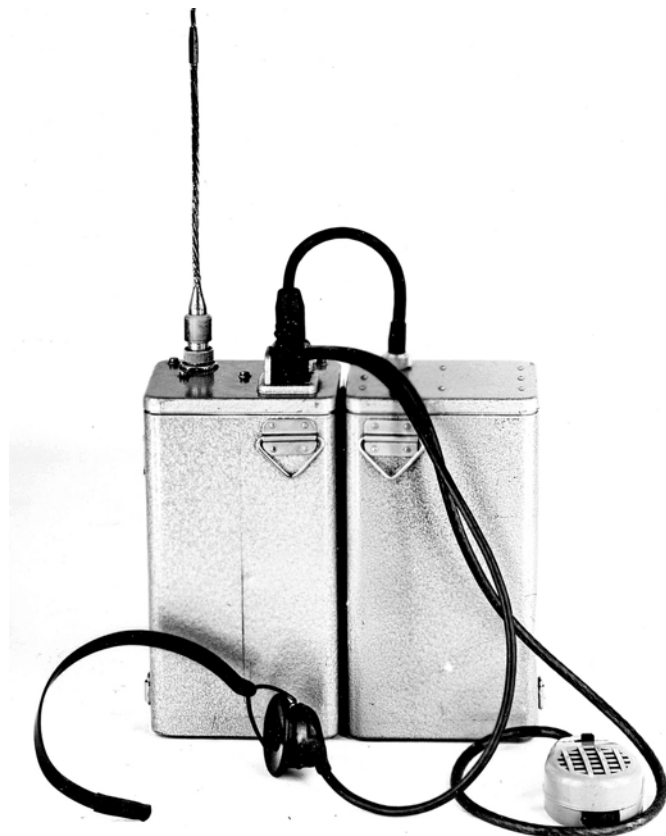


BCC type LL46U

Country of origin: England

Larkspur era #1



DATA SUMMARY

Organisation: British Army.**Developer/maker:** British Communications Corporation Ltd.**Year of first production:** 1955.**Purpose:** VHF AM voice ground to air communication.**Frequency coverage:** Single channel in 100-120MHz band.**Receiver:** Crystal controlled dual conversion superhet, 1st IF, 2nd IF fixed 5MHz. AM voice.**Sensitivity:** 3uV for 14dB s/n.**Transmitter:** Crystal oscillator/multiplier, driver/multiplier, RF power amplifier/doubler, push/pull modulator anode-screen grid modulation. Differential carbon microphone.**RF output:** 120mW.**Valves:** DL73 2x, DL70 2x, DL92 2x, DF91 4x, DAF91, DL94.**Semiconductors:** CV442 2x (used as crash limiters).**Aerial:** Vertical quarter wave flexible rod.**Power Supply:** Dry batteries; LT 1½V 2x, HT 45V 2x.

Continuous working time at 1:10 transmit 10 hours.

Current consumption: Receive LT 0.75A HT 24mA

Transmit LT 0.62A HT 26mA

Size (cm): Height 27.3, length 10.6, width 27.6 (both units).**Weight:** Transmitter-receiver unit 2.1kg. Battery unit 3kg. Total weight of equipment 5.7kg.**Accessories:** Microphone/headphone assembly, aerial, shoulder straps, protective canvas bag, spare batteries.

Acknowledgements:

- Photographs and drawings courtesy Royal Signals Museum, Blandford Forum, Dorset, UK.
- Photocopy of type 46U handbook, 100-120MHz version, courtesy REME Museum (taken in 1989 at Arborfield).
- Scans of EMERs Tele. F79x, courtesy Keith Watt from his website: <https://www.royalsignals.org.uk/>. These were downloaded free from the Manual Section. Certain rules apply for downloading.
- WftW Compendium 2, L. Meulstee, ISBN 978-90-819271-0-9.

Remarks

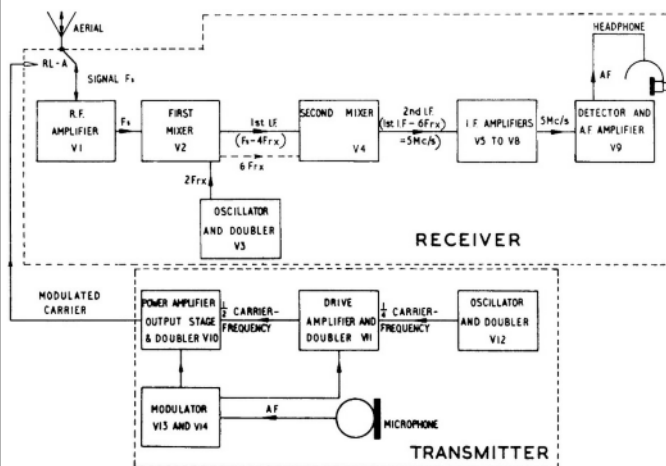
Type LL46U was a crystal-controlled single channel VHF AM man-pack transmitter-receiver, used by the British Army as an interim set for ground to air communication. It was eventually replaced by Station Radio A43R Mk.2 after close support aircraft were re-equipped with UHF sets. Only a limited number were produced and deployment was restricted to theatres where the terrain might preclude use of the vehicle born Burndept BE 201.

