

2 element 3-band beam that
weighs 5 kg and can be raised in
10 seconds

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NO9E SP8FWB VK2ISF

Talk given pm 5/26/25 to Pennine Ham Radio Club (Nick G4IWO chair)

2 el 5 band quad

- Set in 1997 at home QTH
 - Pretty good performance
 - 8 ft aluminum roof tower – 5kg
 - Quad -15kg
 - Reinforced roof attachment
-
- Weeks of planning
 - Hard to fix



A scenic view of a coastal town at sunset. In the foreground, a black radio device with a yellow display and a large knob sits on a wooden surface. The middle ground shows a row of white houses with dark roofs along a beach, with a large concrete bridge spanning the water in the background. The sky is a mix of orange and purple, and the water reflects the sunset colors. A small sailboat is visible on the water.

Isle of Sky GM/N09E

Cliffs of Dover
G/NO9E



2019 - purchase 10 ha of mainly forest for ham radio



5 band Spiderbeam

About 10 kg

Aluminum mast about 15kg

Takes half day to lower and raise

Mast slipping since 2023 –not yet fixed

Total cost with rotor - \$2k

5 years without big trouble



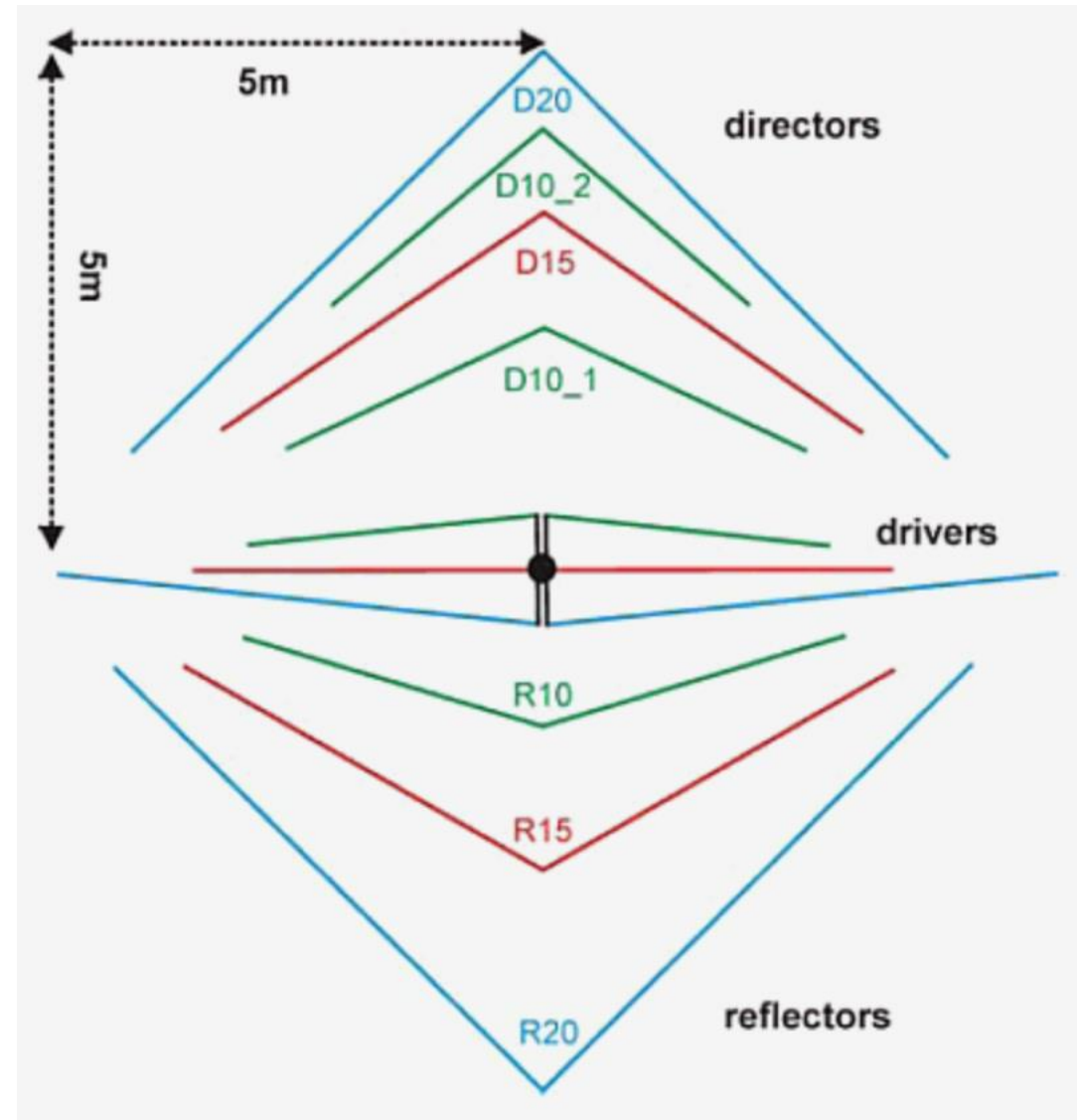


Spiderbeam

3 el on 20-15

4 el on 10

Long – 10m





Phased beams at 30m

Antenna costs in 2020

30m tower - \$10k

2 beams - \$5k

Rotors - \$3k

Declining SSB activity

- High noise floor from much electronics
- Restricted space
- Antenna restrictions
- Weak stations work superstations (e.g., S57DX – SK) but not many superstations on the air

Are conditions that bad?

