

## [A special machine, the HTG-1 Hellschreiber transceiver](#)

01/30/2017 [HA5CBM](#)



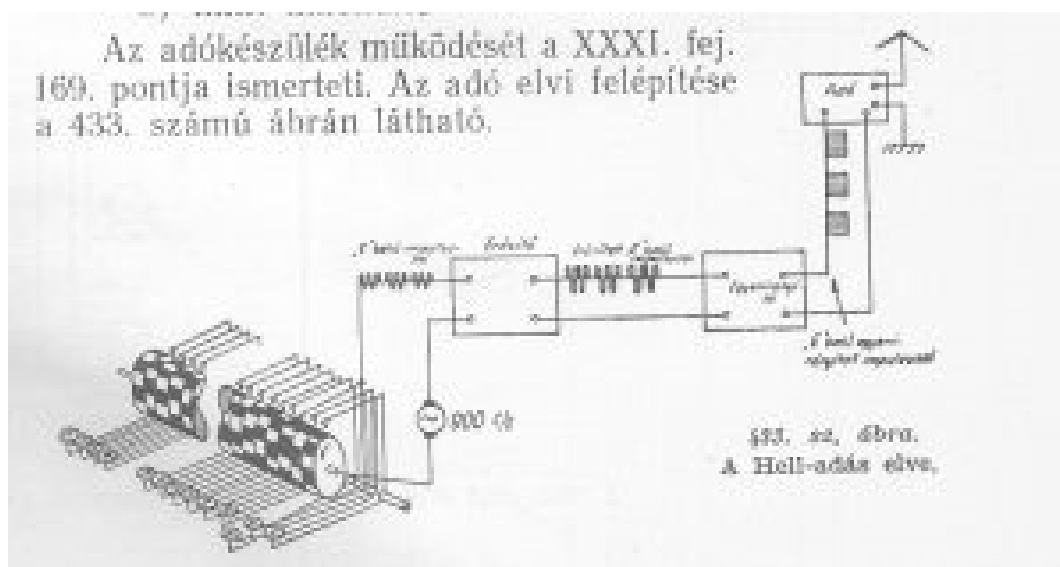
The Hungarian-made HTG-1 Hellschreiber transceiver is the German "Feld Hell" tap. Their manufacturer was on the Hungária Boulevard. (Here is the center of Siemens today.) As roncsutatas.hu writes on "zsolt001", the monographs on the history of the factory are noted, the HTG equipment was born after the sample, and the professionals faced a lot of problems when preparing the first series. There is nothing surprising about this, as - knowing the extraordinary complexity of the device - such a "ghost" could only be compiled with a very well-prepared set of people and devices. It is important to note that the number of known specimens remaining in our age is less than a dozen - even though Pál Germuska was extremely thorough and very readable, according to the book of negotiation of the Hungarian military industry, there was a year when one and a half thousand copies were taken out of the Zuglo plant gate.



Typically, the telegraphic telegraph machines working on the image transducer work with frequency beats (900 or 1,500 Hz), so their use with the radio can be solved without difficulty. The procedure was named after Rudolf Hell, who patented it in 1929. Anno, the most frequently used acronym between the thirties and the sixties, was.

