take about 10 minutes.

3.2.2 At the pre-arranged time, commonly either 0830-0845 or 1230-1245, the Examiner will meet the applicant. A check will be made to ensure that the applicant has the necessary equipment and documentation including:

- Pilot's licence (if applicable), personal flying logbook, and evidence of an aircraft rating or completion of approved training, e.g. Form LST SPA.
- A JAA/UK medical certificate. This need not be current but the applicant will be advised that a current medical is mandatory if he is to use his ratings.
- A form of identity; e.g. a valid passport, photo driving licence, UK Forces ID card or airport pass.
- Valid F170A, Certificate of Competence, or previous attempt form FCL173.
- Current aircraft documents including aeroplane approval certificate (F176) and Technical Log.
- Two headsets - most Examiners will carry their own headset but a spare unit should be available for the flight.

Two copies of the approved check list.

- Suitable approved instrument flying screens including covers for the Artificial Horizon (A/H) and Horizontal Situation Indicator (HSI) or Direction Indicator (DI) and repeaters for simulating limited panel.
- Current publications for the routing and airfields that may be required.
- Planning material including a blank flight log and navigation equipment.
- Any relevant CAA correspondence such as a letter of assessment or retraining requirements.
- Proof of payment for the test.

3.2.3 The Examiner will outline the content of the skill test including the routing required and the airfields where instrument approach procedures are to be flown.

3.2.4 The applicant will be given the Examiners weight for his 'mass and balance' calculations and performance planning. The callsign and approach bookings will be given for the flight plan and other planning.

3.2.5 When the applicant is clear about the format for the flight he will be given time to complete the necessary planning and pre-flight preparation, normally 45 minutes (maximum 1 hour) depending upon the circumstances. The Examiner will specify the time to meet for the main briefing.

3.2.6 If circumstances prevent the Examiner meeting the applicant early enough before flight to give adequate time to plan he may leave a written briefing with the required data and indicate at what time they will meet for a full briefing.

### **3.3 Planning**

3.3.1 Planning facilities will be available either at the Regional Test Centre, FTO, or aerodrome flight planning facility. The Examiner will check that the applicant is aware of where resources are. A quiet briefing room should be used so that the planning can be completed without interruption or distraction.

3.3.2 Planning shall be completed without assistance from other students or instructors.

3.3.3 Current ATC and Met information should be obtained from the aerodrome flight planning facility or from other approved sources and the flight plan must be filed in adequate time for the 'slot' booking.

3.3.4 A flight navigation and radio log must be prepared and the Examiner will require a copy. The log must include such items as:

- Route (including alternate aerodrome)
- ATC and Navaid Frequencies (note that where this information is clearly displayed on planning documents, such as charts and Approach Plates to be used, it is not necessary to copy this information to the log)
- Level or Operating Altitudes
- Timings, ETAs
- MSA, safety height or minimum levels/altitudes
- Fuel Plan (including alternate fuel and contingencies etc.)
- Space for logging clearances, ATIS and events

The overall management of the flight will be assessed as well as the aircraft handling accuracy and knowledge of procedures. The navigation log and radio log must be maintained such that at the end of the test, the flight can be reconstructed from the information recorded. The Examiner is also required to keep a log of the flight for navigation as well as assessment purposes.

3.3.5 Any part of the route which entails flight in other classes of airspace where routes or tracks may not be specified will require the applicant to consider all the necessary planning, i.e. tracks and levels of operation, to achieve a safe and efficient flight.

3.3.6 Pre-prepared flight logs or specially drawn routes shall not be used during the IRT. Only routinely available planning information and documents shall be used. Computer derived flight/navigation plans or aeroplane mass and balance calculations may be used during the allowed planning period. The applicant remains solely responsible for all planning calculations howsoever derived.

3.3.7 Applicants will be required to calculate the aircraft take off and landing performance for the conditions prevailing.

### **3.4 Weather Minima**

3.4.1 The pre-flight preparation of the IRT requires the applicant to assess the weather conditions and make his decision whether to proceed with the flight. However, when extreme conditions of high wind speed, severe turbulence, icing or thunderstorms exist, the Examiner may determine that this would make the flight difficult to assess and may override the applicant's willingness to proceed. The flight should not proceed if all planned sections cannot be achieved or the forecast would prevent a return to base or a suitable alternate aerodrome.

3.4.2 FTOs are required to specify in their aircraft operating procedures the minimum weather conditions below which the training and testing shall not take place. In general it is expected that published limits for the aircraft will be used as appropriate to a commercial flight. Applicants shall comply with the Aerodrome Operating Minima (AOM) given in AIP - AD 1.1.2 in accordance with JAR-OPS 1 or the take-off and landing minima stated in their Operations Manual or other more stringent limitations if applicable (i.e. State Minima).

3.4.3 Awareness of icing conditions must be displayed by regularly checking the outside air temperature (OAT) and indicating this to the Examiner. At some point during the flight the Examiner may respond to this by simulating a build up of ice, the applicant should complete all the necessary precautions for 'removing' the ice. When actual ice is present the necessary equipment must be operated accordingly. FTOs must establish an operating procedure for using aircraft icing equipment particularly with reference to pitot heaters, engine/propeller and airframe icing. The aircraft must not be flown into icing conditions contrary to the aeroplane flight manual.

3.4.4 It should be assumed that during the flight both the precision and non-precision approaches are to be flown in minimum weather conditions, therefore the Decision Height/Altitude (DH/A) and Minimum Descent Height/Altitude (MDH/A) shall be calculated and agreed with the Examiner before flight. The minimum height for completing a circle to land must also be calculated. Similarly applicants should be prepared for any runway change that ATC may direct.

3.4.5 Applicants will be expected to comply with any flight restrictions, such as an "Approach Ban", that may exist during the course of the flight. Consideration must also be given to the weather conditions at the nominated alternate airfield particularly if the actual weather at destination is marginal.

#### **3.4.6 Single engine aeroplanes**

If the IRT is to be conducted in a single engine aeroplane more stringent weather limits must be applied such that in the event of an engine failure during flight the cloud base and visibility is sufficient to enable a forced landing to be achieved. Therefore the cloud base must generally not be lower than 1500 feet AGL with 'few' cloud not below 1100 feet AGL along the route where the terrain is regarded as hospitable. If flight over a large conurbation is planned, then, notwithstanding the above, an additional allowance must be included to comply with the requirements to be able to glide clear. IRTs will not be conducted in single engine aeroplanes over large areas of water or beyond gliding distance from a suitable landing area.

### **3.5 Main Briefing**

3.5.1 Once the applicant has completed the flight planning, the Examiner will give a comprehensive briefing covering all aspects of the flight. During the briefing the applicant may ask questions at any time if he is unclear about any aspect. This briefing would normally take 30 minutes. The Examiner may not brief in the sequence below, but will cover all the relevant items. The Examiner will ask questions relevant to the briefed profile and on any area related to the operation of the aeroplane and operation under IFR.

