Four Element Vertical Dipole Array

Super Antennas on the Beach

Christian “Chris” Janssen
DL1MGB / KO2WW

About Me

- 42 years old
- Favorite modes: CW, SSB, RTTY
- Contester and DXpeditioner
- Married to Anja DO2WW

How it all began

How it all began

How it all began

Joe - DL8WPX / Y21RM

- 5ele VDA for 40m (1988)
- Adopted it for our needs
- But still a secret…

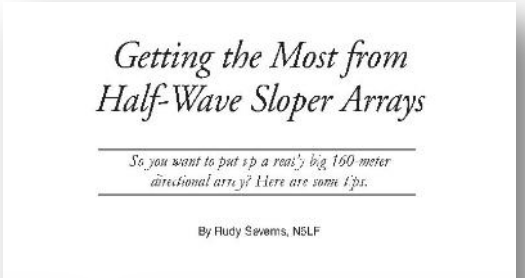
How it all began

Antennas Here are Some Verticals on the Beach...

By R. Dean Straw, N6BV
Senior Assistant Technical Editor, ARRL
5328 Fulton Street
San Francisco, CA 94121

A DXpedition to Jamaica for the CQ World Wide Contest, "Field Day" Style

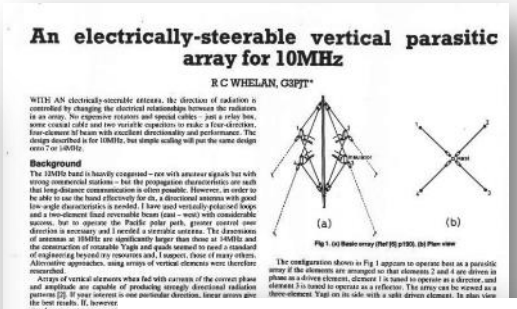
Planning, Planning, Planning



Getting the Most from Half-Wave Sloper Arrays

So you want to put up a really big 160-meter directional array? Here are some tips.