- Calling CQ with 1.5 KW and phased beams
- Happy hams with IC7300 and endfed antennas getting good reports
- Reports
 - 59+10 on phased beams @ 20 and 30m
 - 59 on single beam @ 30m
 - 57 on Spiderbeam @ 12m
 - 55 on Endfed
 - In the noise on vertical

Needed extra antenna fixed to Caribbean

- Space – lots of trees with falling branches
- Permanent installation risky – if heavy tower falls
- Something light and fast

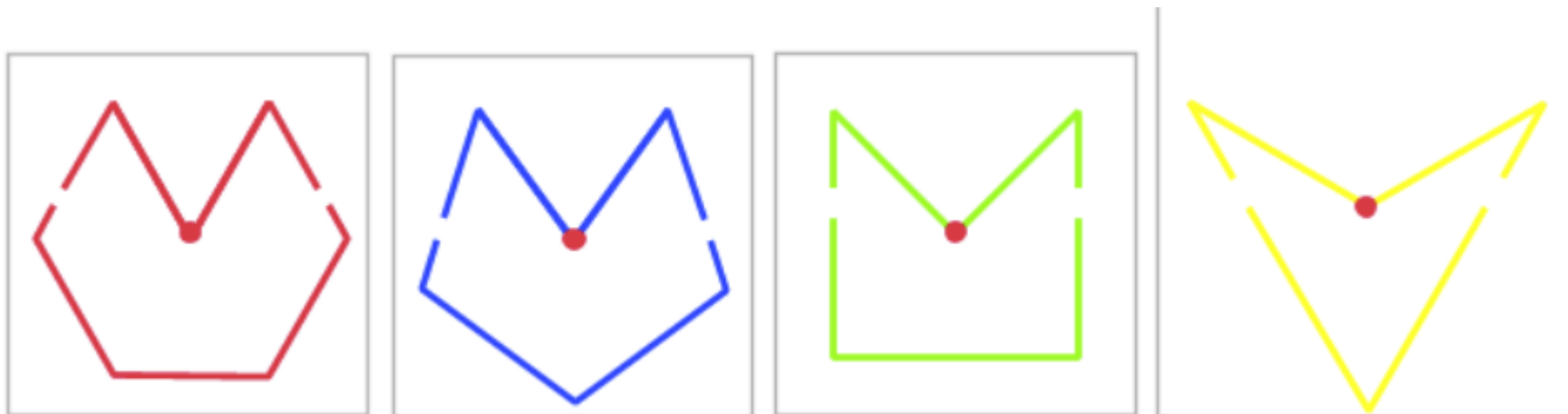


How to create light beam?

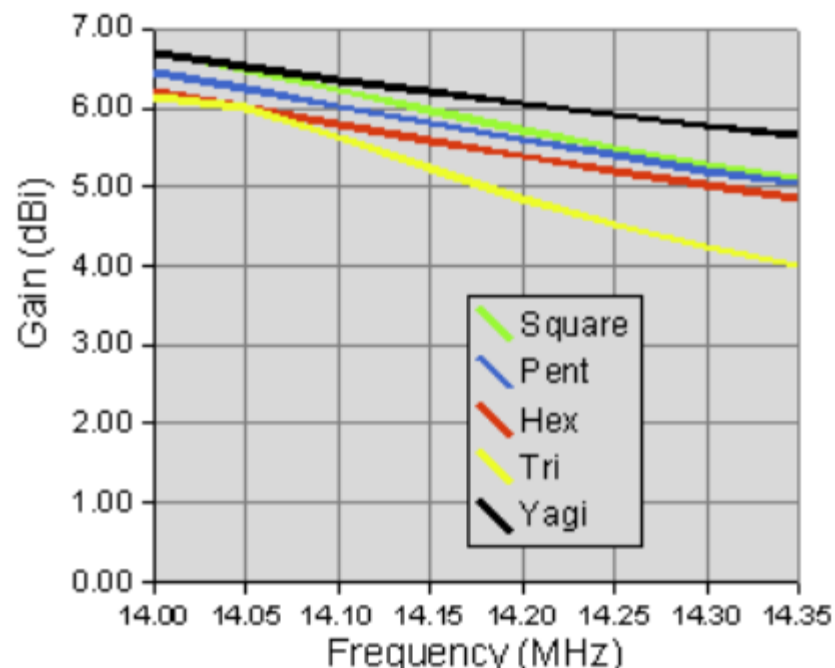
- Simple yest robuts design – square beam
- Light but strong elements – carbon fiber fishing poles
- Light wire – magnet wire 0.8 mm
- Light spreader – aluminum angle
- Light mast – carbon fiber
- Light base – garden post
- Light guys – 3 mm Dacron attached to anything permanent

