ARRL International CW DX Contest 2012 Results

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A shakedown cruise for the new sunspot cycle

As the sun spits and sputters into Cycle 24, contesters continue to hope for improved conditions on the high bands. Although unpredictable, we are currently reaping the benefits of increased solar activity and the 2012 running of the American Radio Relay League DX CW contest offers proof.

This year's event offered more selection of usable frequencies during the daylight hours and even some interesting second-night polar openings on 10 meters With the better propagation comes a potential change in strategy and maybe even hope of stations from the geographically challenged areas creeping closer to those geographically advantaged.

> K9LA analyzes some interesting 10 meter propagation in the section, "Which Door Is It?" and don't miss VE7FO and VE7IO's great story "Making More Contesters" at the end of this article.

In the end, many of the usual frontrunners were right there fighting it out for the top spot in his or her favorite category and it probably comes as no surprise as to who gets to hoist the trophies.

W/VE Single-Op, All Band, High Power (SOAB-HP)

KØDQ continues to impress with his unbelievable results. Add another tally mark in the victory column for Scott and another trophy for his host, Woody WW1WW (NH) that probably has more hardware than most small town hardware stores. Scott distanced himself from the pack with 6.58 million points – just shy of the 6.588M record set from the K5ZD station by W4PA in 2004. Scott called this year the "Battleship New Hampshire Shakedown" as the equipment and antennas continue to improve at WW1WW.

On a propagation note, Scott said it was the first time working a JA on 10 meters at 0100Z from New England. While the numbers never piled up for him on 10 meters, the veteran contester made up for it by making more than 1200 contacts and 100 countries on each of 15, 20 and 40 meters.

Alex, LZ4AX operating at K3CR (WPA) edged out Andy N2NT (NNJ) for second place by less than 40K points (5.762 to 5.725 million). Scott actually tallied three less mults (477) than both N2NT and K3CR but made nearly 600 more QSOs with 4630 valid log entries. Finishing off the top five were Ken, K6LA at VY2TT and Steve, N2IC from New Mexico.

Scott, KØDQ operated WW1WW to a first-place finish in the highly competitive SOAB-HP category. (Photo by WW1WW)

This brings us to the topic of being competitive from the West Coast. N2IC (NM); Pat, N9RV (MT); and Dan, N6MJ operating at W6YI (SDG) all made the Top Ten in the W/VE standings – quite an accomplishment when factoring in the geographical advantage enjoyed on the East Coast. It's no secret that the European multipliers are more plentiful in the east as are the raw number of stations available to work. From the West Coast it takes a little more patience and perhaps improved conditions on the higher frequencies.

N9RV said that it really doesn't matter for him where he is competing from because he is addicted to HF contesting and he's bound to have fun. "The competition this year within the west -- between folks like myself and NK7U, W6YI, and N2IC is another animal completely," Barkey said. "There are big propagation differences between myself and the last two guys on this list but it's not all tilted in favor of any one of us. Each QTH has relative strengths and weaknesses."

W/VE Single-Op, All Band, Low Power (SOAB-LP)

Maury, W3EF (MD) soared to the top to take the SOAB-LP title. Ed, N1UR (NH), who often dominates th category, battled sickness and still managed a strong second-place finish. Maury scored 3.25 million to Ed's 3.15 million. Despite serious jet lag, Maury was able to stay in the chair for 43 hours to Ed's 38. Ed led the QSO battle with 2,724 but Maury pocketed 410 multipliers to fashion the higher score. Maury picked up more mults with 12 more than Ed on 10 meters and 10 more on 40 meters. Julio, AD4Z finished third from Florida, while Terry, N4TZ was fourth from Indiana and Marv, N5AW rounded out the top five from Texas.

W/VE Single-Op, All Band, QRP (SOAB-QRP)

Operating with just a handful of watts can be as fun as it is challenging. Bob, K3PH (PA) can often be found at the top of the QRP results – 2012 was no different as he earned another QRP top spot finish. He was able to edge out Sean, KX9X (CT at W1HQ); Doug, W9WI (TN); Gary, N7IR (AZ); and Mike, K8CN (NH). Perhaps even more impressive about Bob's win is that he lost just one contact to log checking for an error rate of just 0.1%! KX9X tallied more QSOs (1056 to 1022) but had 29 fewer mults (286 to 257). The bottom line was 876K for K3PH and 801K for KX9X.

Top Ten – US/VE Single Operator, All-Band

Single Operator, High Power	
KØDQ	6,581,169
K3CR (LZ4AX, op)	5,762,880
N2NT	5,725,440
VY2TT (K6LA, op)	5,277,090
N2IC	4,921,890
N9RV	4,776,480
W9RE	4,647,513
K1TO	4,560,348
W6YI (N6MJ, op)	4,447,926
AA1K	4,360,524
Single Operator, Low Power	
W3EF	3,258,270
N1UR	3,154,197
AD4Z	2,867,670
N4TZ	2,509,386
N5AW	2,490,540
N4YDU	2,237,103
N8AA	2,086,224
KU2M	1,768,530
WØUO	1,433,322
N2WN	1,433,250
Single Operator, QRP	
K3PH	876,018
KX9X	801,840
W9WI	766,290
N7IR	602,712
K8CN	567,750
N3CZ	499,500
W6JTI	452,904
N1TM	413,028
K8ZT	337,041
W6QU (W8QZA, op)	318,354

W/VE Single-Op Unlimited, High Power (SOU-HP)

Chas, K3WW and Bud, AA3B slugged it out from Pennsylvania in the popular Unlimited category. In the end it was Chas getting the triumph with 6.8 million compared to Bud's nearly 6.2 million. It was a true iron-man experience for Chas putting 48 hours in the chair. Bud put in an impressive 43 hours. The biggest difference in the logs was that Chas had 330 more QSOs and 16 additional multipliers.

Randy, K5ZD (WMA) proved you don't have to spend the entire weekend and cut out sleep to be competitive. He put in 30 hours this year and still took the third spot in the category with 4.9 million points. Noah, K2NG operated as K2Z (NNY) for fourth spot with 4.4 million while John, K1AR (NH) was fifth with 4.26 million. The interesting sidebar to John's story this year is he elected to operate from his modest home station consisting of wire antennas. He used a similar setup from home in the CQWW CW contest and was pleased with the results -- jumping in another major event a few months later. John is no stranger to winning across many categories in nearly all major DX contest.

W/VE Single-Op Unlimited, Low Power (SOU-LP)

The ARRL now offers many awards for the Unlimited entries running low power – a good incentive for the low power stalwarts to try the Unlimited category. This year Brad, W1NT (WMA) snared the top spot with 1.81 million, followed close by Dan, K2YWE operating as K3AU from Maryland. K3AU actually led the multiplier battle but Brad's 1651 contacts proved to be the difference. Completing the top five were Chris, N4CJ (WCF and also known as G4BUE); Ron, WD4AHZ (WCF); and Keith, W3KB (EPA).

Top Ten – US/VE Single Operator, Unlimited

Single Operator Unlimited, High Power	
K3WW	6,844,572
AA3B	6,194,445
K5ZD	4,928,085
K2Z (K2NG, op)	4,405,305
K1AR	4,261,959
KI1G	4,241,466
N1EU	3,795,660
N3RR	3,470,445
N1IW	3,196,092
K7NV	3,134,934
Single Operator Unlimited, Low Power	
W1NT	1,816,416
K3AU (K2YWE, op)	1,798,374
N4CJ	1,647,153
WD4AHZ	1,644,750
W3KB	1,485,249
N5DO	1,389,087
WW3S	1,368,252
K8JJC	1,301,760
W1MSW	1,009,971
N3QE	939,114

W/VE Multioperator Roundup

The K1LZ superstation cruised to an impressive 8.68 million points to win the Multioperator, Single-Transmitter, High Power (MSHP) by more than 2 million points and set a new record for W/VE. Operating from the Natick, MA station this year were W2GB, K3JO, N8BO, KB1WKF. In the MS Low Power (MSLP) category, it was the crew at W1TM winning with 1.06 million points. The Multioperator, Two Transmitter (M2) category was dominated by the talented N3RS (EPA) team of N3RD, W8FJ, NG7M, NA3D, and N3RS with 10.8 million. K5GO (AR) was second with 8.77 million followed by 8.5 from the strong Virginia contingent at W4RM.

Top Ten – US/VE Multioperator

Multioperator, Single Transmitter, High Power

K1LZ	8,668,728
W2RE	6,625,872
K9RS	6,548,688
NY4A	5,813,280
K8AZ	5,608,440
W3BGN	5,553,735
K2QMF	4,984,122
W7RN	4,934,268
NK7U	4,842,708
NØNI	4,761,600

Multioperator, Single Transmitter, Low Power

W1TM	1,062,432
KU1CW	827,169
N4AU	404,766
VA7DZ	345,519
KØUK	146,880
W6YX	131,175
W3WN	97,785
N5FM	91,770
NØMA	37,026
VE3SAO	9,675

Multioperator, Two Transmitters

N3RS	10,820,976
K5GO	8,779,101
W4RM	8,526,060
KB1H	7,845,525
K9CT	7,290,756
N4GI	6,003,480
W8AV	5,274,414
W2XL	4,911,030
KØTV	4,873,416
W2YC	4,823,226

Multioperator, Multi-Transmitter

W3LPL	15,969,150
K3LR	15,747,228
KC1XX	13,724,835
NQ4I	13,606,920
NR4M	12,690,000
WE3C	12,371,742
W2FU	12,103,710
KM1W	11,343,312
K1RX	9,739,359
W2PV	8,969,268

The annual Multioperator, Multitransmitter (MM) showdown was no yawner. In their 30th year as an MM entry W3LPL (MDC) edged out the K3LR (WPA) squad by just over 150K points – an incredibly close score considering both stellar teams approached 16 million points. KC1XX (NH) was third with 13.7 million.

