K9YA Telegraph

Robert F. Heytow Memorial Radio Club

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The HAL Devices 1550 Keyer

A Venerable Electronic Keyer

Philip Cala-Lazar, K9PL

Urbana, Illinois was the birthplace of HAL 9000, the computer aboard the spacecraft in Arthur C. Clarke's 1968 screenplay and novel, *2001: A Space Odyssey*. As depicted, HAL, once his controlling nature got the better of him, was a pretty scary entity. However, that HAL is not likely to be confused with the HAL Devices 1550, a TTL keyer, also built in Urbana, Illinois. This HAL is a great device, obedient to paddle commands, not at all scary and unlikely to croon *A Bicycle Built for Two*. Matter of fact it is a great keyer for learning the iambic persuasion of keying.

> *"…definitely deserves a blue ribbon."*

Tony Dorbuck, W1YNC, reviewed the HAL 1550 in the December 1972 issue of *QST*. The keyer was priced at $65 for the basic version and $90 equipped with the optional call sign ID'er. For some idea of how expensive these items were to that era's hams that's $322 for the standard keyer and $446 for the ID-equipped version in 2007 dollars (http://www.measuringworth.com/ppowerus/).

Although a very basic keyer by today's standards, W1YNC was quite pleased with the 1550's design, features and performance and concluded: "Whether judged from the standpoint of operating or technical expertise, HAL Communications definitely deserves a blue ribbon."

The HAL 1550's very heavy-gauge metal cabinet houses one PCB hosting a complement of seven integrated circuits; point-to-point wiring to the panel-mounted components; and a built-in, downward firing, loudspeaker. Though front panel controls are limited to speed (8-60 wpm), tune, on/off-volume and includes a pilot light, there is a multitude of jacks and toggle switches provided on the unit's rear panel; far more than you will find on a contemporary keyer. A trim pot on the PCB adjusts sidetone pitch.

Out of the box the 1550 offered automatic dots and dashes (single or multiple); iambic (alternating dots and dashes); and dot memory (trailing dot). Removing the capacitor coupling "the iambic flip-flop and the dash flip-flop" disables the unit's iambic circuitry and removing a capacitor and shorting two pins on an IC disables dot memory.

Launched in the period that saw the beginning of the transition between tube and solid-state gear, yet was still heavily hollow-state weighted, the 1550 offers cathode and grid block keying and will run from 115 VAC (three-wire, grounding-type cord) or 12 VDC. The 1550's auxiliary transmitter outputs can key a linear amplifier or perform receiver-muting duties and permit toggling between normally open or normally closed contacts.

The ID memory, a diode matrix affair, programmed by the manufacturer, added the ability to send your

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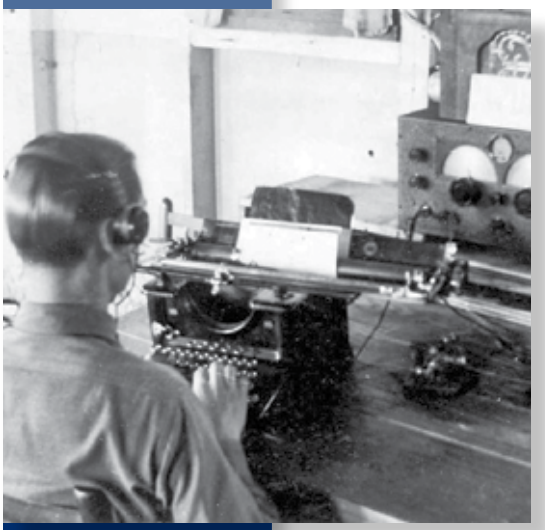
How I Became a Telegrapher and a Radio Amateur (Part I)

Jim Farrior, W4FOK



Radio Station WUGI at the C.C.C. camp in Greenville. Pascal Morris is copying a message on the "mill." Ed Montgomery, W4FAZ, gave me the speaker on top of the receiver. The transmitter, not seen, is on a shelf above the speaker.

