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| Flight no: | CPL(H) 35.\_\_\_ | Trainee name & ARN: |  | | |
| Date: |  | Instructor: |  | | |
| Aircraft registration: |  | Aircraft type: |  | Flight time: |  |

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| Lesson Overview  * Navigation route: [Enter navigation route] * Introduction to pilot navigation in Class G airspace * Operations at non-towered aerodromes * Introduction to GNSS and radio navigation systems |

| PRE-FLIGHT KNOWLEDGE  Long Briefing: 3.0 hour Pre-flight Briefing: 0.5 hour  Underpinning knowledge: as required | |
| --- | --- |
| Content | |
| **Long briefing** – Navigation   * Navigation equipment * Pre-flight briefing - obtaining and analysing weather forecasts, weather reports and NOTAMs * Route selection and preparation of navigation charts * Factors influencing choice of cruising levels * Last light calculations and considerations * Calculation of estimated fuel consumption, fuel reserves, operational requirements and preparation of fuel log * Preparation and submission of flight plan * Departure and arrival procedures/restrictions – non-towered aerodrome or landing area * Operations in Class G airspace, airspace restrictions (prohibited, restricted and danger areas) * Visual navigation techniques (e.g. dead reckoning, ‘time-to-map-to-ground’, the ‘one-in-sixty’ rule) * Navigation checklist procedures, maintenance of navigation log * Engine handling considerations, fuel management and use of fuel log * Radio communication procedures * GNSS systems introduction * Radio navigation systems introduction * SAR requirements * Management of passengers and cargo * Dangerous goods awareness | |
| **Underpinning knowledge**:   * Review/expand previously introduced knowledge as required * GNSS and radio navigation systems: GNSS NDB VOR PBN [NAV(a)(b)] [RNE(a)-(e)] * Dead reckoning navigation [NAV(c)] * Decode NOTAM [ONTA(a)] * Aerodrome ground markings and lighting [ONTA(b)] * Standard RT phraseology for operations at non-towered aerodromes and landing areas [ONTA(c)] * Radio failure procedures in ERSA [ONTA(d)] * Transponder codes for G airspace [ONTA 4(e)] * Class G airspace [OGA] | |
| **HF & NTS**   * Use CLEAR checks * Look out and listen out for traffic enroute * Regularly monitor fuel consumption and gauges * Organise cockpit to minimize workload and maximise efficiency * Avoid fixating on one task to the detriment of situational awareness | |
| **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 [1.5 hours dual] | | | |
| --- | --- | --- | --- |
| MOS Reference | Lesson Content (Elements & Performance Criteria) | Performance  Standard | |
| Required | Achieved\* |
| **NAV.1** | **Prepare documents and flight plan** |  |  |
| (a) | select and prepare appropriate navigation charts for the intended flight | 3 |  |
| (b) | select a suitable route and altitude considering weather, terrain, airspace, NOTAMs and alternate landing areas | 3 |  |
| (c) | obtain and interpret meteorological forecasts, NOTAMs and operational information applicable to the planned flight | 3 |  |
| (d) | determine whether the planned flight can be conducted under the applicable flight rules and taking account of the beginning and end of daylight times | 3 |  |
| (e) | calculate and document critical point (CP) and point of no return (PNR) locations | 3 |  |
| (f) | complete a flight plan to the planned destination and alternates | 3 |  |
| (g) | lodge suitable flight notification for search and rescue (SAR) purposes | 3 |  |
| **NAV.2** | **Comply with airspace procedures while navigating** |  |  |
| (a) | identify airspace restrictions and dimensions applicable to the flight | 3 |  |
| (b) | obtain and comply with air traffic clearances, if applicable; | 3 |  |
| (c) | establish planned track on departure within 5 nm of airfield or apply alternative procedure if required | 3 |  |
