

**Yankee Clipper**



**Contest Club**

# Scuttlebutt

No. 59    September 1985

**President**

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**Bill Santelmann**

**Ron Grzelak**

**Charlotte Richardson**

**Paul Young**

**N1AU 617-862-1753**

**K1BW 203-848-3796**

**KQ1F 617-562-5819**

**K1XM 617-562-5819**

## Captain's Cabin

Bill Santelmann, N1AU

I expect your "contest juices" are beginning to flow as the season approaches. I hope your new towers and antennas are ready for battle (mine aren't yet). Your Area Manager will be after you to check the status of your preparations and arrangements for the CQWW. If you need help or operators or a place to operate, let him know. We can win even with the present solar flux of 69 and A Index of 13; conditions may be lousy, but they are lousy for our competition too!

Remember how hard it was to find a president at the last election? I'll make a deal with the YCCC. If we win either the CQWW or the ARRL DX (why not both??), I will offer to run for re-election as President! (I hope you regard that as the incentive it's intended to be!)

Our first meeting of the contest year will be on October 19 at 1:00pm in the Holiday Inn in East Hartford. Plan to have lunch there too! If 15 or more do so, we will save \$25 in rental of the facility. If you know of someone with contest talent, bring him/her along and recommend Club membership at this meeting in order to validate their score for the YCCC.

We will have an updated YCCC Contest Handbook for you written by the top scorers in the Club, replete with log sheets, multiplier check sheets, dupe sheets, and summary sheets for both the CQWW and ARRL contests. We will also view the hilarious videotape "Pileup Busters" from the Kansas City DX Club. Also scheduled is an opportunity to see how our top CW operators break through pileups in an Acoustic Contest run during the meeting. And K1XM will give us a preview of the HC8X operation for the CQWW on the Galapagos Is.

As I write this, shortly after the Mexico City earthquake, I am very pleased and proud to hear so many glowing reports in the media of amateur radio's performance in the early hours of this tragedy. This is certain to increase the public awareness of, and interest in, ham radio.

Finally, Tom, K1KI, and I have had an idea which may be of interest to YCCC members especially, a tour of the Soviet Union next summer with special visits to Club stations there. No plans have been made, but if there is sufficient interest we can investigate the possibility.

## Floating

Paul Young, K1XM

I hope you and your antennas survived hurricane Gloria. I was lucky: some of my antennas moved on the mast, but no aluminum or steel bent or fell from the sky. Other members were not so lucky: K1IU's mast bent (it was schedule 80 water pipe). K1MEM's verticals got bent over, and KA1SR lost a tower. Probably others members lost hardware too, which I have not heard about yet. If you know of someone in the club who needs help getting things back together before contest season, volunteer to help!

I just received the results of the CQ WW 1984, and YCCC lost by 4 million points. That's not a whole lot, maybe one Caribbean DXpedition. Listening to the Sprint convinces me that we can do it this year!

Charlotte and I will be operating from the Galapagos during the CQ WW SSB. We will be part of a multi-multi, with kilowatts, beams, phased verticals, and beverages. We expect to use the callsign HC8X. Please make it a point to work us on 6 bands.

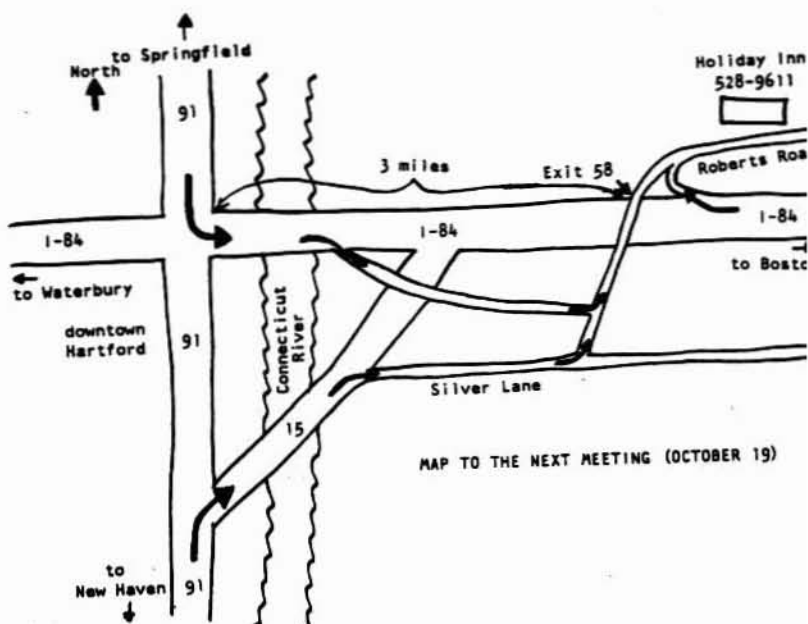
Also Tom, K1KI, will be on as J87DX during the CQ WW SSB. Make it a point to work him on all bands.

One of the major causes of divorce in this country is mixed doubles (tennis). Another major cause is ham radio contesting. So, I am pleased to announce my latest idea for increasing activity in YCCC - the husband and wife multi-op. Quite a few members are eligible for this one, among them W1BK, KA1BRD, KQ1F, K1IJU, K1IU, K1JX, AK1L, W1LXX, K1MEM, K1MM, N1TZ, and W1UQ (That's only listing one member from each couple I know of). To all qualifying members, I offer a challenge - Operate husband and wife multi-op in the 1986 ARRL DX Test SSB. The highest scoring YCCC couple will win a gourmet dinner, provided by Charlotte and myself. The ARRL DX test is far enough away that you have plenty of time to upgrade or to get your spouse to upgrade. All I ask is that both operators do a significant amount of operating (I don't want someone to operate and then to list his or her spouse just to win the dinner).