As a boy of about 14 years of age, I lived in the small town of Letohatchie, in central Alabama, and would hang around the L&N depot. I became fascinated by the click-clack of the telegraph used for traffic control, railroad business, and for telegrams. After all of the years that have passed, I still remember how excited I was when the agent/operators offered to teach me the American Morse code. One of them gave me a telegraph key, sounder and some dry cells, so I could practice. I still have that sounder and telegraph key.

About the same time, I bought some surplus experimental materials that included, among numerous other things, a telephone receiver, a microphone, a ringer generator and the parts for building a crystal set radio. Selling the baby turtles I caught at nearby ponds paid for these things. The crystal radio set was much appreciated because our home had no electricity, and no radio.

"The crystal radio set was much appreciated…"

The only other person I knew who was interested in such things was a school friend, John "J.D." Lamar of Fort Deposit, Ala., to which town I traveled by school bus. I remember spending a weekend with him at his home where we performed some destructive experiments on an old Gilfillan radio set. I received my first electrical shock when I came into contact with the 110-volt power line. Later, both of us would go on to have a career in radio, and would become radio amateurs. Both of us were licensed in 1938. Although I didn't know it at the time, J.D. received his license about three months earlier than I did. His call was W4FLF, and mine was W4FOK. There is also about the same amount of difference in our ages. Although we didn't keep in touch through the years, we now communicate by e-mail.

Due to the Great Depression, I was not able to attend the last half of the 11th grade, and it was not possible for me to enter high school when the school opened in September of 1936. To provide income for the family I joined the Civilian Conservation Corps (C.C.C.), the members of which wore U.S. army uniforms and lived in camps typically located on state or federal parks. Enrollees were required to be 17 years old, but when I enrolled in Montgomery, Ala., on January 7, 1937, they overlooked the fact that I lacked four days of being 17 years old.

The primary objective of the C.C.C. was to provide work for young men and income for needy families. However, the work done by the C.C.C. also turned out to be of much benefit to the public. A major work objective was to improve public parks by planting trees, and building paths, roads, lakes, cabins, etc. The member was paid $5 per month and $25 per month was sent to the member's dependent family.

Each camp had a small radiotelegraph station, which was equipped with surplus army gear and manned by a C.C.C. member, a few of who were professional maritime or point-to-point radio operators unable to get a job. I quickly became friends with the radio operator at my camp at Valley Creek State Park near Selma, Alabama. I already knew the American Morse code, and he helped me to learn the International Morse code that is used on radio circuits. I enjoyed learning it. When the district headquarters sent a request to all camps in the district asking for candidates for the radio school in Ft. Barrancas, Fla., I was recommended. That was a lucky break that started my radio career.

I was sent to the CTC district headquarters at Ft. Barrancas, where the district net control radio station and radio school were located. There was no C.C.C. camp there, and the students lived in their own barracks but ate in the army mess hall. What an improvement over C.C.C. camp food! After 2 1/2 months of studying basic radio theory, maintenance and radiotelegraphy at Ft. Barrancas, I was sent on Aug. 20, 1937, to a C.C.C. camp at Morton, Miss., where I served as the

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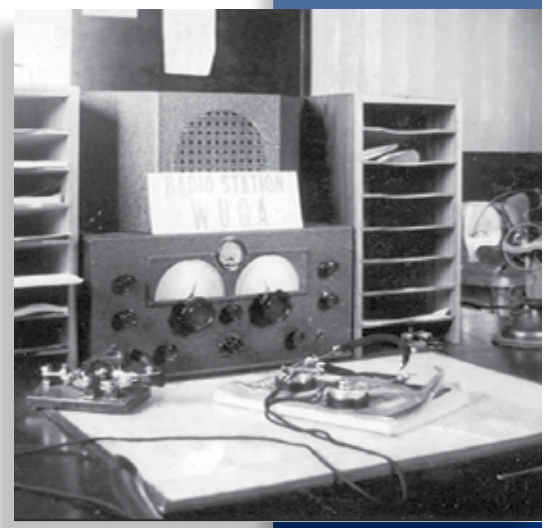
second operator for several weeks. I was then sent to the C.C.C. camp at Greenville, Ala. The camp was located in a park-like area on the edge of town.

