**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 Viking. | |
| **Need** | To select the datum attitude and fly in balance and in trim  To operate the airbrakes correctly | |
| **Title** | Effects of Controls 2  **REF – ACP122 (P21- 23)** | |
| **Revision** | * About the Viking * Cockpit Layout * Axes of Aircraft * Further effects of control surfaces * Use of trimmer | * Primary effects of control surfaces * Secondary effects of control surfaces * Definition of datum attitude * Use of airbrakes |
| **Objectives** | * By the end of this lesson you will be able to:   + To select the datum attitude and fly in balance and in trim   + To operate the airbrakes correctly. | |
| **Scope** | This lesson will last 1 hours | |
| **Handouts** |  | |

**DEVELOPMENT**

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| **Content** | **Notes** |
| Flight Simulator Scenario: The simulator should be launched using the Grob G103a Twin ӀӀ Viking above an appropriate airfield. | |
| Each exercise should be followed by the cadet(s) practicing that exercise. | |
| **2. Airmanship.** | 2 min. Keep good lookout and note importance of re-trimming the aircraft. |
| **3. Further effects of rudder and aileron.** | 5 min. Explain secondary effects of the rudder and aileron. |
| **3.a. Rudder.** | 2 min. Primary effect yaw then secondary effect rolls in same direction. |
| **3.b.** | 2 min. Primary effect roll and secondary effect yaw in the same direction. |
| **4. Use of the trimmer.** | 5 min. Only the elevator can be trimmed. If forward pressure is required on the control column to maintain datum attitude then the trim leaver must be moved forwards. |
| **4.a.** | 1 min. Select the new attitude. |
| **4.b.** | 2 min. Hold the new attitude. |
| **4.c.** | 2 min. Trim as required. |
| **4.d.** | 1 min. Check for accuracy by relaxing on the control column. |
| **5. Use of airbrakes.** | 10 min. Airbrakes reduce total lift generated by wing and increase drag. |
| **5.a.** | 1 min. Unlock airbrakes. |
| **5.b.** | 1 min. Airbrakes can be sucked open if unlocked at approach speed. |
| **5.c.** | 1 min. As airbrakes open, nose pitches down – must maintain attitude. |
| **5.d.** | 1 min. Greater airbrakes equal greater descent. |

**CONSOLIDATION**

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| **Summary**  The cadet(s) have now learnt how to select the datum attitude and fly in balance and in trim.  To operate the airbrakes correctly. |
| **Test Learning**  Place aircraft in different attitude and trim, then ask cadet to select datum attitude and trim. |
| **Restate Objectives**  By the end of this lesson you will be able to:   * + To select the datum attitude and fly in balance and in trim   + To operate the airbrakes correctly. |
| **Student Questions** |
| **Review and Look Forward**  Next Lesson: Straight Glide  AIMS To achieve and maintain the straight glide in balance and in trim. |