



the

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edited by  
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*the official journal of the MAD RIVER RADIO CLUB*

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## BIG FISH

Bomb scares and fire alarms have saved you from reading lengthy and perhaps fabricated minutes of the 1986 MRRC meeting at the Dayton Hamvention. W8FN set a new record for brevity: one which your new Fish hopes to equal. Thanks to Randy for a FB year for the Club!

The Dayton meeting saw the passing of an era. KBNZ relenquished (at his request) the books and cash of the MRRC to Jeff Clarke. Ron Harps has been Treasurer for more years than he can remember, or admit to, but kept us financially afloat and provided continuity of leadership which would have been otherwise lacking. We all owe a great Thanks to Ron for his efforts.

Chris Kinzel, N8DET, and his groupies did a whale of a FB job with the MRRC hospitality suite. Early predictions were that we would perhaps make a small profit this year. The suite can put quite a financial drain on the Club and the membership when it is not well administered or well attended. Chris seems to have managed to overcome our prior short comings, mostly through his own efforts. Thanks to Chris for adding to the fun of the Hamvention.

The Field Day plaque was presented to the K3LR/K8MR duo for its dynamic 1985 performance-- a new national record for the 1A category! Congratulations, Tim and Jim. Various groups are setting their plans for taking the Plaque from the LR team. 1986 activity promises to be on a par with last year. PLEASE--- send a copy of your summary sheet to W8LND for the FD write up in this rag.

In this initial issue it is appropriate to say a few words about goals and activities. From my few years of observation it is clear that there is nothing wrong with MRRC that would not be cured by winning a major club competition.

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## CONTRIBUTORS

RANDY FARMER, W8FN

RX BANDPASS FILTERS

DAVE PRUETT, K8CC

PREPARING FOR SWEEPSTAKES-PART I

ARRL--W10D AND KR1R

HIGH CLAIMED ALL BAND - ARRL DX TEST

**BIG FISH CONTINUED**

We have tried various formats in various contests, without too much success. MRRC is, by virtue of its composition, a medium club as defined by ARRL. Attempts to compete in the unlimited category will only find failure. However, we do have a sufficient number of appropriately equipped stations in the club to be competitive in the Medium category in SweepStakes and in ARRL DX. It would be my hope that we can rally around these events and win a gavel or two. If we reach for quality rather than quantity we are sure to succeed.

One factor affecting the decline in our group performance is the notable absence of participation by the over 30 crowd. Putting on a multisingle effort or bringing in a guest op should be very positive in our club score. Please give this Grayerthanmost Fish a hand, and a gavel.

Randy Farmer put out a call for more club identity. In response, arrangements have been made for the production of tee shirts bearing the MRRC newly created logo, front and back. The shirts will be white with black trim. The logo is red and black. My natural bias causes me to believe they look great! The logo will be silk screened and can be put on a baseball cap, jacket or anything else you want. Initially I will only deal with shirts (see order blank in this issue) but will be pleased to furnish details on other garments after the initial push. I'm on the hook for a 50 shirt minimum so don't be bashful.

The pricing of the shirts is on a "manufacturer direct" basis. The club may make a few pennies on the packaging and mailing charge; however, it will be minimal. This is an effort to deal with a perceived identity crisis and is not a fundraising activity. Allow 4 weeks for delivery.

We will of course continue with our regular club meeting schedule. I have asked Dave Pruett to ramrod the Michigan affair. We will continue with Findlay, Dayton and the KBMR Christmas Party if Jim and his growing family are so inclined.

One or two local events may be fun. Don't read meetings. Greater contact between members in close proximity is desirable. W8LND will host one such function in the Fall. Everyone will be invited but it will not be an official meeting.

Having bitten off more than I can chew I will notify you that a Flash will be forthcoming when the time and location of the Michigan meeting are known. Don't forget about Field Day and The Armadillo Run, in July.