When I arrived at Greenville on Sept. 18, 1937, the station's old National SW-3 receiver was inoperative. For several weeks while waiting for a new receiver to arrive, I was assigned to a work group that dug ditches and planted trees all day. I got tired of the ditch digging and took the receiver to a radio repair shop that was run by a radio amateur, Ed Montgomery, and told him my sad story. He looked at the receiver and said that an inductance in the plate circuit of the audio stage was open. At no charge, he replaced it by a resistor and the receiver worked well enough for me to get back on the air. After the ditch digging experience, it was really good to be able to stay in camp and operate the radio.

Ed Montgomery, whose ham radio call was W4FAZ, took me to his home and showed me his 160-meter ham station. He told me how much fun he had had building and operating the equipment, and I knew that some day I would get an amateur radio license and would build my own equipment.

After the new RME 69 receiver arrived, I practiced copying Morse code on the mill (typewriter) several hours each day, and soon became pretty good at it. I also bought a McElroy bug and practiced sending each day. Shortly after WUGI was back on the air, Pascal Morris, my assistant operator, arrived, but in January he was transferred to another camp.

The C.C.C. district headquarters moved from Ft. Barrancas, Florida, to Fort Benning, Georgia, and on Feb. 9, 1938, I was transferred to the new district "H" headquarters in Ft. Benning, Ga. A number of operators had been called in for testing, and I was selected to be the chief operator of the net control station, WUGA, which was located at the Torch Hill C.C.C. camp on the northern edge of the Ft. Benning military reservation. My becoming chief operator of the net control station was indeed a lucky break, as I had the responsibility of running the net, which had 11 stations in addition to the net control station. The stations were located in Georgia, Alabama and Florida.



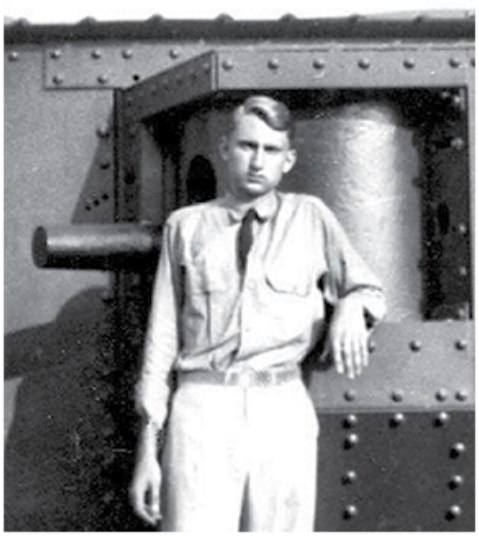
The operating desk at radio station WUGA, the Net Control Station for the District "H" Headquarters. The net frequency was 4440 kc/s.

At WUGA, I gained a considerable amount of maintenance and repair experience on a variety of communications equipment, in addition to handling telegraphic traffic for about eight hours each day. Capt. Phillips, W4CRA, the district "H" signal officer, had a good library of technical books, which I enjoyed studying.

"…happy and proud to earn my amateur radio license…"

Initially, most stations in the net had old surplus army equipment, but Capt. Phillips obtained funds to replace the old gear with new RME-69 communications receivers and new 80 watt Harvey 80T transmitters. I made weekend trips to some of the stations to deliver and set up their new equipment.

The Torch Hill C.C.C. camp, where we lived and where WUGA was located, soon closed down, and WUGA was moved to the Ft. Benning Army base, where we occupied a new building that contained a new 400-watt transmitter, an office, a classroom, a shop, a storeroom and some rooms where our personnel slept. We ate at a nearby Army mess, so once again I had good food.