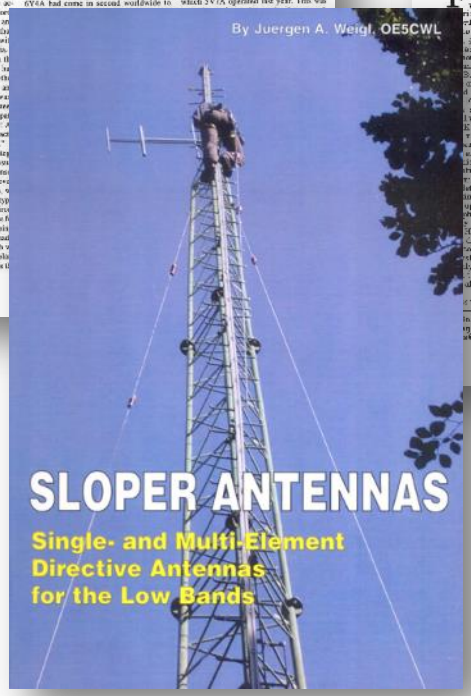
By Rudy Severns, N6LF



An electrically-steerable vertical parasitic array for 10MHz

R C WHELAN, G3PJT*

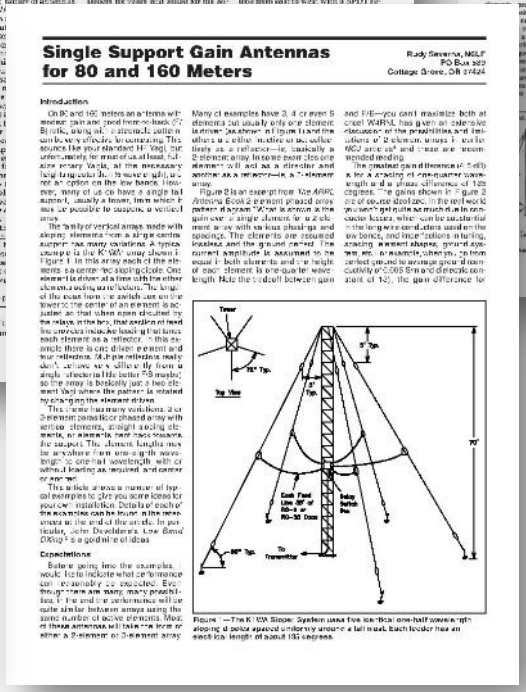
Background



By Juergen A. Weigl, OE5CWL

SLOPER ANTENNAS

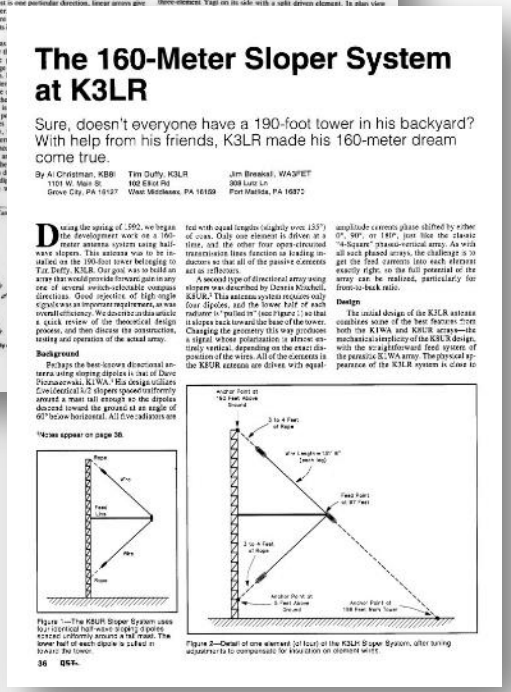
Single- and Multi-Element Directive Antennas for the Low Bands



Single Support Gain Antennas for 80 and 160 Meters

Rudy Severns, N6LF
PO Box 2429
Cottage Grove, OR 97424

Introduction



The 160-Meter Sloper System at K3LR

Sure, doesn't everyone have a 190-foot tower in his backyard? With help from his friends, K3LR made his 160-meter dream come true.

By Al Christman, KB9I
1105 W. Main St
Grove City, PA 16127

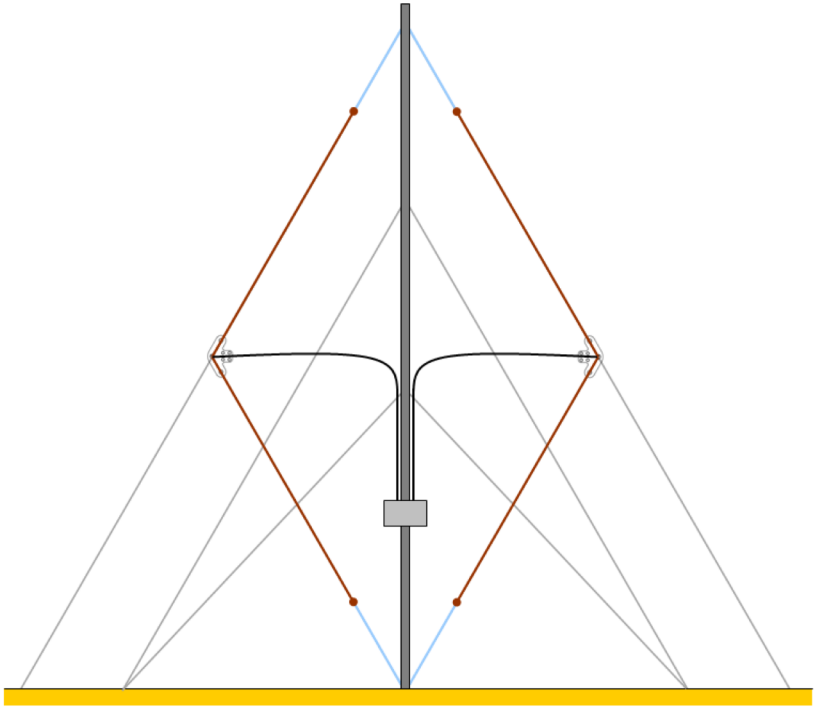
Tim Duffy, K3LR
192 Elliot Rd
West Middlesex, PA 16159

