Musings from the Vice President – November 2018

During Thanksgiving, we went to visit my wife's cousin at a small town of around 4,000, Walnut Ridge, Arkansas—about 20 miles north of Jonesboro. They have a small Army Air Force museum on the grounds of a World War II Army Air Force Base. My dear wife won't let me fill the car up with my "portable" ham stuff, "go figure." So, to kill some time, I visit this museum when I am in town. For this visit we decided to see what neat communication items they had on display. But before I get into what I found, a little about the Army Air Base that was there.

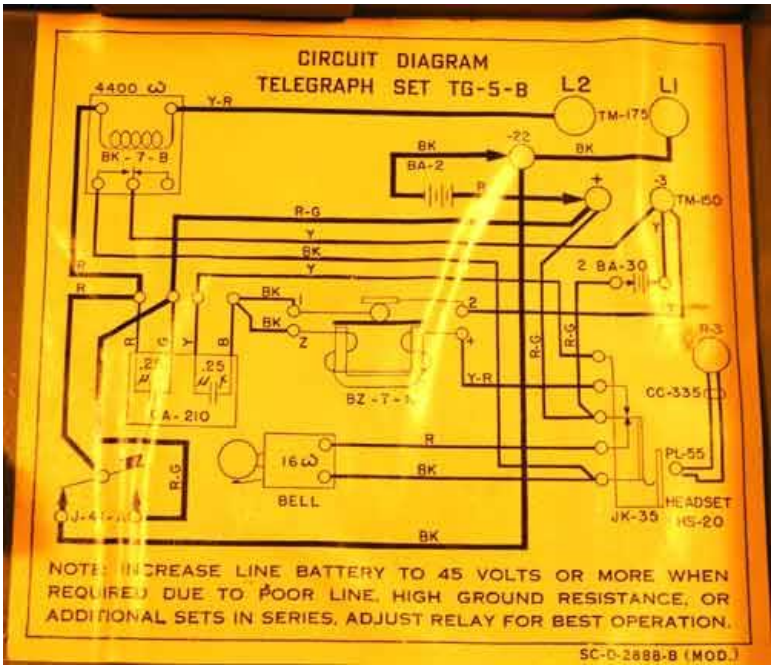
It was founded early in 1942, as a Basic Flying School. 5,310 students entered training and 4,641 graduated. Due to the rush to get pilots trained, the odds of dying while flying were about one in a hundred. As you see from this photo, at its peak, it was quite a big base.

Between 1944 – 1948, it was turned into a warbird storage, sales, and salvage facility. Some 10,000 surplus planes were flown there.

The Wings of Honor Museum was established by an all-volunteer group. Utilizing all the rich scrap available.

So, let's begin with the first item we saw. In the poor light of the display case, I thought we had run across an early CW QRP rig:

But no, it's exactly what it is labeled to be: a field telegraph. What I mistook for the silvered top of a vacuum tube, is a bell. The adjust lever was not to set the frequency, but the sending line voltage. This was used to drive the signal out over a greater length of wire, or to compensate for poor wires that might suffer from high resistance points along the length of the circuit. This could not be done with a field telephone set, which required a rather precise voltage level, thus making telephone units less reliable in field locations. Add to this the fact that interference had less of an effect on a telegraph signal than on voice communication, and the fact that while telegraphy required a trained operator the enemy at least needed one too, as well as one who spoke English and knew Morse code, thus it was easy to see why most military commanders trusted their front line communication to telegraphy.



From the looks of the schematic, it seems to be way over engineered. These units were used from about 1930 well into World War II.

On to the next unit. This has to be a paper punch tape reader/keyer to send CW of the over the air, Right.

Wrong again. It's a unit used by students to hear code. With its loud speaker, its perfect for the class room. It's also not punch tape with holes, but senses a line drawn on the tape with ink that is read by a photocell.

If this was drawn on the paper tape, you would hear a Dot and a Dash for the letter "A". The photocell senses light when a dot or dash goes across it.

Now I am certain that this is a true piece of radio equipment, the BC-348 receiver.

The BC-348 operates on 24-28 vdc with the high voltage (≈+220vdc) provided by an internal dynamotor. Designed by RCA, an early version came out in 1936. They were designed as LF/MF/HF (tuned 1.5-18 MHz in six bands) receivers for use in larger aircraft (B-17, B-24, B-25, B-26, B-29, C-47, etc.).

Enola Gay, the B-29 Super-fortress bomber that dropped "Little Boy", the first atomic bomb on Hiroshima Japan, was equipped with a BC-348 receiver as part of the aircraft's AN/ARC-8 system. This system was still in service in older USAF aircraft in the early 1970s. Today, many examples of the BC-348 are restored and operated by us hams.

Astrograph? What the heck is this?

Through my research I found that types A-1 and B-1 were made by Eastman Kodak. This instrument was used in aircraft with an aid to determine the position and course of the aircraft during nighttime flying using celestial navigation. Accuracy was between 1/2 -2 miles.

Celestial navigation is the use of angular measurements (sights) between celestial bodies and the visible horizon to locate one's position in the world. At any given time, a celestial body is located directly over one point on the Earth's surface.

The astrograph projector was installed above a terrain map at the navigator's station. A start chart film, selected for the intended course of the aircraft, was then put in the projector. The film could be transferred across the lighted rectangular glass lens to pinpoint the starting position and then track it across the sky when illuminated. The film was advanced via the large knobs at the side, which would be facing the navigator at the map table. The lamp projected the star chart image onto the map table below, which would have the ground map of the terrain below.

End

See everyone at our Christmas party. 73 Andy, KE5KOF