3.3. RECEIVER OUTFIT CDY/CAZ (B41)

DATE OF DESIGN. 1946

HANDBOOK. B.R. 1618

ESTABLISHMENT LIST. F.E. 935

FREQUENCY RANGE. 15 kc/s to 700 kc/s

POWER SUPPLIES. 115 V or 230 V, 50 c/s a.c.

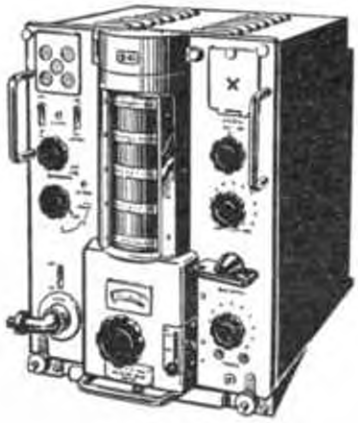

FIG. 1

GENERAL

1. A superheterodyne receiver consisting of three basic units:
   a. R.F. Unit.
   b. I.F. Unit.
   c. A.F. and Power Unit.

There are three models of B41. The type to which this section refers is B41(C). Differences are described later. All types can be fitted for Common Aerial Working. When this is done the outfit is known as outfit CAZ instead of CDY.

DESCRIPTION

2. The description of the B41 is the same as for the B40 with the exceptions listed below.

3. **R.F. Unit.**

AERIAL CIRCUIT. An additional tuned circuit is introduced into the input of the first r.f. There is no micro-switch. There are two aerial inputs.

R.F. STAGES.

a. There is only one r.f. amplifier, with its own tuned circuit: a.g.c. is not applied to this stage.

b. The low-impedance aerial lead is transformer-coupled, and the high impedance lead is capacitor-coupled, to the r.f. amplifier tuned circuit.

LOCAL OSCILLATOR. Operates at 800 kc/s above the signal frequency. There is no OSC. TRIM control.

4. **I.F. Unit.**

I.F. STAGES. The i.f. is 800 kc/s.

B.F.O. Has three outputs, at 800 kc/s, 801 kc/s or 799 kc/s.

In the CAL position of the system switch, extra H.T. is applied to the screen of the oscillator which under these circumstances has a resonant frequency of 100 kc/s. The output, rich in harmonics, is fed to the grid of the mixer. It is possible to calibrate on frequencies below 100 kc/s, and other than multiples of 100 kc/s, by beating harmonics of the crystal with harmonics of the local oscillator. The eighth harmonic of the 100 kc/s crystal is fed to the detector to beat with the i.f. signal.

5. **A.F. Output and Power Unit.** Three output channels:
   a. 2·5 W Remote loudspeaker line.
   b. 35 mW line, to control system.
   c. Local phone and internal loudspeaker.

