Directed Energy Weapons 2009

Driving DEWs from the Laboratory to the Battlefield

February 26th - 27th, 2009 • *Thistle Marble Arch, London, UK*

Pre-Conference Workshops: 25th February 2009

- **Workshop A:** Operational Aspects Of Directed Energy Systems
- **Workshop B:** Directed Energy Hazards To Civil Aviation

10.00–13.00 Workshop A: Operational Aspects Of Directed Energy Systems

Advances in directed energy technologies have made the operational deployment of directed weapons in the near future a reality. These unconventional weapon systems bring both unique capabilities and challenges to the battlefield. The technical advantages of directed energy systems are well documented but issues related to DE deployment and operation less so. An understanding of these issues is critical to the successful deployment and employment of these systems on the battlefield. These issues cover a range of areas including component technologies, materiel support, engagement tactics, and safety.

This master class will help you understand the various issues associated with the deployment of directed energy systems, including:

- Target engagement tactics
- Logistics
- Concept of operations
- Maintenance
- Collateral damage
- Training

Basics of directed energy system engineering, propagation effects, and weapon effects will be reviewed to provide a basis for the deployment discussion with regards to:

- DE system engineering
- Safety & collateral damage
- DE component technologies (sources
- Logistics & maintenance beam control, power, & thermal)
- Example applications

- Weapon use and effects

Led by: Dr. Michael Cathcart

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13.30–16.30 Workshop B: Directed Energy Hazards To Civil Aviation

Over the course of this 3 hour session, this workshop will discuss some of the key directed energy applications which could be a potential hazard to civil aviation. By running through some of the technologies which could pose a threat, the workshop narrows in on potential scenarios where these threats pose significant danger.

OVERVIEW

Directed and Diffuse Energy Weapons

- Mode of operation
- Types of E-bomb
- Explosively Pumped Flux Compression Generators (FCG)
- Explosive and Propellant driven Magnetohydrodynamic (MHD) Generators
- High Power Microwave Sources

Vulnerabilities

- Vulnerabilities to interference from inside the aircraft
- Vulnerabilities to external radio frequency radiation

Lethality of E-bombs

- Size considerations
- Footprint
- Lethality of HF weapons
- Lethality considerations for aircraft

Defence

- Faraday cages
- Detection
- Testing

Electronic Testing

- Weapon Availability

SCENARIOS & RELATIVE RISK

Factors influencing scenario rating

- Attack-Type Parameters
- Sensitivity Parameters
- Organization-Type Sensitivies

Sample Scenarios

- RF Device in carry-on
- Device in cargo hold
- HPM attack on aircraft on take-off or landing Attack “Appeal”

CONCLUSIONS

Led by: Ms. Yael Shahar

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