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| Flight no: | ME(A)CR5.\_\_\_\_ | Trainee name & ARN: |  | | |
| Date: |  | Instructor: |  | | |
| Aircraft registration: |  | Aircraft type: |  | Flight time: |  |

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| Lesson Overview  * Simulated engine failure - enroute * Asymmetric circuits:   + power settings and speeds   + use of flap   + undercarriage and flap operation (normal and emergency)   + committal height considerations   + missed approach * **Assess:**   + pre-flight actions and procedures   + pre-flight inspection   + refuelling   + taxiing   + take-offs, including rejected take-off   + engine failure procedures (enroute & within circuit area)   + fuel management   + circuits   + effective lookout   + non-technical skills   + landings   + post-flight actions and procedures * Flight manoeuvres to be performed within the flight tolerances mentioned in Schedule 8 of the Part 61 MOS |

| PRE-FLIGHT KNOWLEDGE  Long Briefing: 0.8 hour Pre-flight Briefing: 0.3 hour  Underpinning knowledge: as required | |
| --- | --- |
| Content | |
| **Long briefing** – Asymmetric Circuits   * Engine failure after take-off * Engine failure in the circuit * Asymmetric circuit and approach considerations * Engine failure during approach * Asymmetric go around/missed approach | |
| **Underpinning knowledge**   * Review/expand previously introduced knowledge as appropriate * Options when local conditions are not suitable for landing [A4 4(e)] * Technique and procedures used during engine failure on take-off, the appropriate reference airspeeds, and the specific pilot actions required [AME 4(k)] * Technique and procedure for carrying out a rejected take-off after an engine or system(s) failure or warnings, including related safety factors [AME 4(l)] | |
| **HF & NTS**   * Effective communication under normal and non-normal circumstances [NTS2 4(a)] * Threat and error management detailing processes that can be used to identify and mitigate or control threats and errors [NTS2 4(b)] * Developing and implementing plans of action for the following [NTS2 4(d)]:   + removing and mitigating threats   + removing and mitigating errors | |
| **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: 1.2 hours dual | | | |
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| MOS Reference | Lesson Content (Elements & Performance Criteria) | Performance  Standard | |
| Required | Achieved\* |
| 1. C2.1 | Pre-flight actions and procedures | **1** |  |
| 1. C2.2 | Perform pre-flight inspection | **1** |  |
| 1. C4.1 | Plan fuel requirements |  |  |
|  | determine the required fuel reserves | **1** |  |
|  | determine the quantity of fuel required taking into account operational requirements and relevant abnormal or emergency conditions and contingencies | **1** |  |
|  | determine the total fuel required for the flight | **1** |  |
| 1. C4.2 | Manage fuel system |  |  |
|  | verify fuel quantity on-board aircraft prior to flight using two independent methods | **1** |  |
|  | ensure the fuel caps are secured | **1** |  |
|  | perform fuel quality check prior to flight | **1** |  |
|  | ensure fuel drain cocks are closed | **1** |  |
| 1. C4.3 | Refuel aircraft | **1** |  |
| 1. A1.1 | Start and stop engine |  |  |
|  | perform engine start and after start actions | **1** |  |
|  | perform engine shutdown and after shutdown actions | **1** |  |
|  | manage engine start and shutdown malfunctions and emergencies | **1** |  |
|  | consider ground surface in relation to contamination and propeller care during engine start and stop activities | **1** |  |
| 1. AME.1 | Operate multi-engine aeroplane |  |  |
|  | start multi-engine aeroplane | **1** |  |
|  | use asymmetric thrust to assist with taxi manoeuvring | **1** |  |
|  | check multi-engine specific systems and instrumentation | **1** |  |
| 1. A1.2 | Taxi aeroplane | **1** |  |
| 1. A2.1 | Carry out pre take-off procedures |  |  |
|  | correctly identify critical airspeeds, configurations, and emergency and abnormal procedures for normal and crosswind take-offs | **1** |  |
|  | work out a plan of action, in advance, to ensure the safest outcome in the event of abnormal operations | **1** |  |
|  | verify and correctly apply correction for the existing wind component to the take-off performance | **1** |  |
|  | perform all pre take-off and line-up checks required by the aircraft checklist | **1** |  |
|  | ensure approach path is clear of conflicting traffic and other hazards before lining up for take-off | **1** |  |
|  | align the aeroplane on the runway centreline | **1** |  |
| 1. AME.5 | Perform rejected take-off - multi-engine aeroplane |  |  |
|  | abort take-off at or before decision point during the take-off where the abort procedure can be initiated and the aeroplane stopped on the remaining runway or stopway | **1** |  |
|  | reduce power smoothly and promptly | **1** |  |
