



Collaboration works!

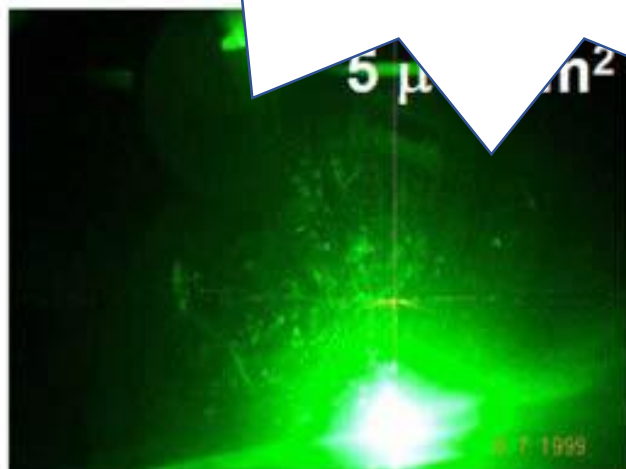
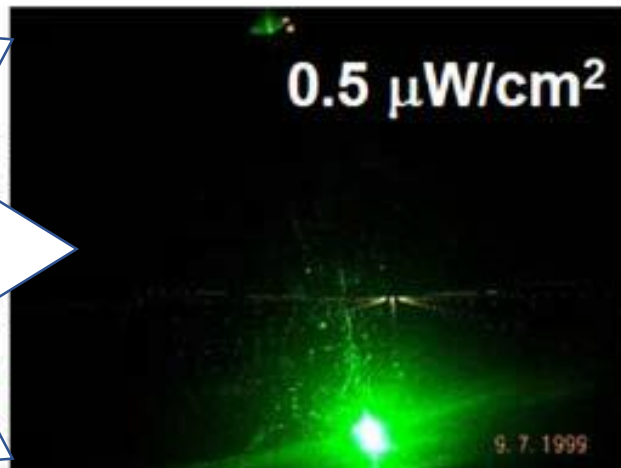
Dai Whittingham
UK FLIGHT SAFETY COMMITTEE

IASS 2018 - Seattle

Example view from aircraft cockpit (in FAA flight simulator) during laser illumination flash

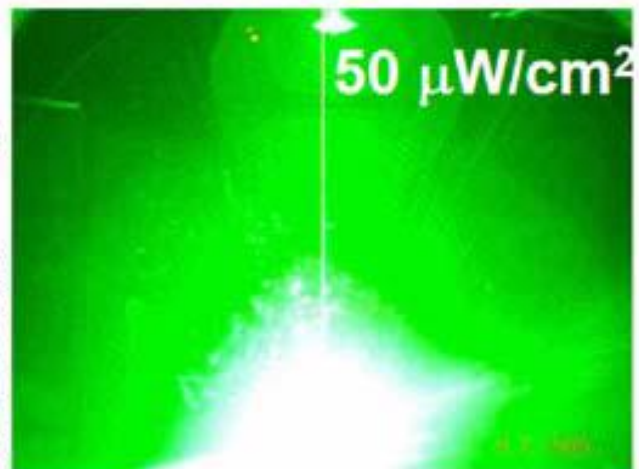
The simulator is showing the aircraft on the ground, at the take off position. The laser is steady for the photo; however, in the actual FAA simulator, pilots were exposed to a single flash lasting one second. So you can imagine pilots seeing one laser flash because in real-life a hand-held laser could not be held steady (lead of remaining steady.)

