

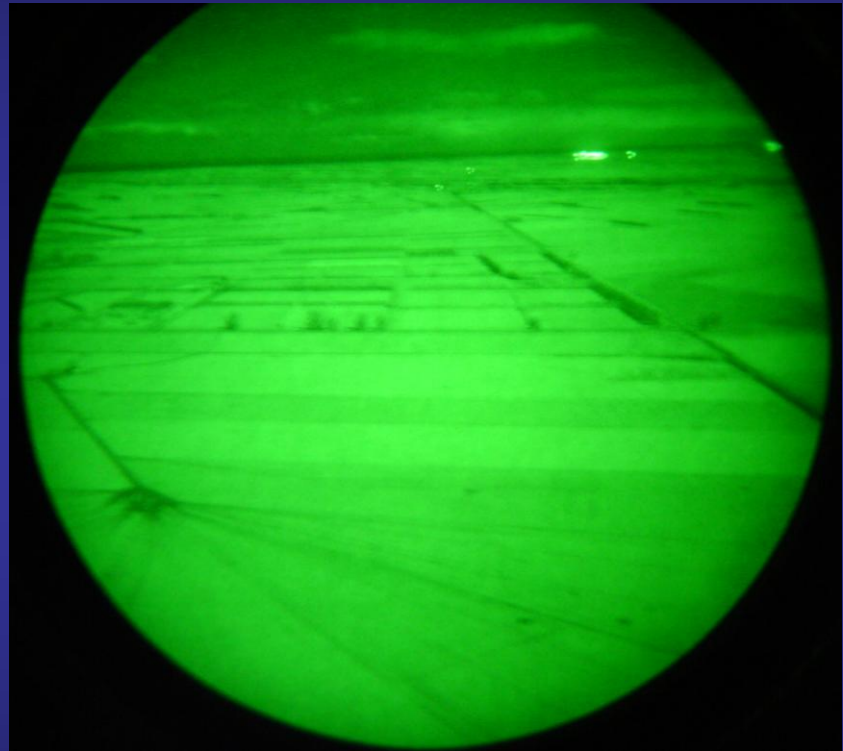
Night Vision Goggles (NVG)



**Squadron Leader
Nigel Cooper**

Range

- Recap
- Short Comings
 - Picture Quality
 - Light Sensitivity
 - Field of View
 - Disorientation
 - Fatigue
- Advantages
 - Light Sensitivity
 - Poor Weather
 - Maritime Environment
- Training