|  | activate spoilers, prop fine, reverse, thrust reverse, wheel brakes and other drag and braking devices (as applicable) | **1** |  |
|  | maintain positive control to bring the aeroplane to a safe stop | **1** |  |
|  | initiate and complete engine failure procedures and checklists | **1** |  |
| 1. A2.2 | Take-off aeroplane |  |  |
|  | apply the controls correctly to maintain longitudinal alignment on the centreline of the runway, if appropriate, prior to initiating and during the take-off | **1** |  |
|  | adjust the power controls taking into account the existing conditions | **1** |  |
|  | monitor power controls, settings, and instruments during take-off to ensure all predetermined parameters are achieved and maintained | **1** |  |
|  | adjust the controls to attain the desired pitch attitude at the predetermined airspeed to attain the desired performance | **1** |  |
|  | perform the take-off applying the required pitch, roll and yaw inputs as appropriate in a smooth, coordinated manner | **1** |  |
|  | trim the aeroplane accurately | **1** |  |
|  | perform gear and flap retractions, power adjustments (as applicable) and other required pilot-related activities | **1** |  |
|  | maintain flight path along the runway extended centreline | **1** |  |
|  | apply the applicable noise abatement and wake turbulence avoidance procedures | **1** |  |
|  | recognise take-off abnormalities and take appropriate action to reject take-off (can be simulated) | **1** |  |
| 1. A2.3 | Take-off aeroplane in a crosswind |  |  |
|  | perform a take-off in an aeroplane making appropriate adjustments for the crosswind conditions | **1** |  |
|  | maintain the runway centreline and extended centreline | **1** |  |
| 1. A2.5 | Take-off aeroplane from ‘short field’ |  |  |
|  | calculate take-off and landing performance in accordance with the aeroplane's performance charts | **1** |  |
|  | perform take-off aeroplane to achieve the minimum length take-off performance | **1** |  |
|  | perform take-off aeroplane to achieve the obstacle clearance parameters | **1** |  |
| 1. A2.4 | Carry out after take-off procedures |  |  |
|  | perform after take-off checklist | **1** |  |
|  | maintain the appropriate climb segment at the nominated heading and airspeed | **1** |  |
|  | manoeuvre according to local and standard procedures | **1** |  |
|  | maintain traffic separation | **1** |  |
| 1. AME.3 | Manage engine failure and malfunction after take-off (simulated) |  |  |
|  | manage simulated engine failures and malfunctions effectively whilst maintaining control of the aircraft flight path within specified tolerances | **1** |  |
|  | configure and fly aeroplane to achieve best performance | **1** |  |
|  | replan flight and take action to return to land or divert to alternate | **1** |  |
| 1. AME.4 | Manage engine failure and malfunction enroute (simulated) |  |  |
|  | maintain or regain control of the aeroplane flight path within specified tolerances | **1** |  |
|  | manage failed or malfunctioning engine effectively | **1** |  |
|  | replan flight and take action to continue or divert to alternate | **1** |  |
| 1. AME.2 | Manage failures and malfunctions - general |  |  |
|  | operate and manage aircraft systems | **1** |  |
|  | asymmetric operations for all phases of flight are anticipated and contingencies are planned | **1** |  |
|  | a plan of action is self-briefed or briefed that will ensure the safest outcome in the event of asymmetric operations | **1** |  |
| 1. A3.6 | Perform circuits and approaches |  |  |
|  | operate and monitor all aircraft systems when operating the aeroplane in the circuit | **1** |  |
|  | in accordance with specific local procedures, safely perform a full circuit pattern (5 legs) by balancing and trimming the aeroplane accurately while applying smooth, coordinated control inputs to achieve the required flight tolerances specified for the flight path flown during traffic pattern manoeuvres as follows: |  |  |
|  | * + 1. track upwind along extended centreline to 500 ft | **1** |  |
|  | * + 1. establish and maintain crosswind leg tracking 90° to the runway | **1** |  |
|  | * + 1. establish and maintain downwind leg tracking parallel to, and at a specified distance from, the runway at circuit height | **1** |  |
|  | * + 1. establish base leg tracking 90° to the runway at a specified distance from the runway threshold | **1** |  |
|  | perform checks as required throughout circuit | **1** |  |
|  | establish the approach and landing configuration appropriate for the runway and meteorological conditions, and adjust the power plant controls as required for the following: |  |  |
|  | * + 1. commence and control approach descent path | **1** |  |
|  | * + 1. adjust descent commencement point to take account of extended downwind leg or traffic adjustments | **1** |  |