The MM category continues to become even more competitive. Spots 3 through 8 were decided by a range of just less than 18 percent. The southern growth of MM showed up this year as NQ4I (GA) and NR4M (VA) both made the top five.

Frank, W3LPL has been participating in the event since 1962 (50 years total) and even picked up wins as a single-op just two years in. Frank had this to say about the increasingly competitive MM category:

"The W3LPL team started multi-multi contesting in 1978. Our first USA #1 finish was exactly thirty years ago in the 1982 ARRL Phone DX Contest. I'm motivated by the technical, operating and teamwork challenges of successfully competing in the hyper-competitive multi-multi category. The K3LR and KC1XX teams can always be counted on to develop new and better ways to raise the competitive bar and you never know which of the three stations will finish on top.

"It's great to see the achievements of the K1RX, KM1W, W2FU, NQ4I, NR4M and NQ4I teams. I'm sure they're enjoying the challenges and rewards of multi-multi competition. It won't be long before one of them breaks into the top three." No doubt Frank and his team will shoot for another win this coming February.

W/VE Single-Banders

There may not be a better way to get a feel for a particular band than attacking a contest in a single-band category. Bill, W4ZV (NC) has spent the past few years duking it out on Top Band but with the arrival of a few sunspots in 2012, he decided to go to the other end of the contesting spectrum to slake his thirst for 10 meters. Bill owns records on 160 meters and 10 meters but even though this was not a record-breaking event for him, he easily took first place for W/VE with 257K points.

Top Ten – US/VE – Single Operator, 10 Meters

W4ZV	257,355
NA4CW	99,102
W3EP	55,278
WF2W	46,575
KI6LZ	42,168
K1WHS	37,185
K2PS	34,974
WA9MAG	31,329
AA7DJ	31,320
K7HP	28,704

Don, N4ZZ (TN) muscled his way to gold on the 15 meter band with 486K points. He fought off Larry, N7DD from Arizona (477K) and Bill, KVØQ (473K). Steve, WA3A (WPA) was fourth with 445K, while Dave, K3EL (SNJ) delivered 435K. It was quite a battle for 15 meters – the money band for many people in the all-band categories, as well.

Top Ten – US/VE – Single Operator, 15 Meters

N4ZZ	486,465
N7DD	477,276
KVØQ	473,070
WA3A	445,200
K3EL	435,978
WA7LT	256,662
KB7Q	242,424
K7ZA	241,392
W9ILY	229,500
W6AEA	216,216

Brain, N2MF (WNY) cruised to a 20 meter title with 659K, as Doug, VE5MK operated VE6JY (AB) was second with 532K. Dave, NN1N (CT) captained his station to 612K for the convincing 40 meter Single-Band title and made a new benchmark for others to chase by setting a new W/VE record. The previous record was 582K set by KI1G in 2011. Jeff, VY2ZM tackled 80 meters from his impressive Prince Edward Island station for 280K. Jeff pushed passed 1,000 QSOs and tallied 91 countries.

Top Ten – US/VE – Single Operator, 20 Meters

N2MF	659,880
VE6JY (VE5MX, op)	532,230
KT9T	364,635
W8TA	360,639
W3FW	330,321
W8WA	323,523
K9OM	302,091
N4IJ	280,500
N8AGU	231,345
KR2AA	140,976

Top Ten – US/VE – Single Operator, 40 Meters

NN1N	612,054
W3UA	518,814
K9GS	158,496
N6MA	146,163
W2EG	141,450
VE6WQ	132,300
WAØUSA	112,560
K9FY	104,397
K6TA	96,048
K9CJ	62,331

Top Ten – US/VE – Single Operator, 80 Meters

VY2ZM	280,800
W3NO	51,333
K4FJ	40,596
W4PK	38,454
K3JGJ	33,462
N3UM	23,265
K3TM	22,896
KØKT	20,250
K4YYL	20,130
VE3OSZ	16,128

On 160 meters conditions were more difficult than in years past with a higher maximum usable frequency. That didn't stop John, W1XX (RI) from spending the weekend parked on the band. W1XX finished first among Top Band enthusiasts with 15K points to top Bob, W3GH's 10K points.

Top Ten – US/VE – Single Operator, 160 Meters

W1XX	15,792
W3GH	10,296
W2MF	6,552
W2VO	6,264
K4PI	5,883
K5RX	5,487
AG4W	4,770
K8FL	3,567
K4EJQ	2,730
NØTT	2,079

DX Single-Op, All Band, High Power

Aim the antennas at W/VE and fire away. That's the basic strategy for DX stations competing in any ARRL DX contest. A photo of John, K6AM's operation from ZF2AM clearly shows his Yagis pointed to the U.S. It certainly kept him busy in 2012 – so busy he tallied 6,493 contacts and 353 multipliers for the top prize and a new North American record. John, a regular to the Cayman Islands, nudged Yuri, VE3DZ who operated from 6Y2T. Yuri put in quite a score from a simple quad on the high bands and ground planes and a dipole for the low bands. In all, John scored 6.80 million from the Cayman's and Yuri pocketed 6.73 million points from Jamaica. Yuri had 90 more contacts but John's 10 additional multipliers proved to be the difference.

Top Ten - DX Single Operator, All-Band

Single Operator, High Power

ZF2AM (K6AM, op)	6,805,134
6Y2T (VE3DZ, op)	6,736,863
P49Y	6,455,241
TO5X (R5GA, op)	6,342,756
CR3A (OM3RM, op)	4,864,113
HP1WW	4,736,034
CR6K (CT1ILT, op)	4,295,850
6V7S (RK4FF, op)	3,549,186
EF8USA (EA8AY, op)	2,912,904
9A6XX	2,859,480

Single Operator, Low Power

VP2MMM (N3AD, op)	4,819,806
V31RR (AA4NC, op)	4,596,600
VP9/W6PH	4,040,823
EF8R (EA8CAC, op)	3,792,096
J88DR (G3TBK, op)	3,599,730
V25AA (AA9A, op)	3,122,895
CQ3B (OM7JG, op)	2,724,300
J38A (K4LTA, op)	2,180,124
TG8/WØOR	1,292,544
CX9AU	1,219,671

Single Operator, QRP

KL7AC	292,572
LU7HZ	257,397
V31SG (KØUU, op)	230,175
HB9BMY	215,364
JH1OGC	180,621
OK3C (OK2ZC, op)	175,320
LZ2RS	119,547
IZ8JFL	116,064
UU2CW	102,111
JH1APZ	99,522

Also of note was the effort of Andy, P49Y; Valery, RG5A operating TO5X; and CR3A operated by Tibi, OM3RM. Andy had another super performance from P49Y and even had an actual benefit from Mr. Murphy who isn't always kind to contesters. Andy was successful at shifting KD4POJ in North Dakota from 20 to 40 for a multiplier but things weren't as smooth when trying 80. Andy forgot to switch to the correct transmitting antenna and wound up missing the mult but moments later he was called by another ND station to secure the mult! Andy tallied 6.34 million points in all. Valery finished with 6.3 million from TO5X as Tibi guided the CR3A station to 4.86 million. Olli, HP1WW was sixth (4.7 million) and CR6K (CT1ILT op) was seventh with 4.29 million. Felipe's total was the best in Europe and a new record.

DX Single-Op, All Band, Low Power

Operating with 100 watts on a small expedition has a big appeal. One doesn't have to worry about potential issues such as carrying an amplifier to another country, blowing up switches, etc. Although the tradeoff is a smaller signal it sure didn't seem to hinder the top finishers in the DX SOAB-LP category for 2012. VP2MMM (Alan, N3AD) edged out V31RR (Will, AA4NC) for first place. Alan scored 5.81 million points while Will registered at 4.59 million. Not far behind in third place was Kurt, VP9/W6PH with 4.0 million. EF8R (Juan, EA8CAC) was fourth with 3.79 million and Dave, G3TBK powered J88DR to the fifth spot with 3.59 million.

N3AD rented the station of K2DM in Montserrat and planned on operating high power but after his amp failed and other complications he opted for low power. After deploying the antennas, Alan was ready to start cranking out the QSOs. He finished with 5013 contacts and 323 mults. Will logged 4754 contacts and 326 mults.

Alan was having some difficulty setting up antennas but help from a visiting neighbor made for quick fix. "At this point an American staying at another unit on the property offered to help me as I was moving the ends of antennas trying to get them to work. He actually stayed with me from early afternoon until contest time. Without his help, I would not have been even close to operational. At one point he was moving the end of the 80 around on the roof as I watched the SWR meter. In one spot it was perfect. I yelled don't move but it was only good when he was actually touching the antenna. For some reason, he resisted my suggestion that he hold that antenna for 48 hours. At the end of the contest, I thought I had done well given the circumstances, but I had no illusions of winning the LP category. That was a pleasant and most unexpected surprise."

DX Single-Op, All Band, QRP

Andre, KL7AC pounded his way to 292K points for first place in the DX QRP battle followed by 257K from Pedro, LU7HZ and 230K from V31SG (Jeff, KØUU). Finishing out the top five were Peter, HB9BMY with 215K and Kazuo, JH1OGC with 180K. KL7AC submitted a log with 129 multipliers and 766 contacts.