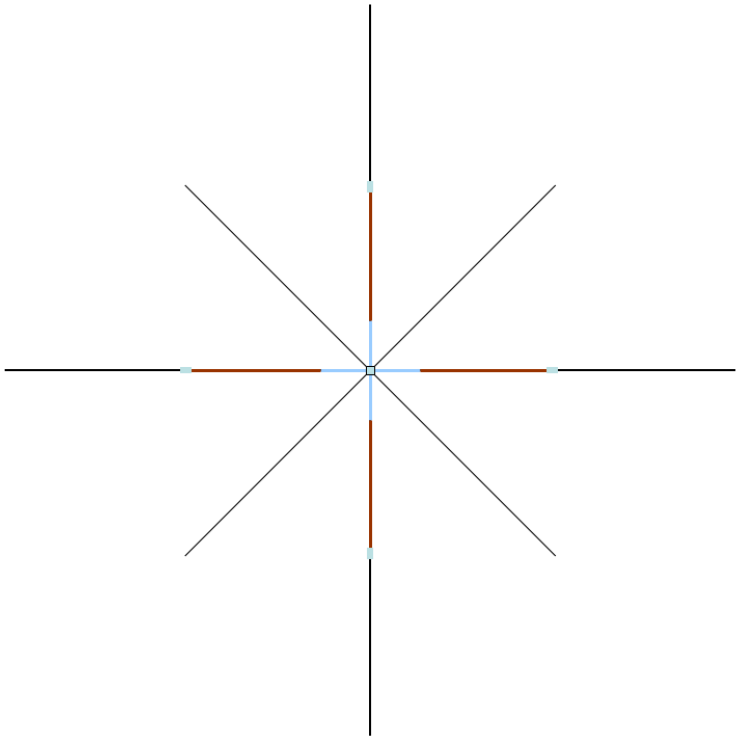
Jim Breakall, WA3FET
309 Lutz Ln
Port Matilda, PA 16872

