TECHNICAL SPECIFICATION
=========================

Frequency Range   225.000 MHz to 399.975 MHz

Number of Channels   7000

Number of Preset Channels   30

Channel Spacing   25 kHz

Modulation   FM: ±6kHz peak deviation
                               AM: more than 80%

Power Output   FM: 10 mW 3 W or 50 W
                               AM: 40mW PEP, 3W PEP or 50 W PEP

Receiver Sensitivity   FM: more than 10 dB (S+N):N Ratio for
                               1 μ V e.m.f. (-111 dBm) RF input
                               AM: more than 10 dB (S+N):N Ratio for
                               3 μ V e.m.f. (-101 dBm) RF input

Hop Rate   100 hops/second

Number of Hop Codes   More than 10^{22}

Narrowband Hopping

Number of Hop Bands   13

Hop Band Range   13.4 MHz

Hop Bands
1   225.000 MHz to 238.375 MHz
2   238.400 MHz to 251.900 MHz
3   251.925 MHz to 265.300 MHz
4   265.325 MHz to 278.700 MHz
5   278.725 MHz to 292.100 MHz
6   292.125 MHz to 305.500 MHz
7   305.525 MHz to 318.900 MHz
8   318.925 MHz to 332.300 MHz
9   332.325 MHz to 345.700 MHz
10   345.725 MHz to 359.100 MHz
11   359.125 MHz to 372.500 MHz
12   372.525 MHz to 385.900 MHz
13   385.925 MHz to 399.300 MHz

Wideband Hopping

Number of Hop Bands

Hop Band Range

3

58 MHz
In each band there is a choice of 8
orthogonal sets of 256 irregularly
distributed frequencies or 256 specified
frequencies entered using the
Programmer/Fill Gun or Keyboard. (For
training it is possible to enter only 4 or
only 16 frequencies).

Hop Bands

225.000-282.975
283.000-340.975
341.000-398.975

NOTE:

Although the top of the frequency range is
never hopped over, selection of hop mode
with base frequencies in this range is
still valid and causes the highest
frequency hop band to be selected relevant
to the hop width in use. Unless entered as
'wideband-fill' frequencies, the radio will
not hop onto the guard channel at 243.000
MHz or the two channels either side.

Barred Bands

On each hopping channel up to 6 barred
bands of frequencies can be entered from
the keyboard or Programmer/Fill Gun.

Supply Voltage

18 V to 32 V DC, 24 V nominal

Antenna

Omnidirectional broadband, 50 ohms

Working Range (Nominal)

25 km using high power

Working Temperature Range

-40°C to +70°C

Width

236 mm (9.3 in.)

Height

196 mm (7.7 in.)

Depth

330 mm (13.0 in.)

Weight

13.0 kg (28.6 lb)

CHAPTER 1
=========

GENERAL DESCRIPTION
====================

NOTE: It is recommended that this manual is read in conjunction with the
      VRQ 317 User Handbook Ref. TH 5335.

INTRODUCTION

1.   The Jaguar Multirole Radio VRQ 317 is a sophisticated UHF Transmitter
     Receiver with anti-jamming and secure speech facilities. AM mode is
     provided to allow inter-operation with existing UHF AM equipment. The
     radio is designed for tactical ground-to-ground, ship-to-ship or surface-
     to-air communications and is suitable for base station, vehicle, airfield
     or shipborne installation.

FACILITIES

2.   The facilities provided by the VRQ 317 are outlined below.

General

3.   The following items of ancillary equipment are necessary in order to bring
     the VRQ 317 radio into service:

     24 V Vehicle Battery or 24 V Mains Supply Unit
     Omnidirection Broadband Antenna, 50 ohm
     Handset/Headset.

4.   The 24 V supply is connected to the supply plug on the lower right of the
     front panel. The antenna is fitted to the N-type socket on the upper
     right of the front panel. The handset is fitted to either of the AUDIO
     sockets at the lower left of the front panel. A headset of a suitable
     type may be used in preference to the handset.