|  | * + 1. align and maintain aircraft on final approach flight path with specified or appropriate runway | **1** |  |
|  | * + 1. set and maintain approach configuration not below 500 ft AGL | **1** |  |
|  | * + 1. identify and maintain the nominated aiming point | **1** |  |
|  | * + 1. maintain a stabilised approach angle at the nominated airspeed not less than 1.3Vs to the round-out height | **1** |  |
|  | * + 1. verify existing wind conditions, make proper correction for drift, and maintain a precise ground track | **1** |  |
|  | * + 1. apply speed allowances for wind gusts | **1** |  |
|  | * + 1. configure aeroplane for landing | **1** |  |
|  | maintain aircraft separation and position in the circuit with reference to other aircraft traffic in the circuit area | **1** |  |
| 1. C4.2 | Manage fuel system |  |  |
|  | monitor fuel usage during the flight | **1** |  |
|  | accurately maintain fuel log | **1** |  |
|  | calculate and state endurance at any point during flight | **1** |  |
|  | perform fuel tank changes correctly | **1** |  |
|  | maintain fuel load within aircraft limits | **1** |  |
|  | operate the fuel cross-feed system correctly (if fitted) | **1** |  |
|  | operate fuel pumps and engine controls correctly | **1** |  |
|  | configure the aircraft correctly to achieve best range performance and correctly calculate the revised range of operation | **1** |  |
|  | configure the aircraft correctly to achieve best endurance performance and correctly calculate the revised operational endurance | **1** |  |
| 1. A4.3 | Conduct a missed approach |  |  |
|  | recognise the conditions when a missed approach should be executed | **1** |  |
|  | make the decision to execute a missed approach when it is safe to do so | **1** |  |
|  | make a smooth, positively-controlled transition from approach to missed approach, including the following: |  |  |
|  | * + 1. select power, attitude and configuration to safely control aeroplane | **1** |  |
|  | * + 1. manoeuvre aeroplane clear of the ground and conduct after take-off procedures | **1** |  |
|  | * + 1. make allowance for wind velocity during go-around | **1** |  |
|  | * + 1. avoid wake turbulence | **1** |  |
| 1. A4.4 | Perform recovery from missed landing |  |  |
|  | recognise when a missed landing is occurring and when it is appropriate to take recovery action | **1** |  |
|  | make the decision to execute recovery from a missed landing only when it is safe to do so | **1** |  |
|  | make a smooth, positively-controlled transition from missed landing to missed approach, including the following: |  |  |
|  | * + 1. select power, attitude and configuration to safely control aeroplane | **1** |  |
|  | * + 1. manoeuvre aeroplane clear of the ground and conduct after take-off procedures | **1** |  |
|  | * + 1. make allowance for wind velocity during go-around | **1** |  |
|  | * + 1. avoid wake turbulence | **1** |  |
| 1. AME.6 | Manage engine failure and malfunction during approach and landing (simulated) |  |  |
|  | maintain control of aeroplane flight path | **1** |  |
|  | nominate decision height for landing | **1** |  |
|  | make decision to continue or abort approach and landing in a safe and timely way | **1** |  |
|  | advise ATS or other agencies capable of providing assistance of situation and intentions | **1** |  |
|  | establish the approach and landing configuration appropriate for the runway or landing area and meteorological conditions, and adjust the power plant controls as required | **1** |  |
|  | maintain a stabilised approach and nominated airspeed within tolerances | **1** |  |
|  | achieve a smooth, positively-controlled transition from final approach to touchdown in the touchdown zone within tolerances | **1** |  |
|  | maintain positive directional control and crosswind corrections during the after landing roll maintaining the centreline within tolerances | **1** |  |
|  | use spoilers, prop reverse, thrust reversers, wheel brakes, and other drag or braking devices, as appropriate, in such a manner to bring the airplane to a safe stop after landing (as applicable) | **1** |  |
| 1. AME.7 | Conduct go-around or missed approach with engine failure (simulated) |  |  |
|  | identify and confirm engine failure in a multi-engine aeroplane during a go-around or missed approach | **1** |  |
|  | maintain control of aeroplane | **1** |  |
|  | perform engine inoperative go-around safely not below the decision height | **1** |  |
| 1. A4.1 | Land aeroplane |  |  |
|  | maintain a constant landing position aim point | **1** |  |
|  | achieve a smooth, positively-controlled transition from final approach to touchdown, including the following: |  |  |
|  | * + 1. control ballooning during flare | **1** |  |
|  | * + 1. touchdown at a controlled rate of descent, in the specified touchdown zone within tolerances | **1** |  |
|  | * + 1. control bouncing after touchdown | **1** |  |