Top Ten - DX Single Operator, Unlimited

Single Operator Unlimited, High Power

E7DX (E77DX, op)	2,553,930
SN7Q	2,119,656
S52AW	1,953,744
S59ABC (S51DS, op)	1,837,725
OT2A (ON6CC, op)	1,832,424
HB9FAP	1,819,080
OQ5M (ON5ZO, op)	1,783,404
EF3A	1,591,500
JS3CTQ	1,580,652
S57DX	1,563,660

Single Operator Unlimited, Low Power

DF9ZP (DK8ZB, op)	1,858,080
EC4CBZ	811,647
GIØRQK	768,888
OL6T (OK1DCF, op)	572,670
ES6Q (ES5RY, op)	544,680
JW/LZ2HM	506,814
SP1NY	491,946
S52W	440,484
HA5BSW	438,729
SP5GRM	424,578

DX Single-Op Unlimited, High Power

Braco, E77DX operated as E7DX and promptly secured the top spot in the category for DX entries. He found conditions to be a roller coaster ride with the high bands being a bit unpredictable on both days. Nonetheless, he persisted and tallied more than 800 QSOs on each of 15, 20 and 40 meters for his impressive final tally. His 2.55 million points was followed by 2.11 million from Kzrysztof, SN7Q and 1.95 million from Karl, S52AW. Braco's biggest edge came on 40 meters where he tallied 833 contacts and 54 multipliers. His 496 contacts on 80 meters wasn't exactly a low total either. Rounding out the top five were S59ABC (Marko, S51DS) with 1.83 million and OT2A (Marc, ON6CC) with 1.83 million. Fabio, HB9FAP deserves mention with 1.81 million followed by 1.78 million from Frankie, ON5ZO operating from home as OQ5M.

DX Single-Op Unlimited, Low Power

Battling the assisted pileups with just 100 watts usually requires patience. DF9ZP (Barney, DK8ZB) was tops for 2012 in this category by a wide margin. His 1.85 million point total was followed by a distant 811K from Oscar, EC4CBZ. Colin, GIØRQK, OL6T (Ladislav, OK1DCF), and ES6Q (Toomas, ES5RY) completed the top five.

DX Multioperator Roundup

The crews at KP2M and V31TP had quite a duel in DX MS-HP this year. Multi-single efforts can require quite a bit of strategy with band changing limits an there's little doubt that played a role in the tight battle between two talented teams. In the end, KP2M gets to hoist the trophy with 6.89 million and be the proud owner of a new overall DX record. V31TP finished with 6.35 million as PZ5RO tallied 5.6 million. The loud signal from the KH7X station fashioned 5.25 million for fourth place followed by 4.7 million from CS2C.

Top Ten – DX Multioperator

Multioperator, Single Transmitter, High Power

KP2M	6,899,748
V31TP	6,358,680
PZ5RO	5,652,522
KH7X	5,252,742
CS2C	4,742,100
PS2T	4,583,700
C6AKQ	4,545,018
TM6M	4,405,734
CW5W	3,799,194
EE5E	3,480,885

Multioperator, Single Transmitter, Low Power

VP5OU	5,648,457
P49V	5,431,020
TI5N	4,426,392
HC2/W7SE	3,283,686
C6ANM	2,539,278
8P5Y	2,279,400
YU2A	386,136
SN9V	321,825
RK9CZO	54,168
GT8IOM	26,406

Multioperator, Two Transmitters

CR3L	6,788,880
M6T	3,805,620
OM7M	3,555,552
M5E	3,359,295
DM8D	2,637,180
HG7T	2,581,290
4U1ITU	2,376,297
LZ9W	2,265,219
7J1YAJ	2,121,483
RWØCWA	1,655,670

Multioperator, Multi-Transmitters

TI5W	11,504,976
PJ2T	11,070,786
PJ4X	11,035,200
KH6LC	6,962,670
9A1A	4,232,550
JA3YBK	3,624,960
JA1YPA	2,452,989
HG1S	2,442,645
JE1ZWT	2,311,458
RL3A	1,737,723

Leading KP2M to victory was the two-man wrecking crew of KT3Y and K9VV. They enjoyed incredible rates that included 16 hours of 180 and seven hours of greater than 200 for a total QSO count of 6682 – simple incredible for a two-man outing. In addition, the pair logged 347 mults. V31TP went Field Day style this year. Using a simple tribander and wires the team (WCØW, K5PI and N7MH) managed 6292 contacts and 340 mults.

VP5OU could be easily found on the bands from the W/VE side of the event. The team consisted of N7OU, W7YAQ, K7AR, and NE7D and cruised to the MS-LP triumph with 5.64 million points. Despite issues on 80 meters the first night, the team still put in very impressive numbers in the Low Power category. The crew enjoyed its stay at the well-known QTH of Jodi, VP5JM.

The race for second place in DX M2 proved to be tight but the top finisher bolted by the finish line much like Secretariat. CR3L out-classed the field with 6.78 million points, nearly 3 million higher than the strong performance from M6T. OM7M was third with 3.55 million, followed by 3.35 million from M5E and 2.6 million from DM8D. CR3L was paced by an all German team that consisted of DJ2YA, DK7YY, DL5AXX, DL5LYM and DL8WAA. Registering more than 1000 contacts on 40 and 15, 1300-plus on 20 meters, and nearly 60 mults on most bands makes it one tough act to catch.

Of the DX multioperator categories, the MM showdown proved to be the closest for the top three participating teams. When the smoke cleared and amplifiers cooled it was the TI5W team earning the triumph and a new record for the category. The team (N3KS, WX3B, NI1N, NY3A, K3LP, K1LZ, N2OW, JT1CO) did a hybrid Field Day-like operation taking advantage of an existing 80 foot tower with a 3-element all-band Yagi on top. Other than that, the squad worked feverously to put together an outstanding multi-multi station. The crew scored 11.5 Mpoints to top PJ2T (11.07 M) and PJ4X (11.03 M).

TI5W captured 10939 contacts and 353 mults for the final margin. PJ2T equaled the multiplier total but fell short in contacts with 10536. PJ4X scored 10558 contacts and 352 mults – contesting's equivalent of a

photo finish. The low bands appeared to be the strong point for the TI5W. Team member Jim, WX3B said it was a fantastic and memorable time. In addition to setting up antennas that included phased verticals for 80, a delta loop for 160, a 2-element monobander for 15, and a 3-element 10 meter monobander swinging from ropes in a tree at 30 feet, they also configured five computers – all in a couple of days. To Jim's delight, there was very little interference between stations.

DX Single-Band

Single-band efforts for 2012 produced some real close battles. Starting with an ever improving 10-meter band, Al, CE1/K7CA edged out Jorge, HK1R by less than 500 points (435,060 to 434,078) for a new 10 meter DX record. While Al tallied less QSOs, (2433) he finished with two more mults for a total of 60 and had an impressive error rate of just 0.7%. Jorge had 2518 contacts and 58 mults with a solid error rate of 1.2%. Al noted in his post contest summary that the pile-ups were big but well-behaved.

Top Ten – DX –Single Operator, 10 Meters

CE1/K7CA	435,060
HK1R	434,478
PY2YU	378,540
LU5FC	356,301
KH7M (KH6ZM, op)	279,096
J39BS	277,713
LU6UO	227,976
LU8EOT	188,100
LW5EE	164,430
LU4VEW	131,670

Fifteen meters was a solid band with consistently decent conditions to the US from many parts of the world. Larry, F6FVY ventured to FY5KE again this year with an impressive score of 478K for the top spot. He was followed closely by contesting legend Jim, N6TJ who powered ZD8Z to 463K. Both ops pocketed 59 mults but Larry scored 2711 contacts to Jim's 2649 contacts. Both totals beat the old 15 meter DX record. Also of note, Pertti, OH2PM operated as CR2X from the Azores to claim a new European record with 356K in third overall.

Top Ten – DX –Single Operator, 15 Meters

FY5KE (F6FVY, op)	478,077
ZD8Z (N6TJ, op)	463,209
CR2X (OH2PM, op)	356,655
CO8LY	298,776
E73W	222,489
EF7X (EA7KW, op)	220,365
S5ØK	210,276
9A5Y (9A3LG, op)	208,860
G5E (G3RAU, op)	202,842
WP3A	193,107

EF8S (op Mauri, OH2BYS) was a beacon on 20 meters, scoring 357K points for first place followed by 273K from Clive, GM3POI and 224K from SO4M (Piotr, SP4DEU). Despite only having one Yagi working, EF8S still managed more than 2K contacts and 59 mults.

Top Ten – DX –Single Operator, 20 Meters

EF8S	357,717
GM3POI	273,465
SO4M (SP4DEU, op)	224,259
OK7K (OK1GK, op)	209,214
HA7GN	201,492
YT9A	196,470
OL9Z	190,806
GW6W	174,876
LZ5R (LZ1UK, op)	168,858
DK3GI	156,468

Top Ten – DX –Single Operator, 40 Meters

XE2S	249,747
HK3TU	238,596
YU1LA	224,694
CO2JD	186,876
E74IW	183,654
OK6W (OK1MU, op)	179,760
YT7A (YU7GW, op)	175,617
S57Z	175,446
S56X	161,205
9A2UZ	160,272

Top Ten – DX –Single Operator, 80 Meters

CR2A	240,720
CO8ZZ	115,995
HF3R	81,549
CO6CAC	68,238
DJØMDR	55,566
G3P (G3WPH, op)	43,992
S57UN	42,720
YU7AV	41,040
DJ5EU	26,784
EA8ZS	25,830

Marco, XE2S took full advantage of being relatively close to the U.S. in terms of geography to sail his station to 249K for the top 40 meter DX spot followed by 238K from Cam, HK3TU and 224K from Ivan, YU1LA.

World renowned contester and DXer Martti, OH2BH operated from the Azores as CR2A with one thing in mind – a new 80 meter record. Well, Martti got it. His total of 240K captured first place followed by 115K from Raúl, CO8ZZ. Martti graciously thanks everyone who called in to make the effort possible.

