

PRC-319

The UK/PRC 319 is a microprocessor-based 50 W HF/VHF tactical radio. The radio is claimed to give up to five times more transmit power per kilogram weight than any other portable in-service radio.

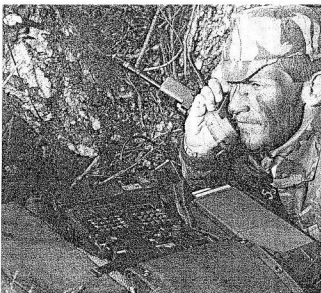
Four detachable units – a transmitter/receiver, electronic message unit and two antenna tuners – have been combined with a standard Clansman battery.

Six deployment options are available ranging from a 50 W voice-only station, using pre-cut resonant antennas, to a 50 W voice and burst data station capable of matching simple wire or rod antennas. The total system size is slightly less than 300 × 200 × 110 mm. A 50 W transmitter extends the groundwave coverage out towards the first sky-wave hop.

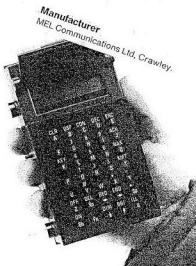
Extension of the HF band, up to 40 MHz into the VHF band, gives a close support VHF voice communications capability using SSB as well as providing skywave channels under unusual ionospheric conditions.

Low probability of intercept is enhanced as a result of using semi-duplex transmission and burst data, and dispensing with the constant intermediate frequency in the receiver.

The integral pocket-size electronic message unit (EMU Mk III), weighing 0.7 kg, is also removable from



UK/PRC 319 HF/VHF tactical radio with BA 1772



EMU Alpha

the radio for independent operation. Powered by a built-in battery, it is capable of storing messages for up to 500 hours. The EMU Mk III also contains a forward error detection and correction system to STANAG 4202. Received messages are called from the memory store and displayed on a two line LCD. The UK/PRC 319 can receive and store messages into memory even during unattended operations.

In addition to the numeric only EMU Mk III, a newly developed alphanumeric unit has built-in crypto, EDC and data interleaving. This EMU Alpha has

independent 2000-character receive and transmit memories and a range of user definable fixed format messages.

The UK/PRC 319 can match a variety of antennas and features a high speed fully automatic antenna tuner (TURF) which permits the use of a remote antenna for covert operations. The TURF can be operated remotely up to a distance of 50 m from the radio through a single coaxial cable.

Operator control is carried out through a keyboard and mode select switch. All control information is displayed on an LCD along with a range of user confidence checks.

Ten pairs of channels can be preset and stored in the UK/PRC 319's electronic memory; switching to a new pair of channels is effected by the depression of a single key.

Status

In production for Special Air Service Regiment, Special Boat Squadron and used in four overseas countries, including the US and, reportedly, New Zealand.

Technical Specification

Frequency range: 1.5-40 MHz

Channel storage: 10 receive/10 transmit

Power output: burst greater than 50 W; CW (Morse) and voice (SSB) greater than 50 W PEP, low power between 2-5 W

Temperature range

operating: -31 to +55°C,

storage: -46 to +70°C

Humidity: 95% at 40°C

Immersion: to 2 m

TURF tuning time: < 220 ms, remote operation: up to 50 m through the coaxial cable

Provided By Army Radio Sales Co.
www.armyradio.com

Transmitter Receiver Radio UK/PRC 319

Introduction

The UK/PRC 319 as shown at Figure 2-4-1 is capable of providing a reliable ground wave range from 20km in the manpack to manpack role on the move and up to 5000km as a base station. A variety of whip and wire antennas may be used in conjunction with a TURF, TURF Extender and Lead Counterpoise. This equipment is not part of the Clansman Project but uses a number of number of common items such as antennas and batteries.

The equipment is solid state and operates in the 1.5 to 40MHz range, the frequency is selectable in 100Hz steps, transmit and receive frequencies may be different and up to 10 operating frequencies can be pre-selected and stored in RAM. It has extensive self test and condition monitoring facilities provided by built in test equipment. Power is provided by 24V, 1.2 or 4Ah secondary battery which can be supplemented/charged by a hand generator or solar panel. Any other suitable 24V dc supply may be used as the prime source of power.