## October YCCC Meeting

The next meeting will be October 19th at the Holiday Inn in East Hartford, CT (right off I-84) - see map.

The room will cost us \$75. If at least 15 people will be there for lunch, we will get it for \$50. If more than 15 show up, we may get a further reduction. So - plan to arrive for lunch at 11:30, and the meeting will start at 1 pm.



## The W2PV 80 Meter Quad

Bill Myers, K1GQ

I've been searching for a way to improve my 80 meter antenna system for several years. Along the way I acquired the switching system for Jim Lawson's two element delta loop array, from Fred Lass, K2TR. Fred also sent me a copy of Jim's engineering notes, which describe the evolution of his design over the summer of 1978. Although these notes do not define all of the antenna design parameters (especially loop circumference and spacing), I've been able to put together a fairly complete picture of Jim's antenna system, which is described below.

"Quad" is a convenient misnomer; the antenna system is a two-element parasitic array. Each element is a (nearly) one wavelength equilateral triangular loop, with one vertex (the feedpoint) at the top. The loops are identical to permit convenient direction switching. The parasitic element is "tuned" to look like a reflector by shunting the feedpoint with an inductance. This arrangement provides very good gain, broad unidirectional main lobe, and moderate F/B ratio, with reasonable bandwidth. Performance is not too sensitive to spacing and height, so the operating frequency can be moved from the phone band to the cw band by adding inductance in series with the loops. The array radiation resistance is quite high (near 100 ohms), so that losses in airwound coils are negligible.

There are two principal parameters to be specified for the two-element array: the loop perimeter, and the parasitic tuning inductance. Jim selected values for these parameters through a combination of experiments and computer analysis. His goal was to produce a resonant antenna system at the central operating frequency, with the peak in the F/B versus frequency curve also at the central operating frequency. As nearly as I can infer from the notes, the loop perimeter was 254 feet, and the reflector inductor was 4 microhenries. These parameters apply specifically for loops with apex at 152 feet, spaced 40 feet.

I've modeled this antenna using the MININEC program. Figure 1 shows the integrated gains versus frequency for fair ground. "Integrated gain" is the average value of the gain over all angles from zenith to horizon in the plane containing the boom. Integrated F/B is the ratio of the integrated backward gain to the integrated forward gain. I believe this provides a more useful representation of antenna performance on 80 meters, where the wave angles of interest span a very large range. Note that the direction of maximum gain reverses about 125 kHz below the central operating

frequency, where the reflector begins to act like a director. [MININEC seems to produce reasonable radiation pattern predictions for loops, but centered at obviously wrong frequencies, so I left the center frequency undefined in the figure. Also, the MININEC predictions of input impedance are unreliable; but that is another story.]

The maximum peak gain is 11.2 dBi, 50 kHz below the center frequency. The peak gain at the center frequency is 10.8 dBi at an elevation angle of 30 degrees. These gains compare well with a rough estimate of potential gain: 3 dBi loop gain plus 4 dB array gain + 6 dB ground reflection gain = 13 dBi.

Figures 2 and 3 show the H-plane and E-plane radiation patterns at the center frequency. Note that you could claim a very large F/B ratio by selecting 40 degrees and 140 degrees as the forward and backward elevation angles. The fat H-plane forward lobe provides good coverage of DX path wave angles, but not so good for the very high angle (close-in) paths. The broad azimuth pattern is important since the antenna system is difficult to rotate.

The input resistance of the driven loop, at the central operating frequency, is about 100 ohms. Initially, Jim used the multi-impedance tapped Amidon balun to match this to a 50 ohm transmission line. After exhaustive tests, he concluded that this balun was defective in every respect, and changed to the matching system shown in Figure 4. The halfwave balun at the feedpoint converts the 100 ohm input resistance to 25 ohms. The series-section transformer then converts 25 ohms up to 50 ohms. All of these transformer sections are made of RG-8 (RG-213), and cut for 3.65 MHz. Jim calculated the effect of the error in transformer lengths when operated at 3.5 and 3.8 MHz, and decided that the consequent mismatch was unimportant. These length errors do NOT affect the array performance, since the transformers are not part of a phasing system. The SWR data measured by Jim is plotted in Figure 5; note the excellent bandwidth between the 2:1 points.

The central operating frequency is shifted down to 3.5 MHz by adding inductive reactance to both loops. Since the direction switching requires a relay box at each loop feedpoint, it is convenient to include the mode switching relay in the same box, shown in Figure 6. The complete antenna system has three relay boxes: the central box is simply a single pole double throw switch which connects the main feedline to one or the other of the two loops. Jim arranged his relay controls so that the default (no power) condition was NE/phone (with the boom running NE/SW).

This summer, I'm putting a version of this antenna at 115 feet on a new tower. In addition to Jim's parasitic arrangement, I plan to provide for feeding both loops out of phase, which yields a bidirectional pattern. The advantages of this feed are small high angle lobes and simplicity. The disadvantages are somewhat lower gain, and lower input resistance. If I don't knock the tower over while cutting down trees, I'll let you know how it works.

## Joe Krone, WA2SPL, Hospitalized After RF Exposure

Bill Santelmann, N1AU

During the night of the ARRL UHF contest held on the first weekend of August, YCCC member Joe Krone, WA2SPL, was subjected to RF exposure and within 24 hours had been blinded. He was a patient at the Mass Eye and Ear for the following two weeks, during which his doctors were uncertain as to the cause of his blindness. As of September 9, his vision had returned to 20/15 in the left eye, but was only 20/400 (legally blind) in the right eye.