3.5.2 The briefing will include:

#### **a The purpose of the flight**

The purpose of the flight is for the applicant to demonstrate his ability to plan and conduct an IFR flight with a passenger whilst acting as pilot-in-command and operating as single crew member. The briefed profile shall be conducted in accordance with Instrument Flight Rules (IFR) and will include simulated aeroplane emergencies. Passenger safety, comfort and reassurance must be considered throughout the flight. The applicant is not to expect any assistance but will be briefed on the role of the Examiner as a safety pilot when instrument screens are in place.

**b The applicant's responsibilities**

The Examiner will explain that all the duties and decisions necessary for the safe and practical conduct of the flight, in accordance with current legislation, will be the responsibility of the applicant. Throughout the flight the applicant must liaise with ATC. Amended flight clearances and instructions from ATC must take priority over the pre-briefed flight profile. The Examiner will only discuss ATC instructions if he considers this necessary. Applicants should arrange the flight so that flight plan departure time and any other slot allocation is achieved within the allowable tolerances (- 5 minutes/+ 10 minutes in accordance with the Integrated Flight Plan System - IFPS) and update ATC as necessary. Modern radar and ATC procedures often reduce the need for RT position reporting points, however, the Examiner will expect to be informed of ETAs en-route in the form of standard position reports and updates (ETA variations +/- 3 minutes). Any significant change to the briefed exercise imposed by ATC may require the flight to be terminated and/or assessed as 'incomplete'.

**c Check lists**

Throughout the flight the applicant will be expected to use the approved aeroplane checklist during the flight. The applicant is to assume that the test is the first flight of the day. Airborne checks may be completed from memory, or from alternative notes, but must be in accordance with the check list and with each check item spoken aloud. Following simulated emergencies all checks must be clearly stated with simultaneous touching of the relevant control switch or lever as appropriate.

**d Planning check**

The Examiner will assess the applicant's ability to check the appropriate aeroplane documents before flight. He will expect to be briefed by the applicant as to the weather suitability, including surface wind. The Examiner will check the flight navigation log and will require a photocopy. He may question the applicant on any aspect of the planning, for example: choice of operating altitudes/levels, safety altitudes, fuel planning, NOTAMS etc. The applicant's calculation and understanding of the aeroplane's mass and balance and performance will be assessed.

**e Speeds**

The aeroplane must be operated in accordance with the Aircraft Flight Manual or Pilots' Operating Handbook, as appropriate, and the operating procedures should follow those given in the FTO's Operations Training Manual. The Examiner will require confirmation of the various speeds and configurations to be used at each phase of flight. Speeds may be adjusted to meet different conditions or circumstances and the Examiner must be advised of the new target speed at that time.

**f Instrument Approach Minima**

Applicants will be required to give details of the operating minima to be observed throughout including the instrument approaches i.e. DH/A or MDH/A, circling minima and MSA or SSA.

**g The Profile**

The Examiner will go through the flight, item by item explaining to the applicant what is required of him. (To avoid repetition of the briefed items these are expanded at para 3.6 The Flight). The Examiner will not instruct the applicant on how to operate or manage the flight; he will advise what he wants to see the applicant do. Conditions, such as which radio aids may be used, will be covered. During the briefing he will regularly check if the applicant has any questions and finally the Examiner will ask the applicant if he is quite clear what is required of him during the test. During the flight the Examiner will not prompt or assist the applicant in any way and will only give instructions when necessary and as previously briefed. The lack of conversation in flight should not be interpreted as being unhelpful or hostile, but is simply to allow the applicant to conduct the flight without interference.

**h IF screens - simulating IMC**

Instrument flying screens will be used throughout the flight to simulate IMC. Hoods, visors or goggles will not be approved for the IR Skill Test. The screens will usually be placed in position before departure but the forward opening should be sufficient to allow visual flight for the take off. At a suitable height/altitude after take off (normally at 150 feet - 300 feet AGL), the forward panel of the screens will be closed to simulate entry into cloud. The Examiner will act as the 'safety pilot' when the screens are being used and will remove the screens at the appropriate time to allow for visual manoeuvring and landing.

**i General Handling on Instruments**

The Examiner will brief in which phase of the flight he will conduct this section of the test. He will advise that he will take control of the radio, lookout and navigation during this section. The applicant has only to fly the required items which the Examiner will brief in detail on the ground and remind the applicant as each item is to be flown. When the section is complete the Examiner will ensure that the applicant is comfortable with his location and the aircraft configuration before handing back control for any subsequent sections to be flown.

**j Emergencies and abnormal conditions**

The Examiner will brief his procedure and requirements for the practise EFATO and when he will respond with follow-up action such as setting the engine/propeller at 'zero' thrust or resetting two engines. He will discuss the actions necessary should any actual emergency or abnormal condition occur during the flight. In general, the pilot flying the aircraft (applicant) is to control and handle any actual aircraft emergency but the Examiner, as aircraft commander, may elect to take control at any stage.

**k Oral questioning**

The Examiner will ask practical questions relating to the flight on subjects such as IFR procedures, aircraft performance, Mass and Balance, Icing procedures, emergency handling and the aircraft documents.

**3.6 The Flight**

- 3.6.1 Applicants will be assessed on all aspects of the aeroplane operation. Sound basic handling skills are essential as well as airmanship, navigation, instrument flying, correct R/T phraseology, cockpit and overall flight management. The Examiner may elect to evaluate certain aspects by oral questioning.

**Departure Procedure (Section 1)**

- 3.6.2 The aeroplane must have previously been prepared for the flight including fuel, oil, ballast and other equipment. Any delays however caused are a responsibility for the applicant to manage.
- 3.6.3 The external checks shall be completed using the approved checklist and as if it is the first flight of the day. Transit or rapid turn-around checks are not expected. The Examiner may observe the external inspection and may at any stage, ask questions about the aeroplane or procedures. It must be assumed, even during the summer months, that the aircraft is being prepared for flight in sub-zero temperatures.
- 3.6.4 The Examiner must be briefed, as a passenger, on the position and method of the use of emergency exits, safety belts, safety harnesses, oxygen equipment, life jackets, and all other devices required by the ANO and intended for use by passengers in the case of emergency. The applicant must instruct the Examiner in the emergency action which he should take. Passenger briefing cards are acceptable but the examiner may ask questions.
- 3.6.5 After engine start and taxiing the applicant must complete all necessary checks and drills for departure. The instrument flight screens should be positioned before entering the runway. It may be necessary for the Examiner to taxi the aircraft into position for take off because of the restricted external view but the applicant would remain responsible for all checks and ATC compliance.
- 3.6.6 When ready for departure the applicant must obtain and read back the ATC IFR departure instructions, revise estimates as necessary and ensure that the radio and navigation equipment is set and identified ready for use.
- 3.6.7 A pre take-off briefing may be given at this stage but is not essential in single crew operations. The Examiner may brief his requirements in the event of an emergency during take-off.
- 3.6.8 The take-off and departure must comply with ATC instructions and/or published procedures.

