Portable HF/VHF/UHF station in an Attaché case

By John Wray AL4U (ex KM6GE)

My wife and I recently moved from Alaska to temporary housing on the east coast near Washington DC and most of our Ham radio equipment including our antennas is sequestered in an out of state storage locker with our furniture. We did bring some basic equipment that would fit in the cars and not take up too much space as pets, clothing, and laptops were a higher priority. In addition to the VHF/UHF HTs and mobile rigs, we brought our Icom IC706MkIIG, the ubiquitous compact HF/VHF/UHF multi-mode transceiver.

Although our move was precipitated by family needs and a new job opportunity, a similar situation might apply to any of us if a man-made or natural disaster forced evacuation of our homes. What communication capability could you bring to a distant shelter if you only had a few minutes' notice to evacuate your QTH? Believing that advance preparation and practice are better than trying to invent solutions during a disaster, I set out to build a portable HF/VHF/UHF station that could be quickly assembled using parts on hand. The following pictures and text show the result.

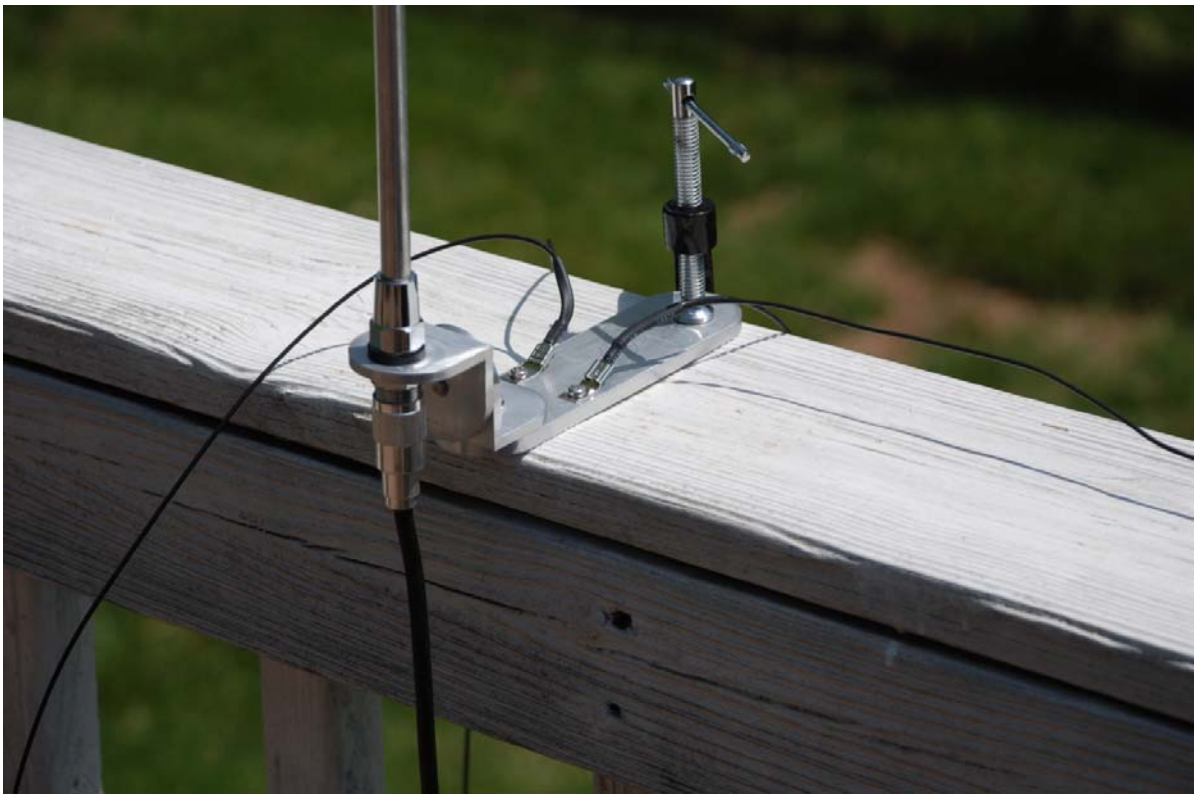
Here is the portable HF/VHF/UHF solution all packed up and ready to travel.