73, Joe

\* \* \* \* \*

The MRRC Flash is the newsletter of the Mad River Radio Club, an ARRL affiliated club serving contesters in Ohio, Michigan, Pennsylvania, Indiana, Kentucky and West Virginia. The FLASH may be reprinted in whole or in part provided proper credit is given. Mail all inquiries or submissions to W8LND at the address shown on the masthead. Join the Mad River Net on 3825 Khz at 8:30 Eastern each Monday evening.

Preparing for Sweepstakes - Part I  
NOW is the time for Antenna work  
by Dave Pruett KBCC

Yeah, I know SS is still almost six months away, but NOW is the time to do that antenna work to prepare your station for the November fray. Whether you plan a serious or casual effort, some of the ideas presented here should be of benefit this fall.

One of the reasons for the popularity of the SS is that simple stations can do quite well. Any station in the MRRCC club radius with a tribander and wires is all set. No tribander you say? KBCC did 1028 Qs on CW in 1983 with NO beam and wires at 35' and below. All it takes is the right strategy and motivation, so read on.

When planning antennas for any contest, it pays to consider the propagation and paths to the different geographical areas which you must work to be successful. In SS, the majority of the stations you must work will be within 500 miles. Success in running stations generally depends on choosing a frequency band appropriate for the time of day with an antenna to maximize your signal within the 500 mile circle. Multipliers will generally take care of themselves with the proper operating strategy.

Without a doubt, 40 meters is the most important SS band for a WB, although its character has changed dramatically with the drop in sunspots. With high sunspots, the 30-40 foot high dipole was entirely sufficient, providing nice high angle radiation for short paths, even at night. Those were the good days for the midwest, with 40 useful almost all night and we could work 600-700 Qs on that band.

But those days are gone for a while, at least until the sunspots return. The low dipole is still needed for 40M daytime within the 500 mile circle, but the band changes after sunset. At night, suddenly the closest stations you hear are 1000 miles or more away. The 500 mile circle is gone which might prompt one to move down to 80M. Indeed, that is the correct strategy (particularly on Saturday night) but you can find some decent rate working the West Coast and Rockies on 40 at night with a decent signal. After all, the little guns in W6, W7 and W0 need somebody to work at night.

So what do we need for success on 40M? If you have only one antenna, then a dipole or inverted Vee up 30-50 feet is ideal. Remember, any horizontal antenna up a half wavelength has a big null in its pattern at high angles, which we want to avoid for the majority of our contacts so stay below 60-70 feet. If your station can accommodate two 40M antennas, then try to come up with something to help your nighttime signal by lowering the radiation angle and perhaps a little gain. If you have a 40M beam up 70-100 feet, then you are all set. If not, another dipole up 60' or more will be worth the effort at night. You might talk to KBMR or KBCC about how they mount a 40M wire dipole above their tribander and are still able to rotate the beam. It is important to isolate the 40M antennas from each other, either physically distant or by electrically open circuiting the one not in use. This can be easily done by feeding the antennas with a half wave multiple of coax if you have a non-shorting coax switch, or with an odd quarter-wave multiple if your coax switch shorts the unused outputs.

## SS Antennas (continued)

The next most important band is 80 meters. For the important 500 mile circle, the antenna of choice is a dipole or inverted vee up 40-80 feet. The improvement with height seems to be minor, so don't fret if your antenna is at the low end of this range. If you have some sort of low angle 80M antenna (vertical, delta loop, sloper, etc.) and you can electrically isolate it from the 80M dipole, keep it and use it for W6s, W7s and WOs late in the evening. Again, the western little guns and casual ops need somebody to work at night.

Then there are what I call the "high bands" - 20, 15 and 10M. 10M and 15M are generally "search and pounce" bands, nobody ever seems to work much scatter during SS. They are sometimes good for picking up western VEs, KL7s and KH6s who are only on to give out a few Qs. For this sort of work with current sunspots, any type of beam is satisfactory, and the higher the better.

