Briefcase set Country of origin: USA

DATA SUMMARY

Design/Manufacturer: The Crosley Corporation, USA.

Year of Development/Introduction: 1941/42.

Purpose: Development models.

Receiver: Model 103.

Circuit features: RF, Mix/LO, IF, Det/AF, AF. AM only.
Frequency range: 1.97-4.348MHz and 3.4-6.05MHz.
Intermediate frequency: 455kHz.
Valves: 1T4 2x, 1R5, 1S5, 1S4.

Transmitter:

Circuit features: Oscillator, RF power amplifier.
Frequency range: 2.35-3.95MHz and 3.95-6MHz.
RF Power output: 0.8-1W.

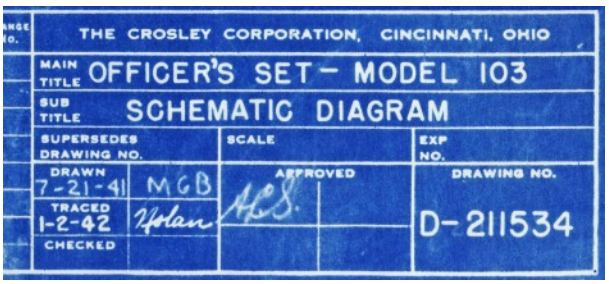
Operating modes: CW only.

Aerial: Separate aerials for receiver and transmitter.

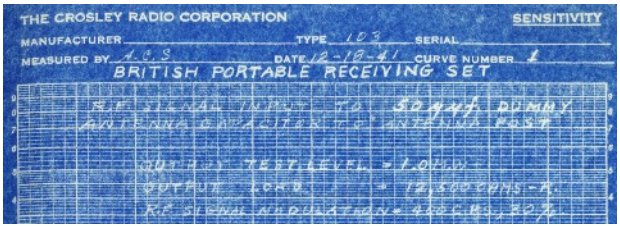
Power supply: Receiver: Dry batteries: 1½V and 67½V. Transmitter: Battery pack 1½V, 45V and 180V or a separate external power source.

Dimensions (mm):	height	width	length	weight (kg)
Receiver unit:	3.8	29.2	23.5	3.4
Transmitter unit:	3.8	29.2	23.5	4.1

Accessories:
High impedance single headphone. Ten foot wire with spring clip for use as receiver aerial. Miniature Morse key. 2x 9m wire aerial and counterpoise for the transmitter.


THE CROSLEY CORPORATION, CINCINNATI, OHIO
MAIN TITLE OFFICER'S SET – MODEL 103
SUB TITLE SCHEMATIC DIAGRAM
SUPERSEDES DRAWING NO.
SCALE
EXP NO.
DRAWN 7-21-41 MGB
TRACED 1-2-42 Nolan
CHECKED
APPROVED
DRAWING NO. D-211534

Blueprint cutouts of the receiver circuit diagram (above) and later drawn sensitivity test curves sheet for the export to Great Britain (below).


THE CROSLEY RADIO CORPORATION
SENSITIVITY
MANUFACTURER
TYPE 103 SERIAL
MEASURED BY
DATE 12-12-41 CURVE NUMBER 1
BRITISH PORTABLE RECEIVING SET

Please note that this Supplement Chapter is a follow up of the '*Briefcase Set*' section in the *'USA'* chapter of WftW Volume 4.

Remarks

When compiling WftW Volume 4 in 2004, not very much was known about the 'Briefcase Set', apart from a late 1944 article published in Electronic Industries (E.I.), a commercial copy of the receiver user handbook and photos of a receiver and transmitter which survived. Over the years a US Signal Corps instruction book for the transmitter ('Personal Radio Transmitting Set') was located and photos of a Signal Corps SCR-295 prototype. A better quality scan of the E.I. article was found by Peter McCollum. These documents were consulted when preparing this Chapter: with only this sparse information a few assumptions had to be made.

Receiver

1) Receiver Model 103, was believed originally a commercial development for a commercial portable (one way communication) patrol receiver for police officers. It had a separate battery box and was fitted with a loop aerial. At that time most of police communication was on HF AM voice. This also might explain that this receiver was made for AM reception only.