Design

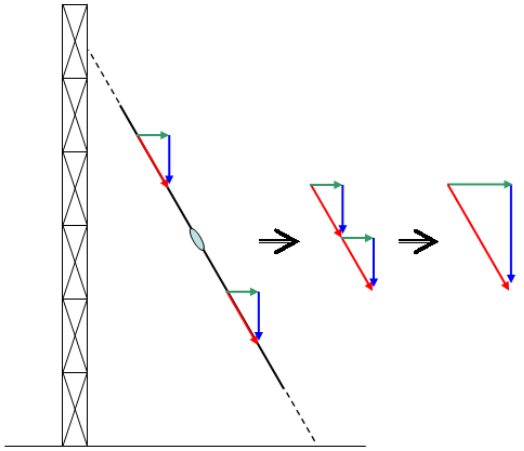
Background

The Antenna

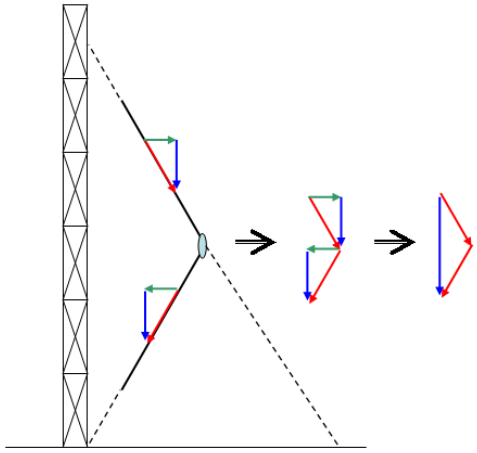




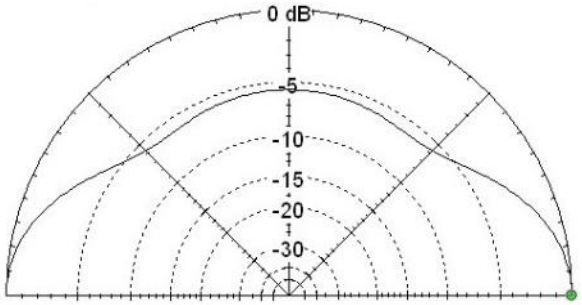
How does it work? *Ingredient #1*



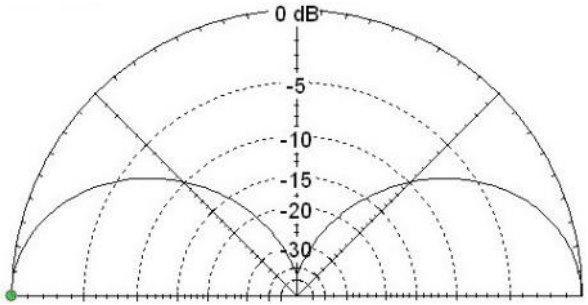
Straight Sloper



Bent Sloper



High-angle radiation

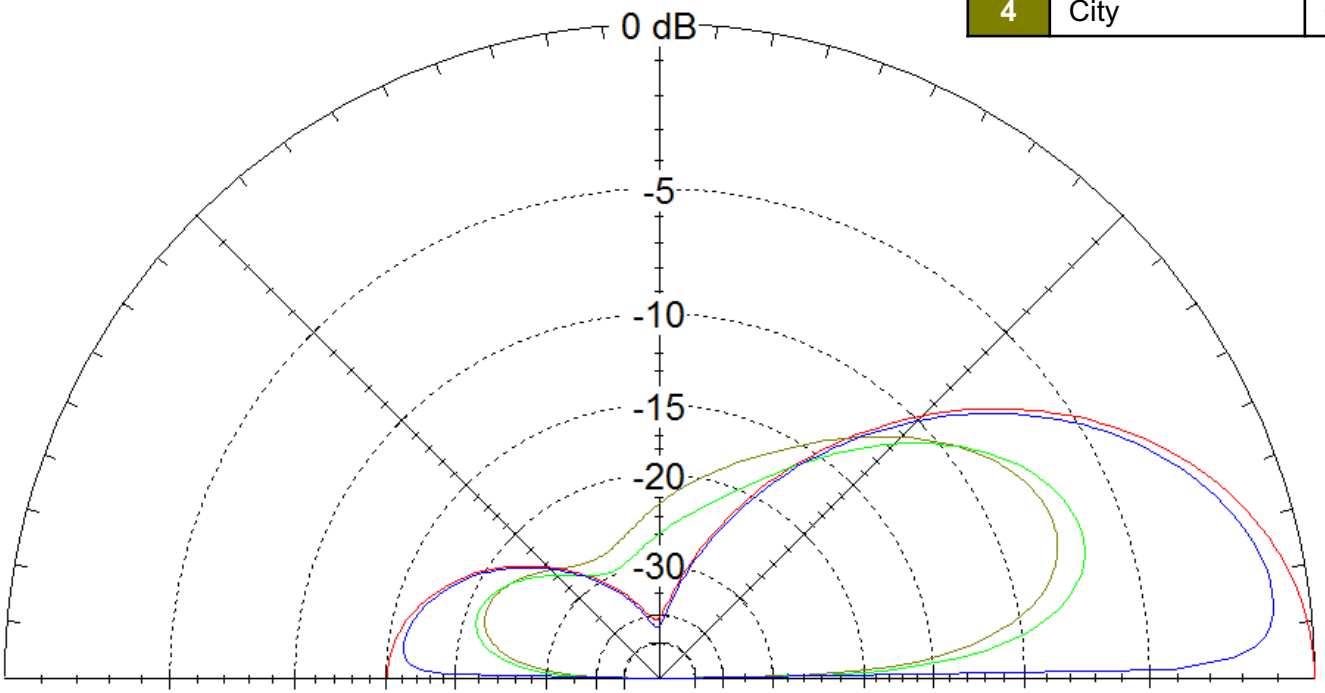


Low-angle radiation

How does it work? *Ingredient #2*

4 Element
Vertical Dipole Array
Different ground types

	Description	Ground conductivity	Dielectric constant
1	Perfect ground	n/a	n/a
2	Salt water	5 S/m	80
3	Average ground	0.005 S/m	13
4	City	0.002 S/m	5

