

NK-1 transmitter
Country of origin: England

REMARKS

The NK-1 (Nouzového Krystalu, translated 'Emergency Crystal'), was a crystal controlled shortwave transmitter based on the 1939 'OK1AU' miniature agents transmitter design (see Chapter 305). It was included in the equipment of several groups (recorded was group 'Clay' with Čestmír Šikola as wireless operator) sent by parachute into occupied Czechoslovakia by the intelligence department of the exile Czech Ministry of Defence in England. The NK-1 was actually just a set of components for assembling a single 6L6 valve (or two valves in parallel) transmitter in the event that equipment was damaged or lost, or more equipment was required.

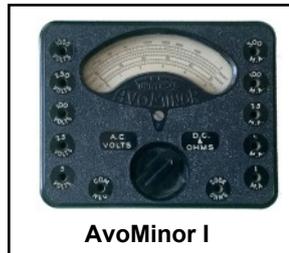
The term 'emergency crystal' was used in the packaging of equipment so that the English would think that it was just a crystal and parts to be used in an emergency, deceiving that groups were equipped with another transmitting device, which might have led to reductions in supplies. Wireless operators were taught to assemble the NK-1 in a preparatory course.

The NK-1 component kit contained several capacitors, a rotary capacitor, wire and a coil form, resistors, a valve socket, an 6L6 valve and a crystal. A printed wiring (circuit) diagram and simple formula to calculate the coil for different frequencies was usually carried personally by the wireless operator. Power was assumed to be taken from the receiver in use or any available source.

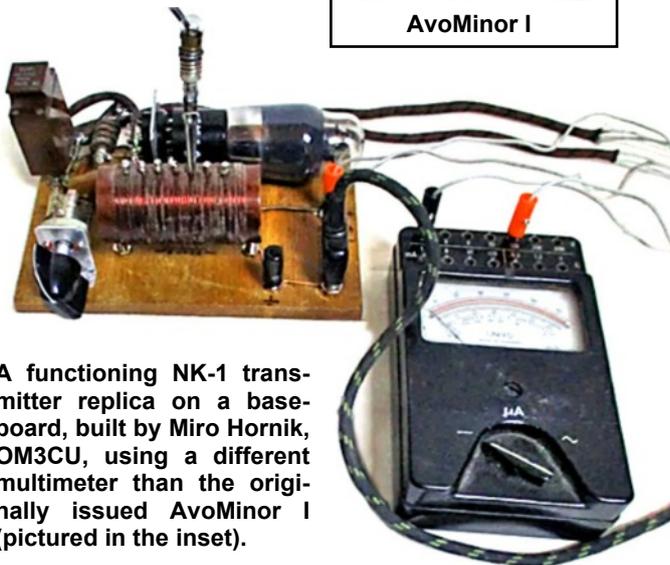
An AvoMinor I multimeter was issued for measuring the anode current (tuning the transmitter). The construction, on which Miro's second NK-1 replica was made, corresponded with that taught at the wireless operators training: a simple wooden baseboard with all components fitted on top.

DATA SUMMARY

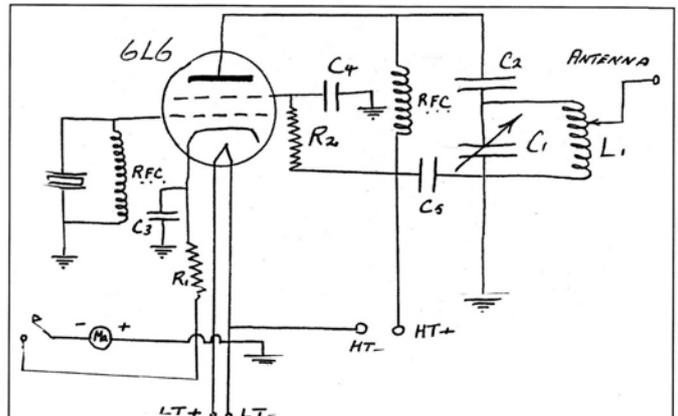
- Organisation:** Czech Army in exile in England.
- Design:** Based in the OK1AU transmitter, most probably by Antonin Šimandl.
- Year of Introduction:** 1944-1945.
- Purpose:** Agents and resistance in Czechoslovakia.
- Circuit features:** Crystal oscillator/RF power amplifier. CW only.
- Frequency:** 1.7-10 MHz (estimated) covered in three ranges by differently wound coils.
- Valves:** 6L6 or similar power type.
- Aerial:** Wire and counterpoise or ground.
- Power Supply:** A separate locally obtained (AC Mains) power source, for example a broadcast receiver.