2 el beams

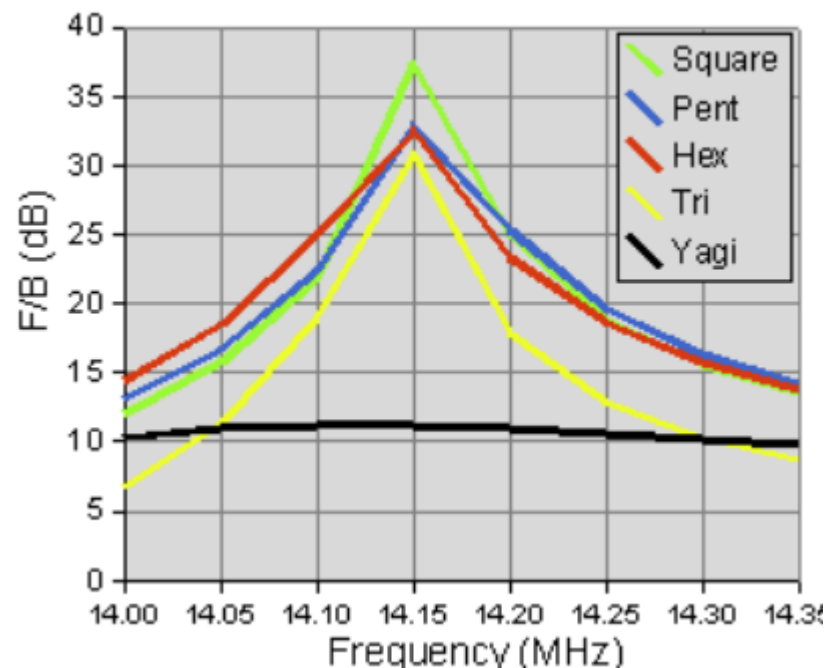
http://www.karina.net/g3txq/wire_beams/



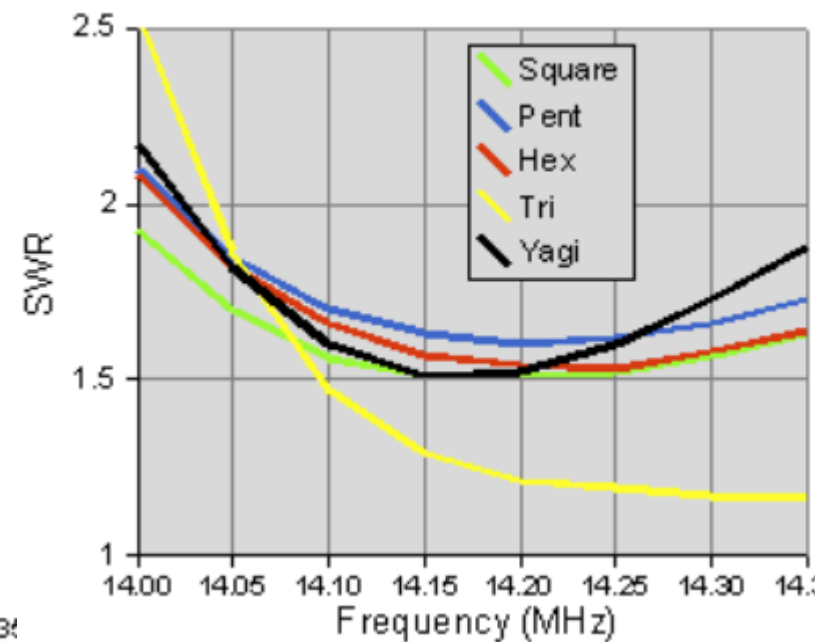
Forward Gain



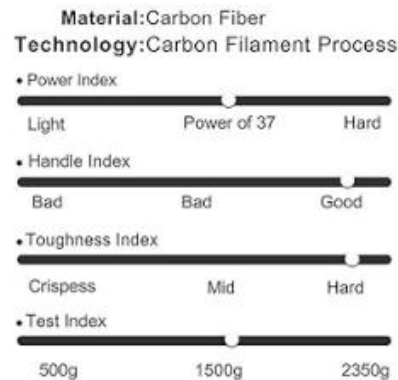
Front / Back ratio



SWR



Carbon fiber fishing rod



Size	Closed Length	Section	Top Dia	Butt Dia	Rod Weight	Line Weight	Actual Length
3.6m/12ft	2.30'	7	0.03"	0.39"	2.82oz	4.4lb	12'
4.5m/15ft	2.30'	8	0.03"	0.47"	3.49oz	4.4lb	13.5'
5.4m/18ft	2.30'	10	0.03"	0.59"	5.75oz	5.5lb	17.4'
6.3m/21ft	2.30'	12	0.03"	0.70"	8.0oz	5.5lb	20.7'
7.2m/24ft	2.30'	13	0.03"	0.79"	10.0oz	5.5lb	23.0'



Goture//Telescopic Tenkara Fishing Rod//Ultralight Travel Fishing Rod,Portable Collapsible Bass Crappie Rod,1 Piece Carbon Fiber Inshore Stream Trout Pole 10 12 15 18 21 24 Free Tip Set(Top 3 Segment)

[Visit the Goture Store](#)

3.9 1,523 ratings | [Search this page](#)

Price: ~~\$26.99~~ - ~~\$35.99~~

[Free Return on some sizes and colors](#)

Get \$50 off instantly: Pay \$0.00 ~~\$34.99~~ upon approval for Amazon Visa. No annual fee.

Color: 1 Piece BREEZE ,Green



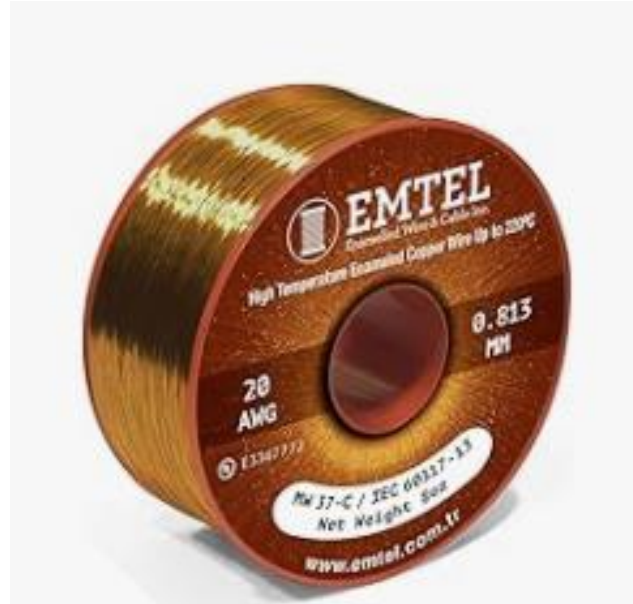
Size: **Select Size**



Much stronger than
Fiberglass

6m pole 0.24 kg

Light magnet wire 0.8mm



20 AWG - 8 oz (157 feet) Magnet Wire ·
Magnetic Coil 220°C (428°F) Thermal C

★★★★★ 22

\$16⁹⁹

\$16.14 with Subscribe & Save discount

✓prime

FREE delivery **Sun, Jun 1** on \$35 of items
shipped by Amazon

Or fastest delivery **Thu, May 29**

Only 12 left in stock - order soon.

