

Polish
'AC mains
SW receiver'
Country of origin:
Polish in England

DATA SUMMARY

Organisation: Polish Home Army (Armia Krajowa); SOE.
Design/Manufacturer: Polish Military Wireless Research Unit, Stanmore, England. (Polski Wojskowy Warsztat Radiowy).
Year of Introduction: Probably late 1943-early 1944.
Purpose: Partisans, resistance, agents, SOE.
Receiver:
Circuit Features: Mix/Osc, IF, Regenerative Det/AF, AF output. (AM R/T and CW)
Frequency Coverage: 3.4-15.4MHz in 4 (8) ranges.
Intermediate Frequency: 1.5MHz.
Valves: 12K8, 12SK7GT, 12SK7, 117N7GT.
Power Supply: 120, 220, 250V AC mains.
Size (cm): Height 8, Length 21, Width 21.
Weight: 2.26kg.
Accessories: Wire for aerial, headphones.

REMARKS

The Polish 'AC mains shortwave receiver' (original type number unknown) was developed and manufactured in England by the Polish Wireless Research Unit in Stanmore, apparently in a small production run. It is believed that the receiver was primarily for use by Polish resistance organisations, partisans, agents and SOE (considering the English text).



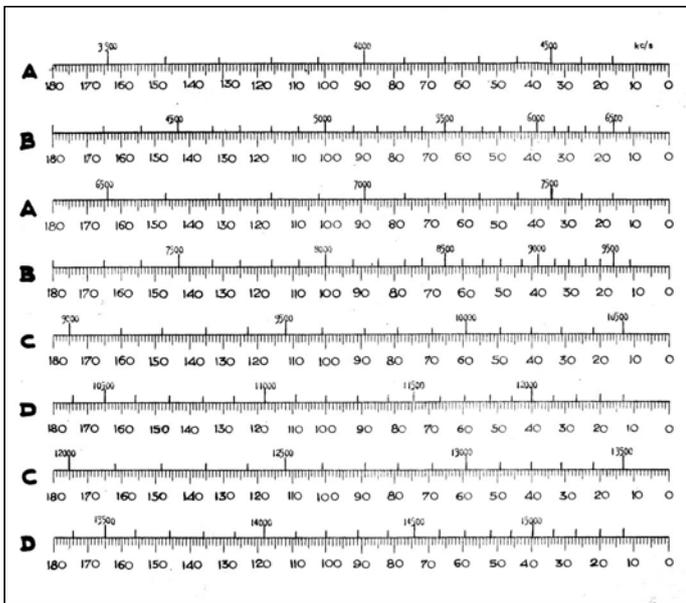
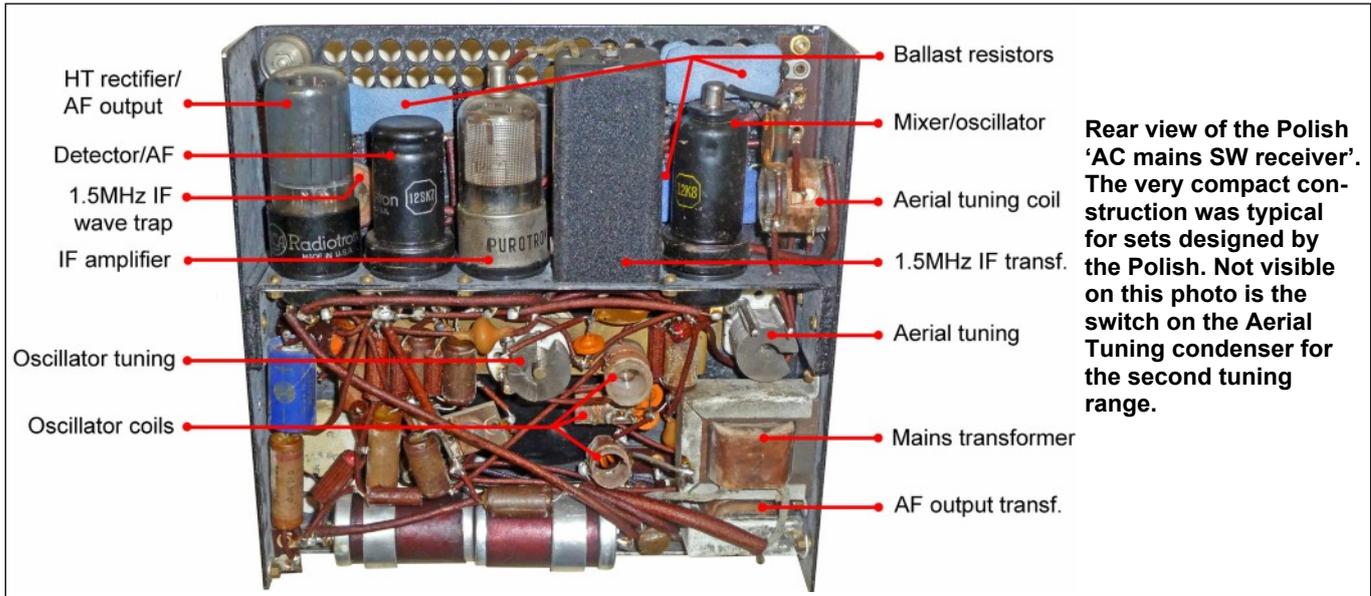
Top view showing the four valves and blue coloured ballast resistors used for the 117N7GT rectifier/AF output valve when used on 220 and 250V AC mains.

References:

- With thanks to Dennis Yates, UK, who attended me to this receiver. He took the splendid photographs and provided all further information for producing this chapter.



Receiver in metal box with tuning scale calibration card glued to the inside of the lid. The mains lead (bottom left) was fixed and coiled up between the lid and front panel when not in use.



Tuning scale calibration chart of 8 ranges, split up in 4 switchable ranges and using upper and lower mixing with separate tuning of the aerial circuit in two ranges.

Electrical design.

The circuit design was based on the receiver incorporated in most of the Polish transceivers, and included the models A1-3, AP4, AP5, MR2, MR3, BP3 and BP5.

The principal circuit was a redesign of the original 'Super-gainer' circuit, modified by adding an IF amplifier, but retaining the regenerative detector.

A very interesting feature devised by the Polish designers were separate local oscillator and aerial tuning controls. This allowed a simple mechanical construction without the need for tracking and saved oscillator band switching. In addition the same oscillator frequency was used for two receiving frequencies, the difference being + or - the IF of 1.5MHz. For this reason two tables of receiving frequencies calibrations were issued for the same oscillator range, covered by one or two aerial tuning ranges. The 'Polish AC mains SW receiver' had four switched oscillator ranges, resulting in eight calibrated tuning ranges with two automatic switched aerial tuning ranges.

The filaments circuit, however, was very different to any other Polish set and comprised two different branches:

- A 117N7GT valve directly fed from 120V mains, with ballast (series) resistors for 220 and 250V mains.

- The filaments of the other three valves were powered via a transformer with taps for 120, 220 and 250V mains.

High tension was directly obtained from the mains and rectified by part of the 117N7GT.



Top/rear view of the receiver with valves removed showing details of the 1.5MHz IF wave trap and HT ballast resistor. Note the large amount of ventilation openings.



Enclosure of the Polish 'AC mains SW receiver' with lid closed. This dust proof and water resistant construction was used with most of the Polish sets.

The panel was not screwed down, it simply slotted in the case and was a tight fit.