The commercial type 46U, developed by BCC in 1955, was originally made in 3 versions: L46U (75-100MHz); LH46U (118-132MHz) and HH46U (156-184MHz). The LL46U version, produced for the British Army, had a frequency range of 100-120MHz. It was similar to the commercial versions, apart from different power and microphone/headphone connectors. All BCC type 46U versions could be powered from a dry battery power unit, or from a vibratory power unit with a 2V accumulator. The LL46U as used in the Army had just the battery power unit fitted with Plessey type plugs and sockets. (The connectors of the commercial versions shown at left on this page; for the Army version, see page 3).

The transmitter-receiver and a power supply unit, each housed in a watertight case of similar dimensions, were normally joined and fitted with a pair of shoulder straps.

The on/off switch was on the front face of the microphone, the spring-loaded push to talk switch was located on the upper edge.

Andy Jackson, G8JAC noted that the BCC 'Series 46' was a single channel VHF pack set, introduced in the late 1953, aimed at aviation authorities, emergency services, civil engineers etc. This evolved into a 'Type 88' set intended for fitting to motorcycles. The '46 series' apparently continued in production until at least 1957.



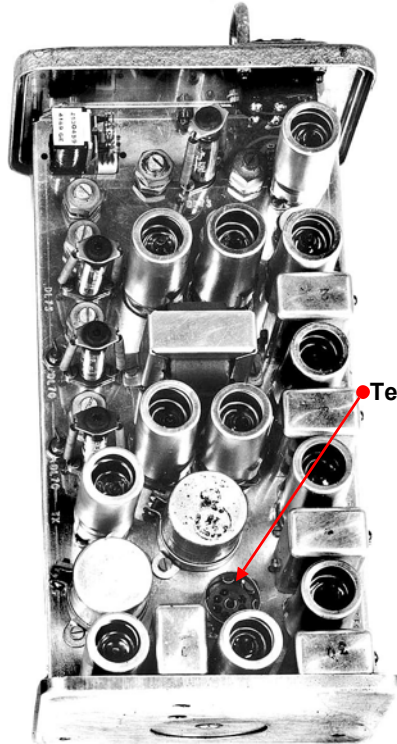
Block circuit diagram of the BCC 46U series.

References:

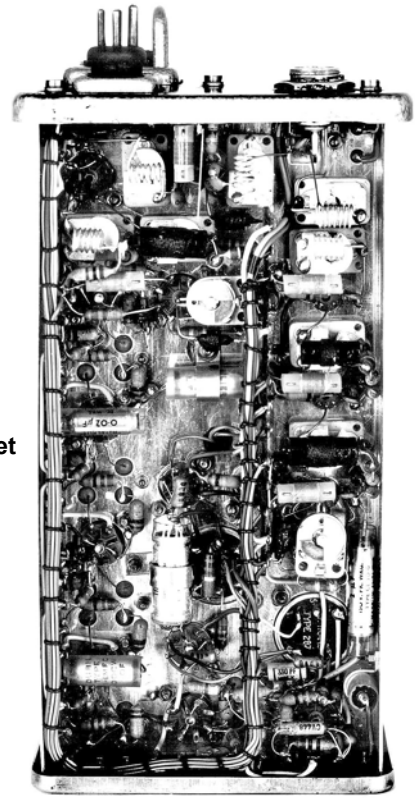
- Correspondence with Andy Jackson, G8JAC.
- BCC Portable VHF transmitter type HH46U, maker's handbook, Dec. 1955.
- Idem, but type LL46U VHF 100-120MHz version. n.d.
- User handbook for Radio Installation A.S.S.U. Tentacle in Truck ¼-Ton GD 4x4 Rover Mk. 3 and Trailer ½-Ton GS Cargo 2-Wheeled Mk. 2., WO Code No. 12776, August 1963.
- EMERs Telecommunications F 790, Transmitter-receiver LL46U, Technical handbook Data summary, 30 May 1962.
- EMERs Telecommunications F 792, Transmitter-receiver LL46U, Technical handbook, Tech. Description, 4 Jan 1963.
- EMERs Telecommunications F 792, Transmitter-receiver LL46U, Technical handbook, Unit repairs, 1 June 1962.