5.   The operator controls combine rotary switches with a display and a
     keyboard to provide:

     (1)   Selection between local and remote working.

     (2)   Selection between fixed frequency (FM, AM) and frequency hopping

           (FM) operation.

     (3)   Selection of channel frequency.

     (4)   Selection of transmitter output power level.

     (5)   Selection of audio output level.

     (6)   Selection of internal encryption (FM, hopping).

     (7)   Selection of selective communication (Secure).

Local Working

6. Local working enables the broadcast and reception of both clear-speech and data messages, in either fixed frequency or frequency hopping operation and at any of three transmitter power output levels, under the control of a local operator.

7. All speech messages are input and output via the handset. The volume control provides control of both microphone sensitivity and audio output level. The 'whisper' position provides a high microphone sensitivity to enable a whispered message to be satisfactorily received, and a low audio level just sufficient to be heard. Turning the volume control clockwise from this position provides four increasing audio output levels, the first two of which provide medium and the last two a normal microphone sensitivity. Switching between the transmit and the receive conditions is controlled by the PTT (Press-To-Talk) switch fitted on the handset. All data handling is at preset levels via the DATA socket.

8. Selection between fixed frequency (secure or clear) and frequency hopping operation is performed via the keyboard. The operating frequency (the significance of which depends upon whether fixed frequency or frequency hopping operation is selected, as described below) is selected from the 30 available preset channel frequencies, using a channel selector rotary switch. One of these channels - Ch 00, the manual channel (M) - can be reprogrammed rapidly by entering the desired frequency on the keyboard. Further positions of the channel selector switch, in conjunction with positions on the volume control switch, enable the remaining preset channels to be programmed.

9. The transmitter output power level is also selected via the keyboard. As indicated in the Technical Specification, three such levels are available; the lowest of these enables communication over short distances only, thus minimising the risk of interference with adjacent nets.

10. As each keyboard entry is made the display shows the entered information for 10 seconds to enable the operator to confirm his selection. Should an erroneous entry be made, the operator is advised of the error by means of a distinctive warning tone; the keyboard facilities enable both the incorrect entry and the warning tone to be cancelled, and a new entry to be made.

Fixed Frequency Operation

11. With fixed frequency (FC, FS or AM) operation selected, the operating frequency is the channel frequency on which all messages are transmitted and received. Communication between a fixed frequency radio and a frequency hopping radio is not directly possible, but the latter can be 'hailed' by a fixed frequency (FM) station (see para. 15).

Frequency Hopping Operation

12. The VRQ 317 provides 13 hop bands in narrowband mode and 3 hop bands in wideband mode, as detailed in the Technical Specification. Each band or set of frequencies contains 256 pseudo randomly selected channel frequencies. Unless it is a barred frequency, each frequency is used in accordance with the hop code stored against the channel switch position in

use. The operating frequency for that position defines the hop band to be used and influences the hopping sequence. The first two digits of the hop code select the hopping mode (Ground/Air) and the 'hop set'. Hop codes and barred frequencies can be programmed from the keyboard, in conjunction with the channel selector, mode selector and volume control switch positions allocated for those purposes.

13. Synchronisation with other radios on the net is performed automatically, in accordance with the hopping authority - control or outstation - selected at the keyboards of the various radios. A single key is arranged to serve the dual purpose of selecting both hopping operation and hopping authority.

14. Normally, one radio on the net is nominated as the control and all others operate as outstations and are synchronised to it. It is possible to operate a hopping net without a control, but this leads to increased synchronisation times. Should a net containing two controls be established, then when one control receives a transmission from the other control, the Error Tone' is generated at the receiving control to indicate that an undesirable situation is in being. Also, should the operator of a hopping radio attempt to transmit while not synchronised (with either the control or the partner outstation) he will receive an 'Unready Tone'.

