December, 2005 Volume 29, Issue 12

The LongPath

A North Alabama DX Club Publication

Special points of interest:

- Christmas Party
- Short Skip
- Follow the MUF!
- Ham Humor
- CW WW CW

Ace Contester and the New Antenna

By Tom Duncan, KG4CUY

"Ace Contester" certainly doesn't describe me. The skill of an accomplished contester amazes me, whether running or search-and-pounce; phone, CW, or data; Field Day or DX. A contest allows me to improve my skills, and to fill in "QSL sent" blanks on the vast, empty expanse of my band-country sheet. Gradually, hopefully, there are replies to these, feeding visions of a DXCC certificate stamp.

CQ WW SSB was a bust for me. I didn't spend much time on the radio, although I found ample time to gripe about lousy conditions. Work beckoned Saturday afternoon, so I was behind the curve and armed with an excuse I could live with. Perhaps another phone contest, on another day.

Sensing my need for more metal in the air, Tom Russell, N4KG, suggested an inverted L, identified the supporting tree limbs, and armed with his trusty fishing reel and a bit of lead, deftly located some monofilament, to haul up some string, to haul up some UV-resistant rope, to haul up some wire. No windows were harmed in these proceedings. In the end, with a matching network cobbled from a partially-defunct antenna tuner, I had an antenna covering 80m through 10m. The top leg is twice as high as my cloud burner dipoles, yielding a heretofore unknown antenna characteristic – azimuth pattern.

Approaching CQ WW CW casually as usual, I was pleased to have the new member of my aerial arsenal deliver QSOs on a previously off-limits band – 80m. Because I ran coax from the shack to the base of the new antenna, changing bands requires a trip to the remote antenna tuner. At night, armed only with a flashlight, this is an adventure fraught with the peril of being swallowed up by a newly-excavated dog hole, or being snagged by a stray coil of garden hose. I therefore ventured back up to 40m using the 30' elevation cloud burner. 40m on the inverted L would wait for Saturday night.

Daytime on 20m was fine with the new antenna. The inverted L/dipole combination worked very well, with the inverted L clearly superior in its preferred azimuth directions. My big surprise was on Saturday afternoon, when I temporarily ran out of steam on 20m and switched to 15m on the dipole. This band was hopping, and I made a quick pass through, for perhaps 20 contacts. This was fertile territory, and clearly the slightest additional effort would yield many more QSOs, but how about giving the new antenna try? I pulled out my magic tuning chart and headed for the tuner in full daylight, twisted

"Ace Contester and the New Antenna", Continued on p. 4

NADXC Christmas Party

Wonder who has been voted NADXC DXer of the Year? Will there be a David L. Reasoner award recipient? Will Santa get snagged by the radials of that ground plane vertical attached to the chimney? Find the answer to these and other pressing questions at the NADXC Christmas Party. See you at the new Greenbrier, just off I-565 at Greenbrier Road.

How to Join

** Come to a club meeting;*

** or send in an application by mail (form on www.NADXC.org)*

** or call Vic Holland at (256)721-9106*

November 8, 2005 NADXC Meeting Minutes

By Vic Holland, K4RVH

The November meeting of North Alabama DX Club was called to order at 7:00 PM on November 8, 2005.

There were 10 members in attendance. There were four visitors in attendance, Kevin KG4TEI, Chuck ND5CH, Greg W4OZK and Lloyd Barnett W4RFZ.

Vic K4RVH gave the treasurer's report stating the funds on deposit amounted to $2786.11. Books were closed on the banquet with a net loss $1.72.

Minutes of the October 2005 meeting were approved.

No membership apps were received in the previous month.

Announcements were again made regarding the Christmas party to be held at 6:30 PM on December 13. It will be a the Greenbrier Restaurant. This is the same location as the last couple of years.

Ballots for DX'er of the Year were handed out, voted and collected.

Meeting was closed and followed by a presentation from Chuck ND5CH and Greg W4OZK on their recent participation with relief efforts from the coastal areas after the recent hurricanes..

[A DX Historical Quiz program followed Chuck and Greg's presentation—ed.]

Respectfully submitted,

Vic K4RVH

This Month in Electrical History

By the LongPath Staff

1798—Luigi Galvani dies. He stumbled upon the creation of electricity from dissimilar metals in an electrolytic medium, namely a frog leg. Alessandro Volta cleared up Galvani's confusion about whether the frog leg or electrolytic action generated the electricity, and in the process developed the chemical battery.