**En-Route Procedures (Section 3)**

- 3.6.9 The route planned should be accomplished in a practical manner utilising VOR and/or NDB tracking. ATC units endeavour to integrate test aircraft into the traffic flow to achieve all of the elements of the test, but applicants must be prepared for some re-routings or holding during busy periods. ATC instructions must be treated as practically as possible. The Examiner will not normally interfere with imposed changes to the briefed exercise unless these will compromise the requirements of the IRT.
- 3.6.10 All radio aids must be tuned and identified before use in accordance with normal operating practice. The Examiner will not interfere with any radio or navigation equipment except where it is necessary to 'de-tune' any aid when not required for the procedure, e.g. ILS de-tuned during the non-precision approach or during the holding pattern. Any radio navigation aid de-tuned by the Examiner will be restored by him at an appropriate time.
- 3.6.11 The IFR route and track must satisfy the basic VOR and ADF RMI/RBI tracking requirements (i.e. Track TO and FROM a VOR/ NDB). Anticipation of the next track by turning at a reasonable distance/radius from the facility is expected. When a suitable route using an NDB is not available VOR tracking using an RMI needle presentation may be substituted. If neither is available the Examiner may substitute a suitable single-needle tracking task based on a BRNAV source.
- 3.6.12 During the en-route section, subject to the Examiners requirements, IFR approved BRNAV equipment, such as KNS 80/81 or GPS equipment may be employed. Equipment must be 'approved' for en-route IFR operations before it may be used as the primary source of data for aircraft tracking. FM immunity requirements must be complied with. Any GPS must have a current database. Flight progress must be monitored on all available aids.
- 3.6.13 The execution of an en-route hold required by ATC will be assessed but will not negate the requirement for a hold at the destination facility and may not be substituted. A holding pattern will be required in either normal or asymmetric aeroplane configuration. The holding pattern should be conducted using a 'needle' instrument presentation from either an NDB or a VOR.

- 3.6.14 Autopilot and flight director systems may not be used during the test. However, if the aircraft is fitted with this equipment, the applicant may choose to carry out the necessary pre-flight checks to establish the serviceability of the system, it must then be disengaged. The electric trim system however may be used as prescribed by the aircraft flight manual and must be tested. Altitude alerting systems and speed bugs are permitted.

#### **Precision Approach (Section 4) & Non-precision approach (Section 5)**

- 3.6.15 Prior to the instrument approaches the applicant must confirm that the weather conditions are suitable for completing the procedure. The route and terminal procedures must be flown as briefed or as directed by ATC and in accordance with the published procedures bearing in mind the actual and assumed weather conditions throughout.
- 3.6.16 Each approach is to be flown with the aeroplane trimmed such that a stable approach path is maintained to DH/A or MDH/A as declared. The Examiner will brief his requirements from each instrument approach. This may be to land ahead, go-around from DH/A or MDH/A, or circle visually to the appropriate runway. A go-around must be executed followed by compliance with the required departure procedure, or into the circuit for landing. However, a non-aligned approach (not within 30°) must terminate at the MDH/A or circling minima, whichever is the higher. A go-around may then be required after visually manoeuvring to the landing runway. N.B. The ability of the applicant to safely position the aircraft for a landing will be assessed whether intending to land or go-around.
- 3.6.17 ATC often ask for higher than normal pattern speeds and applicants will be expected to demonstrate flexibility to assist with traffic separation. It will not be expected that a speed in excess of the limit for the aircraft Category be maintained below 1000' AAL. In any event the calculated Vref speed would still apply and the normal landing area (between the PAPIs) would remain. Occasionally ATC circumstances may require a 'long' touchdown point and the applicant would be expected to comply and inform the Examiner of his intentions and, if necessary, change of configuration and speed for the final stage of the approach and landing. The Examiner has the right to intervene in the interest of the applicant if compliance with ATC would compromise the assessment of the test.

#### **Simulated Asymmetric Flight (Section 6)**

- 3.6.18 Applicants attempting the Skill Test in a multi engine aeroplane (not centre-line thrust) will be required to fly the exercises in Section 6. The EFATO may be combined with Sections 4 or 5. Touch drills are to be used during any simulated emergency and the overall safety of the aeroplane and occupants must be maintained throughout.
- 3.6.19 At a safe height after take-off or go-around the Examiner will simulate an engine failure by closing one of the throttles. The applicant will be expected to retain control of the aeroplane, identify the 'failed' engine and carry out the appropriate engine shut down and propeller feathering procedures using touch drills. Emergency radio calls should be made aloud but not transmitted, however ATC should be informed. Applicants should not assume that any practice emergency is complete until told so by the Examiner. On completion of these drills, the Examiner will be responsible for setting zero thrust and the management of the (simulated) failed engine.
- 3.6.20 The applicant will be expected to carry out an approach to go-around under asymmetric power and an asymmetric approach to land.

#### **General Handling (Section 2)**

- 3.6.21 The Examiner may brief to complete this section following completion of all other sections, or at a convenient time during transit. With the I/F screens in place, the Examiner will be responsible for look out, radios, HASELL checks and navigation. The applicant will be responsible for configuration changes and observance of limitations, etc. On completion of the section he will ensure that the applicant is aware of his location and his next task, before handing back control.

**Full Panel:** Flight by reference to full panel instruments will include:

- Level flight in the cruise configuration.
- Level turns at rate one.
- Climbing and descending turns at given rates and speeds.
- Recovery from incipient stalls in the landing and base turn configurations, with minimum height lost, using the Standard Stall Recovery, recovering to the best rate of climb (Vy) and back to any heading designated by the examiner.

**Limited Panel:** Flight by reference to limited panel will include:

- Straight and level flight and climbing/descending at a given speed in straight flight.
- Level turns onto given headings at rate one using timed or compass turn methods.
- Recovery from unusual attitudes. (Recovery should be made to trimmed straight and level flight with minimum loss of height).

## **FNPT II**

- 3.6.22 The following items may be performed at the discretion of the examiner in an appropriate Flight Simulator or Flight & Navigation Procedure Trainer - II (FNPT II):

Airwork Section 2 - item d. Stalling.  
Simulated Asymmetric Flying, Section 6.

It is CAA policy that initial tests will be completed in an aeroplane wherever possible.

### **3.7 Post Flight Action**

- 3.7.1 At the conclusion of the flight the Examiner will conduct a debriefing and discuss the applicant's performance. The Examiner may ask questions in order to clarify certain items or actions and the applicant will be informed of any sections which have been failed. Any circumstances which arose that were beyond the applicant's control, such as unserviceable equipment, will be considered and, while not be recorded as a 'fail', may require a retest of that section. Any section recorded as 'Not Flown' must be completed on a further flight before any other retest requirements are flown. The overall result will not be given until all items are completed.
- 3.7.2 Notification of the result will be given on the test report form FCL173 (Appendix 1). The form will show the result of each item and section. Should the result be a Partial Pass or Fail, the Examiner will explain the reasons for the failure and also give advice on any aspect of the test which the applicant may find useful during any subsequent attempt. The applicant will be required to sign the form as having understood the result. The result form will be given to the applicant and copies forwarded to PLD Approvals Support and the Chief Flight Examiner (CFE) at Gatwick.
- 3.7.3 Should an applicant have cause for concern about the conduct of the flight test then such comment should be made in writing to the CFE. Details of the appeal procedure are given in Part 4.