15. A hailing facility is included which enables a radio operating on a fixed frequency (FM) to make contact with a hopping receiver, providing that the fixed frequency radio is on the same channel frequency as that displayed at the hopping radio. When such contact is made, the hopping radio operator receives a distinctive 'Hailing Tone' for 5 seconds; when he wishes to reply, he must change to fixed frequency operation.

Remote Working

16. Four methods of working over remote lines are possible:

(1) Remote operation, using a normal handset/headset and the Remote Audio Unit (BCC 568B).

(2) Remote control of any or all of the facilities available when the radio is under local control, using another VRQ 317 radio or a suitable remote control unit.

(3) Auto-Rebroadcast.

(4) Intercom.

In each case, the lines can consist of up to 4 km (2.5 miles) of field telephone cable.
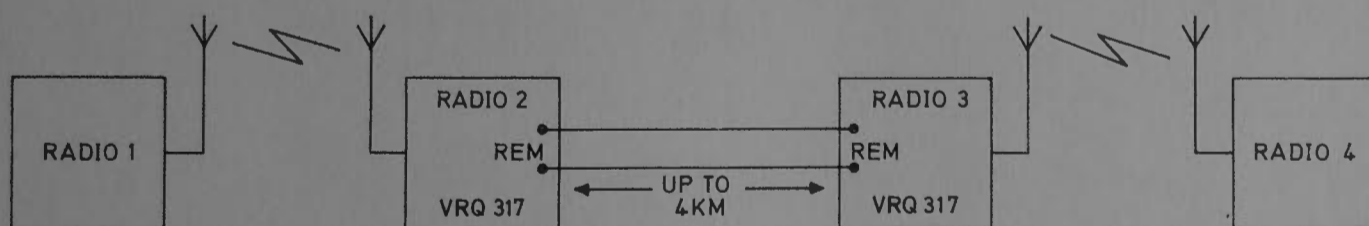
Remote Operation

17. The Remote Audio Unit enables the facilities associated with the handset during local working (viz: the input and output of speech messages, and transmit-receive control) to be extended to an operator at a point distant from the radio. The unit is fitted with a 'call' button, operation of which causes the local operator to receive a distinctive warning tone, to advise him that intercommunication is requested.

Remote Control

18.   Provision is made for two states for remote control, one (REM) as a radio
       under control and one (RCU) as a controller.

19.   A VRQ 317 set to the REM state can be remotely controlled and programmed
       by another VRQ 317 radio or a suitable remote control unit.   The
       transmitter and the receiver remain 'on' but the local keyboard is
       rendered inactive.   Control of the radio is now exercised by the remote
       keyboard and channel selector switch and the remote PTT switch, the
       necessary signals being input from the remote controller via the line
       terminals.   All messages passed by the radio are similarly routed to and
       from the remote equipment.   Local break-in is available.

20.   When a VRQ 317 is set to the RCU state, the role of the radio is changed
       from that of a transmitter-receiver to that of a remote control unit.   The
       transmitter and receiver are switched 'off' and the audio input and output
       paths, together with the control signals generated at the keyboard, the
       channel selector switch and the PTT switch, are routed to the two-wire
       line terminals on the front panel.

Auto-Rebroadcast

21.   The Auto-Rebroadcast mode enables messages received by one radio to be
       automatically relayed to other radios.   The manner in which this relay is
       achieved is best appreciated by considering the operation of the simple
       relay network shown in Figure 1.1.

Simple Relay Network   Fig. 1.1

22.   The essential features of the network are as follows:

       (1)   Radios 1 and 2 are operating at the same channel frequency.

       (2)   Radios 3 and 4 are operating at the same channel frequency (not that
              of Radios 1 and 2).

       (3)   The two-wire line terminals of Radio 2 are suitably linked to those
              of Radio 3.

       (4)   Radios 2 and 3 are both set to the Auto-Rebroadcast mode of
              operation.

23.   With the arrangement as described, any message broadcast by Radio 1 is received by Radio 2 and passed via the wire link to Radio 3, accompanied by a 'transmit' command; the command causes Radio 3 to retransmit the message, thus enabling its reception by Radio 4. Similarly, messages sent by Radio 4 are relayed to Radio 1 via Radios 3 and 2. Both clear and secure speech may be rebroadcast in this manner.