Twenty meters can often be a different story. With even moderate sunspot levels, the 14 MHz skip zone shortens up enough that running stations can be productive. Often, under these conditions the band will also be open to the eastern Wis so there is some potential for decent rate (at least by Sunday standards). In any case, most any decent beam will work well at heights up to 100'.

In recent years, the activity on 160M has increased steadily. Also, the declining solar activity can often cause even 80M to go long at night. With this in mind, it might be wise to consider putting up a 160M antenna. On 1.8 MHz, dipoles are too big for the typical city lot and don't radiate all that well. Shunt feeding your beam tower makes an excellent 160M antenna. Another good design is the quarter-wave inverted-L (used with much success at K8CC). Random wires are OK in a pinch, but for the times when you are forced to go to 160M in SS you need a good signal, not a puny one.

A few notes about feeding this antenna farm. If your antennas are all fed from an outside remote coax switch, consider feeding your 40M antennas from a separate feedline. This will become crucially important when we discuss station layout and strategy in the months ahead. Also, remember to electrically isolate multiple antennas on the same band.

Next issue we will discuss station layout, including how to use two rigs when you only own one! Also, what accessories to use (and not use) under different conditions. After that, we will go over strategy for before and during the contest, bandchanging, and how to set goals using previous years logs. By that time, you should be ready to go!

Not everyone has the desire to work SS full bore. However, the things we will be discussing will also benefit the casual op by making it easier for him to make more QSOs. This will benefit the club score, which increases activity, and on and on....

See you next issue.



## NOTES ON RECEIVER FILTERS

THESE FILTERS, WITH THE EXCEPTION OF THE 160 METER UNIT, ARE ALL TOP-COUPLED 3-POLE CHEBYSHEV TYPES. THEY ARE ALL DESIGNED TO OPERATE AT AN IMPEDANCE LEVEL OF APPROXIMATELY 1000 $\Omega$ . MATCHING IN AND OUT FOR USE IN 50 $\Omega$  SYSTEMS IS DONE USING A C-TAP ACROSS THE OUTER RESONATORS.

THE 160 METER FILTER IS A 7-ELEMENT LOW PASS DESIGNED FOR 50 $\Omega$  TERMINATION IMPEDANCES. IT WAS NECESSARY TO USE THIS CONFIGURATION DUE TO THE GROSS DEPARTURE FROM 50 $\Omega$  OF THE INPUT IMPEDANCE OF DRAKE R-4C<sub>3</sub>. THE LOWPASS DESIGN IS MUCH LESS SENSITIVE TO THIS MISMATCH AND PROVIDES MORE THAN ADEQUATE PROTECTION FROM 80 METER ENERGY.

THESE FILTERS SHOULD BE BUILT WITH AS CLEAN A LAYOUT AS POSSIBLE. MINE WERE ALL CONSTRUCTED ON COPPER-CLAD PERBOARD STRIPS USING SHORT POINT-TO-POINT WIRING BETWEEN THE PARTS. BE SURE TO ORIENT THE COILS OF ADJACENT RESONATORS 90° TO EACH OTHER. KEEP ALL COMPONENT LEADS AND GROUND WIRES VERY SHORT. A LOW-INDUCTANCE GROUND CONNECTION TO THE CHASSIS OF THE FILTER ENCLOSURE IS MANDATORY.

IF POSSIBLE, ALL THE FIXED CAPACITORS SHOULD BE SILVER MICA. IF SOME OF THE VERY SMALL VALUE COUPLING CAPACITORS CANNOT BE FOUND IN SILVER MICA, CERAMIC TYPES ARE ACCEPTABLE. MICA COMPRESSION TRIMMERS WORK WELL FOR THE VARIABLE CAPACITORS, ALTHOUGH AIR VARIABLES WOULD BE EVEN BETTER. CERAMIC TRIMMERS ARE NOT RECOMMENDED DUE TO THEIR HIGH LOSS AND TEMPERATURE SENSITIVITY.