1878—Paul Jablochkoff demonstrates arc lighting on the Victorian Embankment in London. The Jablochkoff Candle featured parallel carbon electrodes which required relatively infrequent adjustment to maintain the arc, compared to the more common arc lamps.

1906— Reginald Fessenden transmits amplitude modulated voice using a 2 kW 100 kHz alternator developed by Ernst Alexanderson and manufactured by General Electric.

1923 — President Calvin Coolidge lights the first national Christmas Tree, a 60 ft tree from Vermont, decorated with 2000 electric lights.

1957—The first nuclear power generation facility to provide net power to the grid in the United States goes into operation at Shippingport, PA.

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QST Publishes 2005 Field Day Scores

As mentioned in last month's Short Skip, the December issue of QST included a complete listing of all participant scores posted for 2005 Field Day. Noted with interest was K4BFT's score, which was second highest among all 83 entries in Class 5A. Although the Big Fat Turkey did not rank first in total points, it did post the highest number of QSOs. This just goes to show how important it is to maximize available bonus points and operations on modes that have higher points per QSO.

CQ World-Wide (CW) Contest Activity

The second CQWW contest (CW version) for 2005 is now over and there seemed to be a reasonably good number of participants. I even logged several QSOs on ten meters, although the band was far from what you would consider open here in "UR-land." If you participated in the CW contest, please remember that your submitted entry must be postmarked no later than January 15. We can probably expect to see the complete contest results published in the September 2006 issue of CQ magazine.

Another "CC&R" Bill Introduced in Congress

Rep. Steve Israel (D-NY) has introduced H.R. 3876 (the "Amateur Radio Emergency Communications Consistency Act") in the U.S. House of Representatives. If it ultimately becomes law, it would make private land-use regulations (CC&Rs) subject to the limited federal preemption pursuant to PRB-1 that now applies only to state and local zoning regulations. This would mean relief for many amateurs who live in residential areas subject to CC&Rs that effectively prohibit any outside antenna. The ARRL has requested amateurs to contact their representatives to gather as much congressional support as possible for the bill. Further information about the bill and a sample letter to use in contacting legislators can be found at **www.arrl.org/govrelations/hr3876/**.

ARRL International DX Contest Not Far Away

The next big DX competition will soon be here when the ARRL International DX Contest is held in February (the CW version) and March (the phone version). See www.arrl.org/contests/forms for complete rules and other contest information.

W4WEG Becomes ARRL Life Member

Bill Grimwood (W4WEG) has been elected a Life Member of the ARRL. Becoming a Life Member is a great way to support the League and its work on behalf of the thousands of U.S. amateurs.

Peter One Update

The 2006 Peter I (3YØX) DXpedition is scheduled to commence in less than 60 days . . . assuming this third attempt will be successful. The latest website update of November 13 reported that the 40-foot long container with 11 tons of equipment has already been shipped to the point of departure in Chile. The team plans to assemble in Punta Arenas on January 29 and fly to the Chilean Navy Base on King George Island in the South Shetlands. There they will board a ship for the last leg to Peter I, with arrival expected around February 6. The team plans to be on the island for 16 days, with on-the-air time of 12-14 days. With nine stations and 23 antennas available, let's hope we'll all get a chance to work this very rare entity. You can keep up with the DXpedition's planning status at www.peterone.com. NADXC is a financial supporter of the 3YØX operation, but individual club members are also encouraged to help out. Details are noted on the website.

Navassa/Desecheo Bill Clears House Committee

Efforts to enable access to Navassa (KP1) and Desecheo (KP5) islands continues in the U.S. House of Representatives. H.R. 1183, the bill that would remove the current Fish & Wildlife Service regulation that prohibits public access to these two islands, was approved without comment by the House Committee on Resources in October. The bill will now be referred to the full House. It is important to gather support from as many House members as possible to improve the chances of the bill's passage. See www.kp1-5.com for more details on how you can contact your local representative about this.

Merry Christmas and happy holidays to all from the Short Skip desk.

73 es gud dx . . . de W4UR

Ace Contester and the New Antenna

(continued from p. 1)

Continued from "Ace Contester..", p. 1

a few knobs, and headed back to the shack.