24.   While the preceding description assumes that all four radios are selected to fixed frequency operation (secure or clear), it should be noted that Auto-rebroadcast is also possible with all radios selected to frequency hopping (wide or narrow band), or even with one radio link (e.g. Radios 1 and 2) selected to frequency hopping and the other to fixed frequency (see fig 5.13). Of course, the radios in each frequency hopping radio link must be identically programmed and must be selected to the same operating frequency. For a full description of Remote Control and Rebroadcast facilities see the VRQ 317 User Handbook Ref. TH 5335.

Intercom

25.   The Intercom mode allows operators of a pair of VRQ 317 radios which are joined by a field telephone cable to converse. Provision is made for the sending of a 'Call Tone' to advise the remote party that intercommunication is requested. While in this mode, the transmitter function of both radios is inhibited although receiver monitoring is permitted.

Miscellaneous Facilities

26.   In addition to those associated with the modes of operation described above, the following facilities are provided.

Data Retention

27.   Any function or information entered via the keyboard is 'memorised' by the radio's control circuits and retained until that particular function or category of information is reselected, at which time the memorised data is updated to include the new selection. Thus when next the radio is switched 'on', it automatically adopts the condition specified by the 'last-remembered' data, all preset channel frequencies and codes being as specified at the end of the last period of use. Provision is made for quickly erasing all stored data in an emergency.

Test

28.   The keyboard includes a key which provides for a confidence check on the radio's operation and also enables the current mode and frequency information to be reviewed.

29   During the Receive condition, the receiver output is normally silenced automatically until an incoming signal is detected. A 'noise-on' facility is provided which enables the operator to remove this silencing, so that the receiver noise can be heard in the headset. This is brought about by pressing the Test Key twice within 1 second.

Low Battery Warning

30. If the voltage at the battery terminals falls to approximately 18 V, short bursts of receiver noise are automatically output to the operator's earpiece to advise him of the fact (except when actively receiving or transmitting or when switched to Noise On).

Encryption

31. The VRQ 317 radio has an integral encryption facility which enables secure speech operation. A selective communication facility is available when integral encryption has been selected. If desired, external encryption or data equipment may be connected to the DATA socket.

STATION CONFIGURATION

32. The Jaguar U Multirole Radio Station is made up of the following items:

Jaguar U Radio VRQ 317.

24V DC vehicle battery or mains power supply unit.

