

THE B2 TRANSMITTER RECEIVER

By C. H. L. EDWARDS (G8TL)

THE majority of members who obtained a B2 Transmitter-Receiver from the recent Ministry of Supply allocation found that no power pack was included. In this article it is proposed to give brief details of the power supply arrangements together with details of the coils.

Normally the coils are carried in a spare container associated with the power pack container unit but both containers were generally missing, having been withdrawn in advance by the Ministry.

Coils

Four standard coils (marked 1A, 2A, 3A and 4A) are used with the transmitter. As these are reversible it is only necessary to pull out a coil and reverse it in its socket to obtain different frequencies. The coils are marked 1B, 2B, 3B and 4B on the reverse side.

All coils are spaced approximately one thickness of wire and wound on $1\frac{1}{4}$ in. formers. The frequencies covered are as follows:—

| | | | | | |
|-------|-----------|-------|-------|-------|-------|
| 1A .. | 3-4 | Mc/s. | 3A .. | 6.5-9 | Mc/s. |
| 1B .. | 3.75-5.25 | " | 3B .. | 7-10 | " |
| 2A .. | 4.5-6.25 | " | 4A .. | 9-13 | " |
| 2B .. | 5.5-7.5 | " | 4B .. | 12-16 | " |

Coil winding data is as follows:—

- 1A.—31 turns, 22 S.W.G., $\frac{1}{8}$ in. space, then 8 turns continuous.
- 2A.—22 $\frac{1}{2}$ turns, 20 S.W.G., $\frac{1}{8}$ in. space, then 6 $\frac{1}{2}$ turns continuous.
- 3A.—15 $\frac{1}{2}$ turns, 18 S.W.G., $\frac{1}{8}$ in. space, then 4 $\frac{1}{2}$ turns continuous.
- 4A.—9 $\frac{1}{2}$ turns, 17 S.W.G., $\frac{1}{8}$ in. space, then 3 $\frac{1}{2}$ turns continuous.

Details of the coil connections are given in Fig. 1.

Power Pack

The connections from both the transmitter and receiver are brought out through two 6-pin plugs, which fit into two 6-pin sockets in the power pack. If a power supply is made-up and the ends are terminated in two sets of sockets, as shown in Fig. 2, no alterations to the plugs will be required.

Receiver Calibration

As all receivers were separately calibrated the dial readings may not be "spot on" in all cases. The readings given below will, however, serve as a useful guide to locating the amateur bands.

| Receiver Dial. | Band 1. | Band 2. | Band 3. |
|----------------|---------|---------|---------|
| 0 | 3.03 | 5.10 | 8.52 |
| 20 | 3.16 | 5.30 | 8.90 |
| 40 | 3.31 | 5.56 | 9.32 |
| 60 | 3.48 | 5.85 | 9.82 |
| 80 | 3.70 | 6.20 | 10.44 |
| 100 | 3.95 | 6.60 | 11.18 |
| 120 | 4.25 | 7.13 | 12.15 |
| 140 | 4.65 | 7.80 | 13.38 |
| 160 | 5.20 | 8.63 | 15.00 |
| 180 | 5.42 | 9.02 | 15.75 |

Receiver Colour Code

Details of the code are:—

| | | |
|-----------|----|---------------------|
| White .. | .. | L.T. + |
| Black .. | .. | L.T. — and chassis. |
| Red .. | .. | H.T. + (230 volts). |
| Yellow .. | .. | G.B. — |

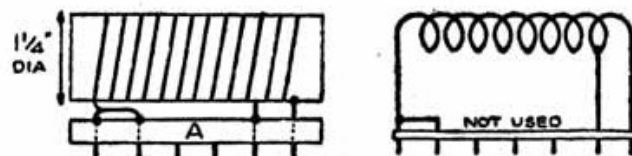


Fig. 1.
Coil connections for the B2.

Metering Positions

The following tabulation will be useful in checking the continuity of circuits.

| Pos. | T.S.R. SWITCH IN "T" OR "S" POSITION. | | | T.S.R. SWITCH IN "R" POSITION. | | |
|------|---------------------------------------|----------------------------|--------------------------|--------------------------------|-----------------------|---------------------|
| | Circuit Measured. | Full Scale Reading. | Normal Reading. | Circuit Measured. | Full Scale Reading. | Normal Reading. |
| 1 | Oscillator Voltage | 600 v. | 230 v. | Receiver Voltage | 600 v. | 230 v. |
| 2 | P.A. Voltage | 600 ($\times 2$) | 230 ($\times 2$) | P.A. Voltage | 600 ($\times 2$) | 260 ($\times 2$) |
| 3 | P.A. Grid | 6 mA. | 1-3 mA. | — | — | — |
| 4 | Oscillator Grid | 1.5 mA. | .25-.75 mA. | Receiver Current | 15 ($\times 2$) mA. | 12.5 ($\times 2$) |
| 5 | Off | — | — | — | — | — |
| 6 | P.A. Total Current | 120 mA. 600 v. Scale | 65-70 mA. 325-350 mA. | — | — | — |

An Explanation

As so many letters have been received regarding the missing power packs and coil containers it should be explained that due to demands from the Services and experimental stations only 88 (and not 300 as advertised) complete sets were made available to members. The Ministry subsequently located another stock of receivers only and offered to include them in