Left: *A photo of me standing beside a giant WW-I tank that was on display near our Net Control Station building.*

While at Torch Hill, I was very happy and proud to receive my amateur radio license (Aug. 2,1938), with the call W4FOK, which I have held ever since. At Torch Hill we had a standby radio station equipped with a RME-69 receiver and a Harvey 80T

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A Rendezvous with Radio

Joe Medsker, K8KLC

Knight Ocean Hopper

Over a half century ago I became interested in building my own radio. The local library had a book that showed how to build a simple crystal set. Most all the parts were collected except for the crystal and the high impedance headphones needed to make such a simple radio. Our family had little money to spend on things like this so the only way was to earn some cash by mowing lawns. It did not take long to earn the necessary funds for the headphones. What joy this kid had playing with the simple radio. It could pick up two or three local broadcast stations. Surely there must be more stations out there, but how do you pick them up?

The coil in the radio seemed to be some sort of magic device that when adjusted tuned into different stations. What would happen if the coil were made smaller? Wow! Here were people talking to each other, not a broadcast but sort of like a telephone conversation. This was the discovery of ham radio. The only stations able to be picked up by the simple crystal set were amateurs who lived close by. It was fascinating and I wanted to know more about these stations.

"Do you remember Allied Radio?"

Do you remember Allied Radio? They put out a catalog of radio kits called Knight Kit. One of those kits was the Ocean Hopper. This was a regenerative detector and audio amplifier with plug-in coils to change the tuning range. As remembered, the radio kit price of about twelve dollars seemed almost out of reach. More lawn mowing and shoveling walks in the winter brought in enough cash. This radio helped to hone my skills at soldering and when finished it worked perfectly.

Operating the radio was another matter. It took some skill to adjust the regeneration and antenna coupling to get the most out of it. Those headphones were now getting a real workout. Many hours were spent short-wave listening and operating skills steadily improving. I could not wait to get home from school and turn on that little radio. Putting the headphones on was like a magic carpet. The headphones blocked out other noise in the house and placed your total attention on the radio signals. Just by turning the knobs you could instantly travel from one country to the next. What a thrill. All of this coming through the air and received on this little radio.

As years rolled by the Continental code was learned and a little later came that coveted radio license. I could now join others on the air and the first receiver used for amateur radio was none other than the Ocean Hopper. The crystal-controlled 6L6 transmitter blocked the regen during transmit. This was not a big problem as back then we tuned up and down the band for calls. It was quite a trick to get the receiver right on the same frequency as the transmitter. This was really only a minor problem and your operating skill with a regenerative receiver compensated for the lack of fancy frills we now all enjoy.

With tubes all lit up and wires running everywhere, headphones perched on your head, made for the most romantic times in amateur radio. Those tubes producing a soft glow on a warm summer evening with signals from all over pouring out of the phones was absolutely exciting. Transistor radios, electronic calculators (my first calculator was a slide rule), electronic wristwatches, computers, cell phones, even the transceiver, to name just a few, were still in the future. The excitement of radio continues to this very day and I have remained quite active. However, the new breed of radio lacking that warm glow of a vacuum tube seems to have a bit of the romance missing.

Yes, I operate with one of those modern all in one box, all mode radios these days. But the best mode is still CW. Almost all the modes have been tried here at one time or another, but CW just cannot be beat, especially if one uses headphones. Yep. That very first set of phones is still here. Many different phone cords have worn out through the years but the headphones still work as good as the first time I ever put them on, fifty-one years ago. ■

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Getting Snowed

Bob Ballantine, W8SU

I'll never forget that big red paddle on K2LEM's electronic keyer. It was an Eldico model right out of the mid-1950s. I was starting out in ham radio as W2RIE and had made a new radio friend, Bob Singer of Trenton, New Jersey who was a great operator and U.S. Merchant Marine.

Singer's comments about Radio Row in Manhattan always were in the back of my mind and in recent years I've found dozens of articles and pictures of that once famous landmark. It is quite a study in itself.