A YO station I hadn't worked called QRZ, and I answered just as I was sitting down, but someone else got there before me. Still on the dipole, I switched antennas, and what a difference! Here's one time I'm glad to have a simulated liquid-crystal S-meter, because I'd still be unwrapping the pointer from the peg of a real meter. This antenna yanked signals from eastern Europe out of the air and stuffed them down the feed-line, and apparently worked as well in the other direction with key down. It did alright to ZL as well, a black hole for my other antennas.

With better-than-expected conditions and a new antenna, this year's CQ WW CW was loads of fun. As a newcomer to the world of DXing, new band-countries come easily, but they are still very much appreciated. I've gotten the hang of contest QSOs now, and found the keyer speed knob so as to get my mostly-dashes 2x3 call out before the DX station looses interest. Now if only I could copy at that speed!

A good contest in bad times is a lesson to those who, like me, have not been hams through an entire solar cycle. I understand that while the best of the good days and the worst of the bad can be 200 solar flux units apart, there is a lot of territory in between.

And that inverted L? Another great lesson. With maybe $5 in parts, and a junk tuner, it has a tremendous band-entity/$ index — enough to get me a couple of 50 country stamps. Thanks N4KG!

73, Tom KG4CUY

QSL

By the LongPath Staff

This month's QSL card harks back to the time when many a young ham was barely past 10 years old. While at the time of our QSO Dave was 13 and an extra, he was a general class licensee at age 11. None of this was evident from the content or style of our QSO—the card told me everything.

Michiganders (or Michiganers/Michiganians, as I am informed the former is sometimes considered a pejorative) will be pleased to note that the back of the card includes a geography lesson on the size and location of Big Rapids. Until the card arrived, I felt Big Rapids might be some sort of nickname or perhaps euphemism for Grand Rapids. I now realize these are entirely legitimate rapids in their own right, though perhaps not as big as the Grand Rapids. Not Quite As Grand Rapids would certainly have been a mouthful.

If any NADXC members have their own QSL cards from the days of yore, the LongPath would be pleased to publish them. Send your black and white photos, woodcuts, daguerreotypes, rune stones, papyri, and illuminated manuscripts or facsimiles thereof. You may wish to blot out your name and remain anonymous: we'll guess whose picture is on the card, and publish the true identity the next month.

You may also send in QSL cards you have actually received, with accompanying text. We'll run the cards and give appropriate recognition.

See you at the Christmas Party

Tuesday, 6:30 pm, at the New Greenbrier

Follow the MUF!

By Thomas Russell, N4KG

Do you remember the sage advice from Deepthroat to "Follow the Money"?

Well, when it comes to DX, the analogous advice would be to "Follow the MUF (a.k.a. Maximum Usable Frequency). Note that the following comments apply ONLY to propagation during the 'Winter Season' (October through March) for years of Low Sunspot Activity.

Do you have fond memories of 10 Meter (28 MHz) openings to Europe from before breakfast until past lunch? Well, those days are gone, for a few years at least, until Sunspot Activity begins to rise at the start of the next solar cycle. High-Banders will have to settle for short openings to Europe on 15 Meters (21 MHz) that begin after breakfast (1400 to 1500 GMT) and may evaporate before lunch (1700 to 1800 GMT) as was amply demonstrated Thanksgiving Weekend during the CQ World Wide CW DX Contest. Similarly, 15 Meter openings to Japan will be weak and short following sunrise in Japan. This leaves the 20 Meter Band as the "money band" during daylight hours and that was certainly the case during the contest.

The following may come as somewhat of a surprise, but nighttime MUF is also affected by low sunspot activity. It is not uncommon for the MUF to Europe and Asia (including Japan) to fall below 7 MHz sometime after our sunset during a sunspot minimum. Looking at MUF charts over the years, it becomes apparent that there is a 3 to1 ratio between daytime MUF and nighttime MUF. Using this relationship, amateurs can forecast nighttime propagation closing to Europe on 40 Meters (7 MHz) by observing daytime propagation closing to Europe on 15 Meters (21 MHz).

If 15 Meters closes early in the morning to Europe (or fails to open at all), then it is highly likely that 40 Meters will close to Europe shortly after dark. During the 2005 CQ WW DX CW Contest, 15 Meters opened to Europe around 1430 GMT from Alabama and dropped out for most of Europe after 1700 GMT. Signals were weaker and fewer stations were heard than during times of high sunspot activity when 15M would normally open at or just after 1200 GMT and remain open until after 1900 GMT.