## **Part 4 Assessment Criteria and Administrative Procedures**

### **4.1 Assessment Criteria**

- 4.1.1 The flight will be assessed as if the applicant was operating under IFR with a passenger. The safety, comfort, reassurance and briefing of passengers must be considered. The applicant shall demonstrate ability to:
- a. operate the aeroplane within its limitations.
  - b. complete all manoeuvres with smoothness and accuracy.
  - c. exercise good judgement and airmanship.
  - d. apply aeronautical knowledge of procedures and regulations as currently apply.
  - e. maintain control of the aeroplane at all times in such a manner that the successful outcome of a procedure or manoeuvre is never seriously in doubt.
- 4.1.2 It is impossible to list all the errors which would constitute a failure of the test, but some more common errors and omissions are shown at Appendix 2.
- 4.1.3 Throughout the flight the aeroplane should be flown as accurately as possible. The limits for operation are given as guidance to applicants but do not necessarily indicate that a 'failure' will result if any boundary is exceeded. Similarly, flight within the tolerances should not be achieved at the expense of smoothness and co-ordination.
- 4.1.4 The Examiner will make allowance for adverse weather conditions such as turbulence and the handling qualities and performance of the aeroplane used. The Instrument Rating Skill Test Tolerances are given at Appendix 3 and are for general guidance.

### **4.2 Administrative Procedures**

- 4.2.1 Each time an applicant undertakes an IR Skill Test it is known as an "Attempt". "Attempts" are grouped into "Series". There are up to two Attempts in each Series. There is no limit to the number of series that may be taken.
- 4.2.2 A PASS will be awarded when all sections of the test are passed in an attempt.

- 4.2.3 An applicant failing only one section at the first attempt in a series shall have gained a PARTIAL PASS. The second attempt will always require the applicant to retake (Section 1) Departure and that section failed at the first attempt.
- 4.2.4 A FAIL will be awarded if more than one section is failed at the first attempt in a series or if any item is failed at the second attempt of a Series.
- 4.2.5 A FREE RETEST may be awarded if the applicant discontinues the flight and the reasons for doing so are agreed by the examiner. The free retest will require only those sections or items not previously flown to be completed; these items must be completed before the result of the flight can be determined. If the applicant terminates the flight test, for reasons considered inadequate by the Examiner, he may forfeit the test fee and a further fee will be required before the next test.
- 4.2.6 The FAIL as defined above will conclude that Series. Before applying for a further attempt in the next (second) Series the applicant will be required to:
- a. Complete the mandatory retraining prescribed by the Flight Examiner and indicated on the Flight Test Report Form, (F173).
  - b. Present his personal flying logbook to the Examiner. The entries covering the retraining requirement must be certified by the CFI of the FTO giving training.
- 4.2.7 Should an applicant fail the second or subsequent Series, the examiner will notify the CFE or his nominated Deputy using Form 112. The CFE will decide on the re-training necessary based on the reasons for failure of all previous attempts. The CFE will appoint a CAA Flight Examiner to conduct the third series and any subsequent tests. No further test attempt can be made until the applicant receives notification from the CAA. The CFE will also decide the requirements following any subsequent series of unsuccessful attempts. A new, flown F170A is required before the third and subsequent series of tests.
- 4.2.8 If all sections of the test have not been completed within the 6 month period of validity of the F170A then a further F170A is required.
- 4.2.9 The second attempt in a series shall be forfeited if the six month period of validity of the F170A has expired.

### **4.3 Applicant's Appeal Procedure**

- 4.3.1 Form F173 (reverse), contains an extract from the Civil Aviation Authority Regulations 1991, which is reproduced below:

*Regulation 6(5) of the Civil Aviation Regulations 1991 provides as follows:-*

*Any person who has failed any test or examination which he is required to pass before he is granted or may exercise the privileges of a personnel licence may within 14 days of being notified of his failure request that the Authority determine whether the test or examination was properly conducted.*

In order to succeed with an appeal the applicant will have to satisfy the CAA that the examination or test was not properly conducted. Mere dissatisfaction with the result is not enough. Should the applicant have concern about the conduct of the IR SKILL TEST he should write to the Chief Flight Examiner who will provide guidance on the Appeal Procedure.

**Appendix 1 INSTRUMENT RATING SKILL TEST – APPLICATION AND REPORT FORM**

**UK Civil Aviation Authority**  
Member of the Joint Aviation Authorities



**INSTRUMENT RATING SKILL TEST - APPLICATION AND REPORT FORM**

Please complete the form in **BLOCK CAPITALS** using black or dark blue ink.

1. PERSONAL DETAILS									
Surname .....			Forename(s) .....						
CAA Ref. No. <input style="width: 40px;" type="text"/>		Licence Type .....							
Series .....		Attempt No. ....		Date of Test .....					
SPA <input type="checkbox"/>		MPA <input type="checkbox"/>							
It is an offence to make, with intent to deceive, any false representations for the purpose of procuring the grant, issue, renewal or variation of any certificate, licence, approval, permission or other document. Persons doing so render themselves liable, on summary conviction, to a fine not exceeding the statutory maximum (currently £5000, or in Northern Ireland £2000) and on conviction on indictment to an unlimited fine or imprisonment for a term not exceeding two years or both.									
I declare that the information provided is correct.			Applicant's Signature						
2. FLIGHT TEST									
Route									
Aircraft Type & Reg		Block Times :		Depart		Arrive		Total	
Test Sections:		1	2	3	4	5	6		
Sections to be taken:									
Result:									
		a							
		b							
		c							
		d							
		e							
		f							
		g							
		h							
		i							
		j							
Re-test:									
Test Sections incomplete due:									
Items not completed:									
Retraining Requirement Recommended/Mandatory:		Aircraft		STD					
Examiner's Signature				Examiner's No. UK IRE		<input style="width: 40px;" type="text"/>			
Received (Applicant)				Date					
3. FLIGHT TRAINING ORGANISATION									
FTO			Aerodrome			Date Flight Training Completed			