We used to use the term in CW: "Snow." "They snowed me." "He got snowed." "I can snow them." If a person sent too fast, the term snow meant exactly that, it was beyond the capabilities of one's receiving level. The Q signal QRS was then in order: "Please slow down."

c. 1947

I was at the K2LEM Quaker Bridge Road home one weekend and I jokingly told Bob that I could snow him with my Morse ability. I got on the red paddle Eldico and no matter how fast my sending, Bob could copy along. Then his turn, eventually he was up to 40-wpm and "I got snowed."

That was a memory of over 50 years ago and the OM can still get snowed. It is like the gunslinger or boxer, there is always someone faster! ■


Eldico 5640
(w1tp.com photo)

K9YA Holiday Pizza Bash


Dave, NE9A; Arny, W9FO; Steve, N9WAT; Steve, WA9FZB; Mike, N9BOR; and Dick, W9CBT.

Ham Radio Firsts

You Always Remember Your First...

Not record making amateur radio firsts as in first transatlantic message or first EME, but personal firsts and every active operator has a long list of these memories.

- First time able to copy a message in Morse.
- First license.
- First QSO.
- First repeater "kerchunk."
- First time you knew others were able to copy your fist.
- First CW QSO.
- First DX.
- First QSL card, subdivided by first domestic card and first DX card and first batch of cards from the QSL bureau.
- First ham radio plates. As a kid, callsign decals on the family car's rear window.
- First hamfest.
- First Field Day.
- First radio club meeting.
- First article published in the *K9YA Telegraph*. *K9YA Telegraph* Author's Guide

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The Rig that Named Me

Ek Returns for an Encore

Rod Newkirk, VA3ZBB/W9BRD

When peace broke out in late 1945 there were thousands of troops in the Philippines awaiting transport back home. All available ships were pressed into service but most of us cooled our heels for weeks. Volleyball, card games and the like helped pass the time. Our outfit was breaking up so we liquidated the company's kitty with a rum and Coke celebration. Many of us took days to recover from that party. When we finally sobered up we realized the long war was really over, the world was still young and we intended to live forever.

Our tent still had a jungle-seasoned, Australian-made HRO receiver that escaped inventory. One day we noticed a bunch of QSO-starved hams fooling around on 20-meters. My foxhole buddy Willie, W8YNY, and I couldn't resist joining in. All army transmitters had gone back to quartermaster to close out their books but we found enough junk in a nearby dump to fashion a 6V6-807 MOPA monstrosity to fill the bill. A single-wire-fed Windom antenna was stretched between tent tops.

> *"NAME HR IS EK"*

Radio conditions were superb, solid signals with very little skip. We got our little junk pile perking on CW with a few watts output. Our first QSO was with someone claiming to be on Palawan. We hadn't connected a key yet, so I was tapping two wires together at the 807's cathode. I did okay at first, about 10 WPM, and intended to give my name as Red, cleverly reasoning that monitoring authorities, if any, would hunt for a guy with red hair, of which I have none.

Holding one wire down and tapping with the other produced "NAME HR IS EK." I tried again but my name still came out as Ek. It was uncanny. Observing my futility, Willie hollered, "That's OK, that's OK. I knew a guy named Ekblad and everyone called him Ek." So I let it go at that. I was Ek on the air henceforth. By the time we closed down weeks later we used the self-assigned call KA1KN for contacts with OMs claiming to be in 25 countries on five continents.

Eventually arriving home I thought I had left Ek behind in the P.I. along with that peculiar piece of wireless gear. But he was about to make a comeback. Hams had only 10-meters and VHF until FCC made the mistake of announcing a date for the return of 80-meters to amateurs in the spring of 1946. Hundreds of hams with gear ready to go jumped the date by days, no callsigns. I was visiting friend Jim, W9MFY (now K9JQ), one evening. He had a neat homebrew 35T rig at the ready so we fired it up.

