NVIS Mods
Lessons Learned: Old and New

John Butler
ATI Engineering Services
Stir in some Navy

USS Wasp

HMS Rotterdam
Viper on goggles
Lessons Learned

• We have come a long way from black tape and glow sticks.
• We have learned a lot along the way
• These lessons need to be applied to any good lighting mod
• This presentation is on those lessons learned
• But, first some basics. The Foot Stompers!
Foot Stompers

1. NVIS modification is mature technology. BUT, it has to be done right
2. You look outside THROUGH the goggles
3. You look inside UNDER and AROUND the goggles
Foot Stompers

4. You have to have SOME illumination
Foot Stompers

5. Green is your eyes’ favorite color
Foot Stompers

5. Chem sticks and black tape can be hazardous to your health
6. When on goggles, your eyes are NOT night adapted
Foot stompers

7. Flying on goggles lets you use daytime tactics at night.
The Lessons

1. You have to treat EVERY light source
2. Daylight readability – this can be a real challenge. These instruments have to work in the bright sunlight as well as night.
The Lessons

3. Watch the Shadows
The Lessons

4. Watch the colors – especially the Reds.
The Lessons

5. No glare or cockpit reflections. Usually not a problem when wearing goggles, but more of a concern for unaided aircrew.
6. Cross cockpit viewing can be a problem
7. Need to think thru follow-on support - how to replace that failed NVIS component
8. Airworthiness is a big deal and bigger all the time.
9. The Goal is No goggle degradation – evaluate this aspect with the darkened hanger visual acuity chart evaluation
10. Covert exterior lights keep you from getting run over
NVIS modification is mature technology.

BUT, it has to be done right.
Do it right - Enjoy the Night!

John Butler
ATI Engineering Services