



The LongPath

A North Alabama DX Club Publication

Special points of interest:

- On Antenna Heights
- Program Announcement
- LongPath 101
- 3W6C
- Short Skip
- Christmas Party

How to Join

- * Come to a club meeting;
- * or send in an application by mail (form on www.NADXC.org)
- * or call Tom Duncan at (256)705-2147

On Antenna Heights

Antenna height is a popular topic this month. Last week's ARRL letter (<http://www.arrl.org/arrlletter/index.html?issue=2009-10-29>) contains an article particularly appropriate for domestic contests in *The Doctor is In*. November QST treats the topic in *Hands-On Radio*. Our own Tom Russell, N4KG had something to say to the Alabama Contest Group in an email this week, reprinted below.

What are the Optimum Antenna Heights for Domestic Contests?

It is well known that Antenna Patterns in the Vertical Plane are a function of Height Above Ground. This can be normalized in terms of Wavelengths.

In the 1970's, Jerry Cross, N4NO created a chart showing Wave Angle vs. MUF up to 50 MHz. For the atmospheric conditions he modeled, he determined the relationship in the next column between Skip Distance and Wave Angle.

Band	Max Angle MUF=50 Mhz	Max Angle MUF=25 MHz	Shortest Skip Range MUF=25 MHz
40M	70 - 90 degrees	45 - 50 degrees	300-400 miles
20M	40+/-	19	900 miles (W1,5,7,0)
15M	27	7	1700 miles (W6,7, VE6,7)
10M	18	0	

Distance Angle
(miles) (degrees)

2400	1	
2200	2	
1900	5	VE7
1700	7	WWA
1500	10	NV, VE6
1200	14	VE1, VE5
1000	18	ME, ND, WY, CO, NM
900	20	ME, ND, WY, CO, NM
800	24	CT, NNY, MN, SD, WTX
700	26	WNY, VE3, WI, NE, TX
600	31	PA, WI, MN, KS, OK, TX
500	36	MI, WI, IA, OK, TX
400	44	WV, OH, IN, IL, MO, LA

With an MUF of 50 MHz (we would need More Sunspots to reach this :-)) the maximum Wave Angle supported by the F-Layer by Band is shown in the table below:

November Round Table Discussion

The topic of discussion this month is the future of the club. We need to address membership, leadership, support of DX operations, general direction, and perhaps other topics. These are important topics. As usual, we'll meet at Ryan's around 6:15 for dinner, with the business meeting beginning at 7:00, and this discussion by 7:30, if not sooner. See you there!



The LongPath Staff

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Tom Duncan, KG4CUY

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Chuck Lewis, N4NM, DX Contests

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SO, what ranges are covered by what antenna heights?

At 1 WaveLength (WL), which is 140 ft on 40M, 70 ft on 20M, 48 ft on 15M, the peak radiation occurs at 14.5 degrees with a NULL at 30 degrees (625 Miles) and a second peak at 45 degrees. The -3 dB points (and less) range from 7 degrees through 21 degrees, covering 900 miles through 1700 miles.

At 3/4 WL, which is 105 ft on 40M, 52 ft on 20M, 36 ft on 15M the peak radiation occurs at 18.5 degrees with a NULL at 42 degrees. The -3 db points (and less) range from 9 degrees through 29 degrees covering 650 miles through 1500 miles.

At 1/2 WL, which is 70 ft on 40M, 35 ft on 20M, 24 ft on 15M the peak radiation occurs at 28 degrees (for a 3L Yagi, slightly higher for dipole) The -3 dB points (and less) range from 14 degrees through 40 degrees covering 450 miles to 1200 miles on the first lobe.

IMO, the Best Height for 20 and 15 Meters in Domestic Contests is between 40 and 50 ft for everything East of the Rocky Mountains. 60 to 70 ft would be good for the West Coast Areas.

Tom N4KG

a.k.a. " LOWER is BETTER " :-)

LongPath 101

By Tom Duncan, KG4CUY, Interim LongPath Editor

Having been Interim LongPath Editor for five years now, I'm almost getting the hang of it. Even so, let me divulge the secrets to the monthly machinations which result in the LongPath being delivered to www.nadxc.org.

I am grateful to have had continuous support of regular LongPath columnists, now Chuck Lewis, N4NM for DX Contests, and Tom Homsley, N4WBS for Short Skip, which he inherited from Myron Manker, W4UR. From the Internet by Kevin Hibbs, KG4TEI, is very nearly a regular.