- Such size that poles do not sag too much
- Some sagging good – for better separation

Carbon fiber is conductive – elements need to be spaced



Paper clips for temporary attachment



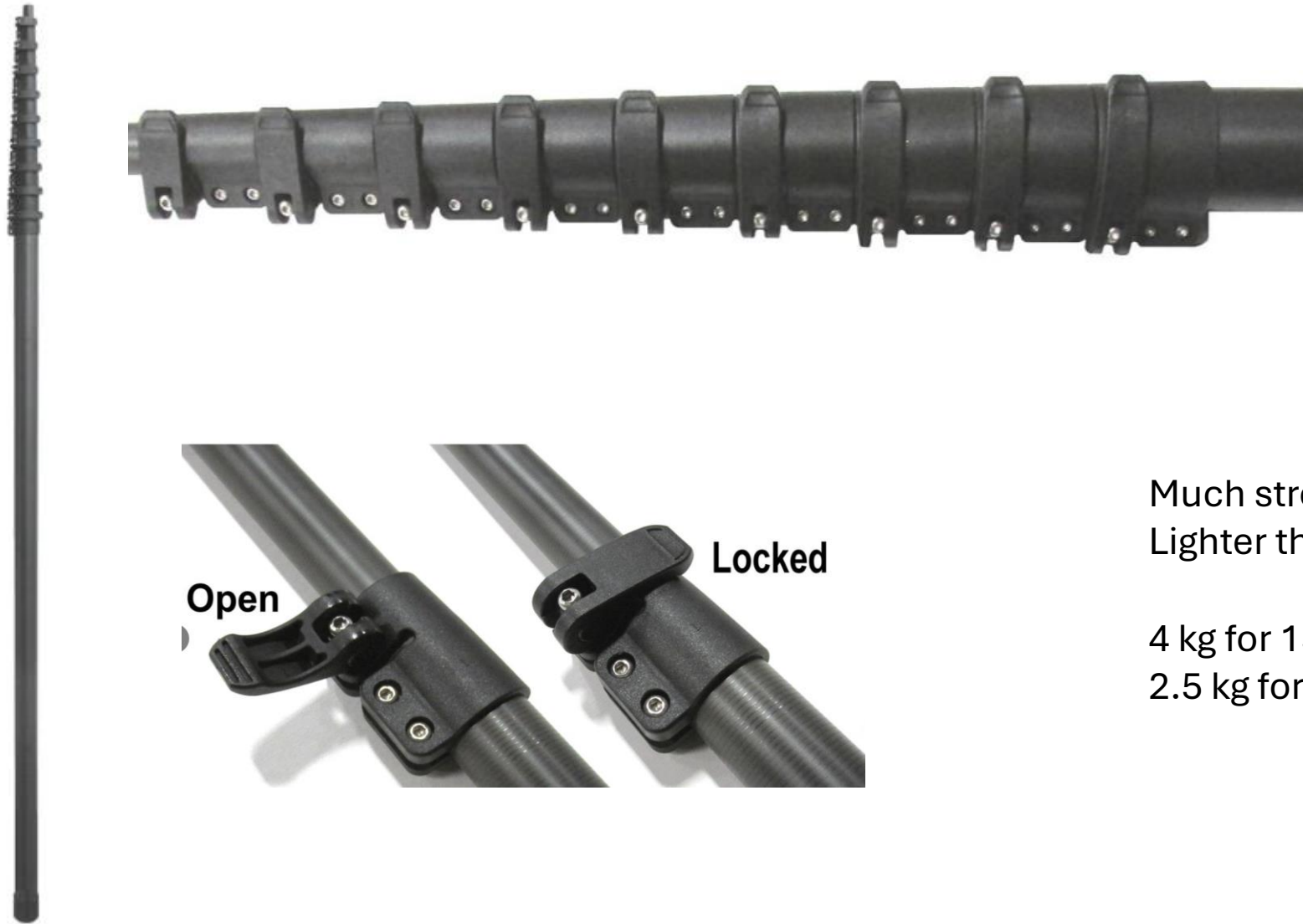
Electrical tape for “permanent” installation



Spreader out of aluminum angle



Carbon fiber mast: 10 to 15 m



Much stronger than fiberglass
Lighter than aluminum

4 kg for 15 m version
2.5 kg for 10m version

Dacron rope



Rope Size	Breaking strength
1/8" rope	450 pounds
3/16" rope	1300 pounds
5/16" rope	2600 pounds
1/2" rope	7050 pounds



Garden pole, dog spiral tie, Nite ize carabiner

Article in Feb 2025 QST

A Square Beam for 20, 15, and 10 Meters

A carbon fiber mast makes this two-element antenna lightweight and easy to deploy.

