

# Go Take a Hike!

*Simple & Successful Portable QRP Operating*



Shel Radin KFØUR



# I prefer Portable HF - *QRP Style*

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- What is QRP?
  - Not just low power
  - 5 watts or less on CW or Digital
  - 10 watts or less on SSB
  - Less to tote
  - Very satisfying



Turn the power down to 5 watts, and these are QRP rigs – *but hardly portable*



Yaesu FT-9000

Icom 7800



That's not what we're talking about!

And you can use an antenna like this – *but hard to fit in your car*



But that's not what we're talking about either



This is what we're talking about!





# This is why we go Portable HF!



Dan  
KØUIF



And this...







# And this is why we go Portable HF!

- My log from QRP portable includes:

ES1TU – Estonia	EA8TL – Canary Islands
US0GA – Ukraine	RM22MR - Russia
OM3DX – Slovak Republic	YT9M - Serbia
F5UQE – France	DL4CF - Germany
OT4A – Belgium	CN2OZ - Morocco
S52WW – Slovenia	OZ2TF - Denmark
HA5AGS – Hungary	YY4IVB - Venezuela
9A5Y- Croatia	V44KAI – St. Kitts & Nevis
SP3ASN – Poland	...and <b><u>all</u></b> 50 states
CU3AA - Azores	...VE1- VE9

But you don't have to go hiking...  
A picnic table will do





# Badlands, SD – 153 QSOs for NPOTA







# Perfect for National Parks on the Air or now "Parks on the Air"

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**I visited:**

- **Colorado:**

- Florissant Fossil Beds
- Sand Creek Massacre Site
- Great Sand Dunes Park & Preserve
- Bent's Old Fort & the Santa Fe Trail
- Rocky Mountain National Park

- **South Dakota:**

- Badlands
- Mount Rushmore
- Wind Cave
- Jewel Cave

- **Wyoming:**

- Devils Tower

**5,334 QSOs  
logged!**



# My Typical Setup







# Let's look at the 4 main components I use

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1. **Rig**
2. **Antennas**
3. **Power Plant**
4. **Accessories**

# The Rig

- Elecraft KX3 Preferred

- All HF bands + 6M
- All modes, including PSK and RTTY
- Up to 15 watts to help when poor band condx





# Out in the field, I needed something to...

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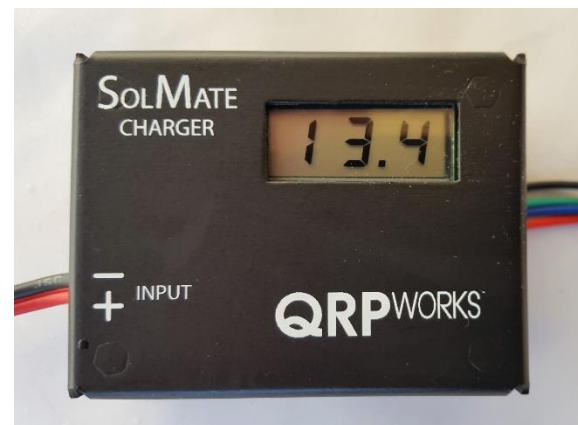
- Log my QSOs
- Send messages / text
- Display received PSK and RTTY
- Control the rig

So I embarked on a homebrew project using a MicroController



# The Result is QRPworks, LLC

- SideKar, SideKar Plus, K-Board, SolMate, Key Log Go, & more



Started as a homebrew MicroController project!

