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| Flight no: | ME(A)CR1.\_\_\_\_ | Trainee name & ARN: |  | | |
| Date: |  | Instructor: |  | | |
| Aircraft registration: |  | Aircraft type: |  | Flight time: |  |

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| Lesson Overview  * Aeroplane familiarisation * Preparation for flight * Operation of controls and systems * Engine handling considerations and techniques * General handling and performance characteristics (straight & level, climbing, descending, turning, cruise at best range and best endurance) * In flight emergencies other than engine fire/failure (e.g. hydraulic, electrical, airframe, engine icing, others as per flight manual or pilot operating handbook) |

| PRE-FLIGHT KNOWLEDGE  Long Briefing: 0.8 hour Pre-flight Briefing: 0.3 hour  Underpinning knowledge: as required | |
| --- | --- |
| Content | |
| **Long briefing** – Aeroplane familiarisation, preparation for flight and general handling sequences   * General aeroplane data (category, limitations, fuel and oil) * Controls and systems * Operating airspeeds and limitations * Pre-flight actions * Use of checklists * Taxiing * Take-off and after take-off checks * Synchronisation * Straight and level – normal cruise, range and endurance * Climbing and descending * Turning (level, climbing and descending) * Slow flight * Inflight emergencies (other than engine fire/failure) | |
| **Underpinning knowledge**   * Standard operating procedures for the category and class of aircraft and the operator [C2 4(a)] * Fuel requirements for day VFR flight operation [C2 4(b), C4 4(a)], fuel sources and grades, methods for identification [C4 4 (b)], verification of quantity of fuel on board an aircraft [C4 4(c)], variations to planned fuel consumption [C4 4(h)] * Minimum equipment list [C2 4(c)] * Airworthiness requirements applicable to the aircraft category and class [C2 4(d)] * Local weather patterns [C2 4(e)] * Aircraft weight and balance and how to calculate aircraft centre of gravity [A1 4(f)] * Local aerodrome requirements [C2 4(f)] and operating procedures [A3 4(p)] * Differences between normally aspirated and fuel-injected systems [A1 4(b)] * Carburettor icing [A1 4(c)] * Cause and effect of fuel vaporisation [A1 4(d)] * The environmental conditions that represent VMC [A1 4(h)] * Propeller wash, rotor wash and jet blast and how they affect other aircraft [A1 4(i)] * Day VFR flight rules [A1 4(j) A5 4(e)], VMC [A3 4(n), A5 4(e)] * The meaning of light and marshalling signals, aerodrome markings, signals and local procedures as applicable [A1 4(k)] * Care of propellers [A1 4(l)] * Actions to be taken in event of a brake or steering failure [A1 4(m)] * Relevant sections of the AIP [A1 4(n), A5 4(f)] * The primary and secondary effects of controls [A3 4(a) & (b)] * Aircraft systems, performance, hazards when performing performance manoeuvres [A3 4(d),(e),(g)] * Relationship between angle of bank, load factor and stall speed, relationship between induced drag and operating at slow speed [A3 4(i) & (j)] * Engine considerations during prolonged climbing and descending [A3 4(l)] * Operational circumstances where steep turns are required [A5 4(a)] * Aerodynamic and aeroplane operational considerations relevant to stalling, steep turns and upset aeroplane states [A5 4(b)] * Contents of the flight manual and pilot owner handbook [A5 4(c)] * Hazards of unbalanced flight [A5 4(g)] | |
| **HF & NTS**   * Hand over/take over technique (e.g. ‘I have control – you have control’) * Effective communication under normal and non-normal circumstances [NTS1 4(a)] * Task management [NTS1 4(b)] * Control handling technique | |
| **Pre-flight briefing**   * Review flight sequences, what to expect, see & do * Check essential knowledge * Reinforce threat & error management * Reinforce significant airmanship points | |
| **Pre-flight knowledge components complete:** | **Instructor’s signature & date** |