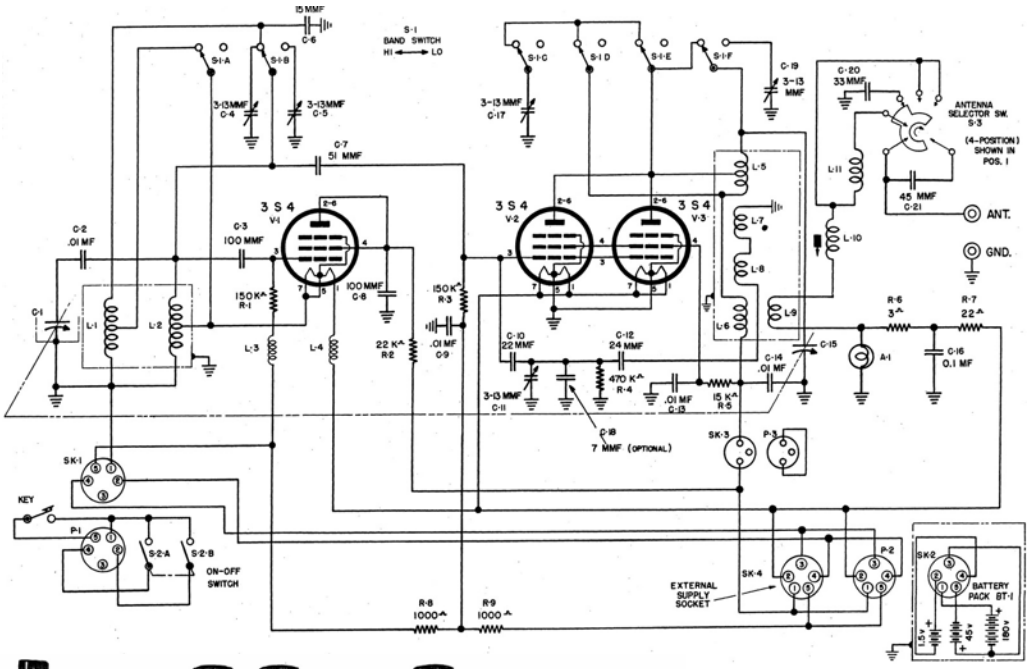
Meeting the specifications for a tender of a portable short wave receiver known as SCR-295 (according '*Signal Corps radio sets front view receivers and transmitters, Signal Corps Labs'),* Model 103 was submitted, probably unmodified as it had still a loop aerial. A similar model for this tender was offered by General Electric. Apparently the project was abandoned as SCR-295 cannot be found in later documentation.

2) The same receiver was in a modified form, according the '*British Portable Receiving Set user handbook',* sold as 'British Portable Receiving Set', probably to the British Supply mission. The blueprint circuit diagram in this handbook still had the Model 103 designation. In the technical description of this handbook it was stated that the (original) receiver with lid (but obviously without the loop aerial) was fitted as a separate assembly aside a compartment holding one set of dry batteries, a spare set of batteries, spare valves and a lightweight headphone.

Transmitter

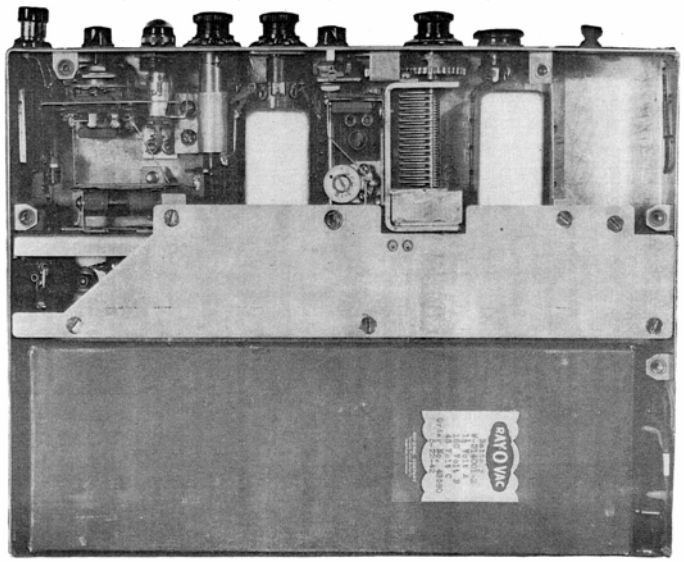
3) The '*Instruction book for Personal Radio Transmitting Set manufactured by the Crosley Corporation, Cincinnati, Ohio'*, *published by authority of The Chief Signal Officer*, provides a technical description with circuit diagrams, operation and alignment of a battery powered CW transmitter having the same dimensions as the 'British Portable Receiving Set'. Hitherto no further information was found of this transmitter and it may be speculated that the events in December 1941 were a reason to cancel the contract, and only a very limited number of trial sets were produced of which just a few survived.