# Logging & Messaging

## ■ QRPworks SideKar Plus (natch!)

- Can send RTTY, PSK and CW with a wireless keyboard
- Can send user defined “canned” messages for any QSO type
- Built-in log exports to a standard ADIF file. Leave the pen & paper at home.
- Controls the rig (*anything you want it to do*) with a single keystroke.
- Added a DXpedition feature to handle pile-ups faster for NPOTA





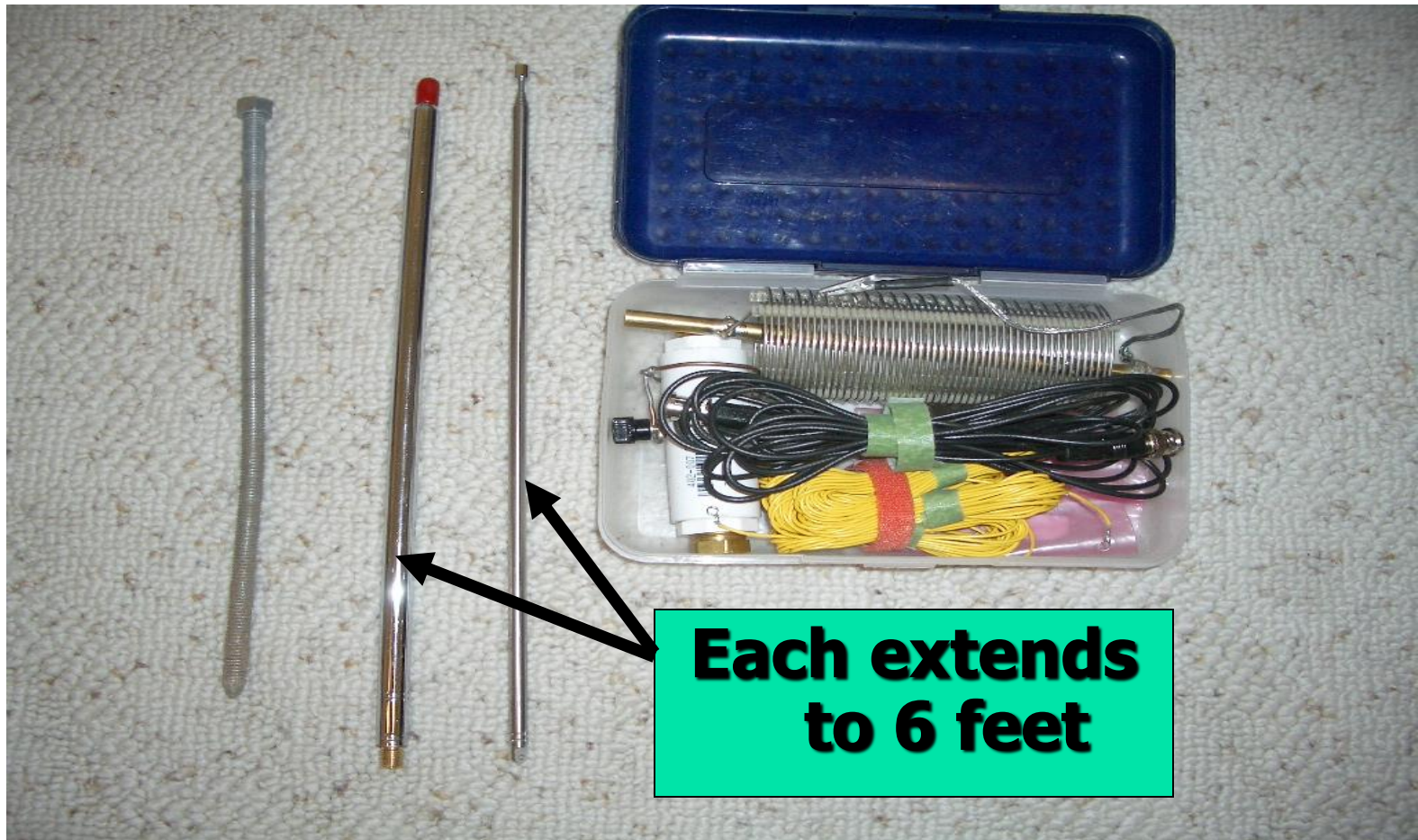
# The Antenna

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- Homebrew portable Vertical I've been using for many years.
  - 6-40 meters using a tapped coil
  - Sets up in 10 minutes – *on the air quickly.*
  - 12 feet tall extended
  - 1 foot collapsed - *easy packing.*
  - Uses 6-8 radials loosely laid on the ground
  - 15 feet of LMR-100A coax