TUNING THE FILTERS

THE BEST WAY TO TUNE THE BANDPASS FILTERS IS TO USE A SPECTRUM ANALYZER AND TRACKING GENERATOR TO SEE THE SWEPT PASSBAND RESPONSE. SINCE THIS WILL OBVIOUSLY BE IMPOSSIBLE IN MOST CASES, THE FOLLOWING APPROXIMATE PROCEDURE SHOULD GIVE ACCEPTABLE RESULTS:

1. TERMINATE THE FILTER AT EACH END WITH THE APPROPRIATE IMPEDANCE, 50 OHMS IN THIS CASE.
2. LOOSELY COUPLE A RECEIVER TO THE FIRST RESONATOR OF THE FILTER THROUGH A SMALL WIRE PROBE ANTENNA NEAR THE TOROID - MAINTAIN MAXIMUM SPACING POSSIBLE FROM ALL COMPONENTS OF THE FILTER.
3. SHORT THE 2<sup>ND</sup> RESONATOR WITH A GOOD LOW-INDUCTANCE SHORTING STRAP TO COMPLETELY DETUNE IT.
4. DRIVE THE FILTER INPUT WITH A SIGNAL GENERATOR AT THE NOMIAL CENTER FREQUENCY TO WHICH THE FILTER IS TO BE TUNED.
5. TUNE THE 1<sup>ST</sup> RESONATOR FOR A PEAK IN THE DETECTOR RECEIVER OUTPUT.
6. MOVE THE SHORTING STRAP TO THE 3<sup>RD</sup> RESONATOR.
7. TUNE THE 2<sup>ND</sup> RESONATOR FOR A NULL AT THE DETECTOR RECEIVER.
8. REMOVE THE SHORTING STRAP AND TUNE THE 3<sup>RD</sup> RESONATOR FOR A PEAK IN THE RECEIVER OUTPUT.
9. CHECK FILTER RESPONSE AT THE DESIRED PASSBAND EDGES. IF THE PASSBAND IS SKEWED TO ONE SIDE, MOVE THE GENERATOR FREQUENCY SLIGHTLY IN THE OPPOSITE DIRECTION AND REPEAT THE ALIGNMENT PROCEDURE.
10. WHEN THE DESIRED RESPONSE IS ATTAINED, ALIGNMENT IS COMPLETE.

(ALL PARTS FOR THESE FILTERS CAN BE PURCHASED FROM RADIOKIT, BOX 411, GREENVILLE NH 03048, TEL. (603) 878-1033.)

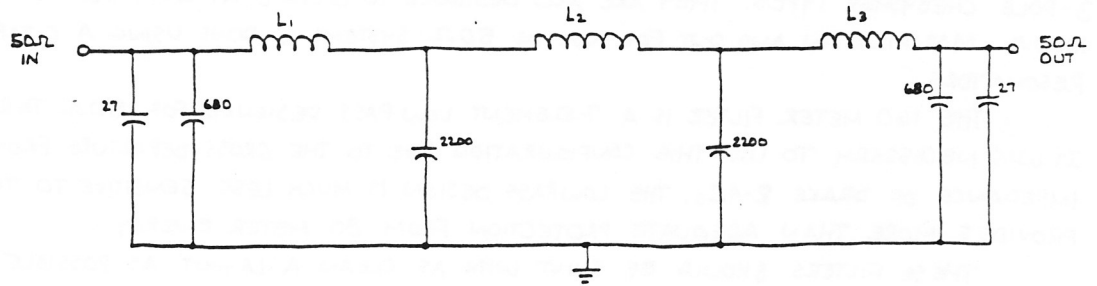
HOPE THIS INFORMATION IS USEFUL. GOOD LUCK WITH THE FILTERS & LET ME KNOW IF YOU ENCOUNTER ANY DIFFICULTIES. 73.