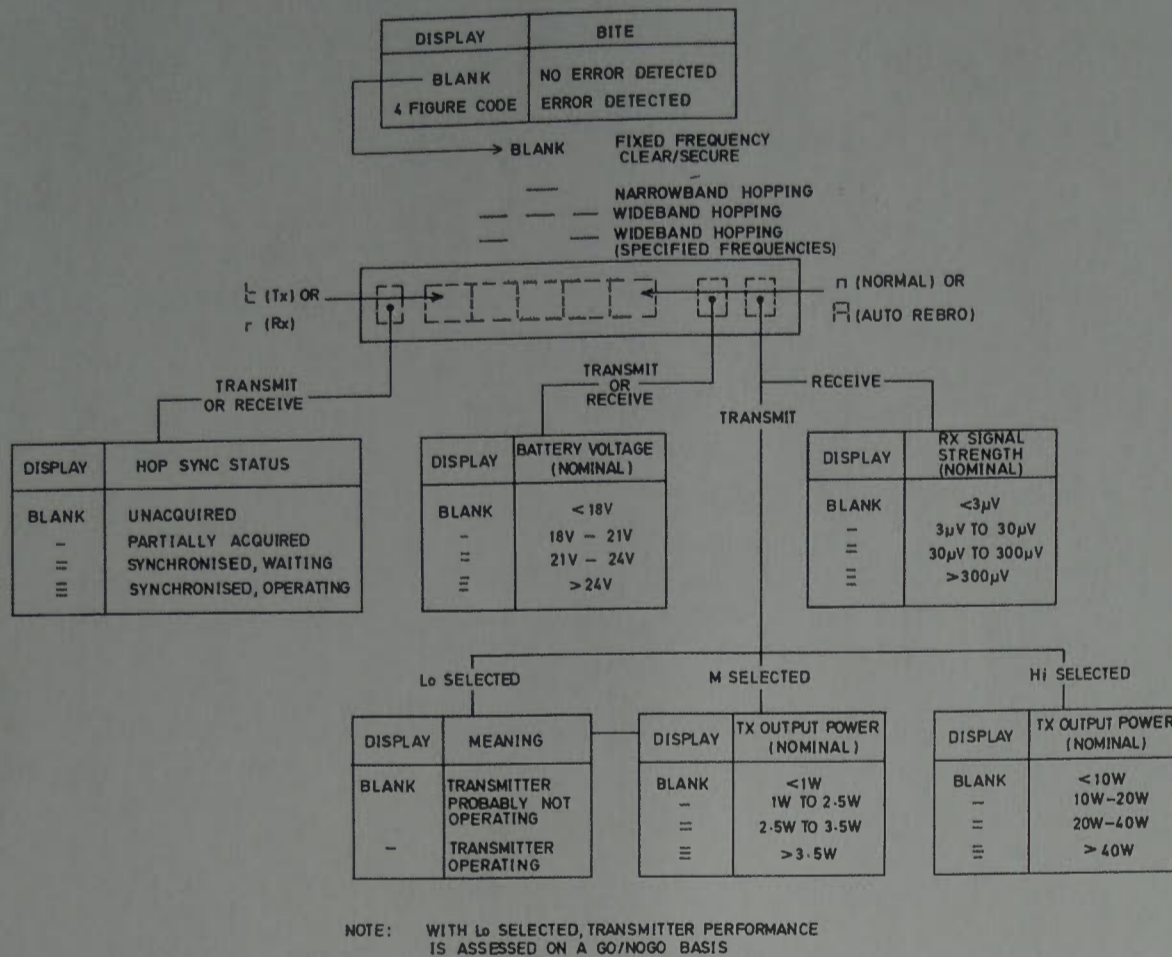Omnidirectional broadband Antenna, 50 ohm

Handset.

Radio mounting tray (for vehicle use)

The radio, power supply, antenna and handset are assembled as described in para. 4.

DISPLAY (Figure 1.2)

33. The display uses eight, 7-segment, LED elements to depict figures, mode letters and status indicator. It takes the form:

```
| X   X   X   X   X   X | X | X |
|         (a)           |(b)|(c)|
```

DISPLAY	BITE
BLANK	NO ERROR DETECTED
4 FIGURE CODE	ERROR DETECTED

BLANK — FIXED FREQUENCY CLEAR/SECURE
— NARROWBAND HOPPING
— — — WIDEBAND HOPPING
— — — WIDEBAND HOPPING (SPECIFIED FREQUENCIES)

t (Tx) OR / r (Rx) .... n (NORMAL) OR / Ɑ (AUTO REBRO)