Gerd, DJ4KW manned the V31YN station for 49K for first place on Top Band and was followed by 160M enthusiast Herb, KV4FZ with 46K. Third place went to M5O (Peter, G3LET) with almost 20K.

Top Ten – DX –Single Operator, 160 Meters

V31YN (DJ4KW, op)	49,539
KV4FZ	46,332
M5O (G3LET, op)	19,998
HB9LCW	11,880
OL9A (OK2ZAW, op)	8,712
KP2BH	1,767
JA8NFV	1,512
UU7J (UU1AZ, op)	1,248
SV3RF	975
OM7RU	936

Regional Leaders

QRP/LP/HP = Single-Op All-Band, U/UL = Single-Op Unlimited/Low-Power, MS/MSL = Multioperator, Single Transmitter/Low-Power, M2/MM = Multioperator, Two/Multi-Transmitter

Northeast Region

New England, Hudson and Atlantic Divisions; Maritime and Quebec Sections

Call	Score	Cat
KØDQ	6,581,169	HP
K3CR (LZ4AX, op)	5,762,880	HP
N2NT	5,725,440	HP
VY2TT (K6LA, op)	5,277,090	HP
AA1K	4,360,524	HP
W3EF	3,258,270	LP
N1UR	3,154,197	LP
KU2M	1,768,530	LP
K3NK	1,243,221	LP
W1JQ	1,198,218	LP
K3PH	876,018	QRP
KX9X	801,840	QRP
K8CN	567,750	QRP
N1TM	413,028	QRP
K3RR	296,091	QRP
K3WW	6,844,572	U
AA3B	6,194,445	U
K5ZD	4,928,085	U
K2Z (K2NG, op)	4,405,305	U
K1AR	4,261,959	U
W1NT	1,816,416	UL
K3AU (K2YWE, op)	1,798,374	UL
W3KB	1,485,249	UL
WW3S	1,368,252	UL
W1MSW	1,009,971	UL
W3EP	55,278	SO-10
WF2W	46,575	SO-10
K1WHS	37,185	SO-10
K2PS	34974	SO-10
K2SSS	22272	SO-10
WA3A	445,200	SO-15
K3EL	435,978	SO-15
N2UN	203,013	SO-15
W2JZ	36,636	SO-15
K3OQ	30,072	SO-15
N2MF	659,880	SO-20
W3FW	330,321	SO-20
KR2AA	140,976	SO-20
KG1V	77154	SO-20
K3GW	62880	SO-20
NN1N	612,054	SO-40
W3UA	518,814	SO-40
W2EG	141,450	SO-40
NA2X	39,123	SO-40
W1FQ	36,498	SO-40
VY2ZM	280,800	SO-80
W3NO	51,333	SO-80
K3JGJ	33,462	SO-80
N3UM	23,265	SO-80
K3TM	22896	SO-80
W1XX	15,792	SO-160
W3GH	10,296	SO-160
W2MF	6552	SO-160
W2VO	6264	SO-160
W1FMR	108	SO-160

Southeast Region

Delta, Roanoke and Southeastern Divisions

Call	Score	Cat
K1TO	4,560,348	HP
N5WR	3,948,846	HP
K4RO	2,783,610	HP
KØEJ	2,777,133	HP
K4AB	2,733,216	HP
AD4Z	2,867,670	LP
N4YDU	2,237,103	LP
N2WN	1,433,250	LP
N4TB	1,075,248	LP
NA4K	953,712	LP
W9WI	766,290	QRP
N3CZ	499,500	QRP
WB4MSG NO4GA	298,143	QRP
(W4QO, op)	221,781	QRP
AA4GA	213,942	QRP
K1PT	2,826,981	U
K5EK	2,360,832	U
N4PN	2,239,020	U
K3IE	2,228,661	U
N4ZC	2,212,194	U
N4CJ	1,647,153	UL
WD4AHZ	1,644,750	UL
WØPV	839,928	UL
K4MM	569,184	UL
K4FPF	486,243	UL
W4ZV	257,355	SO-10
NA4CW	99,102	SO-10
W5QP	18,432	SO-10
N3JT	12540	SO-10
WA5OYU	8448	SO-10
N4ZZ	486,465	SO-15
K4RDU	81,600	SO-15
K1SE	65,016	SO-15
K4NVJ	47,652	SO-15
W6UB	33,210	SO-15
K9OM	302,091	SO-20
NK3U	72,480	SO-20
NW4V	56,394	SO-20
K4TRH	22506	SO-20
W5MK	7548	SO-20
WAØUSA	112,560	SO-40
K9FY	104,397	SO-40
K4CC	55,350	SO-40
WA1FCN	45,000	SO-40
KW7R	42,336	SO-40
K4FJ	40,596	SO-80
W4PK	38,454	SO-80
K4YYL	20,130	SO-80
KM4HI	9,594	SO-80
W6DVS	5616	SO-80
K4PI	5,883	SO-160
AG4W	4,770	SO-160
K4EJQ	2730	SO-160

Central Region

Central and Great Lakes Divisions; Ontario Section

Call	Score	Cat
W9RE	4,647,513	HP
VC3A (VE3AT, op)	4,353,804	HP
K8GL	2,717,832	HP
VE3TA	2,460,030	HP
N8BJQ	1,915,584	HP
N4TZ	2,509,386	LP
N8AA	2,086,224	LP
NA8V	1,283,808	LP
N9CK	1,137,510	LP
KV8Q	853,632	LP
K8ZT	337,041	QRP
KT8K	248,976	QRP
VE3HG	229,917	QRP
VE3RSA	142,188	QRP
WA8REI	121,296	QRP
W8MJ	2,756,268	U
NØIJ	2,495,175	U
VE3RTU	2,411,748	U
K9IMM	1,804,950	U
N8TR	1,668,753	U
K8JJC	1,301,760	UL
WE9R	796,374	UL
N8VV	506,196	UL
W9ZRX	475,407	UL
K9OR	460,083	UL
WA9MAG	31,329	SO-10
K4WW	14,100	SO-10
N9GUN	2,088	SO-10
N4KZ	1260	SO-10
W9ILY	229,500	SO-15
W8UD	87,480	SO-15
VE3TG	73,470	SO-15
VA3DDX	39,744	SO-15
AB8DF	5,850	SO-15
W8TA	360,639	SO-20
W8WA	323,523	SO-20
N8AGU	231,345	SO-20
VE3MWA	47523	SO-20
VA3GUY	35838	SO-20
K9GS	158,496	SO-40
K9CJ	62,331	SO-40
WO9S	44,712	SO-40
K8SM	43,650	SO-40
KO8Z	32,448	SO-40
VE3OSZ	16,128	SO-80
W1NN	12,348	SO-80
W8TM	10,260	SO-80
VE3MGY	8,190	SO-80
AC8CE	1650	SO-80
K8FL	3,567	SO-160
WD8DSB	1,425	SO-160
VE3SQZ (VE3MGY, op)	1425	SO-160

Midwest Region

Dakota, Midwest, Rocky Mountain and West Gulf Divisions; Manitoba and Saskatchewan Sections

Call	Score	Cat
N2IC	4,921,890	HP
KØRF (WØUA, op)	3,971,970	HP
KØSR	2,837,100	HP
K5WA	2,549,376	HP
N7VM	1,860,516	HP
N5AW	2,490,540	LP
WØUO	1,433,322	LP
WØETT	511,500	LP
W5RYA	510,000	LP
NAØN	509,355	LP
KØOU	288,828	QRP
NZ5A	105,792	QRP
WEØM	65,136	QRP
N5RZ	60,066	QRP
NDØC	41,796	QRP
KØKX	2,356,992	U
W5GN	1,602,108	U
NØAT	1,553,376	U
WAØMHJ	1,163,052	U
WØRX	1,062,510	U
N5DO	1,389,087	UL
K5IID	773,376	UL
AD1C	713,241	UL
KØRI	541,242	UL
KØMPH	530,091	UL
AA7DJ	31,320	SO-10
WNØL	15,708	SO-10
VE5KS	12,000	SO-10
NXØX	126	SO-10
KVØQ	473,070	SO-15
WØSHL	37,170	SO-15
KFØIQ	23,790	SO-15
WA5LFD	13,284	SO-15
K7ULS	1,152	SO-15
KT9T	364,635	SO-20
N4IJ	280,500	SO-20
ADØH	14,946	SO-20
W5EB	714	SO-20
KØMIS	48	SO-20
KZ5J	33,831	SO-40
K5ZE	23,760	SO-40
KIØG	10,032	SO-40
N9HDE	3,420	SO-40
KØKT	20,250	SO-80
AA5B	3,249	SO-80
NØTK	3,240	SO-80
K5RX	5,487	SO-160
NØTT	2,079	SO-160

West Coast Region

Pacific, Northwestern and Southwestern Divisions; Alberta, British Columbia and NWT Sections

Call	Score	Cat
N9RV	4,776,480	HP
W6YI (N6MJ, op)	4,447,926	HP
VE7CC	3,003,936	HP
K6XX	2,987,580	HP
K6NA	1,961,982	HP
N7ZG	1,387,386	LP
K2PO	1,380,744	LP
WJ9B	833,721	LP
N6RV	679,320	LP
VA7ST	662,112	LP
N7IR	602,712	QRP
W6JTI	452,904	QRP
W6QU (W8QZA, op)	318,354	QRP
N6WG	84,900	QRP
K7GO	66,150	QRP
K7NV	3,134,934	U
K6LL	2,633,202	U
AA7A	2,335,800	U
VA7DX (@ VE7UF)	1,609,725	U
N6WIN	1,606,692	U
K6WSC	447,909	UL
K6MM	316,602	UL
VE7CA	267,540	UL
K7JE	257,925	UL
K6AAB	192,030	UL
KI6LZ	42,168	SO-10
K7HP	28,704	SO-10
W6SJ	4,350	SO-10
N7DD	477,276	SO-15
WA7LT	256,662	SO-15
KB7Q	242,424	SO-15
K7ZA	241,392	SO-15
W6AEA	216,216	SO-15
VE6JY (VE5MX, op)	532,230	SO-20
K7MH	28,608	SO-20
VE7NI	2,400	SO-20
N6MA	146,163	SO-40
VE6WQ	132,300	SO-40
K6TA	96,048	SO-40
N7MAL	25,368	SO-40
K9DR	17,808	SO-40
W6RKC	4,374	SO-80
VE7SQ	1,734	SO-80
W7DRA	378	SO-80
WA6NOL	60	SO-80
W2RS	330	SO-160
N6TI	120	SO-160