An old Samsonite attaché case gets new life as HF/VHF/UHF Ham station . The assembled station weighs 27.5lbs with everything packed but the power source. There is enough interior volume to accommodate a small GelCell battery or maybe a switching power supply but my smallest AC supply will not fit unless I cut out some interior bits, or find a slightly larger case. The AC supply would not be needed for battery operation from a vehicle or storage battery/solar source.

Opening the case shows how all the equipment fits nicely into the case. From Left to Right: Kenwood TH-D7 dual band HT, Super Antenna MP1 in blue cloth roll-up, small external speaker, zip-lock bag with antenna radials atop the AT180 tuner, 706 control head in Crown Royal bag, Microphone and IC706MkIIG behind, The document pocket in the lid contains 25' of LMR 240 low loss coax with PL259s, a legal pad, radio manual, pens and markers, coax adapters, a wave multi-tool, plus a #1 Phillips screwdriver to open the radio case or remove the control head ext cable.

To place the station in operation, remove the antenna package, HT, remote control head microphone and speaker.

Assemble and erect the antenna. In our kit we have a SuperAntennas MP-1, a very compact 40m to UHF antenna kit. It works like a screwdiver antenna without the screwdriver motor. The machined aluminum parts thread together easily with no tools, and the antenna can be clamped to a rail or other structure or you can buy the optional tripod for free-standing operation. An optional 80m coil is also available..



The MP1 base with wire radials attached is easily clamped to the railing on our deck with included C-clamp.

Mount the antenna away from trees and buildings for best results.

With the antenna mounted in this location we were able to work DX stations over 4500 miles away and heard many other DX stations in Dubai and other exotic locales, but the pile-ups were too intense for our modest station to be heard. In the ARES role, re-orienting the antenna from vertical to horizontal might allow us to use NVIS Near Vertical Incident Skywave for reliable close-in communication to support an incident in mountainous terrain where no line of sight or repeaters are available.

Hook up the power source. We added Anderson Powerpole connectors to the 706 power cord allowing rapid attachment to any source of 12VDC with matching connectors. We also have a Hi Amp Cigarette plug adapter and battery clamps which would allow us to power off of a vehicle or car batteries. Here we are using a Samlex SEC1235M switching power supply.

Here is a view of the control head tuned to 14.292MHz when I attempted to check in to the Alaska Net and heard former SCARES president Dick Collins K6ANN running Net Control from his QTH in Oregon 2270 miles away, but the signal was too weak for me to copy reliably. Morse Code or a weak signal digital mode would probably have allowed communications with this modest setup.

It was a fun exercise assembling the basic elements of a HF/VHF/UHF multi-mode station into a convenient carry case. Because nothing is permanently mounted in the case it is very flexible and adaptable to the needs of the moment. I can place the antenna and case outside and bring the remote control head inside, or operate it all outside on the picnic table.

With the station packed as shown, I was able to assemble the system and get on the air in less than 10 minutes. If I didn't stop to take pictures along the way it would have been quicker.

The SuperAntennas MP1 performed beyond my expectations: I have talked to hams in Austria, Croatia, Spain, Mexico, and throughout the US with the setup shown here. For more local use, mounting a horizontal polarized antenna close to ground allows you to use Near Vertical Incidence Skywave on HF to communicate to nearby stations from canyons or mountainous terrain. It also performs well pulling in shortwave broadcasts.

The ability of the Icom 706MkIIG and similar radios like the IC-7000, Yaesu FT857 and FT 897 to provide multi-mode HF/VHF/UHF communications from a compact package provides the disaster communicator with amazing capability in a small package. Some of you will add a laptop and GPS

For those of you who are technicians, you too can jump on this bandwagon as these radios allow you to explore your CW privileges on 80m/40m/15m/10m and ssb voice on 10m which will allow you to communicate over long distances during our current sunspot cycle.

My XYL and I plan to operate from our attaché portable station during Field Day. We hope to hear you on the air.

73, John AL4U