

# K9YA Telegraph

Robert F. Heytow Memorial Radio Club

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## Ozark Patrol Receiver

Regenerative Blast from the Past by David Cripe, NMØS, and 4SQRP



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*In days of old when SWLs knew no code and pocket-books quite restricted, They built their receivers in the regenerative mode and were soon Morse addicted.*

K9PL

Reading the Ozark Patrol kit's (<http://www.4sqrp.com/ozarkpatrol.php>) description I was immediately reminded of Allied Radio's Knight Kit trio of simple regenerative receivers: Ocean Hopper, Space Spanner and Span Master. I still have my Span Master with its complement of 6BZ6 and 6AW8A tubes and tip pin headphone jacks. Nightly DXing with the torture devices known as Trimm headphones led to high-pitched ringing in the ears persisting for hours unto sleep. Despite that occupational hazard I was daily drawn to the wide world of signals that two-tuber offered.

From the Ozark Patrol 4SQRP Web site:

*Frequency Range: 3.5-15 MHz in two bands*

*Sensitivity: Yes!*

*Power Supply: 6 x AA batteries*

*Audio Output: A 2.6" speaker is included, as well as a jack for 1/8" stereo headphones*

*The Ozark Patrol circuit is a two-band shortwave receiver, using only three NPN transistors in its circuit. It employs a reflexed regenerative detector to maximize gain from its simple design, followed by a two-transistor audio amp. It is capable of operating from a simple wire antenna.*

*This kit features a pre-drilled and silk-screened circuit board front panel with a total of 38 through-hole*

*components mounted on pads etched on the opposite side. Component values and reference numbers are silk screened by each part location for fool-proof assembly. This style of PC board was invented in 2003 by our own Joe Porter, WØMQY, as an optional board for the NJQRP RF Sniffer, a field strength meter designed by Joe Everhart, N2CX. Since Joe lives in Pittsburg, KS, the board design was dubbed the "Pittsburg" style.*

The kit's first run ran out of stock in 36 hours, so I missed that window of availability. Undismayed, I mail ordered my kit and a month later received one of the first of the second run.

Inventorying and sorting parts into an egg carton I was very pleased to find nothing missing. The 4SQRP Group's kitters are very professional about supplying complete kits. In the rare instance where a component is missing, their response to e-mails is rapid and the

missing component quickly received.

It is a handsome looking piece of gear with its piano-black and silver front panel. All electronic components mount on the back of the front panel. The circuit includes only one toroid and its 20 turns are easily wound with 22 AWG magnet wire.

*"Soon Morse addicted"*

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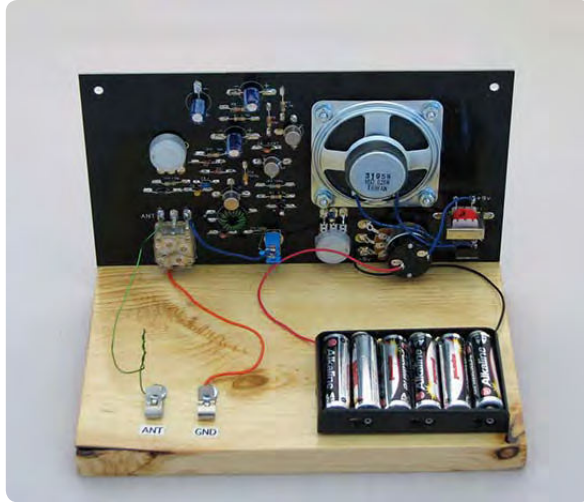
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A supplied pine board supports the front panel, the six AA-cell battery holder and Fahnestock clips for antenna and ground. Decorate the board as you choose. I chose to stain it and finish with two coats of polyurethane gloss varnish applied with a foam brush. As completed it does honor to the “inexpensive receiver kits from Radio Shack, Knight or Allied” it was “designed to pay homage to....”



### Tips

Be sure to download the latest versions of the Ozark Patrol assembly manual and Bill of Materials. The manual I used was dated 7-22-14. The second run uses one gimmick capacitor—two in the first run. The capacitor complement between runs differs slightly.

Pittsburg style construction, after a bit of practice, proceeded quickly. Bending the component leads, only a slight bend is needed, into a shallow “W” became reflexive after the first couple of resistors.

Audio transformer (T1) mounting tabs are bent out to facilitate soldering to the provided pads. I lightly sanded the mounting tabs as they were at first reluctant to take solder.

T1’s primary leads are soldered to the two pads provided on the Primary side of the transformer outline; the right lead soldered to the pad marked “+9v”.

The manual omits the step of soldering T1’s leads to the speaker.

The two straps (center, one above the other) remaining on C1, the polyvaricon, are soldered to the GND pad closest to the breadboard.

C9 is the darker blue of the two blue capacitors (C9 and C11).

The kit with its low parts count and laborsaving construction method assembled quickly, about four hours, and worked from first switch on.

### Listening

Contingent on propagation, evenings spent monitoring with the receiver hooked to one leg of my low 80-meter dipole and the shack ground returns excellent results. Amateur 80- and 40-meter CW and SSB signals are easily heard. On the upper band powerful signals from a multiplicity of domestic and DX SW broadcasters and many commercial and governmental digital signals need only minimal volume settings.

Slight hand capacitance was noted in proximity to the front panel. Stability is good requiring only an occasional touch up. The fine old juggling act of tweaking the tuning, regeneration and bandwidth knobs quickly becomes second nature and enhances the vintage radio ambiance.

The two-transistor amplifier drives the built-in speaker with operating-desk-to-ear amplitude, but headphones greatly improve the experience by enhancing volume, intelligibility and listening comfort.

The Ozark Patrol kit is the perfect choice for those in the mood to relive a bit of their youth and for those wishing to share the fun and wonder of old time radio technology with the young. ■

Subscribe to the friendly Ozark Patrol Yahoo! Group for all the latest news and views:

<https://groups.yahoo.com/neo/groups/ozarkpatrol/info>

### Ham Lingo

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“CALL-SIGN”



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