Call	Score	Cat	Call	Score	Cat	Call	Score	Cat	Call	Score	Cat	Call	Score	Cat
K1LZ	8,668,728	MS	NY4A	5,813,280	MS	K8AZ	5,608,440	MS	NØNI	4,761,600	MS	W7RN	4,934,268	MS
W2RE	6,625,872	MS	WW4LL	4,219,968	MS	VE3CR	2,337,216	MS	KØJA	501,948	MS	NK7U	4,842,708	MS
K9RS	6,548,688	MS	N4RV	1,756,644	MS	WN9O	2,252,925	MS				NX6T	1,813,896	MS
W3BGN	5,553,735	MS	AD4ES	1,390,917	MS							N7BV	1,780,548	MS
K2QMF	4,984,122	MS	W5WMU	120,153	MS							K6MMM	717,939	MS
			N4AU	404,766	MSL	VE3SAO	9,675	MSL	KU1CW	827,169	MSL	VA7DZ	345,519	MSL
			WA4PIG	429	MSL				KØUK	146,880	MSL	W6YX	131,175	MSL
N3RS	10,820,976	M2	K5GO	8,779,101	M2	K9CT	7,290,756	M2	N5FM	91,770	MSL	N7IP	1,592,136	M2
KB1H	7,845,525	M2	W4RM	8,526,060	M2	W8AV	5,274,414	M2	NØMA	37,026	MSL	AK7AZ	1,130,796	M2
W2XL	4911030	M2	N4GI	6003480	M2	VE3YAA	2420688	M2						
KØTV	4873416	M2	W5RU	2699370	M2									
W2YC	4823226	M2												
W3LPL	15,969,150	MM	NQ4I	13,606,920	MM	WØAIH	5,010,918	MM	N5AA	1,125,918	MM	N6BV	6,026,946	MM
K3LR	15,747,228	MM	NR4M	12,690,000	MM							VE7IO	896,250	MM
KC1XX	13724835	MM												
WE3C	12371742	MM												
W2FU	12103710	MM												

Division Winners

Single Operator, High Power

Atlantic	K3CR (LZ4AX, op)	5,762,880
Central	W9RE	4,647,513
Dakota	KØSR	2,837,100
Delta	N5WR	3,948,846
Great Lakes	K8GL	2,717,832
Hudson	N2NT	5,725,440
Midwest	KV1E	829,980
New England	KØDQ	6,581,169
Northwestern	N9RV	4,776,480
Pacific	K6XX	2,987,580
Roanoke	WX4G	2,471,580
Rocky Mountain	N2IC	4,921,890
Southeastern	K1TO	4,560,348
Southwestern	K6NA	1,961,982
West Gulf	K5WA	2,549,376
Canada	VY2TT (K6LA, op)	5,277,090

Single Operator, Low Power

Atlantic	W3EF	3,258,270
Central	N4TZ	2,509,386
Dakota	NAØN	509,355
Delta	N2WN	1,433,250
Great Lakes	N8AA	2,086,224
Hudson	KU2M	1,768,530
Midwest	KIØI	351,168
New England	N1UR	3,154,197
Northwestern	N7ZG	1,387,386
Pacific	K7ACZ	233,310
Roanoke	N4YDU	2,237,103
Rocky Mountain	WØETT	511,500
Southeastern	AD4Z	2,867,670
Southwestern	N6RV	679,320
West Gulf	N5AW	2,490,540
Canada	VA7ST	662,112

Single Operator, QRP

Atlantic	K3PH	876,018
Central	N1RU	23,217
Dakota	NDØC	41,796
Delta	W9WI	766,290
Great Lakes	K8ZT	337,041
Hudson	K2JT	145,791
Midwest	KØOU	288,828
New England	KX9X	801,840
Northwestern	K7GO	66,150
Pacific	W6JTI	452,904
Roanoke	N3CZ	499,500
Rocky Mountain	NO2D	21,735
Southeastern	NO4GA (W4QO, op)	221,781
Southwestern	N7IR	602,712
West Gulf	NZ5A	105,792
Canada	VA1MM	276,687

Single Operator Unlimited, High Power

Atlantic	K3WW	6,844,572
Central	NØIJ	2,495,175
Dakota	KØKX	2,356,992
Delta	W4NZ	1,970,724
Great Lakes	W8MJ	2,756,268
Hudson	N1EU	3,795,660
Midwest	WØTT	550,470
New England	K5ZD	4,928,085
Northwestern	KG7H	1,364,241
Pacific	K7NV	3,134,934
Roanoke	K5EK	2,360,832
Rocky Mountain	KEØUI	833,553
Southeastern	K1PT	2,826,981
Southwestern	K6LL	2,633,202
West Gulf	W5GN	1,602,108
Canada	VE3RTU	2,411,748

Single Operator Unlimited, Low Power

Atlantic	K3AU (K2YWE, op)	1,798,374
Central	WE9R	796,374
Dakota	KØMPH	530,091
Delta	N4UW	438,180
Great Lakes	K8JJC	1,301,760
Hudson	K2ZC	881,691
Midwest	ACØE	153,972
New England	W1NT	1,816,416
Northwestern	KD7H	102,951
Pacific	K6MM	316,602
Roanoke	K4FPF	486,243
Rocky Mountain	AD1C	713,241
Southeastern	N4CJ	1,647,153
Southwestern	K6WSC	447,909
West Gulf	N5DO	1,389,087
Canada	VE3XAT	370,296

Single Operator, 10 Meters

Atlantic	WF2W	46,575
Central	WA9MAG	31,329
Dakota	NXØX	126
Delta	W5QP	18,432
Great Lakes	K4WW	14,100
Hudson	WB2AMU	11,400
Midwest	WNØL	15,708
New England	W3EP	55,278
Roanoke	W4ZV	257,355
Rocky Mountain	AA7DJ	31,320
Southeastern	NA4CW	99,102
Southwestern	KI6LZ	42,168
Canada	VE5KS	12,000

Single Operator, 15 Meters

Atlantic	WA3A	445,200
Central	W9ILY	229,500
Dakota	WØSHL	37,170
Delta	N4ZZ	486,465
Great Lakes	W8UD	87,480
Hudson	N2UN	203,013
Midwest	KFØIQ	23,790
New England	KN1H	12,300
Northwestern	WA7LT	256,662
Pacific	W7DR	209,385
Roanoke	K4RDU	81,600
Rocky Mountain	KVØQ	473,070
Southeastern	K4NVJ	47,652
Southwestern	N7DD	477,276
West Gulf	WA5LFD	13,284
Canada	VE3TG	73,470

Single Operator, 20 Meters

Atlantic	N2MF	659,880
Central	W9WJ	14,250
Dakota	KT9T	364,635
Delta	K4TRH	22,506
Great Lakes	W8TA	360,639
Hudson	KR2AA	140,976
Midwest	ADØH	14,946
New England	KG1V	77,154
Northwestern	K7MH	28,608
Roanoke	NK3U	72,480
Southeastern	K9OM	302,091
West Gulf	N4IJ	280,500
Canada	VE6JY (VE5MX, op)	532,230

Single Operator, 40 Meters

Atlantic	NA2X	39,123
Central	K9CJ	62,331
Great Lakes	K8SM	43,650
Hudson	W2EG	141,450
Midwest	N9HDE	3,420
New England	W3UA	518,814
Northwestern	WB7FJG	2,322
Pacific	K6TA	96,048
Roanoke	KS4S	26,373
Southeastern	WAØUSA	112,560
Southwestern	N6MA	146,163
West Gulf	KZ5J	33,831
Canada	VE6WQ	132,300

Single Operator, 80 Meters

Atlantic	W3NO	51,333
Great Lakes	W1NN	12,348
Midwest	KØKT	20,250
New England	K1MC	8,640
Northwestern	W7DRA	378
Pacific	W6RKC	4,374
Roanoke	K4FJ	40,596
Rocky Mountain	AA5B	3,249
Southeastern	KM4HI	9,594
Southwestern	WA6NOL	60
Canada	VY2ZM	280,800

Single Operator, 160 Meters

Atlantic	W3GH	10,296
Central	WD8DSB	1,425
Delta	K4EJQ	2,730
Great Lakes	K8FL	3,567
Midwest	NØTT	2,079
New England	W1XX	15,792
Southeastern	K4PI	5,883
Southwestern	W2RS	330
West Gulf	K5RX	5,487
Canada	VE3SQZ (VE3MGY, op)	1,425

Multioperator, Single Transmitter, High Power

Atlantic	W2RE	6,625,872
Central	WN9O	2,252,925
Dakota	KØJA	501,948
Delta	W5WMU	120,153
Great Lakes	K8AZ	5,608,440
Hudson	K2QMF	4,984,122
Midwest	NØNI	4,761,600
New England	K1LZ	8,668,728
Northwestern	NK7U	4,842,708
Pacific	W7RN	4,934,268
Roanoke	NY4A	5,813,280
Southeastern	WW4LL	4,219,968
Southwestern	NX6T	1,813,896
Canada	VE3CR	2,337,216

