



PZTiR factory in Warsaw (1933), the main producer of military radio equipment in Poland prior World War 2.

Introduction of Polish Army Wireless of the Inter-War years.

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'Polish Army wireless sets used in the 1939 campaign', is the topic of two books by Roman Buja with detailed (technical) descriptions and rare photographs of wireless equipment developed and produced in Poland, used by the Polish Forces in the Inter-War years. It was very surprising to see that many photographs and documents survived

the invasion and occupation by the Germans in 1939, the September 1944 Polish uprising and later Soviet occupation. Although this topic was by no means within the original scope of the WftW Vol 4 Supplement, the rarity and availability of hitherto outside Poland unknown information was a reason to make an exception for pub-

lishing a multi-chapter Section.

Roman Buja, assisted with translations and provided technical information, high resolution photos and wrote the introduction.

Bogdan Szkudlarek, SP3LD, kindly made scans of manuals and additional photographs.

History of pre-war Polish field radio stations

After Poland regained independence in 1918, the Polish Army Signal Service used many different radio stations procured from Germany, Austria, Russia, France and Great Britain (these are pictured with a short description of main features at page 3). Several sets were also made in Poland in military workshops, and in the first Polish radio factories, Farad and Radjopol, both created in 1919. In 1921, after the Polish-Bolshevik war, the Polish Army procured three types of radio stations for higher level of command from The Marconi Wireless Telegraph Co.

Ltd., which were eventually designated RKA, RKG/A and RKG/N.

The first mass produced Polish military radio station was the division set RKD. Designed in 1926, it was produced in three factories: Polskie Towarzystwo Radiotechniczne (PTE), Centralne Warsztaty Łączności (CWL) and Państwowa Wytwarznia Łączności (PWL). The introduction of the RKD started the process of development and production of Army wireless stations in Polish factories. In 1929 prototype trials of the RKB were conducted, a newly developed

set for working in a battle net. Though not produced in series, it formed in 1936 the base of the N2 battalion radio station, designed by Państwowe Zakłady Tele- i Radiotechniczne (PZTiR or PZT).

Type N1 was a new division set developed and built in 1938. In the same year trials were conducted with two prototypes of the W1, a new radio station for communication at higher level of command. Almost all field radio stations of the Polish Army used in the campaign of September 1939 were produced in Polish factories.

Apart from wireless equipment procured from 1918 onwards, generally in limited quantities produced in various countries and mostly of WW1 pattern, there were two development categories: the initial classification from 1923 and new classification from 1934.

The initial Polish Army wireless stations were divided in 5 categories:

- RKG/N – HQ net
- RKG/A – group of army net
- RKA – army net
- RKD – division net
- RKB – battle nets (only in prototypes)

In 1934 Polish Army wireless stations were again classified in 5 categories:

- W – HQ set with European range.
- W1 – army and group of armies set with range 500 km on CW.
- W2 – division/brigade, army set with range 100 km on CW.
- N1 – division/brigade, regiment and heavy artillery set with range 50 km on CW and 25 km on R/T (AM).
- N2 – battalion and light artillery set with range 25 km on CW and 10 km on R/T (AM).

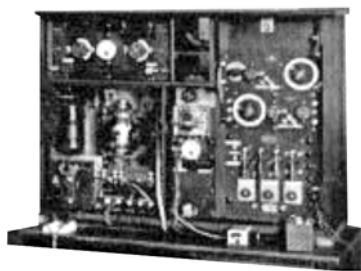
The W and W2 never materialised and there were only plans for their implementation.

'W' means „Wyższy” (szczebel dowodzenia) = Eng.: „Higher” (level of command).

'N' means „Niższy” (szczebel dowodzenia) = Eng.: „Lower” (level of command).

References:

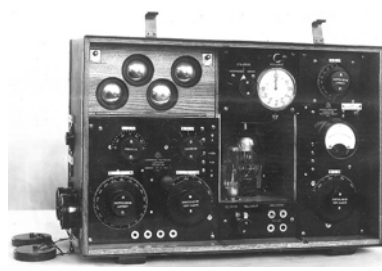
- Radiostacje Polowe, Roman Buja, ISBN 978-83-7769-588-3, 2014.
 - Radiostacje CZ. 2, Roman Buja, ISBN 978-83-7945-635-2, 2017.
- Both published at Edipresse Polska S.A., Warszawa.



RKG/A (Marconi Co. YC3).
(Chapter 307).



RKA (Marconi Co. YB1).
(Chapter 308).



RKD.
(Chapter 309).

Initial 1923 series of Inter-War Polish Army wireless sets.



W1
(Chapter 310).



N1
(Chapter 311).



N2 receiver
(Chapter 312).

New 1934 series of Inter-War Polish Army wireless sets.



ROD Wz. OP1
(Chapter 313).

