

Roving in VHF Contests

Presented to

Socorro Amateur Radio
Association

May 11, 2016

KK6MC James Duffey

NMVHF.org



Overview

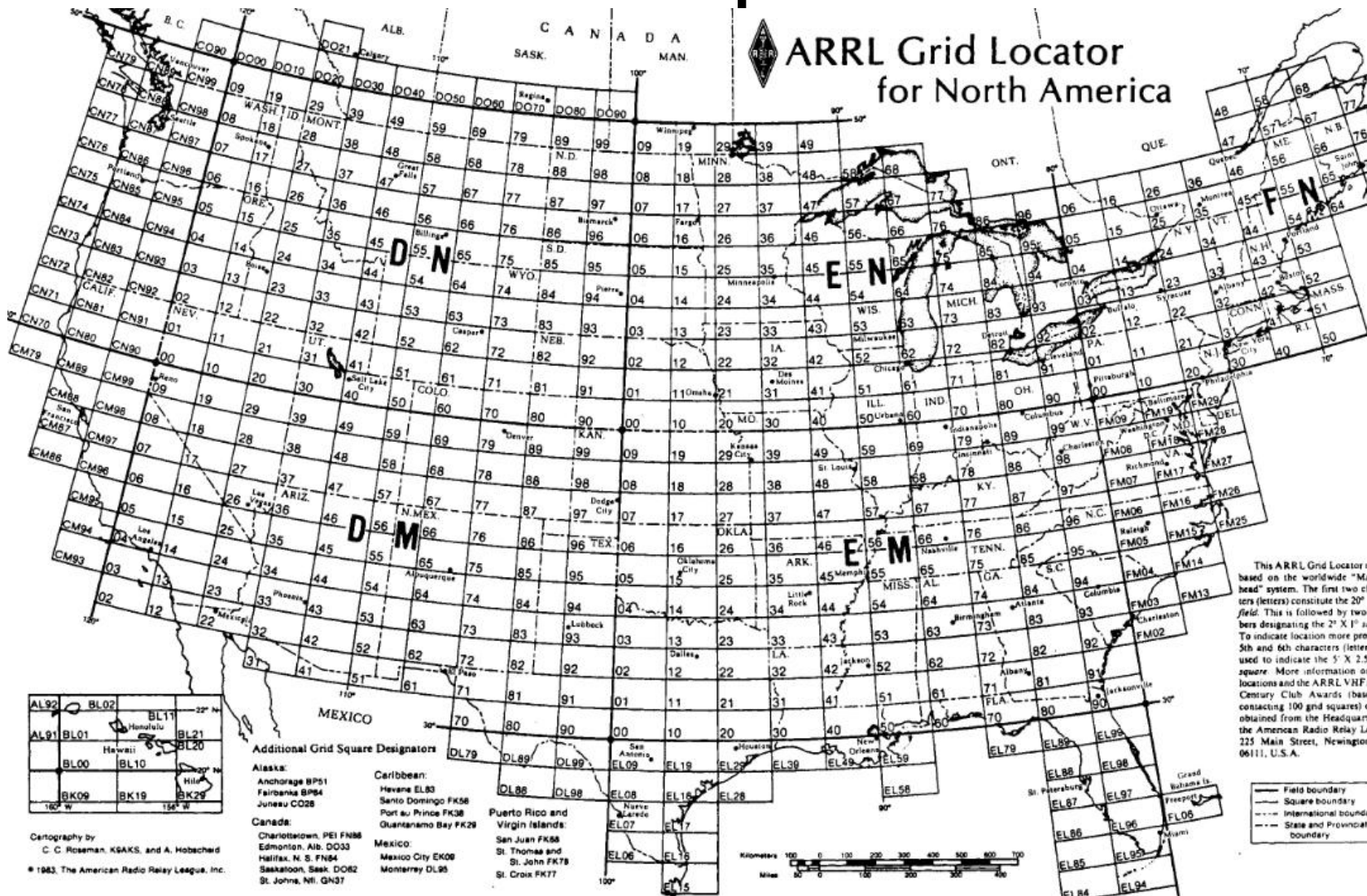
- Bulk of talk will be on Roving in VHF contests
- Two timely bonus topics
 - Sporadic E and getting on 6M
 - VHF contesting
 - ARRL June VHF contest
 - 1800 UTC June 11 Saturday through 0259 UTC Monday June 13
 - CQ WW VHF Contest (6M and 2M only)
 - 1800 UTC Saturday, July 16, 2016 through 2100 UTC Sunday, July 17, 2016

What Is a Rover?