Multioperator, Single Transmitter, Low Power

Atlantic	W3WN	97,785
Delta	WA4PIG	429
Pacific	W6YX	131,175
Rocky Mountain	KØUK	146,880
Southeastern	N4AU	404,766
West Gulf	N5FM	91,770
Canada	VA7DZ	345,519

Multioperator, Two Transmitter

Atlantic	N3RS	10,820,976
Central	K9CT	7,290,756
Delta	K5GO	8,779,101
Great Lakes	W8AV	5,274,414
Hudson	W2XL	4,911,030
New England	KB1H	7,845,525
Northwestern	N7IP	1,592,136
Roanoke	W4RM	8,526,060
Southeastern	N4GI	6,003,480
Southwestern	AK7AZ	1,130,796
Canada	VE3YAA	2,420,688

Multioperator, Multi-Transmitter

Atlantic	W3LPL	15,969,150
Central	WØAIH	5,010,918
New England	KC1XX	13,724,835
Pacific	N6BV	6,026,946
Roanoke	NR4M	12,690,000
Southeastern	NQ4I	13,606,920
West Gulf	N5AA	1,125,918
Canada	VE7IO	896,250

Continental Leaders

QRP/LP/HP = Single-Op All-Band, U/UL = Single-Op Unlimited/Low-Power, MS/MSL = Multioperator, Single Transmitter/Low-Power, M2/MM = Multioperator, Two/Multi-Transmitter

Africa

CR3A (OM3RM, op)	4,864,113	HP
EF8R (EA8CAC, op)	3,792,096	LP
EA8BVP	147	QRP
ZS6A	19,206	U
CT3KY	11,214	UL
EA8ZS	25,830	SO-80
5H3EE	12,915	SO-40
EF8S	357,717	SO-20
ZD8Z (N6TJ, op)	463209	SO-15
EA8AVK	24,030	SO-10
CR3L	6,788,880	M2

Asia

JH4UYB	1,708,470	HP
JI1RXQ	709,716	LP
JH1OGC	180,621	QRP
JS3CTQ	1,580,652	U
JM1NKT	418,584	UL
JA8NFV	1,512	SO-160
JH1AEP	17,850	SO-80
JA6SHL	93,174	SO-40
RZØSR	90,312	SO-20
JA7FTR	184,509	SO-15
JA1BPA	62,769	SO-10
RUØFM	2,093,976	MS
RK9CZO	54,168	MSL
7J1YAJ	2,121,483	M2
JA3YBK	3,624,960	MM

Europe

CR6K (CT1ILT, op)	4,295,850	HP
DL1QQ	849,930	LP
HB9BMY	215,364	QRP
E7DX (E77DX, op)	2,553,930	U
DF9ZP (DK8ZB, op)	1,858,080	UL
M5O (G3LET, op)	19,998	SO-160
CR2A	240,720	SO-80
YU1LA	224,694	SO-40
GM3POI	273,465	SO-20
CR2X (OH2PM, op)	356,655	SO-15
EA4KD	51,552	SO-10
CS2C	4,742,100	MS
YU2A	386,136	MSL
M6T	3,805,620	M2

North America

ZF2AM (K6AM, op)	6,805,134	HP
VP2MMM (N3AD, op)	4,819,806	LP
KL7AC	292,572	QRP
XE2X (XE2WWW, op)	156,420	U
KL1JP	42,558	UL
V31YN (DJ4KW, op)	49,539	SO-160
CO8ZZ	115,995	SO-80
XE2S	249,747	SO-40
KL8DX	141,588	SO-20
CO8LY	298,776	SO-15
J39BS	277,713	SO-10
KP2M	6,899,748	MS
VP5OU	5,648,457	MSL
KL7WV	1,100,358	M2
TI5W	11,504,976	MM

Oceania

VK2IM	1,059,000	HP
KH6FP	117,720	LP
N7ET/DU7	36,750	QRP
ZL3IO	1,485,384	U
YB1ALL	102,414	UL
WB4JTT/KH6	18,720	SO-80
VK6HG	10,476	SO-40
4GØLD (DU1XX, op)	12	SO-20
KH6 (K7GQ, op)	135,744	SO-15
KH7M (KH6ZM, op)	279,096	SO-10
KH7X	5,252,742	MS
DU1HR	10,296	MSL
KH6LC	6,962,670	MM

South America

P49Y	6,455,241	HP
CX9AU	1,219,671	LP
LU7HZ	257,397	QRP
PV8ADI	537,570	U
PY1NX	417,945	UL
PS7DX	684	SO-80
HK3TU	238,596	SO-40
PR7AR	113,904	SO-20
FY5KE (F6FVY, op)	478,077	SO-15
CE1/K7CA	435,060	SO-10
PZ5RO	5,652,522	MS
P49V	5,431,020	MSL
PJ2T	11,070,786	MM

Sponsored Plaque Winners

Plaque Category	Plaque Sponsor	Winner
W/VE Single Operator High Power CW	Frankford Radio Club	KØDQ
W/VE 1.8 MHz CW	Jerry Rosalius, WB9Z	W1XX
W/VE 21 MHz CW	Carl Luetzelschwab, K9LA	N4ZZ
W/VE 28 MHz CW	Green River Valley, IL ARS	W4ZV
W/VE Single Operator Low Power CW	Andy Faber, AE6Y	W3EF
W/VE Single Operator QRP CW	Tod Olson, KØTO	K3PH
W/VE Single Operator Assisted, High Power CW	Harold Ritchey, W3WPG Memorial	K3WW
W/VE Multioperator Single Transmitter High Power CW	Ray Sokola, K9RS	K1LZ
World Single Operator High Power CW	North Jersey DX Association	ZF2AM (K6AM, op)
Europe Single Operator High Power CW	Jim George, N3BB	CR6K (CT1ILT, op)
North America Single Operator High Power CW	Potomac Valley Radio Club	ZF2AM (K6AM, op)
World 1.8 MHz CW	Fred Race, W8FR, In Memory of DL1FF	V31YN (DJ4KW, op)
World 14 MHz CW	Jeff Hartley, N8II	EF8S
World 21 MHz CW	Caribbean Contesting Consortium PJ2T	FY5KE (F6FVY, op)
World 28 MHz CW	W7EW / W7AT	CE1/K7CA
World Single Operator Low Power CW	Sanjay Vig, VA2OP	VP2MMM (N3AD, op)
World Single Operator QRP CW	Jerry Griffin, K6MD	KL7AC
World Multioperator Single Transmitter, High Power CW	John Patterson WCØW/V31TP	KP2M
Asia Single Operator QRP CW	Sean Kutzko, KX9X	JH1OGC
Asia Multioperator Single Transmitter High Power CW	Yankee Clipper Contest Club	RUØFM
World Multioperator Two Transmitters CW	Frankford Radio Club - K2TD Memorial	CR3L
World Multioperator Unlimited CW	H Stephen Miller NØSM	TI5W
Great Lakes Division Single Operator CW	North Coast Contesters	K8GL
Japan Single Operator Low Power CW	Western Washington DX Club	JI1RXQ
Seventh Call Area Single Operator High Power CW	Willamette Valley DX Club	N9RV
Canada Single Operator Low Power CW	Contest Club Ontario	VA7ST
Pacific Division Single Operator Low Power CW	Central California DX Club, Inc. W6MEL	K7ACZ
North America Single Operator Low Power CW	John Patterson WCØW/V31TP	VP2MMM (N3AD, op)
Hudson Division Single Operator High Power CW	HVCDX & AARA John Naberezny, WE2F Memorial	N2NT
Central Division Single Operator High Power CW	Northern Illinois DX Association	W9RE

Which Door Is It? 10 Meters at K3LR for ARRL DX CW by Carl Luetzelschwab K9LA

On Friday evening, 10 meters wasn't very productive to SE Asia and JA at Tim Duffy's K3LR Multi-Multi station. Only a handful of stations were worked Friday evening on 10 meters, with only one being from that area (JA1BPA).

Saturday night was a different story. George, N3GJ and Ed, VE3FWA, the 10 meter ops at K3LR, began working JAs around 2200 UTC, but the path was not the true great circle short path to the northwest – it was a skewed path to the west-southwest (not an uncommon path). Later in the evening, beginning around 0130 UTC, more JAs and SE Asians were worked but now they were along the true short path. Why wasn't the true great circle short path open initially? Why was the skewed path open? And why did the path shift back to the true great circle short path later in the evening?

As one might expect, all of this was tied to geomagnetic field activity. Figure 1 shows the high latitude K indices from February 12 thru February 19.

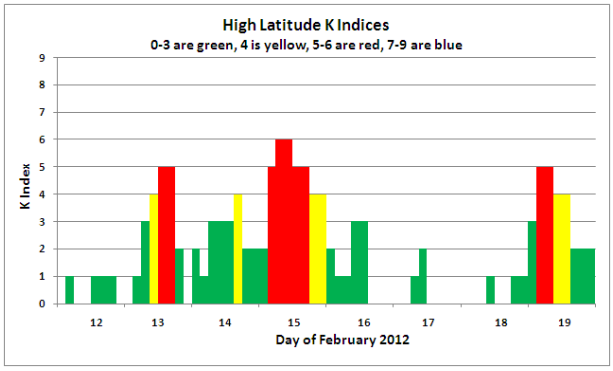


Figure 1 – High Latitude K Indices

From the 10th (not shown) thru the 12th the K index was 2 or below, indicating quiet geomagnetic field conditions. On the 13th the K index spiked up to 5, then settled back down until the 15th. Early on the 15th the geomagnetic field was very disturbed. It then again settled down until late on the 19th (right at the end of the Contest). Let's look at ionosonde data to see how this affected the F2 region of the high latitude and equatorial ionosphere on these paths from K3LR to SE Asia and JA. But first we'll look at great circle paths out of K3LR.

