

### What are the temporary effects?

**Distraction:** attention is drawn away from operational tasks

**Glare:** visual impairment occurs only during exposure

**Flash blindness :** visual impairment occurs during and following exposure to extremely high intensity light (photography flashbulb effect)

- Afterimages partially obscure vision
- Normally 90% recovered within 3 minutes

### What can be the permanent effects?

**Lasting** loss of vision

**Caused by** retinal tissue damage inside eye

**Very low risk** of occurrence from current threats

**Immediate** medical treatment improves outcome



# Aircraft Laser Illumination-- Pre-deployment Brief

Dstl Sensors & Countermeasures Department



## Dstl Sensors & Countermeasures Department

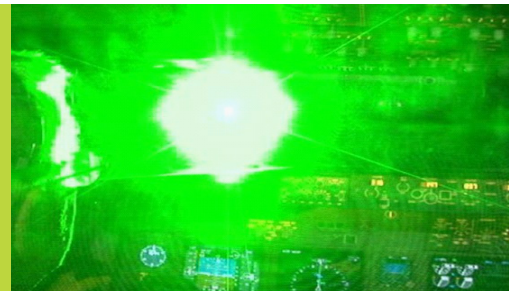
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- Vision is crucial to aircraft navigation —temporary visual glare can compromise flight safety
- Laser dazzle is a rapidly increasing threat
  - Handheld lasers have significantly increased in power over recent years while prices have fallen sharply
  - Legacy military systems becoming more widely available
  - EO sensors also vulnerable to high brightness torches
- Common 5mW laser pointers cause glare at about 400 m (see photo front page)
- NVGs are more easily dazzled and damaged than bare eyes
- Most events occur:
  - Between 15:00 and 00:00 local time
  - During approach, departure or low altitude operations
- ~85 % incidents involve green lasers, although other wavelengths have been used
- Lasers can be integrated with automated tracking systems at a relatively low cost

### What to do during the attack?

**Stay calm** -- don't rub your eyes!

**Don't look** into the beam

**Shield** your eyes / don laser protection

**Warn** other crew members (if applicable)

**Manoeuvre** to block laser, if possible

**Check** your instruments

**Turn up** your background lights

**Activate** autopilot, if possible

**Transfer control** if possible

**Contact** Air Traffic Control

### As soon as safety allows:

Check for dark/disturbed areas in vision, one eye at a time

### After landing:

**Flight surgeon** will evaluate vision again after landing (Ophthalmoscopy, visual acuity and Amsler grid)

**Report** the incident through D-FSOR

- Laser colour, duration, location, range, severity and spatial size of dazzle, pulsed?