W8FBN

BAND : 160

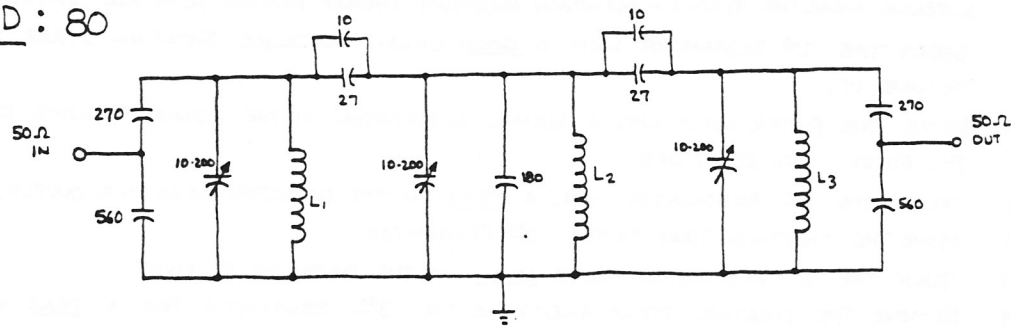
(7-ELEMENT LOW PASS)

L<sub>1</sub>, L<sub>3</sub> : 30 TURNS #26 ON T-68-2 CORE (5.1μH)L<sub>2</sub> : 38 TURNS #26 ON T-68-2 CORE (8.2μH)MEASURED PERFORMANCE

3dB CORNER FREQUENCY : 2.20 Mc

INSERTION LOSS : .2dB

-34 dB @ 3.500 Mc

W8FV  
4-22-86BAND : 80

ALL FIXED CAPACITORS SILVER MICA

L<sub>1</sub>, L<sub>2</sub>, L<sub>3</sub> : 30 TURNS #26 ON T-68-2 CORE (5.1μH)MEASURED PERFORMANCE

CENTER FREQUENCY : 3.750 Mc

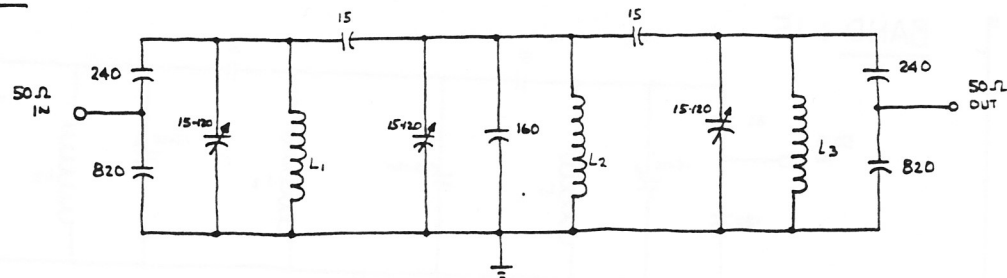
3dB BANDWIDTH : 694 Kc

INSERTION LOSS AT CENTER FREQUENCY : .7dB

-60 dB @ 1.900 Mc

-39 dB @ 7.000 Mc

W8FV  
4-22-86

BAND : 40

$L_1, L_2, L_3$  : 17 TURNS # 22 ON T-68-2 CORE (1.6  $\mu$ H)

ALL TRIMMERS ARCO 406 (15-120 pF)