1500
per
year

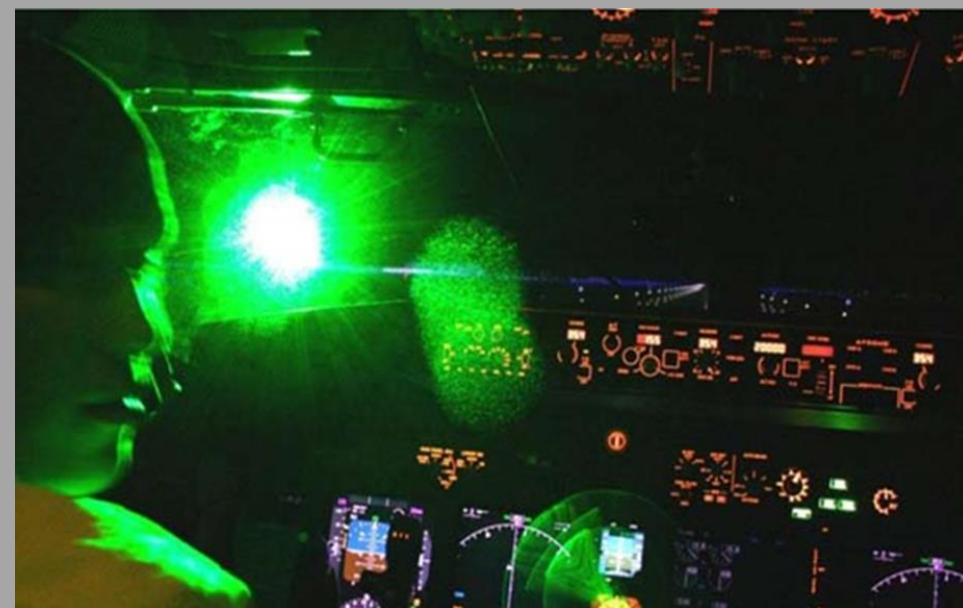


FAA Simulator Study, Level 1 (10 times less than FAA Sensitive Zone level), where glare is the primary hazard. 5 mW pointer at 1,200 ft. Runway mostly obscured

FAA Simulator Study, level 3 (10 times less than FAA Sensitive Zone level), temporary flashblindness begins. 5 mW pointer at 350 ft. Runway completely obscured



All photos taken with the same setting: Kodak DC240 digital camera, aperture #2.8, shutter speed 1/6 second.



“...the two fundamental organizational processes as far as safety is concerned are allocation of resources and communication.”

(ICAO Doc 9859 - Safety Management Manual, Third Edition – 2013)

Last meeting of CAA Laser WG – Feb 2013...

ICAO State Letter, 4th Dec 2014

“I also strongly encourage your State to enforce all relevant laws and to apply penalties against perpetrators in accordance with applicable legislation. ***Should current legislation not cover laser attacks, I urge your State to consider including legal provisions to address the issue of laser attacks against civil aircraft, and to penalize such attacks.***”

(UK) Air Navigation Order

Lights which dazzle or distract **Max £2500 FINE**

225. A person must not in the United Kingdom direct or shine any light at any aircraft in flight so as to *dazzle or distract* the pilot of the aircraft.

Endangering safety of an aircraft **JAIL or UNLIMITED FINE**

240. A person must not *recklessly or negligently act in a manner likely to endanger* an aircraft, or any person in an aircraft.

What happened next?

- Approach to Department for Transport
 - Support gained from DfT and CAA
 - 2 x govt depts engaged
- Community of interest formed:
 - Industry and military stakeholders, police, prosecutors, public health specialists, CAA staffers
- Lobbying and information campaign (BALPA)