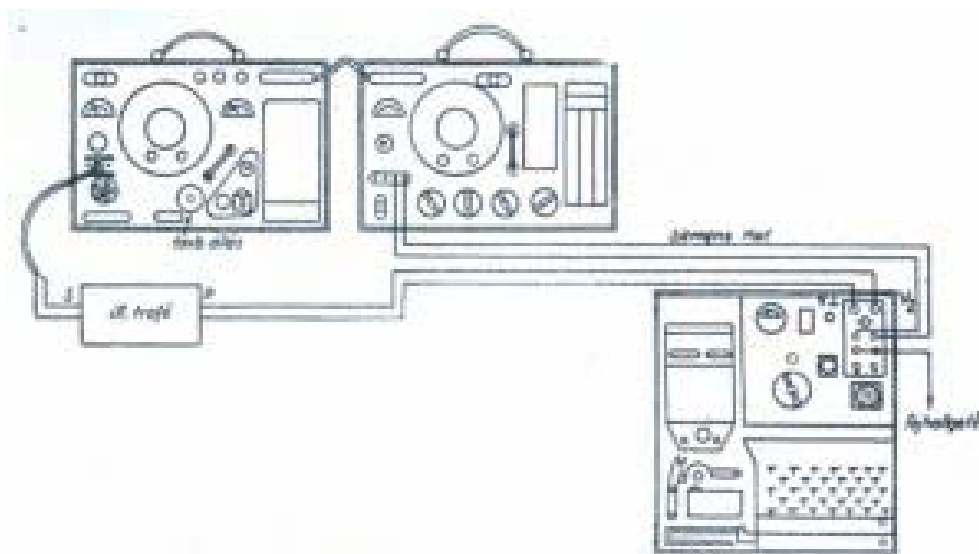
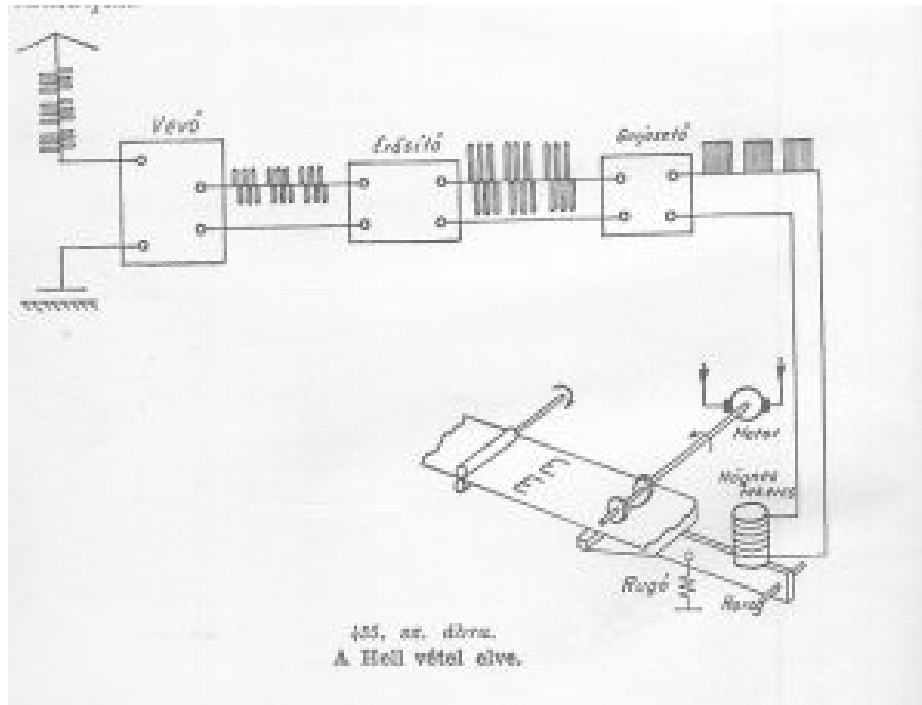
- as a built-in transceiver
- as a buyer

The structure of the transmitter is shown in the following figure:



At reception, the transmitted telegraph signals are transmitted to the radio through the receiving antenna, and then the amplification and rectification of the incoming frequency is already done in HTG-1. The writer consists of an electromagnet, the tongue of which presses the continuous web of tape onto the rotating spindle. This will display a letter or punctuation mark on the tape.

The simplified principle of reception is shown below:



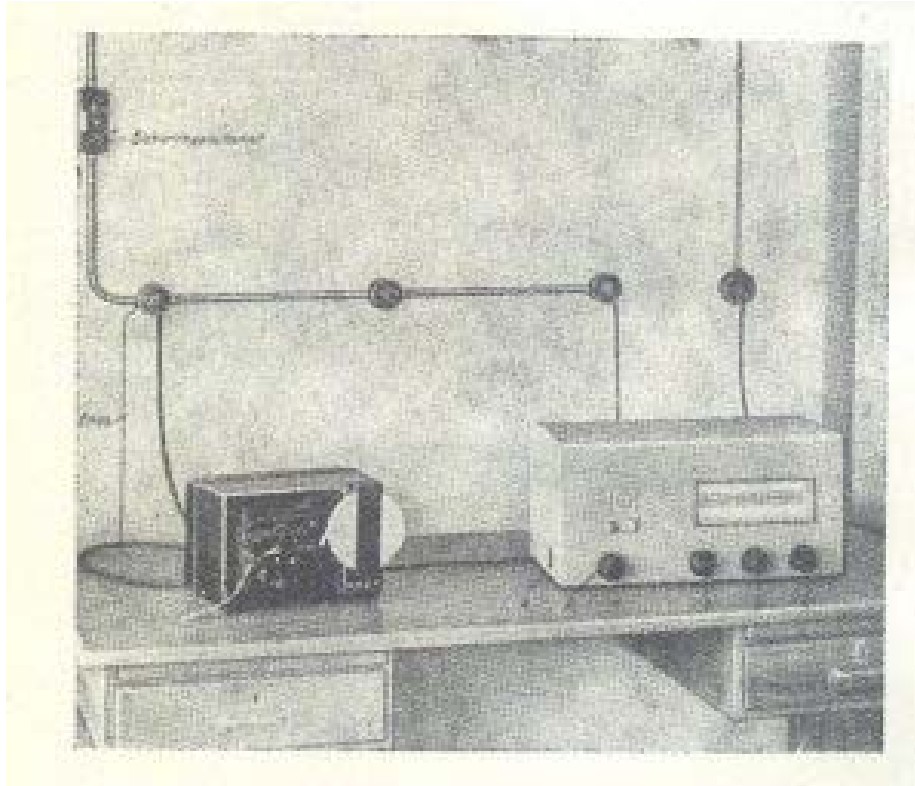
In the above figure, it is worth noting that although it is from a 1952 book, it can be seen on the German Feld Hell and an R / 7 transmitter and R / 7 receiver.

The transmitter and receiver equipment of the 49 M camping machine, formerly used for camp news, was integrated. Connected to the radio, a so-called loudspeaker transmission can be carried out in place of the microphone, which is essentially the same as the telephone mode.

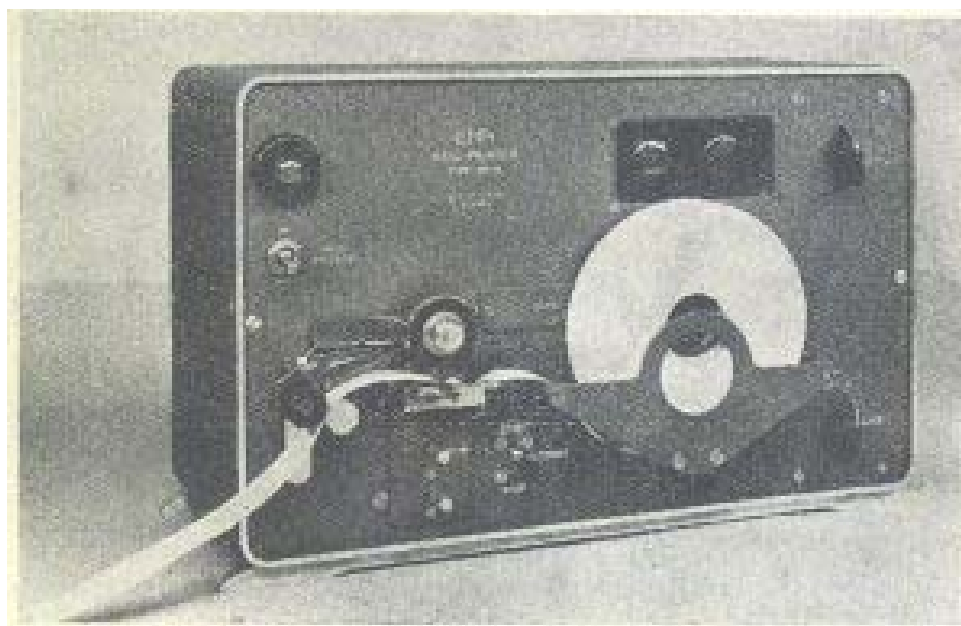


If you are using a hard telegram, you need to insert a relay between the HTG and the radio key. Pulses have a bandwidth of 125 Hz at 125 rpm and 258 Hz at 300 rpm.