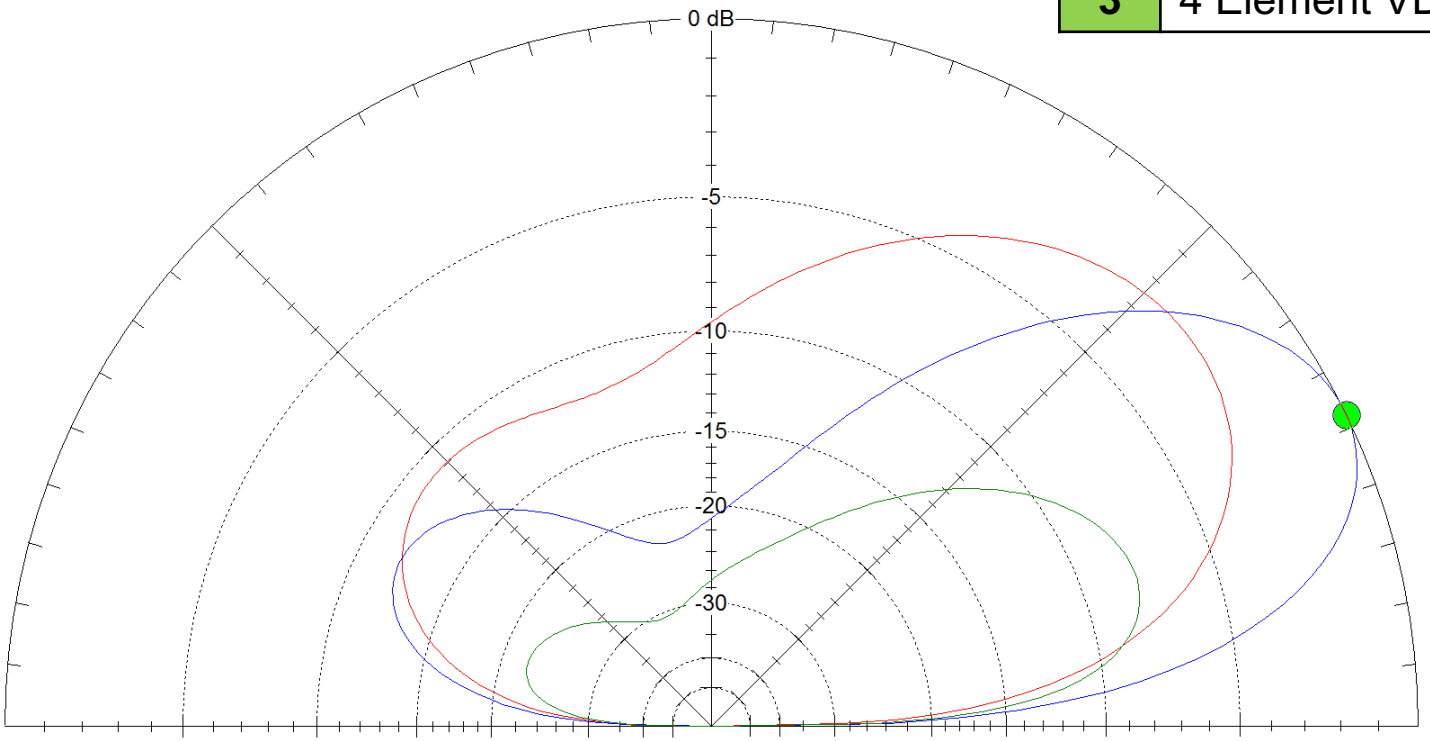


How does it work? *Ingredient #2*

Comparison

On average ground

	Description
1	3 Element Yagi @ 5m
2	3 Element Yagi @ 10m
3	4 Element VDA

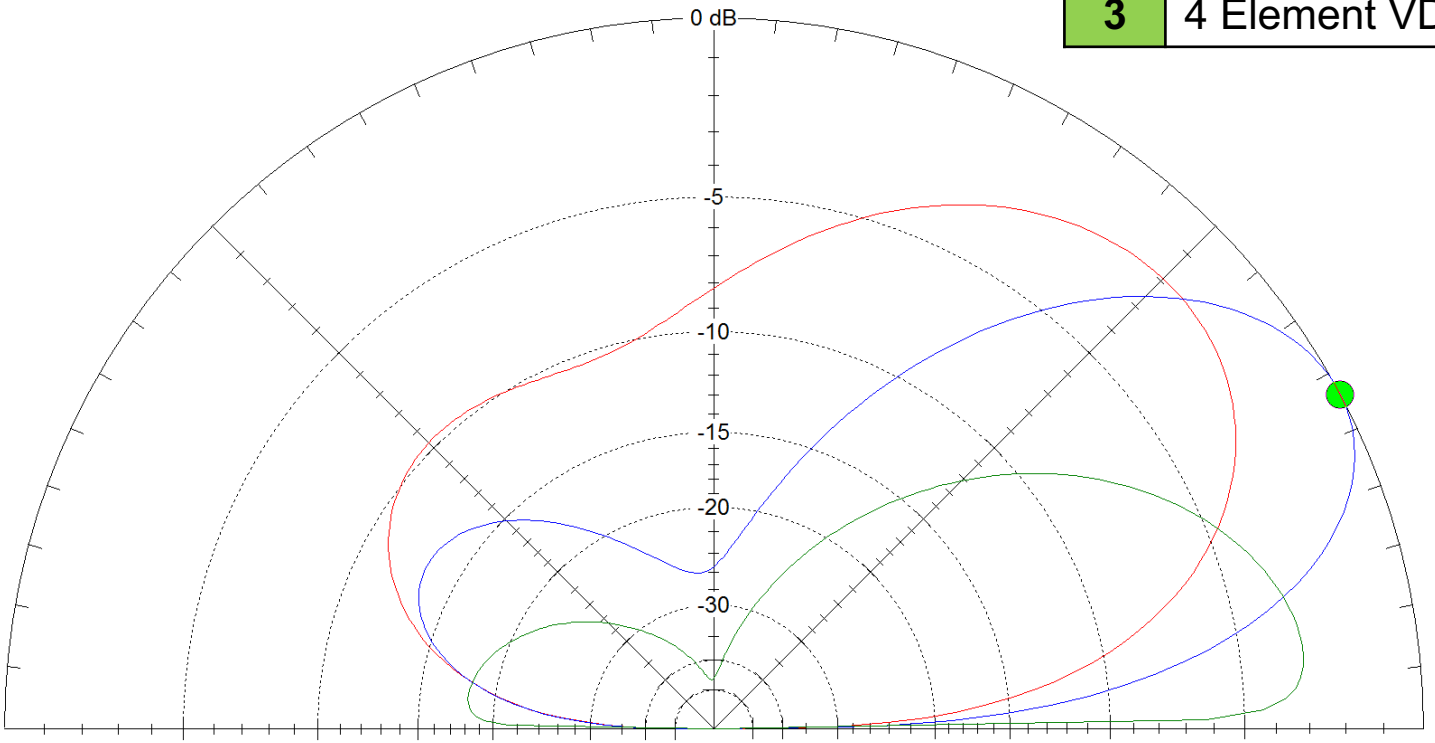


How does it work? *Ingredient #2*

Comparison

