



Electronic Warfare Training and Electronic Warfare Academy Consultancy

Our Electronic Warfare Technology and Training (EW T&T) team has a proven track record of providing world-beating EW education, training, and training consultancy services.

Using highly experienced ex-military instructors, who are Master's degree qualified and considered as experts in their field, the EW T&T welcomes students with differing experiences, perspectives and views.

We strive to deliver an all-inclusive and relaxed training environment that provides an interactive learning experience. Using a blended training approach, classroom-based instruction and exciting demonstrations are supported by interactive courseware, all aimed at making our courses interesting while meeting our customer's educational requirements.

Modular-based training and education

Our expertise tells us that for many militaries, the focus is often on purchasing equipment or materiel, with equipment training being included in the contract purchase. This training usually provides operators with the knowledge of how to operate the system, but not 'why' they are doing it and when it should be used in a wider operational context. Our experience shows that militaries - and military suppliers - are becoming more aware of the need to educate personnel in the art of electronic (or electromagnetic) warfare.

Our solution is to provide a wide range of modular-based electromagnetic warfare training and education courses. These allow those involved with electromagnetic spectrum operations (EMSO), or delivering the capability to support EMSO, to select the perfect option to enhance both their operational thinking and implementation skills.

From fundamental EW courses right through to qualitative examination of infra-red, radar and EW systems, our training will support building or augmenting an EMSO capability across the joint battlespace.

We also have experience in developing EW schools and academies and we offer a full consultancy service in this area to complement the educational offer.

Industry specific offers:

Offer one

Providing fundamental EW education to our customer's staff as part of their road map of becoming an intelligent supplier. This can be achieved either by attending our 'Fundamentals of EW Course', held in Lincoln (UK), alongside other members of industry, or on a course of your own at a location of your choice.

Offer two

In collaboration with you, we determine the EW training requirements and subsequently deliver that training to a customer, leaving you to conduct the original equipment manufacturer training.



The EW T&T team



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EW Instructor and
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With over 100 years combined 'in-uniform' military experience, our five dedicated EW T&T experts are educated to Master's degree level in subjects including: aero systems engineering, microwave engineering, and optoelectronics and aerospace operations and tactics.

As 'Association Old Crows' and 'Royal Aeronautical Society' members, our pedigree is underpinned by vast amounts of experience in:

- Rotary wing
- Multi-engine
- Uncrewed air vehicle (UAV)
- Intelligence, surveillance and reconnaissance (ISR)
- Combat aircraft
- Assisting special forces in operations

Our team all qualified as instructors and managers on the UK military's MSc courses, and have also undergone extensive ISR training, pilot training, UAV training and EW training.

Having the ability to impart EW theory while tying it into an operational context means we are the 'go to' choice for many national and international customers. We have delivered multi-domain EW training and education to all personnel who operate in the UK's Joint Electronic Warfare Operational Support Centre, as well as providing EW training a number of Baltic states and the European Defence Agency.

Experts in course design

We pride ourselves on understanding the customer EW training need, and possessing the ability to readily offer EW courses that can be tailored to meet the customer requirement.

Drawing on our vast lesson library and understanding the customer's output standard, we will help you develop the optimum EW training course, ensuring the capability enhancement is delivered as efficiently as possible.

Our courses range from a few days to several weeks long, but all are unique and driven by customer requirements.

To offer an insight into how our courses are developed, and who they are suitable for, two scenarios are offered.

SCENARIO ONE:

Wanting to become an intelligent supplier

THE CHALLENGE

As part of a goal of becoming an intelligent supplier, a manufacturer of EW military equipment has an operational EW education requirement. They need to provide broad EW training for up to 20 members of their marketing/sales department and technical team.

The requirement is further bounded in the knowledge that the staff members have little prior knowledge of the military. The training needs to be carried out over five continuous days and there is no requirement for formal assessment.

OUR SOLUTION

In this scenario, we would deliver the training at the factory, minimising the travel and subsistence cost for the customer.

Drawing on lessons from our lesson library, organised into specific modules, our unique solution is to offer a five-day course that would teach: the principles of war and how each fighting arm (air and space, land, and maritime) contributes to warfighting; essential elements of electromagnetic physics; EW doctrinal terms; operational utility and tactical EW; battlespace spectrum management; and the synchronisation of physical kinetic effects with EW and cyber operations.