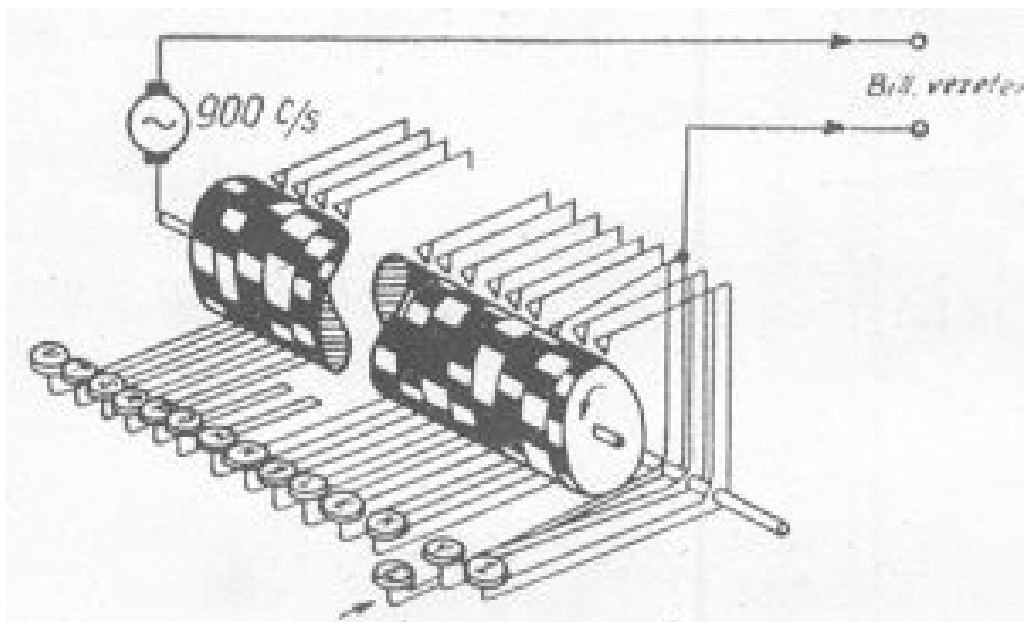
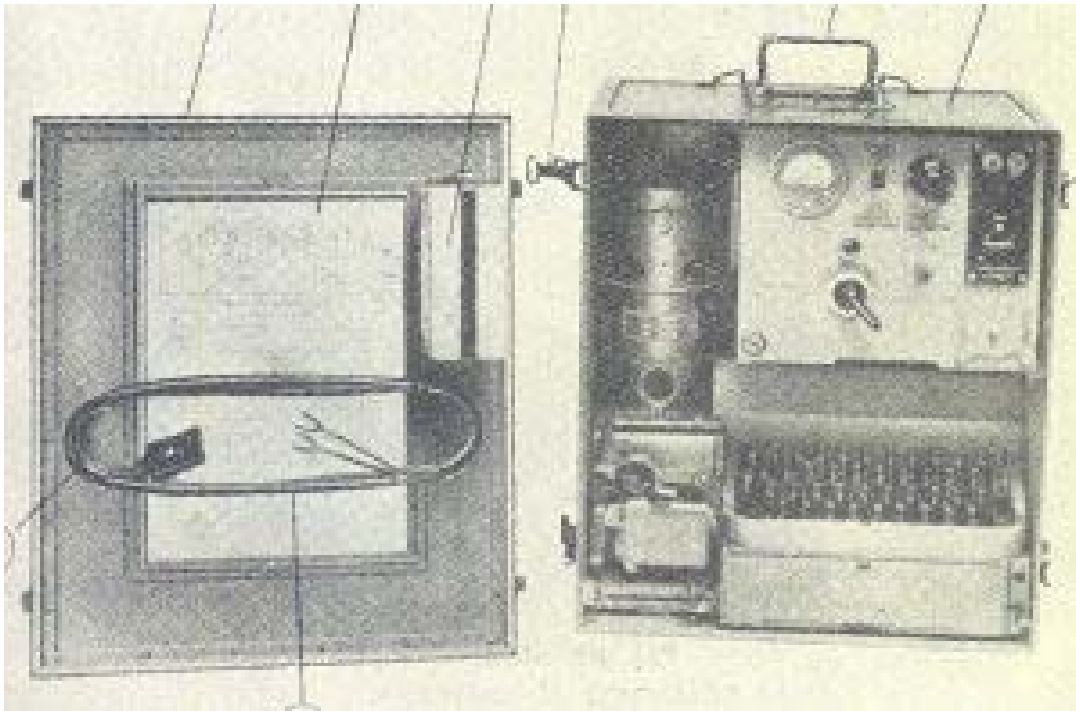
Its range is the same as the range of radio used. When operated in a wired system, it has a range of five people - but it can be further enhanced with conventional telephone amplifiers. In the latter case, a camp telephone can be connected to the guide presses of the telegraph, and the resistor can be called.