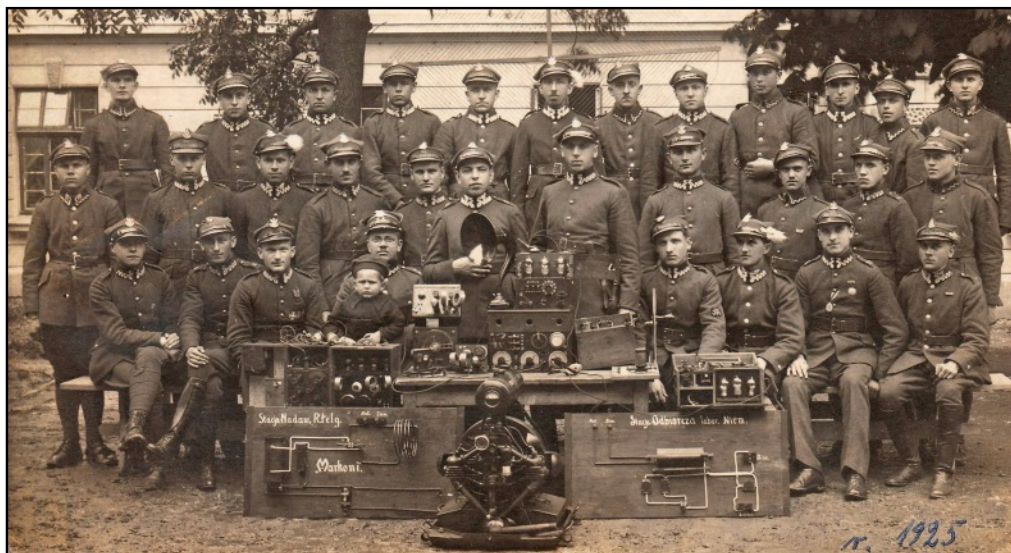


ROW
(Chapter 314).

Polish Army wireless receivers.



N2 transmitter
(Chapter 312).



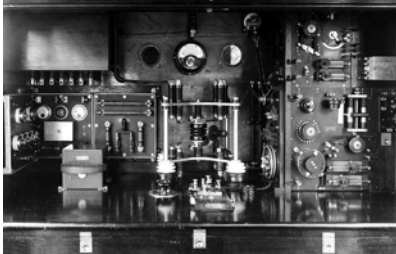
Polish wireless operators course, 1925. Wireless equipment shown in front: radio station type E10bis, transmitter type PP4, amplifier type 3ter and TPS (Transmission Par Sol) set (left).

Polish wireless cars (two Renault MH2 all terrain types in front). Warsaw, 1926 (right).

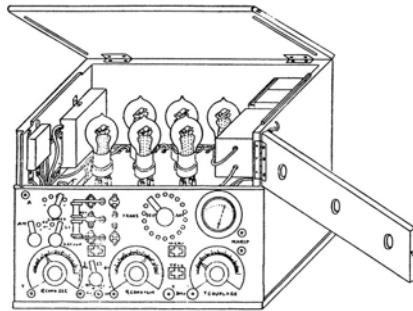




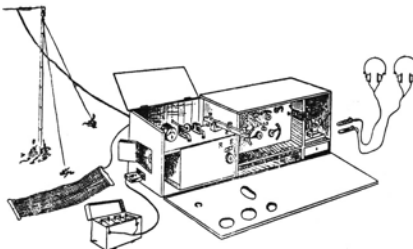
Telefunken D Type 14 was a German heavy field radio station designed in 1914, shown with Polish crew (1920). Transported in 3 limbers/carts. Transmitter: quenched spark gap, power 1.5 kW, frequency 142-500 kHz. Receiver: 2-circuit detector type E85c (43/137-2000 kHz). Aerial: umbrella type with 30 m telescopic mast.



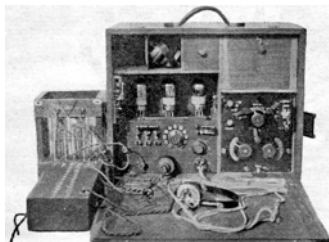
Marconi F2. Transported on a truck or in 4 limbers and carts. Transmitter: Marconi rotary spark gap, power 2 kW, frequency 200-500 kHz. Receiver: 2 circuits detector type, 75-1200 kHz with 2 receivers. In the F2 were also two 3-valve amplifier-detectors. Horizontal wire aerial on two 21 meter tall masts. Range 500 km.



E10bis, a French valve radio station. Housed in a wooden box. Transmitter: 3 valves type TM connected in parallel, 300-500 kHz, CW, AM. Receiver: 3 valves type TM or R, detector with reaction and 2 stage AF amplifier. Aerial: umbrella type with 13 m telescopic mast.

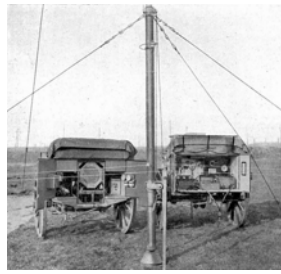


PP4A was originally a French portable radio station comprising a spark transmitter and detector receiver designed in 1918. Transmitter PP4A could work on 2 frequencies: 1110 or 1430 kHz. Power: 40 W. Power source: accumulator 10V/20Ah. Receiver: Type A1, 2-circuit with crystal detector, freq. coverage: 700 3000 kHz. The set was housed in a single wooden box.