ALL FIXED CAPACITORS SILVER MICA

MEASURED PERFORMANCE

CENTER FREQUENCY : 7.150 Mc

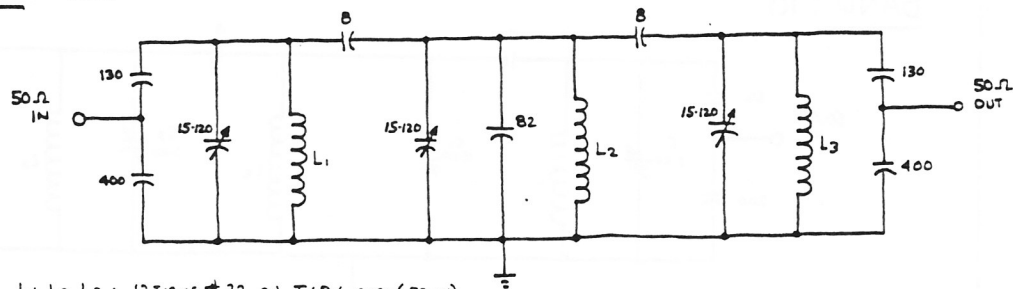
3dB BANDWIDTH : 600 Kc

INSERTION LOSS AT CENTER FREQUENCY : 1.8 dB

-75 dB @ 4.000 Mc

-60 dB @ 14.000 Mc

WBFN  
4-22-86

BAND : 20

$L_1, L_2, L_3$  : 12 TURNS # 22 ON T-68-6 CORE (.79  $\mu$ H)

ALL TRIMMERS ARCO 406 (15-120 pF)

MEASURED PERFORMANCE

CENTER FREQUENCY : 14.175 Mc

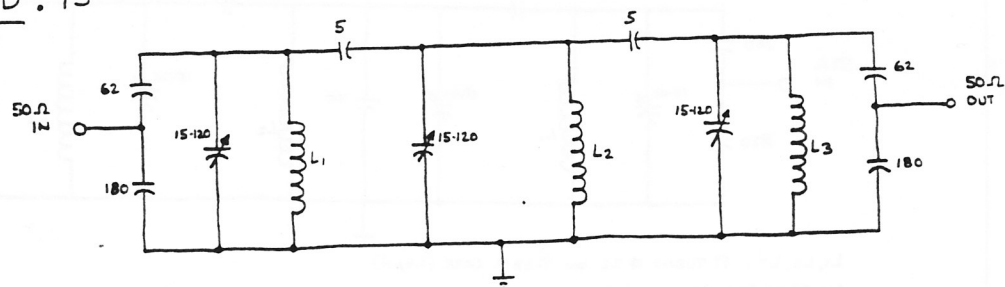
3dB BANDWIDTH : 1.23 Mc

INSERTION LOSS AT CENTER FREQUENCY : 1 dB

> -70 dB @ 7.300 Mc

-60 dB @ 21.000 Mc

WBFN  
4-22-86

BAND : 15

$L_1, L_2, L_3$ : 13 TURNS #22 ON T68-10 CORE (.53μH)  
ALL TRIMMERS ARCO 406 (15-120pF)

MEASURED PERFORMANCE

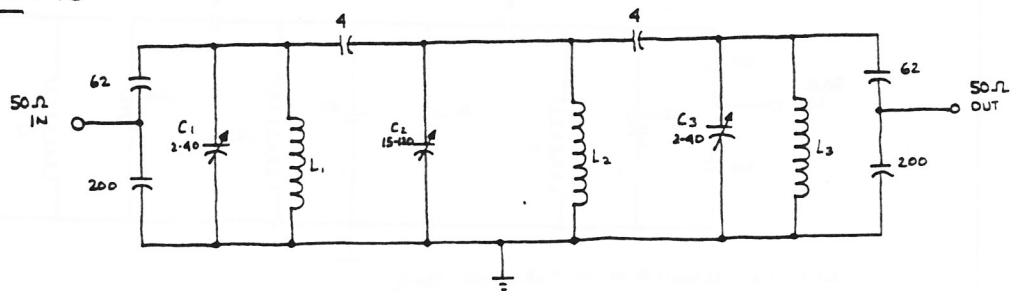
CENTER FREQUENCY: 21.200 Mc

3dB BANDWIDTH: 1.90 Mc

INSERTION LOSS AT CENTER FREQUENCY: 1.2 dB

-65 dB @ 14.35 Mc

-41 dB @ 28.00 Mc

WBFA  
4-22BAND : 10 $L_1$  &  $L_3$ : 10 TURNS #22 ON T-68-10 CORE $L_2$ : 11 TURNS #22 ON T-68-10 CORE $C_1$  &  $C_3$ : ARCO 403 (2.40pF) $C_2$ : ARCO 406 (15-120pF)MEASURED PERFORMANCE