Equally important are the feature articles contributed as the occasions arise. In just the past few months we've had great articles by John Stensby, N5DF, Steve Werner, AG4W, and Mark Brown, N4BCD. Over the past years, Tom Russell, N4KG has submitted any number of articles on contest results, propagation, and antennas. Jerry Cross, N4NO provides us with sunspot updates. Thanks to all you contributors.

The president customarily sees to the front page article. This generally means writing it, but sometimes involves stealing it from someone else, as was the case this month.

Having received all these articles and others from the outside, like requests for DXpedition sponsorship, the editor massages them into the customary format. I use Microsoft Publisher, but there's no magic in that. In an effort to minimize empty space, some columns like Boatanchor of the Month and Unusual QSL Card of the Month have been devised. These are juggled around until the editor is satisfied, or gives up. The table of contents and Special Points of Interest columns are then adjusted, and the LongPath is converted to PDF format.

At this point, the Webmaster takes charge, posts the LongPath to nadxc.org, and sends out the monthly email. Interested? Contact KG4CUY.

The following email and attachment were received on October 31, requesting sponsorship for an upcoming DXpedition to Vietnam:

From: PGSchreier

[PGSchreier@swissonline.ch]

Sent: Sat, October 31, 2009 8:17 pm

To: Duncan, Thomas K.

Subject: Application for sponsorship of 3W6C DXpedition

Attachments: 3W6C Infosheet for Sponsors Oct2009.pdf

Dear OM Tom,

I am writing in hopes that the North Alabama DX Association would be kind enough to help us finance the 3W6C DXpedition to Con Co Island in Vietnam this coming April. Full details are in the attached document.

As an American who has been living in Switzerland for the last 8 years, I am privileged to be a part of the 3W6C team, and I would greatly appreciate the support of American DX clubs and organizations.

As you know, Vietnam is a much desired DX country. In addition, we will activate Con Co Island (IOTA AS-185), which has been activated only once previously, with just several hundred QSOs, virtually none to the USA or Europe. We are going to change that situation!

Our scouting team has been on site and worked out a contract with the local Peoples' Committee so that we can set up our operation and erect large antennas aimed towards the USA and Europe.

In addition, among our ranks we have a number of enthusiastic low-band DXers, so we are making a special effort to make as many contacts on 80m and

160m as possible.

As you can imagine, this is an expensive undertaking -- our total budget is in the range of \$85,000. We hope you will be kind enough to help us defray these costs. Any donation is most welcome!

If you have any questions, I will be glad to answer them.

tnx, 73

Paul Schreier

AA1MI / HB9DST

Head of Club Sponsoring for the 3W6C DXpedition

e-mail: aa1mi@3w6c.qrv.ch

Web site: <http://www.3w6c.qrv.ch/>

The following is excerpted from the attachment:



Côn Cồ DXpedition Executive summary

Between 10 and 18 April, 2010, a group of amateur radio operators will be conducting a DXpedition from Côn Cồ Island in Vietnam. They will be running four stations equipped with antennas for operation from 160m to 10m (CW and SSB) plus a fifth station for RTTY and 6m. They will use every technical and operational effort to make as many contacts as possible with Europe and the USA. They will also exploit the low bands (160m and 80m) to the best extent possible given propagation conditions.

This will be an expensive undertaking. The total budget for the DXpedition is \$US 85,000, and it is expected that each member of the DXpedition crew will contribute \$US 5,500 of his own funds to make this possible. This is on top of the countless hours of preparation for the meticulous preparations necessary to conduct a DXpedition in a region where contacts are rare. These personal contributions, however, could very well be much higher if we do not receive adequate support from the ham-radio community.

Thus, we ask that you consider making a contribution -- of any size -- to help us defray our costs. Only in this way will it be possible for future DXpeditions to take place so that hams around the world can work the "rare ones".

We need your support to make sure this and future DXpeditions are a success! We, of course, will recognize each contribution on our web site, and major contributors can have their name/logo place on the web site and on the DXpedition QSL card (ask for details).

Your contact for further information:

Paul Schreier, AA1MI/HB9DST

Alte Landstrasse 101

CH-8800 Thalwil

Switzerland

Tel: +41 43 377 52 45

E-mail: hb9dst@3w6c.qrv.ch

Côn Cồ DXpedition — 3W6C essentials

DXpedition call sign: 3W6C – issued by the Vietnamese telecom authorities on August 17, 2009.