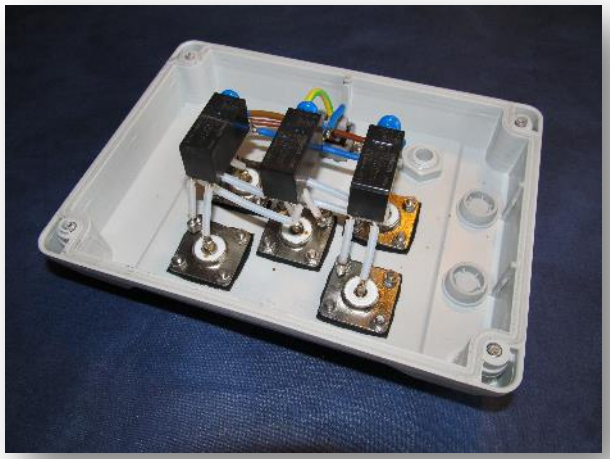
Very close to salt water

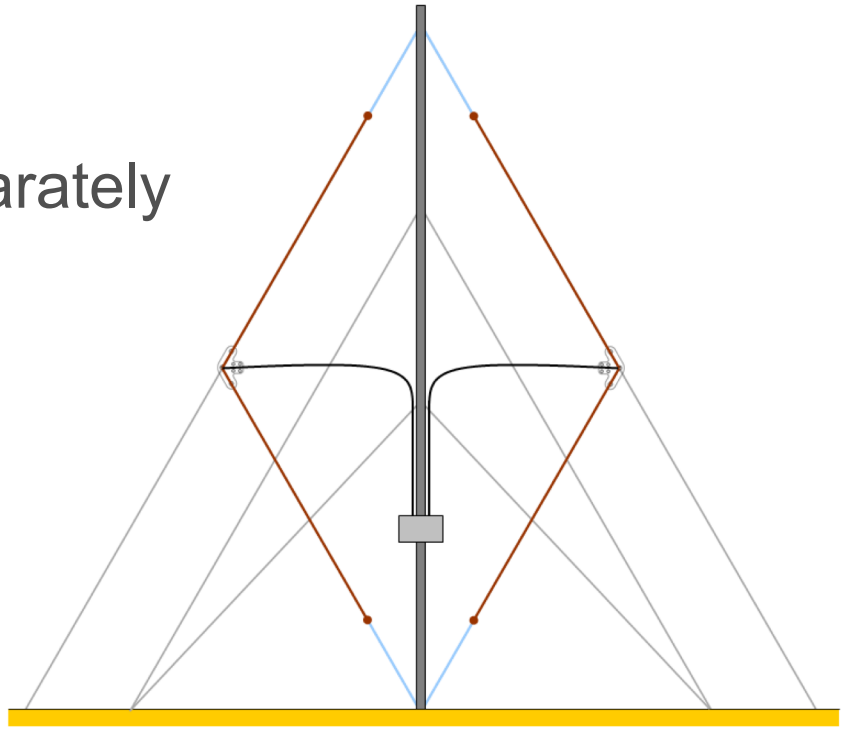
	Description
1	3 Element Yagi @ 5m
2	3 Element Yagi @ 10m
3	4 Element VDA



How does it work? *Ingredient #3*

- Dual-function of the coax cables
  - Feeder
  - Stub
- Switching Box
  - Insulated
  - Grounds switched separately





VP6DX – Ducie Island 2008

- 2 Element VDAs for 20m to 10m
- Designed by DJ2YA
- New QSO records

VK9DWX – Willis Island 2008

- Assembly as expected
- Minor length changes
- Loud signals
- Directivity
- Switching appreciated