SECTION 1. DEPARTURE		SECTION 4. PRECISION APPROACH	
a	Use of flight manual (or equivalent) especially a/c performance calculation, mass and balance	a	Setting and checking of navigational aids, identification of facilities
b	Use of Air Traffic Services document, weather document	b	Arrival procedures, altimeter checks
c	Preparation of ATC flight plan, IFR flight plan/log	c	Approach and landing briefing, including descent/approach/landing checks
d	Pre-flight inspection	d+	Holding procedure
e	Weather Minima	e	Compliance with published approach procedure
f	Taxing	f	Approach timing
g	Pre take-off briefing. Take-off	g	Altitude, speed, heading control (stabilised approach)
h	Transition to instrument flight	h+	Go-around action
i	Instrument departure procedures, altimeter setting	h+	Missed approach procedure/landing
j	ATC liaison - compliance, R/T procedures - Airmanship	j	ATC liaison - compliance, R/T procedures - Airmanship
SECTION 2. GENERAL HANDLING		SECTION 5. NON PRECISION APPROACH	
a	Control of the aeroplane by reference solely to instruments, including Level flight at various speeds, trim	a	Setting and checking of navigational aids, identification of facilities
b	Climbing and descending turns with sustained 30 degree bank and at rate 1	b	Arrival procedures, altimeter setting
c	Recoveries from unusual attitudes, including sustained 45 degree bank turns and steep descending turns	c	Approach and landing briefing, including descent/approach/landing checks
d*	Recovery from approach to stall in level flight, climbing/ descending turns and in landing configuration	d+	Holding procedure
e	Limited Panel, straight and level flight climb and descent, turns at Rate 1 onto given headings, recovery from unusual attitudes	e	Compliance with published approach procedure
		f	Approach timing
		g	Altitude, speed, heading control, (stabilised approach)
		h+	Go-around action
		h+	Missed approach procedure/landing
		j	ATC liaison - compliance, R/T procedures - Airmanship
SECTION 3. EN-ROUTE IFT PROCEDURES		SECTION 6. SIMULATED ASYMMETRIC FLIGHT (if applicable)*	
a	Tracking, including interception e.g. NDB, VOR, RNAV	a	Simulated engine failure after take-off or on go-around
b	Use of radio aids	b	Asymmetric approach and procedural go-around
c	Level flight, control of heading, altitude and airspeed, power setting, trim technique	c	Asymmetric approach and landing
d	Altimeter settings	d	ATC liaison: compliance, R/T procedures - Airmanship
e	Timing and revision of ETAs (En-route hold - if required)		
f	Monitoring of flight progress, flight log, fuel usage, systems management		
g	Ice protection procedures, simulated if necessary		
h	ATC liaison and compliance, R/T procedures - Airmanship		

**NOTES:**

- \* May be performed in a Flight Simulator FNPTII
- + May be performed in either Section 4 or Section 5



## Appendix 2 IR Skill Test Schedule and Standard

### Applicants Notes

These notes are intended to give applicants a detailed account of the exercises that may, at the discretion of the Examiner, be required in each section. The headings used relate directly to those shown on Form 173 a copy of which is shown at Appendix 1. In the interests of openness the standards to which they are assessed have also been included and these are shown in *italics*. It is emphasised that during the skill test applicants should concern themselves only with the flying and operating of the aircraft to the best of their ability. The test standards are properly the responsibility of the Examiner.

### Examiners Notes

These guidance notes are published by the CAA to establish the test standard required for a United Kingdom or JAA IR (Aeroplane) Skill Test. Any Flight test can only be a brief 'snapshot' of a pilot's ability and therefore, to ensure overall pilot competence, FTO's Flight Instructors are expected to use these standards when preparing applicants for the test. The applicant for an Instrument Rating must exhibit a significantly higher level of knowledge and skill than is required for a VFR only rating. The Examiner must apply the standards evenly and fairly and without prejudice. The flight however, may be conducted in any sequence to achieve a complete and efficient test.

### Section 1 - Departure

- a. **Use of Flight Manuals (or equivalent)**  
Use of the Flight Manual and Operations Manual to determine aeroplane performance; mass and balance and aeroplane documents to determine acceptability for the flight; Aircraft Technical Log.
- b. **Air Traffic Services document and weather document**  
Use of the correct documents, including maps; charts and approach procedure plates to prepare flight plan and flight log; collating and interpreting the weather documents to determine the route weather.
- c. **Preparation of ATC flight plan and IFR flight log**  
Preparation of the ATC IFR flight plan for the route, including any off-airways sectors, and preparation of a full navigation and RTF flight log.
  - *Obtains and assesses all elements of the prevailing and forecast weather conditions for the route.*
  - *Completes an appropriate flight navigation log.*
  - *Completes the required ATC flight plan(s).*
  - *Determines that the aeroplane is correctly fuelled, loaded and legal for the flight.*
  - *Confirms any aeroplane performance criteria and limitations applicable.*
  - *in relation to runway and weather conditions.*
  - *Demonstrates sufficient knowledge of the regulatory requirements relating to instrument flight.*
- d. **Pre-flight Inspection**  
Full initial pre-flight inspection in accordance with the approved check list assuming the 'first flight of the day' and 'icing conditions'.
  - *Performs all elements of the aeroplane pre-flight inspections as detailed and applicable to the actual or simulated weather conditions.*
  - *Confirms that the aeroplane is in a serviceable and safe condition for flight.*
  - *Checks and completes all necessary documentation.*
  - *Takes appropriate action with respect to any identified unsatisfactory conditions.*
- e. **Weather Minima**  
Confirmation of weather affecting the departure, route, destination and diversion; acceptability for the flight. Determination of the expected instrument approach minimum heights/altitudes.
- f. **Taxying**  
Passenger briefing; correct taxying technique, procedures and checks. Aerodrome markings and indicators including marshalling instructions and signals.
- g. **Pre take-off briefing**  
Obtaining ATC departure clearance, flight deck preparation, confirmation of departure and passenger emergency briefing. Actions to be taken with regard to the aeroplane if an emergency occurs during departure should be covered in the pre-flight Main Briefing.
  - *Completes all recommended taxying checks and procedures.*

- *Complies with airport markings and signals.*
- *Completes all departure checks and drills including engine operations.*
- *Obtains ATC clearance.*
- *Completes an appropriate passenger briefing. (Emergency handling details should be discussed in the pre-flight brief).*
- *Confirms any performance criteria including crosswind condition.*
- *Actions any anti-icing procedures.*
- *Positions the aeroplane correctly for take off and advances the throttles to take off power with appropriate checks.*
- *Conforms to the correct take off technique using the recommended speeds for rotation (Vr) and initial climb.*
- *Ensures a safe climb and departure adjusting power and aeroplane configuration as appropriate.*
- *Completes all necessary after take off checks.*

**h. Transition to instrument flight**

Take-off in accordance with the performance calculations using the correct techniques. Establish the climb, complete a smooth transition to instrument flight and complete the after take-off checks and drills.

**i. Instrument departure procedure**

Complete the Standard Instrument Departure procedure (SID) or follow the ATC departure instructions to join controlled airspace; use of correct altimeter setting procedure; maintaining aeroplane control, speed, heading and level.

- *Maintains directional control and drift corrections within acceptable limits of speed, heading, height and track.*
- *Identifies any navigation aids used.*
- *Follows any noise routing or departure procedures and ATC clearances.*
- *Completes all necessary climb checks including altimeter setting procedures and ice precautions.*

**Section 2 - General Handling**

Control of the aeroplane by sole reference to instruments including:

**a. Full Panel**

Straight and level flight at various speeds maintaining balance and trim.