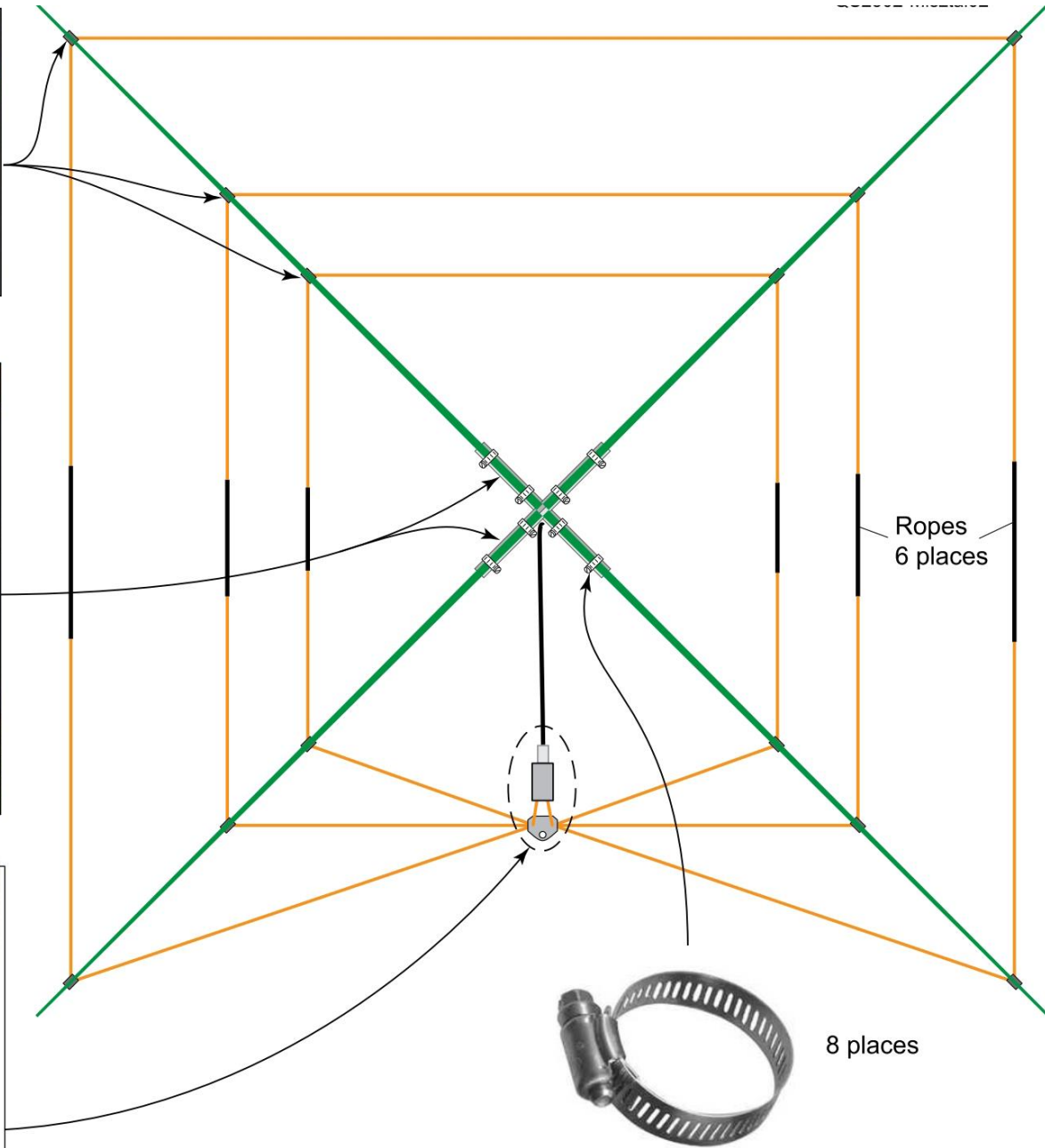
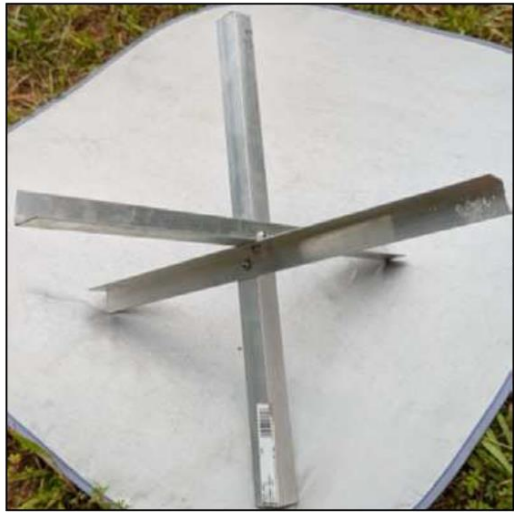
Ignacy Misztal, NO9E

Everyone knows that beam antennas are useful for pulling stations out of the noise. However, they can take significant time to construct and raise. To solve this issue, here's a square beam that weighs only 10 pounds (with a mast), takes seconds to raise, and performs as well as a hexbeam.

