

# WINGS ASEL NIGHT OPERATIONS LESSON PLAN / WORKSHEET

## LESSON - 01

**Mission – Intro / Practice VFR Night Cross Country**

**WINGS Flight Activity A211209-01**

**DUAL – FLIGHT TRAINING DEVICE / AIRPLANE**

<b>OBJECTIVE:</b>	To successfully perform night operations an airman must have a thorough understanding of particularities of night flight and corresponding procedures, including night vision difficulties, use of lighting, local and cross-country navigation, and airport work at night.		
<b>SCHEDULE:</b>	Scenario Pre-Briefing	<b>EQUIPMENT:</b>	Airplane – Airworthy Night VFR
	Discuss Lesson Objective		FAA POH or AFM
	CFI Explanation and Demo		Fully operational NAV/COM system
	Postflight Review and Discussion		Clipboard, Mapboard, Flashlight, etc
	Review of Next Lesson		Current Aeronautical charts and flight logs
<b>ELEMENTS:</b>	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 conditions	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 takeoff phase – emphasis on night operations	40. Key elements during climb phase – emphasis on night operations	
	41. Key elements during enroute phase – emphasis on night operations	42. Key elements during descent phase – emphasis on night operations	

	43. Key elements during approach phase – emphasis on night operations	44. Key elements during landing phase – emphasis on night operations
	45. Key elements during after landing taxi phase – emphasis on night operations	46. Basic Aircraft control elements
<b>COMMON ERRORS:</b>	Inadequate Flight Planning	Checklist routine and/or items bypassed
	Poor knowledge of Regulations	Poor knowledge of lights – airport/aircraft/etc
	Inadequate scanning techniques	Off center viewing technique ignored
	Poor cockpit management/organization	Inadequate instrument cross-check
	Poor pattern work – final too high or low	Poor judgment
	Slowed reaction time	Inattention
	Ease of distraction	“Channelized” attention - fixation
	Loss of situational awareness	Night vision problems
	Vulnerable to optical illusions	Fatigued
	Electrical system familiarity inadequate	Emergency checklist not readily available
<b>INSTRUCTOR ACTIONS:</b>	The instructor will lead a thorough discussion on the following topics prior to flight. (List is not all inclusive)	
	<b>Night Operations Objective</b>	Obtain a familiarity with the factors relating to night flight and operations.
	<b>Motivation</b>	When the airman understands all the different factors and risks of night flying, it brings a new exciting dimension to aviation
	<b>Overview</b>	Prior to night flight operations, the instructor and airman will discuss the factors relating to night vision, optical illusions, use of lighting, airport lighting, and night operations to include at least the following:.
	<b>Conclusion and Evaluation</b>	The airman will understand all the factors of night flying and be aware of extra possible risks. Be able to explain the extra risks with night flying as well as factors to consider in decision making and preparing for night flying.
<b>NIGHT OPERATIONS SCENARIO</b>		
<b>SCENARIO ROUTE:</b>	Night VFR cross-country from <b>select your home airport</b> to select an airport at least 30 minutes away from the home airport and return to the home airport	
<b>Pilot</b>	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.	
<b>Aircraft</b>	Your aircraft, which you co-own with several friends, is an Insert Actual Aircraft Make/Model with long-range tanks. It recently completed its annual inspection with no major squawks. The instrument panel is <b>Insert actual instrument configuration</b> .  <b>Instructor: For this flight no moving map GPS display will be used – only current flight charts</b>	

<b>enVironment</b>	<p>Departure and destination airports will be the actual airports used in the flight scenario. However, for flight planning purposes, consider a summer day of 90°, 7 miles visibility in haze, a standard pressure of 29.92" for both the departure and destination airport. Enroute weather is the actual conditions for the flight.</p> <p><b>Instructor: The departure and destination airport surface conditions have been chosen so the airman can work with density altitude problems.</b></p>
<b>External Pressures</b>	You are making the trip to drop off one of your aircraft co-owners so he can spend a weekend with relatives. The nagging two months of not flying – you are questioning your skills/currency.

