



Approximate real size of the BND SW Converter.

## BND SW Converter

Country of origin:  
Germany (W)

### DATA SUMMARY

**Organisation:** Bundes Nachrichten Dienst (BND).

**Year of Introduction:** Late 1950s.

**Purpose:** Agents.

**Receiver:**

**Circuit Features:** Mixer, crystal oscillator.

**Frequency Coverage:** 3-6MHz (100kHz segment determined by the crystal frequency).

**Intermediate Frequency:** 1500kHz ( $\pm 50$ kHz)

**Transistor types:** OC170 (2x).

**Power Supply:** Dry battery 3V, carried in the converter case or an external 3-4½V battery via an adapter.

**Size (cm):** Height 2½ (with knob 3), length 6½, width 6½.

**Accessories:** Earpiece, 4 crystals, battery adapter, aerial wire, connector to broadcast receiver.



Components of BND SW Converter: converter with crystal inserted; earpiece; three crystals; 3V battery.

### REMARKS

In the early phase of one-way broadcasting, coded messages to BND agents operating in the GDR (East Germany) were transmitted in Morse code. This had a great handicap because an agent had to master Morse code. It was for this reason that initially many ex-Service signalers were recruited for this task. Receivers for reception of the 'number' stations (broadcasting on frequencies in the range of 3-4MHz in CW or later voice) in the target countries (primarily East Germany) were difficult to obtain, and would raise suspicion as the frequencies of the stations were not for reception of normal broadcast stations.

#### BND Short Wave Converter

When the number of agents in the GDR increased, the Morse coded messages were replaced by voice and an alternative solution was required to replace the OG/BND shortwave receiver which was primarily used by agents at that time. (see chapter 31) This was eventually solved by the development of a simple miniature transistorised crystal controlled converter, used in combination with an ordinary medium wave broadcast receiver.

The 'number' stations of the BND transmitted their messages to agents on 3370kHz (DCF 37) and 4010kHz (DFD 21). By means of converting the frequency to 1500kHz (200m) it became possible to receive these frequencies on any medium wave broadcast receiver tuned to this frequency.

BND transmissions on 3370kHz (referred to as Frequency 1) and 4010kHz (Frequency 2) required the use of crystal frequencies 1: 4870kHz (3370+1500) and 2: 5510kHz (4010+1500). As an alternative (when interference from breakthrough of broadcast stations on 1500kHz was experienced) other crystals were provided. Crystal 1A: 4830.01kHz for reception on 1460kHz, and 2A 5537.96kHz for 1528kHz.

An advantage of down conversion to medium wave was a form of 'bandsread' which allowed easy tuning to the short wave station. One of the main disadvantages of this converter, however, was the relative strong radiation of the crystal controlled local oscillator which was liable to detection and location with DF equipment. The BND Short Wave Converter was used from the late 1950s until well in the 1960s.

### References:

- Photos, scans and all information on this topic was kindly provided by Detlev Vreisleben, DC7KG, Germany.

### Mittellwellen - Konverter (mit losen Kabel)

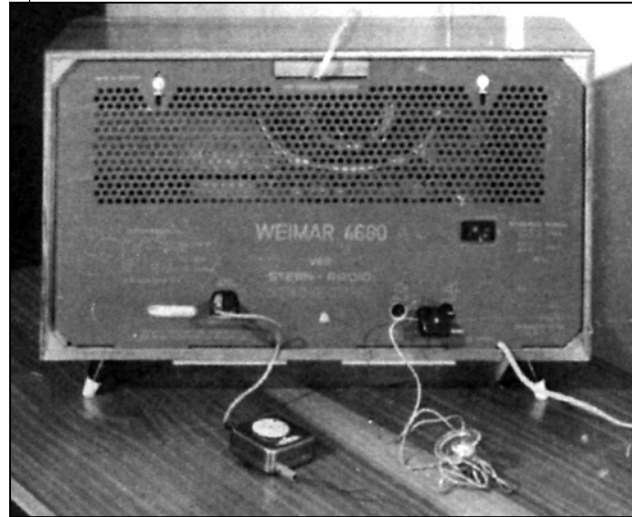
2

Verwendbar nur für den Anschluß an einen Superhet-Rundfunkempfänger mit Mittelwellenbereich, der je eine Buchse für Antenne und Erde hat.