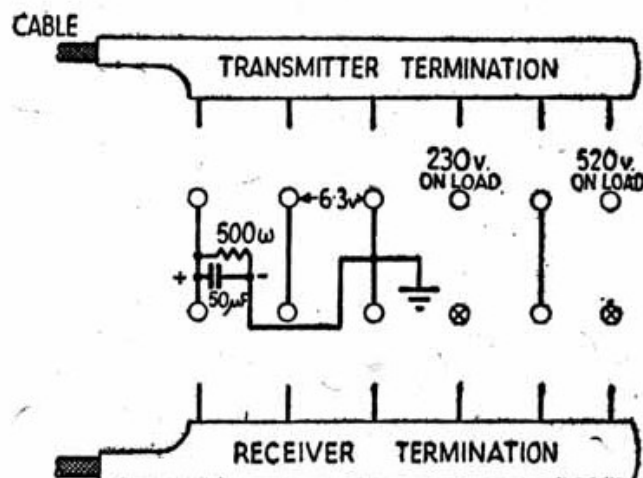


Fig. 2.
Power supply terminal connections for the B2 equipment.

the scheme at £2 each less power pack and coils. As the original agreed price for the transmitter alone was £2, the offer was accepted, consequently those who ordered B2's at £3 complete and obtained the receiver only will receive a refund of £1. The new offer is still an excellent bargain.

Coil Supplies

Upon making enquiries a quantity of 1,500 B2 coils were located. These have been purchased privately by G8TL and G2BRH, the deal involving a personal expenditure of £18 15s. on the basis of 3d. per coil. Bearing in mind that a number of members may already have made-up their own coils it is assumed that only 100 sets (viz. 400 coils) will be sold. To recover the initial outlay and to offset collection, packing and dispatching charges, it has been decided to make a charge of 5s. per set of coils, but if more

than 100 sets are sold this figure will be proportionally reduced.

Members who require coils should place an order *at once* with their C.R. (who has already been notified of the above arrangements). The sponsors of the scheme have neither the time, staff nor packing facilities to deal with orders from individual members. Despatches will be made in bulk to C.R.'s, but the final selling price cannot be fixed until all orders have been received. For this reason members are urgently requested to place their order *at once*.

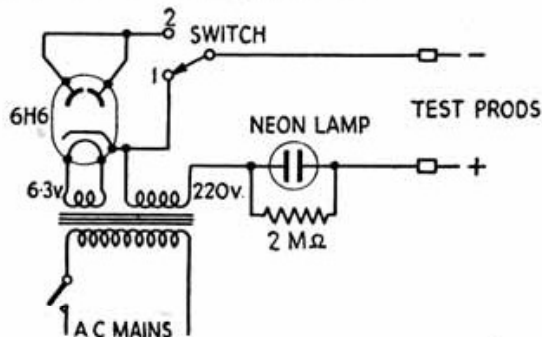
No intentional profit will be made by the sponsors, but if there is a small surplus at the finish it will be placed to the credit of the East London District Fund.

Remember this is a free service to members with a chance that the sponsors might not even recover their outlay.

A Handy Circuit Checker

By R. MENZEL (FRS108)

The circuit diagram of this useful little instrument is almost self explanatory, but the following notes will help to show its many uses. To test a condenser, the switch is set to position 2. If the neon lamp glows the condenser is leaky, if not, then it is O.K. When the switch is turned to position 1, the condenser capacitance can, with a little experience, be roughly estimated by observation of the degree of glow in the neon lamp. If in this position there is no glow, then the condenser is open circuit.



To test electrolytic condensers switch position 2 should be used and the polarity observed.

Since the current used is very small, the 6H6 valve will serve adequately as a rectifier and if used in conjunction with one of the dwarf type neon lamps, the whole instrument can be made compact and handy.

Many other components, such as chokes, resistances, etc., can also be tested.

S. F. and S. T. S.

During the war many amateurs served, under the direction of Brigadier F. W. Nicholls, G3BEK, with the Special Forces, maintaining secret radio links to Allied agents working within the enemy lines. Amateurs at home or abroad, who have not already done so, are invited to contact Stanley Ingram, G6ZY, 2 Shepherd Street, London, W.1, as a list of such S.F. members is now being compiled.

S.F. QSO Parties are being organised, and it is hoped soon to have a station at the S.F. Club, 8 Herbert Crescent, London, S.W.1. Membership is open to all who served with such types of unit as Stations 53, S.T.S. 54, Force 139, No. 1 S.F., etc.

Held Over

Due to pressure on our very limited space the second part of "Atlantic Journey," as well as an account of the two recent D/F. contests, have been held over from this issue.

More Publicity

The Jersey States Tourism Committee have, at the request of Mr. E. Banks, GC2CNC, agreed to



present special QSL cards to local amateurs. We illustrate one of the cards which shows Mount Orgeuil Castle, or Gorey Castle as it is better known to visitors.

Battery-Operated Receivers

The Editor will be pleased to consider for publication articles dealing with the construction of battery-operated T.R.F. and superheterodyne receivers. Intending contributors should communicate with Headquarters prior to commencing work on a manuscript.

EDITORIAL—(continued from page 41).

members may be few can find time to run both their own business affairs and those of the Society. So before you saddle someone with these responsibilities, think carefully and ascertain that he has the free time available to undertake the onerous duties the job demands.

As a matter of interest and for the information of intending nominees, the writer devoted more than 250 hours to R.S.G.B. official business during the first eight months of 1947. This time was spent at Council meetings, Committee meetings and O.R.M.'s and was exclusive of many additional hours given over to the M.O.S. Scheme.

Refrain therefore from rushing headlong into nominating your best supporter until you are certain that he can qualify for those extenuating requirements called for by becoming a Council member. Otherwise you may be doing him, yourself, and the Society an injustice by keeping out a more suitable candidate who has both the necessary qualifications and the time available.

C. H. L. E.