TRANSMIT OR RECEIVE — TRANSMIT OR RECEIVE — RECEIVE — TRANSMIT

DISPLAY	HOP SYNC STATUS
BLANK	UNACQUIRED
–	PARTIALLY ACQUIRED
=	SYNCHRONISED, WAITING
≡	SYNCHRONISED, OPERATING

DISPLAY	BATTERY VOLTAGE (NOMINAL)
BLANK	<18V
–	18V – 21V
=	21V – 24V
≡	>24V

DISPLAY	RX SIGNAL STRENGTH (NOMINAL)
BLANK	<3μV
–	3μV TO 30μV
=	30μV TO 300μV
≡	>300μV

Lo SELECTED

DISPLAY	MEANING
BLANK	TRANSMITTER PROBABLY NOT OPERATING
–	TRANSMITTER OPERATING

M SELECTED

DISPLAY	TX OUTPUT POWER (NOMINAL)
BLANK	<1W
–	1W TO 2.5W
=	2.5W TO 3.5W
≡	>3.5W

Hi SELECTED

DISPLAY	TX OUTPUT POWER (NOMINAL)
BLANK	<10W
–	10W–20W
=	20W–40W
≡	>40W

NOTE: WITH Lo SELECTED, TRANSMITTER PERFORMANCE IS ASSESSED ON A GO/NOGO BASIS

Test Key/BITE Display   Fig.1.3

34. The display brightness is controlled automatically, by a light sensor fitted into a gap in the display, to give maximum brightness in sunlight and minimum in the dark.

CONTROLS

35. Control Switch

(1) This switch enables the radio to be controlled from either the local keyboard and switches or from a remote unit (using the remote lines). The switch also allows a radio to be used as a controller for a remote Jaguar-U family radio.

The 3 positions of the switch are:

LOC   –   Local (front panel) keyboard active.
             Normal local operation.

REM   –   Remote. For use when the radio is being remotely controlled. Remote keyboard (or remote control unit) active. Local keyboard (front panel) disabled except for TEST key which when pressed will display the last information received from the controller.

RCU   –   Remote Control Unit. To control another radio (set to REM) remotely. Keyboard functioning as a Remote Control Unit, acts as if the Keyboard switch is set to 'LOC'.

(2) On/Off Volume Control Switch

The 11 positions of the switch are:

OFF   - Supply and radio off.

W (Whisper) - Supply on, minimum level audio output and high
                 microphone sensivitity.

VOL (3-4)   - Volume of audio output increases as control is
                 rotated from positions 3 to 4; medium mic.
                 sensitivity.

VOL (5-6)   - Volume of audio output increases as control is
                 rotated from positions 5 to 6; normal mic.
                 sensitivity.

A-R   - Automatic Rebroadcast selected; audio output level as
                 for position 4; normal mic. sensitivity as in
                 positions 5 and 6.

F   - Programme frequency to channels 00 to 29.

H   - Programme hopping codes to channels 00 to 15, and to
                 common code (C on Mode Switch). This code entry
                 applies to hopping and integral secure speech.

B   - Programme up to 6 barred bands to each of channels 00
                 to 15.

EXT S   - Programme secure channels 00 to 09 to external Jaguar
                 compatible COMSEC unit, not required for VRQ 317.

NOTE: A mechanical interlock is fitted at position 'F' to
                 avoid unintentional programme operations (positions
                 'F' to 'S'). The lock is released by a button beside
                 the switch. This switch does not affect the audio
                 levels at headgear connected to a harness system.

(3) Channel Switch

The Channel Switch is a continuously rotating 12-position switch
which is used to select channels in the range 00 to 29. At switch-
on the radio will assume the last used channel. The channel may be
changed by turning the switch clockwise to increase the channel
number, or anti-clockwise to reduce it. There are electrical end-
stops at 00 and 29 so that trying to set the channel below 00 or
above 29 will have no effect. Hopping and secure modes are
available only on channels 00 to 15.

(4) Mode Switch

T/R   -   Normal transceiver operation, guard receiver
                  deselected.

T/R+G   -   Normal transceiver operation, guard receiver
                  selected. The separate receiver monitors 243.000 MHz
                  for AM signals. If any are detected the received
                  audio is mixed in with the main receiver audio
                  output.

G   -   Radio switched to 243.000 MHz. AM, High power for
                  operation on the international distress frequency.
                  This switch position overrides the channel switch and
                  disables mode and power changing, although Ic may be
                  selected.

LIGHTS OFF   -   The above three modes are available as selected, but
                  neither the display nor the rx, tx, or supply LEDs
                  will be illuminated.

ALL   -   Programme all channels. Frequencies programmed in
                  this position are stored automatically in all channel
                  memories; codes and barred bands are stored in
                  channel memories 00 to 15.

