



'Phonotrix'
High speed keyer
Country of origin:
Ger. W./USA

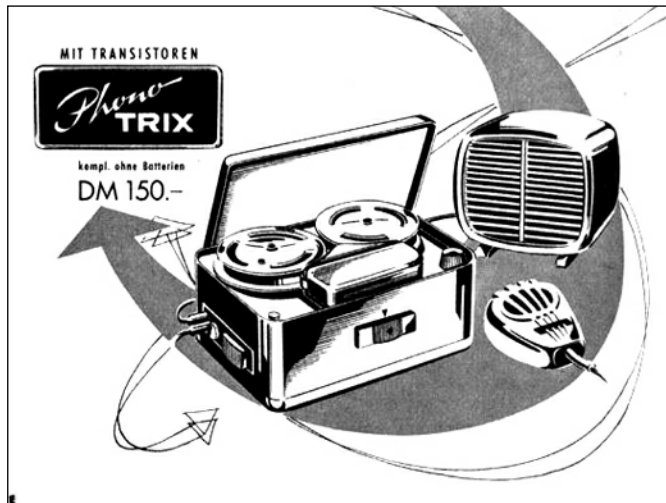
DATA SUMMARY

Organisation: Central Intelligence Agency. (Germany W)
Design/Manufacturer: E. Voelk KG, Nurnberg, Germany. (Trix United Toy Factories); **Modification:** unknown.
Year of Introduction: Probably 1958.
Purpose: High speed Morse keyer for agents.
Power Supply: 6V DC at 100mA.
Size (cm): Height 9, length 16.5, width 12.5.
Weight: 1.6kg. Recorder only less batteries.
Accessories: Morse key, 75mm diameter tape reel containing about 65m tape, empty reel, earphone, four D cells.

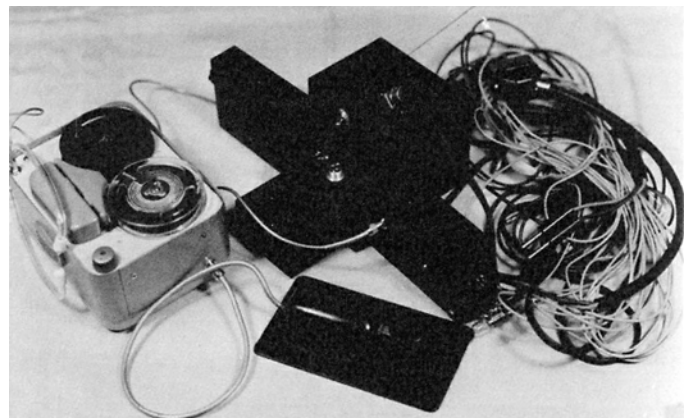
REMARKS

The 'Phonotrix' was a commercial toy tape recorder adopted and modified for use as high speed Morse keyer. This cheap and readily available miniature tape recorder appeared very suitable for this purpose: lightweight and small in size; use of standard tape; powered by only four D cells and a continuous regulation of speed from 3 to 15cm/sec. Recorded messages in Morse code at a tape speed of slightly higher than 3cm/sec would playback at a speed of 15cm/sec, about 4 times the original speed. Recorded and used tapes could be erased and used again. Known is the use of the Phonotrix with the 'Modular' transmitter-receiver. (Described in chapter 54).

Modifications and additions to the original Phonotrix were an AF tone generator for recording Morse code messages keyed by an external hand speed Morse key. After rewinding the tape and switched to playback, the AF output of the recorder was connected to a tone detector circuit and keying relay. Connected to the transmitter keying contacts, and when started to play with a tape speed control set to maximum, the transmitter was keyed at high speed. See the block diagram on the next page.



Front page of an original commercial sales leaflet for the 'PhonoTrix', made by Trix United Toy Factories.



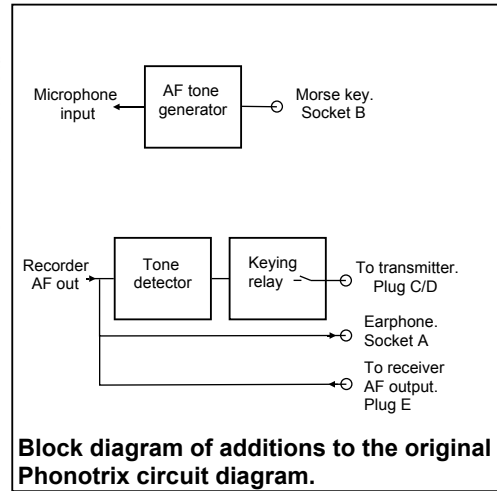
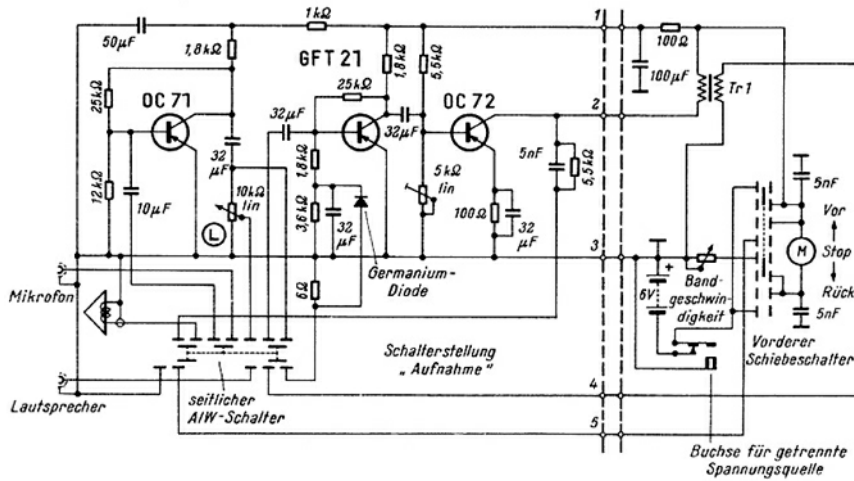
Phonotrix high speed Morse keyer connected to a 'Modular' transmitter receiver, used by agents of the American CIA. The picture above was a taken of a set captured from a CIA agent operating in the GDR.