**b. Full Panel**

Climbing and descending turns at Rate 1 onto nominated headings.

**c & d. Full Panel**

Recoveries from the approach to the stall in level flight or gentle climbing/descending turns and in the landing configuration (may be performed in a Flight Simulator or FNPT II).

**e. Limited Panel**

Manoeuvres including straight and level flight and climbing and descending at a given speed. Level turns onto given headings. Recoveries from unusual attitudes.

- *Controls the aeroplane by sole reference to instruments within the nominated limits (due consideration will be given for turbulence).*
- *Completes flight in straight and level, and climbing and descending, at required speeds. Turns flown at Rate 1 onto nominated headings, using the correct technique and demonstrating correct instrument scan and interpretation.*
- *Recovers from unusual attitudes including sustained 45° bank turns and steep descending turns using the correct technique to minimise height lost.*
- *Recovers from an approach to the stall in level flight, climbing/descending turns and in the landing configuration, with minimum height loss.*
- *Completes limited panel straight and level flight, climbing/descending flight and turns at Rate 1 onto given headings in level flight. Recovers from unusual attitudes.*

**Section 3 - En-Route IFR Procedures**

**a. Tracking**

Intercept and maintain the route or amended route including tracking to and from an NDB or VOR or Rnav/GPS derived position. Single needle tracking will be briefed.

Note 1: RNav/GPS may only be used as a primary tracking aid if the equipment is approved for IFR primary navigation and has a current database where appropriate.

Note 2: RNav/GPS must only be used when combined with a demonstration of basic tracking to/from a primary beacon NDB or VOR.

- b. Use of radio aids**  
Correct use of radio aids with regard to promulgated range, identification and interpretation. Use of ATIS where available.
- c. Level flight control**  
Smooth control of heading, altitude, speed, power, trim and ancillary controls.
- d. Altimeter settings**  
Correct altimeter setting procedure and cross checking, monitoring of en-route MSA.
- e. Timing and ETAs**  
Timing and revision of ETAs including en-route hold procedures if required.
- f. Monitoring flight progress**  
Completion of the navigation and RTF log to monitor flight progress, provide position reports and manage the fuel system; monitor and manage the other aeroplane systems. Use of check list.
- g. Ice protection procedures**  
Monitoring of OAT and ice accretion rate (simulated if necessary); use of anti-icing and de-icing procedures.
- h. ATC Liaison**  
ATC Liaison using the correct RTF procedures and phraseology and compliance with procedures and clearances.
  - *Follows the flight planned route or any other ATC route requirements within the operating limits specified.*
  - *Identifies and uses navigation systems correctly.*
  - *Uses the correct altimeter setting procedures and shows awareness of MSA.*
  - *Maintains the flight log for navigation, RTF, and fuel use, sufficient to give position reports and to confirm acceptable minimum fuel states.*
  - *Conducts an en-route hold if required by ATC.*
  - *Monitors the OAT and the aeroplane surfaces for ice, and takes the appropriate actions if necessary. (This will be simulated if there is no actual icing).*
  - *Uses the correct RTF procedures and phraseology.*

#### **Section 4 - Precision Approach**

- a. Navigation Aids**  
Use of navigation aids with regard to promulgated range, identification and interpretation.
- b. Arrival procedures**  
Descent planning and consideration of MSA. Completion of the published arrival procedure or as instructed by ATC including altimeter setting, ATC Liaison and RTF procedures.
- c. Approach and Landing Briefing**  
The approach briefing including weather and confirmation of instrument approach procedure minima, and all procedures, checks and drills in preparation for landing.
- d\*. Holding Procedure**  
Complete appropriate entry procedure followed by a standard ICAO hold using a needle pointer presentation, making the appropriate corrections to heading and time.
- e. Published Approach Procedure**  
Compliance with the published precision approach procedure; vertical and horizontal profile to the nominated minima.
- f. Approach timing**  
Monitor or control the approach procedure using timing as necessary.
- g. Control of the aeroplane**  
Establish a stabilised approach, in-trim for the aeroplane configuration and speed, using the correct techniques for attitude, heading and power control. Correct assessment of drift and rate of descent.
- h\*. Go-around**  
At the minima, or as directed by ATC, transition to a climb at the correct speed and complete the checks.

- i\*. **Missed approach procedure/landing**  
Follow the missed approach procedure or continue for visual landing or circle for landing. (If flown first, following the precision approach, a go-around and missed approach procedure will be required.)
- j. **ATC liaison**  
ATC liaison using the correct RTF procedures and phraseology, and compliance with procedures and clearances.

(NOTE: \* items may be performed in Section 4 or 5)

*Hold and Instrument Approach*

- *Completes an approach briefing and the checks and drills for landing; sets and identifies any navigation aids; uses the appropriate altimeter setting and RTF procedures to liaise with ATC to prevent disruption to commercial traffic.*
- *Completes any holding procedure with appropriate corrections for tracking and timing to achieve a standard hold.*
- *Complies with the published arrival and approach procedures using timing corrected for wind when necessary.*

*Precision Approach*

- *Selects and complies with the appropriate ILS instrument approach procedure.*
- *Confirms the serviceability and monitors the correct operation of selected navigation equipment.*
- *Complies with all ATC instructions and clearances.*
- *Uses correct RTF for ILS reporting procedure.*
- *Establishes the appropriate aeroplane configuration and airspeed for the phase of the approach.*
- *Completes the necessary aeroplane checks and drills.*
- *Completes the manoeuvring pattern as required to establish the final approach segment within the specified flight tolerances.*
- *Establishes the final approach segment and maintains the approach path in horizontal and vertical profile (max 1/2 scale deflection) to Decision Height/Altitude.*
- *Controls the aircraft as necessary to make adjustment and achieve a stable and trimmed final approach path.*
- *Initiates a missed approach at (not below) Decision Height/Altitude DH/A.*

*Missed Approach*

- *Demonstrates knowledge of missed approach procedure.*
- *Initiates the missed approach procedure upon reaching Decision Height/Altitude if required visual references for landing runway are not obtained.*
- *Establishes aeroplane in a safe climb out and initiates aeroplane configuration changes as required to achieve as least the performance climb segments.*
- *Follows designated missed approach procedure or as required by ATC.*

**Section 5 - Non-Precision Approach**

- a. **Navigation Aids**  
Use of navigation aids with regard to promulgated range, identification, monitoring and interpretation.
- b. **Arrival Procedures, descent planning and consideration of MSA**  
Completion of the published arrival procedure or as instructed by ATC including altimeter setting, ATC liaison and RTF procedures.
- c. **Approach and landing briefing**  
The approach briefing including weather and consideration of instrument approach procedure minima, and all procedures, checks and drills in preparation for landing.
- d\*. **Holding procedure**  
Complete appropriate entry procedure followed by a standard ICAO hold/published hold using a needle pointer presentation, making the appropriate corrections to heading and time.
- e. **Published approach procedure**  
Compliance with the published non-precision approach procedure; vertical and horizontal profile to the nominated minima.
- f. **Approach timing**  
Monitor or control the approach procedure using timing as necessary.
- g. **Control of the aeroplane**  
Establish a stabilised approach, in-trim for the aircraft configuration and speed, using correct techniques for attitude, heading and power control. Correct assessment of drift and rate of descent.
- h\*. **Go-around**  
At the Missed Approach Point or as directed by the examiner/ATC, transition to a climb at the correct speed and complete the checks.