The huge advantage of Hellschreiber machines is that, even in severe atmospheric disturbances, they surpass the manual and machine overheads in terms of operational safety. As long as the use of Morse or the five-alphabet, atmospheric disturbances, even when some pulses are omitted, or when signals are replaced instead of pauses, they do not change the letters. From experience, the signal sent will be no more than a faint. Their installation is relatively simple, and their installation does not take more than a few minutes. To treat one person is enough.

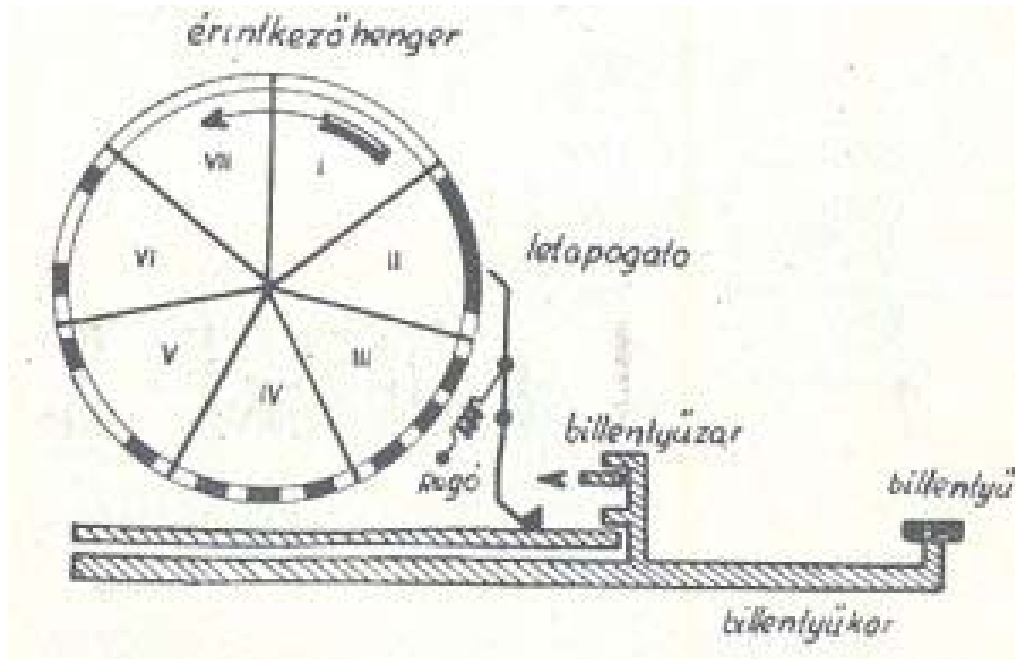


The 49 M HTG-1 transmitter is a vibration-generating tube - it produces 900-wave waves. The transmitter also includes a contact roll and a key system.