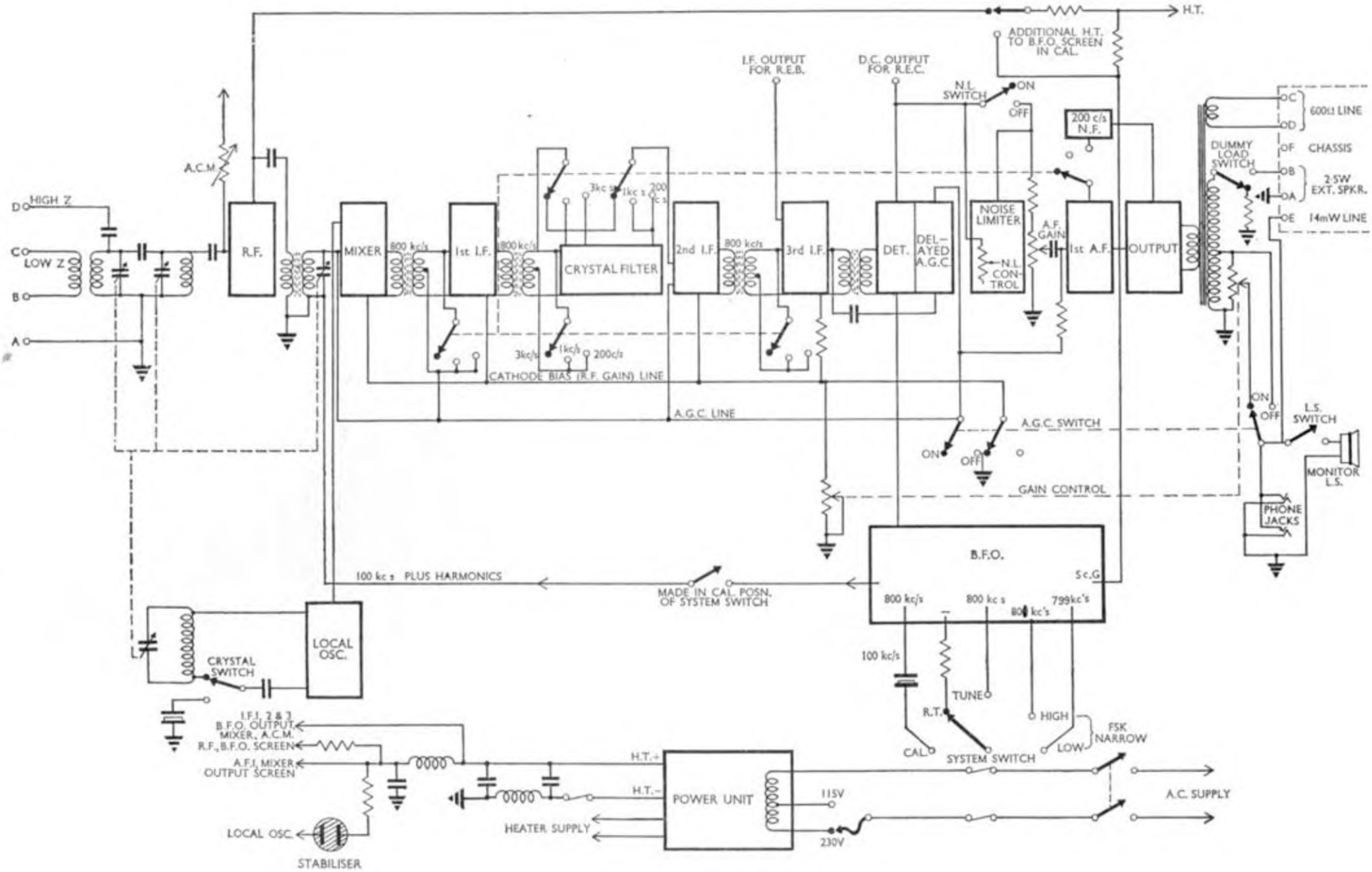

FIG. 2. RECEIVER B 41

6. **Controls.**

SYSTEM SWITCH. A five-position switch.

Low. B.F.O. oscillates at 799 kc/s. Used in this position for normal c.w. reception as an alternative to HIGH, to assist in clearing adjacent channel interference.

High. B.F.O. oscillates at 801 kc/s.

Tune. B.F.O. oscillates at 800 kc/s, i.e. in tune with the i.f.

R/T. B.F.O. does not oscillate.

Calibrate. B.F.O. is controlled by 100 kc/s crystal.

BANDWIDTH SWITCH. Three positions, marked '200 c/s,' ' 1 kc/s,' and '3 kc/s.'

AERIAL INPUT. There are four pins, marked A, B, C and D.

A – earth.

B and C – low impedance.

D – high impedance.

DIFFERENCES

7. The principal difference between the B41(C) and (B) is that the former is fitted throughout with valves which have been agreed for joint-service use, whereas the older type is not.

8. The principal differences between the B41(B) and (A) are as follows. The B41(A) has:

a. Different bandwidth switch – Wide (8 kc/s).
Narrow (3 ks/c).
Note Filter.

In the last, the bandwidth remains at 3 kc/s, but the note filter, with an audio bandwidth of approximately 200 c/s, is introduced. In Wide position, b.f.o. circuit is inoperative.

b. System switch with six positions. CAL as in B41(C). A.G.C. is applied in the TUNE, LOW, HIGH, and R/T positions, and is inoperative in the MANUAL position. This should only be used when strong interference is experiences in reception of weak signals. In this position, the b.f.o. is at 800 kc/s: the receiver must therefore be detuned slightly to ensure an audible note.

c. No a.g.c. switch.

d. Screwdriver controls for Limiter and R.F. Gain control.

e. Aerial input markings 1, 2, 3 and 4.

OPERATING INSTRUCTIONS

9. See instructions for B40.