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| --- | --- | --- | --- | --- | --- |
| Flight no: | PPL(A)2.\_\_\_\_ | Trainee name & ARN: |  | | |
| Date: |  | Instructor: |  | | |
| Aircraft registration: |  | Aircraft type: |  | Flight time: |  |

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| Lesson Overview  * Navigation route: [Enter navigation route] * Introduction to operations at controlled aerodromes and controlled airspace procedures * Flying for range and endurance * Low level navigation * Lost procedure * Procedure when encountering turbulence * Radio failure procedures * Practice forced landing * Basic instrument flight revision, straight and level, climbing, descending |

| PRE-FLIGHT KNOWLEDGE  Long Briefing: 1.5 hours Pre-flight Briefing: 0.5 hour  Underpinning knowledge: as required | |
| --- | --- |
| Content | |
| **Long briefing** – Preparation for and overview of navigation exercise #2   * Controlled airspace procedures * Departure and arrival procedures/restrictions – controlled aerodromes * Use of navigation aids and systems as a supplement to visual navigation – introduction to basic concepts, requirements and restrictions * Pre-flight operational decision making – carrying additional fuel, planning for holding and alternate aerodromes * Circumstances for which a diversion may be required, planning and carrying out a diversion * Calculating and flying for range and endurance * Navigation at low level * Procedure when unsure of position | |
| **Underpinning knowledge**   * Basic GNSS principles [NAV 4(a)] * Enroute GNSS navigation principles [NAV 4(b)] * Diversion considerations and procedures [NAV 4(e)] * Radio failure procedures in ERSA [ONTA 4(d)] * Decode NOTAMs, aerodrome ground markings and lighting, standard RT phraseology for operations at controlled aerodromes, radio failure procedures in the ERSA, transponder codes [CTA 4(a)-(e), CTR 4(a)-(e)] * Revise underpinning knowledge applicable to basic instrument flight | |
| **HF & NTS**   * Task management [NTS1 & NTS2 4(b)] * Threat and error management detailing processes that can be used to identify and mitigate or control threats and errors [NTS2 4(b)] * The application of situation awareness to identifying real or potential environmental or operational threats to flight safety [NTS2 4(c)] * Developing and implementing plans of action for removing and mitigating threats, and removing and mitigating errors [NTS2 4(d)] * Undesired aircraft states, including prevention, identifying and controlling [NTS2 4(e)] * How an undesired aircraft state can develop from an unmanaged threat or error [NTS2 4(f)] | |
| **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, and is deemed safe to conduct solo practice under direct supervision | Achieves competency to the standard required for qualification issue |

| FLIGHT TRAINING  Suggested flight time: 3.0 hours dual (0.3 IF) | | | |
| --- | --- | --- | --- |
| MOS Reference | Lesson Content (Elements & Performance Criteria) | Performance  Standard | |
| Required | Achieved\* |
| 1. NAV.1 | Prepare documents and flight plan |  |  |
|  | select and prepare appropriate navigation charts for the intended flight | **2** |  |
|  | select a suitable route and altitude considering weather, terrain, airspace, NOTAMs and alternate landing areas | **2** |  |
|  | obtain and interpret meteorological forecasts, NOTAMs and operational information applicable to the planned flight | **2** |  |
|  | determine whether the planned flight can be conducted under the applicable flight rules and taking account of the beginning and end of daylight times | **2** |  |
|  | complete a flight plan to the planned destination and alternates | **2** |  |
|  | lodge suitable flight notification for search and rescue (SAR) purposes | **2** |  |
| 1. ONTA.1 | Non-towered aerodrome – pre-flight preparation |  |  |
|  | using a current ERSA and NOTAM, for the non-towered aerodrome or landing area, extract all of the relevant operational information | **2** |  |
|  | interpret the extracted information | **2** |  |
|  | identify all special aerodrome procedures | **2** |  |
|  | check current weather forecast and local observations | **2** |  |
|  | identify all relevant radio and navigation aid frequencies | **2** |  |
| 1. CTR.1 | Controlled aerodrome pre-flight preparation |  |  |
|  | using a current ERSA and NOTAM, for the controlled aerodrome, extract all the relevant operational information | 2 |  |