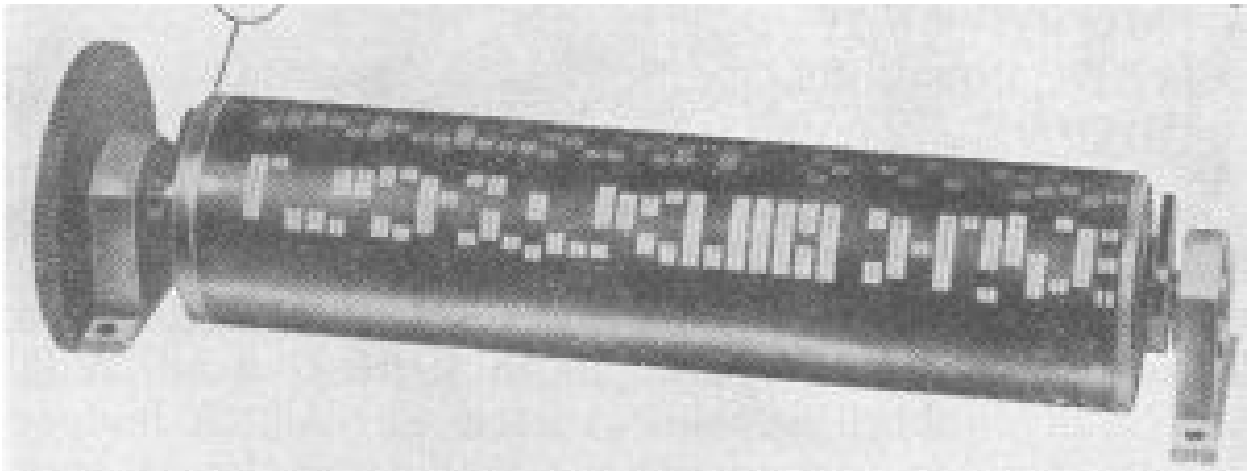


The receiver consists of a preamplifier, rectifier, amplifier stage and writing system. As mentioned above, the Hell telegraph works with the so-called seven-line system on the principle of the image telephony operation.

This is understood to mean that the image field is divided into seven sections parallel to the direction of the tape, so that the entire picture consists of forty-nine parts. (See figure.) Scanning from left to right, from top to bottom. In our example, the letter E is shown on the surface of the transmitter cylinder.

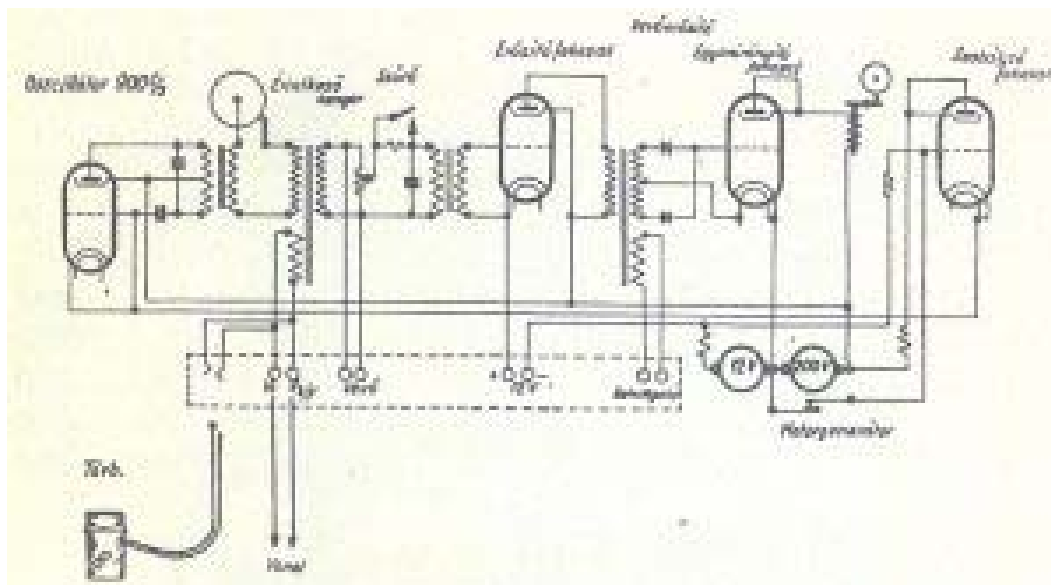


The circumference of the cylinder, as shown in the figure, is also divided into forty-nine slices - and each character and letter has its own code. By pressing the letters, the mechanics push the corresponding scanner onto the surface of the continuously rotating cylinder, where the spring closes the metal to the metal surface and opens it on the insulated. Through the contacts, the signals of the vibration generator 6BA6 are partly transmitted to the line and partly to the receiver itself.