Location: Côn Cồ Island (17° 09' North, 107° 20' East)

DXpedition operation dates: 10-18 April 2010

DXCC Country: Vietnam (#88 on the "most wanted" list)

3W6C Sponsorship Request (cont'd)

IOTA reference number: IOTA AS-185, Gulf of Tonkin South Group (claimed by 0.9% of all IOTA participants)

Operating time: 24/7

Anticipated number of QSOs: 60,000

Number and description of stations:

- 4 fully equipped stations for operation from 160m to 10m
- Each station with an FT2000 transceiver and 1 kW amplifier
- 5 antennas for both the CW and SSB tents, each antenna with its own mast
- 1 RTTY/6m station with a vertical all-band antenna and 30m loop

QSLing

Direct, via the bureau, Logbook of the World

QSL Manager: Leo Marbach, HB9DWL

Kornfeld 6, CH-6212 St. Erhard, Switzerland, hb9dwl@3w6c.qrv.ch

Estimated budget

- Technical equipment (rigs, antennas, generators) \$US 30,000
- Travel/freight; food/lodging through Peoples' Committee \$US 50,000
- Miscellaneous (licensing fees, etc.) \$US 5,000

Total Budget \$US 85,000

Of this total, amount to be carried by the crew members: \$US 65,000 – which comes out to roughly \$US 5,500 per individual who travels on the trip, and this amount is predicated on us meeting our sponsorship goals.

Please help us defray the cost of this DXpedition and in doing so make a contribution to the worldwide ham radio community and make future DXpeditions possible.

No contribution is too small or too large!

Full details for making a contribution

Info regarding donations with PayPal, checks or bank transfers are available on the DXpedition web site at www.3w6c.qrv.ch.

Côn Có DXpedition – List of operators

Team Leader

List of operators (status as of October 2009):

HB9BQI Rene Schmitt, Deputy Team Leader 3B7RF, 3B6RF [SSB/RTTY op]

HB9BQW Christine Toporitschnig, 3B7RF, 3B6RF [SSB op]

HB9BHW Hansruedi Buerki, VKØIR [CW op]

HB9DST/ Paul Schreier, HSØZGE, VR2/AA1MI, QRP DXCC AA1MI [CW op]

HB9PJT Peter Sidler, V5/HB9PJT,

HB9PJT/C6A [SSB/RTTY op]

HB9JCI Matthias Schumacher, Contests, DX [CW op]

HB9DKZ Hans-Juerg Voegeli, HSØAC, HS5ØA (IOTA AS-125), E29AL (IOTA AS-126) [CW/SSB op]

HB9JBI Friedhelm Hoffmann, 3B6RF [SSB/RTTY op]

HB9TVR Rolf Senn, Contester [SSB/RTTY op]

DJ8NK Jan B.C. Harders, 5N, VP2ENK, TX9, 5A7A, VU4AN, GW8K, GU8K, GD8K, 3D2ØCR [SSB/RTTY op]

G3KHZ Derek Cox, P29NI (organizer), 3B6RF, CQ9K, T88DC, 9M8PSB, V8PMB, T88SI, GU8D, CS5C, CU4T, 8P9FX [CW op]

XV1X Eddy Visser, PAØDDT, G5AHN, OZ6DT, EP2DT, XV9DT, XV1A, 3W3W, YI1BGD [CW op]

XV9DX/ Michal Horecky, HBØ/OM2DX, 5Z4/OM2DX, YI9X, OM2DX YI/OM2DX, TK/OM2DX, ID9/OM2DX, E4/OM2DX [CW op]

XV2B Bui Quang Huy, Contests, DX [SSB op]

The onshore team is supported by a home base service team. See full list of team members on our web site www.3w6c.qrv.ch.