|  | interpret the extracted information | 2 |  |
|  | identify all special aerodrome procedures | 2 |  |
|  | check current weather forecast and local observations | 2 |  |
|  | identify all relevant radio and navigation aid frequencies | 2 |  |
| 1. ONTA.2 | Taxi aircraft at a non-towered aerodrome or landing area |  |  |
|  | refer to aerodrome or landing area chart (if available) | 2 |  |
|  | set local QNH or area QNH | 2 |  |
|  | broadcast intentions on appropriate frequency | 2 |  |
|  | obtain and interpret traffic information | 2 |  |
|  | maintain lookout for, and separation from, other aircraft, wildlife and other obstructions | 2 |  |
|  | recognise ground markings during taxi and take appropriate action | 2 |  |
|  | taxi aircraft to holding point | 2 |  |
|  | use strobes when crossing any runway | 2 |  |
| 1. ONTA.3 | Perform departure at a non-towered aerodrome or landing area |  |  |
|  | check and ensure runway approach is clear prior to entering a runway | **2** |  |
|  | correctly set transponder code and mode prior to entering runway for take-off | **2** |  |
|  | confirm runway approaches clear in all directions prior to entering runway | **2** |  |
|  | broadcast line up details | **2** |  |
|  | transmit appropriate radio calls and maintain separation with other aircraft | **2** |  |
|  | advise air service provider of departure details, if required | **2** |  |
|  | conduct departure | **2** |  |
| 1. NAV.3 | Conduct departure procedures |  |  |
|  | organise cockpit to ensure charts, documentation and navigational calculator are accessible from the control seat | **2** |  |
|  | comply with all departure procedures, clearances and noise abatement requirements | **2** |  |
|  | establish planned track on departure within 5 nm of airfield or apply alternative procedure if required | **2** |  |
|  | calculate estimated time of arrival (ETA) for first waypoint | **2** |  |
| 1. NAV.4 | Navigate aircraft enroute |  |  |
|  | maintain a navigation cycle that ensures accurate tracking, and apply track correctional techniques to re-establish track prior to waypoint or destination | **2** |  |
|  | maintain heading to achieve a nominated track | **2** |  |
|  | maintain and revise ETAs (±2 minutes) for waypoint or destination | **2** |  |
|  | maintain track in accordance with published flight path tolerances in controlled airspace | 2 |  |
|  | navigate using accepted map-reading techniques | **2** |  |
|  | maintain navigation and fuel log to monitor tracking, ETAs and fuel status | **2** |  |
|  | use appropriate techniques to obtain a positive fix at suitable intervals | **2** |  |
|  | maintain awareness of route, enroute terrain, enroute and destination weather, and react appropriately to changing weather conditions | **2** |  |
|  | perform pre-descent and turning point checks | **2** |  |
|  | maintain appropriate radio communication and listening watch with ATS and other aircraft if radio is fitted and used | **2** |  |
|  | configure the aircraft as required for the following environmental and operational conditions: |  |  |
|  | * + 1. turbulence | **2** |  |
|  | * + 1. holding | **2** |  |
|  | * + 1. maximum range | **2** |  |
|  | maintain awareness of search and rescue times (SARTIME) and revise as required | **2** |  |
|  | monitor aircraft systems, manage fuel and engine to ensure aircraft is operated to achieve flight plan objectives | **2** |  |
| 1. NAV.2 | Comply with airspace procedures while navigating |  |  |
|  | identify airspace restrictions and dimensions applicable to the flight | **2** |  |
|  | obtain and comply with air traffic clearances, if applicable | **2** |  |
|  | comply with airspace procedures applicable to the airspace classification throughout the flight | **2** |  |
| 1. OGA | Operate aircraft in Class G airspace |  |  |
|  | maintain tracking and altitude tolerances to remain outside controlled airspace | **2** |  |
|  | apply separation tolerances between IFR flights, and IFR and VFR flights | **2** |  |
|  | when using an aircraft radio: |  |  |
|  | * + 1. monitor appropriate radio frequency | **2** |  |
|  | * + 1. make appropriate radio calls | **2** |  |
|  | * + 1. obtain operational information from air services provider and other aircraft | **2** |  |
|  | * + 1. use information to ensure aircraft separation is maintained | **2** |  |
|  | * + 1. apply loss of radio communication procedures | **2** |  |