Recap

NVGs since 1991-1992

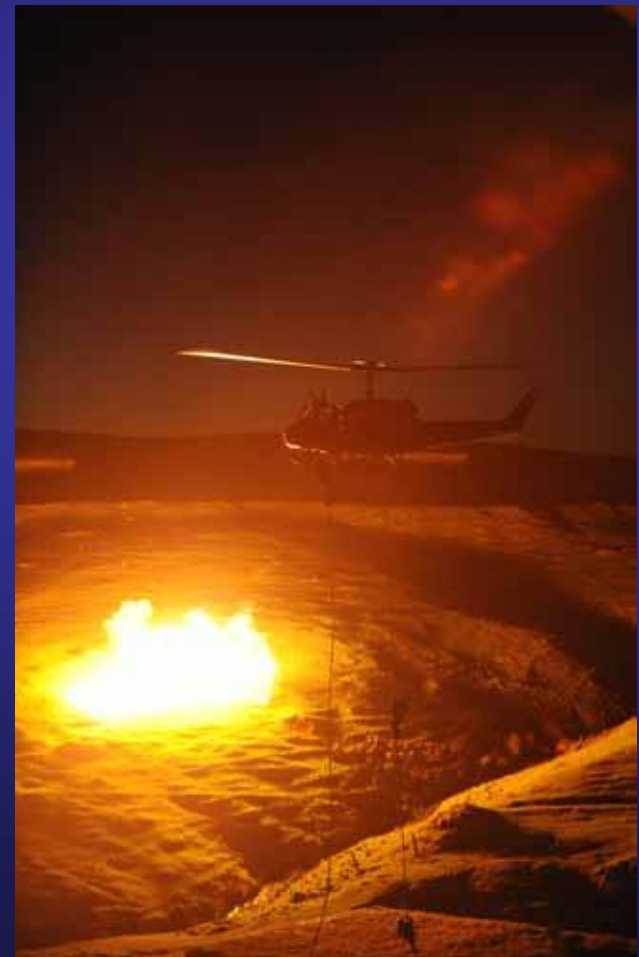
Crawl-Walk-Walk-Walk-Saunter approach

Primarily for Tactical Operations

Traditionally Black Role

Now Green Role

10-15% up to 25%



Recap

When properly used, NVGs can increase safety, enhance situational awareness, and reduce pilot workload and stress that are typically associated with night operations.

Advisory Circular 91-13

They are not a tool to enable additional capabilities in marginal VMC.

Short Comings

Picture Quality

Remember:

On the best night, with the best light, the best atmospheric conditions and in the best environment, you get vision that would not pass a drivers licence eye exam at a 40° field of view!



Short Comings

Picture Quality

Environmental Conditions, Windscreen, Use of Search Light (winching)
Friend or Enemy?



Short Comings

Light Sensitivity

Bloom!

Light Discipline in the Cockpit – but
on the ground?



Short Comings

Picture Quality

Transition?



Short Comings

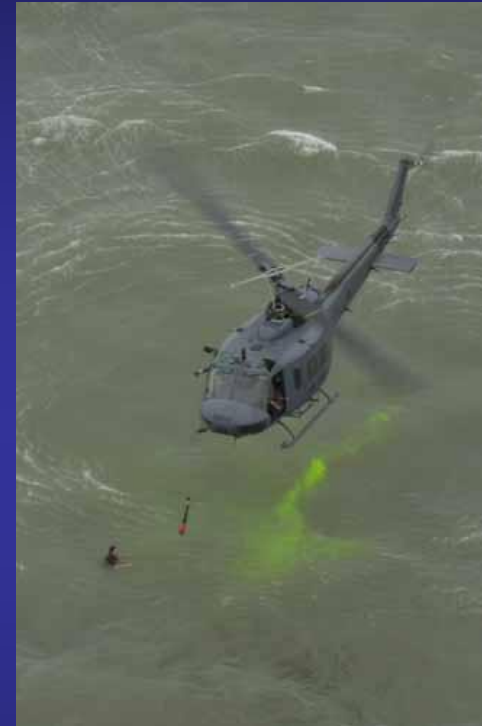
Field of View



Short Comings

Field of View

- Reference
- Cues
- Scan
 - Internal
 - External (Monochromatic Adaptation)
 - Instrument (Right Time)
 - Searching (Sweep Width)
- CRM
- Emergency Handling
- Disorientation



Know your responsibility and stick to it!

Short Comings

Disorientation



Know your responsibility and stick to it!

Short Comings

Fatigue

Take into account potential factors of fatigue (91-13)

Crew Duty is Specific
SAR Duty Management
2 for 1 below 500ft
1 1/2 for 1 above 500ft
De-Goggle when you can



Advantages

Light Sensitivity

Searching

If it reflects, then great

If it emits light, then awesome

If it is a bright light, then fantastic

If it does nothing, then you're an idiot!