We joined the early birds with no callsigns. I think I was signing off with someone claiming to be in Ohio when a tuner appeared on frequency. He sent "Ek?" It was Willie, running an 807 on his farm in upper Michigan. He had recognized my fist among all the bootleggers! We had a great contact, each of us claiming to be Ek. Jim and I later learned that radio inspector Ken Hedrick had been leaning on our doorbell during that QSO. With doors locked and volume up high we were oblivious. Ken finally gave up and went away.

Too many cats were out of the bag. Anyway, in a few days we were all legal once more. ■

Ham Quips

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call sign preceded by "DE." The identification process is initiated via a hand key or switch connected to the "I.D. KEY" jack.

Somewhere around 1978 I received my HAL 1550 as an unexpected gift from my pal, Sy, WD9BFC (SK), when he replaced it in his shack with an MFJ Grandmaster keyer. (See: *K9YA Telegraph*, January 2006.) The Grandmaster was a mighty impressive piece of gear at the time with its many memories and pushbutton interface.

I learned iambic keying with a Heathkit HD-1410 and its built-in paddle, so putting my 1550 on the air meant adding a new, standalone, paddle to the shack. I purchased the Bencher BY-1 that still serves as the flagship Morse instrument in my third generation shack with its presence and daily use.

Rear Panel

Yes, HAL Communications Corp. is still around and still located in Urbana, Ill. ■

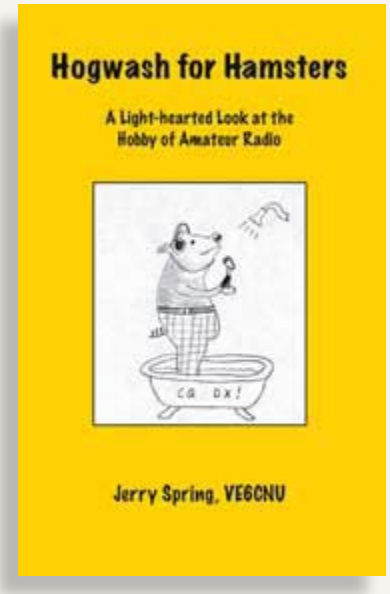
Top View of Hal Keyer

Point-to-Point Wiring

Hogwash for Hamsters

Over two years in the making, *K9YA Telegraph* contributor, Jerry Spring takes a look at the more humorous aspects of ham radio. Check out the stories, riddles, one liners, limericks, jokes, nursery rhymes and more. Find out what's for dinner at Elmer's Diner and why the ham operator refused to buy the used tri-band beam. Got some tough technical questions? Then ask "Dear Liddy" for straight answers. This book definitely proves that Jerry had too much time on his hands in order to come up with this kind of stuff. If you're among the group that thinks hams take themselves too seriously, then get a copy of *Hogwash for Hamsters* and spread the fun.