Joe reports that he climbed a tower on Mt. Greylock to make an antenna adjustment during the night when it appeared that he was the only operator. While he was on the tower, another operator appeared and, seeing an EME schedule, proceeded to give a 2 1/2 minute call on 432 MHz using 900 watts. Unfortunately, Joe was at the focal point of the antenna and received an effective 125 KW dose of RF during this call. His vision was soon impaired, and within 24 hours his vision was gone.

His doctors have calculated that this RF exposure could only raise the temperature of Joe's eye about 1/4 degree F, which would not be enough to detach or burn his retina. They suspect that a virus was also involved which may have been triggered by the RF exposure. Joe is now home and experiencing some gradual improvement in his vision. Possibly, nature will slowly restore his sight, but if not, he may try a volunteer program with some new drugs. As a last resort, surgical procedures may be required.

It is not clear why Joe lost his sight, but RF seems to have been involved. It is probably a wise policy to treat RF with great respect and caution, especially as the frequency and power increase.

## Excess Cargo

7 element Wilson 20 meter beam (58' boom) \$250  
(too big for me, used to be up at W2PV)

Ham III/IV stainless steel U-bolts (2) \$4/set

Package: one Rohn 45 torsion assembly \$30  
six 12" x 1/2" eye & eye turnbuckles  
200' + EHS 1/4" guywire

Three 12" x 1/2" eye & eye turnbuckles \$3/each

Johnson lowpass filter \$5

Heavy duty mobile antenna mount (bolts on) free

Contact Tom Frenaye, K1KI 203/673-5429

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Kenwood TS830S with VFO230 digital VFO - \$750.

Heath SB220 linear - \$425.

All in top condition.

Contact John Kaufman, W1FV, 897-5929 (home)  
863-5500 x 4041 (work)

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Package: 40' Rohn 25 tower  
torsion bars and rotor plate  
Ham M  
System 33 tribander

TRS-80 color computer, printer, modem, \$250 worth  
of software, ram-packs 64K \$300.

Contact Scott Bullock, KA1CLX, at NEW address: 20  
Summer St., Northboro, MA 01532

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Kenwood TS830S and VFO240, mint - \$650.

Contact Hal Offut, K8HVT, (203) 655-2837

# W2PV 80 Meter Two-element Parasitic Delta Loop Array Performance Versus Relative Frequency

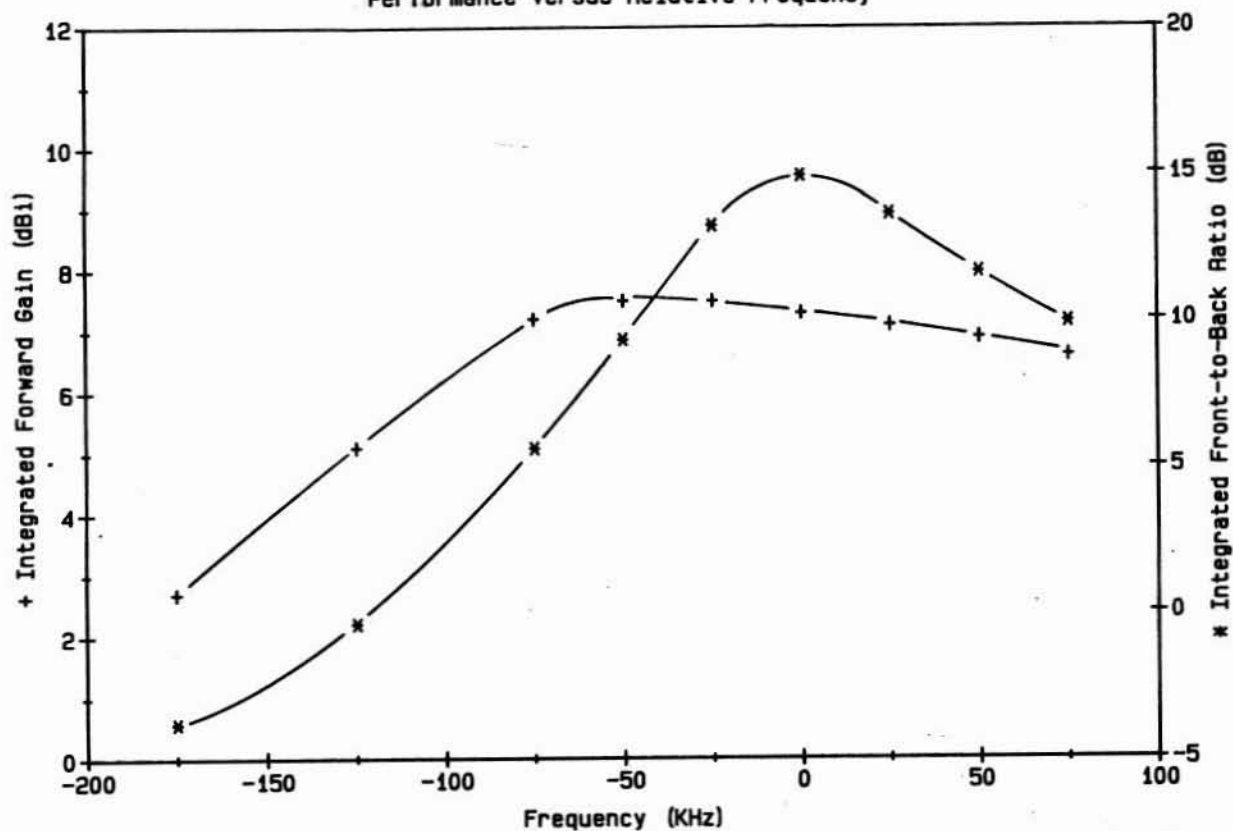


Figure 1.