Based on this shorter 15 Meter opening to Europe, 40 Meters might be expected to open to Europe in the evening but close sometime after dark as opposed to remaining open throughout the night. Alabama must have been right on the edge of the MUF to Europe after dark on 40M last weekend. Signals from Europe were quite strong from well before sunset (2200 GMT) until several hours after sunset. By 0300 GMT, activity levels and signal strength from Europe seemed to drop off. K8AZ in Ohio reported that after 0300 GMT, signals from Europe became weak and watery and peaked at non-direct path headings. Stations further west reported that the 40 Meter band had closed to Europe.

It should be noted that this correlation only applies to the band **closing** and not the opening. During the day, the MUF is obviously above 7 MHz and therefore 40M signals will be supported with increasing signal levels as the MUF drops before sunset.

The next question one might ask is "what happens to 80 (and 160) Meters after the MUF drops below 7 MHz? This year's CQ WW CW DX Contest benefited from EXCEPTIONAL conditions on 80 Meters. European signals were strong and plentiful throughout the evening on 80M until well after sunrise as the sun rose across Europe, lasting until at least 0830 GMT. N4KG worked 76 countries with 100 Watts to dipole antennas without ever reverting to special receiving antennas. This would have been an excellent year to do a serious 80 Meter Single Band effort and continues to be a good year to work 80 Meter DX, even for those with a modest antenna system. It should be noted that there are still day to day variations and not every day is going to be exceptional.

Propagation to Europe on 160 Meters was fair during the DX contest, with a number of stations being heard and worked but as 160 Meter guru W4ZV put it, "we seemed to be under a cloud of absorption in the SE USA". VY2ZM on Prince Edward Island (VE1) and HC8N in the Galapagos Islands reported excellent propagation on 160M illustrating the fickle and independent nature of the TopBand, it simply doesn't correlate with any other band!

As the age old expression goes, "When you are handed a lemon, make lemonade". This is the time to "make lemonade" on the Low Bands. Even simple antennas such as inverted vees or single verticals will enable YOU to work DX on 40, 80, and yes, 160 Meters under these excellent wintertime low sunspot conditions. ENJOY !

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Ham Humor

By Joe Fairclough, WB2JKJ as relayed to Chuck Lewis, N4NM

Reprinted by permission from "Apple Slices" by Joe Fairclough, WB2JKJ. Via Chuck Lewis, N4NM.

REWARD OFFERED

A reward of 500 microfarads is offered for information leading to the arrest of the desperate criminal Hop-A-Long Capacity.

This unrectified criminal escaped from a primary cell where he had been clamped in ions, awaiting the gauss chamber.

He is charged with the induction of an 18 turn coil named Millihenry, who was found choked and robbed of valuable joules. He is armed with a carbon rod and is a potential killer.

Capacity is also charged with driving a dc motor over a Wheatstone bridge and refusing to let the band pass. If encountered, he may offer resistance.

The electro-motive force spent the night searching for him in a magnetic field, where he went to ground. They had no success and believe he returned ohm via a short circuit.

He was last seen riding a megacycle with his friend Eddy Current, who was playing a harmonic.

NEWSFLASH!!

Two renowned analysts, Norton and Thevenin, from the AC/DC Circuit Court who recently turned bounty hunters, are hot on their trail and intend to shunt both Capacity and Eddy Current when found!

CQ World Wide CW DX Contest 2005

As experienced by Tom Russell, N4KG

Scores for this year's running of the CQ WW CW DX Contest will likely be down from previous years due to lower sunspot activity. This resulted in poor high band propagation to Europe and Asia on 10 and even 15 Meters but was more than compensated for by the FUN FACTOR as nighttime propagation on the Low Bands and daytime propagation on 20 Meters was EXCEPTIONAL.

While propagation on 160 Meters was reported as excellent along the upper east coast of the USA and Canada, as well as HC8 on the equator, those of us in the SE states were still hearing (and working) European stations but with weaker signals due to higher absorption levels. Europeans worked by N4KG were in CU, DL, G, and ON.

This was THE YEAR everyone has been waiting for on 80 Meters. Signals from Europe were good and plentiful from 0300 to 0830 GMT and possibly even earlier (this writer was concentrating on 40M from 0030 to 0300). N4KG set a personal BEST 80M multiplier of 21 zones and 76 countries as an All Band Low Power (100W) entrant. (A one time 80M Single Band entry using High Power resulted in 82 countries.) Perhaps even more impressive was the 70 country multiplier achieved by K1TO operating QRP (5W) from Florida!

