

'AN/URC-4' Country of origin: USA

DATA SUMMARY

Organisation: USAF/CIA.

Design/Manufacturer: Unknown/Various manufacturers.

Year of Introduction: 1951-52.

Purpose: Originally air-sea rescue and later also used by Army special missions/forces. Beacon with speech feature used to nearby aircraft during agents and supplies drop.

Receiver:

Circuit features: Super-regenerative detector, AF amplifier, AF output.

Frequency coverage: Single frequency in the range 120-130MHz and 240-260MHz. Normally preset to 121.5MHz and 243MHz. AM R/T and tone.

Valves: 6050 (2x); 2E32 and 3Q5 (also used on transmit)

Transmitter:

Circuit features: CO, doubler (3x), modulator, speech amplifier, AF tone oscillator. 35mW RF out. Operation on UHF was twice the VHF frequency. AM R/T and tone.

Frequency coverage: Single frequency in the range 120-130MHz and 240-260MHz. Normally preset to 121.5MHz and 243MHz emergency frequencies.

Valves: 6050 (2x), 5851 (2x); 2E32 and 3Q5 (also used on receive)

Power supply: BA-1264/U battery 1.3 LT, 135V LT.

Size (cm): Height 17.5, length 5.4, width 9.7.

original horizontal polarised aerial replaced by a telescopic ground plane. The latter had the advantage of a 'cone of silence' when flying over the beacon. The whole unit was placed on an photographic tripod for stability. During the initial successful trials a C-47 aircraft was fitted with an AN/ARA-8 VHF homing set for communicating with the URC-4.

The RT-159/URC-4 modified by CIA of which the colour pictures in this chapter were taken came from the former GDR MfS inventory. A captured CIA URC-4 set was also shown in a 1957 press briefing mounted on an originally issued tripod. (Right)

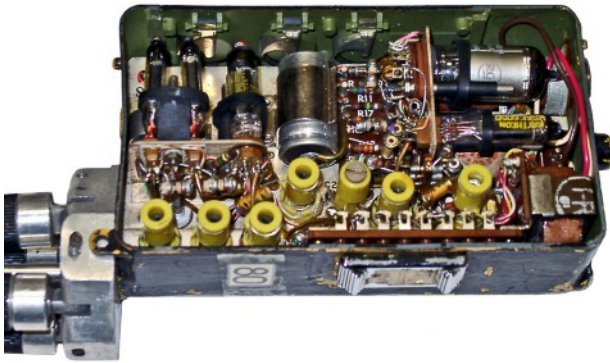
References:

- Photographs and information for this chapter courtesy Detlev Vreisleben, DC7KG, Germany and Pete McCollum, N0TDM, USA.

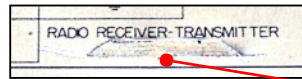
REMARKS

The AN/URC-4 was a miniature VHF/UHF radio set developed for the USAF in 1950-51 for survivors of downed aircraft or forced (sea) landings. The set comprised a RT-159/URC-4 transmitter-receiver, a mercury battery and a connector, all normally carried in a special vest. Operation to searching aircraft was two-way R/T voice and (keyed) tone on 121.5 or 243MHz. The original models were painted bright yellow, later OD coloured sets were produced. The latter were also used with special forces and Army operations, but usually aligned for operating on other frequencies. The AN/URC-4 was self-contained, fully waterproof, readily available in large numbers, using a short aerial and operating on a battery with a long life. For these features the set was used in the 1950's by CIA agents as a VHF beacon to a nearby aircraft during supply and personnel drop. The transmitter-receiver and battery of the URC-4's used by the CIA were painted matt black and the

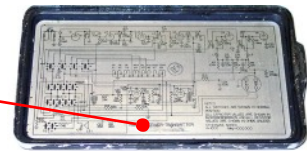




Pictures of the captured URC-4 as shown in the photo on the previous page: side view (above right) and internal view (above), revealing an early RT-159/URC-4 model.



Back side of lid showing where the type number had been cut out.



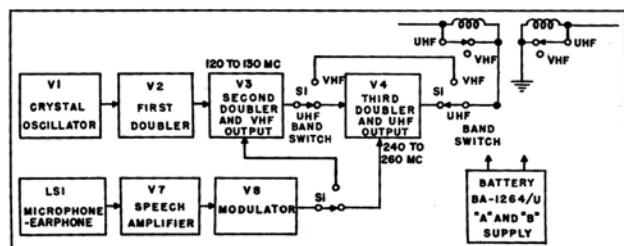
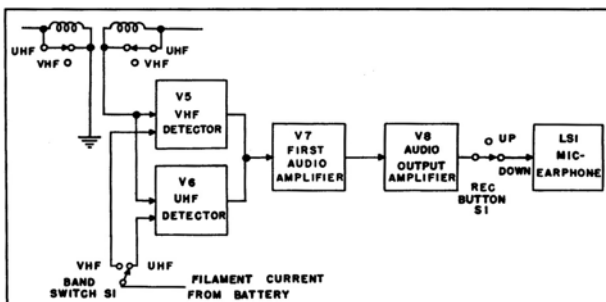
Original aerial arrangements of the URC-4 with horizontal polarised telescopic aerial partially extended.

RT-159A/URC-4, (left) the original 'yellow/red' Air-Sea- Rescue transceiver (this is a later produced and more widespread 'A' model); The last produced model was the RT-159B/URC-4 which was similar to the RT-159A but with a new type of rear cover. All models differed electrically but only in minor changes of components and types of valves.

The mercury battery pack (right) had a twistlock arrangement which fastened it to the back of a URC-4.

The later RT-159B model was coloured OD 'green' as far as could be traced. Shown right is a RT-159 (PE)/URC-4 model TRE 54 produced in the UK by Thorn Electrical Industries Ltd.

The circuit diagram of the URC-4 was omitted as being easily available on the Internet as a free download.



Above left: block circuit diagram of transmitter part; above right: block circuit diagram of receiver. Note that V7 and V8 were used in both receiver and transmitter.