| **NAV.3** | **Conduct departure procedures** |  |  |
| (a) | organise cockpit to ensure charts, documentation and navigational calculator are accessible from the control seat | 3 |  |
| (b) | comply with all departure procedures, clearances and noise abatement requirements | 3 |  |
| (c) | establish planned track on departure within 5 nm of airfield or apply alternative procedure if required | 3 |  |
| (d) | calculate estimated time of arrival (ETA) for first waypoint | 3 |  |
| **NAV.4** | **Navigate aircraft enroute** |  |  |
| (a) | maintain a navigation cycle that ensures accurate tracking, and apply track correctional techniques to re-establish track prior to waypoint or destination | 3 |  |
| (b) | maintain heading to achieve a nominated track | 3 |  |
| (c) | maintain and revise ETAs (±2 minutes) for waypoint or destination | 3 |  |
| (d) | maintain track in accordance with published flight path tolerances in controlled airspace | 3 |  |
| (e) | navigate using accepted map-reading techniques | 3 |  |
| (f) | maintain navigation and fuel log to monitor tracking, ETAs and fuel status | 3 |  |
| (g) | use appropriate techniques to obtain a positive fix at suitable interval; | 3 |  |
| (h) | maintain awareness of route, en route terrain, en route and destination weather, and react appropriately to changing weather conditions | 3 |  |
| (i) | perform pre-descent and turning point checks | 3 |  |
| (j) | maintain appropriate radio communication and listening watch with ATS and other aircraft if radio is fitted and used | 3 |  |
| (k) | configure the aircraft as required for the following environmental and operational conditions: |  |  |
|  | (i) turbulence | 3 |  |
|  | (ii) holding | 3 |  |
|  | (iii) maximum range | 3 |  |
| (l) | maintain awareness of search and rescue times (SARTIME) and revise as require; | 3 |  |
| (m) | monitor aircraft systems, manage fuel and engine to ensure aircraft is operated to achieve flight plan objectives | 3 |  |
| **NAV.8** | **Use instrument navigation systems** |  |  |
| (a) | initialise navigation system (as applicable) | 3 |  |
| (b) | conduct navigation system validity check (as applicable) | 3 |  |
| (c) | conduct RAIM check if required | 3 |  |
| (d) | select, load, check and activate the flight plan (as applicable) | 3 |  |
| (e) | navigate on departure, enroute and on arrival using GNSS | 3 |  |
| (f) | operate instrument navigation systems correctly | 3 |  |
| (g) | use instrument navigation systems to assist with navigation | 3 |  |
| (h) | confirm waypoints and fixes using instrument navigation systems | 3 |  |
| **NAV.9** | **Execute arrival procedures** |  |  |
| (a) | obtain updated relevant aerodrome information | 3 |  |
| (b) | determine landing direction and aerodrome suitability | 3 |  |
| (c) | conduct arrival | 3 |  |
| (d) | identify and avoid all traffic | 3 |  |
| (e) | observe local and published noise abatement requirements and curfews | 3 |  |
| (f) | cancel SARWATCH | 3 |  |
| **RNE.1** | **Operate and monitor radio navigation aids and systems** |  |  |
| (a) | select and operate navigation aids and systems | 3 |  |
| (b) | monitor and take appropriate action in relation to the integrity of navigation aid systems information | 3 |  |
| **RNE.2** | **Navigate the aircraft using navigation aids and systems** |  |  |
| (a) | determine aircraft position fix solely with reference to navigation aids and systems | 3 |  |
| (b) | intercept tracks to and from navigation aids and systems | 3 |  |
| (c) | maintain tracks within specified tolerances | 3 |  |
| (d) | record, assess and revise timings as required | 3 |  |
| (e) | recognise station passage | 3 |  |
| **ONTA.1** | **Non-towered aerodrome – pre-flight preparation** |  |  |
| (a) | using a current ERSA and NOTAM, for the non-towered aerodrome or landing area, extract all of the relevant operational information | 3 |  |