COURSE MODULES

- 01** Introduction to warfighting
- 02** Introduction to the Electromagnetic Environment (EME)
- 03** Electronic / Electromagnetic Warfare Terms and Doctrine Including Military Electromagnetic Spectrum Operations
- 04** Decibels - the 'Maths' of EW
- 05** Physics of EW
- 06** Radar System Techniques and Operational Radar Weapons
- 07** Infra-Red Weapon Technology
- 08** Integrated Air Defence Systems and Engagement Cycles
- 09** Electronic Attack
- 10** Electronic Surveillance
- 11** Electronic Defence
- 12** Cyber and Electromagnetic Activities
- 13** Navigation Warfare
- 14** Intelligence, Surveillance and Reconnaissance within the EME

SCENARIO TWO:

Desire to grow capability and EMSO support

THE CHALLENGE

A national military customer wishes to grow its capability to support EMSO and consequently it requires its personnel to be trained in EW.

The country doesn't currently have sovereign capability to undertake such training but has a desire to deliver an indigenous EW training capability in the future.

OUR SOLUTION

Here, we would offer three courses, with attendance determined by the EMSO role of the candidate. We would align to the customer's requirement to develop personnel in order to populate an EW training academy staff. Details of our solution are shown below.

One-week Introduction to EW Course

COURSE AIMS

To provide an introduction to EW techniques, technology and fielded systems across all domains.

On successful completion of the course, the student will be able to:

- Demonstrate a principle understanding of EW sensor and system technology
- Identify the principles underlying radar detection in noise and clutter, relating these principle to operational performance
- Evaluate first-order performance of common EW systems

POTENTIAL COURSE MODULES

- 01** EW Introduction
- 02** RF Introduction
- 03** IR Introduction
- 04** RF Surface to Air Missiles
- 05** IR Surface to Air Missiles
- 06** Electronic Support Measures

Three-week Practitioners EW Course

COURSE AIMS

To provide an introduction to EW techniques, technology and fielded systems across all domains.

On successful completion of the course, the student will be able to:

- Demonstrate a comprehensive understanding of the application and limitations of EW sensor and system technology
- Identify the principles underlying radar detection in noise and clutter, relating these principle to operational performance
- Explain the operational advantages of a modern EW sytem of systems
- Evaluate the performance of common EW systems

POTENTIAL COURSE MODULES

- 01 EW Introduction
- 02 RF Introduction
- 03 RF Missiles
- 04 IR Introduction
- 05 IR Missiles
- 06 IR Countermeasures
- 07 Missile Warning Systems
- 08 Staring Array Technology
- 09 Pulse Doppler Radar
- 10 Pulse Compression
- 11 RF Electronic Support Measures
- 12 RF Electronic Countermeasures – Passive and Active
- 13 EW Mathematics

EW Instructors Course

COURSE AIMS

To train EW officers to a standard that will enable them to perform EW instructor duties on a front-line squadron and provide EW subject matter advice to commanders on deployed operations.

Candidates must have completed at least the practitioner's course or equivalent course and have completed a period of operational experience as a practioner.

POTENTIAL COURSE MODULES

- 01 Instructional technique and delivery training to develop instructor skills and refresh EW knowledge
- 02 Implement EW knowledge to a given scenario



EW consultancy: developing EW academies

The structure of EW academies varies according to the military or security capability of the country in question and/or those of their main adversaries.

Therefore, it is impossible to define a “typical” model for an EW academy. In our experience, a customer’s plan for an EW academy will initially be based on those of a near-peer military or represent “best practice,” but the plan changes as their specific capabilities and requirements are evaluated.

EW academies often follow a progressive path: from a fundamental level, where the aim is remembering information and

understanding concepts, through to advanced courses aimed at providing graduates with the knowledge to allow application.

Some countries may not be able to develop an academy or school beyond a general progression or feel their military capability does not justify such investment in terms of personnel, money and resources. Others may wish to have a higher capability, with advanced practitioners progressing from understanding to analysis, evaluation or even creation, covering skills such as intelligence analysis, operational or academic instruction, mission data production, test and evaluation and acquisition management.

Case study

A multi-domain joint EW academy for an international customer.

We collaborated with a major international customer to identify the training requirements for a joint EW academy covering air, land and maritime forces, and space and cyber domains.

The customer had determined what EW capabilities they wanted to develop. Using a framework similar to the 'UK Defence Line of Development' and 'NATO Doctrine, Organisation, Training, Materiel, Leadership and Education, Personnel, Facilities and Policy', we designed a structure for EW-specialist career paths and training. We identified areas of commonality across different services and capability roles within a single service (for example combat air, air mobility, ISR within the air domain).

A series of courses was then recommended that would provide training and education for personnel to develop a sovereign capability for both operational and support personnel, from direct entrants to warrant officers, junior officers to general staff officers.



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