4) It was in a 1944 article '*Brief case transmitter'*, published in Electronic Industries, that a link was made between the above units which had only the general construction, dimensions and finish in common. In this article it was stated that the set was developed '..entirely for CW telegraphic communication..', which occurred as rather strange as the receiver had neither a BFO, nor other feature for CW reception.



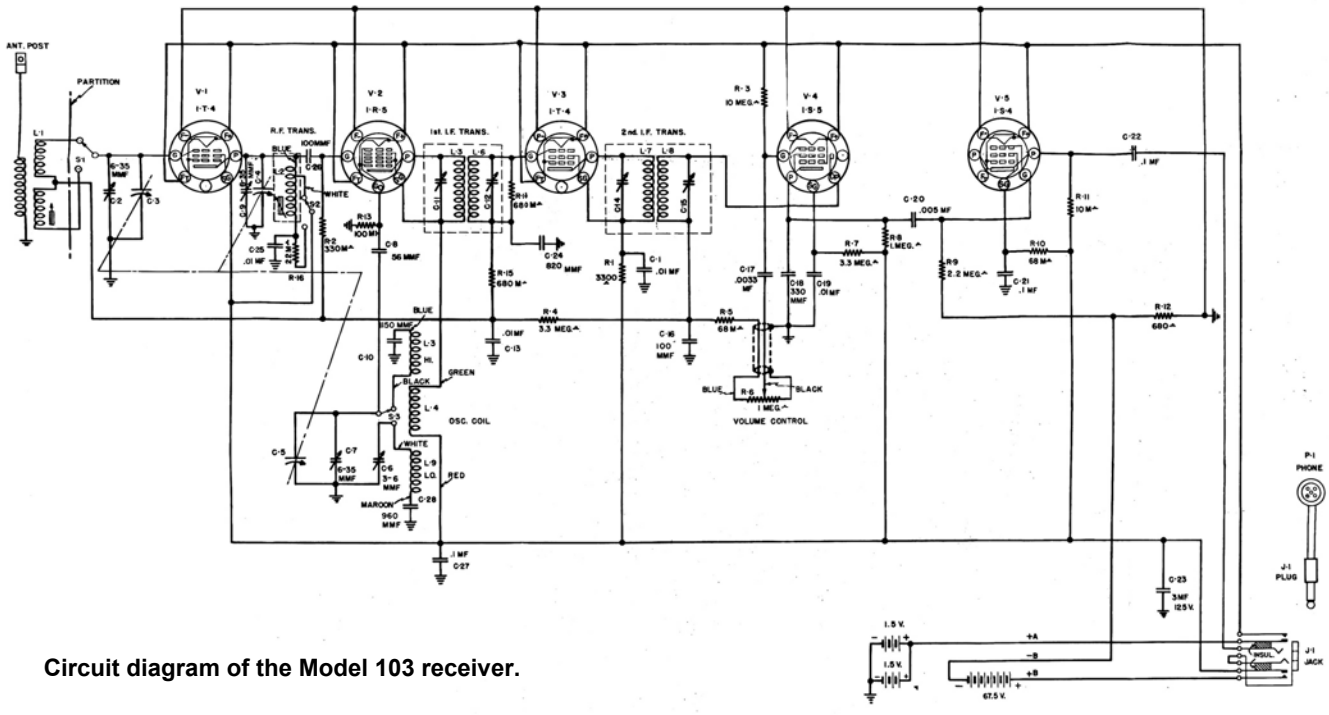
Circuit diagram of the 'Briefcase Transmitter', officially known as 'Personal Radio Transmitting Set'.

An interesting design feature was that the optimal tuning of the aerial circuit was indicated by a miniature lamp. This lamp was connected across a resistor to the LT in the lower side of the aerial circuit and kept glowing at a minimum, increasing its sensitivity.