Propagation on 40 Meters was also EXCELLENT, as long as the MUF stayed above 7 MHz. Many entrants reported running Europe at least 2 hours before their local sunset, even from Arizona. After 0300 GMT things changed dramatically, depending on location in the USA. The East Coast and SE states enjoyed all night propagation to Europe, including the incredibly strong European Sunrise Peak which has to be heard to be believed (It's worth staying up for!). Stations in the upper midwest reported weak and watery propagation at skewed beam headings and western stations lost propagation entirely. We can blame the auroral zone influence due to the Magnetic North Pole being offset from the rotational North Pole towards North America for having the lowest MUF's in the world for our given latitudes. LUCKY US! (Sarcasm intended). Contact totals and even multipliers on 40M often rivaled 20M for many stations, foreign and domestic. At N4KG, 40M was THE place to work countries in Africa (11), Asia (9), and Oceania (5).

For most, 20 Meters was the "Money Band" all day long. Signals were strong and activity was high. At one point N4KG worked 16 stations in 8 minutes doing S&P (Search and Pounce), making it hard to leave this very productive band.

I blame the outstanding propagation on 20M for my delayed appearance on 15 Meters which cost me several QSO's and multipliers in Central and Eastern Europe. Propagation was simply gone to those areas by the time I arrived (1445 and 1500 GMT Saturday and Sunday respectively). RU1A was my only Zone 16 contact on 15M and this Russian Super Station was fairly weak by the time I found them. NO stations were worked by N4KG in Zone 20 on 15M. In the afternoon, a few of

"CW World Wide...", continued on page 8

DX Contests

By Chuck Lewis, N4NM

ARRL Ten Meter Contest, (SSB & CW), 10 meters only

Dec. 10, 0000Z to Dec. 11, 2400Z

Exchange: RS(T) plus State or Province. DX: RST plus Ser. #.

See page 105, Nov. QST

OK DX RTTY Contest, (RTTY), 80 – 10 meters

Dec 17, 0000Z to 2400Z

Exchange: RST plus CQ Zone

See page 86, Dec. QST

RAC Winter Contest (CW & PHONE), 160-2 meters

Dec 17, 0000Z to 2359Z

Exchange: RS(T) plus Serial No.; VEs send RS(T) plus Province

See page 86, Dec. QST

MDXA PSK DeathMatch (PSK31/63), 80 – 6 meters

Dec. 17, 0000Z to Dec. 18, 2400Z

Exchange: Name + State/Country/ Province

See page 86, Dec. QST

Stew Perry Topband Challenge, (CW), 160 meters

Dec. 17, 1500Z to Dec. 18, 1500Z

Exchange: Grid square only

See page 86, Dec. QST

Russian 160 meter Contest, (CW & SSB), 160 meters

Dec. 17, 2100Z to 2300Z

Exchange: RS(T), Ser. #, Special Square

See page 86, Dec. QST and www.radio.ru/cq/contest/rule/

Croatian CW Contest, (CW), 160 – 10 meters

Dec. 17, 1400Z to Dec. 18, 1400Z

Exchange: RST + SER. #

See page 86, Dec. QST

DARC Christmas Contest, (CW & SSB), 75/80 & 40 meters

Dec. 25, 0830Z to 1100Z

Exchange: RS(T) [+DOK or special code for DL]

See page 86, Dec. QST

ARRL RTTY Roundup, (RTTY), 80 – 10 Meters

Jan. 7, 1800Z to Jan. 8, 2400Z

Exchange, RS plus State/Province. DX: RS plus Ser. #

See ARRL Website

OTHERS:

RAEM Contest

0200Z-0959Z, Dec 25

SARTG New Year RTTY Contest

0800Z-1100Z, Jan 1

AGCW Happy New Year Contest

0900Z-1200Z, Jan 1

Original QRP Contest

1500Z, Jan 7 to 1500Z, Jan 8

EUCW 160m Contest

2000Z-2300Z, Jan 7 and 0400Z-0700Z, Jan 8

DARC 10-Meter Contest

0900Z-1059Z, Jan 9

Dates & times often change or are misprinted in the journals; beware.