In the maritime environment they are most effective





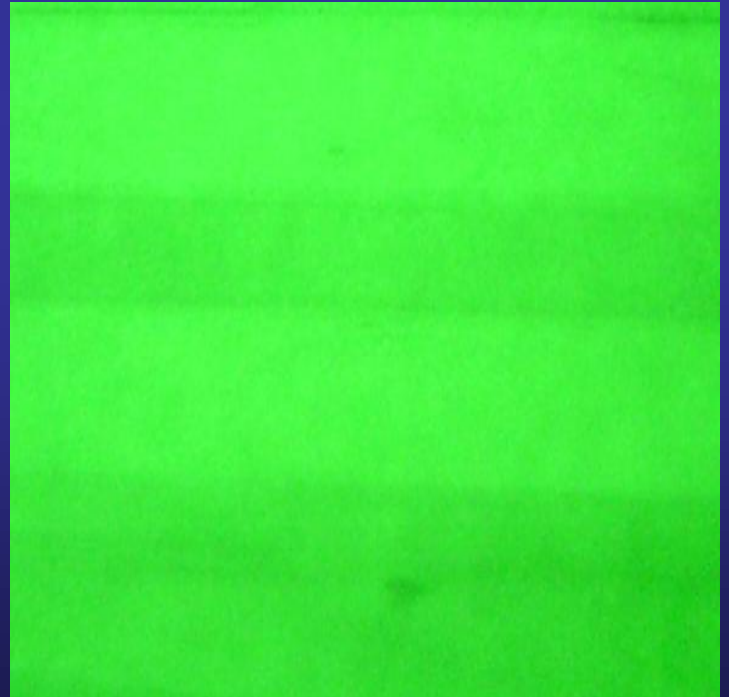
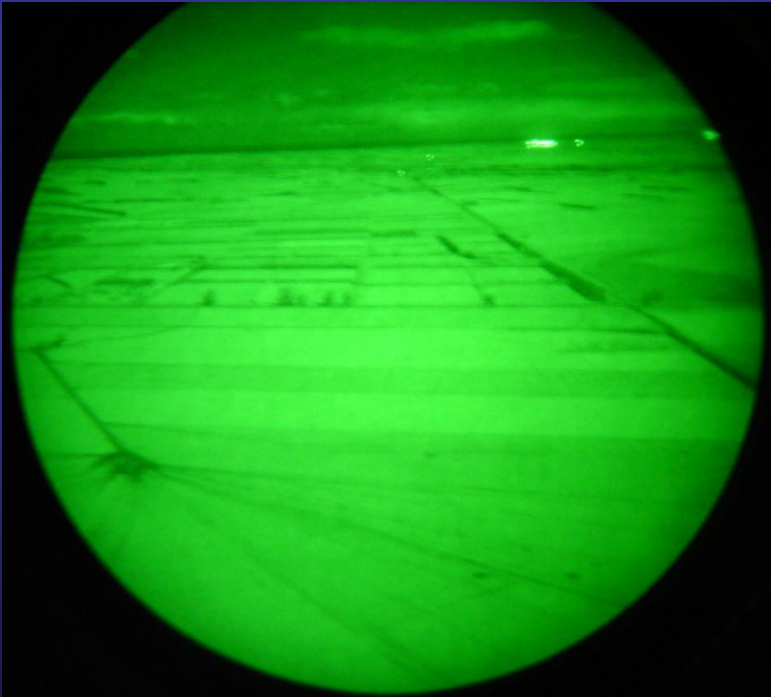
Advantages



Advantages

Poor Weather

Cloud Penetration & Inadvertent IMC



Advantages

Maritime Environment

The mighty Huey

Crew of Four – 2 + 2

HCM Dedicated Lookout

Unobstructed Views

Nightsun + 2 Searchlights

Strict CRM

Winching?

Most Effective Use



Training



Conversion Course

Continuous Upgrade (Experience & Performance)

Progressive Qualifications and Limitations

Crew Composition

Instrument Rating + GPS

Currency

Regular Scenarios

Frequent SAR

But what about the medics, observers, ICs.....

Pertinent Points



Reliance on NVG

Learning From Incidents and Accidents

International Standards

Tactical is much Harder

Risk Aware Not Risk Adverse – Mitigation

Exposure – Right time in the right place

Simple Methods to Enhance Visibility



