

Field Day DXpedition to Alaska!

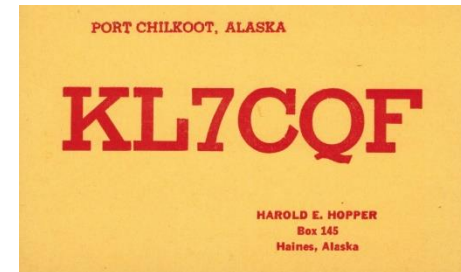
Jim DeLoach, WU0I
10 June 2020



*Maggie DeLoach, KK6DZS and Jim DeLoach,
WU0I in Haines, Alaska*

Dedication

- Our Field Day operation was dedicated to the hams who supported the Alaska 1964 'Good Friday' earthquake response, including Harold 'Bud' Hopper, KL7CQF (SK), long-time resident of Haines, Alaska
 - For an unforgettable, chilling recording of these hams in action, check out: <https://www.youtube.com/watch?v=rw9HZMagcb8>
 - The [Old Valdez Exhibit](#) in Valdez, AK has fascinating coverage of the 1964 Good Friday Earthquake
- These hams showed us how to serve, and why we do emergency preparedness activities like Field Day



Bud's QSL card



ARRL Public Service Award presented to Bud for his service in the 'Good Friday' Earthquake

Why Alaska, and Why Field Day?

- For years, the XYL (Maggie, KK6DZS) and I had wanted to drive the Alaska-Canadian 'ALCAN' Highway to Alaska, then take the 'Alaska Marine Highway' ferry back
- We planned to leave right after Maggie's school was out on 9 June 2017, and it would take us about 2 weeks to get there, so arrival by late June
- Late June $\hat{=}$ Field Day!



But Where in Alaska to do Field Day?

- We needed to terminate the driving portion of our trip at one of the port towns where we could get on the ferry – either Haines or Skagway
- We had heard Haines was a ‘real town’, very different from touristy Skagway, so we decided to try to make Haines our base
- I first looked for a local club station that I could join for Field Day, but finding none in Haines, we decided to bring a station and set up our own Field Day at a vacation rental



An Alaska Marine Highway ferry runs between Bellingham WA and Skagway, AK in summer, stopping in Haines and other Panhandle towns



Finding the Perfect Vacation Rental

- For optimal Field Day operation, our vacation rental needed to have:
 - A clear view to at least some of the main North American population centers, preferably overlooking the water
 - Enough space for wire antennas
 - Tall trees to hold them up
 - And of course a beautiful Alaskan setting (this part was easy!)
- After searching online and checking Google Maps, with the help of a super-supportive reservation agent*, we found the Orca Cabin at Viking Cove south of Haines



Viking Cove, South of Haines, Alaska



Orca Cabin at Viking Cove

* Randa Szymanski, www.reservationsbyranda.com, 907-314-0466, randaszymanski@gmail.com. Bud was Randa's father.

The Orca Cabin at Viking Cove

- On the water overlooking the Chilkoot Inlet, looking Southeast towards the West Coast
- 15 to 25-meter-tall trees
- A big, nearby open field, with tall trees around it
- At the end of the road and at the end of underground power lines, so low RF noise
- Lovely, comfortable, and absolutely stunning views!



This way to the Field Day site!



View from Orca Cabin Window

Getting Ready

Forming the Team

- I looked through FCC and qrz.com records to determine if any hams lived in Haines
 - Found only one, Lynn Hyder, KL7YXF
 - Reached out to Lynn, a retired farmer from Oregon, and he was happy to join us
 - So I, Maggie, and Lynn formed our '1A AK' team!

