



Clandestine receiver in a rum bon-bon sweets tin. (#3 A)

DATA SUMMARY

Design/Manufacturer: Philips employees.
Year of Introduction: 1943 to the end of WW2.
Purpose: Listening to Allied broadcasts.
Circuit Features: TRF with regeneration.
Frequency Coverage: Shortwave.
AF output: High impedance headphones.
Valves: Depending on model and what was available: E1F (4672), E1C (4671), E13F, UCH21, ECH21, etc.
Power Supply: Usually 220V AC. In some models, during frequent power cuts, a 6V AC bicycle dynamo could be used mounted on the rear wheel of an upturned bicycle.

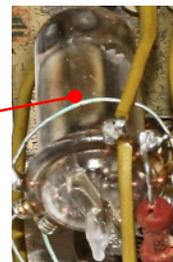
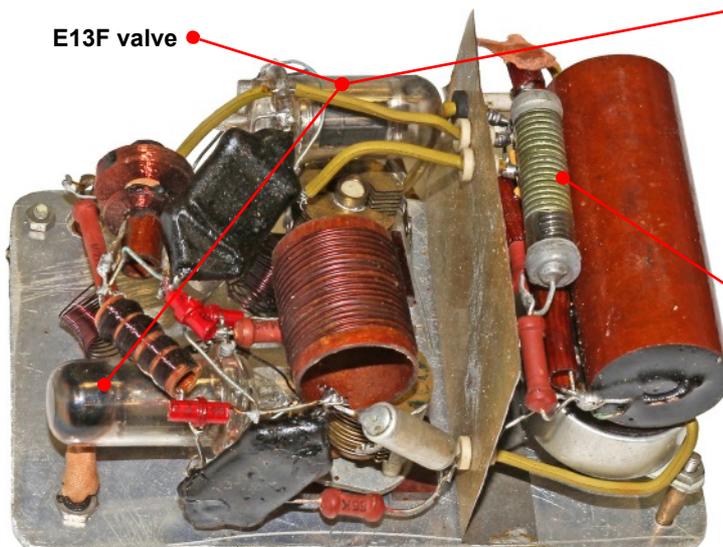
Clandestine Midget Receivers #3

(The 'Philips Historical Products Collection')
 Country of origin: Holland

Remarks

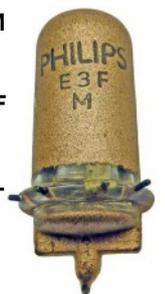
In German occupied Holland it was strictly forbidden to listen to Allied radio broadcasts. As this of course could hardly be enforced, eventually all broadcast receivers in the Netherlands were confiscated in May 1943, though many were not handed in and concealed. As a result, easy to conceal midget receivers were constructed by amateurs for listening to broadcasts from the BBC and other allied stations, initially on long and medium waves. Later in the war, when German jamming made listening on medium and long wave difficult (see Chapter 162), many of the clandestine midget receivers were built to operate on short-wave. The use of Philips acorn valves and miniature beehive trimmers allowed a considerable reduction of size. The selection of clandestine midget receivers in this and other chapters was definitely not complete and simply provided examples that survived. One source mentioned that during the war at least 3000 and probably many more clandestine receivers were built by Philips employees alone. As a guide for identification, the clandestine receivers in the WfW Supplement were individually marked with Midget Receiver chapter # and model e.g. #3D.

E13F valve



E13F (left) and E3F M (right).

The E13F was an E3F without metal base. It is believed that the M version was metalised.



Miniature (selenium) metal HT rectifier.