Battery power supply unit comprising two LT and two HT batteries.

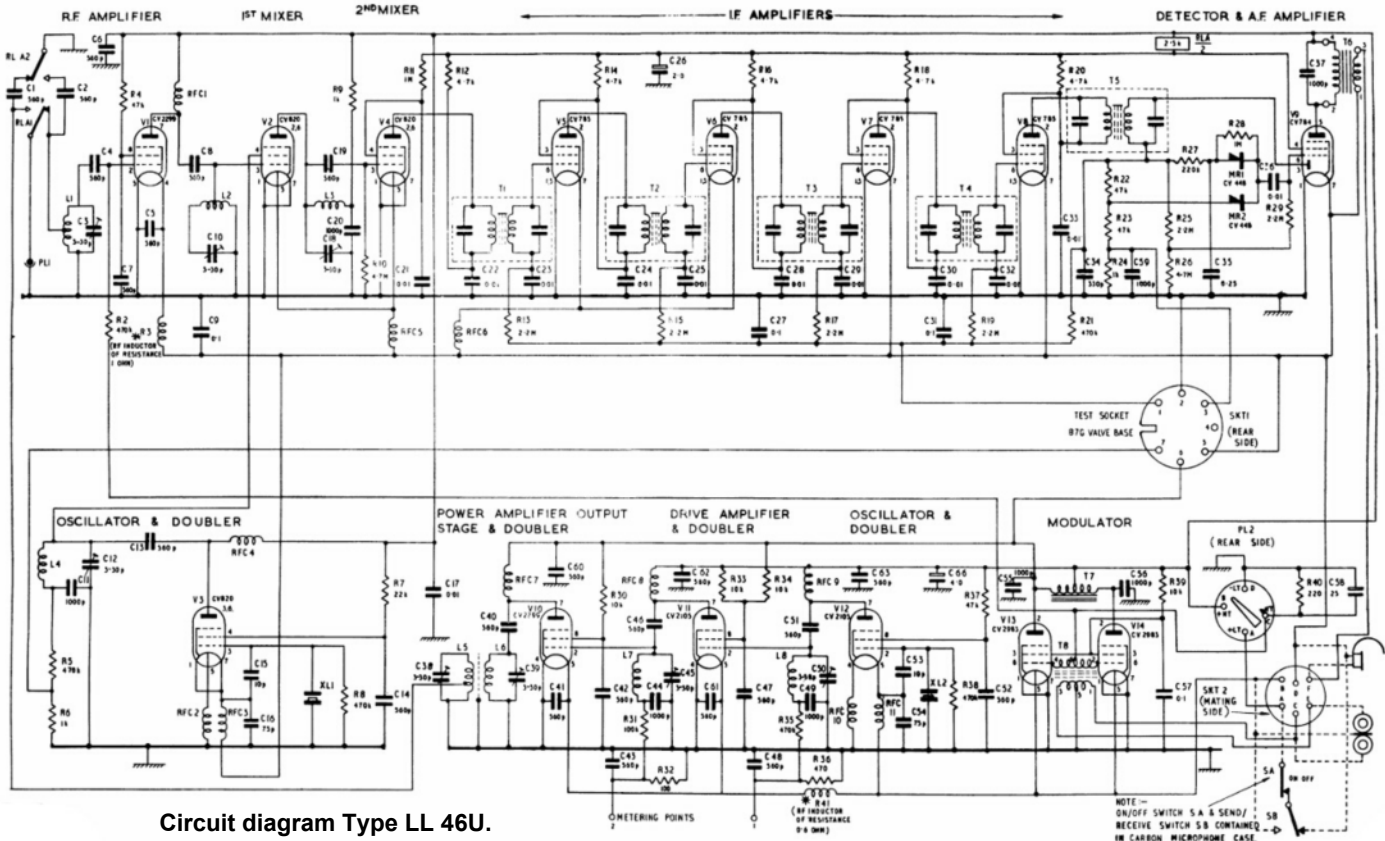


Top view of transmitter-receiver chassis .



Bottom view of transmitter-receiver chassis.

The transmitter crystal frequency was 1/8 of the carrier frequency; the receiver crystal frequency was the signal frequency minus 5MHz, divided by 10. A test socket, a BG7G valve base, fitted on the chassis was provided for alignment.

