

I am showing you this diagram of a Type 18 set simply to demonstrate how the back shunt works of an ARC transmitter. See Pre WW1 Files 1907 and number 10.pdf.

The Type 18 is very much like the types 14, 15 and 16 ARC transmitters previously shown and explained. Types 14 to 19 were the only ARC transmitters the Royal Navy had.

On the second drawing below, you will observe that the Morse key is not being pressed. Because of this state, the two-contacts switch to the left connected to the coil of the Magnetic Key, moves the switch to the left thereby connecting it to Coil L and not to the lower of the two aerial coils.

The ARC, which burns continuously [whether the Morse key is pressed or not] – in fact it would be a mini disaster were it to be extinguished - and is depicted as one would show a shining star, is routed to the left hand circuit comprising of R, L and C where it oscillates internally without leaving the transmitter. The wave which oscillates internally is called the SPACING WAVE. When the Morse key is pressed, the Magnetic Key energises its coil and the switch is pulled over to the right to connect to the bottom of the lower aerial coil to the burning ARC. This sends a MARKING WAVE which oscillates on the aerial and into the ether transmitting Morse code symbols. It is arranged by circuitry that the MARK is usually 2kHz higher in frequency than the SPACE.

Now look to the first drawing below, namely to that of the Type 18. The burning ARC is clearly shown just off-set centre of picture. The magnetic key is one unit drawn for convenience and clarity as two units. Although not as explicit as the drawing below, when the Morse key is pressed the ARC is routed to the aerial via the Send/Receive Switch [bottom right] and the MARKING WAVE oscillates on the aerial and into the ether. When the Morse key is not pressed the ARC is routed to the circuit comprising of Resistance B Condenser B and Coil B when the SPACING WAVE oscillates without radiating on air.

This type of circuit is called a BACK SHUNT.

