



## Sprucing Up Sparky: Minor Upgrades

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This holiday season, Sparky got several minor upgrades:

- HF spring / ball / whip / wire NVIS antenna re-alignment;
- Mounting point for the OPEK HVT-400 HF multi-band antenna;
- MEWS wind vane new fast mount support pylon;
- Adjustable spotlight bracket;
- Anderson Powerpole fitted battery charging harness for the stand alone radio battery;
- A 12 VDC power outlet for the Yaesu FH-912 radio;
- Adapters to connect the Hustler VHF magnet mount antenna;
- Paint the center console frame



The photo on the right shows Sparky before the upgrades with the HF whip / wire antenna deployed on the bamboo outriggers and stinger.

### **HF spring / ball / whip / wire NVIS**

**antenna support strut:** The weight and tension of the horizontal wire portion of this mobile NVIS antenna caused the failure of the connection of the wire to the whip when encountering big bumps on rough roads. The addition of a simple PVC support strut for the wire solved the problem. **[Note:** This whip / wire antenna configuration was the solution to not finding a 2.59 m / 102 inch stainless steel whip to use as a mobile NVIS antenna.]

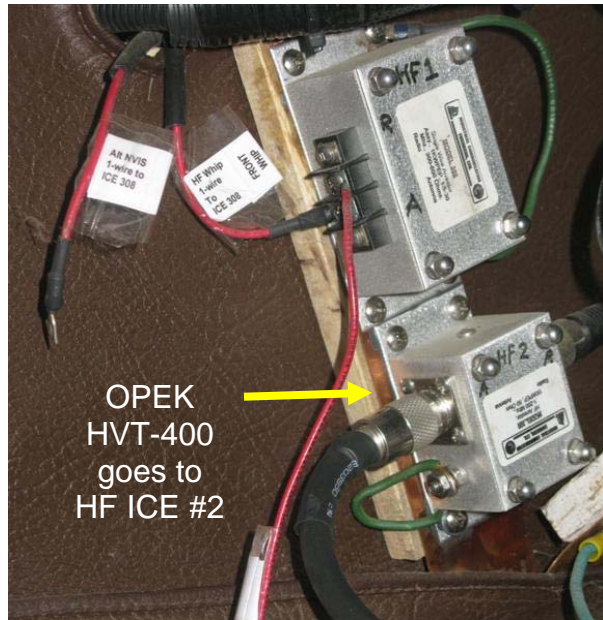


Bamboo outriggers and a bamboo

“stinger” holds the antenna wire about 2m high. The strut allowed re-tensioning of the rest of the wire and shortened the stinger. All of this made for easier entry and exit from the garage.

When the HF radio is installed on Sparky, this is the primary antenna. The system includes lightning grounding via an ICE #308 unit, an ICOM AH4 tuner, and connects to the HF antenna switch in Sparky. The only connections required are for the radio (i.e. ground strap, coax jumper from the HF antenna switch, and the tuner control cable. All other connections are pre-set in Sparky. The OPEK HVT-400 multi-band vertical antenna is available as an option. This requires mounting the antenna to Sparky.





height above ground level (AGL) is ~3.2 m (which exceeds the vertical clearance of our garage).



**Adjustable spotlight bracket:** Operating at night requires light. One concern is being able to see the antennas on our push up masts. It is easy to imagine not having enough hands during an emergency situation. So we wanted an adjustable spotlight on Sparky. These are expensive items (over \$150). We had a hand held spot light but needed to make an inexpensive adjustable bracket. We came up with a PVC pipe solution.

The handle of the spotlight had to fit freely into a PVC T-fitting serving as the main holder. A horizontal PVC pipe is bolted to the platform bracket for the magnetic mounted emergency beacon and VHF antenna. The T-fitting slips onto the horizontal PVC pipe. It is not cemented. This friction fit lets the T-fitting rotate on its vertical axis so the spotlight can be tilted from front to back. Aiming the spotlight up and to the back illuminates the push-up masts at night (see left photo below).



