**LESSON PLAN**

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| **Lesson** | Power Loss After Take Off (PLATO) | **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 how to learn what to do in the event of a full or partial engine failure after take-off. |
| **Title**  | Power Loss After Take Off (PLATO)  **REF – FTP 124 (P41 - 45)** |
| **Revision** | * Attitudes
* Transition
* Lookout
* Approach
 | * FRC’s
* Co-ordinated Controls
* Medium Turns
 |
| **Objectives** | * By the end of this lesson you will be able to:
	+ To land safely following a power loss after take-off.
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| **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. |
| **1. Airmanship.** | 5 min. Pre take-off FRC’s. **Priority is to fly the aircraft.** |
| **3. Partial power loss above 400ft or able to climb to 400ft.**  | 5 min. If only partial loss it may be possible to maintain height, usually need 2300 RPM. |
| **3.a.**  | 1 min. Lower nose to achieve attitude of 60 kts.if below 400 ft select approach attitude. |
| **3.b.**  | 1 min. Check height and RPM. |
| **3.c.** | 10 min. If there is time, check cause of power loss using:Throttle, Carb heat, Choke, Fuel (TCCF).  |
| **3.d.** | 10 min. if above 300 ft: turn downwind 60kts.if below 300 ft: climb to 300 ft then turn. Max bank 30° |
| **3.e.** | 1 min. downwind. Monitor height, airspeed & RPM. |
| **3.f.** | 2 min. Made radio call if time permitted. |
| **3.g.** | 2 min. If below 400 ft / before final turn select approach attitude. |
| **3.h.** | 1 min. Try normal approach if not then final turn by 300 ft |
| **3.i.** | 1 min. Level wings by 100 ft. accept landing area. |
| **3.j.** | 1 min. Close throttle when confident. Keep 65 – 70 kts. |
| **3. Wind Velocity.** | 10 min. with higher wind strength it is necessary to move the ARP closer to the airfield.  |
| **4. Partial power loss below 400 ft and unable to climb.** | 5 min. If RPM below 2300 and cannot maintain 60 kts then land ahead.  |
| **4.a.**  | 2 min. If possible land on runway. Close throttle and treat total power loss. |
| **4.b.** | 1 min. Lower nose 65 -70 kts.  |
| **4.c.** | 1 min. Check height and RPM. |
| **4.d.** | 5 min. If time check cause TCCF |
| **4.e.** | 2 min. Select landing area into wind. |
| **4.f.** | 1 min. Call radio |
| **4.g.** | 2 min. When confident close throttle, use airbrakes. |

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| **5. Total power loss below 500 ft.** | 5 min. Land ahead. |
| **5.a.** | 1 min. Lower nose to approach attitude. |
| **5.b.** | 1 min. Close throttle. |
| **5.c.** | 5 min. Check height. If above 300 ft and no landing area ahead fly mini-circuit. If below 300 ft land ahead. |
| **5.d.** | 5 min. Do checks if time: Fuel cock, fuel pump, ignition, propeller (FIP). |
| **5.e.** | 1 min. Call radio if time.  |
| **5.f.** | 1 min. Use airbrakes to land. |
| **6. Total power loss above 500 ft.** | 5 min. Turn back manoeuvre for mini-circuit, downwind or crosswind landing and 65 – 70 kts by 400 ft. |
| **6.a.** | 1 min. Select attitude for 60 kts. |
| **6.b.** | 1 min. Close throttle. |
| **6.c.** | 2 min. Check height above 500 ft continue with turn back. Max 30° bank. |
| **6.d.** | 2 min. Carry out FIP check. |
| **6.e.** | 1 min. Call radio if time. |
| **6.f.** | 2 min. If mini-circuit not possible land downwind or crosswind. Use airbrakes as normal. |
| **6.g.** | 1 min. Ensure 65 – 70 kts by 400 ft. |
| **6.h.** | 2 min. If mini-circuit continue downwind to boundary or 300 ft. Then final turn. |
| **6.i.** | 1 min. Wings level by 100 ft. Select landing area. |
| **7. Power loss below 100 ft.** | 5 min. Land ahead on airfield if possible.  |
| **7.a.**  | 1 min. Try select approach attitude. |
| **7.b.** | 1 min. Close throttle. |
| **7.c.** | 1 min. Attempt 65 – 70 kts. |
| **7.d.** | 1 min. If 65 – 70 kts open airbrakes gently. |
| **7.e.** | 2 min. If below 65 kts use airbrakes once hold off attitude is selected. |
| **8. Engine fire in the air.** | 5 min. Treat as PLATO. Make FIP checks, land as soon as possible. On ground leave brakes off, open canopy, leave and move upwind. |
| **9. Engine fire on the ground.**  | 5 min. Stop aircraft. Carry out Fuel cock, Fuel pump, Ignition, Radio (emergency call), Main switch (FIRM). Vacate aircraft. Move upwind.  |

**CONSOLIDATION**

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| **Summary**The cadet(s) have now learnt how to land safely following a power loss before or after take-off. |
| **Test Learning**Ask a cadet to fly a normal circuit. Induce power loss. |
| **Restate Objectives** By the end of this lesson you will be able to:* + To land safely following a power loss after take-off.
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| **Student Questions** |
| **Review and Look Forward**Next lesson: Pre Solo Check & First SoloAIM To fly a normal circuit and landing. |