

AC4XO Field Day 1999

This summary provides proof of bonus points and other notes about the AC4XO Field Day Event.

Operator:	Ben E. Cline, AC4XO
Class:	1 B Battery, QRP.
Participant:	Sue Ellen J. Cline, KD4LQO, provided help with antenna setup and take-down and with photography. She did not operate
Transceiver:	Wilderness Radio Sierra QRP rig with band modules for 40M, 15M, and 10M. It was powered by solar-charged gel cells.
Antenna:	40M vee and 10M vee fed from same feedpoint. Tuner used for 15M and 10M.
Logging:	Gateway Solo running NA. Powered by internal battery and external gel cells and regulator circuit.
Web site:	http://mega.isis.vt.edu/~benjy/fd99
E-Mail:	benjy@vt.edu
Exchange:	1B VA
QSOs and bonuses:	128 CW QSOs, 100% emergency power, natural power: Since QRP, QSO points = $128 * 2 * 5 = 1280$. Bonus points = 200.

Bonus points:

1. **Natural power.** All 128 QSO's were made with the Sierra running off 1 of 2 gel cell batteries (Yuasa 12V 1.2 Ah and Yuasa 12V 7 Ah) that were charged with a 2.5W solar cell from a broken fence charger. These are not deep-cycle batteries, so they were not completely discharged before solar charging. However, these two batteries were recharged after having been in use running the Sierra for the month of June. After 1800Z on Friday, the batteries were again topped off as much as the overcast



Figure 1 - Solar charger made from electric charger.

conditions would allow. Due to the low current requirements of the Sierra (30 mA receive and 200-450 mA xmit, varying by band), the batteries lost little charge during Field Day. During sunny periods during Field Days, one of the batteries would be charging from the solar cell while the other was in use. **Note that all contacts were made using the solar-charged batteries. See the attached NA log for the call signs of the stations I worked.**

2. **100% Natural Power.** All Field Day equipment was run off of emergency power. The commercial mains were not used for any Field Day equipment.

1. The transceiver was powered by solar-charged batteries. See 1. above.
2. The Gateway Solo laptop used for logging was powered from two sources. The first was its internal battery which was charged before Field Day. The second source was an external battery system. The external batteries were two sets of Panasonic 7.2 Ah batteries taken from aging UPS systems. Each set consisted of two 12V batteries in series to produce 24V. I constructed a 350T regulator circuit to produce 19V output for the laptop from the 24V batteries. The first set of batteries powered the laptop from 1415 EDT until 2148 EDT Friday. The laptop was run for about 8 more minutes on its internal battery before station shutdown on Friday. The next morning, the second set of old UPS batteries were used to recharge the internal battery and operate the laptop; however, these batteries were defective and only operated the laptop for about 30 minutes. For the remaining period (1130 EDT to 1342 EDT), the laptop was powered from its internal battery with about 30% charge left at the end of Field Day.
3. For night operation, a battery-powered lamp was used.



**Figure 2 -
Regulator circuit
for laptop power.**

Warts:

1. The 40M antenna turned out not to be resonant on 15M, and the 10M section was cut too short. The limb that supported the center of the antenna broke about 2 hours before the start of Field Day, so I decided to spend my time putting the antenna back up instead of solving the problems with 15M and 10M. Instead, I used a tuner for 15M and 10M. This situation was not ideal for QRP due to the coax losses.
2. My Sierra has a KC2 meter option with a memory keyer. I had planned to use the message memory to send my call and then the exchange. I abandoned this approach when I discovered that the keyer did not respond quickly to one or more switch presses to select the desired message. The delay was too great for contest-like operation. I used a Vibroplex paddle and the keyer to make most of the contacts (which was more fun than just pressing a button to send the exchange ☺).

Good stuff:

1. The external laptop power system worked great for a quickly designed solution for powering the laptop without using commercial mains.

2. This was my first attempt to use the NA logging program for a 1B operation. Last year I used dupe sheets, but NA gave me more time to have fun instead of checking dupe sheets.
3. Last year, I was only able to work 40M. The addition of 15M capabilities and good 15M conditions during Field Day allowed me to work more stations.

More Photos



Figure 3 - The operating position.



Figure 4 - AC4XO making a QSO.



Figure 5 - AC4XO relaxing for a minute.