



MRK-1

Country of origin: Hungary

Though not directly within the scope of Supplement Volume 4 was the MRK-1 VHF DF receiver. Considering as being used in the GDR by MfS, it was included in this Supplement.

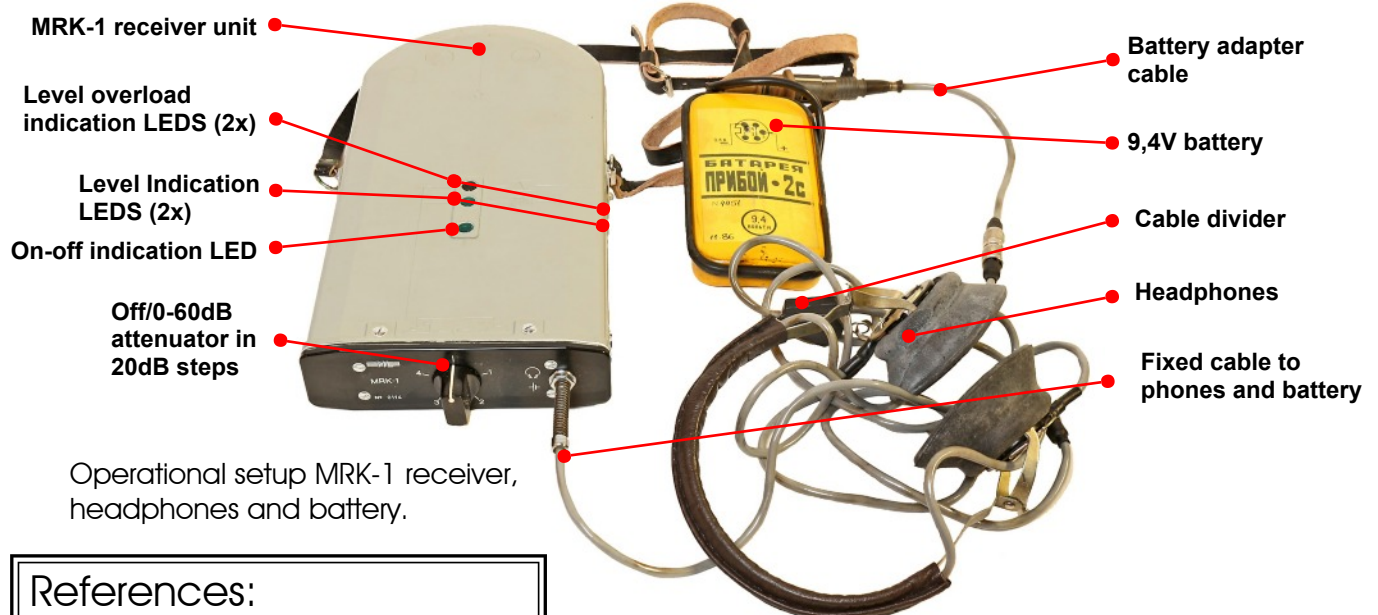
DATA SUMMARY

Organisation: Security and probably Search & Rescue organisations of Warsaw Pact countries.
Design/Manufacturer: M.L., Budapest, Hungary.
Year of Introduction: 1980.
Purpose: Direction finder for locating emergency beacons of downed pilots.
Receiver:
Circuit features: Dual conversion crystal controlled superheterodyne with special features including accurate direction of an emergency transmitter at very close distance. IF: 10.7 and 0.455MHz. AM.
Frequency: 121.5MHz. International VHF aircraft emergency frequency.
Power Supply: 9.4V sealed battery.
Size (cm): Height 4¼, Length 29½, Width 10.
Weight (kg): 1.3.
Accessories: Battery, headphones, transport case.

MRK-1 was a portable fully transistorised, self contained and waterproof direction finder receiver operating on the 121.5MHz aircraft emergency frequency. It could therefore not only locate downed pilots from your own side, but also enemy pilots in possession of a VHF emergency beacon/transmitter-receiver. The MRK-1 receiver had a built-in loop aerial, the strength of the incoming signal (indication of direction and null) was indicated by the an audible signal level of a 1000Hz tone in the headphones. LEDS showing the visual level of the signal and overload indication were both on top and on the side of the receiver.

The receiver was powered by a 9.4V battery, which could be a type which was normally issued with a Russian R-855YM pilot's emergency transmitter (see next page). This battery was connected to the MRK-1 via an adapter cable, allowing the use of other types of batteries. The main reason for the choice of using an external battery was that it could be worn on the body, protecting it from being frozen in extreme low temperatures.