27 Aug 85 K16Q

# W2PV 80 Meter Two-element Parasitic Delta Loop Array H-Plane Radiation Pattern

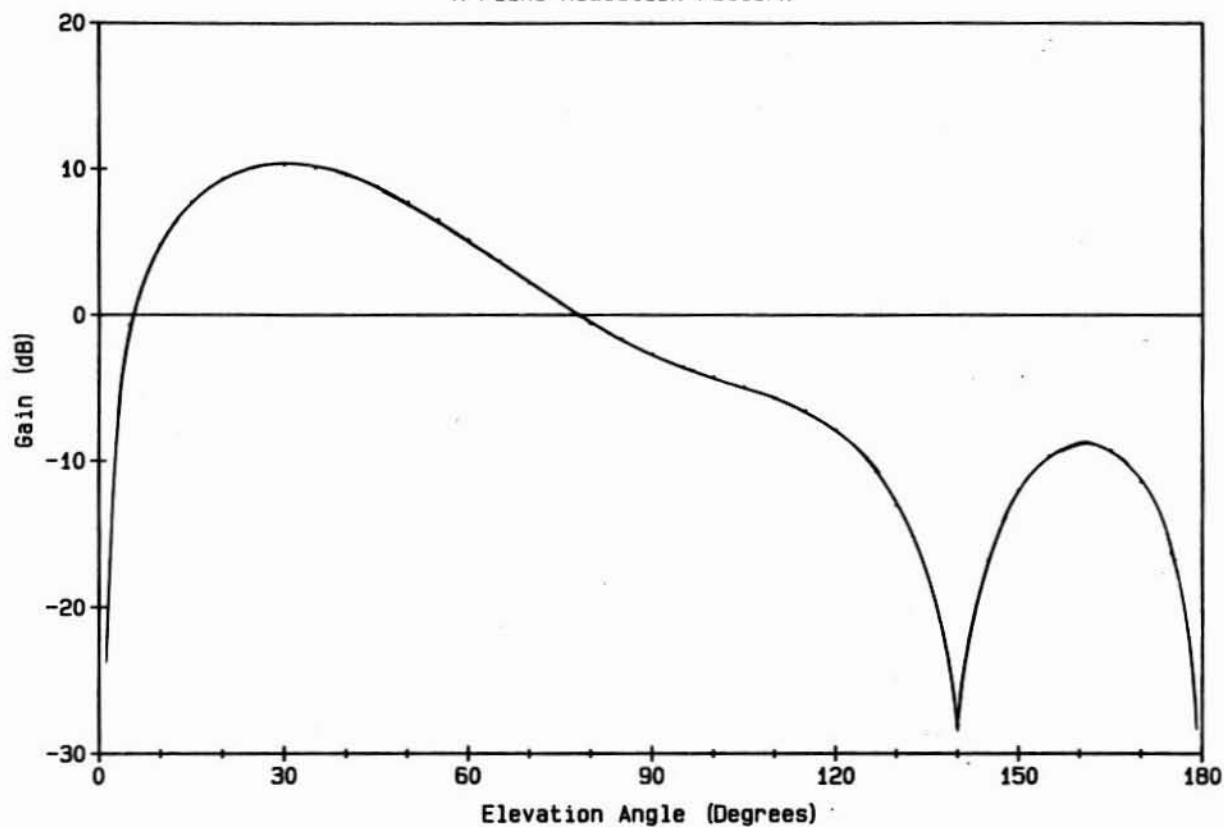
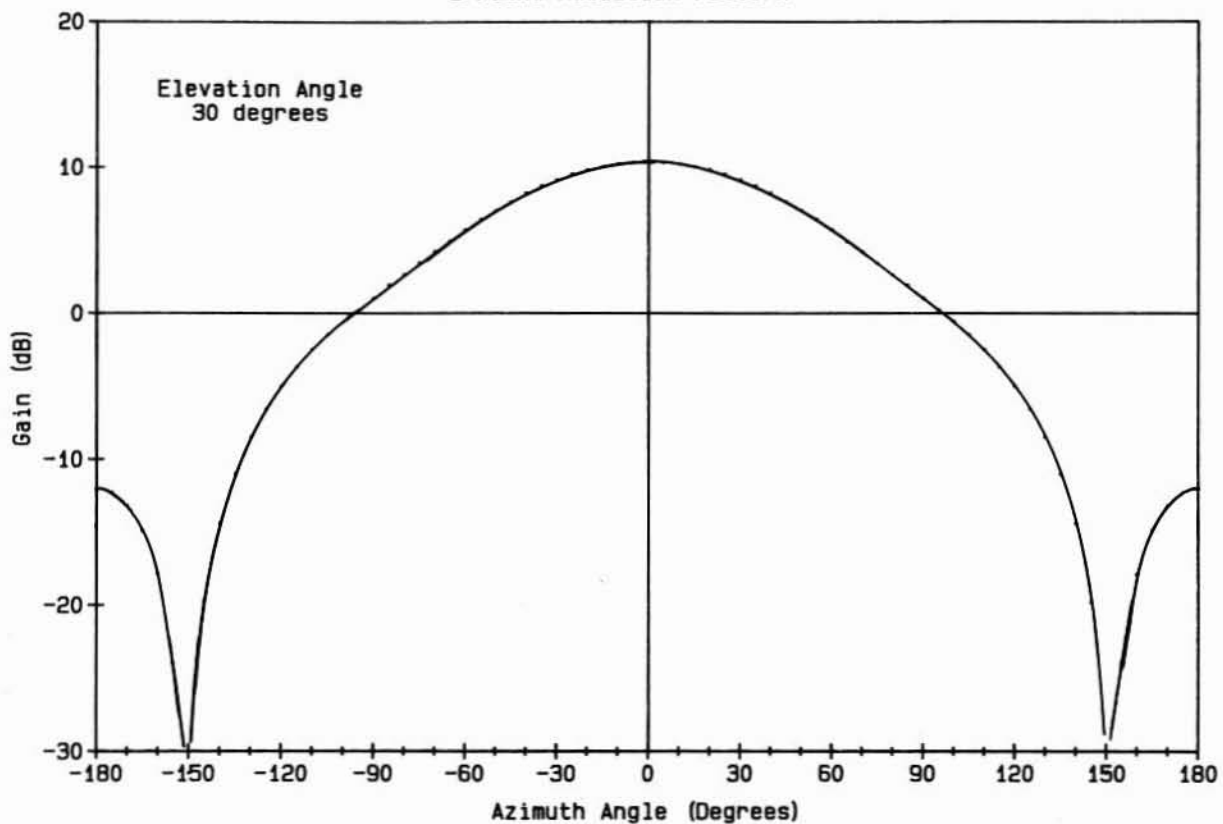