- i\***        **Missed approach procedure/landing**  
Follow the missed approach procedure, or continue for visual landing, or circle for landing.
- j.**         **ATC Liaison**  
ATC liaison using the correct RTF procedures and phraseology, and compliance with procedures and clearances.

(NOTE: \* items may be performed in Section 4 or 5).

*Non Precision Approach*

- *Selects and complies with the appropriate VOR/NDB instrument approach procedure.*
- *Confirms the serviceability of selected navigation equipment.*
- *Complies with all ATC instructions and clearances.*
- *Uses correct RTF for VOR/NDB procedures.*
- *Establishes the appropriate aeroplane configuration and airspeed for all phases of the approach.*
- *Completes the necessary aeroplane checks and drills.*
- *Completes the manoeuvring pattern to establish the final approach segment within the specified limits.*
- *Establishes the final approach segment and maintains the approach track and vertical profile to MDH/A or circling minima and continues until visual flight conditions are established so as to complete transition to a visual approach or manoeuvre for landing.*

*Missed Approach*

- *As for the precision approach.*

**Section 6 - Simulated Asymmetric Flight**

- a.**        **Engine Failure After Take Off**  
At a safe altitude complete an engine failure after take-off, maintaining control by sole reference to instruments and completing the emergency drills (simulated).

NOTE: Engine failure will be simulated only after the aeroplane has achieved at least the take-off safety speed or V1 decision speed as appropriate to aeroplane type and at a safe altitude when performed in an aeroplane which is not certificated in Performance Group A.

- b.**        **Asymmetric approach and procedural go around**  
Following the engine failure after take-off, continue with the procedural missed approach or as directed by ATC and maintain the climb schedule for the (simulated) asymmetric condition.
- c.**        **Asymmetric approach and full stop landing**  
From the instrument approach achieve a safe transition to visual flight, and when the required visual references have been established, continue into the circling approach procedure or appropriate visual circuit to land. If weather conditions preclude a visual manoeuvre the final asymmetric approach to land may, if circumstances permit, be made from another instrument approach.
- d.**        **ATC Liaison**  
Compliance - RT Procedure - Airmanship

*Simulated Asymmetric Flight*

- *Maintains control following a simulated engine failure after take-off; completes the necessary checks and drills: maintains the correct speed and continues to follow ATC instructions.*
- *Completes an asymmetric go-around into a circling approach or other appropriate manoeuvre maintaining control at safe speeds.*
- *Completes an asymmetric approach and landing; complies with ATC instructions and maintains satisfactory lookout to avoid other circuit traffic.*

*Approach and Landing*

- *Considers the actual weather and wind conditions, landing surface and obstructions.*
- *Plans and follows the circling approach pattern and orientation with the landing runway.*
- *From the circling approach establishes the recommended aeroplane approach configuration, adjusting speed and rate of descent to maintain a stabilised approach pattern.*
- *Selects and achieves the appropriate touchdown area.*
- *Adjusts descent and roundout (flare) to achieve a safe landing with little or no float with appropriate drift and crosswind correction.*
- *Maintains control and applies aeroplane brakes for a safe roll out.*
- *Completes necessary checks and drills.*

### Appendix 3 Instrument Rating Skill Test Tolerances

The following table is taken from the Flight Examiners Handbook. Tables for PPL and CPL Skill Test are included for comparison.

PROFILE	PPL Skill Test	CPL Skill Test	IR Skill Test & all Revalidations and Renewals (For IMC ratings see Standards Doc 25 or LASORS)
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#### Altitude or Height

Normal Flight	± 150 ft	± 100 ft	± 100 ft
With simulated engine failure	± 200 ft	± 150 ft	± 100 ft
Limited or partial panel		± 200 ft	± 200 ft
Starting go-around at decision alt/ht			+ 50 ft / - 0 ft (Asym + 100 ft / - 0 ft)
Minimum descent altitude / height			+ 50 ft / - 0 ft (Asym + 100 ft / - 0 ft)
'Not below' minima (from FAF altitude down to MDA/H)			- 0 ft
Circling minima			+ 100 ft / - 0 ft

#### Tracking

All except precision approach	± 10°	± 5°	± 5°
Precision approach			Half scale deflection azimuth and glidepath
DME arcing			± 1nm

#### Heading

All engines operating	± 10°	± 10°	± 5°
With simulated engine failure	± 15°	± 15°	± 10°
Limited or Partial panel		± 15°	± 15°

#### Speed

Take-off / Vr	+ 10 / - 5 kt	+ 5 / - 0 kt	+ 5 / - 0 kt
Climb and approach	± 15 kt	± 10 kt	± 5 kt
Vat / Vref	+ 15 / - 5 kt	+ 5 kt / - 0 kt	+ 5 kt / - 0 kt
Cruise	± 15 kt	± 10 kt	± 5 kt
Limited or Partial Panel	N/A	± 10 kt	± 10 kt
With simulated engine failure	+ 15 / - 5 kt	+ 10 / - 5 kt	+ 10 / - 5 kt
Blue Line speed or V <sub>YSE</sub> / V <sub>2</sub>	± 5 kt	± 5 kt	± 5 kt
Maximum airspeed error at any time	± 15 kt	± 10 kt	± 10 kt

#### Notes:

Asymmetric limits also apply to centreline thrust ME aeroplanes operating on one engine.  
Figures in Italics are National requirements.

## **Appendix 4      Guidance Notes to Flight Examiners Conducting the Initial IR Skill Test (Aeroplanes) Restricted to Multi-Pilot Operations**

### **1.            Multi Pilot Instrument Rating Flight Test - Requirements**

The multi pilot instrument rating flight test will only be conducted in a multi engine aeroplane which is equipped with retractable landing gear and has at least 4 seats.

Applicants must normally hold a valid JAA Medical Certificate Class 1, however, PPL(I/R) applicants may hold a Class 2 medical certificate. They are also to be in possession of a valid F170A Certificate of Competence.

Military personnel must have a current military medical certificate and are exempt from the need to have a F170A.

### **2.            Provision of Aeroplanes**

Aeroplanes, other than military, used for the multi-pilot IR(A) must be approved by the Authority (CAA) in accordance with provisions of JAR-FCL Part 1 and CAA Document 7.