Operating modes are single sideband for voice and data or carrier wave for morse. Data communications at speeds of 75, 150 or 300 baud in conjunction with either a Digital Message Handling Device (DMHD) or Electronic Message Unit (EMU), these also provide facilities for encryption and storage of messages if the radio is unmanned.

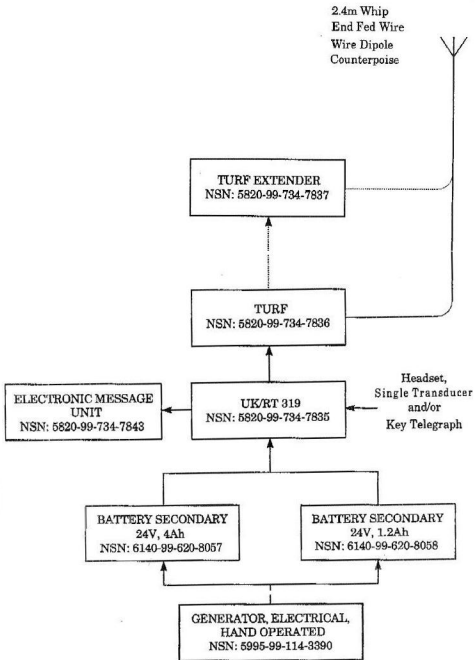
The radio is supplied to CES 45488 (5820-99-967-2806) as Radio Station UK/PRC 319 Ground. The Kit contains all of the main items and a number of the available accessories including a carrying frame but excluding batteries, to make an operating station in manpack or static roles.

It is for limited deployment where the additional facilities provided by this equipment are required. The radio set can be used in conditions of heavy rain, salt spray and driving dust, sand and snow. It will withstand parachute drops and the rough handling encountered in combat zones.

Operational Concept

The radio can be deployed in manpack, static or base station roles using appropriate antennas for the role and transmission range required, no vehicle installation kit is available. It can be used for single dual or remote operator working and can receive and record data messages when left unmanned. The antenna, TURF and TURF extender may be positioned up to 50m from the radio. If required, inter-connecting cables can also be used to separate the battery and/or the electronic message unit from the radio.

Transmitter Receiver Radio UK/PRC 319



**SCHEMATIC DIAGRAM OF
TRANSMITTER RECEIVER RADIO UK/PRC 319
NSN: 5820-99-734-7835**

Transmitter Receiver Radio UK/PRC 319

Technical Details

1. NAVAL, GENERAL AND AIR STAFF REQUIREMENTS (NGASR). TBA
2. OPERATIONAL CONCEPT. The equipment is intended for the transmission of insecure voice, morse and data or encrypted data using ground or sky wave. It is intended for use by dismantled troops.
3. DESIGN AUTHORITY AND CONTRACTOR. The Design Authority and Post Design Contractor is Redifon MEL Ltd, Crawley, West Sussex
4. FREQUENCY
 - a. Range 1.5Mhz to 40Mhz
 - b. Intermediate
 - c. Stability
5. Systems
 - a. Voice SSB
 - b. CW (Keyed tone)
 - c. Digital (Burst)
6. POWER SUPPLIES
 - a. Battery, Secondary 24V, 4Ah, 6140-99-620-8057
24V, 1.2AH, 6140-99-620-8058
 - b. Hand Generator 5820-99-114-3390
 - c. Solar Panel TBA
7. BATTERY LIFE (4Ah)
 - a. Voice or CW, 1 : 9 Tx/Rx ratio, 8 hrs approx
 - b. Data, 1 : 100 : 70 Tx/Rx/Stby, 100 hrs approx
8. RF OUTPUT
 - a. High Power 50W pep
 - b. Low Power 5W pep
9. AF OUTPUT > 0.4mW into 150 ohms
10. ANTENNA RANGE
 - a. 2.4m Whip Up to 20km
 - b. Whip on mast TBA
 - c. Wire end fed TBA
 - d. Wire dipole Up to 5000km
11. DIMENSIONS 200mm h x 210mm w x 103mm d
12. WEIGHT 3.4kg
13. CLIMATIC CONDITIONS
 - a. Temperature
 - (1) Operation -31°C to +55°C
 - (2) Storage -46°C to +70°C
 - b. Humidity 95% at 40°C
 - c. Altitude
 - (1) Operation and Storage Up to 3000m
 - (2) Transportation Up to 12000m
 - d. Immersion To a depth of 2m for 5 minutes