ZL8X – Kermadec Island 2010

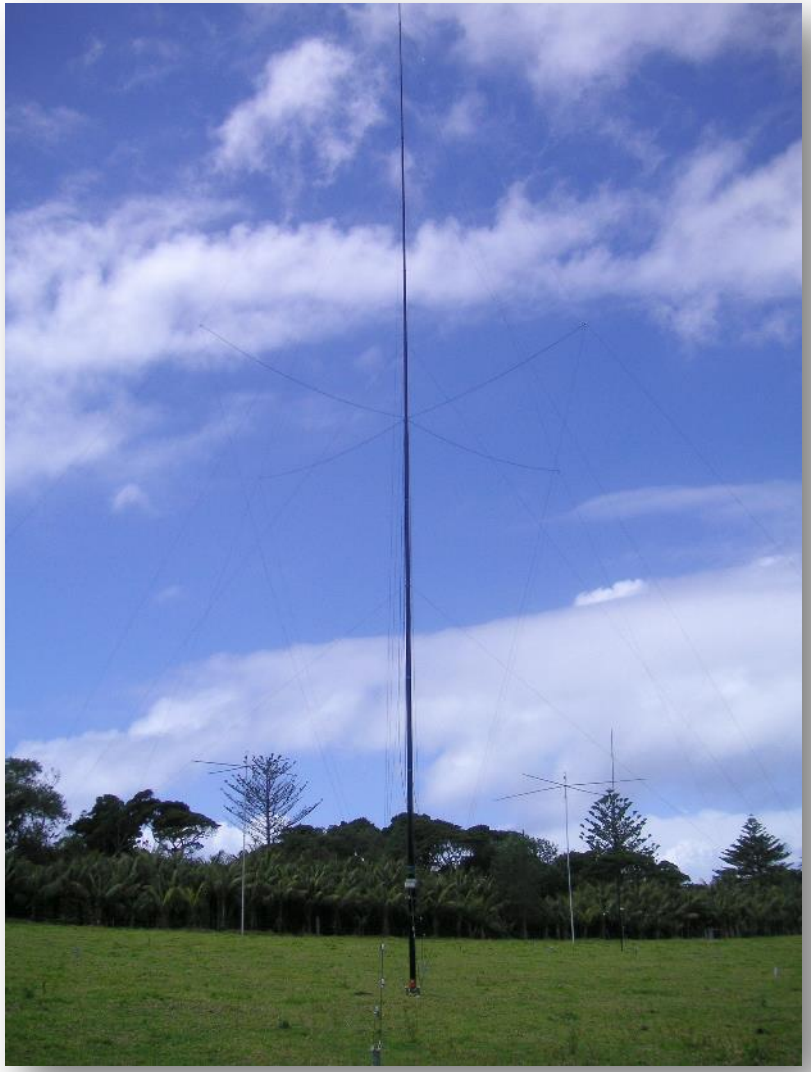
- Cliff edge – no salt water
- Simulations showed strange results
- No big signals on VDAs
- Decoupling on site

TX5K – Clipperton Island 2013

- First 30m VDA on 18m mast
- Antenna setup similar to VK9DWX
- Loud signals – despite professional disapproval

VK9DLX – Lord Howe Island 2014

- First 40m VDA on 26m fiberglass mast
- No Beach :-(
- Decoupling of stations



Summary

LAGUNARIA DX GROUP

SALT WATER

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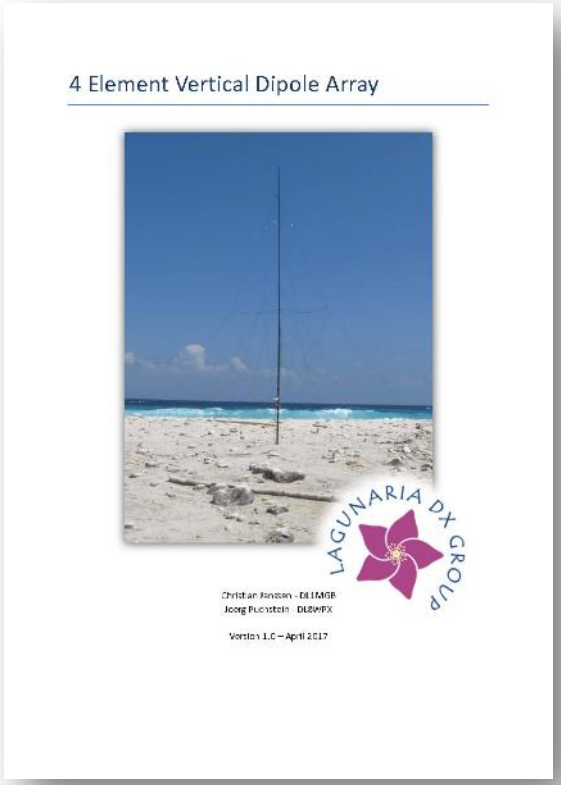
VERTICALS

Book recommendation



- 32 pages in-depth information
- A lot of construction tips
- List of relevant articles and books
- English and German language
- EZNEC files of VDAs

- Also on our website
- Information of our DXpeditions
- Pictures
- Statistics
- Presentations
- … and more to come in the future

www.lagunaria-dx-group.org

THANK YOU !

www.lagunaria-dx-group.org