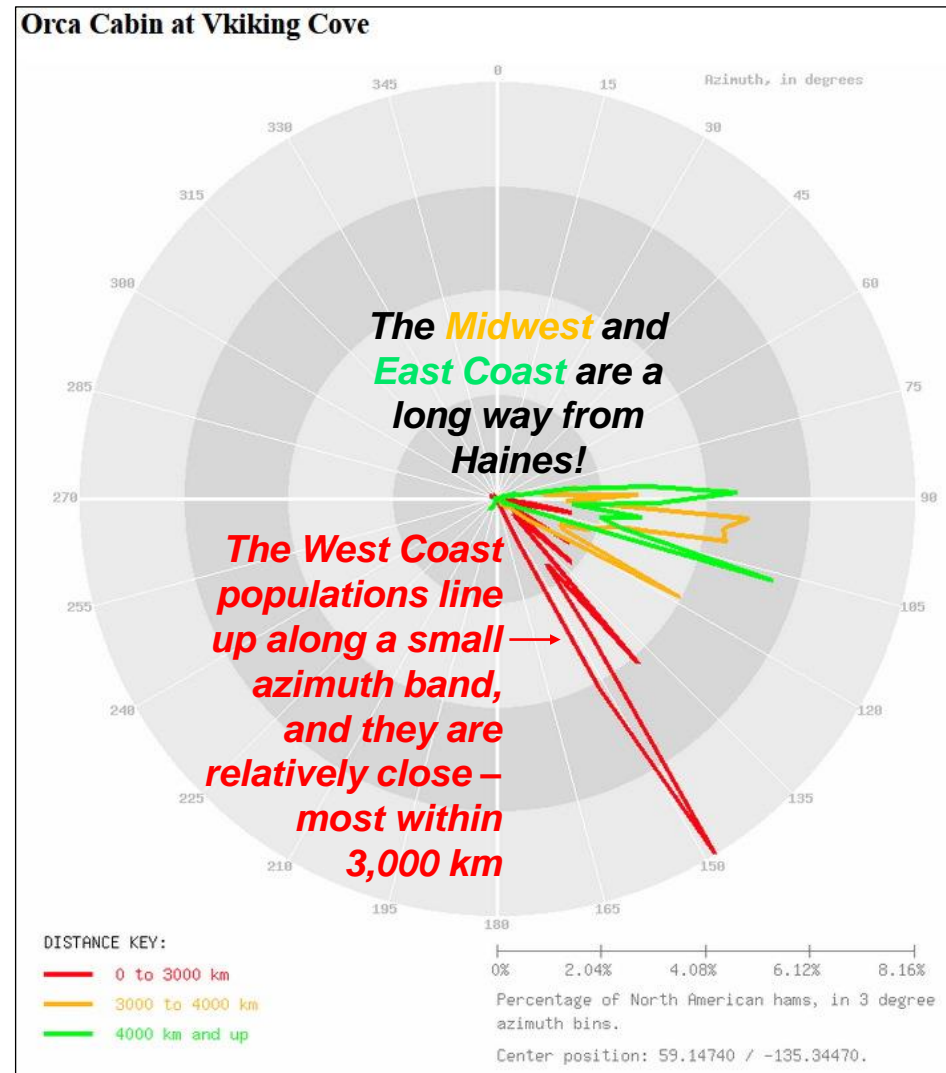


Jim, WU0I & Lynn, KL7YXF operating from the cabin

Where are North American Hams Relative to Haines?

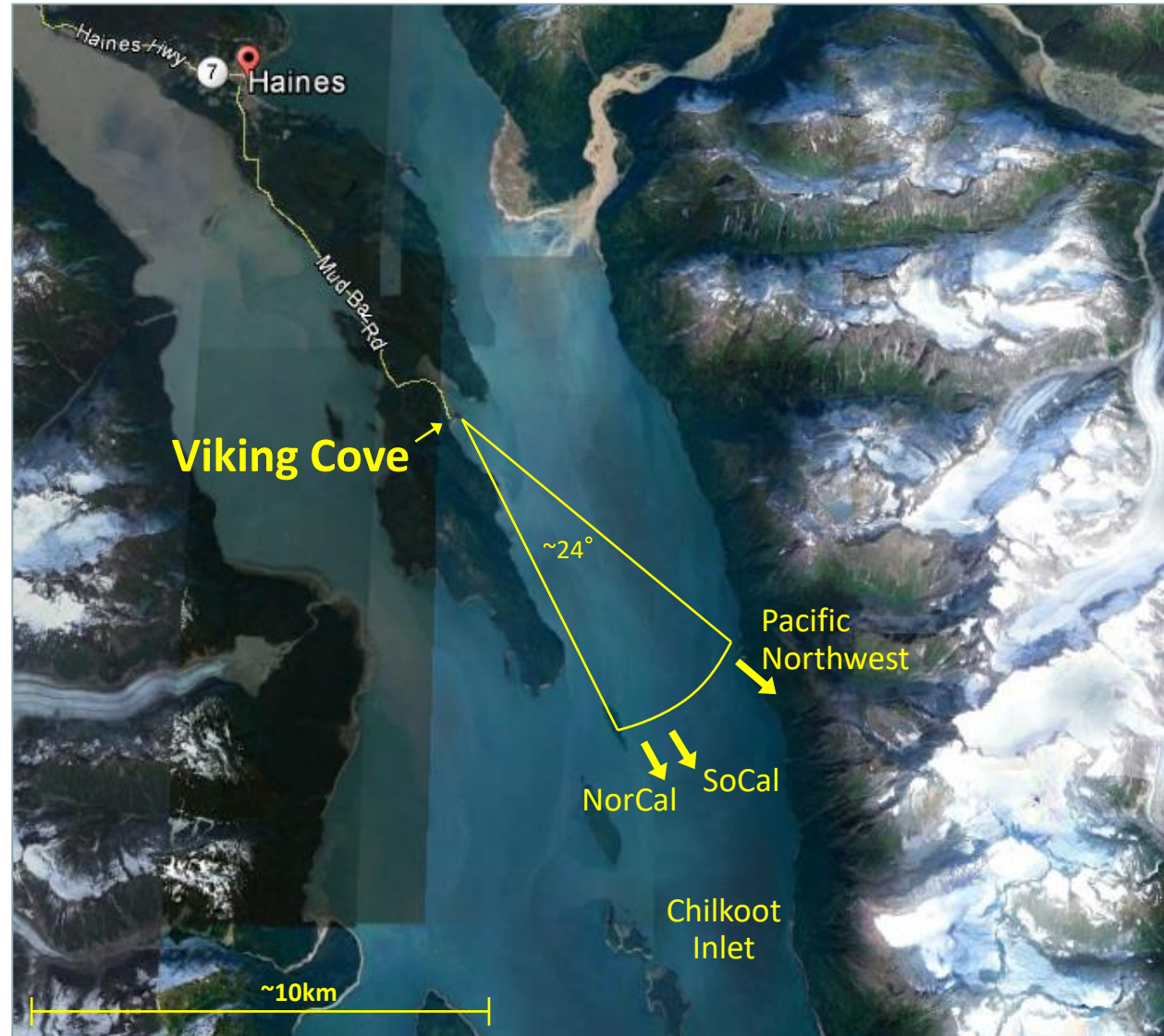
- To get a feel for where other North American hams are relative to Haines – in what directions and in what concentrations – I used my “Point Your Field Day Antenna” web site:

<http://www.deloach.net/PointYourFieldDayAntenna/index.htm>



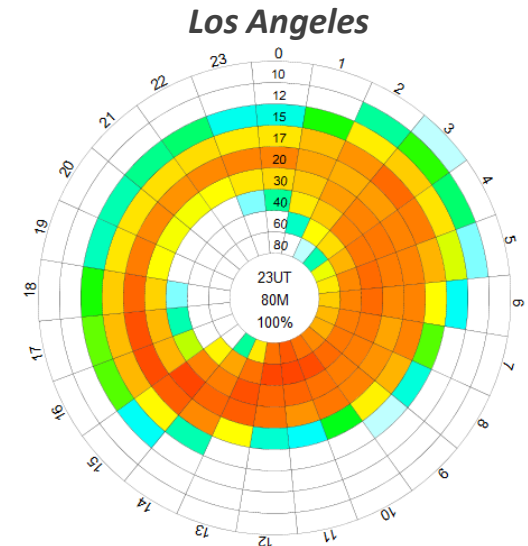
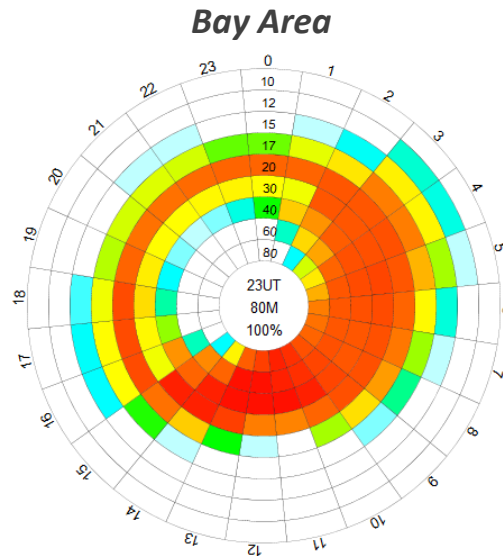
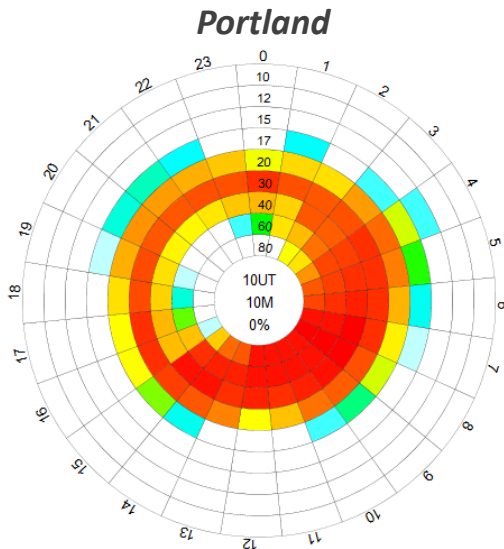
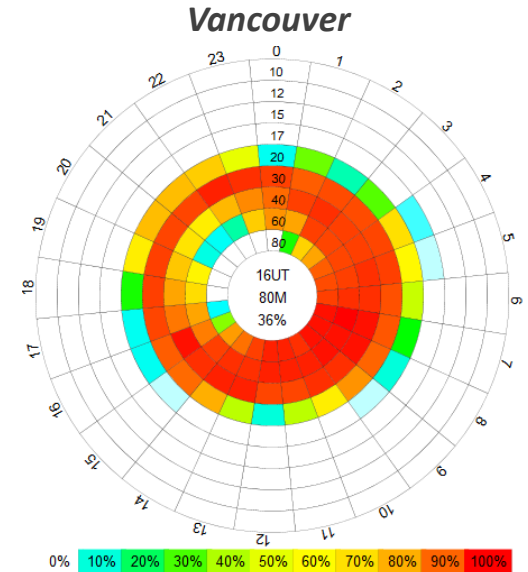
The Geography of the Field Day Site