TYPE 18

DIAGRAM OF CONNECTIONS

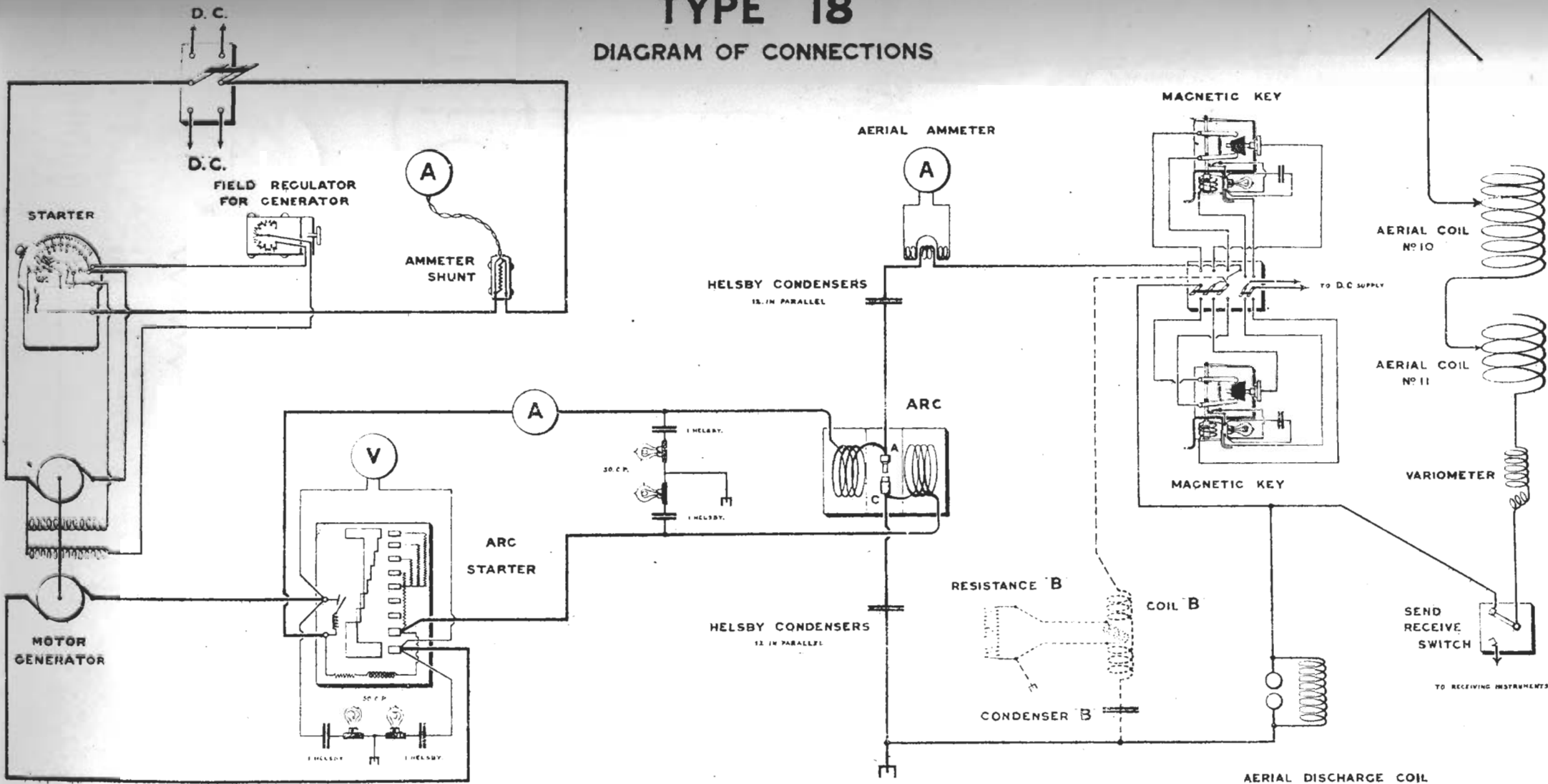
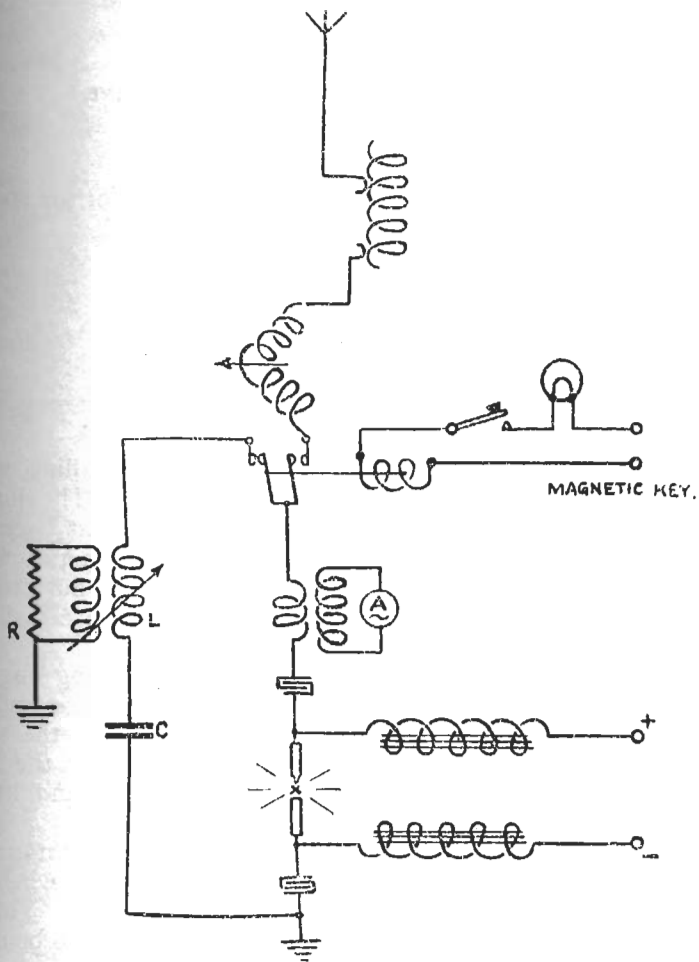


FIGURE 21.



The Back Shunt Circuit.