- Competitive Class in VHF/UHF Contests
- Goes from grid square to grid square operating from each
- Can work the same station from different grid squares
- Additional multiplier for operating from grid



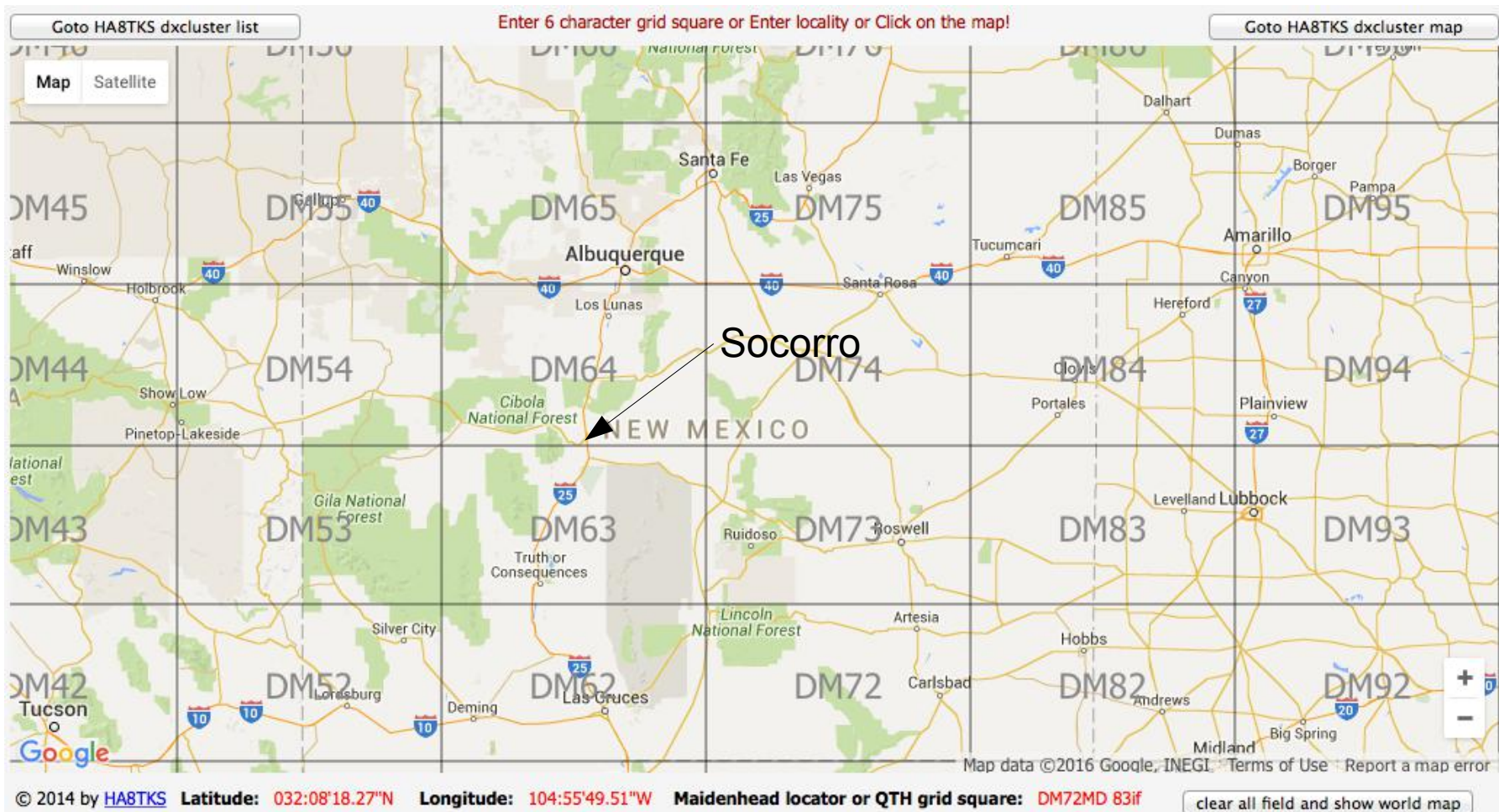
VHF operators like to collect Grid Squares



AL92	BL02	BL11
AL91	BL01	BL21
	BL00	BL10
BK09	BK19	BK29

Cartography by
C. C. Roseman, K5AKS, and A. Hobscheid
© 1983, The American Radio Relay League, Inc.

