

Night Vision Lighting Discipline

As with most systems we trust to assist us in flying, pilots who regularly use night vision goggles (NVGs) may develop a certain degree of complacency with them. Awareness is one way to avoid complacency, so the purpose of this article is to encourage you to examine your “NVG lighting discipline” — that is, your NVG knowledge and your approach to using them.

Let’s start with the basics: What is acceptable to you as a pilot, and do you have the correct knowledge to back your decision?

From a big picture standpoint, do you believe degraded NVG performance is better than no NVG? If so, what is the basis for that belief? Many variables could lead you to think that a degraded NVG image is better than flying without NVGs. However, are you aware of how the degradation affects your NVG image, so that you know what you are *not* seeing? How does this awareness affect your NVG lighting discipline, or more importantly, how you fly with a degraded NVG image?

Some light leaks are bad enough to make it obvious that the NVG image is washed out. Others may not be so obvious, but will still affect the NVG’s image. What if you notice the leak in a high-illumination environment, such as a ramp or helipad with cultural lighting? If you have a questionable light leak, do you consider the effect of the leak given a minimum-illumination scenario? What are the potential hazards as a result of a subtle degradation of your NVG image? For example, subtle degradations, such as a minimal glare or blooming in the NVG image can mask terrain features or obstacles that would otherwise be visible in the NVG image. Another hazard is more subtle: the more you fly with a degraded image, the more likely it is that you will subconsciously consider it normal (habituation).

How do you deal with light leaks in the cockpit? If you discover a light leak or other NVG lighting issue on the nightly or shift-change preflight, do you report it to maintenance? What if you find it on pre-flight? Do you “work around” the light leak and try to mitigate it, and report it after the flight? How effective is your workaround, and how do you make that evaluation? What is your tolerance? Or, do you report it to maintenance immediately and exercise the relief of your Minimum Equipment List (MEL) if you are approved to use one?

Does your NVG lighting discipline change based on the type of flight and destination? If you are a helicopter air ambulance (HAA) pilot and your flight is from one hospital pad to another hospital pad, are you more likely to accept the potential effect of a light leak on your NVG image? On the other hand, are you more concerned with NVG lighting discipline if you are flying to a scene in the middle of a rural county on a moonless night, or maybe working with first responders who have no experience with HAA operations?

How effective is your NVG lighting compatibility preflight? Are you even aware of how to effectively accomplish this critical task? If the aircraft is parked on a brightly lit ramp or pad, the high ambient cultural lighting may make it difficult for you to perform an adequate visual check. You may have to settle for a visual sweep of the cockpit with the NVGs looking for hotspots, and understand that it may be the only way of detecting small cracks, chips, or debonding of filter material on instrument faces. If you notice a hotspot or see glare in the NVG with the hotspot outside the NVG field of view, consider how it affect your NVG image in flight.

These are only a few of the questions that arise in the context of NVG lighting discipline. While there are probably “book” answers to most of them, the key to safety in any operation is your judgment and the decisions you make as a result.

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