WINGS ASEL Private Pilot NIGHT OPERATONS
Lesson Plan
WINGS Flight Activity A211209-01

OBJECTIVE	**The objective of this WINGS Flight activity is to introduce, develop, review, or improve the airman's knowledge and understanding in all areas of night operations; with emphasis on improving aeronautical decision making and to determine that the airman exhibits satisfactory knowledge, risk management, and skills associated with preparing for and executing safe flight in night operations.**

SCHEDULE:	• Scenario Pre-Briefing • Discuss Lesson Objective • CFI Explanation and Demo • Postflight Review and Discussion	**EQUIPMENT:**	• Airplane – Airworthy Night VFR • FAA POH or AFM • Fully operational NAV/COM system • Clipboard, Map board, Flashlight, etc • Current Aeronautical charts and flight logs	**TIME:**	**ACTIVITY:** Ground Discussion Ground Preflight Flight Debrief TOTAL:	**Est.** 1.0 .6 1.5 .5 3.6

ELEMENTS:	1. Physiological aspects of night flying	2. Night Vision	3. Night Optical Illusions	4. Night Orientation
	5. Night Disorientation	6. 5P's	7. Navigation and Chart Reading Techniques	8. Route – Lateral Navigation and Vertical Navigation by Pilotage
	9. Taxi, Departure, Enroute, Descent, Approach, Landing Hazards	10. Communications	11. Use of Automation	12. Pilot Essential Night Flight Equipment
	13. Navigation Log	14. Flight plan (VFR)	15. Airport Facility Directory	16. Airman's Information Manual (AIM)
	17. Weather – Takeoff, departure, enroute, approach and landing	18. Notices to Airmen (NOTSMS) / Terminal Flight Restrictions (TRFs)	19. Density Altitude	20. Effect of Wind
	21. Airport and Navigation Lighting Aids	22. Airplane Lighting and Equipment	23. Plans for Diversion	24. Ice and Frost
	25. Runway Conditions	26. Aircraft Flight Manual (AFM) or Pilots Operating Handbook (POH)	27. Aircraft Maintenance/Inspections	28. Aircraft Inoperative Items
	29. Aircraft Performance	30. Night Flight Preparation and Preflight	31. Starting, Taxiing and Run-Up	32. Takeoff and Departure Climb
	33. Orientation and Navigation	34. Approaches and Landings	35. Safety Precautions	36. Pilot Controlled Lighting
	37. Night Emergencies / Abnormal Procedures	38. Key elements during taxi phase – emphasis on night operations	39. Key elements during enroute phase – emphasis on night operations	40. Key elements during descent phase – emphasis on night operations
	41. Key elements during approach phase – emphasis on night operations	42. Key elements during landing phase – emphasis on night operations	43. Key elements during after landing taxi phase – emphasis on night operations	44. Basic Aircraft control elements

COMMON ERRORS:	1. Inadequate Flight Planning	2. Checklist routine and/or items bypassed	3. Poor knowledge of Regulations	4. Poor knowledge of lights – airport / aircraft / etc
	5. Inadequate scanning techniques	6. Off center viewing technique ignored	7. Poor cockpit management/organization	8. Inadequate instrument cross-check
	9. Poor pattern work – final too high or low	10. Poor judgment	11. Slowed reaction time	12. Inattention
	13. Ease of distraction	14. "Channelized" attention - fixation	15. Loss of situational awareness	16. Night vision problems
	17. Vulnerable to optical illusions	18. Fatigued	19. Electrical system familiarity inadequate	20. Emergency checklist not readily available

INSTRUCTORS ACTIONS	**THE INSTRUCTOR WILL LEAD A THOROUGH DISCUSSION ON THE FOLLOWING TOPICS PRIOR TO FLIGHT:**	
NSTRUCTORS ACTIONS	**OVERVIEW:**	**Prior to night flight operations, the instructor and airman will discuss the factors relating to night flying including at least the following:** • **Night Vision** • **Night Optical Illusions** • **Night Illumination** • **Disorientation** • **Pilot Equipment** • **Airplane Lighting and Equipment** • **Airport and Navigation Lighting Aids** • **A review of the applicable Key Elements from above** • **A review of the Common Errors from above**