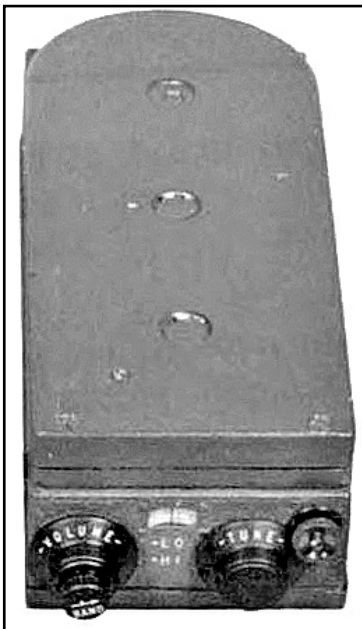


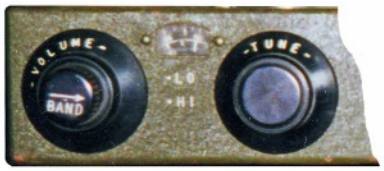
General view of the transmitter with a miniature Morse key which was stored in the compartment at the left side of the front panel when not required (above).

Top view of transmitter unit with cover detached (left). Note the combined battery pack at the bottom.

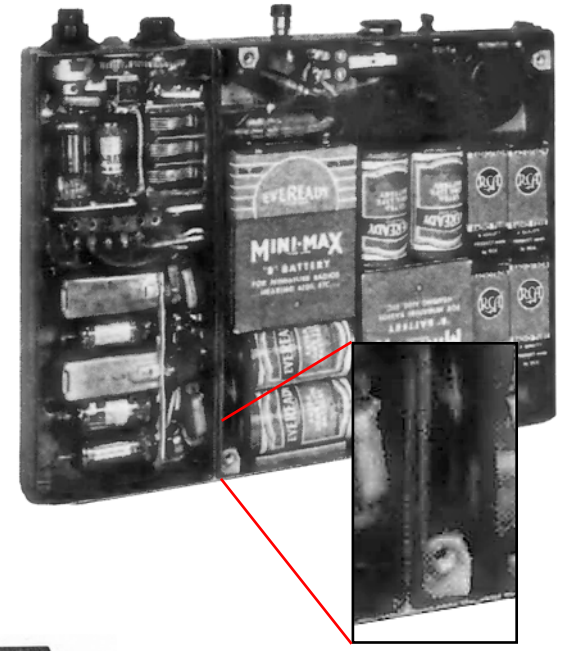


Circuit diagram of the Model 103 receiver.



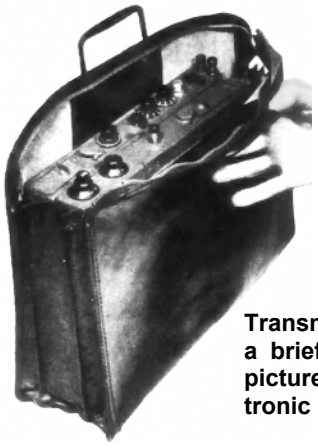


The original prototype receiver Model 103 (left) had a separate battery box and most probably a built-in loop aerial. It may be speculated that it originally was developed as a police officers patrol receiver, later meeting the requirements of a US Signal Corps development tender for the SCR-295 .
Note the similarity with the Brief case Set receiver controls (above).



The enlarged cutout above shows that the Crosley prototype receiver SCR-295 (Model 103) was fitted as a separate assembly aside the battery and accessory compartment of the 'Briefcase Set receiver'.
'… separately sealed and water-proofed by a small cover held in place by two screws….'.

General view of the Crosley developed prototype SCR-295 receiver which had a separate battery box.



Transmitter and receiver in a briefcase, a commercial picture taken from the Electronic Industries article.

General Electric submitted this portable receiver to the Signal Corps Lab. SCR-295 development tender in December 1941.

References:

- British Portable Receiving Set, Order # 637-CHI-42, User handbook, Jan. 1942.
- Instruction book for Personal Radio Transmitting Set, manufactured by The Crosley Corporation, published by the authority of The Chief Signal Officer, n.d.
- Brief case transmitter, J.R. Duncan, *Electronic Industries*, pp 83-85, October 1944.
- WftW, Volume 4, Clandestine Radio, 2004.
- Signal Corps radio sets front views receivers and transmitters, Signal Corps Labs, January 1943.
- Pocket book data of British Signal Equipment, issued by British Supply Mission SD IX (Signals Branch), Washington, D.C., USA, n.d.

The Navy RBZ was functionally quite similar to the SCR-295 development receivers.