| (b) | interpret the extracted information | 3 |  |
| (c) | identify all special aerodrome procedures | 3 |  |
| (d) | check current weather forecast and local observations | 3 |  |
| (e) | identify all relevant radio and navigation aid frequencies | 3 |  |
| **ONTA.2** | **Taxi aircraft at a non-towered aerodrome or landing area** |  |  |
| (a) | refer to aerodrome or landing area chart (if available) | 3 |  |
| (b) | set local QNH or area QNH | 3 |  |
| (c) | broadcast intentions on appropriate frequency | 3 |  |
| (d) | obtain and interpret traffic information | 3 |  |
| (e) | maintain lookout for, and separation from, other aircraft, wildlife and other obstructions | 3 |  |
| (f) | recognise ground markings during taxi and take appropriate action | 3 |  |
| (g) | taxi aircraft to holding point | 3 |  |
| (h) | use strobes when crossing any runway | 3 |  |
| (i) | refer to aerodrome or landing area chart (if available) | 3 |  |
| **ONTA.3** | **Perform departure at a non-towered aerodrome or landing area** |  |  |
| (a) | check and ensure runway approach is clear prior to entering a runway | 3 |  |
| (b) | correctly set transponder code and mode prior to entering runway for take-off | 3 |  |
| (c) | confirm runway approaches clear in all directions prior to entering runway | 3 |  |
| (d) | broadcast line up details | 3 |  |
| (f) | transmit appropriate radio calls and maintain separation with other aircraft | 3 |  |
| (g) | advise air service provider of departure details, if required | 3 |  |
| (h) | conduct departure | 3 |  |
| **ONTA.4** | **Perform arrival and landing at a non-towered aerodrome or landing area** |  |  |
| (a) | check ERSA and NOTAM prior to entering circuit area | 3 |  |
| (b) | set correct area or local QNH | 3 |  |
| (c) | use correct radio frequency to transmit inbound calls as required | 3 |  |
| (d) | maintain effective lookout | 3 |  |
| (e) | maintain aircraft separation and avoid other traffic | 3 |  |
| (f) | maintain tracking tolerances | 3 |  |
| (g) | determine wind velocity | 3 |  |
| (h) | determine landing direction | 3 |  |
| (i) | confirm runway is serviceable for the operation | 3 |  |
| (j) | determine circuit direction | 3 |  |
| (k) | conduct landing area inspection (if applicable) | 3 |  |
| (l) | position aircraft in the circuit in preparation for landing and maintain separation from traffic | 3 |  |
| (m) | make all necessary circuit radio calls | 3 |  |
| (n) | verify runway is clear of other traffic, wildlife and other obstructions | 3 |  |
| (o) | land the aircraft | 3 |  |
| (p) | vacate runway | 3 |  |
| (q) | cancel SARWATCH, if applicable | 3 |  |
| **OGA** | **Operate aircraft in Class G airspace** |  |  |
| (a) | maintain tracking and altitude tolerances to remain outside controlled airspace | 3 |  |
| (b) | apply separation tolerances between IFR flights, and IFR and VFR flights | 3 |  |
| (c) | when using an aircraft radio: |  |  |
|  | (i) monitor appropriate radio frequency | 3 |  |
|  | (ii) make appropriate radio calls | 3 |  |
|  | (iii) obtain operational information from air services provider and other aircraft | 3 |  |
|  | (iv) use information to ensure aircraft separation is maintained | 3 |  |
|  | (v) apply loss of radio communication procedures | 3 |  |
| (d) | using a suitable chart: |  |  |
|  | (i) operate clear of active aerodromes and landing areas in the vicinity of the aircraft | 3 |  |
|  | (ii) identify and remain clear of controlled and restricted airspace | 3 |  |
|  | (iii) take appropriate action when operating in the vicinity of a danger area | 3 |  |

\*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 |
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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 |
| --- | --- |
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