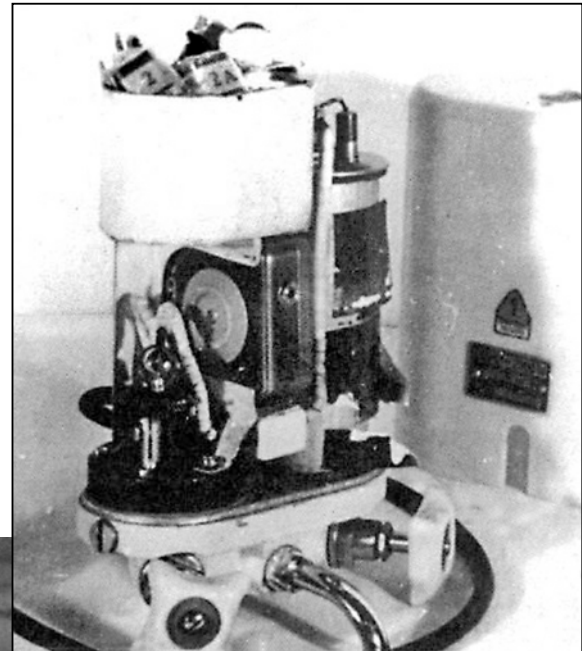
#### Bedienungsanweisung

1. Kopfhörer an die Buchse für 2. Lautsprecher anschließen und den eingebauten Lautsprecher abschalten.
2. Schwarzen Klinkenstecker des Kabels in die blanke, mit Schraubenmutter befestigte Buchse des Konverters bis zum Anschlag einführen.
3. Roten Bananenstecker des Kabels in die Antennenbuchse, schwarzen Bananenstecker in die Erdbuchse des Empfängers stecken.
4. Empfangsantenne mit guten Bananenstecker an die mit Isolierung versehene Buchse des Konverters anschließen. Hierdurch schaltet sich der Konverter ein. Nach Gebrauch Ausschalten Nicht vergessen!
5. Frequenzstecker 1 bzw. 2 (nach Programm) in die Buchse des Konverters stecken.
6. Konverterscheibe drehen, bis etwa der Wert 3,5 bzw. 4 (nach Programm) auf weißen Farbpunkt eingestellt ist.
7. Empfänger auf Mittelwellen-Bereich (MW) schalten und auf 1500 kHz (200 m) einstellen.
8. Abstimmknopf des Empfängers um 1500 kHz (200 m) herum feinfühlernd drehen, bis Sender gehört wird. Dann am Konverter auf größte Lautstärke nachregeln. Bei Empfängern mit magischem Auge kann dieses als Abstimmanzeige mitbenutzt werden.
9. Falls der Sender nicht gehört wird oder gestört ist, Frequenzstecker 1A bzw. 2A stecken und mit dem Empfänger zwischen 1400 und 1600 kHz bzw. zwischen 215 und 190 m den Sender wie unter Punkt 8 an ergeben erneut suchen.
10. Beim Suchen des Senders muß die Möglichkeit einer ungenauen Empfängereichung berücksichtigt werden und deshalb bei Nicht-Hören breiter nach links und rechts gesucht werden.
11. Die eingebaute 3 Volt-Stabzelle reicht für ca. 200 Betriebsstunden und kann nach Öffnen des Konverters (Bodenschraube lösen) ausgewechselt werden.

Pluspol = kleine Messingkappe an Gehäuse  
Minuspol = Zinkboden an gesackte Kontaktfeder



BND SW Converter connected to a GDR manufactured 'Weimar 4680' broadcast receiver found into the possession of an agent operating in the GDR.