The aeroplane may be certificated for either multi pilot (MPA) operations or single-pilot operations (providing it is suitably equipped for multi-pilot operations). In the case of a single pilot aeroplane CAA Document 7 specifies the minimum level of equipment required. It is expected that MPA aeroplanes will meet the minimum requirement except some military transport aircraft which may have different levels of radio navigation equipment.

A multi engine centre line thrust aeroplane shall be considered as a single engine aeroplane for the purposes of the IRT(A).

The aeroplane must be equipped with a forward facing seat immediately behind the pilots' seats or a jump seat such that the Examiner has an uninterrupted view of both pilot and co-pilot's instruments and controls. In addition, an intercom system must be available to the Examiner to enable him to communicate with all crew members. It is not essential that the intercom system allows the Examiner to make R/T transmissions.

Screens are required as indicated in Standards Document 7 - except for military aeroplanes where temporary arrangements will be made.

### **3.            Conduct of the Flight Test**

The flight test schedule, format of test and flight test tolerances remain similar to that given for the single pilot IR flight test.

Where no type qualified Examiner is available, and at the discretion of the Authority, Examiners may be authorised without meeting the relevant Instructor/Type/Class requirements.

### **4.            Composition of Flight Crew**

The minimum flight crew necessary for the conduct of tests including those which are conducted in aeroplanes certified for single pilot operations, must comprise:

- The applicant, who will be acting as the Pilot Flying, will occupy the pilot seat appropriate to the rating sought.
- The safety pilot, who will complete the duties of the Pilot not-flying and occupy the other pilot seat. The safety pilot will usually be an instructor or training captain who is qualified to act as Captain on the aircraft type or class being used for the test and will be responsible as the Pilot in Command for the safety and general operation of the aircraft.
- The Examiner, who may be designated as the Commander, except in circumstances agreed by the Examiner when another qualified pilot is designated as Commander for the flight (such as on military aeroplanes), will observe the test from the third pilot/jump seat or suitable rear seat position.
- Any other crew member required for the safe operation of the aeroplane and to comply with the minimum flight crew complement.

## 5. Briefing

The aircraft Operator or Flying Training Organisation (FTO) shall provide written guidance to students, instructors and aircrew operating in a multi pilot function for both Single and Multi Pilot operations. Instructions shall be contained in the Operations Manual and must include an authorised check list or in-flight reference card.

The Operations Manual must include the policy and procedure for conducting all checks and drills for the safe operation of the aeroplane and the Flight Examiner must be briefed on the system that will be used. Any written reference material must be available to the Examiner during flight.

The Examiner must confirm with the instructor or training captain the outline of the flight test before briefing the applicant to ensure that the test conforms to the approved operating procedures (e.g. Standard Operating Procedures (SOPs)).

The Examiner will conduct an initial briefing with the applicant and safety pilot (co-pilot) that includes the Flight Test Schedule and Profile.

All crew members must attend the main briefing given by the Examiner to ensure that each is familiar with the requirements of the flight.

The 'Safety Pilot' must be briefed that any intervention by him to prevent an error on the part of the Applicant may be deemed a 'Fail' in that section, but that this must not deter him from his safety responsibilities.

The 'Safety Pilot' must be briefed on the actions he is to take on behalf of the Flight Examiner with regard to:

- erecting/dismantling the screens
- taxiing the aircraft with screens erected
- removal of radio aids such as the ILS/DME during the Hold and NDB approach and when to reinstate them
- simulation of an engine failure (SOPs)
- the actions he is to take in the event of an emergency

If Section 2 of the test is to be flown then the 'Safety Pilot' must be briefed on the precise manoeuvres to be flown and how he should direct the applicant during the flight.

Applicants will be expected to brief the 'Safety Pilot' or crew on their duties both on the ground and in the air including departure, approach and emergency briefs.

## Appendix 5 Instrument Rating Test – Common Reasons for Failure

The following is a list of the more usual errors or omissions which constitute a fail point:

1. Failure to comply with any aeroplane speed limitation e.g. flap or undercarriage extension / retraction.
2. Failure to apply the correct altimeter settings at any phase of the flight.
3. Failure to check before flight any one of the flight instruments including the compasses (gyro and magnetic).
4. Failure to check before flight any one of the flying, trimmer or stabiliser controls for range and freedom of movement and operation in the correct sense.
5. Failure to check any of the following items during the pre-flight aeroplane inspection: pitot head(s) and static heaters; static vents; all de-icing and anti-icing equipment for serviceability; fuel and oil; electrical system.
6. Failure to use any of the above equipment correctly and as appropriate.
7. Failure to check on the ground, as far as possible, any item of radio and navigation equipment which is to be used during the flight.
8. Failure to complete any checks and drills as prescribed in the approved check list including taxi, engine and pre take off checks.
9. Failure to obtain ATC clearance whenever necessary.
10. Failure to comply with ATC clearances or use correct R/T phraseology and reporting procedures, including use of the transponder.
11. Jeopardising the safety of the aeroplane at any time by lack of control such that the Examiner is caused to take over.
12. Exceeding the tolerances of speed, height, heading/track indicated at Appendix 2 and maintaining the error for an unreasonable period of time.
13. Failure to correctly identify any radio navigation aid before use and failure to monitor such aids when in use.
14. Failure to maintain the tracking required within  $\pm 5^\circ$  specified when a good signal is being received at a suitable distance from the transmitter.
15. Correcting track by turning in the wrong direction and maintaining the error for an unreasonable time.
16. Failure to adjust ETAs such that ATA differs from ETA by more than three minutes.
17. Failure to calculate the correct minimum safe obstacle clearances.
18. Failure to apply the correct joining procedure and timing during the holding pattern or to establish the inbound track.
19. Failure to observe the instrument approach minima during an approach to land.
20. Failure to maintain published tracks and reference heights/altitudes for a given instrument procedure.
21. Failure to intercept and maintain the NDB/VOR inbound track before the intermediate descent and final approach fix or facility, or maintain the final approach track and height reference.
22. Failure to maintain within half scale deflection the published glide path and final approach track or to establish the aeroplane on a stabilised approach.
23. Exceeding the limits applicable to DH/A or MDH/A for the instrument approach.
24. Failure to comply with the cleared go around and missed approach procedure.
25. Failure to carry out correctly any simulated emergency procedure and maintain the control of aeroplane within the prescribed limits.
26. Failure to trim the aeroplane in all axes including during asymmetric flight.
27. Failure to achieve departure ATC slot time within acceptable tolerances necessitating a delay and re-filing of the flight plan.
28. Failure to maintain the aeroplane on a stable approach path during the instrument approach procedures.
29. Failure to recognise any equipment malfunction within a reasonable period of time.
30. Failure to demonstrate sufficient skill or technique with instrument flying such that excessive aeroplane control inputs are required.
31. Failure to maintain an adequate record of the flight.
32. Failure to check and use A/C documents correctly including the technical log.
33. Entering Controlled Airspace without clearance.
34. Failure to fly an approach so that a safe landing could, when permitted, be made.
35. Demonstrated lack of understanding of airspace and altimetry.