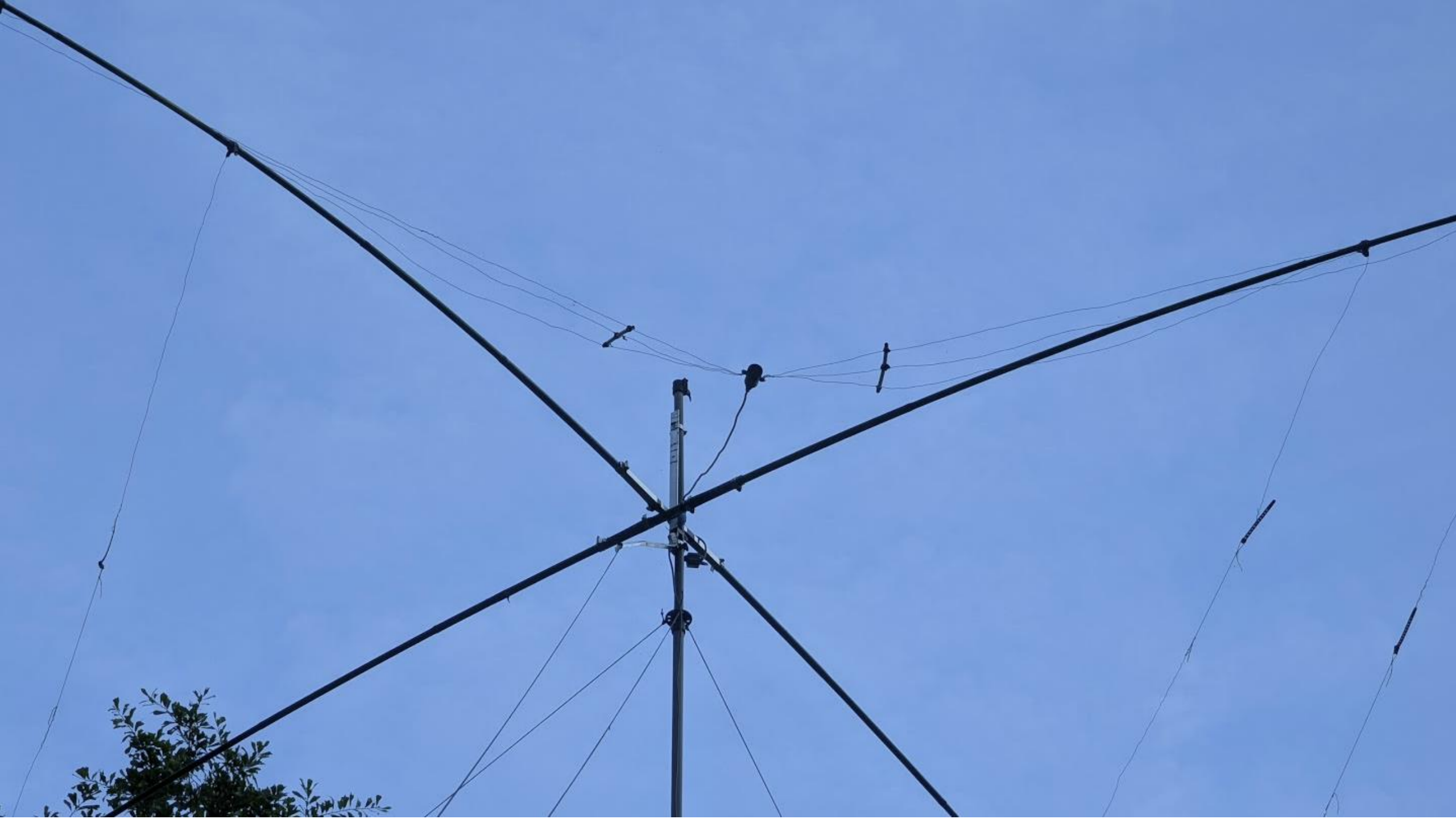
list is provided in Table 3. For links to where you can buy the parts, additional construction details, and more photos of the final product, visit www.arrl.org/qst-in-depth.

Step-by-Step Instructions

1. Cut the aluminum angle into three 2-foot pieces. Screw two pieces together in the center to make an X.











Tuning

- Trim driven element for best SWR or best gain
- Trim reflector for best F/B (front to back)
- Interaction – longer reflector, lower gain but higher bandwidth
- Start from 20m

- SWR with antenna analyzer
 - SWR 2:1 perfectly acceptable if ATU present and coax not too long

- F/B with 2nd antenna or wideband noise generator



High Flatness Noise Source Signal Generator TZZ 0 2 2000M Spectrum Tracking

US \$29.84

or Best Offer

Was US \$33.15 (10% off) ⓘ

\$28.35 with coupon code [Price details](#)

Condition: **New** ⓘ

Quantity:

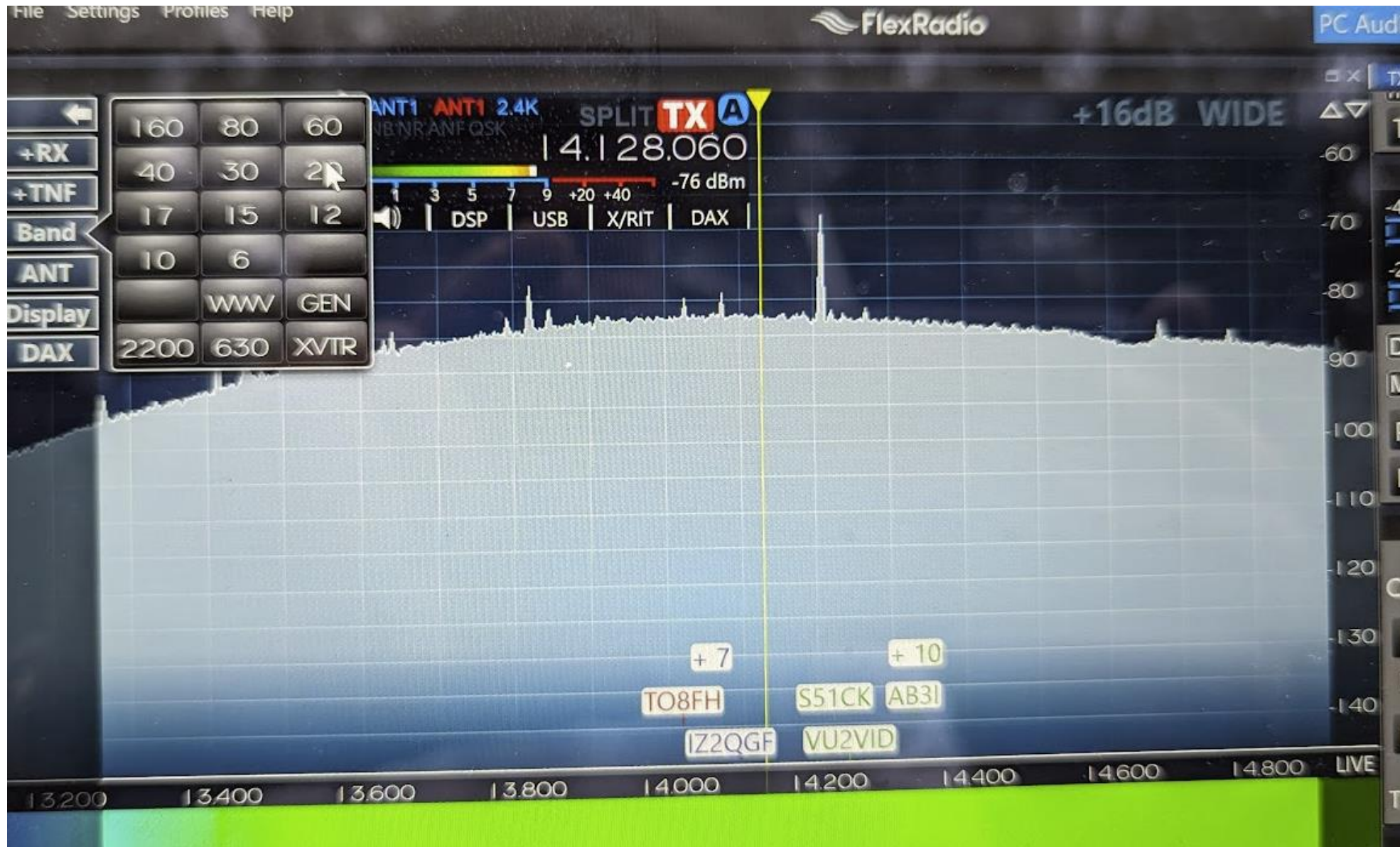
1

5 available

Generator attached to beam

Signal received on another horizontal antenna at least 20m away

Beam towards receiving antenna

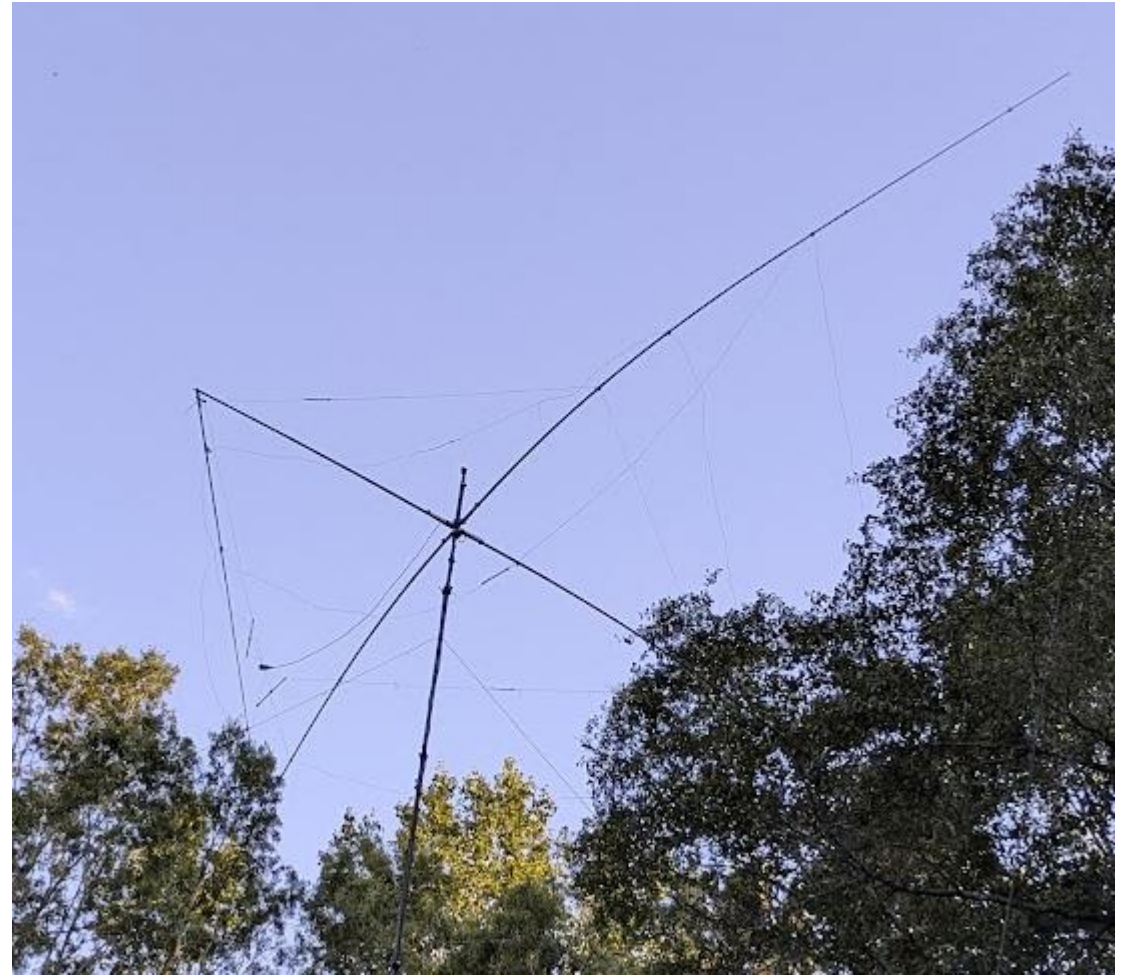


Beam back to
receiving antenna



One year later after hurricane

Oak tree



Fix took 1 hr

Comments

- Nylon clamps melt running at 1.5 KW – especially 10m
 - Insulate wires within clamps or better clamps
 - Thicker wires for 10 and 15m
- Mast turns if antenna not set straight
- Can add 12 and 17m – lots of tuning
- Possibly can add 30m if 15m high

Applications

- Temporary antenna – raised when needed
 - Easily fixable
- Portable – be careful setting up in wind
- DXPeditions
- If rotor – at bottom

Alternative masts from Spiderbeam



Aluminium Telescopic Mast 10m (33ft)

transportation length 135cm - weight 9kg

Perfect DXpedition mast for portable Spiderbeam Yagi



Aluminium Telescopic Mast 15m (49ft)

transport. length 200cm - weight 14kg

Serious 15m mast for portable & HD Spiderbeam Yagi



Aluminium tripod with 1.2m legs

for 10m and 12.5m aluminium mast

(transportation length 0.95m)

Home station optimized for minimum wires – Flex radio with many features but buggy



Construction as simple as possible but sound – examples of Beverage Wi-Fi switch



EME setup outside



The SSB weekend of the CQ World Wide DX Contest is this month, often featuring activity from rare locations. Those operations aren't necessarily major DXpeditions. Here's NO9E's story of his one-ham contest expedition to Easter Island (CEØY) during last year's CQWW SSB Contest.