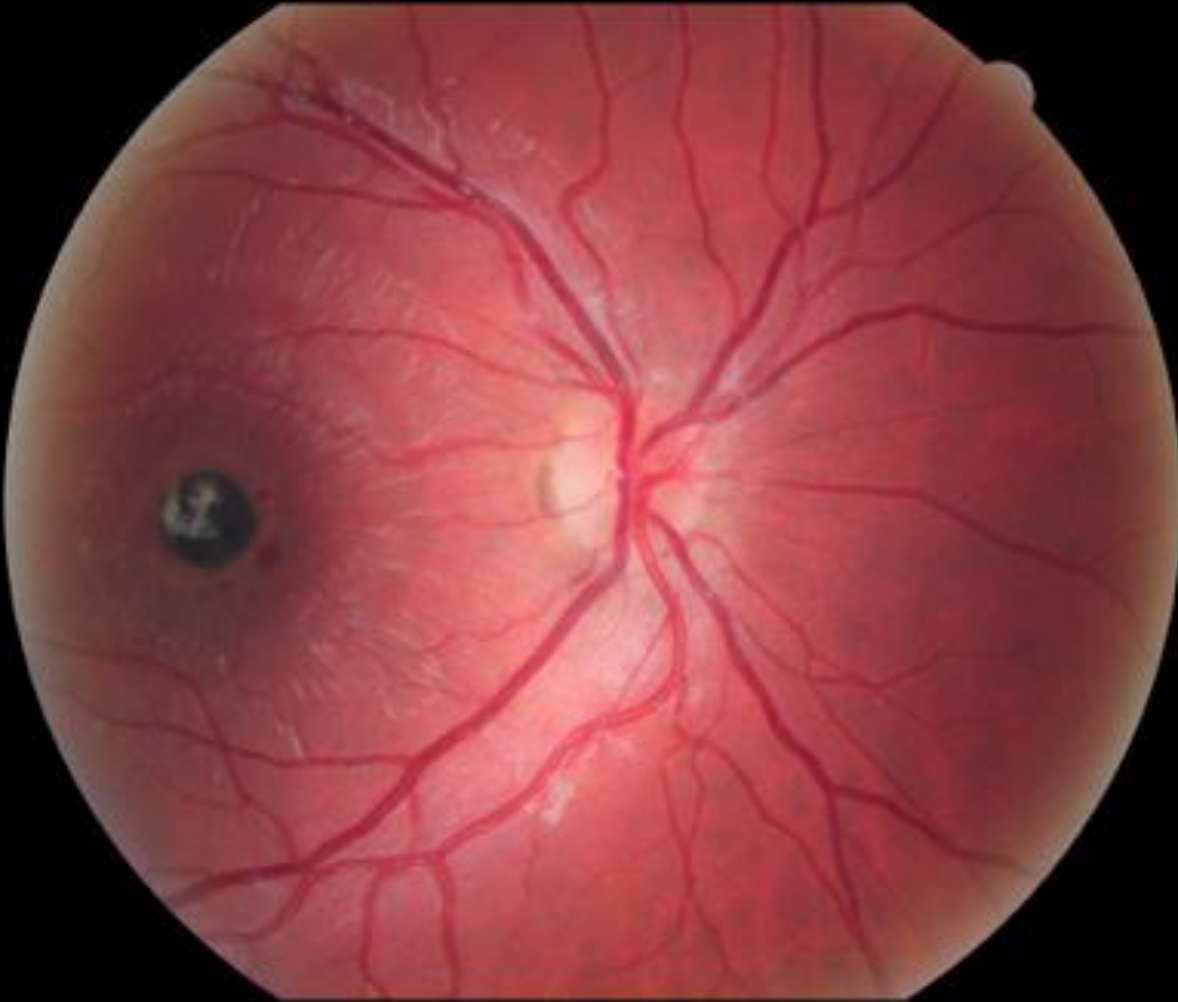
UK Laser Working Group

- Alignment
- Shared goals and consensus-building
- Decision on multi-modal approach

EVIDENCE...

- Govt required evidence!
- BALPA/Air Pilots survey showed 30-40% attacks unreported
- UK operators only, so true figure ~4000/year
- Spill-over into road/rail/maritime (anecdotal only)
- Inadequate reporting system
- Review of other nation's laws

Injuries



A 13 year old boy with permanent scarring at right macula with 84% loss in vision.

14 Feb 2016



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International Edition + 🔍 ☰

'Laser incident' forces Virgin Atlantic jetliner back to London

By Susannah Cullinane, CNN

🕒 Updated 1346 GMT (2146 HKT) February 15, 2016



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DATA CENTRE SOFTWARE SECURITY DEVOPS BUSINESS PERSONAL TECH SCIENCE

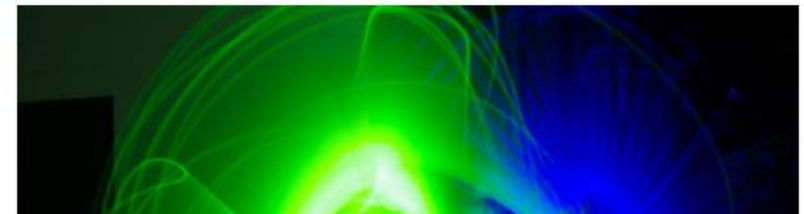
Bootnotes

Virgin Atlantic co-pilot dazzled by laser

NYC-bound flight forced to return to Heathrow

By [Lester Haines](#) 15 Feb 2016 at 15:21

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UK Laser Working Group

- Alignment
- Shared goals and consensus-building
- Decision on multi-modal approach
- Focus on distract or dazzle (proven safety issue)
- Deal with high-power lasers, import controls, police powers once basic legislation achieved

Laser Misuse (Vehicles) Act (2018)

5 years jail, or unlimited fine

... directs a laser beam towards a vehicle which is moving or ready to move, and the laser beam dazzles or distracts, or is likely to dazzle or distract, a person with control* of the vehicle.

... directs a laser beam...towards an air traffic facility, or towards a person providing air traffic services...

* “any person on the aircraft who is engaged in controlling it, or in monitoring the controlling of it.”