NM Grid Squares around Socorro, NM



Why Rove?

- Provide more contacts and multipliers (grid squares) for other contestants
- Produce more QSO points and multipliers for self
- Work more stations – dupes reset to zero at each new grid!
- Operate from other than home QTH
 - Lower noise
 - Better location
 - Rare grids
 - Go where activity is
- Challenging operating and technical conditions
- See new sights

Sight Seeing and Roving



Couch on side of road near Show Low AZ

Grand Canyon scenic overlook



The Challenges of Roving

- Setting up effective multiple band VHF/UHF contest station in a vehicle
 - Power
 - Antenna
 - Operating position
- Set up new station for each new contest
- Planning
 - Best route to get from one site to another
 - Best sites for operating
 - Good radio horizons
 - Easy access
 - Proximity to other ops

Improvisation Plays an Important role in Roving



Fixing Moxon on the road in DM75



Dummy load substitute for forgotten antenna

Operate in Motion?



In Motion 2008 CQ WW VHF Contest

Advantages

More operating time

Less set up time

Don't miss openings

Disadvantages

Sub optimal signals

Antenna limited

Or Stop and Set up?



Stop and Set up June ARRL VHF

2008

Advantages

Good locations, high, low noise

Large antennas possible

Disadvantages

set up time

travel time

Operating Position



TS-2000S for 6M, 2M, 432, 1296

Also drives Elecraft 222MHz transverter to KLM amp

DEMI 902 Transverter

DEMI 2304 Transverter driven by TR-751

Headset and footswitch leaves hands free to log and tune

MacBook Pro running RoverLog

24GHz Gunnplexer courtesy of W7QQ

The Back side isn't so pretty



Getting Coax into the Car



Use foam pipe insulation on top of window before it is rolled up

24GHz



24GHz Gunnplexor, 10mW QSO with W7QQ

Short range mostly good for rover to rover QSOes

Worth the trouble because there are more QSO points for microwave QSOes than for Lower band QSOes

10GHz



W7QQ with 3W on 10GHz to 24" dish

6000W ERP!

Grand Mesa CO, DM69

Capable of QSOes > 100 miles

Antennas



W7QQ 6 band stack

Antennas - Stop and setup lets one use really long antennas



13 element Cushcraft 13B2 set up for 2M sprint in DM74

Mast Mounts



Homebrew drive on mount

Floor Flange and nipple



NN5K receiver hitch mount

Meeting Other Rovers



Meeting with W3DHJ/r during CQ WW VHF contest 2008

Coordinated Roving generates activity when bands are slow



Make sure
antennas
are all
pointed in
same
direction...



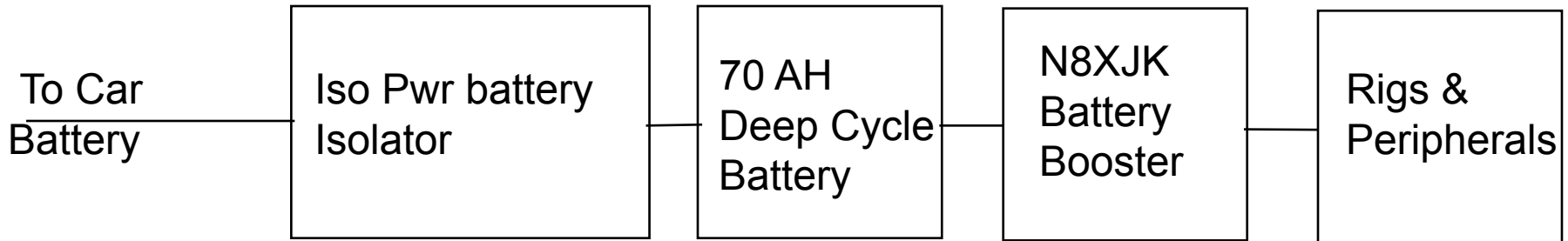
Make sure feedline is connected...