Figure 2.

22 Aug 85 K16Q

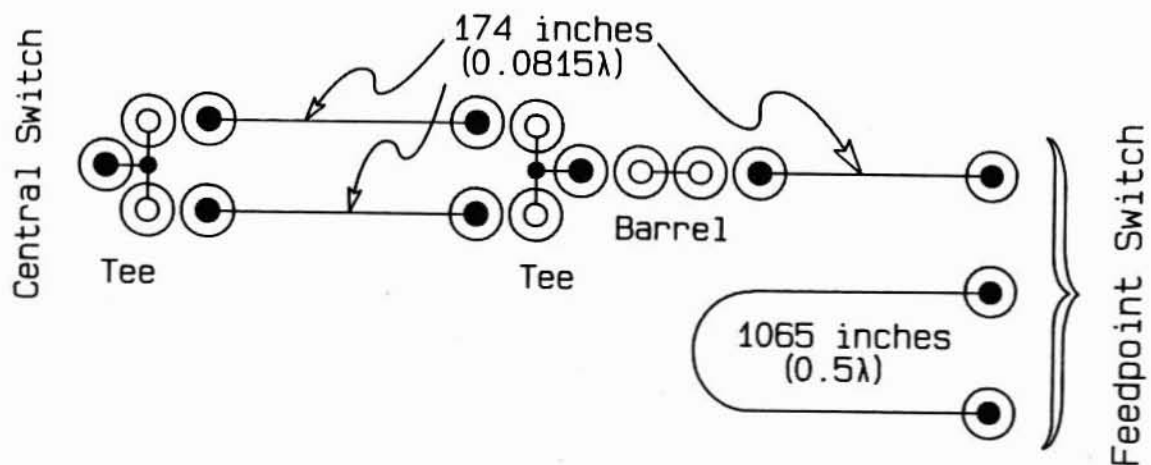
W2PV 80 Meter Two-element Parasitic Delta Loop Array  
E-Plane Radiation Pattern



22 Aug 85 K16Q

Figure 3.

W2PV 80 Meter Two-Element Parasitic Delta Loop Array  
Coaxial Matching Sections



All coax RG-8A/U or RG-213/U

Figure 4.

25 AUG 85 K16Q



# W2PV 80 Meter Two-element Parasitic Delta Loop Array

Measured Standing Wave Ratio

(JLL 24 IX 78)