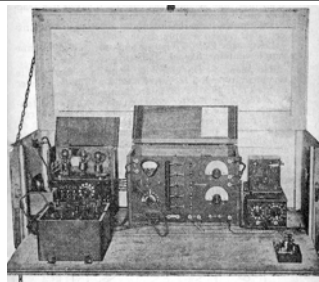


ROD Receiver (Radiostacja Odbiorcza Dywizjonu) was comprised of a French A1 receiver and amplifier type 3ter fitted in wooden suitcase. The Amplifier type 3ter had 3 type TM or R valves, one could function as detector. 2 headphones could be connected. Power source: 90 V HT dry battery and a 4 V accumulator. Weight of complete set was 100 kg. It could be transported by 3 men. Range: 40 km.

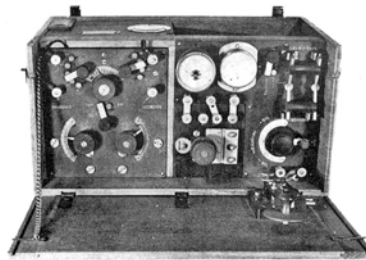
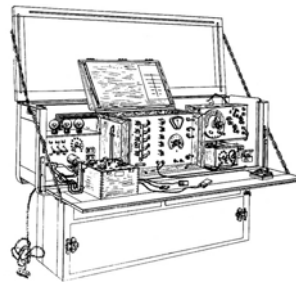
ROD used by Polish wireless operator.



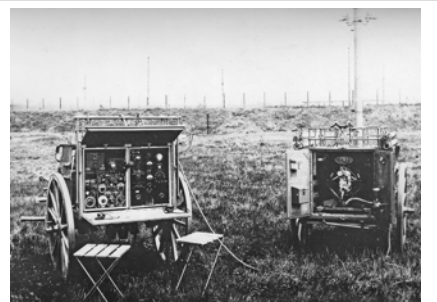
GEF17 (Gefechtsstation Type 17 – Battle Station Type 17) was a German field radio station transported in 2 limbers and made by Telefunken at the end of WWI. Transmitter: quenched spark gap, power 500 W, frequency 375-1500 kHz. Receiver: 2-circuit detector type E186a, 150-2500 kHz, amplifier type EV89 (with 2 type EVE173 valves). Aerial: umbrella type with 17 m telescopic mast. Range 80 km.



E3bis was a French valve radio station comprising 5 units: Transmitter: 10W, frequency 210-330 kHz; CW and AM voice. 4 type TM or R valves connected in parallel. Detector receiver type E3ter; Amplifier-detector type 3ter, and a wave meter. Aerials: V type (horizontal), double V (W) type (horizontal), umbrella type with 25 m telescopic mast. Range: 100 km on CW, 30 km on AM.



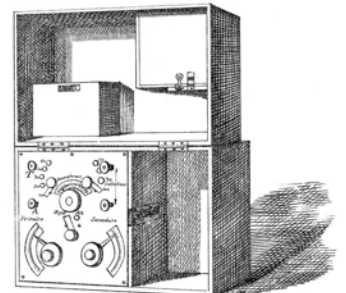
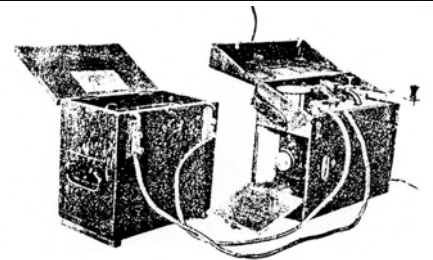
PP5 was a French portable spark radio station transported by 6 men. Transmitter: Braun system, power 50 W, operating on 3 frequencies: 860, 1110 and 1430 kHz. Receiver: type A1. Aerial: 2 x 35 m wire (horizontal V) or 1 x 35 m, depending on frequency.



Gfuk18, a Telefunken field radio station transported in a limber and cart. Transmitter: type 04TFV, quenched spark gap, power 400 W, frequency 190-1300 kHz. Receiver: type E213a, 85-2000 kHz, 2 circuits with reaction with 2 type RE16 valves connected in parallel or used as detector receiver. In addition a 2-valve amplifier type EV211b and wave meter type KW61e. Some stations had an umbrella aerial with a 15 m Magirus mast and others a T aerial with two 12 m masts. Range 150 km.



PP4 (Poste Portatif Nr. 4), was a French portable spark transmitter made in 1916, used for one-way front line communication. Power 40 W. Powered by 10V accumulator. Fixed frequency 1430 kHz. Aerial: 30 m wire on three poles 1 m high. Counterpoise: earth mat. Range 3 km.



A1 was a French portable detector receiver used to receive airplanes sending artillery fire correcting messages, and as a communication receiver in the PP4A and PP5, designed in 1915. It had 2 tuning circuits and crystal detector. Aerial: wire 20 or 35 m long on 3 bamboo poles. Freq. coverage: with 20 m aerial: 940-3000 kHz, with 35 m aerial: 600-1000 kHz.

LTS 250 W was a Polish CW valve transmitter designed and built in 1921 by Farad in Warsaw. Frequency coverage: 230-375 kHz. Used in higher level of command communications in the 1920s.