At night
headlamp
helps a lot...

Handling Power



- Charges battery while engine is running
- Isolates battery from car electrical bus
- Provides 13.8 V until battery is discharged
- Rigs operate at optimum voltage without degradation
- Uses Anderson PowerPoles for interconnects
- Battery can operate rigs 6 to 8 hours without charging
- SSB and CW are pretty low duty cycle modes
- Remove and charge battery at night if there have been problems

Trip Planning - Maps

- Road Atlas with latitude and longitude
 - Some state DOT road maps, Rand McNally, Universal, some National Geographic
- Benchmark Atlas for detail (also DeLorme)
- Google Maps
 - F6FVY and HA8TKS Gridmap overlay for Google Map
- Google Earth
- Topo! (National Geographic)
- On line topo maps, Topozone, other
- Printed maps from the internet usually have poorer resolution than the paper equivalents

Trip Planning - Other

- 511 Road conditions and construction information
- Motel reservations - it is amazing how much can go on in a small town in one weekend
- Ask veteran VHF contesters for good rover and operating site information
- Get permission where necessary
- Publicize it on internet
 - We keep e-mail list and announce trips

Rover Strategy

- Start at grid convergence or grid boundary near populated area
 - this lets people know you are on and gets their attention
 - gives them two, three, or four quick multipliers
 - They know you are roving and will look for you
- Keep moving and keep operating
 - more grids are more multipliers
 - maximize operating time while maximizing the number of grids you go to not always easy
- Be loud on two - beam and amp
- Publicize where you are going and when
- Always sign /r, always use phonetics, always give grid when you call CQ
- Have CW available

Tips for Fixed Stations to Work Rovers

- Know who is going out, where they are going and when they will be in what grid
- Keep track of the rover's progress and location during contest
- Swing the beam
- Ask if they have additional bands
- Ask where they are going next and when they will get there
- Listen for the weak ones
- Have CW available

Official KK6MC/r Driver and Photographer



With Sporadic E season starting, now is the time to get active on 6M

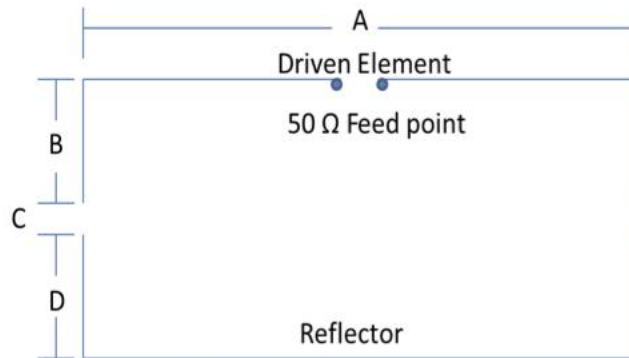
- Sporadic E season from mid-May to mid August
- Strong signals
- Activity concentrated mid-morning and early evening, but can happen anytime
- Monitor the calling frequency, 50.125MHz, for activity, move off to make long QSOes or when band is open
- If skip gets real short on 6M listen on 2M

Antennas to quickly get on 6M

- Use an HF antenna that you already have
 - 40M dipoles usually work OK (odd harmonic)
 - 30M dipoles often work
 - Tribanders also can be made to load on 6M
 - Sometimes 80M dipoles will work
- Build simple dipole 10ft of wire and 3 insulators
 - Inverted vee will work fine
- Moxon for a bit of gain
- Loops give away a lot of gain, but are popular because of omnidirectional pattern

N2MH Moxon made from $\frac{3}{4}$ inch Aluminum angle

< www.n2mh.net/moxon.htm >



Maximum
Radiation

A = 83 3/4"