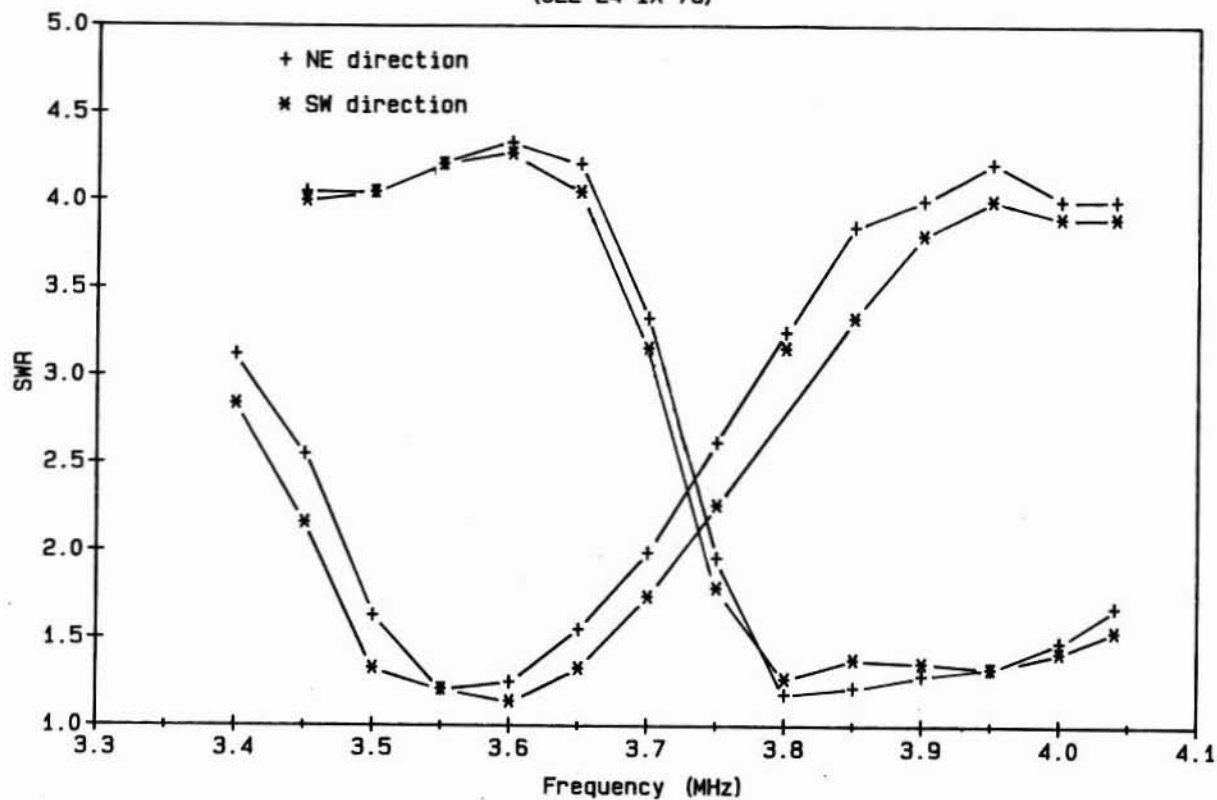


Figure 5.

22 Aug 85 K16Q

## W2PV 80 Meter Two-Element Parasitic Delta Loop Array Feedpoint Switch

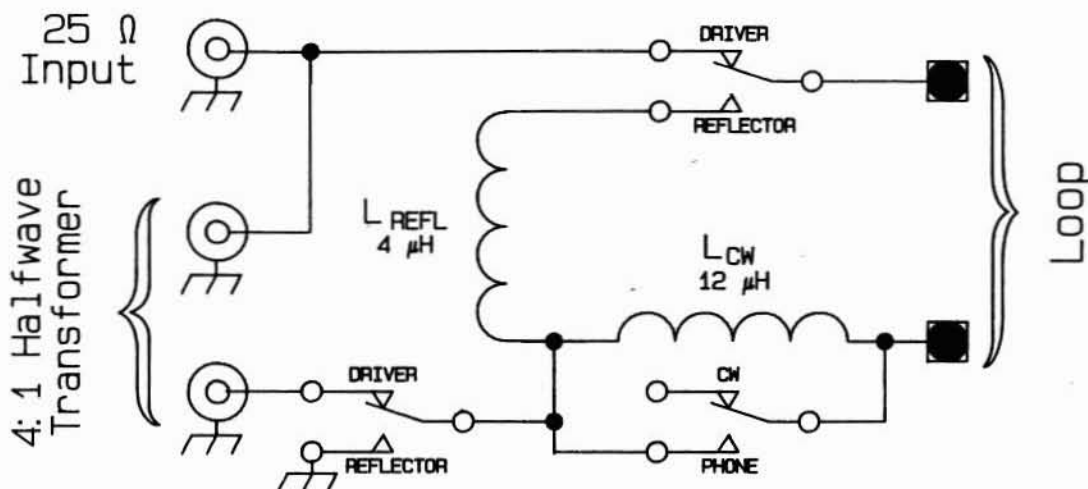


Figure 6.

25 AUG 85 K16Q

## Solving the 160 meter Chaos

Jim Dionne, K1MEM

In August I wrote to 130 hardcore 160 meter operators, including all the holders of 160 meter DXCC. I was concerned that the call for input to the ARRL Membership Services Committee about a 160 meter bandplan in August QST would go unheeded.

The response has been surprising and gratifying. I have received copies of letters sent to the ARRL from throughout the U.S. and from DX stations ranging from VK6HD to 4X4NJ and OZ1LO.

The writers all call for the separation of CW and SSB, and they also realize that voluntary plans have not worked. The ARRL must petition the FCC to establish regulated sub-bands, as exist on all the other bands. Please note that even if the top of the band (1900-2000 KHz) is lost, a CW band of 1800-1840 would be the same percentage of the band as on 80 and 40.

Read the following comments, and then write the ARRL, before the Committee meets on October 4, if possible. I'm sure that Tom, K1KI, who is on the Committee, would love some more reading material.

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4 Sept., 1985

Membership Services Committee  
ARRL  
225 Main St  
Newington, Conn. 06111

Gentlemen:-

This letter is in response to your request for input on 160-meter operation. The purpose of this letter is to propose a 160-meter band plan.

Having been an active ham for over 30 years, I have seen a great deal of change on 160 and the other bands. With regards to 160, my observations lead me to conclude a band plan is necessary for 160 to remain a place for experimentation with antennas and equipment as well as for weak signal DXing.

If you listen on 160 today you will see the voluntary arrangement is not working very well at all. I believe an FCC rule change is needed which would designate the lower portion of the band as CW-only. This action would be similar to regulations presently existing for all other amateur bands.

I feel either 40 kHz or 50 kHz for CW-only would be appropriate. This amount would represent 20% to 25%

of the band, a lower CW-only percentage than most other bands.

Thank you for your attention.