# The Antenna – Homebrew Vertical

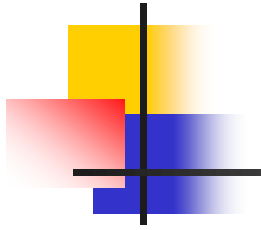


# At the Florissant Fossil Beds, CO

- stake in the ground

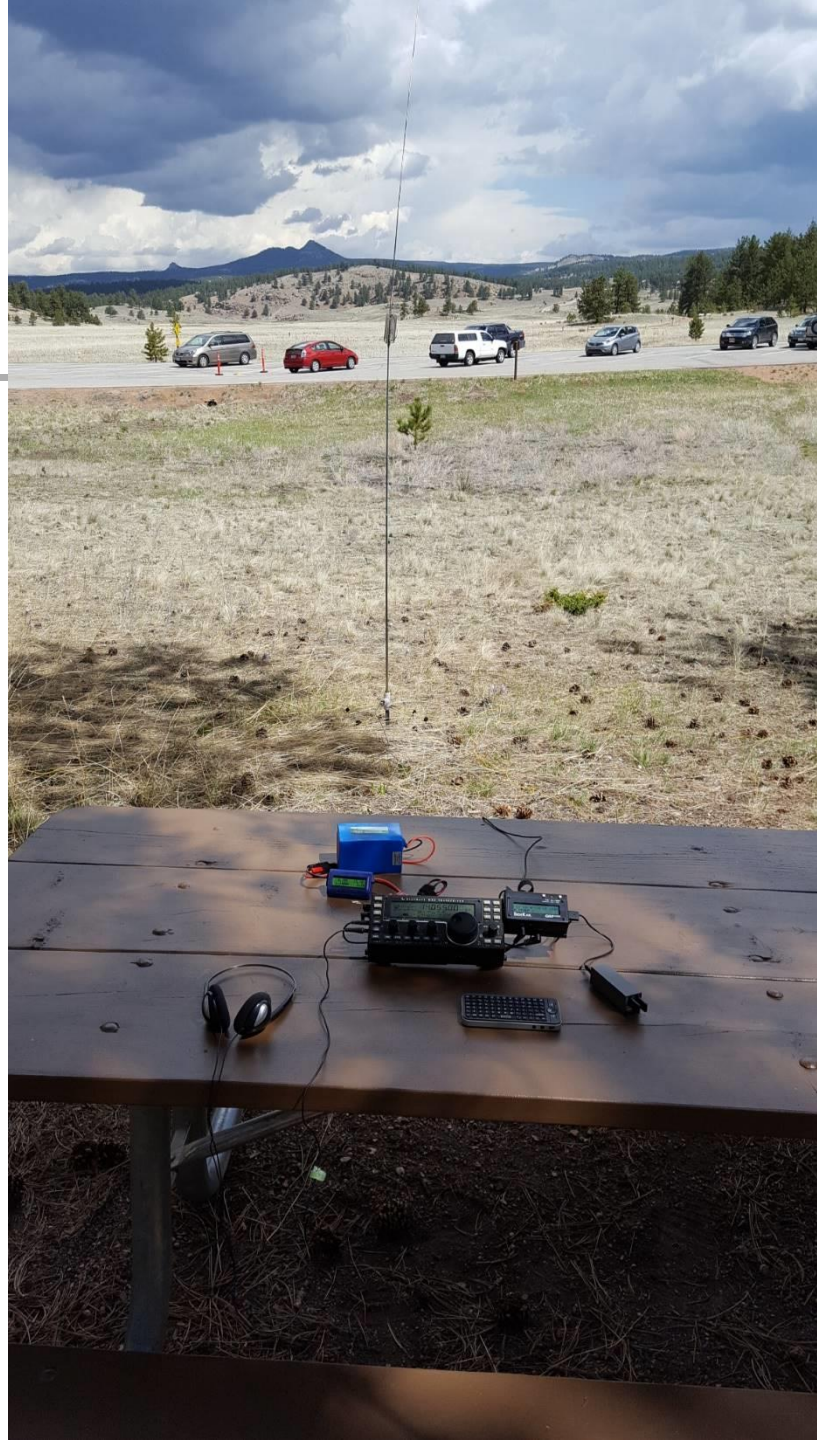




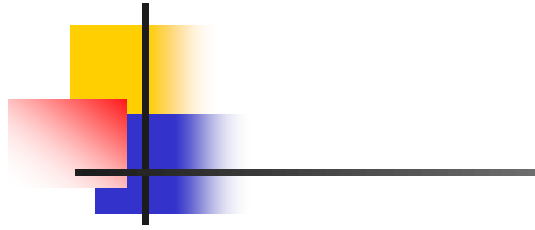


# Antenna Mounting

- On a stake in the ground at the Florissant Fossil Beds, CO







# Antenna Mounting

- In a snow bank

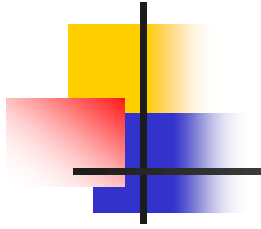


# Antenna Mounting

- On a stake in the ground at 10,700' MSL, Rocky Mountain National Park, CO



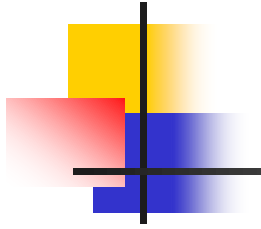




# Antenna Mounting

- On a picnic table at Jewel Cave, SD