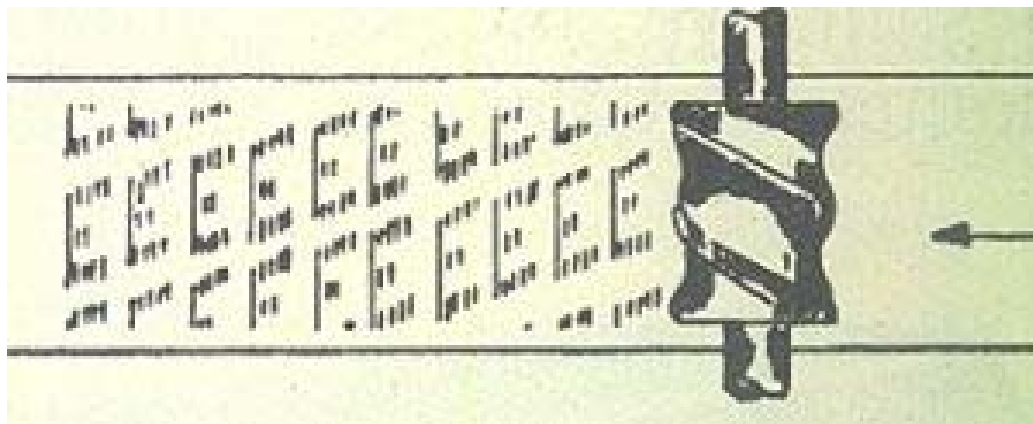
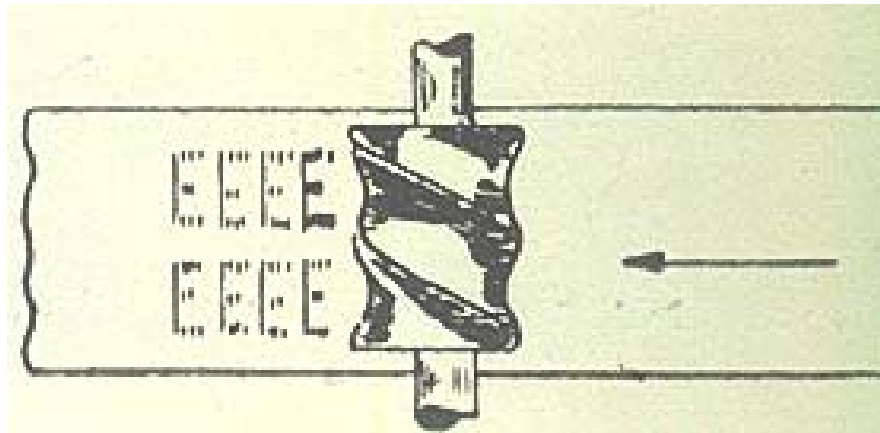
Transmission is done by pressing the appropriate lever on a typewriter keyboard. The Hell machine recorder, as described above, is a rhythmic system, which means that it can only be written on a regular basis. Its speed is 150 letters per minute.

During reception, both the own and the incoming signals pass through the amplifier stage, and after the rectification, the anode current of the amplifier tube is controlled. The latter passes the magnetic coil of the writing system and, by pulling the magnetic tongue, pushes the tape onto a roller with a screwless writing pad, the so-called writing roller.





The electromagnet's tongue is actually a smooth two-lever hoist - if the magnet is pulled, the writer's press will push the continuous paper belt to the rotary spindle. The surface of the threads is kept wet by a felting roller made of felt. When the paper web is pressed against the spindle, a signal is drawn to the tape, depending on the speed of the paper and the speed of the spindle, the current strikes of the signals coming from the line or the radio. There are two threads on the writing roller, so each signal is drawn twice in two consecutive rows. As with telegraphs in general, a certain amount of synchronization is required between the two machines. If the run together is perfect, the received signal is arranged in rows parallel to the two edges of the tape. If the run together is perfect, the received signal is arranged in rows parallel to the two edges of the tape.



If the transmitter and receiver machine speed is different, the written text will be inclined. If the transmitter is in a hurry, the rows will move from left to right if slower, from left to right.



Of course the above-mentioned writing is just a teaser, nothing more. If you have such a machine and you have never been robbed, please do not give it a flash on the first run. It can be enveloped that the electrolytic capacitors in HTG-1 have given themselves over time, so that instead of the sound, only the spherical bullet pops out of the box when you put it on. Its power consumption from twelve Volrs is not, of course, just four amps.

If you have any questions, feel free to let us know and we will try our best to do it!

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