- The Chilkoot Inlet is enclosed by tall mountains, but the inlet itself is pointed more-or-less towards the West Coast
- Midwest and Eastern North America would be difficult due to steep mountains and distance
- So Western North America was the play



Identify Which Bands Would Work Best

- I used the excellent VOACAP web site (<https://www.voacap.com/hf/index.html>) to predict the best bands from Haines to the West Coast
- As expected, 20 and 40 meters were the go-to bands in the day, and 40 and 80 meters at night



Devised Suitable Wire Antennas

- Every part of the station had to be transported over rough ALCAN Highway roads for weeks in a Subaru Impreza, so no towers!
- All wire antennas had to be suspended between trees
- Used the 'Air Boss' compressed air system (<https://www.kr4loairboss.com/>) for launching guy lines into trees
 - The Air Boss *works great!*
 - Bill Olah, KR4LO, made a special version for me that broke in to two pieces for transport in a shipping case



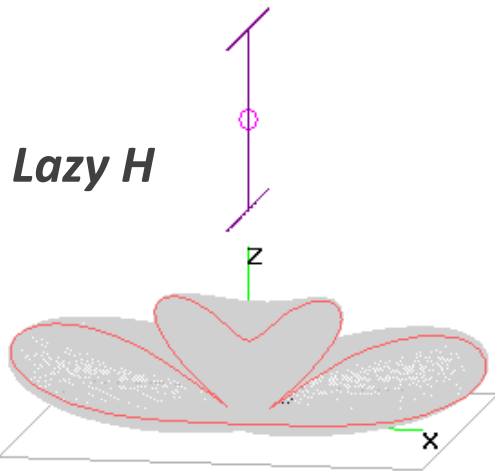
Our car 'Buzz'



Disassembled Air Boss and Pelican 1650 case in which it fits, along with lots of other stuff

Devised Suitable Wire Antennas (cont.)

- Modeled properties of various wire antennas using 4NEC2
- Focused not just on horizontal gain properties but also vertical takeoff