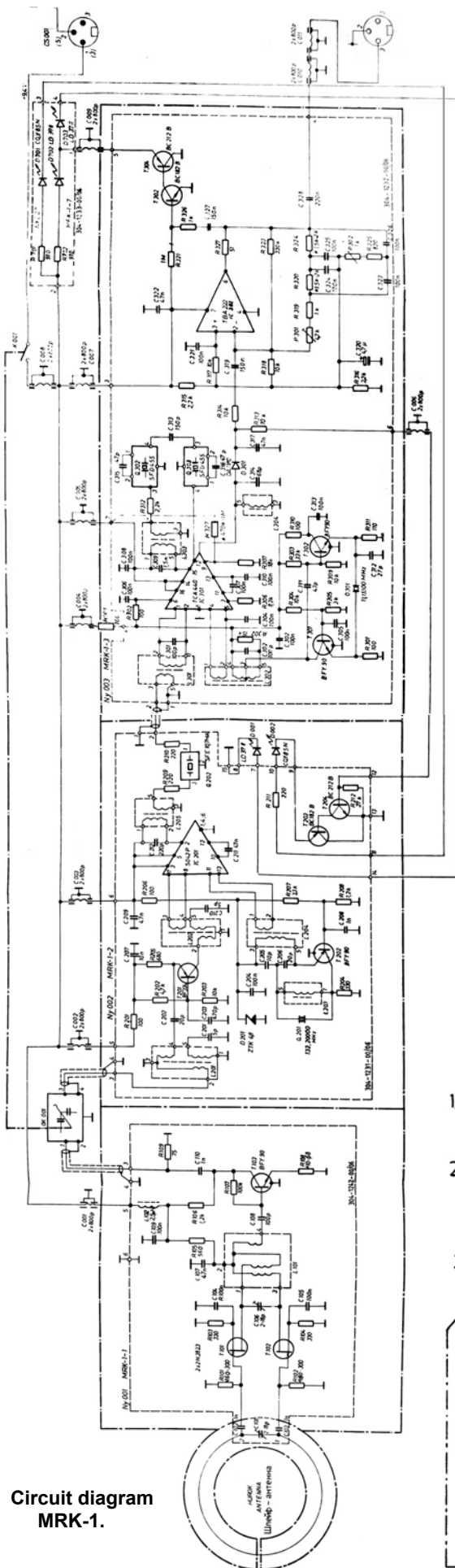
The MRK-1 and accessories were developed and produced by Mechanicai Laboratórium in Hungary.



Operational setup MRK-1 receiver, headphones and battery.

References:

- MRK-1 user manual, 1980, M.L., Budapest, 1980.



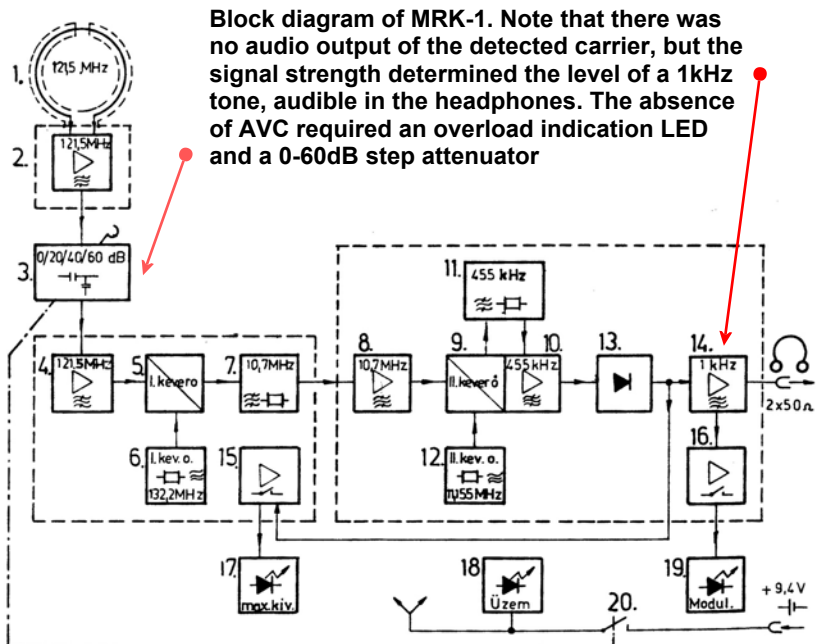
Circuit diagram MRK-1.



Internal view of attache case showing arrangement of MRK-1 and accessories.



Russian pilot's beacon R-855YM (left), and British emergency transmitter-receiver BE 310/234/D Sarbe Mk.3 (above). Both sets operated on 121.5 MHz and had speech facilities for short range communication to rescue parties.



Block diagram of MRK-1. Note that there was no audio output of the detected carrier, but the signal strength determined the level of a 1kHz tone, audible in the headphones. The absence of AVC required an overload indication LED and a 0-60dB step attenuator