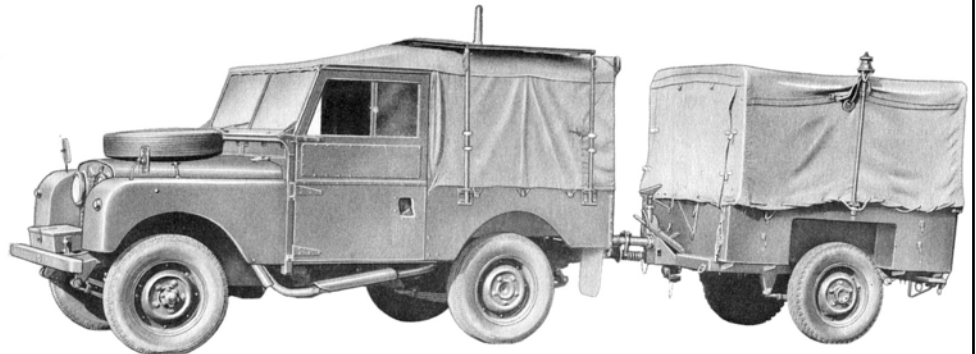


Circuit diagram Type LL 46U.

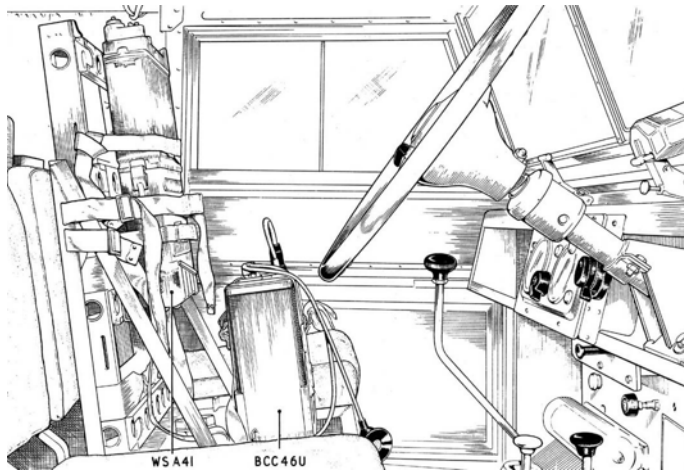
BCC LL46U in Air Support Signal Units (A.S.S.U) Tentacle.

In 1943, the Air Ministry adapted a policy of using standard fighter aircraft for tactical support and artillery reconnaissance. This made it necessary to change the communication arrangements with the Army, since RAF fighters were equipped only with VHF sets. Communication was to be provided by a ground station capable of operating on VHF and HF, with retransmission facilities for direct communication between aircraft and ground forces.

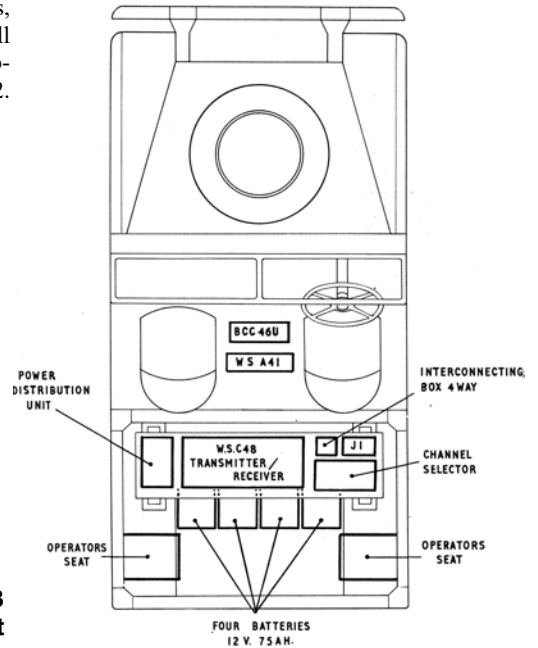
Initially named 'Contact Car', later better known as 'Tentacle', it was used by forward formations in the Air Support Signal Units (ASSU). Over the years, ASSU stations with different equipment existed, fitted in various vehicles, all providing communication between aircraft and signal units. Illustrated descriptions of ASSU stations can be found on pages 57 to 64, in WftW Compendium 2.



General view of ASSU Rover Mk.3 and trailer.



Position of Station Radio A41 and BCC LL46U in an ASSU Mk.3 Rover, both secured by webbing straps. The centre passenger seat was removed and a two - set stowage frame installed in its place.



Plan view of ASSU Rover layout.



BCC LL46U

The photograph at left shows the use of a man pack BCC LL46U (enlarged in the caption above) and a Burndept BE201 fitted in a Rover. The photo was probably taken at an exercise or range trial in Aden.