<b>Schedule:</b>	<b>NOTES:</b>												
<table border="1" style="width: 100%;"> <tr> <th style="width: 60%;">Activity</th> <th style="width: 40%;">Est. Time</th> </tr> <tr> <td>Ground Discussion</td> <td>1.0</td> </tr> <tr> <td>Ground Preflight Perform</td> <td>.6</td> </tr> <tr> <td>Flight</td> <td>1.5</td> </tr> <tr> <td>Debrief</td> <td>.5</td> </tr> <tr> <td style="text-align: right;">TOTAL:</td> <td>3.6</td> </tr> </table>	Activity	Est. Time	Ground Discussion	1.0	Ground Preflight Perform	.6	Flight	1.5	Debrief	.5	TOTAL:	3.6	
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Scenario Activities	Scenario Sub Activities	Desired Outcomes	Flight Maneuvers Grade	SRM Grade
<b>PREFLIGHT PREPARATION (NIGHT OPERATIONS EMPHASIS)</b>	Pilot Qualifications	Choose an item.		
	Airworthiness Requirements	Choose an item.		
	Scenario Planning	Choose an item.		
	Weather Information	Choose an item.		
	Cross-Country Flight Planning	Choose an item.		
	National Airspace System	Choose an item.		
	Performance and Limitations	Choose an item.		
	Operation of Systems	Choose an item.		
	Human Factors	Choose an item.		
	Water and Seaplane Characteristics, Seaplane Bases, Maritime Rules, and Aids to Marine	Choose an item.		
	Navigation (ASES, AMES)	Choose an item.		
	Preflight SRM Briefing	Choose an item.		
	Decision making and risk management	Choose an item.		
<b>PREFLIGHT PROCEDURES (NIGHT OPERATIONS)</b>	Preflight Assessment	Choose an item.		
	Flight Deck Management	Choose an item.		
	Engine Starting	Choose an item.		

<b>EMPHASIS)</b>	GPS Programming	Choose an item.		
	MFD Setup	Choose an item.		
	PFD Setup	Choose an item.		
	Taxiing (ASEL, AMEL)	Choose an item.		
	Taxiing and Sailing (ASES, AMES)	Choose an item.		
	Before Takeoff Check	Choose an item.		
	SRM/ Situational Awareness	Choose an item.		
<b>AIRPORT AND SEAPLANE BASE OPERATIONS(NIGHT OPERATIONS EMPHASIS)</b>	Communications, Light Signals, and Runway Lighting Systems	Choose an item.		
	Traffic Patterns	Choose an item.		
<b>TAKEOFFS, LANDINGS, AND GO-AROUNDS (NIGHT OPERATIONS EMPHASIS)</b>	Normal Takeoff and Climb	Choose an item.		
	Normal Approach and Landing	Choose an item.		
	Short-Field Takeoff and Maximum Performance Climb (ASEL, AMEL)	Choose an item.		
	Go-Around/Rejected Landing	Choose an item.		
<b>PERFORMANCE MANEUVERS</b>	Steep Turns	Choose an item.		
<b>NAVIGATION (NIGHT OPERATIONS EMPHASIS)</b>	Pilotage and Dead Reckoning	Choose an item.		
	Navigation Systems and Radar Services	Choose an item.		
	Diversion	Choose an item.		
	Lost Procedures	Choose an item.		
<b>SLOW FLIGHT AND STALLS (NIGHT OPERATIONS EMPHASIS)</b>	Maneuvering During Slow Flight	Choose an item.		
	Power-Off Stalls	Choose an item.		
	Power-On Stalls	Choose an item.		
	Spin Awareness	Choose an item.		
<b>BASIC INSTRUMENT MANEUVERS (NIGHT OPERATIONS EMPHASIS)</b>	Straight-and-Level Flight	Choose an item.		
	Constant Airspeed Climbs	Choose an item.		
	Constant Airspeed Descents	Choose an item.		
	Turns to Headings	Choose an item.		
	Recovery from Unusual Flight Attitudes	Choose an item.		
	Radio Communications, Navigation Systems/Facilities, and Radar Services	Choose an item.		
<b>EMERGENCY OPERATIONS (NIGHT)</b>	Emergency Descent	Choose an item.		
	Emergency Approach and Landing (Simulated) (ASEL, ASES)	Choose an item.		

<b>OPERATIONS EMPHASIS)</b>	Systems and Equipment Malfunctions	Choose an item.		
	Emergency Equipment and Survival Gear	Choose an item.		
<b>NIGHT OPERATIONS</b>	Night Preparation	Choose an item.		
<b>POSTFLIGHT PROCEDURES (NIGHT OPERATIONS EMPHASIS)</b>	After Landing, Parking and Securing (ASEL, AMEL)	Choose an item.		
	Seaplane Post-Landing Procedures (ASES, AMES)	Choose an item.		
		Choose an item.		