CENTER FREQUENCY: 29.000 Mc

3dB BANDWIDTH: 3.24 Mc

INSERTION LOSS AT CENTER FREQUENCY: 1.3dB

-54 dB @ 21.450 Mc

WBFA  
4-22-86





## ARRL DX S/O AB CW

CW

## ARRL DX MS CW

CALL	SCORE
GRF (KODQ,opr)	1,487,400
K01F	1,413,864
K3ZO	1,393,728
N2LT	1,383,936
K1AR	1,335,084
K3WW	1,198,773
K1DG	1,127,973
W3BGN	1,096,416
K3KG (K4FJ,opr)	1,060,884
K5NA	1,048,605
K1BW	1,047,033
K5ZD/1	933,720
WX4G	873,705
W3XU	872,460
W8ZF/4	863,328
NQ4I	841,122
W0JLC	795,495
W3VT	755,568
VO1MP	592,200
W8LNO	587,292
AA1K	569,829
K3ZZ	554,508
K3TUP	519,651
AK1A	488,898
K4GKD	444,783
K2UR	442,335
N4KMY	414,612
W2XL	407,928
3IXE	402,930
K1VR	402,804
W0WP	400,668
=====	=====

## ARRL DX S/O LP CW

CALL	SCORE
VO1MP	592,200
W2TZ	339,636
KS1J	173,052
K9UIY	126,360
W3HVQ	125,367
K4MF	122,670
K1VUT	107,238
KR8Y	105,216
WB2ABD	95,106
WD4AHZ	88,578
W3ARK	86,130
WA5OYU	81,783
WC5D	76,014
KF8K	69,972
N1CC	62,700
W2EA	57,600
W2KHQ	57,600
W2FTY	53,096
N3OS	50,796
SOH	50,784
A2ASQ	50,232
KW2J	47,250
KD8WX/3	45,198
W3QIR	45,058
K4FPF	43,596
=====	=====

CALL	SCORE
N4WW	1,446,882
K1YR	1,226,016
N2MM	1,162,200
K4VX/0	1,119,525
KM1C	1,102,302
K1IU	947,232
N3AD	826,584
K2NJ	735,315
K1WA	732,555
N4KG	660,240
=====	=====

## ARRL DX M2X CW

CALL	SCORE
W2REH	2,128,386
N5AU	1,851,696
K5LZO	1,308,066
K1XM	977,550
N2RM	953,451
KY1H	837,288
N6ND	755,802
K1RX	500,360
=====	=====

## ARRL DX MM CW

CALL	SCORE
N2ME	2,985,156
W3LPL	2,828,595
K2TR	2,647,890
W3GM	2,170,746
K3OC	1,822,065
N3RS	1,724,514
N6RO	1,101,210
WOATH/9	886,464
K1EA	689,520
=====	=====

73,

W1OD & KR1R  
ARRL Contest Branch



ARRL DX S/O AB PH

**PHONE**

ARRL DX MS PH



CALL	SCORE
K1KI	1,885,482
K3ZO	1,510,758
W9RE	1,241,280
N2LT	1,237,698
WX4G	1,217,640
K5ZD/1	1,134,027
W6MKB	1,095,687
K4VX (KROY,opr)	1,028,160
N2MM	978,600
AK1A	793,914
N6AW	762,570
K1IU	721,752
VE1NG	720,390
K5RX	689,082
VE3XN	570,726
N2IC/O	537,510
K6EID	413,595
KI3L	405,162
K7OX	364,182
KX4R	347,976
W1CWU	331,788
N4MM	331,752
KJ3R	322,095
NGOW	305,184
N3JT	289,440
W3UJ	286,836
K5NW	283,410
WOHBH	274,620
K5MK	263,007
VE2AYU	257,424
KF4HK	256,032
KA5W	254,436