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| Performance Standard | | |
| **3** | **2** | **1** |
| Has received training in the element, however is not able to consistently demonstrate competency to the standard required for qualification issue | Demonstrates a developing level of proficiency | Achieves competency to the standard required for qualification issue |

| FLIGHT TRAINING  Suggested flight time: 1.0 hour dual | | | |
| --- | --- | --- | --- |
| MOS Reference | Lesson Content (Elements & Performance Criteria) | Performance  Standard | |
| Required | Achieved\* |
| 1. C2.1 | Pre-flight actions and procedures |  |  |
|  | complete all required pre-flight administration documentation | **2** |  |
|  | obtain, interpret and apply information contained in the required pre-flight operational documentation, including the following: |  |  |
|  | * + 1. minimum equipment list (MEL) | **2** |  |
|  | * + 1. maintenance release | **2** |  |
|  | * + 1. weather forecasts | **2** |  |
|  | * + 1. local observations | **2** |  |
|  | * + 1. Notice to Airmen (NOTAM) | **2** |  |
|  | * + 1. global navigation satellite system (GNSS) receiver autonomous integrity monitoring (RAIM) information | **2** |  |
|  | * + 1. En Route Supplement Australia (ERSA) | **2** |  |
|  | * + 1. Aeronautical Information Package (AIP) | **2** |  |
|  | identify special aerodrome procedures | **2** |  |
|  | identify all relevant radio and navigation aid facilities to be used during the flight (if applicable) | **2** |  |
|  | determine the suitability of current and forecast weather conditions for the proposed flight | **2** |  |
|  | using the aircraft documents, calculate the following for a given set of environmental and operational conditions: |  |  |
|  | * + 1. weight and balance | **2** |  |
|  | * + 1. take-off and landing performance | **2** |  |
|  | * + 1. fuel requirements | **2** |  |
|  | determine whether the aircraft is serviceable for the proposed flight | **2** |  |
| 1. C2.2 | Perform pre-flight inspection |  |  |
|  | identify and secure equipment and documentation that is required for the flight | **2** |  |
|  | complete an internal and external check of the aircraft | 3 |  |
|  | identify all defects or damage to the aircraft | 3 |  |
|  | report to, and seek advice from, qualified personnel to determine the action required in relation to any identified defects or damage | **2** |  |
|  | ensure all aircraft locking and securing devices, covers and bungs are removed and stowed securely | **2** |  |
|  | certify the aircraft flight technical log entering any defects or endorsements to permissible unserviceabilities as appropriate | **2** |  |
|  | complete and certify the daily inspection (if authorised to do so) | 3 |  |
| 1. C4.1 | Plan fuel requirements |  |  |
|  | determine the required fuel reserves | **2** |  |
|  | determine the quantity of fuel required taking into account operational requirements and relevant abnormal or emergency conditions and contingencies | 3 |  |
|  | determine the total fuel required for the flight | **2** |  |
| 1. C4.2 | Manage fuel system |  |  |
|  | verify fuel quantity on-board aircraft prior to flight using two independent methods | **2** |  |
|  | ensure the fuel caps are secured | **2** |  |
|  | perform fuel quality check prior to flight | **2** |  |
|  | ensure fuel drain cocks are closed | **2** |  |
| 1. A1.1 | Start and stop engine |  |  |
|  | perform engine start and after start actions | **2** |  |
|  | perform engine shutdown and after shutdown actions | **2** |  |
|  | consider ground surface in relation to contamination and propeller care during engine start and stop activities | **2** |  |
| 1. AME.1 | Operate multi-engine aeroplane |  |  |
|  | start multi-engine aeroplane | **2** |  |
|  | use asymmetric thrust to assist with taxi manoeuvring | 3 |  |
|  | check multi-engine specific systems and instrumentation | 3 |  |
| 1. A1.2 | Taxi aeroplane |  |  |
|  | use aerodrome or landing area charts to taxi aircraft | **2** |  |
|  | comply with taxiway and other aerodrome markings, right-of-way rules and ATC or marshalling instructions when applicable | **2** |  |
|  | perform applicable taxi checks, including the following: |  |  |
|  | * + 1. brakes and steering function normally and take appropriate action in the event of a malfunction | **2** |  |
|  | * + 1. instruments for correct readings | **2** |  |
|  | * + 1. altimeter setting | **2** |  |
|  | maintain safe taxi speed and control of the aircraft | **2** |  |
|  | maintain safe spacing from other aircraft, obstructions, and persons | **2** |  |
|  | taxi the aeroplane along the centre of the taxiway | **2** |  |
|  | avoid causing a hazard to other aircraft, objects or persons | **2** |  |
|  | correct handling techniques are applied to take into account wind from all four quadrants | **2** |  |