C   -   Programme Common code. This is part of hopping and
                  secure codes which may change only at rare intervals
                  and is common to channels 00 to 15.

Z   -   Zeroise. For emergency use to remove codes, barred-
                  bands and frequencies from memory.

NOTE: -   Mechanical interlocks are fitted at positions 'ALL'
                  and 'Z' to avoid unintentional programme (positions
                  'ALL' and 'C') or Zeroise operations (position 'Z').
                  The lock is released by a button beside the switch.

(5) Keyboard Switches

The 20 press button keys are:

0 to 9   -   The 10 keys are used for entry of frequencies, codes
                  and Selective Communication addresses. The
                  frequency, code or address selected is indicated
                  within positions 1 to 6 of the display.

FC   -   Fixed frequency Clear operation. Indicated in
                  position 7 as C.

FS   -   Fixed frequency Secure operation. Indicated in
                  position 7 as S. (See Note after hH).

h H   –   Frequency Hopping operation. Press key once for
hopping slave station (h). Press key twice for
hopping master station (H). Indicated in position 7
as h (slave) or H (master).

               NOTE: If in Fixed frequency Secure or Frequency
Hopping modes when using an external Comsec
then E will overwrite the symbol in position
7.

AM   –   Fixed frequency AM (clear) operation. Indicated in
position 7 of display as A.

Hi   –   High transmit power of 50 W. Indicated H in position
8.

M   –   Medium transmit power of 3-4 W. Indicated ⊓ in
position 8.

Lo   –   Low transmit power of about 10 mW. Indicated L in
position 8.

Ic   –   Zero transmit power. Intercom and Call mode of
operation. With key held down, Call selected; with
key released Intercom mode selected. Indicated I in
position 8.

↑K   Stepping/Selective Communication Key

The Stepping key ↑K is pressed once, to increment
information blocks entered into a channel memory
during programming. As code blocks are entered, 1,
2, 3, 4 is displayed in sequence at the right-hand
character position when the key is operated, the
current 5-digit code is cleared from the display in
readiness for the next.

When entering Wideband Fill Frequencies (4/16/256
specified Hop Frequencies) the two right-hand
character positions indicate the count, 01 to 16 (or
64); the key is operated twice to enter the mode and
once to increment/clear for next entry.

It is also used to scroll through the 'barred band'
edge frequencies (lower L , upper ᴜ), identified in
the right hand character positions as 1L, 1ᴜ, 2L etc
(with the vol switch set to B).

When the key is pressed twice within one second,
selective communication can be achieved provided the
radio is in a secure mode. Three letters, either SEL
or bAn (for selected or banned stations
respectively), or Add for own address followed by a
two digit station address code are displayed.

The codes may be changed via the keyboard. Return from selective communication to other modes is achieved by pressing ↑K once again. For further information see Chapter 5 of the VRQ 317 User Handbook.

Test:

Test key T* is used to check the state of the radio and to correct an erroneous frequency or code entry. The display shows frequency and mode for 10 seconds following the key being pressed, after which the displayed frequency is replaced by the channel number. When pressed twice in 1 second this key will set the noise on facility.
When used for checking purposes, while the key is operated:

- Noise-On is enabled.

- If in Receive, the two right-hand display positions contain horizontal bar codes giving an indication of the battery voltage and the received signal strength as shown in Figure 1.3.

- If in Transmit, the two right-hand display positions contain horizontal bar codes giving an indication of the battery voltage and the transmitter output power as shown in Figure 1.3.

- If hopping operation is selected, the left-hand display position contains a horizontal bar code indicating the current hop synchronisation status, as shown in Figure 1.3.

  If 'control' hopping authority (H) is selected, a transmission from another radio on the net which is also operating as a hop control station causes 'Error Tone' to be generated and the bar code to be replaced by the character H.

- If BITE has detected an error, the centre portion of the display contains a 4-figure code indicating the nature of the error.