Chuck, N4NM

Continued from "CW WW...", p. 6

the BIG GUNS from Japan were heard weakly after their sunrise, but none could hear my 100 Watts calling. The auroral zone influence mentioned previously was probably most dramatic on 15M. All stations in NA had reduced propagation to Europe and Asia with the eastern states doing best to Europe and worst to Japan and the reverse from the western states.

Propagation on 10 Meters was limited mostly to NA and SA. TZ5A and ZD8A were the only African stations worked. ZL6QH was heard weakly (519) but could not hear my 100 Watts calling.

N4KG chose to enter the Low Power (100W) category rather than QRP to better enjoy the low band openings and was able to work most of what was heard on 80 through 10 meters. I also chose the (Packet) Assisted category to help increase my multiplier count and to help fill in some 'missing bands' for stations I've already worked on several bands. Following packet spots with 100W can be frustrating if not tempered by some delay to allow the Big Guns to get out of the way first. Some Assisted entrants like to refer to category as "Distracted" which it certainly can become if you pay too much attention to packet spots and ignore your game plan based on your understanding of propagation from your own area.

For much of the contest I was cursing Packet Pileups as the bane of contesting, UNTIL, the last hour of the competition when I went to 40M as saw spots for HZ1IK (7030), 8Q7DV (7043), 3V5A (7021), A61AR (7011), A45XR (7095?), MU0FAL, ER4DX (7037), and 5B/AJ2O. I worked them ALL plus a few others for 12 QSO's, 1 Zone, and 8 Countries in 20 minutes, many of them on the first call. I called this my "Roaring 20's Moment" because of all the stations in Zones 20, 21, and 22, including a bonus contact with SV1RP who I heard calling a Caribbean station that had just left the frequency but replied to my call. What a way to end a contest! I won't say much about the last half-hour on 80M chasing multipliers to no avail. With one brief exception, all contacts were made doing Search and Pounce.

There is a famous saying that says: "When you Snooze, you Lose". That said, this aging contester finds it increasingly difficult to remain focused and energetic after the first 24 hours. I seem to 'hit the wall' at sundown Saturday. Apparently many of the European single operators have this same problem as activity levels are noticeably reduced Saturday evening. Deciding when to sleep (if you must) is always a trade-off. One astute contester noted that he "sleeps when the Europeans sleep – 0200 to 0500 GMT Sunday. I find it difficult to walk away from the NA / SA / AF multipliers that are active Saturday evening. The European Sunrise peak at 0600 to 0800 GMT followed by the SA sunrise peak at 0800 to 0900 can also be quite productive on the low bands. Then there is the local sunrise peak to JA and the Pacific on the low bands. In addition, 20M can open to Europe before local sunrise (1245 GMT). No matter when you decide to sleep, you miss important openings, hence the famous saying. I slept from 0930 to 1230 GMT both nights because I hate to pass up multipliers on the Low Bands. On the other hand, it would help to get up a little earlier. By mid afternoon I was really dragging and took 1 hour naps (2000 GMT Sat, 2100 GMT Sun) and three 20 minute breaks each day, just to 'get away from the radio' and try to gather my wits. If I only had the energy of my youth and the wisdom of my years!

Here are the results reported by N4KG SOAB(A) LP ALA

(Single Operator All Band – Assisted, Low Power)

Operating Time = 35 hours

Band	QSO	Zone	Country
160	42	11	22
80	151	21	76
40	207	28	98
20	297	31	104
15	138	21	66
10	36	11	23
Total	871	123	389

Score = 1,206,389 points

Multi-Band Contacts were down primarily due to the lack of 10 Meter openings.

The following 4 stations were worked on 6 Bands:

HC8N P40L PJ2T WP2Z

The following 12 stations were worked on 5 Bands:

6Y7A 8P5A 9Y4AA C6AQQ
C6AUR CU2A FP/K8DD PJ5NA
VE7SV VP5W YW4D ZD8A

The following 31 stations were worked on 4 Bands:

5J1W 6W1RW 6Y3R CT3EN CT6A
CT8T DQ0Q EA6IB EA8ZS EI7M
G5W GD6IA IR4M J88DR
KP3Z LR2F OE4A PZ5C RU1A
S50A TM2Y TZ5A V26K
V31TM VE1JF VP2E VP9I
WP3C XE2AC ZF1A ZL6QH