**TUTORIAL: HELICOPTER HAZARDOUS FLIGHT CONDITIONS**

**FLIGHT INSTRUCTOR RATING – TUTORIAL LESSON PLAN & TRAINING RECORD**

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| 1B**TRAINEE NAME:** |  | 2B**TRAINEE ARN:** |  |
| 3B**INSTRUCTOR NAME:** |  | 4B**TRAINING**  **SESSION DATE:** |  |
| 0B**Lesson Overview**   * The objectives of the tutorial are to:   + Provide additional awareness to the trainee instructor on helicopter hazardous flight conditions   + Provide the trainee with guidance on teaching hazardous flight conditions as part of the RPL, PPL and CPL syllabus   + Review relevant reference material for hazardous flight conditions   + Confirm the trainees understanding of the relevant underpinning knowledge of hazardous flight conditions. | | | |

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| **MOS**  **Reference** | **Lesson Content** *(Elements & Performance Criteria)* |
| **FIR4.4** | 6B**Conduct airborne training** |
|  | Intervene to recover the aircraft if trainee does not manage an undesired aircraft state |
| **FIR3.7** | 7B**Conduct flight training** |
|  | Maintain situational awareness during all phases of flight demonstrating the performance criteria specified in unit NTS1 |
|  | Manages threats and errors during all phases of flight demonstrating the performance criteria specified in unit NTS2 |

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| **MOS Ref** | **Underpinning knowledge** |
| H4 | Vortex ring state, low g and mast bumping, overpitching or low RRPM. |
| H7 | Manage upset recovery |
| FIM (H) | Chapter 25 Hazards |

# Training Notes

* No performance standards have been provided against the criteria in FIR4.4 and FIR-TE3.7 for this tutorial. The inclusion of these elements is to provide some focus for the instructor. The tutorial provides an opportunity to discuss them with the trainee instructor as part of the hazardous conditions scenarios by drawing attention to some of the issues and considerations that can occur in airborne instruction.
* The tutorial should be planned in a logical manner to ensure that the trainee instructor receives the appropriate level of guidance and training to teach a student pilot, helicopter hazardous flight conditions.
* Reference materials mentioned in the lesson overview should include, but are not limited to:
  + Helicopter flying handbook (FAA-H-8083-21A) and the CASA Flight Instructor manual – Helicopter;
  + Robinson Helicopter Company safety notices –
  + 10 Fatal accidents caused by low RPM rotor stall
  + 11 Low-G pushovers – Extremely Dangerous
  + 24 Low RPM rotor stall can be fatal
  + 32 High winds or Turbulence
  + 36 Over speeds during lift-off
* The tutorial is not Robinson helicopter specific, however as a high percentage of ab-initio pilot training is conducted in Robinson helicopters the safety notices mentioned above have been included and provide sound advice on a number of the topics.
* The hazardous conditions must include:
  + Vortex ring state
  + Retreating blade stall
  + Low G conditions
  + Mast bumping
  + Low rotor RPM
  + Rotor stall
  + Rotor RPM decay
  + Ground resonance
  + Dynamic rollover
  + LTE
* The tutorial should include guidance on which of the hazardous conditions can be demonstrated in flight, how they should be demonstrated, the level of student pilot involvement and appropriate recovery actions.

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* The remaining hazardous conditions should be conducted by way of ground briefing only. The trainee instructor should be given guidance and an opportunity to practice delivery of these hazards.
* The instructor must give examples of how and when hazardous flight conditions can arise during flying training. The symptoms, recognition and appropriate recovery techniques to be used by the flight instructor to recover from the upset situation.
* The tutorial session should require the trainee instructor to demonstrate their understanding of the lesson objectives through scenario based question and answer.
* Training session TE3-46 is placed at the beginning of the abnormals phase. It may be practical for the operator to deliver this course tutorial at any stage of the airborne elements of training. But it is recommended, not before the beginning of the advanced phase.
* The operator may choose to include a practical flight lesson covering helicopter hazardous flight conditions as this is not included in the sample syllabus for the grade 3 training endorsement.

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| 5B**COMMENTS AND OUTCOME (INCLUDING ELEMENTS & PERFORMANCE CRITERIA THAT REQUIRE CONSOLIDATION AND/OR REMEDIAL TRAINING)** | |
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| **Instructor’s signature & date** | **Trainee’s signature & date** |
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