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ARRL DX S/O LP PH

CALL	SCORE
WB2ULI	1,020,672
N4KG	968,175
KU2Q	794,508
WA3SPJ	686,718
W3AP	674,163
K7LXC	660,630
N8CXX	642,864
AK1L	591,528
K2UR	447,387
W2RR	419,016
W6BIP	304,278
WA2LQO	289,938
W8LNO	276,588
N3EC	257,925
KS1N	227,808
KZOC	223,212
KROB	207,405
W2UI	185,484
N6MNB	158,772
KB6JK	158,355

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ARRL DX M2X PH

CALL	SCORE
N6ND	1,982,760
K3II	683,865
KQ1F	555,270
K6TMB	414,990
K5TYP	19,656

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ARRL DX MM PH

CALL	SCORE
K1EA	903,600
KM1C	901,167
KY1H	382,374
W3UM	51,102

=====

CALL	SCORE
VE1NG	720,390
W3UJ	286,836
W2TZ	233,070
KG1D	117,558
WA5OYU	106,533
N6ADK	88,275
K4JHT	85,344
N1CC	72,000
W9KTB/4	65,205
WB3BRF	61,800
W7Yaq	60,066
K3FNW	59,058
KA1ION	55,296
W7LHO	55,200
K2MFY	50,301
W2HAJ	49,551
WA5IYX	48,594
NOFYM	43,326
W2KHQ	41,796
W3SOH	41,580
W7MLJ	39,204
VO1QU	37,800
WA1FCN	36,900
NG9L	32,076
W9NTU	30,336

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73,

W1OD & KR1R  
ARRL Contest Branch

## SHIRT ORDER FORM AND QUESTIONNAIRE

All shirts will be white with black trim. each will be imprinted with the logo on the back, approximately 10 inches in diameter, and on the front, approximately 4 inches in diameter. The logo will be black and red (BLACK ONLY on front). The optional lettering for calls and names will be red. Please return your order to WBLND before July 8.

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

SIZE	XL	L	M	S	price	qty
STYLE-----						
-----SHORT SLEEVES-----					\$6.25	----
-----JERSEY- 3/4 LENGTH SLEEVES-----					7.25	----

## OPTIONAL LETTERING-

CALL ON BACK - \$0.30 PER CHARACTER

CALL \_\_\_\_\_

NAME ON BACK - \$0.30 PER LETTER

NAME \_\_\_\_\_

CALL ON FRONT - \$0.15 PER CHARACTER

CALL \_\_\_\_\_

NAME ON FRONT - \$0.15 PER CHARACTER

NAME \_\_\_\_\_

CHARGE FOR PACKAGING AND MAILING-----\$1.50

NOT MUCH TO GO ON, BUT TRUST ME, YOU'RE GONNA' LOVE THESE SHIRTS!  
WILL YOU HAVE INTEREST IN A JACKET OR HAT?\_\_

THE STOCK SHIRTS SEEM TO RUN A LITTLE SMALL SO YOU MAY WISH TO ORDER  
ONE SIZE LARGER THAN YOU THINK YOU NEED. I WILL ATTEMPT TO ADJUST AS  
WE GO ALONG.

WHAT ARE YOUR THOUGHTS ON WHICH CONTESTS SHOULD BE EMPHASIZED FOR CLUB  
COMPETITION?

WOULD YOU BE WILLING TO HOST A LOCAL GET TOGETHER?

HOW DO WE INCREASE PARTICIPATION ON THE MRRG NET?

WHAT PROGRAMS/TOPICS WOULD YOU LIKE TO SEE COVERED AT MEETINGS?

ANYTHING ELSE?