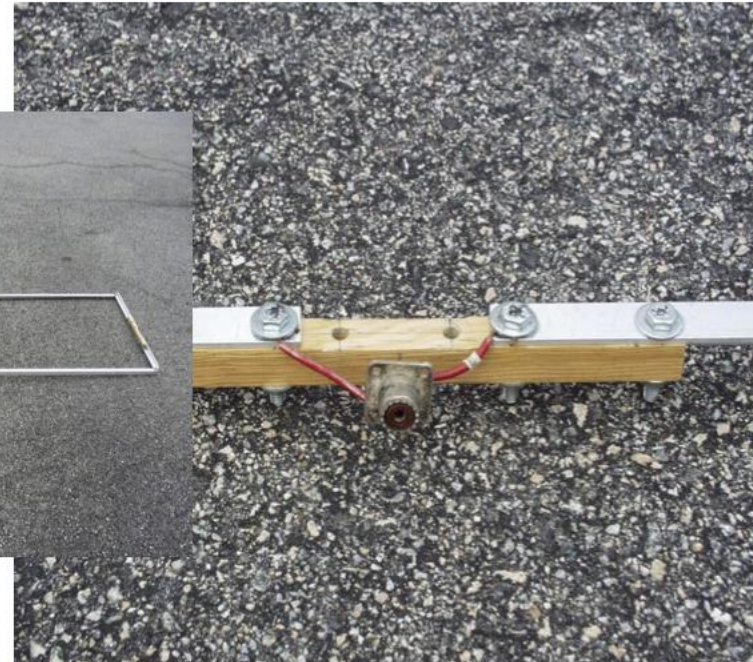
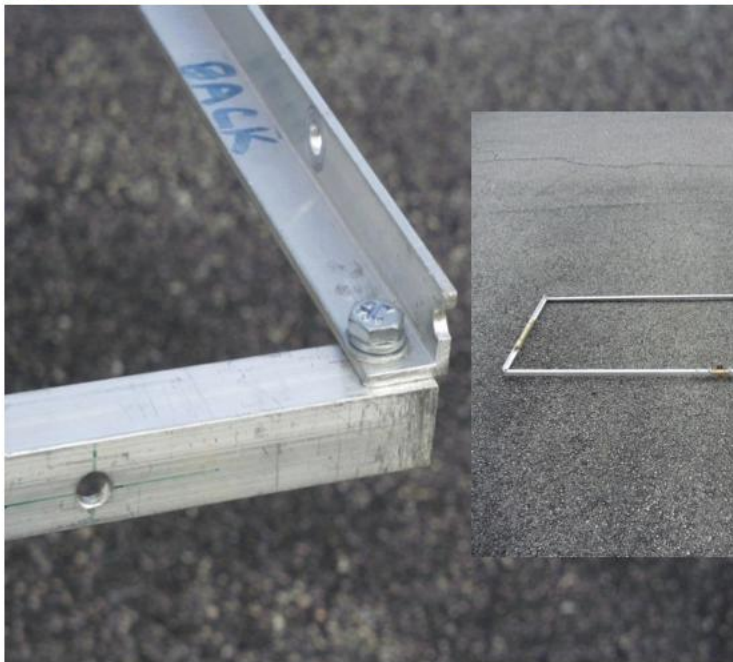
B = 10 3/4"

C = 4 1/4"