For more information, and to order your copy, go to: www.trafford.com/08-1259



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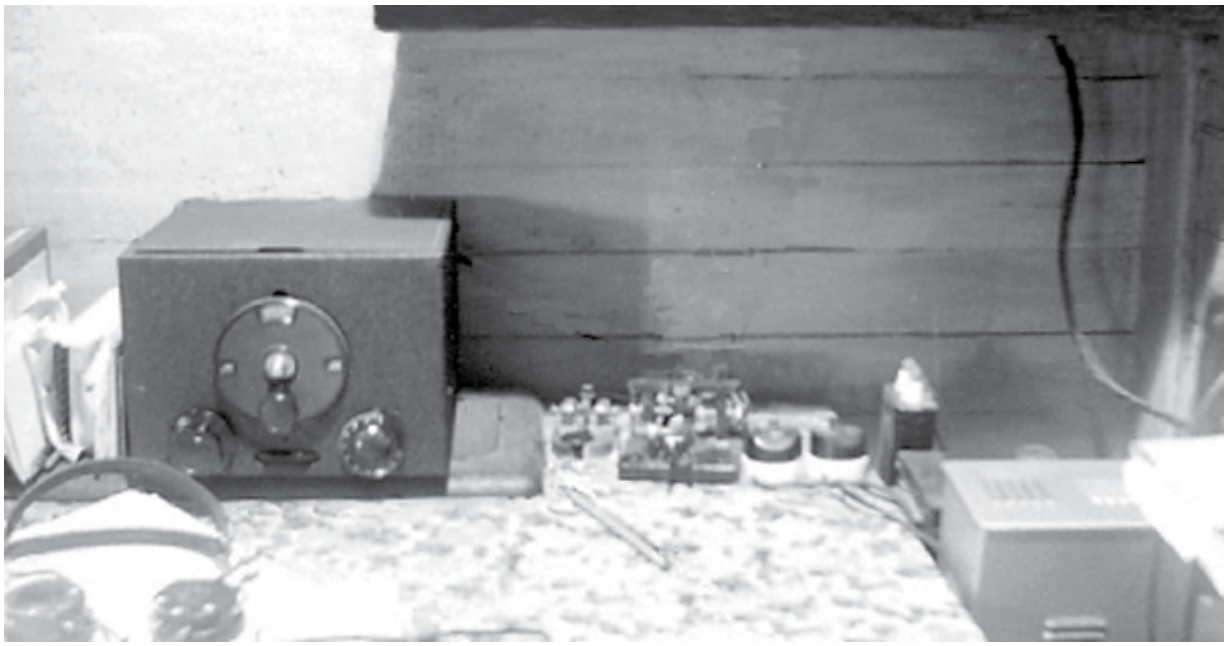
transmitter, the same setup as the outlying stations. I could also use it for amateur radio when not on duty. It had a club call of W4EQI, and I used it before I was licensed. Our new facilities on the army base were not equipped for amateur radio operation.

Our storeroom contained not only our spares, but also some surplus radio equipment brought in from the stations when they were upgraded. I wasn't allowed to take one of the old transmitters, but from the junk I collected some parts, including an inoperable pair of headphones, which I fixed. The prize, however, was a National SW-3 regenerative receiver, inoperable, but I knew I could repair it. Without it, I would probably not have been able to put a station together, as I had no parts with which to build a receiver. The SW-3 was a three-tube battery set withdrawn from service and was headed for the garbage dump. One man's junk was certainly another man's treasure. It was identical to the receiver that had been at Greenville when I had first arrived there. I also found enough parts to build a power supply for the transmitter.

I wanted very much to finish high school, so after I had been at Ft. Benning for about six months, I left the C.C.C. on Sept. 1, 1938, and went back home to Letohatchie, Ala. My mother had contacted the county superintendent of education and had been assured I would be allowed to enter the 12th grade even though I had only attended the 11th grade for the first half of the term.

Immediately upon returning home, I began to build my first amateur radio station. I was very lucky, because my family had recently moved into a house that had electricity. Our previous homes had not had electricity.

The photo below, taken about November 1938, shows my SW-3 receiver on the operating table. To the right of the receiver is my brass hand key, and to the right of the hand key is my treasured Mac bug, both of which I still have. Two switches can be seen on the table beside the bug. The left one switched the heater power to the transmitter tubes, and the other switched the high voltage to the transmitter plate circuits. The top of the transmitter power supply is visible on the right hand side of the table. It was built entirely from junk parts, and was capable of supplying much more power than needed. There was not much safety there, as the power supply high voltage was across the exposed terminals of the capacitor shown just to the right of the right-hand switch. About the only things I had to buy were batteries to supply the filament and plate requirements of the National SW-3 receiver. I would be able to use later it when I upgraded my transmitter. I sat at this operating table for many hours, often far into the night, enjoying ham radio operating at its best. Among the first contacts I made were some of the CTC operators with whom I had worked and who were hams. I also made a number of new friends who enjoyed CW. I don't think I've ever heard CW signals that sounded better than those received on the old SW-3. ■



My First Amateur Radio Station. The Operating Table

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