Taking Contesting to New Heights

By Carl Luetzelschwab, K9LA

When I lived in the Chicago area in the mid 1970s, I always thought it would be neat to participate in the ARRL 10-meter Contest as an airmobile. Unfortunately, the weather in the Chicago area in December usually wasn't conducive.

A transfer with Motorola to the Dallas/Ft Worth area in the spring of 1979 set the wheels in motion for my dream to come true. After driving down over a weekend in early March with my worldly possessions in tow (which wasn't much at the time), I flew back up to Chicago the next weekend to bring my Cessna 170B (N1634D) to Texas. Owning an airplane sure helps if you plan to go airmobile!

The author and N1634D at Mangham Airport (Texas), circa 1979.

Problem Solving

I had done some 2-meter FM operating from the 170 (including the measurement of a 2-meter repeater antenna pattern), but doing an HF contest was formidable: what rig would I use, how do I power the rig, what antenna would work, who would come along to operate, etc.

The rig problem kind of solved itself. Prior to moving to Texas, all I had was a 5-W TenTec Argonaut transceiver. I wanted something bigger for a real station in the new house, so I bought a TS-120 transceiver, a VFO-120 and a PS-30 power supply. The TS-120 would be the prefect rig for airmobile work. It was small and relatively light, it generated 100-W output and ran off 12 V (which is what the electrical system in the 170 used). I temporarily installed a 2-pin connector below the 170's instrument panel on the passenger side, and wired it directly to the battery.

The 10-meter air mobile contest antenna.

The antenna problem took a bit more effort. I first considered removing the ADF sense antenna, which ran from the top of the fuselage to the tail. Once that was off, I could install a center-fed dipole in the same place. But that would mean a big effort to re-install the ADF sense antenna, so I dropped that idea. I ended up homebrewing a short center-loaded whip antenna that mounted on top of the fuselage about halfway between the cockpit and tail.

The 10-meter antenna was just under three feet tall, with the loading coil on a 1-inch diameter plastic form. I eventually made top sections for 15 and 20 meters, in addition to 10-meters. It was a pain to change bands during general HF operation—descend from cruise altitude, land, change top sections on the antenna, takeoff and climb back up to cruise altitude. It was the best I could do at the time while keeping the antenna as unobtrusive as possible.

With the rig, power and antenna issues resolved, I took everything for a test hop to make sure it worked. Indeed everything worked—after a fashion. The problem was ignition noise. It was horrendous and prevented any signals from being heard. The root cause was that the ignition harness for the Continental C-145 engine wasn't shielded. Money solved that problem—I replaced the old unshielded ignition harness with a shielded harness. Once that was done, I could actually hear many HF signals (1979 was near the peak of Cycle 21, so 10-meters was really rocking and rolling).

The last problem was finding an operator. Casual HF operation on 20, 15 and 10-meters by myself wasn't too tough, but it would be impossible in a contest. Fortunately, Charlie, WA8MYV/WB5TGK (he's now KC9LA—great suffix, huh?), had also transferred down with Motorola and he was more than willing to come along to operate.

Contest Take Off

Soon the 1979 10-meter Contest rolled around. We took off Saturday morning from the old Mangham Airport in north Ft Worth where I had 1634D based (and which has since been turned into a housing development). We flew to Ardmore (Oklahoma), and then flew back to Mangham. Charlie operated SSB, using the call sign K9LA/air mobile 5 and handing out the TX and OK multiplier as appropriate. We were at 2000 feet for most of the Qs.

How'd we do? Well, let's just say we had lots of fun taking contesting to new heights. It took just under an hour each way and Charlie made about 30 Qs during each leg. We certainly didn't break score records, or set any new run-rate records, either. Some notable calls in the log were K8LX, N6TR, W3LPL, W2YV, K2LE/1, K6AA and K5NW.

What did we learn? First, we learned that 100 W to a compromise antenna, even at a couple thousand feet, still couldn't beat a kilowatt and a beam. Second, we learned that the ergonomics of a contest station in a Cessna 170B are poor (now there's an understatement). Charlie had to write on the log sheet on his leg with one hand and key the mic with his other hand—all while holding the TS-120 tightly between his legs so he could twiddle the knobs with whatever hand was free at the moment.

Let's see—about 60 Qs for 2 hours of contest effort, plus a whole bunch of up-front effort. If I throw in the operating expense of the 170, it works out to…heck, I had better not calculate *that* cost. Let's just leave it at "we had lots of fun." NCJ