- If BITE has detected no error, the centre portion of the display contains a horizontal bar display indicating narrowband or wideband hopping and a character indicating the selected mode of operation (normal or auto-rebroadcast), as shown in Fig. 1.3.

To correct an erroneous frequency or code entry, the Test key is operated momentarily and the correct frequency or code then entered.

WARNING TONES AND SIGNALS

36.   The operator is warned automatically of the existence of certain operational conditions by means of distinctive tones and signals. A description of each of the warning tones and signals is given below; phonetic approximations of how they are heard by the operator are given in Figure 1.4.

(1)   Error Tone

A continuous tone alternating between 2.0 kHz and 1.6 kHz (512 ms high frequency, 512 ms low frequency). It is activated by:

- An incorrect key entry.

- The faulty transmission of data from the Keyboard to the Central Control Unit, incorrect stored data in the Central Control Unit, or faulty reply to the Keyboard from the Central Control.

- Operation of a hopping net with two radios switched to 'control'.

(2)   Call Tone

A continuous 2 kHz tone. It is generated:

- While the Intercom (Ic) key is pressed.

- In the remote mode, while the dc sensor in the remote lines is activated by a call signal, or if the remote lines are short-circuit or reverse-connected.

(3)   Hailing Tone

A series of 500 Hz tone bursts (256 ms on, 256 ms off). It is initiated during frequency hopping operation when hailed on the channel reference frequency for at least 3 seconds, and continues for 5 seconds.

(4)   Unready Tone

A series of 2 kHz tone bursts (64 ms on, 192 ms off). It is generated when the transmit path is not clear to send (normally, while the radio is synchronising; lasts 5 seconds for initial synchronisation if 'ground' sync is selected).

| (5) | Low Battery Warning | A series of bursts of received noise (70 ms on, 570 ms off). It is initiated when the supply voltage at the battery terminals falls to approximately 18 V and the radio is not actively receiving or transmitting. |
| (6) | Secure Tone | A series of 2 kHz tone bursts (20 mS on every 2 secs). It is generated when actively transmitting or receiving in a secure mode. |

CONNECTORS

37.   The paragraphs which follow briefly describe the purpose of each of the connectors provided on the VRQ 317.

RF Antenna Socket

38.   The RF socket (SK4) provides a bidirectional interface for RF signal input/output over the frequency range 225 to 400 MHz at 50 ohms impedance.

AUDIO Sockets

39.   The 7-pin AUDIO sockets (SK1, SK2) provide connections which enable audio signals to be exchanged between the radio and a local headset or handset. It also provides the data input/output and control signal paths necessary to allow channels to be programmed from an external device.

DATA Socket

40.   The 7-pin DATA socket (SK3) provides connections which enable audio signals to be exchanged between the radio and a COMSEC unit. The signals may be in either an analogue form (clear speech) or a digital form (secure speech). It also provides the data input/output and control signal paths necessary to allow channels to be programmed from an external device.

HARNESS Plug

41.   The 7-pin HARNESS plug (PL1) provides connections which enable audio signals to be exchanged between the radio and a harness system. It also provides control signals for pressel and rebroadcast operation.

REM Terminals

42.   The REM (remote line) terminals (REM1, REM2) may be used for three purposes:

(1)   To connect a suitable remote control unit (or another VRQ 317 radio, in RCU mode) to the radio via up to 4 km of field telephone cable. This will provide remote control of all radio functions except on/off switching.

(2)   To connect the Remote Audio Unit and handset. This will provide pressel and call control only.

(3)   For rebroadcast to another VRQ 317 radio.

SUPPLY I/P Plug

43.   The 2-pin SUPPLY I/P Plug (PL2) provides for connection of a 24 V vehicle battery or mains operated power supply.

ASSOCIATED PUBLICATIONS

44.   The following publication relating to the VRQ 317 is available:

User Handbook Jaguar-U Multirole Radio VRQ 317 Ref TH 5335.

Summary of Warning Tones and Signals

Fig.1·4