|  | * + 1. touchdown aligned with the centreline within tolerances | **1** |  |
|  | ensure separation is maintained | **1** |  |
|  | maintain positive directional control and crosswind correction during the after landing roll | **1** |  |
|  | use drag and braking devices, as applicable, in such a manner to bring the airplane to a safe stop | **1** |  |
|  | complete the applicable after landing checklist items in a timely manner | **1** |  |
| 1. A4.2 | Land aeroplane in a crosswind |  |  |
|  | verify existing wind conditions, make proper correction for drift, and maintain a precise ground track | **1** |  |
|  | configure the aeroplane for the crosswind conditions | **1** |  |
|  | control the aeroplane during the transition from final approach to touchdown and during after landing roll to compensate for the crosswind conditions | **1** |  |
| 1. A4.5 | Short landing |  |  |
|  | land aeroplane at nominated touchdown point at minimum speed | **1** |  |
|  | control ballooning during flare | **1** |  |
|  | control bouncing after touchdown | **1** |  |
|  | maintain direction after touchdown | **1** |  |
|  | apply maximum braking without locking up wheels | **1** |  |
|  | stops aircraft within landing distance available | **1** |  |
| 1. NTS1.1 | Maintain effective lookout | **1** |  |
| 1. NTS1.2 | Maintain situational awareness |  |  |
|  | monitor all aircraft systems using a systematic scan technique | **1** |  |
|  | collect information to facilitate ongoing system management | **1** |  |
|  | monitor flight environment for deviations from planned operations | **1** |  |
|  | collect flight environment information to update planned operations | **1** |  |
| 1. NTS1.3 | Assess situations and make decisions |  |  |
|  | identify problems | **1** |  |
|  | analyse problems | **1** |  |
|  | identify solutions | **1** |  |
|  | assess solutions and risks | **1** |  |
|  | decide on a course of action | **1** |  |
|  | communicate plans of action (if appropriate) | **1** |  |
|  | allocate tasks for action (if appropriate) | **1** |  |
|  | take actions to achieve optimum outcomes for the operation | **1** |  |
|  | monitor progress against plan | **1** |  |
|  | re-evaluate plan to achieve optimum outcomes | **1** |  |
| 1. NTS1.4 | Set priorities and manage tasks |  |  |
|  | organise workload and priorities to ensure optimum outcome of the flight | **1** |  |
|  | plan events and tasks to occur sequentially | **1** |  |
|  | anticipate events and tasks to ensure sufficient opportunity for completion | **1** |  |
|  | use technology to reduce workload and improve cognitive and manipulative activities | **1** |  |
| 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 | **1** |  |
|  | define and explain objectives to stakeholders | **1** |  |
|  | demonstrate a level of assertiveness that ensures the optimum completion of the flight | **1** |  |
| 1. NTS2.1 | Recognise and manage threats |  |  |
|  | identify relevant environmental or operational threats that are likely to affect the safety of the flight | **1** |  |
|  | identify when competing priorities and demands may represent a threat to the safety of the flight | **1** |  |
|  | develop and implement countermeasures to manage threats | **1** |  |
|  | monitor and assess flight progress to ensure a safe outcome, or modify actions when a safe outcome is not assured | **1** |  |
| 1. NTS2.2 | Recognise and manage errors |  |  |
|  | apply checklists and standard operating procedures to prevent aircraft handling, procedural or communication errors | **1** |  |
|  | identify committed errors before safety is affected or the aircraft enters an undesired state | **1** |  |
|  | monitor the following to collect and analyse information to identify potential or actual errors: |  |  |
|  | * + 1. aircraft systems using a systematic scan technique | **1** |  |
|  | * + 1. the flight environment | **1** |  |
|  | * + 1. other crew | **1** |  |
|  | implement countermeasures to prevent errors or take action in the time available to correct errors before the aircraft enters an undesired state | **1** |  |
| 1. NTS2.3 | Recognise and manage undesired aircraft state |  |  |
|  | recognise an undesired aircraft state | **1** |  |
|  | prioritise tasks to ensure an undesired aircraft state is managed effectively | **1** |  |
|  | apply corrective actions to recover an undesired aircraft state in a safe and timely manner | **1** |  |
| 1. C2.3 | Post-flight actions and procedures | **1** |  |

\*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.

| CONSOLIDATION AND/OR REMEDIAL TRAINING | | | |
| --- | --- | --- | --- |
| MOS Reference | Lesson Content (Elements & Performance Criteria) | Performance  Standard | |
| Required | Achieved |
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| DEBRIEFING |
| --- |
| 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 |
| --- | --- |
|  |  |