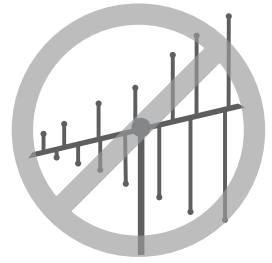


Communications Jamming Course



Who should attend?

Military and government civilian EW practitioners engaged in communication jamming activities.

Key Organisations

Ministry of Defence

HQ Joint, Army, Navy, and Air Force EW operators/Analysts.

All Government agencies, industries and organisations interested in operational and technical aspects of EW.

What you will learn:

- Introduction to Electromagnetic Attack within EW
- Mathematics related to communications jamming
 - Exponents, metric prefixes, logarithms and decibels
- Space/direct wave propagation including:
 - Propagation losses using the line-of-sight and two-ray propagation loss models
 - Fresnel zones
- Communications and Electromagnetic Attack antennas
 - Principles and terminology associated with electromagnetic radiation
 - Principles of various communications and jamming antennas: half-wave dipole, monopole, Logarithmic Periodic Array, discone and parabolic reflector
- Principles of communications jamming
 - Jamming networks
 - Jamming analogue and digital signals
 - Jamming-to-Signal (J/S) ratio including operational calculations
 - Burn-through range including calculations
- Types of jamming and systems
 - Including: spot, barrage, swept, partial band, responsive and follower jamming

Introduction

This course addresses key elements of communications jamming and will provide delegates with a sound understanding and appreciation of the complexities of communications jamming in a range of operational scenarios and against various signal types. The course will be delivered with a blend of theory and progressive practical lessons to consolidate knowledge and skills.

- Different jamming techniques including: self-protection, stand-off and stand-in jamming
- Different types of jamming systems
- Ground-based and airborne communication jamming
 - Man-portable, vehicle-based, mast elevated, expendable and airborne
- Jamming of Low Probability of Intercept (LPI) threat signals
 - Basics of Frequency Hopping Spread Spectrum and Direct Sequence Spread Spectrum
 - Jamming methods used against LPI signals
- Satellite communications jamming and GSM jamming
 - Introduction to SATCOM and GSM communications
 - Methods of SATCOM jamming and GSM jamming
 - Spoofing and GPS jamming
- Jamming planning process – tasks involved during each stage of the jamming planning process
- Electromagnetic Protect and anti-jamming
 - Active methods of EP (technical and tactical)
 - Passive methods of EP (technical, tactical and training)
- Radar jamming
 - Jamming and deception techniques
- Counter-Radio Controlled Improvised Explosive Device (C-RCIED) Jamming
 - The RCIED threat, principles of ECM, jamming techniques, interoperability, development cycle
- Various syndicate based practical exercises to consolidate knowledge



Course Duration
2 Weeks

Location
Mercury EW Ltd – Training Facility