**LESSON PLAN**

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| **Lesson** | Effects of Controls - 2 | **Instructor** |  | **Class/Group** |  |
| **Location** | Maps & Simulation Room | **Date / Time** | / | **Equipment** | Flight Sim |

**INTRODUCTION**

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| **Interest** | To develop your piloting skills in preparation for a Gliding Scholarship in the Vigilant | |
| **Need** | To learn to taxy the aircraft and select the datum attitude and then fly in trim. | |
| **Title** | Effects of Controls – 2 **REF – FTP 124 (P13 – 16)** | |
| **Revision** | * The Axes of an aircraft * Primary effects of controls. * Co-Ordination * Datum Attitude | * Clock Code * Control Surfaces * Airfields |
| **Objectives** | * By the end of this lesson you will be able to:   + To start the aircraft and taxy safely.   + To select the datum attitude and to fly in balance and in trim.   + To operate the airbrakes correctly | |
| **Scope** | This lesson will last 2 hours | |
| **Handouts** |  | |

**DEVELOPMENT**

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| **Content** | **Notes** |
| Flight Simulator Scenario: The simulator should be launched using the Grob G109B Vigilant at an appropriate airfield in a parking spot. | |
| Each exercise should be followed by the cadet(s) practicing that exercise. | |
| **2. FRC checks.** | 15 min. Despite not being able to do external checks, internal checks can be done. Ex. G115 (Vigilant) FRC’s. |
| **3. Starting and stopping in a straight line.** | 5 min. Demonstrate use of the rudder pedals and toe brakes, co-ordinated with the throttle. |
| **4. Taxy checks.** | 10 min. Demonstrate Taxy Checks carried out in accordance with FRC’s. |
| **5. Taxying.** | 5 min. demonstrate use of rudder pedals to control taxying. |
| **6. Steering.** | 5 min. Explain how an aircraft should always be taxied down the centre of a taxy way. |
| **7. Wind direction.** | 5 min. Explain the effect of the wind direction of the stability of and responsiveness of the aircraft. |
| **9. Airmanship.** | 5 min. Explain that an aircraft should be re-trimmed every time a new attitude is selected. |
| **10. Further effects of rudder and aileron.** | 15 min. Demonstrate the further effects of the rudder and ailerons. |
| **11. Use of the trimmer.** | 5 min. Demonstrate how to trim the aircraft and when it is needed. |
| **12. Use of airbrakes.** | 10 min. Demonstrate the function of the airbrakes and when they should be used. Use the stages defined in FTP 124 |

**CONSOLIDATION**

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| **Summary**  The Cadet(s) have now learnt how to start the aircraft using the FRC’s and taxy safely. They should now be able to select the datum attitude and fly in trim, and operate the airbrakes correctly. |
| **Test Learning**  Instruct the cadet to start the aircraft and taxy it to a certain point.  Place the aircraft is different attitudes and airspeeds. The cadet must then bring the aircraft back to the datum attitude and trim it so that no input is needed. Instruct the cadet to operate the airbrakes. |
| **Restate Objectives**  By the end of this lesson you will be able to:   * + To start the aircraft and taxy safely.   + To select the datum attitude and to fly in balance and in trim.   + To operate the airbrakes correctly |
| **Student Questions** |
| **Review and Look Forward**  Next lesson: Straight & Level Flight, Climbing & Gliding  AIMS   * + To achieve and maintain straight and level flight, in balance and in trim.   + To fly the climb and the glide.   + To transition between straight and level flight, the climb and the glide. |