|  | correctly manage the engine during taxi manoeuvres | **2** |  |
| 1. A3.1 | Climb aeroplane |  |  |
|  | operate and monitor all aircraft systems when commencing, during and completing a climbing flight manoeuvre | **2** |  |
|  | adjust altimeter subscale according to applicable settings | **2** |  |
|  | identify and avoid terrain and traffic | **2** |  |
|  | for the following climbing manoeuvres select power, attitude and configuration as required for the flight path, balance and trim the aeroplane accurately, and apply smooth, coordinated control inputs to achieve the required flight tolerances that apply to the manoeuvre: |  |  |
|  | * + 1. cruise climb | **2** |  |
|  | * + 1. best angle climb | **2** |  |
|  | * + 1. best rate climb | **2** |  |
|  | anticipate level-off altitude and achieve straight and level flight | **2** |  |
| 1. A3.2 | Maintain straight and level flight |  |  |
|  | operate and monitor all aircraft systems during straight and level flight manoeuvres | **2** |  |
|  | adjust altimeter subscale according to applicable settings | **2** |  |
|  | identify and avoid terrain and traffic | **2** |  |
|  | for the following straight and level manoeuvres select power, attitude and configuration as required for the flight path, balance and trim the aeroplane accurately, and apply smooth, coordinated control inputs to achieve the required flight tolerances that apply to the manoeuvre: |  |  |
|  | * + 1. at slow speed | **2** |  |
|  | * + 1. at normal cruise | **2** |  |
|  | * + 1. at high-speed cruise | **2** |  |
|  | * + 1. during acceleration and deceleration | **2** |  |
|  | * + 1. at maximum range | **2** |  |
|  | * + 1. at maximum endurance | **2** |  |
|  | * + 1. with flaps selected | **2** |  |
| 1. A3.5 | Control aeroplane at slow speeds |  |  |
|  | complete pre-manoeuvre checks | **2** |  |
|  | operate and monitor all aircraft systems when operating the aeroplane at slow speed | **2** |  |
|  | recognise and respond positively to reduced effectiveness of controls during slow flight manoeuvres | **2** |  |
|  | transition from slow speed configuration using take-off power to achieve nominated speed in excess of 1.5 Vs without loss of height | **2** |  |
| 1. A3.4 | Turn aeroplane |  |  |
|  | operate and monitor all aircraft systems during turning flight manoeuvres | **2** |  |
|  | for the following turning manoeuvres select power, attitude and configuration as required for the flight path, balance and trim the aeroplane accurately, and apply smooth, coordinated control inputs to achieve the required flight tolerances that apply to the manoeuvre: |  |  |
|  | * + 1. level turns | **2** |  |
|  | * + 1. climbing turn | **2** |  |
|  | * + 1. powered descending turn | **2** |  |
|  | * + 1. gliding descending turn | **2** |  |
|  | complete turn manoeuvre on a nominated heading or geographical feature | **2** |  |
|  | turn aeroplane at varying rates to achieve specified tracks | **2** |  |
|  | manoeuvre aeroplane over specified tracks or geographical features | **2** |  |
| 1. A5.3 | Turn aeroplane steeply |  |  |
|  | perform pre-manoeuvre checks for steep turning | **2** |  |
|  | steep level turn using a nominated bank angle, ending on a nominated heading or geographical feature, without altitude change | **2** |  |
|  | steep descending turn using a nominated bank angle, ending on a nominated heading or geographical feature ending on a nominated altitude | **2** |  |
|  | aeroplane operating limits are not exceeded | **2** |  |
| 1. C4.2 | Manage fuel system |  |  |
|  | monitor fuel usage during the flight | **2** |  |
|  | accurately maintain fuel log | **2** |  |
|  | calculate and state endurance at any point during flight | **2** |  |
|  | perform fuel tank changes correctly | **2** |  |
|  | maintain fuel load within aircraft limits | **2** |  |
|  | operate the fuel cross-feed system correctly (if fitted) | **2** |  |
|  | operate fuel pumps and engine controls correctly | **2** |  |
|  | configure the aircraft correctly to achieve best range performance and correctly calculate the revised range of operation | **2** |  |
|  | configure the aircraft correctly to achieve best endurance performance and correctly calculate the revised operational endurance | **2** |  |
| 1. A3.3 | Descend aeroplane |  |  |
|  | operate and monitor all aircraft systems during descending flight manoeuvres | **2** |  |
|  | for the following descending manoeuvres select power, attitude and configuration as required for the flight path, balance and trim the aeroplane accurately, and apply smooth, coordinated control inputs to achieve the required flight tolerances that apply to the manoeuvre: |  |  |
|  | * + 1. glide | **2** |  |
|  | * + 1. powered | **2** |  |
|  | * + 1. approach configuration descent (flap and undercarriage) | **2** |  |
|  | anticipate level-off altitude and achieve straight and level flight | **2** |  |