Short Skip

By Tom Homsley, N4WBS

Ham Receives Nobel Prize for Physics

George E. Smith, AA2EJ, of Barnegat, New Jersey, won the Nobel Prize in Physics for 2009 "for the invention of an imaging semiconductor circuit – the CCD sensor." Smith will share the prize money with two other recipients: Charles K. Kao, of Standard Telecommunication Laboratories in the United

Kingdom and Chinese University of Hong Kong in Hong Kong, China, and Willard S. Boyle, of Bell Laboratories. Each recipient will receive a diploma, a medal and a document confirming their share of SEK 10 million (about 1.4 million US dollars); Kao will receive 50 percent, while Smith and Boyle will each receive 25 percent of the monetary award. (ARRL)

Three Amateurs Inducted into Consumer Electronics Hall of Fame

Former ARRL Rocky Mountain Division Director Walt Stinson, WOCP, of Englewood, Colorado; Former ARRL Vice President and Central Division Director R.H.G. Mathews, W9ZN (ex-9ZN) (SK), and Karl Hassel, W9PXW (ex-8AKG) (SK). The latter two founded

what became Zenith Electronics Corporation. (ARRL)

Solar Update

A new sunspot (1030) just emerged on Thursday. It is currently in the center longitudinal meridian as viewed from earth and may provide some enhancement for the ARRL CW Sweepstakes Contest this weekend. On Thursday, the daily sunspot number was 15. Sunspot numbers for October 29-November 4 were 19, 13, 0, 0, 0, 0 and 0 with a mean of 4.6. The 10.7 cm flux was 76.7, 75.2, 75.1, 72.3, 71.4, 71.5 and 71.4 with a mean of 73.4. The estimated planetary A indices were 7, 11, 1, 2, 2, 0 and 0 with a mean of 3.3. The estimated mid-latitude A indi-

ces were 5, 8, 1, 2, 2, 1 and 1 with a mean of 2.9. (ARRL)

Ham Tragedy

The CGAPR team members - Pete W2GJ, Ed K3IXD, Randy K4QO, and Dallas W3PP - headed for CQ WW SSB were all killed when their private plane crashed on takeoff. (ARRL Contest Update)

November Contests

The ARRL CW Sweepstakes Contest is this weekend (SSB follows two weeks later.) This is the biggest and oldest of the domestic contests. If you're new to the contesting cattle drive, here's a short [article](#) on how to join the fun! Also see [WA7BNM's Contest Calendar](#) and

[SM3CER's Contest Calendar](#). (ARRL Contest Update). The link to the article on sweepstakes contesting is <http://www.arrl.org/contests/HowToWorkSweepstakes.pdf>

So long 'til next time. . .



de N4WBS

Christmas Party

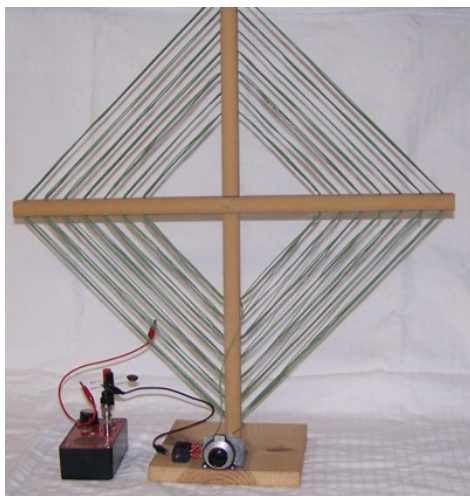
The NADXC Christmas Party will be held on Tuesday, December 8th at 6:30 pm at Terra Nova, on Paramount Drive near Gigaparts. We have the private room reserved, so there will be plenty of room. The entire menu will be available, and we'll pay with individual checks. See you there!

Boatanchor of the Month

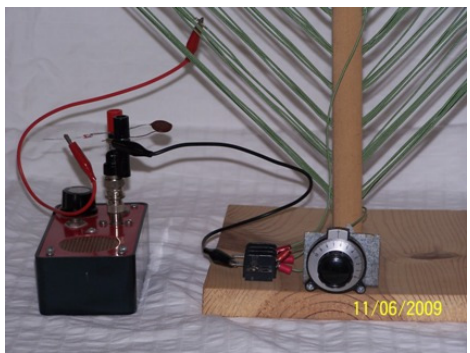
This month's entry is a boatanchor wannabe, but more-or-less true to the boatanchor spirit: a crystal radio, or almost.

The thing behind the metal plate supporting the vernier drive is a 20-200 pf tuning capacitor, and the 35-turn coil measures 455 uH. That gives a tuning range covering most of the AM standard broadcast band. The closeup shot reveals the key components of the envelope detector: a 1N34A germanium signal diode (from Radio Shack—you can still get them, or at least, you could a couple of years ago) and an ancient 3300 mmf (sic) Sprague disk ceramic capacitor. Now comes a bit of cheating: no hi-Z crystal earphone, but my utility audio amp, with about 45 dB gain.