A 'Liliput' electric boiler used as container for hiding a BND SW Converter and accessories. (Above)

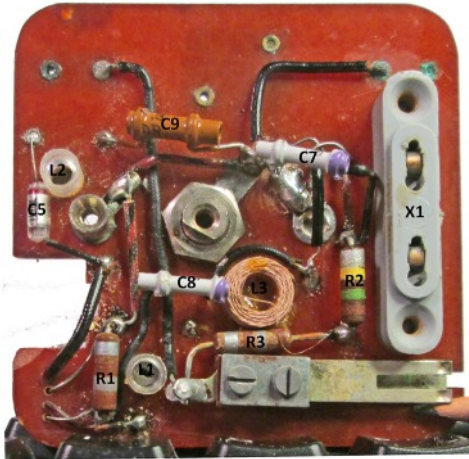


A BND SW Converter with accessories concealed in the bottom of a thermos flask.

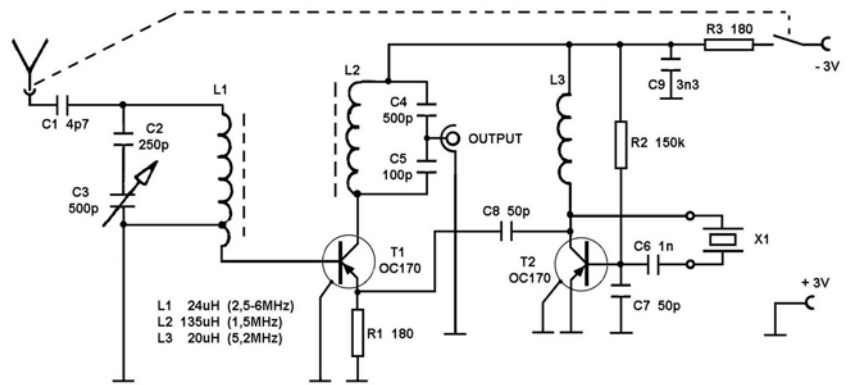
Scan of original user instructions for BND SW Converter.



Internal view of the BND Short Wave Converter showing the major components of the top side of the Paxolin board (right). This board had miniature rapid rivets which can be seen in the bottom view of the board (below). The board was housed in a tin box with openings for the combined aerial socket/on-off switch, and 1500kHz output socket.



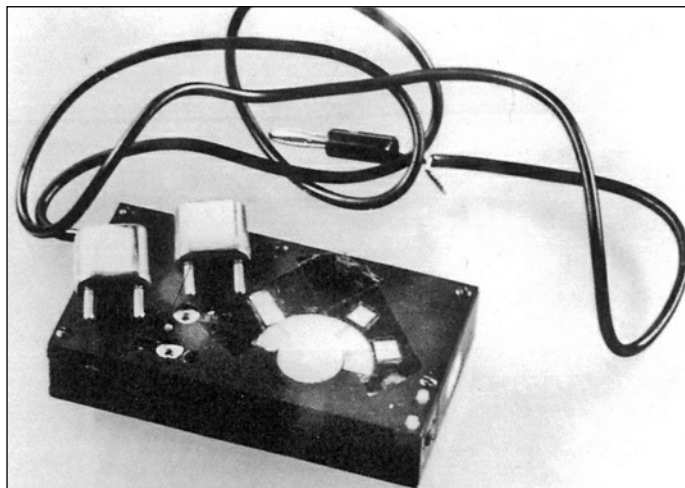
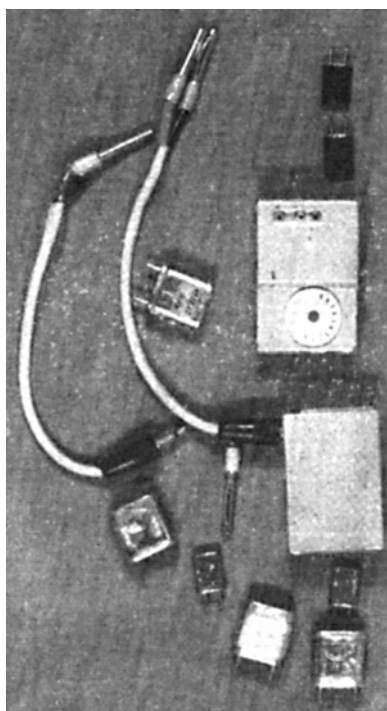
Blue coloured variation of the BND SW Converter enclosure.