| 1. NTS1.1 | Maintain effective lookout |  |  |
|  | maintain traffic separation using a systematic visual scan technique at a rate determined by traffic density, visibility and terrain | **2** |  |
|  | maintain radio listening watch and interpret transmissions to determine traffic location and intentions | **2** |  |
|  | perform airspace-cleared procedure before commencing any manoeuvre | **2** |  |
| 1. NTS1.2 | Maintain situational awareness |  |  |
|  | monitor all aircraft systems using a systematic scan technique | **2** |  |
|  | collect information to facilitate ongoing system management | **2** |  |
|  | monitor flight environment for deviations from planned operations | **2** |  |
|  | collect flight environment information to update planned operations | **2** |  |
| 1. NTS1.3 | Assess situations and make decisions |  |  |
|  | identify problems | **2** |  |
|  | analyse problems | **2** |  |
|  | identify solutions | **2** |  |
|  | assess solutions and risks | **2** |  |
|  | decide on a course of action | **2** |  |
|  | communicate plans of action (if appropriate) | **2** |  |
|  | allocate tasks for action (if appropriate) | **2** |  |
|  | take actions to achieve optimum outcomes for the operation | **2** |  |
|  | monitor progress against plan | **2** |  |
|  | re-evaluate plan to achieve optimum outcomes | **2** |  |
| 1. NTS1.4 | Set priorities and manage tasks |  |  |
|  | organise workload and priorities to ensure optimum outcome of the flight | **2** |  |
|  | plan events and tasks to occur sequentially | **2** |  |
|  | anticipate events and tasks to ensure sufficient opportunity for completion | **2** |  |
|  | use technology to reduce workload and improve cognitive and manipulative activities | **2** |  |
| 1. NTS1.5 | Maintain effective communications and interpersonal relationships |  |  |
|  | establish and maintain effective and efficient communications and interpersonal relationships with all stakeholders to ensure the optimum outcome of the flight | **2** |  |
|  | define and explain objectives to stakeholders | **2** |  |
|  | demonstrate a level of assertiveness that ensures the optimum completion of the flight | **2** |  |
| 1. NTS2.1 | Recognise and manage threats |  |  |
|  | identify relevant environmental or operational threats that are likely to affect the safety of the flight | **2** |  |
|  | identify when competing priorities and demands may represent a threat to the safety of the flight | **2** |  |
|  | develop and implement countermeasures to manage threats | **2** |  |
|  | monitor and assess flight progress to ensure a safe outcome, or modify actions when a safe outcome is not assured | **2** |  |
| 1. NTS2.2 | Recognise and manage errors |  |  |
|  | apply checklists and standard operating procedures to prevent aircraft handling, procedural or communication errors | **2** |  |
|  | identify committed errors before safety is affected or the aircraft enters an undesired state | **2** |  |
|  | monitor the following to collect and analyse information to identify potential or actual errors: |  |  |
|  | * + 1. aircraft systems using a systematic scan technique | **2** |  |
|  | * + 1. the flight environment | **2** |  |
|  | * + 1. other crew | **2** |  |
|  | implement countermeasures to prevent errors or take action in the time available to correct errors before the aircraft enters an undesired state | **2** |  |
| 1. NTS2.3 | Recognise and manage undesired aircraft state |  |  |
|  | recognise an undesired aircraft state | **2** |  |
|  | prioritise tasks to ensure an undesired aircraft state is managed effectively | **2** |  |
|  | apply corrective actions to recover an undesired aircraft state in a safe and timely manner | **2** |  |
| 1. C2.3 | Post-flight actions and procedures |  |  |
|  | shut down aircraft | **2** |  |
|  | conduct post-flight inspection and secure the aircraft (if applicable) | **2** |  |
|  | complete all required post-flight administration documentation | **2** |  |

\*Enter the performance standard achieved if it is different to that required

Where it has not been possible to introduce performance criteria or the trainee has not achieved the required standard, the performance criteria must be covered during the next lesson. Enter these performance criteria in the lesson record for the subsequent lesson.

| DEBRIEFING |
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| Content |
| * Training review and outcomes achieved against lesson objectives and the Part 61 MOS competency standards * Recommendations for next lesson (including any carryover/remedial training) * Trainee preparation for next lesson * Training record completion and sign off |

| COMMENTS AND OUTCOME | | |
| --- | --- | --- |
|  | | |
| **Proceed to next training session?** | **Yes** | **No** |

| Instructor’s signature & date | Trainee’s signature & date |
| --- | --- |
|  |  |