A couple of years ago, I was playing with magnetic loops to excite hearing aid coils. The big fixed model was



(maybe still is) above the ceiling of the room at the Red Cross where HARC meetings are held. The coil shown here began life as my portable version, and when driven with 100 W of audio, it could generate a pretty impressive field to couple into the tiny hearing aid coil. After I ran those experiments through their course, the coil I had spent a few hours winding was "re-purposed" as a receiving loop. The tuning capacitor was added at that point.



While this picture was being taken (pre-dawn, with local stations still at their night-time powers and antenna patterns) the dulcet tones of an announcer at WGN in Chicago were emanating from the speaker in the red-and-black box. With the diode tapped as shown by the red clip lead, tuning is quite selective, and there are quite a few stations to be heard.

DX Contests

By Chuck Lewis, N4NM

Ukrainian DX Contest, (CW/SSB), 160-10 meters

Nov. 7, 1200Z to Nov. 8, 1200Z

Exchange: RS(T) and serial number or Ukraine oblast

See page 86, Nov. QST and www.ucc.zp.ua

DARC Digital "Corona", (Digital), 10 meters

Nov. 8, 1100Z to Nov. 8, 1700Z

Exchange: RST and Serial number

See page 86, Nov. QST and www.Darc.de/referate/ukw-funksport

WAE DX Contest (RTTY), 80-10 meters

Nov. 14, 0000Z to Nov. 15, 2400Z

Exchange: RST plus serial number

See page 86, Nov. QST and www.waedc.wea

Japan Int'l DX Contest, (SSB), 80-10 meters

Nov. 14, 0700Z to Nov. 15, 1300Z (48 hours)

Exchange: RS plus CQ zone; JAs send prefecture

See page 86, Aug. QST and www.jidx.org

OK/OM DX Contest, CW, 160-10 meters

Nov. 14, 1200Z to Nov. 15, 1200Z

Exchange: RS(T) plus serial number or OK.OM district

See page 86, Nov. QST and www.okomdx.xrk.cz

LZ DX Contest, (CW/SSB), 80-10 meters

Nov. 21, 1200Z to Nov. 22, 1200Z

Exchange: RST plus ITU zone

See page 86, Nov. QST and www.tzdx.bfra.org

Mongolia DX Contest, (CW/SSB), 160-10 meters

Nov. 21, 0000Z to Nov. 22, 2359Z

Exchange: RS(T) plus CQ zone

See page 86, Nov. QST

CQ Worldwide CW, (CW), 80-10 meters

Nov. 29, 0000Z to Nov. 30, 2400Z

Exchange: RST plus CQ zone

See page 86, Oct. QST and www.cqww.com

OTHERS:

RSGB 80m Club Sprint, SSB



2000Z-2130Z, Nov 12

YO International PSK31 Contest

1600Z-2200Z, Nov 20

All Austrian 160-Meter Contest

1600Z, Nov 21 to 0700Z, Nov 22

RSGB 1.8 MHz. Contest, CW

2100Z Nov. 21 – 0100Z Nov. 22

ARRL 160-Meter Contest

2200Z, Dec 4 to 1600Z, Dec 6

ARRL 10-Meter Contest

0000Z, Dec 12 to 2400Z, Dec 13

Dates & times often change or are misprinted in the journals; beware. Also, check the cluster: "sh/contest". Have fun!

Chuck, N4NM

K4BFT Field Day Results

Field Day 2009 results are in, and K4BFT placed first in category 4A, and 13th overall. Thanks go out to all those who contributed in any way to the effort. The top 4A standings are shown to the right.

1	K4BFT	14,404 pts	4,708 QSOs	Huntsville ARC
2	K7UM	14,080	4,624	Utah DX Association
3	W6ARA	11,326	3,480	Palo Alto ARA
4	N2OB	11,210	3,311	Old Barney ARC
5	K4XY	10,958	3,361	Vienna Wireless Society
6	W8UM	10,560	2,719	ARROW/UMARC Field Day Team
7	K8ES	9,688	2,581	Delaware ARA
8	KD5C	9,652	2,240	Midland ARC
9	K4PB	9,374	2,824	Lighthouse Amateur Radio
10	K1BKE	8,934	3,487	Contoocook Valley Radio Club