73,

Ralph Green  
W1HT/W1HGT  
160 DXCC Nr. 2

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15 September 1985

Dear ARRL Membership Services Committee:

I am writing in reference to the recent request for input on the 160 meter band plan. Although I have only been on 160 since last October, I have spent a lot of time listening, DXing (DXCC #90), contesting and ragchewing. I have observed the following situation:

1. The 1825-30 window is generally respected except during contests when SSB stations sometimes operate on 1830 and claim they are "not in the window" even though their sidebands are. The window does not cover USSR and other European countries as noted in Table I of the August QST article. These stations generally operate CW in the 1830-40 area which often creates a conflict with SSB stations ragchewing in this area.

2. 160 is still a gentleman's band but some old timers' definition of gentleman means that you should not ask them to move from the frequency they've been using for ragchewing on SSB for years. There are even a few stations that ragchew below 1825 on upper sideband.

3. I hear a few RTTY signals in the 1830-35 area although this is fortunately limited so far. The 1900-2000 area is generally only lightly used in the Midwest (desireable given PR Docket 84-874??).

4. Contests are a problem whether you are in the contest or not. This is especially true for the ARRL 160, CQ 160, and 73 SSB contests which are highly oriented to domestic contacts. Because of no mode segmentation, there is no refuge for the non contesters. Furthermore, for contest participants it is virtually impossible to hear any DX stations on SSB because of the wideband nature of SSB QRM generated by S9+40dB signals. Even if spurious signals are down by the required 40 dB, we still have S9 noise in the window because of the close proximity to the window. Because of the voluntary nature of the windows they are often abused, e.g. SSB CQing on 1830.

The current situation sometimes borders on chaos



which is commonly defined as "a condition of utter disorder". I propose we bring order to the band by mandatory mode segmentation as we have on every other HF band including 12 meters. Specifically, I propose:

1. 1800-40 CW only.
2. 1840-2000 SSB and other wideband modes (RTTY included).
3. Voluntary windows of 1825-1830 or 1835 (could be used by DX stations on SSB, listening for USA on SSB above 1840) and 1907.5 to 1912.5.

This seems like a simple solution which would solve many of the problems noted above. I even suspect it would reduce complaints to the FCC regarding interference, intentional or otherwise. Mode segmentation works well on every other HF band and must be seriously considered given the increasing population on 160. Let's face it, the gentlemen's agreement worked well when there was little activity on the band, but it cannot cope with the rapid influx of new stations (myself included), the ready availability of transceivers with 160 coverage and the lifting of power restrictions.

Please act with expediency. Every day on 160 with the excellent propagation brought about by low solar activity is precious! Let's bring some order to an otherwise great band.

73,  
Bill Tippet, W0ZV  
Life Member

## QST DE WIAW

HR IARU Region II Bulletin NR 106-E  
Newington CT, Sept 11, 1985

To all member amateur societies region II/ all radio amateurs

The following information has been submitted by the Region 2 coordinator for the IARU monitoring system, ML Gibson, W7JIE.

On 7000.3 and 7000.5 kHz a station is sending a CW id as 4A4 with two separate transmitters at 18 words per minute. No traffic has been heard.

On 7050 unknown foreign language transmissions It is claimed to be radio Xinjiang, in China.

On 7060 every hour on the hour, hand key and tape identifying itself as SGJ.

7080 foreign language broadcast for 30 minutes starting at 1530 UTC.

7095 Radio Beijing. Please help on this one.

7216 UMS station has been heard continuously in direct violation of the ITU as well as on 14141.

Jamming signals are being reported on the following frequencies: 7015, 7020, 7040, 7045, 7070, 7085, 7102, 7105, 7120, 7140, 7150, 7215, 7220, 7250, and 7270.

From this report, it is very obvious that IARU must continue to work in eliminating all of the interference to the amateur service on 40 meters. Each and all of you can help by listening and reporting as many intruder signals on this band to the IARU society in your country. These reports will be processed.

LU4AA/B is on the air. This new 14 MHz beacon entered into operation this past weekend and can be heard on 14.100 kHz every 10 minutes starting at 08 minutes past the hour. Reports of the beacon would be very much appreciated by both the Radio Club Argentino and the NCDXF.

The HK4LR/B beacon should be on the air shortly and we will let you know the exact conditions of this beacon as soon as they are made available to us.

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### CW

#### YCCC Members:

K1KI	273	38	10374
K1EA	253	37	9361
W1WEF	248	37	9176
K1AR	258	35	9030
W2RQ	242	37	8954
K5ZD/1	247	36	8842
KZ2S	211	40	8440
K1RX	219	37	8103
K1ZM	225	36	8100
K5NA/2	225	33	7425
K8HVT	175	32	5600
KM1C	162	?	
K1GQ	160	?	
K2TR	154	32	4928
K1DG	129	?	
K1YRP	103	25	2545
KT1O	91	?	
K1MEM	31	16	496

#### Non-YCCC Members on YCCC Teams:

KA1GQW	120	?
K1ZZ	69	23
W1AW	30	?
(WA1MBK)		
K1RM	?	?

#### YCCC Members also QRV:

K1BW	W1PH	K1XM
W1CWU	K1RQ	N2GC
KA1DWX	K1SA	N2JJ
KG1E	AB1U	K2VV
W1FM	K1VUT	AI3E
KB1H	KB1W	WB8TDA
KA1O	W1XK	
KM1P	KA1XN	

#### Non-YCCC:

K5RC	276	43	11868
(K5GN)			
N5JJ	272	42	11424
N5RZ	289	39	11271
N6TJ	273	41	11193
N6TR	279	40	11160
KR0Y	289	38	10782
N2IC	281	35	9835
N2AA	242	?	
K9ZO	235	?	
N7NG	220	41	9020
W8UFE	207	34	7038
K9GL	227	35	7945

W9YT	188	?
AC9C	185	?
K5QY	?	?