Easter in October

Impromptu CQWW Contesting From CEØY

BY IGNACY MISZTAL,* NO9E





CE0Y/NO9E
Easter Island









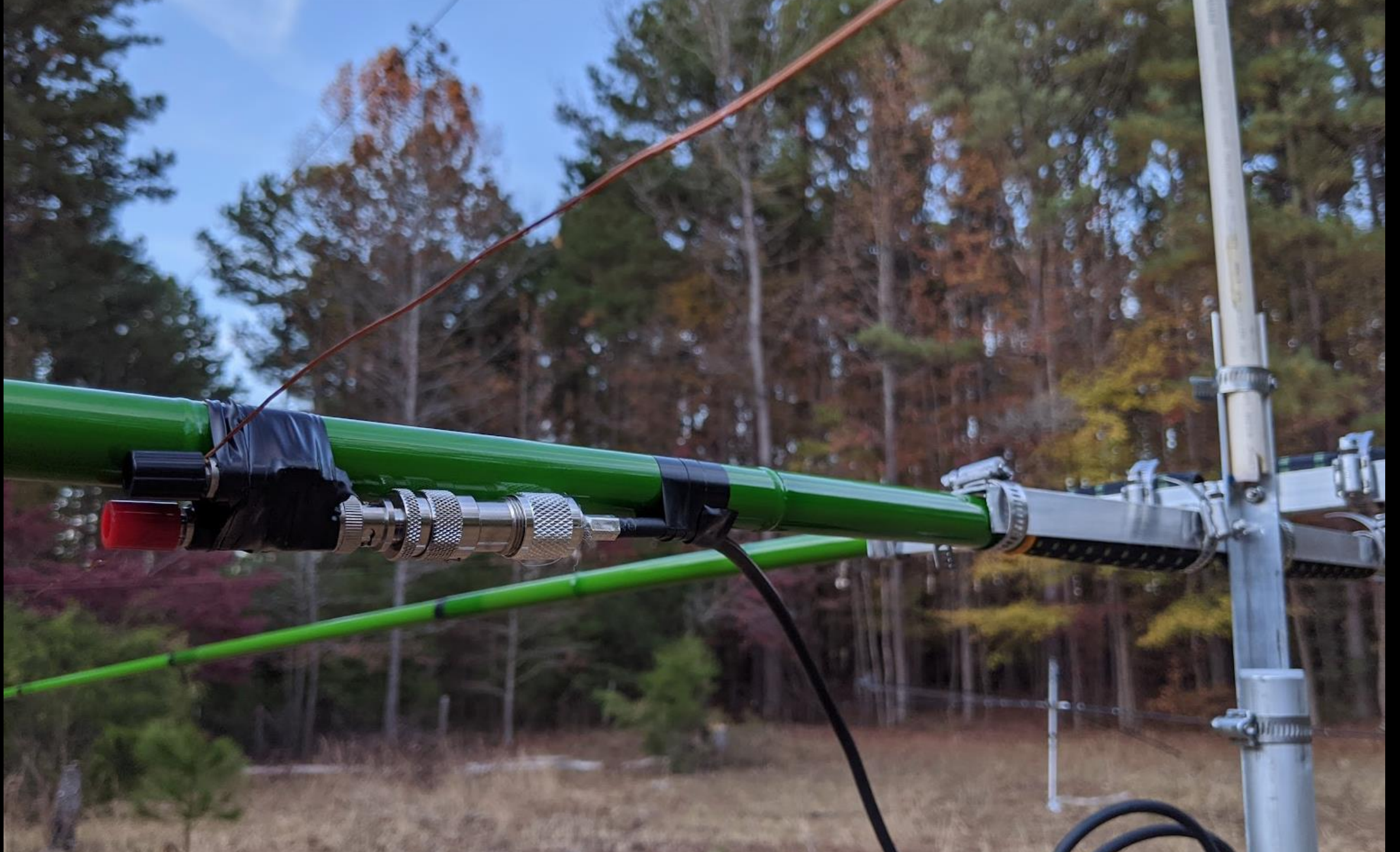
First beam in 2020: 20m Spider beam

Carbon fiber poles

Light spreader

Spiderpole mast and stand

Bad SWR when wires close to carbon poles





 <p>Nick G4IWO</p>	 <p>Ignacy NO9E</p>	 <p>Jef ON8NT</p>	 <p>Ken G3WYN</p>
 <p>Ken G4VZV</p>	 <p>Roberto/N4XAT</p>	<p>Jan PE0SAT</p>	
 <p>Rachael M1AYG</p>	 <p>George M0URB</p>	 <p>Michael EI6JMB</p>	 <p>Keith(gm4jkz)</p>
 <p>Jim Alderman G4JBA</p>	 <p>Dave GW7TIX</p>	 <p>Jeff MØITZ</p>	 <p>Amanda m6bjd & "Henr..."</p>
 <p>Adriane DL8BDT_Mike...</p>		<p>Julian - 2E0CIQ Steve Hudson...</p>	
		<p>Julian - 2E0CIQ</p>	<p>Steve Hudson AA4BW</p>