

Philips SDR314 manpack mobile (1953)

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At the time of its introduction in late 1953, the SDR314/04 was described by Philips Telecommunication Industries as a "Portable F.M. transmitter/receiver for the frequency range 156-174 MHz (1.92-1.72 m). (...) The transmitter, which has a power output of about 150 mW, is capable of covering a distance of about 1 kilometer in densely built-up areas (i.e. highly adverse conditions), or about 3 to 5 kilometers in open terrain."

The SDR314 is powered by a 6-volt motorcycle battery. Like many WW2 and Cold War short-range 'manpack' radios like the famous WS38, the SDR314 is designed to be carried on the back using canvas straps. Fortunately, the radio can also be carried by a handle. Either way, you're carrying a weight of about nine kilos, so 'portable' has to be taken with a pinch of salt. The distances quoted for the SDR314 may seem small, but Philips later added that the figures refer to "two-way communication between two SDR314 radios". The distance between an SDR portable and a base station or a vehicle-mounted mobile should be of the order of 10-20 kms.

The SDR314/04 is invariably green which immediately suggests that it is an army radio. A false assumption, as the SDR314 was designed for use by (traffic) police and Home Guards only during the Cold War period and quite a few years later! It was never allowed for military use. Philips' brochures for the SDR314 suggested use by 'fire scouts' i.e., a person (to be pitied) who was supposed to assess the size and intensity of a fire and report on any imminent dangers over the radio.

The SDR314 employs 22 valves and a few germanium diodes. The valves are direct-heating types from Philips' very own DL/DF series. The anode voltage is left on all the time and the receiver and transmitter are switched on and off by means of the heater voltages. A compact vibrator power supply is used to generate the 70-V and 140-V anode



voltages. In transmit mode, the SDR314 draws about 2.5 amps from the 6-V battery, which results in a total 'in-efficiency' of $0.15 \text{ W} / 15 \text{ W} = 0.1\%$. It has to be said that the SDR314

is let down by mechanical, weight and power supply aspects only. The transceiver proper is not only a lightweight construction but also a wonder of Dutch design ingenuity and ef-

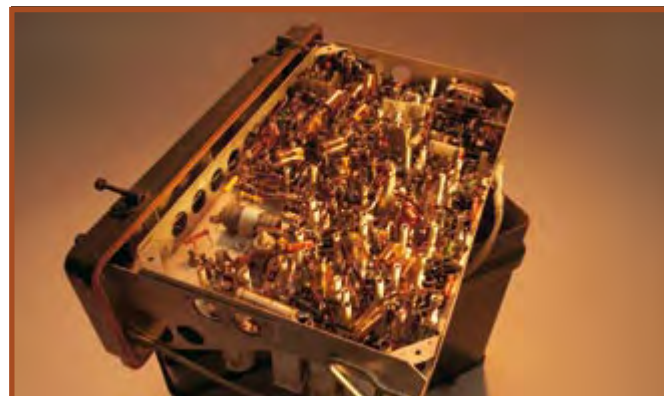
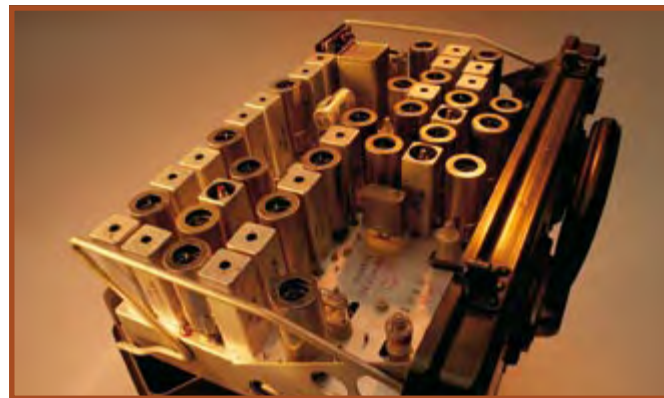
iciency. The radio performs extremely well when connected to a benchtop PSU and an external antenna instead of the half-wave whip. All parts used to build this radio, down to the last screw and washer, were Philips proprietary, so you will search in vain for, say, Sprague, RCA or General Electric logos or part numbers.

The NBFM receiver is a superheterodyne with a variable first IF and a fixed second IF of 1.5 MHz. The RF input valve is an EF95/6AK5 pentode. The transmitter multiplies the crystal frequency by 64 (!) to ensure the required FM deviation of $\pm 15 \text{ kHz}$ at the final frequency. The RF output valve is again an EF95 which also doubles as the AF output valve!

The radio can be aligned with no more than a micro-ammeter set to the 50 μA range. About 30 red, green and yellow test points are available on the chassis to check HT, grid current and filament voltages respectively and even people with 'modest' knowledge of electronics should be able to set up the radio on a channel.

The /04 pictured here is the original Home Guard version, complete and in very good condition. I also have the /05 civilian/utilities version which is grey and has 5 channels.

Originally, my /04 worked on a former Home Guard channel at 160.000 MHz but I crystallized and retuned it to work on 145.725 MHz to suit my local repeater. The FM deviation has been reduced from 15 kHz to 5 kHz to avoid upsetting the younger generation of radio amateurs used to Japanese plastic only. Stability and sensitivity are excellent and 150 mW from the TX is ample to cover 10 km or so. I'm told the vibrator supply produces a light whining sound on my microphone signal, helping to identify it as coming from a 'vintage' transceiver. Come to think of it, my latest GSM mobile will never cover more than 2 km or so to the nearest mast, and then, worst of all, people I do not want to talk to keep calling me. Not a chance of that happening on the SDR314.



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