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INSTRUCTORS ACTIONS	**CONCLUSION AND EVALUATION**	**The airman demonstrates understanding of:** • **Physiological aspects of vision related to night flying.** • **Lighting systems identifying airports, runways, taxiways and obstructions, as well as pilot controlled lighting.** • **Airplane equipment and lighting requirements for night operations.** • **Personal equipment essential for night flight.** • **Night orientation, navigation, and chart reading techniques.** **The airman demonstrates the ability to identify, assess and mitigate risks, encompassing:** • **Collision hazards, to include aircraft, terrain, obstacles, and wires.** • **Distractions, loss of situational awareness, and/or improper task management.** • **Hazards specific to night flying.**

NIGHT OPERATIONS SCENARIO (Example) (REQUIRED FOR WINGS FLIGHT ACTIVITIES	**THE INSTRUCTOR WILL DEVELOP A HIGHLY STRUCTURED SCRIPT OF REAL WORLD EXPERIENCES TO MEET THE FLIGHT TRAINING OBJECTIVES IN AN OPERATIONAL ENVIRONMENT.**
THE PLAN:	**The plan includes the basic elements of cross-country planning: weather, route, fuel, current publications, etc. The plan also includes all the events that surround the flight and allow the pilot to accomplish the mission. The pilot should review and update the plan at regular intervals in the flight, bearing in mind that any of the factors in the original plan can change at any time.** **FOR THIS *WINGS* FLIGHT ACTIVITY: Night VFR cross-country from select your home airport to select an airport at least 30 minutes away from the home airport and return to the home airport**
THE PLANE:	**The plane includes the airframe, systems, and equipment, including avionics. The pilot should be proficient in the use of all installed equipment as well as familiar with the aircraft/equipment's performance characteristics and limitations. As the flight proceeds, the pilot should monitor the aircraft's systems and instruments in order to detect any abnormal indications at the earliest opportunity.** **FOR THIS *WINGS* FLIGHT ACTIVITY: Use your actual aircraft for this WINGS flight activity.**
THE PILOT:	**The pilot needs to pass the traditional "IMSAFE" checklist. This part of the 5P process helps a pilot identify and mitigate physiological hazards at all stages of the flight.** **FOR THIS *WINGS* FLIGHT ACTIVITY: You are a private pilot with approximately 55 hours of total time, and 21 hours of cross-country experience. You are not instrument-rated. You have not flown at all in two months, and you have never before been to your destination airport.**
THE PASSENGERS:	**The passengers can be a great help to the pilot by performing tasks such as those listed earlier. However, passenger needs — e.g., physiological discomfort, anxiety about the flight, or desire to reach the destination — can create potentially dangerous distractions. If the passenger is a pilot, it is also important to establish who is doing what. The 5P approach reminds the pilot-in-command to consider and account for these factors.** **FOR THIS *WINGS* FLIGHT ACTIVITY: Your passenger is one of the three aircraft co-owners who is an ATP pilot currently flying for a national airline. You will be dropping him of at your destination airport for a weekend visit. He is 6' 2" in height and weighs 195 pounds.**
THE PROGRAMMING:	**The programming can refer to both panel-mounted and hand-held equipment. The task of programming or operating both installed and handheld equipment (e.g., tablets) can create a serious distraction from other flight duties. This part of the 5P approach reminds the pilot to mitigate this risk by having a thorough understanding of the equipment long before takeoff, and by planning in advance when and where the programming for approaches, route changes, and airport information gathering should be accomplished, as well as times it should not be attempted.** **FOR THIS *WINGS* FLIGHT ACTIVITY: If this is a night introductory activity, the flight should be conducted with minimal electronic navigation aids so the airman can develop basic night navigation skills. The electronic navigation aids can be added as the airman acquires skills. For all others use the electronic navigation equipment as installed in the aircraft.**

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