Figure 2 shows great circle paths from K3LR, with the true great circle short path to JA highlighted in red. Fortunately there are two ionosondes near the K3LR-to-JA true great circle short path (this is unusual, as most of the time there isn't an ionosonde close by the path, which really makes it tough to make any conclusions). The Gakona (Alaska) ionosonde is very near the path. The King Salmon (Alaska) ionosonde is also close to the path, but not as close as the Gakona ionosonde. The dotted line is the magnetic equator.

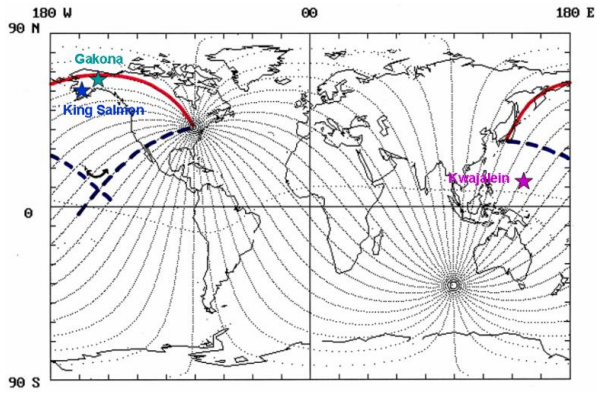


Figure 2 Great Circle Paths Out of K3LR

Also shown in Figure 2 is a west-southwest path out of K3LR and an easterly path out of JA. Both are highlighted as dashed dark blue lines. This represents a possible skewed path observed by the K3LR ops earlier Saturday evening. The alleged skew point (where refraction, reflection, or scatter occurs to divert the electromagnetic wave off the great circle path out of K3LR and onto the great circle path into JA) is in the Pacific Ocean (more on this later). Now let's look at the Gakona ionosonde data, which is Figure 3.

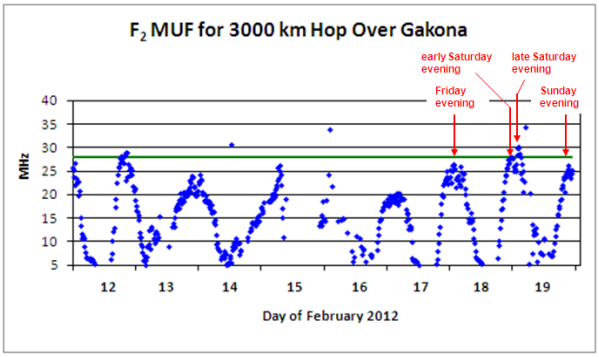


Figure 3 – Gakona Data

The ionosonde data gives us a good picture of what happened on Friday, Saturday, and Sunday evening of the Contest. The geomagnetic field activity on the 15th took its toll on high latitude F2 region ionization. There were gaps in the data on the 15th, and this also resulted in significantly depressed electron densities on the 16th and 17th. The F2 region began to recover on the 18th, but it didn't recover enough for good solid 10-Meter propagation on Friday evening (the green solid line in Figure 3 is 28 MHz). The F2 region continued its recovery on the 19th. Early Saturday evening the F2 MUF (maximum useable frequency) appeared to peak just below 10 meters. This is why the true great circle short path was not open initially.

But then the F2 MUF showed a nice increase later Saturday evening, which allowed the true great circle short path to open. Then came the geomagnetic field activity early on the 19th, and it kept the F2 MUF along the true great circle short path below 28 MHz Sunday evening (K3LR did work some SE Asia and JAs Sunday evening, but it was again via the west-southwest skewed path – the Friday evening JA was also via this skewed path). For the record, the King Salmon ionosonde showed similar trends as the Gakona ionosonde.

We've seen what happened along the true great circle short path and understand why it wasn't available until later in the evening on Saturday, so now let's try to look at the west-southwest skewed path. In Figure 2, the Kwajalein ionosonde is the closest to the alleged skew point. It's still pretty far away, but it's all we have out in the Pacific in that area. Unfortunately we run into a brick wall here. There is Kwajalein data up thru most of February 13, but then nothing. I even checked the ionograms (from whence the tabular data comes). Unless this data shows up, all we can do is speculate why the west-southwest path was there.

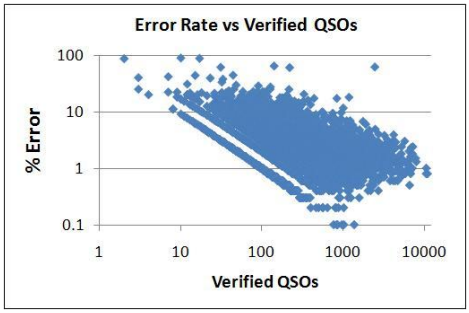
A clue comes from N3GJ. In a personal e-mail he said "The stronger signals were during the 0200Z short path opening on Saturday night." This tells us the skewed path was likely a lossy scatter mechanism at the skew point, not refraction (as on the true great circle short path) or reflection. That kind of makes sense, as the electron density and its gradient at the skew point would have to be pretty high and extensive to reflect or refract a 28 MHz electromagnetic wave by 90 degrees (refer back to Figure 2).

*Now the area of the ionosphere at the alleged skew point is around the northern crest of the equatorial ionosphere (from 10 to 15 degrees north of the magnetic equator) and as such could have a high electron density. But my guess is the electron density wasn't high enough (the Kwajalein ionosonde data might have confirmed or refuted this), and scatter was indeed the mechanism. Another possible scatter mechanism is sea scatter from high waves. Silberstein and Dickson (IEEE Transactions on Antennas & Propagation, January 1965) had a very interesting paper titled "Great-Circle and Deviated-Path Observations on CW Signals Using a Simple Technique" discussing this. Contact K9LA (**k9la@arrl.net**) for more information on this paper.*

In summary, Saturday evening was an exciting time for the 10 meter ops at K3LR. They had to make sure they 'opened' both doors to work SE Asia and JA. Finally, thanks to the K3LR crew for their helpful inputs on these events.

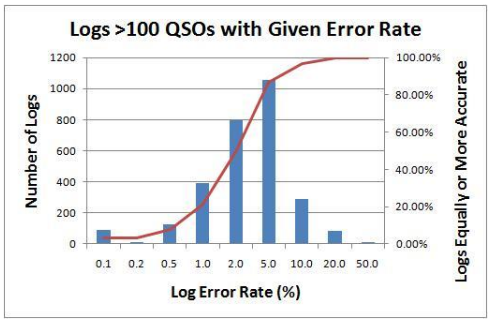
Accuracy

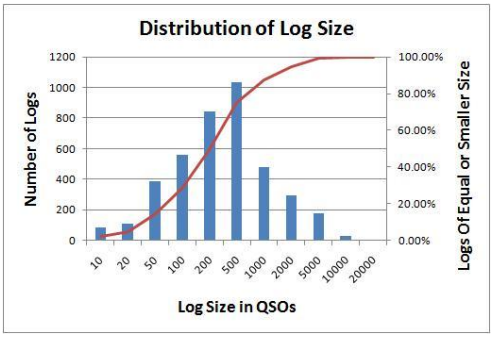
In the heat of battle, it's often difficult to take the extra time to make sure the contact is logged correctly. Those operators who take that time are often rewarded with higher scores in the end. For 2012, many of the battles were decided by how accurate the logs were. Next time you enter a contest, try increasing your accuracy – it can be just as important as rate and mults.



The chart of Error Rate vs Log Size shows the accuracy of the top stations. Toward the lower right of the chart (where you want to be!) error rates approach 1% even for QSO totals of nearly 10000 QSOs.

The cumulative charts show how many logs were submitted with different error rates and QSO totals. A table also shows the ten largest "Golden Logs" – those without any errors found during log checking.





In the Accuracy Leaders table, the Accuracy Index is a measure of how accurate a particular log was, taking into account that it is harder to achieve the same percentage error for a large log as for a small log. (See the 2011 ARRL DX Phone Results for the formula used.)

Top 10 Golden Logs (logs without errors)

Call	*QSOs*
K1HT	544
DL1NEO	471
NI1L	464
DL7UMK	420
WB4KDI	390
DJ8EW	373
W5KI	342
N5DY	313
G4HZV	297
ON4CAS	293

Accuracy Leaders

Call	*Cat*	*QSOs*	*Error Rate(%)*	*Index*
W-VE				
Single-Op (Non-assisted)				
KØDQ	SOHP	4630	1.2	13.546
K1TO	SOHP	3788	0.6	13.518
K3CR (LZ4AX, op)	SOHP	4026	0.9	13.515
N2NT	SOHP	4007	1.2	13.483
N2IC	SOHP	3613	1	13.458
Single-Op (Assisted)				
AA3B	SOAHP	4123	0.6	13.555
K5ZD	SOAHP	3402	0.9	13.442
K3WW	SOAHP	4453	2.3	13.419
KI1G	SOAHP	2852	0.7	13.385
N1EU	SOAHP	2571	0.7	13.340
Multi-Op				
W3LPL	MM	7964	1.3	13.771
K3LR	MM	7808	1.5	13.743
NQ4I	MM	7134	1.8	13.673
W2FU	MM	6493	1.4	13.672
WE3C	MM	6747	1.6	13.669
DX				
Single-Op (Non-assisted)				
6Y2T (VE3DZ, op)	SOHP	6583	0.5	13.768
ZF2AM (K6AM, op)	SOHP	6493	1.1	13.702
P49Y	SOHP	6278	1.2	13.678
TO5X (R5GA, op)	SOHP	6243	1.3	13.665
CR3A (OM3RM, op)	SOHP	5087	0.7	13.636
Single-Op (Assisted)				
E7DX (E77DX, op)	SOAHP	3177	1.1	13.392
S59ABC (S51DS, op)	SOAHP	2698	1	13.331
OQ5M (ON5ZO, op)	SOAHP	2372	0.5	13.325
JS3CTQ	SOAHP	2126	0.5	13.278
DF9ZP (DK8ZB, op)	SOALP	2563	1.5	13.259
Multi-Op				
TI5W	MM	10939	0.8	13.959
PJ2T	MM	10536	0.8	13.943
PJ4X	MM	10558	1	13.924
KH6LC	MM	7105	1	13.752
CR3L	M2	6789	0.8	13.752

Closing

With WRTC-2014 (**www.wrtc2014.org**) not too far away, expect people jockeying for position for one of the precious team spots to put in big efforts in the ARRL DX CW contest on February 16-17, 2013 – one of the final qualifying events. Be sure to get on and experience the thrill of the event. The sunspots should be more plentiful and potentially at the peak – don't miss it!