AvoMinor I



A functioning NK-1 transmitter replica on a baseboard, built by Miro Hornik, OM3CU, using a different multimeter than the originally issued AvoMinor I (pictured in the inset).



A list of alternative German values will be supplied 611

PARTS REQUIRED.

- C(i) .00025 m.f.d. variable condenser
- C(ii) .001 m.f.d. Mica condenser
- C(iii) .01 m.f.d. paper condenser
- C(iv) .01 m.f.d. " "
- C(v) .01 m.f.d. " "
- R(i) 200 OHM 2 watt resistance
- R(ii) 1500 OHM 2 watt resistance
- RFC 2.5 MH HF choke
- L(i) 1.75 Hc
42 turns of 22 gauge enamel wire 2" long
- L(ii) 3.5 Hc
21 turns of 18 gauge enamel wire 2" long
- L(iii) 7 Hc
15 turns of 18 gauge enamel wire 2" long.

Original circuit diagram of the NK-1 agents transmitter with component values and coil winding details.

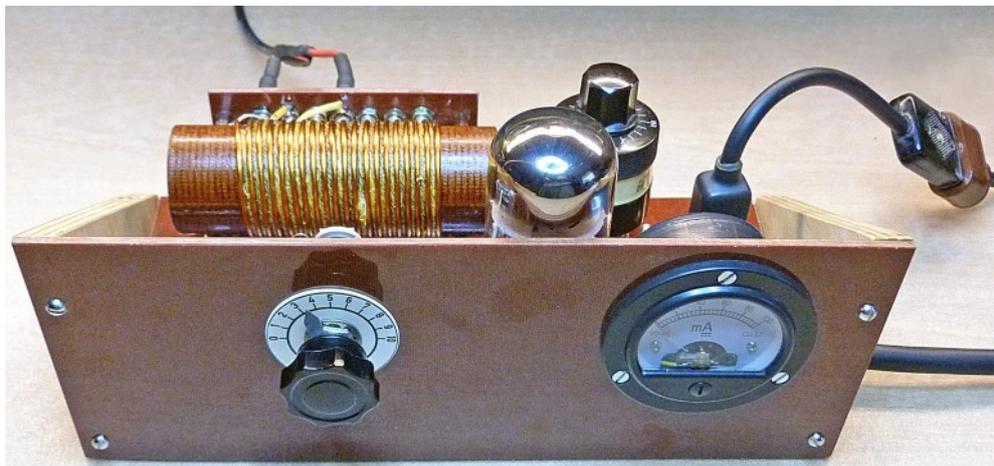


Miro Hornik, OM3CU, originally built a NK-1 transmitter replica on a baseboard with Paxolin front panel incorporating a meter (above and top right). He was later informed that an AvoMinor I multimeter was issued to the wireless operator and accordingly changed his replica as pictured on page 1.

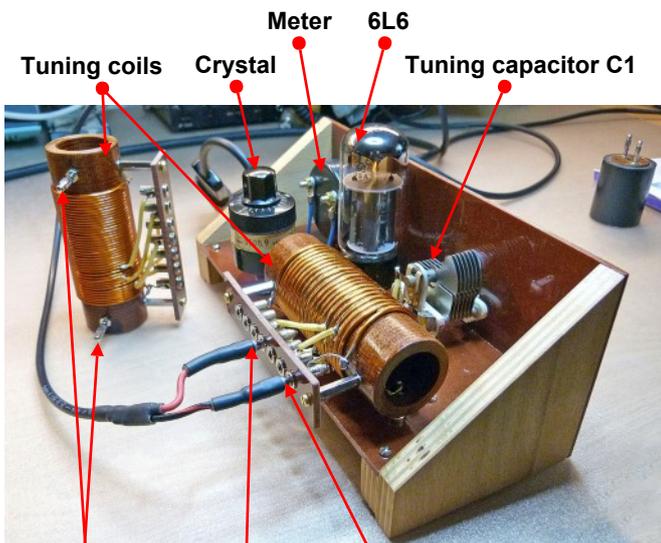


References:

- Construction details, technical information and photographs were kindly provided by Miro Hornik, OM3CU.
- Photographs of NP-1 replicas taken by Thomas Hoeppe, DJ5RE, Germany.
- Muži a radiostanice tajné války, Vit Hanák, OK1HR, Elli Print, 2002, isbn 80-239-0322-5.



NK-1 replica built by Thomas Hoeppe, DJ5RE.



Components of the DJ5RE replica NK-1 transmitter.

Thomas Hoeppe, DJ5RE, a renown builder of replica agent radios, constructed his NK-1 after the first replica of Miro Hornik, OM3CU. The anode tuning coils were fully plug-in with taps terminated in banana sockets.

See this link: <https://www.qrz.com/db/DJ5RE>