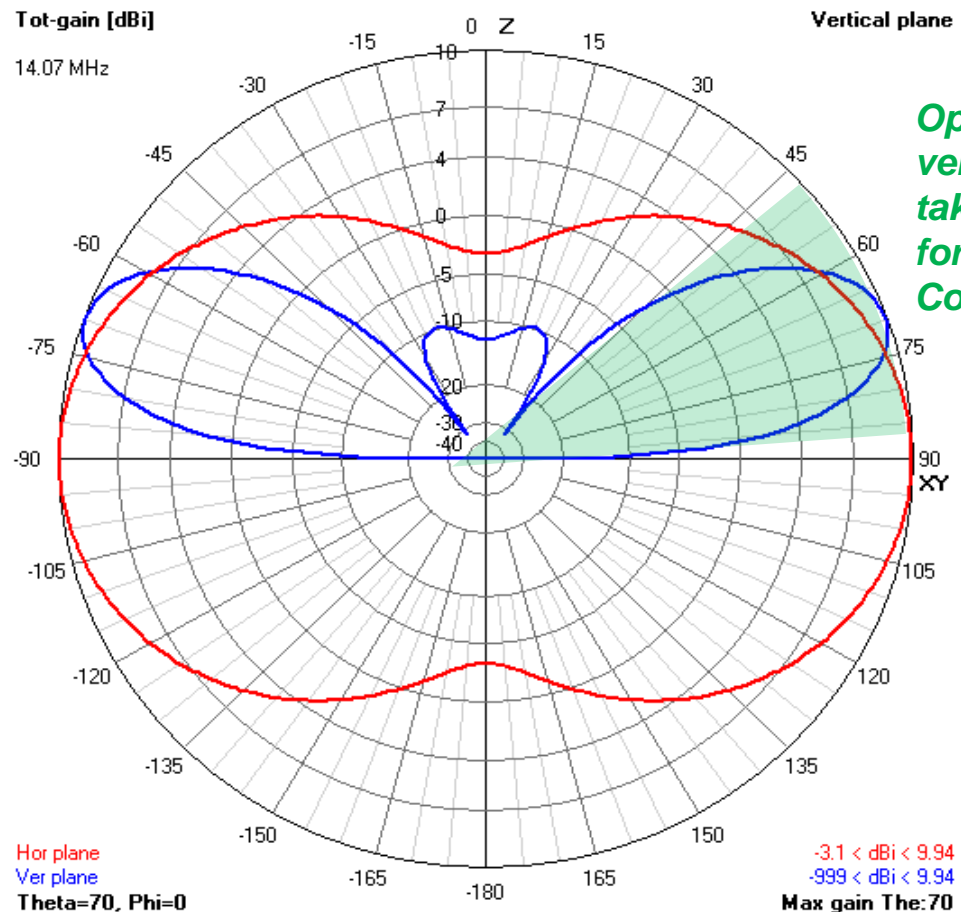


Theta : 80

Axis : 10 mtr

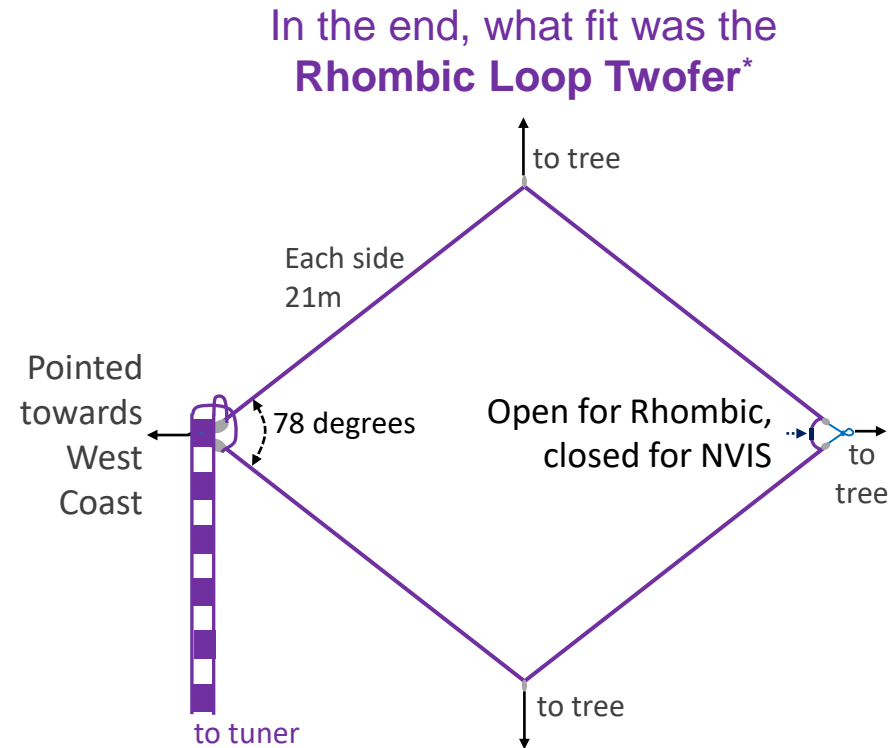
Phi : 280

Hor plane
Ver plane
Theta=70, Phi=0



Devised Suitable Wire Antennas (cont.)

- Not knowing the exact physical characteristics of the space we would have to work with, I came prepared with 7 different wire antennas:
 - Horizontal Lazy-H
 - Rhombic Loop Twofer
 - 20-meter dipole
 - 40-meter sloping dipole/vertical
 - 20-meter horizontal loop
 - 48-meter-length doublet
 - 80-meter $\frac{1}{4}$ - λ Vertical
- Once on the ground, I would pick whichever fit best



- When open, a 'small' rhombic with solid bidirectional gain on 20 through 6 meters
- When closed, NVIS on 80 meters and decent forward gain on 40 meters

* QST, June 2017, p.43.