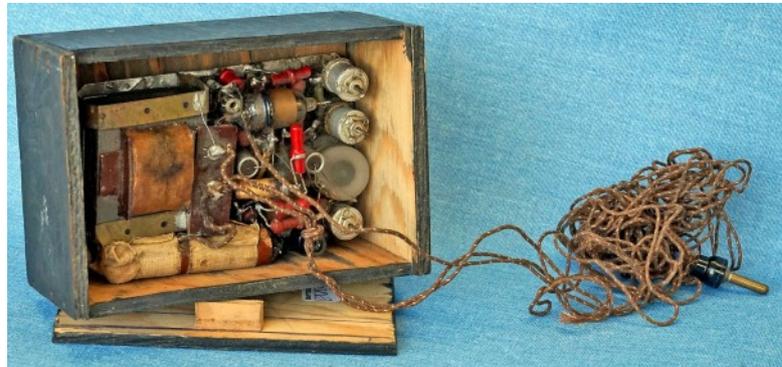
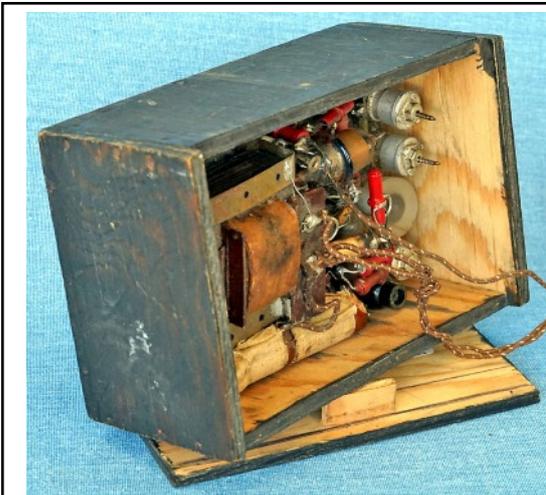
Clandestine Midget Receiver (#3A) was mounted in a 'De Gruyter' rum bon-bon tin box . It operated on short wave using two rare E13F valves without metalising, probably 'acquired' from the production line. The receiver comprised a regenerative detector and AF output stage

Dimensions (cm): 10x15x9.

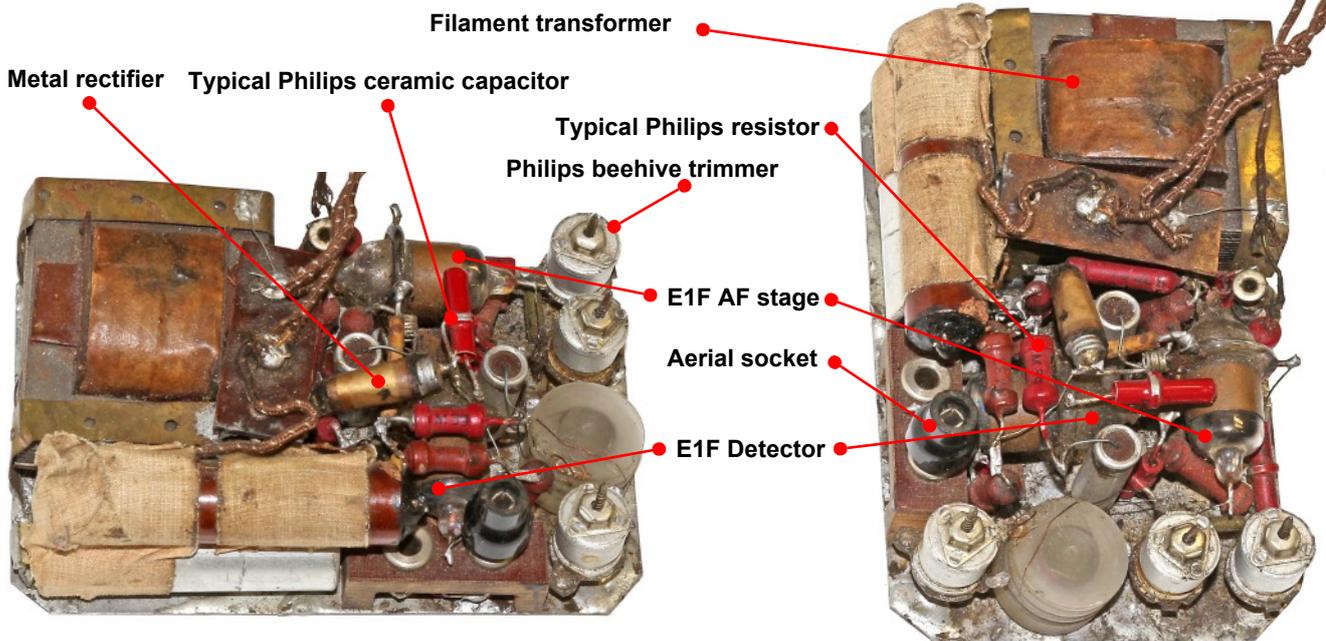
Internal view of clandestine receiver (#3 A).