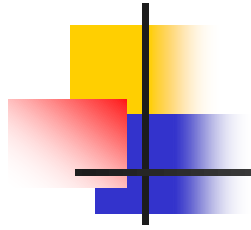


# Antenna Mounting

- On a fence post at Bent's Old Fort, CO, on the Sante Fe Trail



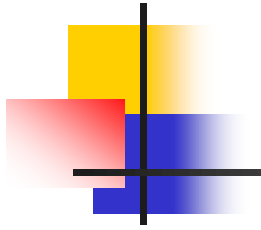




# Antenna Mounting

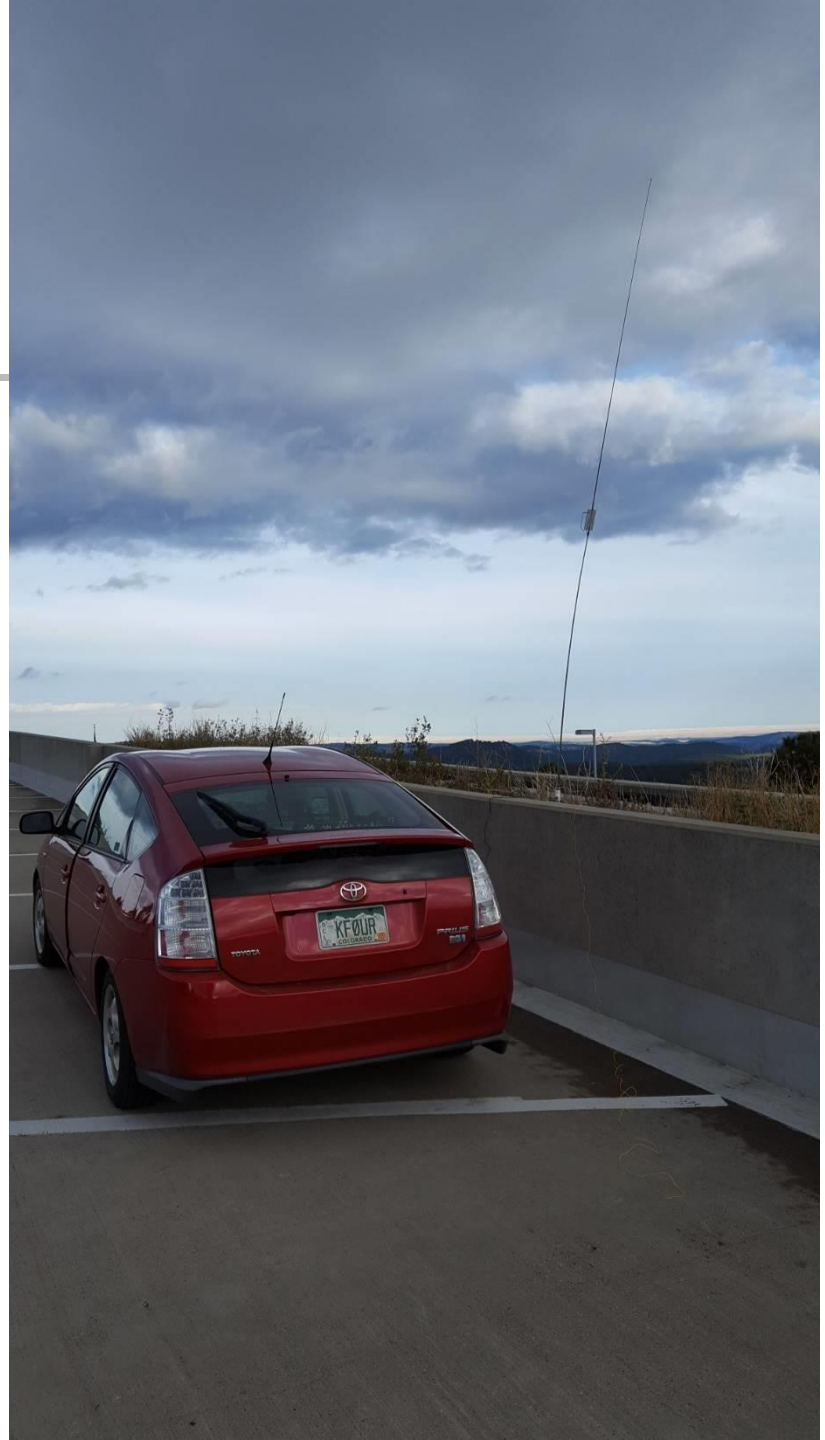
- On a fence post at Bent's Old Fort, CO



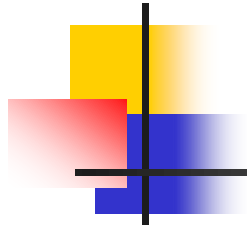


# Antenna Mounting

- On a stake in the dirt of a “planter wall” at Mt. Rushmore, SD







# Antenna Mounting

- On a stake in the ground at Mt. Rushmore, SD





# Velcro'd to a fallen limb, Mt. Herman, CO @ 9000'





# The View from Mt. Herman @ 9000'



# On Iron Mtn, Manitou Springs at 7200'







On Mt. Blodgett, Co. Springs @ 8000'



# Antennas

## ■ Great alternative: Magnetic Loop

- Popular: AlexLoop
- Many others on the market
- 20 watts maximum
- Lightweight – easy to transport
- Hi-Q = very narrow bandwidth
- Works amazingly well.





# An "AlexLoop" out of an apartment window





# The view from outside







Can be  
oriented  
Horizontally or  
Vertically

# Antennas

## ■ Another alternative: End-fed Zepp

- It's a single wire
- One end up in a tree
- The other end at your rig
- Lightweight – easy to transport