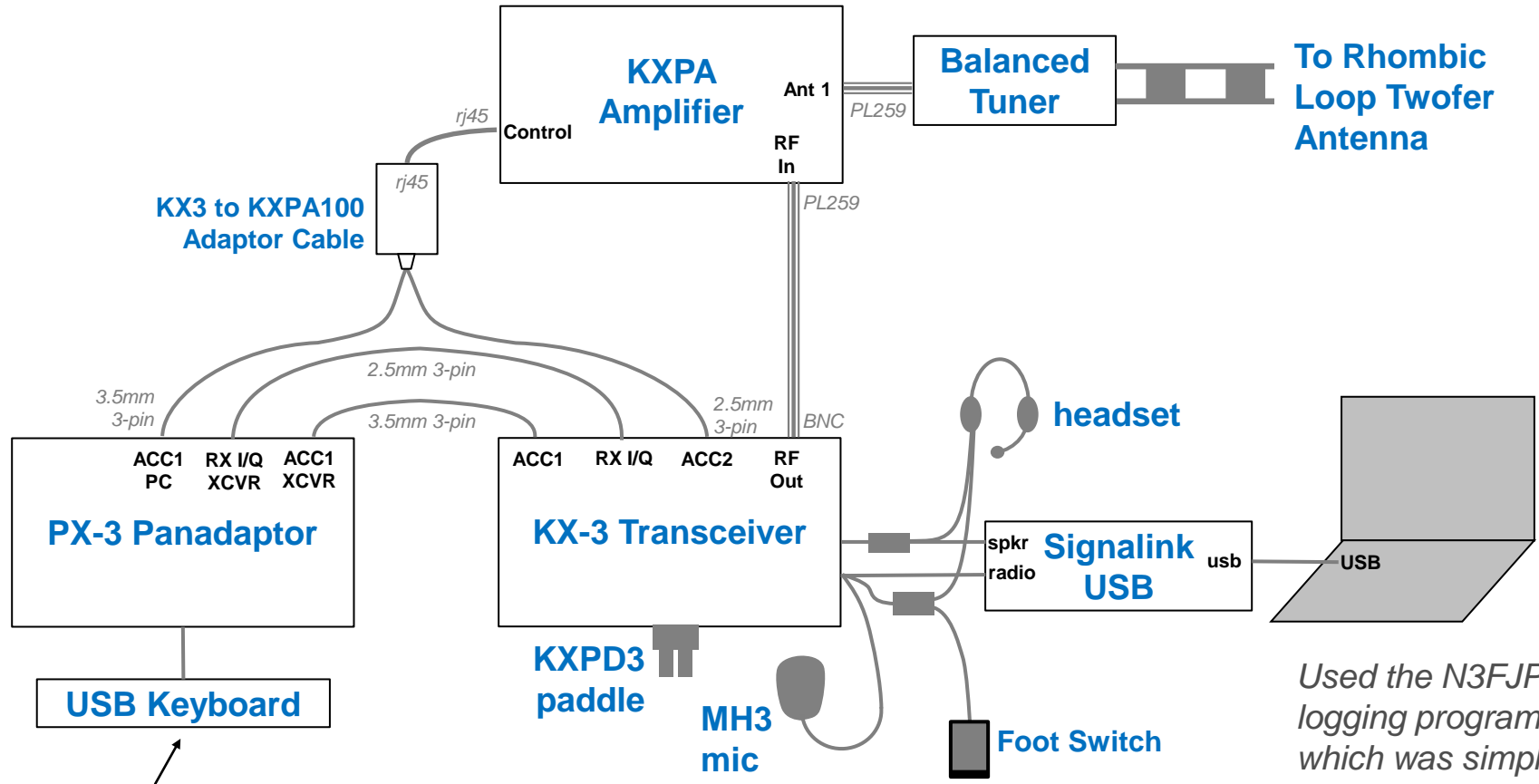
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Logistical & Material Preparations

- Reached out to the local paper and radio station
 - Haines is a vibrant and energetic town, and local media was happy to cover our Field Day event
- Prepared training & promotional materials
 - The ARRL is a good source
- Arranged with vacation rental property owners for visitor site access
- Arranged for a special 1x1 call “**K7L**”, as a tribute to the Alaska Amateur Radio operators who supported the 1964 earthquake and tsunami response, under the auspices of my then work club station NA6ST
- Gathered my HF station and FM satellite station

Operation

The HF Station



A USB keyboard connected directly to the PX-3 works surprisingly well for sending CW. Since the PC was only used for logging, it could be powered from AC when in CW mode.

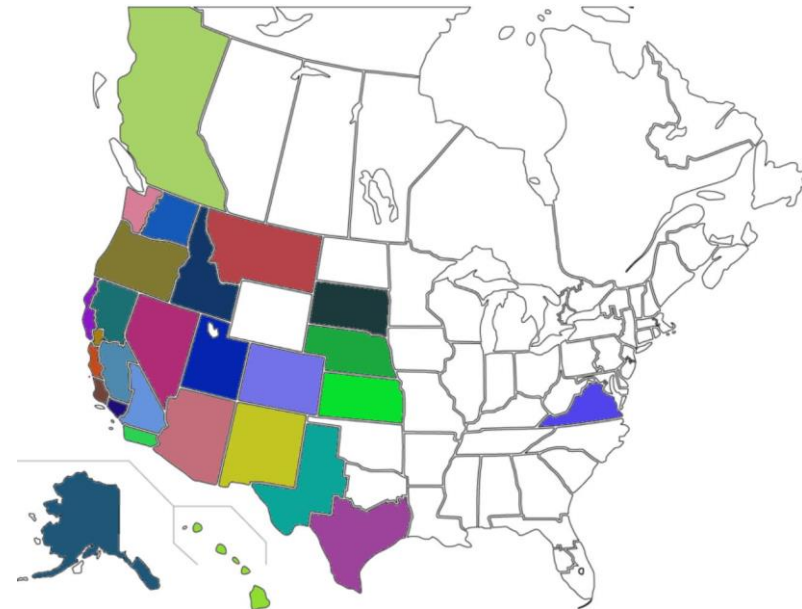
Came prepared for digital, CW, and SSB

Used the N3FJP logging program, which was simple yet highly effective.