[Laser Pointer](#)[New Arrivals](#)[Clearance](#)[GO](#)

2 item(s)
\$259.98

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SKU: G32000076

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Description

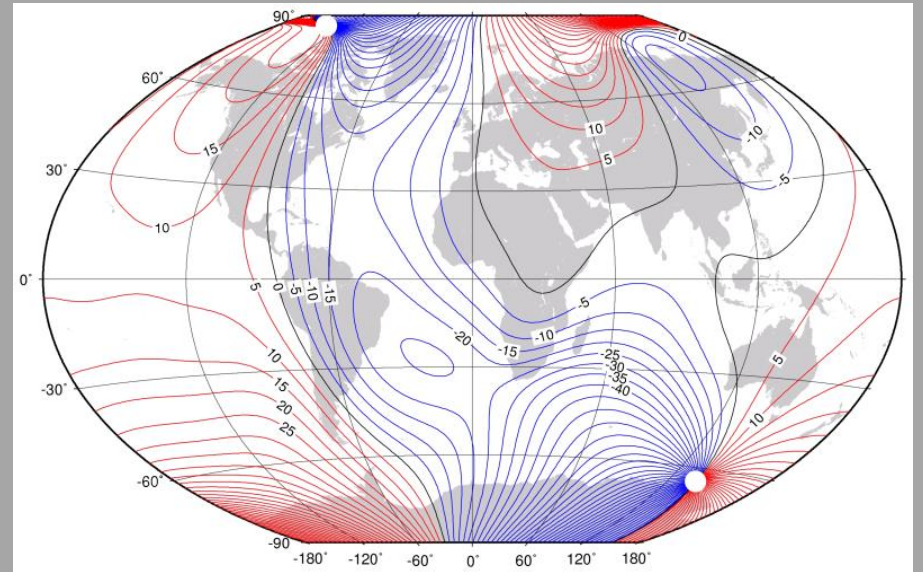
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This is our new Laser pointer. With 5000mW of output power, it produces a green laser beam that is clear, bright and full of energy.

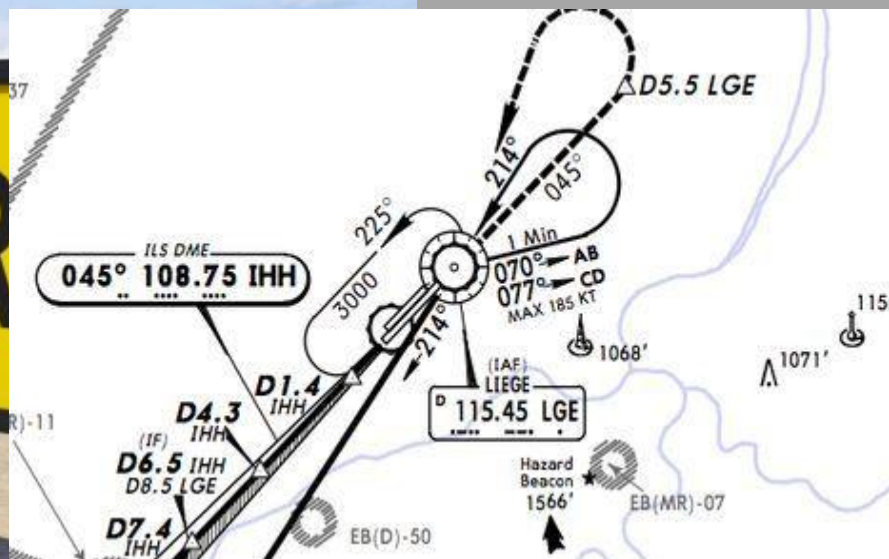




**TRUE
NORTH**



TRUE
NORTH



THE VISION

- **TRUE NORTH** navigation as the baseline standard
- One-off costs, long-term financial and safety benefits
- **COLLABORATE** to solve the implementation problems, don't just kick the can down the road!

IT'S TIME TO PUSH BACK!



IT'S TIME TO PUSH BACK!

- What is a pushback?
- When does it start/stop?
- Tow-bar attached? Brakes off? Moving?
- NO DEFINITION!
- NO COMMONALITY! (Spreadsheet approach)

A RECIPE FOR CONFUSION, MISTAKES,
DAMAGE, INJURIES, DEATHS...

THE VISION

- All heavy CAT using common pushback terminology **as a minimum**
- **Ideally** all using the same procedures

**If manufacturers, operators and regulators work together,
WE CAN MAKE THIS HAPPEN!**



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Questions?