# For 6 Meters, I use a homebrew Moxon

Breaks down into a few  
small pieces for easy  
transporting





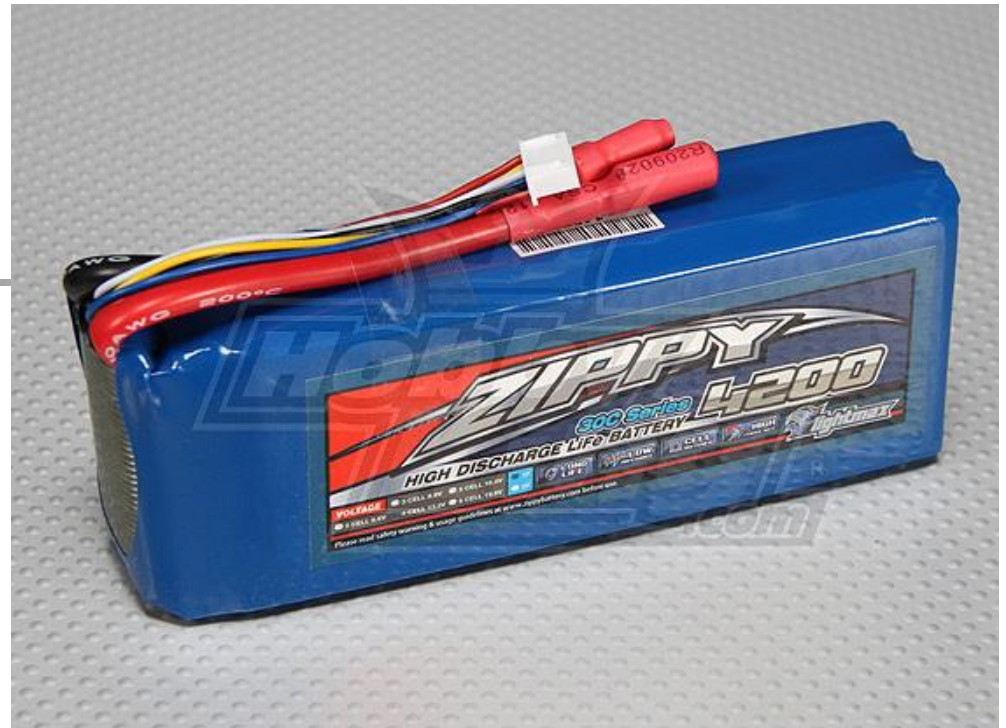
# Power It Up

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- There are lots of Battery chemistry choices
  - Alkaline, SLA, NiCd, NiMH, Lithium Ion/Polymer (LiPo), Lithium Iron Phosphate (LiFePo4)
- Considerations
  - Size
  - Weight
  - Juice
  - Rechargeability



# First LiFePo4



- Battery: 12 volts, 4.2 Amp LiFePo4
- Recharge: at home – **but lots of warnings!**
- Requires a balanced charger
- Have to be careful not to discharge too far

# The Current Battery *(pun intended)*

- BioennoPower 3 amp or 6 amp LiFePo4 battery
  - 6 amp battery lasts over 5 hours at a steady 13 volts (with rig set at 15 watts).
  - ~12 hours at 5 watts...all at 13 volts. Great for Field Day.
  - Weighs 1 lb 10 oz
- 3 Amp version is great for hikes.
- Over 5 hours of use, weighs just 12 oz.





# Current LiFePo4



- Recharge: at home or in the field with a solar charger
- Balanced charger is built-in
- Battery manages itself – charging and turning off at low voltage

# The Setup

- I use a “Watt’s Up” meter to measure usage. It shows cumulative amp-hours.





# If you'd like to run FT8...

- You need a rig that has SSB
- Almost any laptop will do
- If the laptop does not have a "audio in" port (many don't) use an inexpensive USB Audio Adapter.



# And just as important, you need to have accurate time

- If WiFi is not available, use GPS

- An inexpensive GPS Receiver will get the time data to your laptop



- Time sync software, like NMEATime, will then use those sigs to set the time accurately (within 1 sec).



# Mt. Rushmore, SD

- first time in the car – very comfy!





**Pikes Peak**



On Iron Mountain, Manitou Springs @ 7200'







# Flight of The Bumblebee Contest

## Mt. Blodgett, Colorado Springs, CO





And that's why we go HF Portable!



Spruce Mountain, Palmer Lake, CO



In conclusion.....

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**Get Out!**

...of the house...and enjoy another  
wonderful facet of our hobby!



Thanks for your time! C U on the air 73, Shel

KFØUR



Colorado Springs, Colorado, USA

Elevation  
6850 Feet