Clandestine Midget Receiver (#3B) was constructed in a tin box. This receiver used an UCH21 valve operating as regenerative TRF and AF output stages. It operated on short wave, probably the 49M and 40M bands tuned by two Philips beehive trimmers. The filaments were connected directly to 220V AC mains via a series capacitor. HT was obtained via a miniature metal (selenium) rectifier. The circuit diagram was believed to be similar to that in Chapter 152, page 4, #2. Dimensions (cm): 10x14x6.



Clandestine Midget Receiver (#3C) fitted in a home made wooden box with a loose top lid. No controls and sockets were visible at the outside. The receiver operated on short-wave using two E1F acorn valves as regenerative detector and AF output amplifier. HT was obtained direct from the 220V mains using a small metal (selenium) rectifier. Tuning and regeneration control was by three Philips beehive trimmers. Dimensions (cm): 13x9x6.5.



Clandestine Midget Receiver (#3D) mounted in a 'Maja' pipe tobacco tin. It received 9-12MHz short wave with two acorn valves, quite similar to the midget receiver described in Chapter 95, using circuit #4 in Chapter 152, page 4. Dimensions (cm): 10.2x7.3x3.



Filament transformer

E1C detector valve

A1F AF output valve

Tuning control

Regeneration control



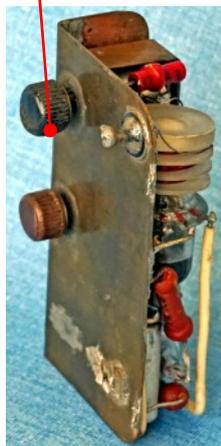
Metal rectifier

E1F AF output valve

E1C regenerative detector valve



Aerial terminal



Clandestine Midget Receiver (#3E) This receiver comprised a small brass angled chassis, probably fitted in an unknown enclosure. Tuning and regeneration control was accomplished by two Philips trimmers fitted with improvised knobs. It operated on short wave powered by an unknown supply unit directly connected by leads. Dimensions (cm): 5x7.5x3.

This chapter was based on a number of clandestine midget receivers built during WW2 by Philips employees, mostly at their homes, using rejects or 'liberated' components from the existing production lines. The clandestine midget receivers shown here are on permanent display in the collection of the 'Foundation Philips Historical Products' museum in Eindhoven*. A small selection of receivers, of which many were unmistakably built by Philips employees, kept in other museums and in private collections, are shown in Chapters 152 and 153. The choice of enclosure was nearly unlimited, though noticed was a preference for small (tobacco) tins and thick books with cut-out pages.

*) The 'Stichting tot behoud van historische Philips producten' (Foundation Philips Historical Products) is not directly related to the official Philips Museum. The foundation has a collection of Philips products, made from the early years till present day with a bias on technical details. A visit in combination with the official Philips Museum (at a different location) is highly recommended. On permanent display are working examples of the vast range of products of the Philips concern.

References:

- Information and photographs courtesy 'Foundation Philips Historical Products', Eindhoven. Photographs were taken by Geert Prummel.
- Copyright photos: 'Stichting tot Behoud van Historische Philips Producten', Eindhoven, Holland. www.philips-historische-producten.nl