|  | using a suitable chart: |  |  |
|  | * + 1. operate clear of active aerodromes and landing areas in the vicinity of the aircraft | **2** |  |
|  | * + 1. identify and remain clear of controlled and restricted airspace | **2** |  |
|  | * + 1. take appropriate action when operating in the vicinity of a danger area | **2** |  |
|  | perform actions in the event of abnormal operations and emergencies  (e.g. simulated complete or partial engine failure enroute) | **2** |  |
|  | recall transponder emergency code and communication failure code | **2** |  |
| 1. NAV.8 | Use instrument navigation systems |  |  |
|  | initialise navigation system (as applicable) | **2** |  |
|  | conduct navigation system validity check (as applicable) | **2** |  |
|  | conduct RAIM check if required | **2** |  |
|  | select, load, check and activate the flight plan (as applicable) | **2** |  |
|  | navigate on departure, enroute and on arrival using GNSS | **2** |  |
|  | operate instrument navigation systems correctly | **2** |  |
|  | use instrument navigation systems to assist with navigation | **2** |  |
|  | confirm waypoints and fixes using instrument navigation systems | **2** |  |
| 1. A3.2 | Maintain straight and level flight |  |  |
|  | 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 maximum range | **2** |  |
|  | * + 1. at maximum endurance | **2** |  |
| 1. NAV.5 | Navigate at low level and in reduced visibility |  |  |
|  | configure the aircraft as required for the following environmental and operational conditions: |  |  |
|  | * + 1. reduced visibility | **2** |  |
|  | * + 1. low cloud base | **2** |  |
|  | navigate aeroplane at minimum heights (not below 500 ft AGL, clear of built-up areas) and remain in VMC | 3 |  |
|  | maintain separation from terrain, obstacles, allowing for wind and turbulence at low level | 3 |  |
|  | avoid noise sensitive areas | 3 |  |
|  | operate appropriately in the vicinity of aerodromes and landing areas | 3 |  |
| 1. NAV.6 | Perform lost procedure |  |  |
|  | acknowledge positional uncertainty in a timely manner | **2** |  |
|  | configure aircraft for range and endurance as required | **2** |  |
|  | apply recognised method to re-establish aircraft position | **2** |  |
|  | fix position | **2** |  |
|  | use radio to request assistance, if applicable | **2** |  |
|  | plan a timely precautionary search and landing if unable to complete flight safely to suitable aerodrome | **2** |  |
| 1. NAV.7 | Perform diversion procedure |  |  |
|  | make timely decision to divert | **2** |  |
|  | identify an acceptable alternate aerodrome | **2** |  |
|  | select a suitable route and cruising level | **2** |  |
|  | revise flight plan considering weather, terrain, airspace and fuel available | **2** |  |
|  | advise ATS of an intention to divert | **2** |  |
| 1. CTA.1 | Operate aircraft in controlled airspace |  |  |
|  | comply with airways clearance requirements for operating in all classes of airspace, including lead time required for flight plan submission, contents, ‘clearance void time’, and ‘readback’ requirement | 3 |  |
|  | apply airways clearance requirements for entering, operating in and departing from CTA and CTR, including details that need to be provided to ATC, and what details to expect from ATC | 3 |  |
|  | maintain control area protection tolerances | 3 |  |
|  | maintain tracking and altitude tolerances when operating on an airways clearance | 3 |  |
|  | reconfirm any clearance items when doubt exists | 3 |  |
|  | advise ATC as soon as possible if unable to maintain clearance due to adverse weather conditions | 3 |  |
|  | follow ATC requirements for a change of level in CTA, including in an emergency situation | 3 |  |
|  | comply with departure, climb, transition to cruise (levelling out), cruise, change of levels, descent and visual approach procedures in CTA and CTR instructions | 3 |  |
|  | apply separation standards between IFR flights, and IFR and VFR flights in the various classes of CTA | 3 |  |
|  | perform appropriate actions in the event of the loss of radio communication in CTA and CTR | 3 |  |
|  | perform appropriate actions in the event of abnormal operations and emergency procedures in CTA and CTR | 3 |  |
|  | operate under radar vectoring procedures, including radio procedures and phraseologies | 3 |  |
|  | maximum permissible time interval between ATC transmissions during radar vectoring are not exceeded | 3 |  |
