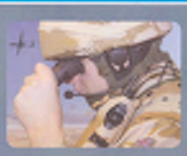
Tactical C4I Systems

COBHAM

Eagle – Close Combat Radio (CCR)

The most important thing we build is trust








Eagle CCR significantly enhances command and control at section/squad level through a full duplex capability and seamless ad-hoc networking

Eagle Close Combat Radio (CCR)

Cobham has extended its product portfolio with the introduction of the highly functional, low cost, Close Combat Radio, Eagle.

Stand Alone or Integrated

Eagle has been designed for use as a standalone section/squad radio, or as a wireless communications platform that may be fully integrated through Cobham's Vehicle Intercom Systems (VIS), to provide seamless communications between platform and dismounted infantry/crew.

With simultaneous and encrypted voice and data capability, auto rebroadcast/retransmission, Eagle is an ideal comms bearer for integration into C4I soldier systems such as Cobham's IDSS. In this role, Eagle not only provides full duplex voice communications between section/squad members, but also the separate data networks for the passage of information and maintaining situational awareness within the group.

Advanced Network Radio

Eagle is a third generation, full duplex networked radio, specifically designed to provide the soldier with a cost-effective solution for voice and data communications at section/squad level in rural, urban and the challenging mixed environments met on modern operations. It eliminates the issues associated with simplex radios and has significant advantages over radios that use a 'fixed master'.

Eagle is an extremely flexible radio and contributes to a significant reduction in the stress faced by soldiers in combat. Eagle directly improves mission success through improved combat efficiency.

Ease-Of-Use

Eagle is intuitive and easy to use. Its single push and turn selection button is used in conjunction with simple voice prompted menus to allow the user to make rapid changes to the radio configuration.

An ad-hoc networked radio with automatic rebroadcast for extended range and area coverage

Third Generation Close Combat Radio

Eagle represents a step change from the traditional simplex soldier radios with their inherent limitations in voice and data communications and the need for rigid net discipline and restrictive voice procedure.

Eagle allows up to six users, within any ad-hoc group, to gain simultaneous voice access to the network. Full duplex voice significantly eases the communications burden on users, by eliminating the need for rigid voice procedure. In the VOX mode of operation, Eagle emulates true command and control and allows users to pass instructions and orders as they would if they were standing next to each other thereby improving command and control and the efficiency of combat troops.

With other key features such as simultaneous voice and data, AES 128 encryption and a two button Wireless PTT, Eagle represents a major advance in low cost section/squad level communications.

Integrated Communications

Eagle has been designed with embedded CNR access capability for simple integration into Cobham's VIS.

Armoured fighting vehicles have considerable fire power at their disposal and full integration of dismounted section/squad nets enhances dismounted operations considerably. Dismounted troops can communicate with crews and remotely access platform radios for command and control. Crews are kept aware of the immediate tactical situation through Eagle and are able to react rapidly to changing events and maximise the support they provide to dismounted troops.

In complex asymmetric warfare, clear, precise and immediate communication is essential between section/squad and supporting platforms to minimise casualties and maximise combat efficiency.

- Six simultaneous duplex users
- Encryption using AES 128

- Simultaneous voice and data
- Automatic rebroadcast
- Masterless ad-hoc network
- VOX operation
- Wireless PTT option
- Audio integration from second radio into a single headset, with separate PTTs.

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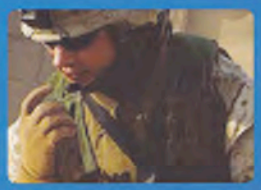


- Full Duplex
- Six Simultaneous Users
- Automatic Rebroadcast
- Dynamic Net Controller
- Various Data Modes
- Encrypted Communications & Data

Ease-of-Use

Eagle uses a single rotary control push button, accompanied by voice prompts, to guide users through the menu structure and select the various functions. In reality, once set up there are very few changes a user would ever make except altering volume and changing Groups (channels). Voice prompts can be made available in the users language of choice.

PTT and Wireless PTT

Two PTTs are built into the radio as standard. One PTT activates the Eagle and the second PTT provides additional external radio or VIS access. A wireless access unit with two remote PTTs is also available. It can be hand or weapon mounted for ease-of-use.

Facilities Interface

A multi pin connector on the base of the Eagle provides access for the following functions:

- External power from 24V nominal
- RS232 data port
- External radio interface
- VIS interface

Eagle Headset

To complement the Eagle Radio, a single ear Eagle headset is provided. This gives the user spatial awareness whilst operating the Eagle CCR. Other audio ancillaries can be provided on request.

Key Functions of Eagle

Dynamic Net Controller

Eagle uses a Dynamic Net Controller (DNC). The nomination of DNC is automatic and is based on the radio that is at the centre of RF mass. As the network changes shape with movement, the DNC moves between radios automatically with no loss of communication. If the current DNC is lost, for any reason, another radio takes over the role seamlessly.

Rebroadcast/Retransmission

Eagle has a line of sight range of 700m in open terrain. When a radio does not have full network coverage a rebroadcast link is set up by the network to bring that radio into full coverage. Up to five rebroadcast links can be set up within a network at any one time.

Group security and encryption

A group (radio net) can be formed as secure or insecure and open or closed. In the open mode other radios can join the net by selecting the same group through the voice prompted menu. In the closed mode the radio cannot join the group unless another user 'opens' the group to allow access.

Interface Capability

Eagle has been designed with a comprehensive interface to VIS and CNR.

- Connection to a man pack using the single headset and the second PTT on Eagle to access the radio
- Connection to a man pack CNR and allow the radio traffic to be passed to all users on the Eagle network. Other Eagle users can also access the CNR with their second PTT
- Connect to a Cobham's VIS as a standard radio. The Eagle users only receive traffic when the crew activate the PTT
- Connect to the headset port of a Crew Station. This extends the intercom to all Eagle users and the Eagle network to the VIS. Any user selecting their second PTT can access the crew station working radio
- Fully integrate to VIS via a Wireless Expansion Unit. Eagle extends the VIS and allows Eagle users to remotely access any one of three platform radios on the VIS

Data Capability

Eagle has a number of data modes that satisfy modern requirements at section/squad level:

- **SA data with anti-collision.** This is separate to the other data modes and is retransmitted, as necessary, around the network within the network management signals
- **Low speed data.** This mode allows small data files (objects) from C4I systems to be sent over a normal voice channel. Similar to voice, it can be rebroadcast up to five times within a group
- **Broadcast data.** This is a higher speed data used to transmit larger files or images. It is not rebroadcast and any routing of this data has to be done via the C4I system

Eagle is a high functionality, low cost section/squad radio

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Eagle's Communications Capability

Main group sub divide

Area coverage using auto Rebroadcast

Increases area coverage around obstacles with five automatic rebroadcast links

AES Encryption

AES 128 Encryption prevents unauthorised access

Range extension using auto rebroadcast

Increase range coverage with five automatic rebroadcast links

Trusted Tactical C4I Systems

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