



Introduction to Combat Net Radio Bearer (MIL-STD-188-220) – Course Content

This 2 day course has been based on the MIL-STD-188-220D Change 1. It is designed as a follow on to the Introduction to VMF course and will provide the delegate with in depth information about the CNR bearer protocols.

Lesson 1 – Introduction

- MIL-STD-188-220D Change 1
- CNR Definition
- CNR/VMF Association
- CNR Basic Principles
 - Data Frame
 - Network Access
 - Types of Service

Lesson 2 – OSI 7 Layer Model

- Introduction/ISO Standards
- 7 Layer Model as used for CNR
- Data Frame Compilation

Each of the layers utilised for CNR will be explained in detail:

Lesson 3 – Physical Layer

- COMSEC
- Transmission Modes
- Transmission Frame
- Primitives
- Modulation
- Physical Layer Concatenation

Lesson 4 – Data Link Layer

- Transmission Header
- Header Format

Frames

- U, I and S PDUs
- Addressing
- Control Field
- PDU Construction



- Data Link Concatenation
- Primitives

Types of Service (TOS)

- TOS 1-4
- Flow Control
- Duplicate Frame Detection
- Station Class
- TOS Determination
- Quiet Mode

Network Access Delay (NAD)

- F Variable
- Network Access Control Requirements
- P-NAD
- H-NAD
- RE-NAD
- R-NAD
- DAP-NAD
- DAV-NAD
- FOAR
- Initial Condition State

Timing & Associated Parameters

- Explanation of timing parameters

Exchange Network Parameters (XNP)

- Network Control Station
- Dynamic and Static Stations
- XNP Messages

Lesson 5 – Network Layer

- Intranet Header
- ip Fragmentation
- Address Resolution Protocol
- Neighbour Discovery
- Intranet Relay
- Source Directed Relay
- Topology Update
- Routing Trees
- Primitives



- Internet Protocol
- SubNetwork Dependent Convergence Function (SNDCF)

Lesson 6 – Transport Layer

- Transmission Control Protocol (TCP)
- User Datagram Protocol (UDP)
- Segmentation Reassembly
 - Basic and Enhanced

Lesson 7 – Hardware

- Radios and Modems

A brief description of some commonly used CNR and associated modems