How Did We Get Out on HF?

- Alaska is a **long way away** from most North American stations
 - Link margins are lower
 - Beams are rarely pointed North
 - So it is difficult to break through
- PSK31 was QRM-ridden and slow to make QSOs (no FT8 yet in 2017)
- SSB did not work at all except for the few local low-band stations
- But what worked well was CW!
 - Once I got up the courage to dive in, QSOs started flowing – modestly given my rusty CW – a real CW op would have cleaned up
 - 20-meters and 40-meters CW worked best (15 never opened up)
 - 80-meters CW would have rocked at night had our antenna been optimal for the low takeoff angle needed

As expected, we mostly got out to Western North America



ARRL Sections worked

Satellite Operation

- Satellite operation in the North is a joy
- With ham density in the North so low, making FM satellite QSOs on Field Day is easy
 - Made the contact on SO-50 on the first try
- We in fact made FM satellite contacts the whole way up the ALCAN Highway, activating some rare grid squares



Field Day satellite QSO from Viking Cove

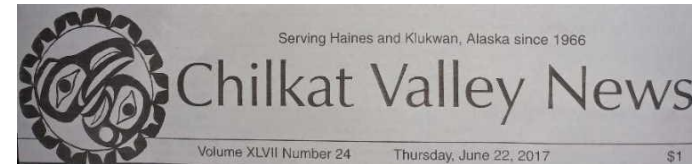


Satellite QSO from Radium Hot Springs, BC

So How Did We Do?

- We scored 1,608 points, with 92 QSOs, mostly CW, coming in 2nd in Alaska, almost beating the big Juneau club with 1,638 points and 48 participants
- So how did our puny 92 QSOs do so well? Bonus points!

- ✓ **100% Emergency Power &**
- ✓ **Natural Power QSOs** – 2 deep cycle batteries / solar
- ✓ **Media Publicity** – article in local paper and on radio!
- ✓ **Public Information Table** – ARRL handouts
- ✓ **SM & NTS Messages** – HF Winlink messaging is so easy!
- ✓ **W1AW Message** – W1AW iffy but K6KPH MFSK16 boomed in
- ✓ **Satellite QSO** – easy when so far North!
- ✓ **Elected Official Visit** – local councilman
- ✓ **Educational Activity** – program on satellites
- ✓ **Social Media** – Maggie's Facebook page
- ✓ **Safety Officer** – teacher Maggie has First Aid certifications
- ✓ **Submitted via Web**



Ham radio event set for weekend

By Natalie Helms

A group of Haines and California residents are learning to set up and operate ham radios this weekend to connect to the outside world in case of an emergency power failure.

Lynn Hyder of Haines and members of the Snaptrack Amateur Radio Club of Santa Clara, California will spend Saturday and Sunday at a cabin in Viking Cove for the annual Amateur Radio Field Day.

Field Day coordinator Jim DeLoach said over 35,000 people from across the country will use ham radios that day for an emergency preparedness exercise. The Haines group will quickly assemble three ham radios without existing infrastructure, using only battery power and stringing wires through trees.

"You have no power, you need to be able to quickly establish communication when power has failed," DeLoach said.

DeLoach said it could take several hours to a full day to get the systems running before reaching out and talking to as many people as possible through the machines.

"It's kind of a contest for us, the more people you talk to, you win," DeLoach said. "It's a way to get hands on practice setting up that emergency station and work through all the kinks involved."

Although DeLoach said he didn't know how many participants would be there, guests are invited to watch at 2 p.m. Saturday, June 24. Call 408-691-1349 for more information.

Article about us in the local paper

Lessons Learned

- The research and preparation really paid off – things went smoothly on nearly every front
- It worked well to have lots of wire antenna choices – we were able to quickly pick one that fit the tree resources available
- In the end, I brought a lot more stuff than was needed, but this redundancy proved critical when the ham computer failed
 - Having a backup main HF rig would have been a good addition, though
- Operation from Alaska is tough – you are far away from most other North American stations, and they are not looking for you
 - Thus more link margin is necessary
 - And CW is the mode of choice
- I wish I had had time to deploy a better low-angle 80-meter antenna solution – 80-meters would have been really fun at night