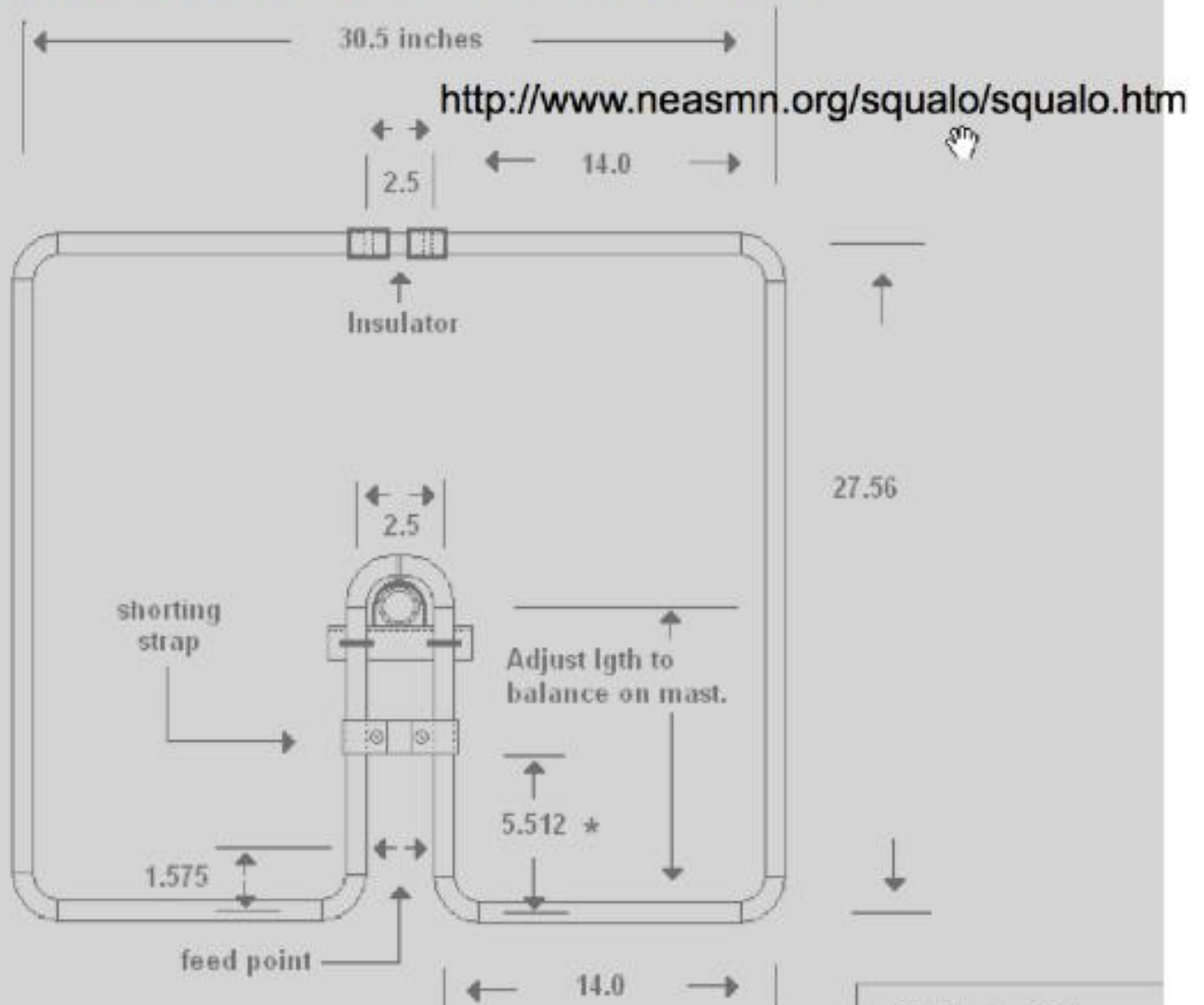
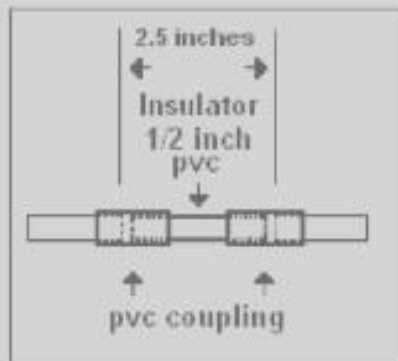
D = 16"

E = 31"

I optimized these dimensions, they are slightly different than N2MH



Six Meter Loop Built with 1/2 inch Aluminum U channel



Six Meter SQ Loop

VHF Contesting

- VHF contests coming up
 - ARRL June VHF contest
 - 1800UTC June 11 (Saturday) to 0259UTC June 13
 - CQ WW VHF Contest
 - 1800UTC July 16 (Saturday) to 2100 July 17 (Sunday)
- Mostly CW and SSB activity, but there is an FM only category
- Assistance can be used
 - Setting up QSOes with repeaters, texting, DX clusters, internet chat rooms
 - Can setup QSOes only, no QSO information can be passed other than by direct means

Quick tips for VHF contesting

- Get on at the beginning of the contest
 - Activity also peaks in evening
- Use all the bands you have capability on, even FM only
- Monitor 6M for Sporadic E
- Monitor 2M calling frequencies, 144.2MHz (CW and SSB) or 146.52 (FM) for local activity
 - Don't hog the calling frequencies

More Contesting Tips

- If you work a station on one band try to get them to QSY to other bands
 - FM is an OK response to “Do you have any other bands?”
- Sometimes VHF QSOs can be hard to make due to QSY, stay with station to complete
- If you have some VHF operating experience and digital mode experience, try WSJT modes
- Submit a log no matter how few QSOs you make

Thanks for your attention - Any Questions?