Circuit diagram of the BND SW Converter.



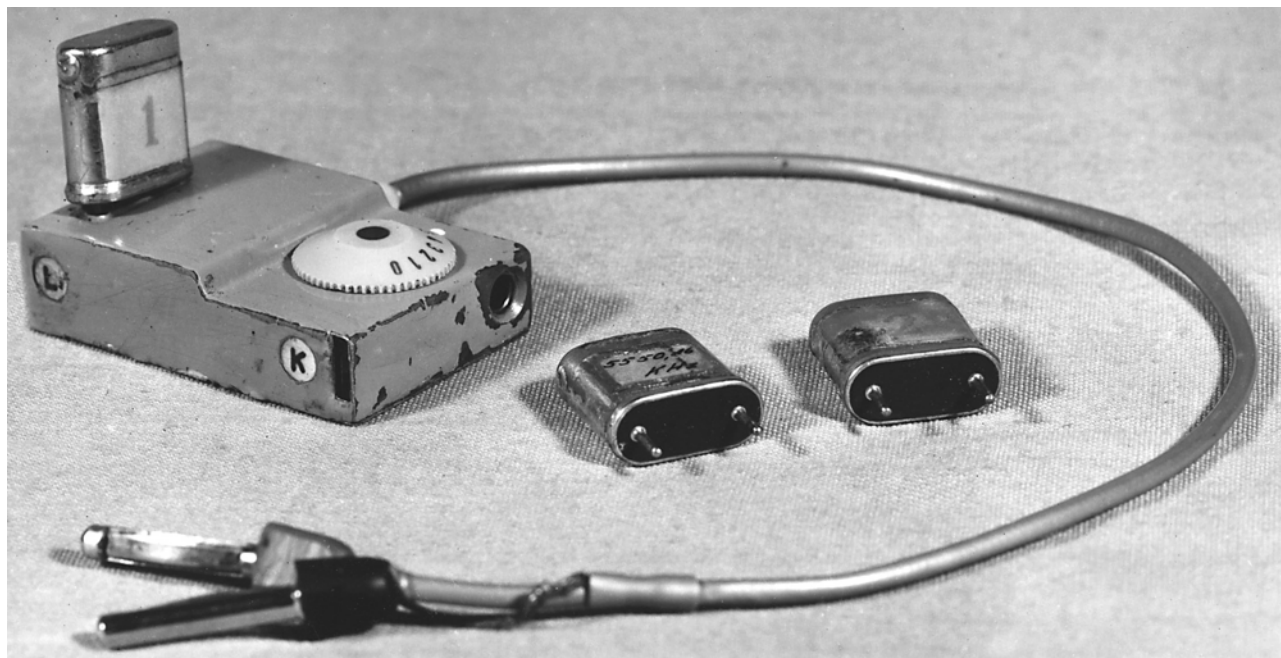
As an alternative to the 3V battery carried inside the case, the BND SW Converter could also be powered from an external 4.5V battery via an adapter.



A British SW converter (above) and other (probably earlier) version of the BND SW Converter. (left)

No further details of these converters are known, but assumed they were similar in functionality to the BND SW Converter described in this chapter.

### Variations of the BND Short Wave Converter.



Close up view of a probably earlier version of the BND SW Converter housed in a metal case.