Left hand side panel of the PhonoTrix: Microphone (red) and loudspeaker (blue) sockets (left), playback volume control (centre) and Record/playback switch (right). The two audio sockets were not used in the modified Phonotrix.

References:
- With thanks to Detlev Vreisleben, DC7KG, Germany, who kindly supplied all the photos, technical and historical data.

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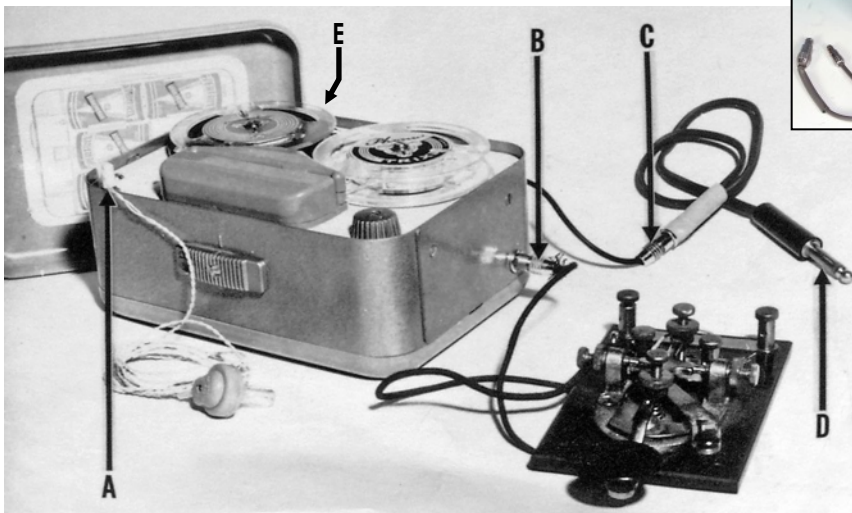


Circuit diagram of the original commercial Phonotrix miniature toy tape recorder. A number of modifications and additions were required to make the recorder suitable for use as a high speed Keyer.

Block diagram of additions to the original Phonotrix circuit diagram.



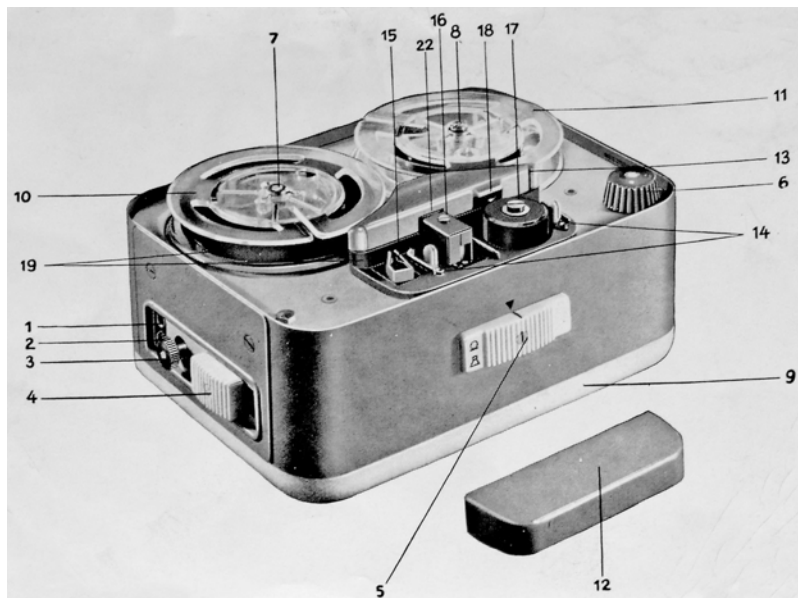
Rear view of a modified Phonotrix showing the connectors E and C, and the existing external 6V power socket.



Photograph of a modified Phonotrix ready for recording a Morse code message. (Left) Socket A was for side tone of keying during recording a message and checking in playback or when connected to the receiver listening to the corresponding main station via plug E. Socket B connected the Morse key. Plug C or D connected to the transmitter keying contacts.

Scan taken from the original user handbook with functional explanations of the various controls.

- 1 Microphone socket (red)
- 2 Loudspeaker socket (blue)
- 3 Volume control
- 4 Record-playback switch
- 5 Play/record-stop-fast rewind
- 6 Tape speed control
- 7 Full reel capstan
- 8 Empty reel capstan
- 9 Bottom cover
- 10 Full reel
- 11 Empty reel
- 12 Head and roll cover assy.
- 13 Tape guide capstan
- 14 Tape guiding
- 15 Erase magnet
- 16 Record/playback head
- 17 Rubber pinch roll
- 18 Driving capstan



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