Questions

Supplemental Material

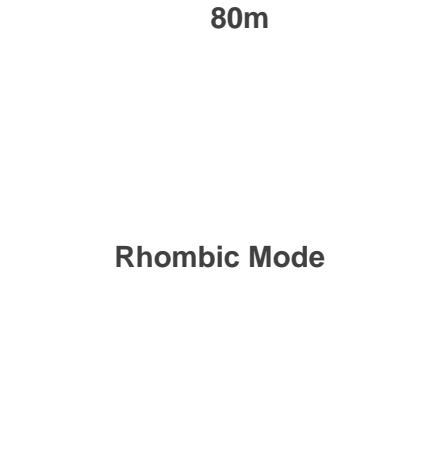
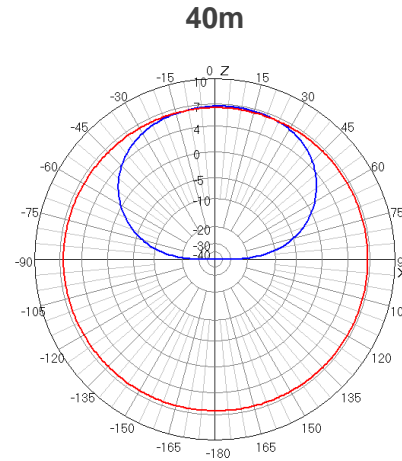
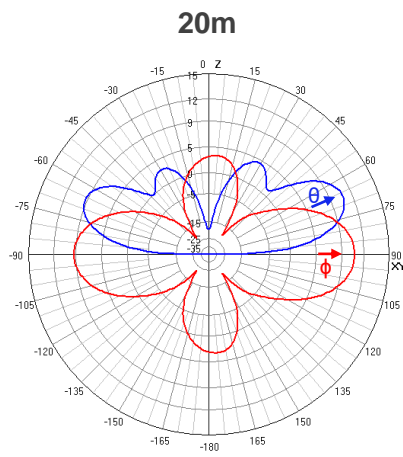
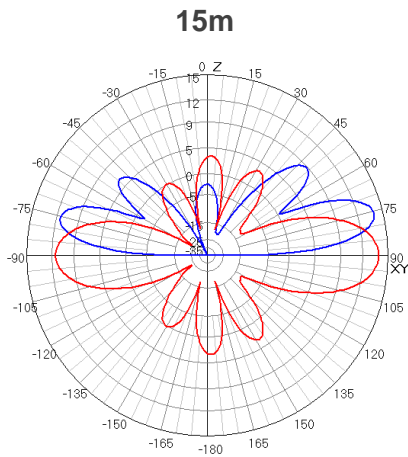
The ARRL June VHF Contest

- It just happened that we left home the exact day the ARRL June VHF Contest began
- So with Maggie driving and me operating, we participated as a 'Limited Rover', low power
- During contest hours, we traveled from Sacramento to near the Canadian border, mostly on back roads in Eastern Oregon and Washington
- We made 15 QSOs on 2m and 70cm FM from 7 Grid squares, and actually managed to win something!



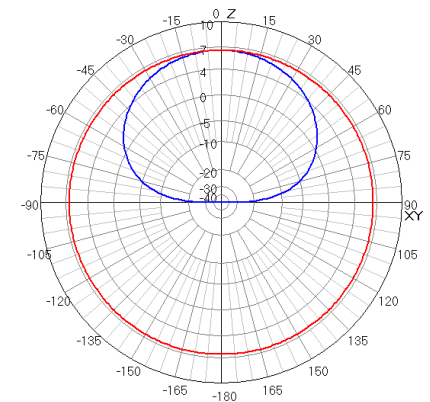
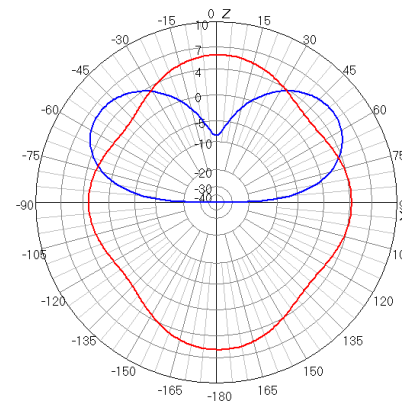
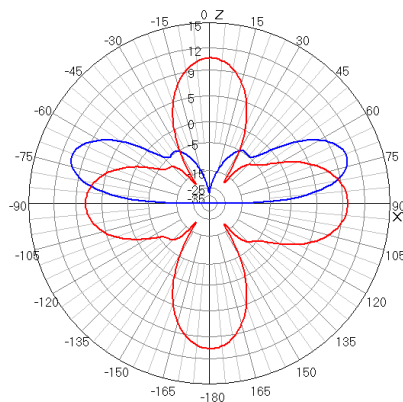
To our great surprise, we got this in the mail months later -- the serious contesters must have been busy that weekend!

4NEC2-modeled Rhombic Loop Twofer Patterns



Rhombic Mode

Loop Mode



KEY:

— Horizontal Pattern (at elevation Theta)

— Vertical Pattern (at azimuth Phi)

My 4NEC2 files are available at:

www.deloach.net/RhombicLoopTwofer/.