*The bracket tilts up and down in the vertical axis.*



*The light can freely swivel 360 degrees in the horizontal axis inside the PVC T-fitting. Gravity holds the light in place.*

**Anderson Powerpole battery charging harness:** We have 3 different battery chargers in service. To make it easier to use any battery charger on any of the radio batteries, we put Anderson Powerpole fittings on the chargers and batteries. The separate radio battery on



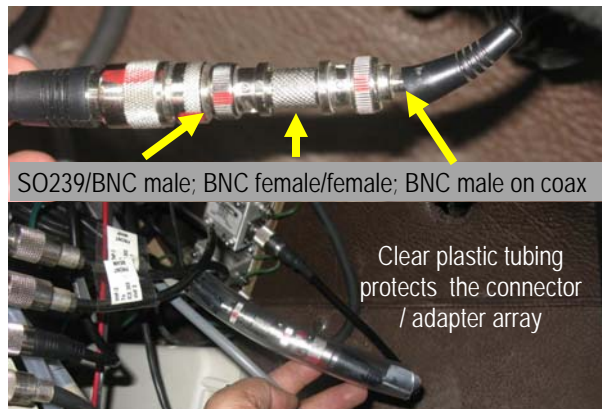
**12 VDC power outlet for the Yaesu FH-912 radio:** We finally got a 12 VDC power adapter for the Yaesu FH-912. This means whenever we are near a larger external power supply, we can converse the internal radio battery. The problem on Sparky was the location of the radio bracket relative to the existing 12 VDC outlets. So we added an outlet at the radio location. Power comes via the Rigrunner 4010S distribution panel fed from the separate radio battery. In an emergency, we can also draw power from Sparky's batteries. **[Note: Sparky's batteries are primarily to power the vehicle. RTC-TH policy restricts the operating range of Sparky to hold 50% of his battery capacity as radio ready reserve power as a back-up.]**

**Adapters to connect the Hustler VHF magnet mount antenna:** Prior to this, the use of this VHF antenna was limited by the BNC male fitting on the antenna cable. We had a pigtail with BNC female to SMA male connectors to use this antenna with the Yaesu FH-912. The VHF ICE lightning arrestors and the VHF antenna switch only had SO239 fittings. Using the FH-912 with this antenna meant there was NO lightning protection. We set up a



Sparky finally got upgraded with this type of battery charging harness. The RTC-TH policy is to standardize all connectors and fittings to enable any piece of equipment to be moved and used at either licensed RTC-TH station or portable situation.

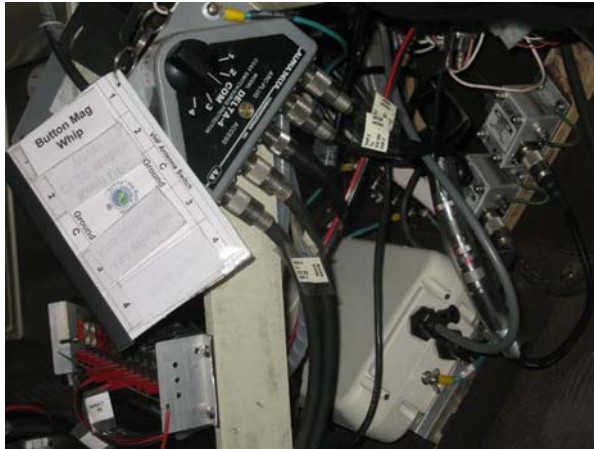
The photo on the left shows the A & A Engineering Smart Battery Charger using Sparky's new Anderson Powerpole charging harness in action. The charger is also fitted with Anderson Powerpole connectors.





series of adapters and a short coax jumper to connect this antenna to the VHF ICE #1 and the #1 position on the VHF antenna switch. Any

VHF radio connected to the switch can now use this antenna.



In the future, different adapters will be used to get a more direct connection reducing the present number of adapters now in use.

**Painting the Center Console:** It's been a while since we originally made and installed the center console. Over time, the original layout did not require any modifications. To make the installation more permanent, we painted the console to blend with Sparky's original color scheme. The silvery aluminum base frame gave way to coco brown to blend with the floor covering. The bare wood got a coat of Ivory to closely match Sparky's khaki.



Brackets for the HF and VHF mobile radios are mounted in the console. The radios can be quickly moved from the Wangwa station to Sparky. They only require connecting the ground strap, coax jumper from the appropriate antenna switch, and audio connection to the appropriate external speaker. (The HF rig may also require connecting the tuner control cable.)

Sparky is a work in progress. No doubt there will be future "tweaks" and upgrades. Things have a way of changing. It is difficult to find much ham equipment and accessories here. So each trip to visit friends and relatives abroad is an opportunity to find needed adapters, connectors, accessories, and more. But the main goal remains the same: set up each station and portable platform to that the radios can be quickly and seamlessly moved from one unit to another. This is our quest for personal interoperability to have the flexibility to effectively use the limited radio equipment and budget we have on hand.🌐