### SSB

#### YCCC Members:

K1KI	289	43	12427
KG1E	220	?	
W1WEF	217	38	8246
K2TR	215	36	7740
K1DG	194	39	7566
K1AR	173	41	7093
K8HVT	166	31	5145
KM1P	142	?	
K5NA	133	31	4123
KA1SR	110	32	3520
K1RX	223	?	
KA2AEV	50	22	1100

#### Non-YCCC Members on YCCC Teams:

#### K1THP

#### YCCC Members also QRV:

KM1C	K1XM	K1YRP
AK1A	KB1H	W2RQ
K1YR	K13W	WB8BTH

#### Non-YCCC:

N6RO	340	46	15640
K5LZO	314	47	14758
W9RE	323	?	
KW8N	322	?	
N6TR	280	48	13440
N2IC/0	305	41	12505
K5MR	300	39	11700
N5RZ	278	42	11676
WB5VZL	293	39	11427
N5DU	283	40	11320
N2FB	278	39	10842
KT3M	261	41	10701
W2YF	291	36	10476
K9ZO	274	36	9864
W3YY	244	37	9028
AC9C	240	36	8640
N8ET	235	36	8460
WC4E	212	39	8268
N0BSH	211	?	

## FCC Rules on PRB 1

ARRL Bulletin NR 78 from ARRL headquarters  
Newington CT September 18, 1985  
to all radio amateurs

In an FCC news release dated September 18, FCC announced favorable action on PRB 1, the League's request for declaratory ruling preempting local antenna ordinances. In the September 16 action, FCC declared a limited preemption over state and local regulations, stating that such regulations which preclude amateur radio communications are in direct conflict with federal objectives and must be preempted. FCC declared that local antenna regulations must reasonably accommodate amateur radio communications and represent the minimum practicable regulations to accomplish the purpose of the local authority. See the ARRL Letter and QST for further details.

## QSL Badges

The following people have not picked up their QSL badges:

KA1XN  
KM1C  
KB1T  
AI1S  
NIACU  
KA1R  
AB1U

If you find yourself on this list, see Charlotte, KQ1F, at the next meeting.

## Flakey Ideas

Paul Young, K1XM

As many of you know, Wayne Green, W2NSD, is no longer associated with 73 magazine. So as to ease your withdrawal symptoms (and because you didn't write enough articles for this Butt) I am starting a new column of "flakey ideas". Please contribute your best amateur radio related ideas. To start things off, I hereby present some of my own flakier ideas:

I don't like the idea of the ARRL taking over call sign administration. It's like getting my vanity plates from the auto club. I notice that the state is in no hurry to get out of the license plate allocation business. The reason is simple - the state makes money on vanity plates. I think the FCC should do likewise for vanity callsigns. Currently renewal of one callsign is free, and so is getting the next callsign in the sequence. That's fine. But if I want to trade for a new 1X2, there is no reason why I shouldn't be charged for the favor. In fact, the cost should be high for a 1X2, since the demand exceeds the supply. Perhaps a normal 2X3 should go for \$50 if I pick the call. For a 1X3, maybe \$100.00, and for a 1X2 or 2X1 maybe \$500.00. As long as we are trying to pay off the national debt, perhaps other, more interesting calls could be made available - a 1X1 callsign (such as "K1A") for \$5,000.00, a 1X0 (such as "K1") for \$50,000.00, and for the first three applicants with \$500,000.00, the special callsigns "W", "K", and "N". Just think of it in contests, "QRZ TEST K". Seriously, the government isn't going to be able to pay off the whole deficit by selling callsigns, but why should they GIVE a potentially profitable business away to the ARRL?

Next issue, I will explain why I am in favor of a no-code ham license, and why the ARRL is blowing it on 900 MHz.

The **Scuttlebutt** is the newsletter of the **Yankee Clipper Contest Club** and is mailed about nine times per year to all paid up members. Dues are \$10 per year, payable 1 April with a grace period through 30 June. Non-members may subscribe to the **Scuttlebutt** by sending \$10 to the Treasurer: Charlotte Richardson, KQ1F, 11 Michigan Drive, Hudson, MA 01749. Subscribers who subsequently become members will be credited as having paid dues.

The **Yankee Clipper Contest Club** (an ARRL Affiliated Club) holds four official meetings per year, on Saturday afternoons in March/April, October (at the New England Division Convention when possible), November/December, and January/February. The next meeting will be in the Hartford area on October 19, 1985. Attendance at an official meeting is required in order to become a member. Club members congregate on 3830 Khz or 1900 Khz Monday evenings: many routinely monitor these frequencies other evenings as well.

Rosters are mailed to all paid members each summer. For more information and/or assistance, contact the area manager nearest you on the following list:

Area	Call	Name	Home	Work
CT/RI	K1RX	Mark Pride	(203) 271-3096	(203) 265-8825
EMass	W1FJ	Al Rousseau	(617) 598-3744	(617) 599-7500x173
WMass	K1RQ	Dana Cobb	(413) 655-8096	(413) 655-2797
VT/NH	KM1C	Bill Pedersen	(603) 673-1678	
ME	K1SA	Bernie Cohen	(207) 773-6589	(207) 797-3585
NNY	K2RD	Ira Stoler	(518) 439-5804	(518) 445-8474
SNY/NJ	K2EK	Bill Gioia	(914) 221-1672	(212) 888-2102

YCCC  
11 Michigan Drive  
Hudson MA 01749

FIRST CLASS