|  | perform appropriate actions in the event of abnormal operations and emergencies | 3 |  |
|  | recall transponder emergency code and communication failure code | **2** |  |
| 1. CTR.4 | Perform arrival and landing at controlled aerodrome |  |  |
|  | check ERSA and NOTAM prior to entering control area and extract required operational information | 2 |  |
|  | receive ATIS and correctly set the appropriate QNH | 2 |  |
|  | request and receive ATC clearance and set correct transponder code prior to entering control area | 2 |  |
|  | advise ATC as soon as possible if unable to comply with clearance | 3 |  |
|  | maintain lookout at all times | 2 |  |
|  | update QNH as required | 2 |  |
|  | maintain tracking tolerances | 3 |  |
|  | establish aircraft on the correct leg of the circuit in preparation for landing and maintain separation from traffic | 2 |  |
|  | confirm clearance to land | 2 |  |
|  | vacate runway and obtain taxi clearance | 2 |  |
| 1. CTR.2 | Taxi aircraft at a controlled aerodrome |  |  |
|  | obtain and comply with ATC clearances | 3 |  |
|  | manoeuvre aircraft to holding point as instructed and take appropriate action to avoid other aircraft and obstructions | 2 |  |
|  | recognise ground markings during taxi and take appropriate action | 2 |  |
|  | recognise lighting signals and take appropriate action | 2 |  |
|  | identify airport runway incursion hotspots | 2 |  |
|  | manoeuvre aircraft to avoid jet blast hazard | 2 |  |
|  | request taxi guidance if unsure of position | 2 |  |
|  | use strobes when crossing any runway | 2 |  |
| 1. CTR.3 | Perform departure from controlled aerodrome |  |  |
|  | receive and correctly read back an airways clearance | 2 |  |
|  | check and ensure runway approach is clear prior to entering a runway | **1** |  |
|  | correctly set transponder code and mode prior to entering runway for take-off | 2 |  |
|  | comply with ATC departure instructions | 3 |  |
|  | advise ATC as soon as possible if unable to comply with clearance | 3 |  |
|  | contact approach with airborne report or give departure call to tower | 3 |  |
|  | maintain lookout | 2 |  |
|  | avoid wake turbulence | 3 |  |
|  | comply with airways clearances within tracking and altitude tolerances and maintain traffic lookout until clear of the aerodrome control zone | 3 |  |
| 1. IFF.2 | Perform manoeuvres **using** full instrument panel |  |  |
|  | set and maintain power and attitude by reference to the full instrument panel to achieve the following: |  |  |
|  | * + 1. straight and level performance during normal cruise within the flight tolerances | 2 |  |
|  | * + 1. nominated climb performance within the flight tolerances | 2 |  |
|  | * + 1. descent performance within the flight tolerances | 2 |  |
| 1. NAV.9 | Execute arrival procedures |  |  |
|  | obtain updated relevant aerodrome information | **2** |  |
|  | determine landing direction and aerodrome suitability | **2** |  |
|  | conduct arrival | **2** |  |
|  | identify and avoid all traffic | **2** |  |
|  | observe local and published noise abatement requirements and curfews | **2** |  |
|  | cancel SARWATCH | **2** |  |
| 1. ONTA.4 | Perform arrival and landing at a non-towered aerodrome or landing area |  |  |
|  | check ERSA and NOTAM prior to entering circuit area | **2** |  |
|  | set correct area or local QNH | **2** |  |
|  | use correct radio frequency to transmit inbound calls as required | **2** |  |
|  | maintain effective lookout | **2** |  |
|  | maintain aircraft separation and avoid other traffic | **2** |  |
|  | maintain tracking tolerances | **2** |  |
|  | determine wind velocity | **2** |  |
|  | determine landing direction | **2** |  |
|  | confirm runway is serviceable for the operation | **2** |  |
|  | determine circuit direction | **2** |  |
|  | conduct landing area inspection (if applicable) | **2** |  |
|  | position aircraft in the circuit in preparation for landing and maintain separation from traffic | **2** |  |
|  | make all necessary circuit radio calls | **2** |  |
|  | verify runway is clear of other traffic, wildlife and other obstructions | **2** |  |
|  | land the aircraft | **2** |  |
|  | vacate runway | **2** |  |
|  | cancel SARWATCH, if applicable | **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** |  |

\*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 carry-over/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 |
| --- | --- |
|  |  |