Making More Contesters – by Jim Smith, VE7FO with help from Fred Orsetti, VE7IO

When I retired in 1997 I'd been out of ham radio for something like 25 years and didn't think I'd get back into it. VE7IN, who I used to mentor in the 60s and now mentors me, suggested we enter a contest from his QTH "for old times' sake." While I've got some ARRL and CQ contest wallpaper dating back to 1958, I'd forgotten how much fun contesting is.

Next thing you know I'd dumped amateur astronomy, put up some antennas, borrowed an IC-706 from VE7IN and was on the air. Lots of stories about my travails on 3830. Wasn't too long before I moved up to an FT-1000MP MkV. I've had a lot of fun and a gratifying amount of contest success in the intervening years including many firsts for VE7 and several #1 VE.

Some years ago near the end of my career I found myself involved in strategic planning. When I retired in 1997 I decided that I needed a plan to guide me through the remaining years. Well, the first step is to come up with a Mission Statement.

After not very much thought I decided that my Mission was to bring about world peace. In the strategic planning process that I had been exposed to the next step is to define a number of goals. By definition, if you achieve the goals you are performing the mission.

A collection of new and experienced operators worked together at VE7FO's station. Left to right are Jim, VE7FO (seated); Mike, RWØCN (standing); Jay, VE7CWH; Brett, VE7GM (standing); John, VA7XB; and Fred, VE7IO. (Photo by VE7FO)

Well, I wasn't really sure what the appropriate goals were so I thought I'd come up with a bunch of objectives and see if some goals would be revealed in the process. Each goal has a number of objectives attached to it. By

definition, if you achieve all the objectives for a particular goal then you have achieved that goal.

This is where the rubber hits the road as each objective has attached to it a number of measurable criteria. The key word here is "measurable". I was totally unable to come up with any way of measuring my effectiveness in bringing about world peace so I decided to choose something easier to measure. My mission became to make more contesters.

Around this time I was teaching a license class for a local emcomm club. The Canadian test questions are mostly aimed at regulations and HF operating. Satisfactory, but not sparkling, performance on the test yields a license which is restricted to VHF and up.

So I'm in front of the class, talking about HF stuff that most of them will probably never encounter and wondering how to turn this from dry as dust words into something real. Aha!! My mission statement guides me into the right action, in this case to invite the class members to come to my QTH and get on the air. Well, not just any old air, the ARRL International DX Contest. While it's a modest station, conditions were good and we worked numerous stations in all continents with no difficulty. I had a lot of fun asking each person when they made a contact where they thought the station was located. As they had no clue about call signs they, of course, didn't know. When I showed them where to look on the logging software screen they were amazed. In particular, I hit the VOX button just in time as one of them said, "Italy?? Holy ****!"

Fast forward to 2011 when I was invited to the Surrey ARC FD. They lured me in with the bait that they were aiming to be #1 VE in 3A. Hey, my kind of folks. Well, the location and gear were OK but the ops just didn't have the needed experience. What to do?

Aha!! Mission statement kicks in. I proposed an HF Op training plan to the Club Exec which was accepted. The plan consisted of some initial classroom work on the mechanics of making a Q and how to log it in N1MM followed by a number of on-air training sessions to take place during major contests. The Exec accepted the proposal and away we went.

The first issue was finding a QTH to operate from. Fortunately Fred, VE7IO volunteered his station. It's pretty decent with an IC-756 PRO & IC-775DSP, amps, a tribander and a SteppIR beam along with some wire antennas. This meant we could do M/2 which in turn meant that we could process twice as many trainees.

Next was deciding on which contest to start with. That was easy, it's September, so let’s do CQ WW RTTY. I gotta tell you, RTTY is far and away the easiest intro to contesting for HF newbies. They don't have to know CW, don't have to know phonetics, and tuning to the right frequency is dead easy once the display is understood (it isn't easy on phone or CW).

Next was recruiting and op scheduling for our first test. Fred took care of this while I worked on the session planning. This planning included assumptions about the ops' contest skills (none), Objectives, Strategy and N1MM Configuration. Anyone who knows me would not be surprised to learn that the Plan occupies 10 single-spaced pages.

The material that each trainee was taken through while sitting at the radio consisted of:

- ORIENTATION
- CONTEST FUNDAMENTALS
- RTTY FUNDAMENTALS
- LOGGING ON AT THE START OF YOUR SHIFT
- OPERATING MODES
- S&P (recommended for beginners)
- RUN
- MAKING & LOGGING THE S&P Q
- PUTTING N1MM INTO S&P MODE
- DEMO THE FLOW OF THE Q
- SIMULATE MAKING AN S&P Q
- DEMO DUPE
- TRAINER MAKES SOME ACTUAL S&P Qs
- MAKING & LOGGING THE RUN Q
- PUTTING N1MM INTO RUN MODE
- SIMULATE MAKING A RUN Q
- TRAINER MAKES SOME ACTUAL RUN Qs
- DEALING WITH LOG ENTRY ERRORS
- TRAINEE MAKES SOME S&P & RUN Qs

(I would change the order of some of these next time around.)

SESSION 02 - CQ WW SSB: We had a classroom session for this where everybody brought laptops, we loaded N1MM into them and practiced logging SSB Qs using a recording of ZF2NT. Well, that didn't work very well as he did 400 Qs in one hour so I switched to someone else the trainees would have a chance of logging. We had 9 trainees show up for this one. 526 Qs, 138 Zones, and 98 countries. They were ecstatic!

SESSION 03 - ARRL SS SSB: 6 Trainees 264 Qs 80 sec. A clean sweep and 42,240 points. Fred and I chipped in and bought SS mugs for all of them and had a little presentation at the club.

SESSION 04 - ARRL 10 Meter: 6 ops 280 Qs 116 Mult 110,664 points.

SESSION 05 - NAQP CW: (Yes - CW) 3 ops They all had some CW skill to start with 150 Q's 109 sec 16,650 points.

SESSION 06 - NAQP SSB: 6 ops 259 Qs 107 Mults 27,713 points. Some ops getting used to running.

SESSION 07 - ARRL DX CW: 6 Ops 1271 Qs 257 Mults 978,399 points. Hey, we're getting somewhere!

SESSION 08 - ARRL DX SSB: 9 ops 636 Qs 193 Mults 354,927 points.

SESSION 09 - CQ WPX SSB: 8 ops 316 Q's 100 Cty 49 Zn 119,349 points.

SESSION 10 - ONQP & TARA SKIRMISH: 3 Ops 26 Q's 598 points.

SESSION 11 - FQP: 4 Ops 154 Q's 70 Mults 19,320 points.

SESSION 12 - ARRL VHF: Future.

SESSION 13 - ALL ASIAN DX CW: Future.

OPERATING AIDS PROVIDED:

- Phonetics list - all the common ham ones
- RAC/ARRL Sections Sorted by Section Name, Section Abbrev, and Call Area
- Basic Contest Operating Procedures – There was a separate one tailored to each specific contest. It had all the necessary info to guide the op through the process of making S&P and Run Qs; What to do at the start and end of your shift S&P; Overview Run; Overview Entering the Exchange; I messed up - now what; N1MM Band Map; Basic and Advanced Multiplier Window; Call History.

Operating aids and information about the contest was distributed to each op before the contest so they could study it:

- Contact Points - how many you get for a Q
- Mults - what counts as a mult
- Score - how it's calculated
- Exchange - what it is
- Rules - where to find them

Overall, we had lots of sessions, quite a few ops and quite a lot of interest. Most ops elected 4-hour shifts or longer. Some ops attended pretty well all the sessions, some just came now and then. Fortunately the "Basic Contest Operating Procedures" sheets made it very easy to accommodate ops at any stage in the process. Those with little experience followed the Procedures for the particular contest. Those with lots of experience only needed to refer to them occasionally.

With minor tweaks these same sheets will be useable next year which will reduce the prep work load considerably. The op support consisted of written materials as described above and always one mentor instantly available and usually two, one for each op position.

We now have four ops who can run on SSB, RTTY & CW plus another three on SSB & RTTY. It took much longer than I expected for people to become comfortable running. Some still aren't there. No worries, we'll get 'em next year. It's been an arduous and time consuming process but the results are well worth it.

Without Fred's (VE7IO) tremendous support in volunteering the use of his station for so many weekends this could never have been as successful as it has turned out to be. Our thanks also to Mike, RWØCN who assisted with the mentoring.

Thanks to all of you in the contesting community for putting up with all our fumbling, getting calls backwards and endless fills as we were finding our feet in this totally fun aspect of the hobby.