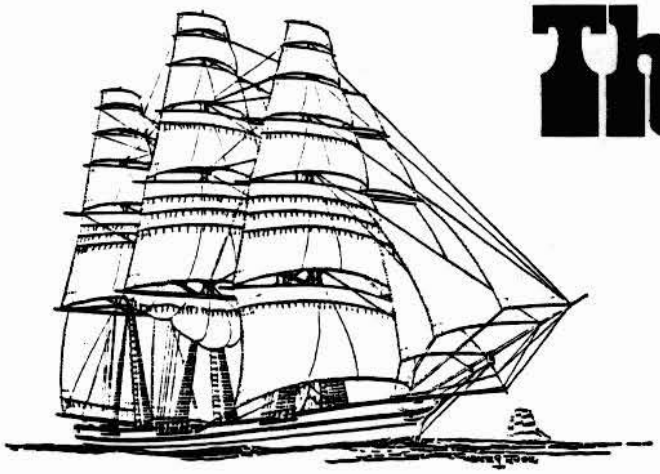


The Scuttlebutt

yankee clipper contest club

no. 37 November 1981

CQ WW PHONE

➡ 100 MEGAPOINTS ⬅

Captain's Cabin

Well boys (and girls), I'm real proud of you. Conditions were pretty good except for absorption on the low bands, and multipliers were plentiful, but our phone aggregrate beats our *total* 1980 WW score, and is an *incredible* 3 times bigger than the '80 phone aggregate!

Don't get big-headed yet, though. True, we are slightly ahead of FRC (and although NCCC isn't talking, they had many expeditions), but remember what happened last spring. We can't win with a ho-hum effort on cw! The weekend following Thanksgiving is always tough to negotiate, what with family commitments and all, but 10 to 20 well-chosen hours of operating will yield a very important score for the club if you can't make a all-out effort. Run Europeans both mornings on 15 and 10, and hunt multipliers off and on at others times on all bands to make a big score in minimum time.

The Convention meeting October third drew over 100 attendees, and has received rave reviews. In fact, the only complaint (besides grumbles about the "long" drive) was from the speakers - they all wanted to listen to the other talks instead of giving one. Among the many highlights - AA2Z presented a number of the super new ARRL plaques, including two to K1JX and an unannounced special (sponsored by the HQ contest crew) for the multiplier hound, K1KI. If you missed the meeting (and too many of you did!), it's your loss; it was the best meeting we've ever had. Special credit is due to Ginnie, WB1AVA, for outstanding efforts in organizing the meeting place and rounding up the props. If she and her fiancee don't join voluntarily pretty soon, we're going to have to invent honorary memberships!

Meeting Announcement: The Fall YCCC meeting starts at 1 PM Saturday, December 5, at the Polish Naturalization Independence Club (PNIC) in Worcester, MA (see map elsewhere in this **Butt**). Please make every effort to get your scores to your Area Manager before the meeting (*you* call *him* - you can't make QSOs without transmitting). At the meeting we'll recap aggregate and individual WW and SS performances. In keeping with the season (and due to general exhaustion among your leadership), the remainder of the program is loosely defined as "party". Between toasts, KR2J will be accepting orders for the new club tee shirt.

On raw scores, YCCC stations top the WW phone single-op and multi-multi categories, and the multi-single race is too close to call. Let's sweep the cw competition too, and become the club to beat in the WW!!!!

de K1AR

Ponderings From The Poop Deck

I intended to wait until I reached the absolute minimum in my biorhythm cycle, then write a nasty paragraph about paying dues. Instead, I'm tweaking the mailing label program. Computers are entirely without emotion, so you can be certain that if the label on this issue reads "FEES NOT PAID", you *will not* receive any more **Butts** until N1TZ receives your $10 check. Those receiving complimentary copies will also be automatically purged after each official YCCC meeting.

I've had a grand total of one inquiry about the unexplained graph in **Butt** 36. Since everyone evidently either understands the plot or doesn't care, I won't fill in the details (whew - not sure I can!).

This newsletter has become a source of amusement for several of our members, who delight in bringing errors to my attention. In some instances, the screwups are important. In **Butt** 35, "Poop Deck", third paragraph, Kk21ZZ is, of course, K1ZZ, the k2 should have been enclosed in brackets to make it a DECset command. Dave has a lot of pull, but I doubt that he would deliberately finagle a call like that!

Also in **Butt** 35, in N2NT's article, I made two errors. In step 2 of the calibration procedure, the frequencies should be 14.0000 and 13.9992, or 14.2000 and 14.1992. In the schematic, the value of C3 should be 4.7μF, not .47μF. This circuit *will not* work with the wrong value (demonstrated by K1AR).

Finally, the calendar in **Butt** 36 has the ARRL 10-Meter and 160-Meter contests reversed, but the YCCC meeting date *is* right.

I'm amazed how new (to me) dodges keep surfacing in the quest for ever-higher scores. In the CQ WW phone test, MCs were heard bringing multipliers to P41C's frequency and even "assisting" in the QSOs when needed. Perhaps my New England-style independence makes me biased, but lists and so forth are an abomination in casual DXing, and their appearance in the contest scene makes me ill.

de K1GQ

Minutes

YCCC Meeting October 3, 1981

The meeting was called to order at 2105Z by President, John Dorr. First order of business was to enroll new members. The following amateurs were unanimously elected to join the crew:

KK2A	Bruce Hamilton
N2AIF	Seymour Miller
KA1CLV	Barry Dutcher
W1FV	John Kaufmann
WA1GDX	Bruce Lomasky
KA1GHR	Charlotte Richardson
K1KI	Tom Frenaye
K2RD	Ira Stoler
K3UA	Phil Koch
AG9V/1	John Ackermann
K1WW	Ray Crites
K1XM	Paul Young

WA2OVE reported on items for club members. These included YCCC jackets (unlined - $9, lined - $12) and YCCC tee shirts ($2.50). Considerable interest was shown in the tee shirts, and Bob will continue looking into it.

The Great Circle Beam Heading Contest, held during K1KI's talk earlier in the day, was won by K2VV. John was awarded a DX toothbrush.

Winners in the raffle held by K2OY and W1XK included:

K1HI	Amateur Radio license plate
K1EB	ARRL Antenna Handbook
K1HI	ARRL Antenna Anthology
W2GD	Repeater Directory
KA1CLV	ARRL Operating Manual
W1ZT	ARRL Operating Manual
K2OY	ARRL Flag patch
WB8BTH	ARRL Necktie(!!)
KA1CLV	20M Long-John yagi*

*Donated at cost by WA1TZV

A log dupe-checking service was offered by K1KI. Requirements are that the log must be:

from a new member, or
1000 QSOs CQ WW CW, or
1200 QSOs CQ WW SSB, or
900 QSOs SS CW, or
1100 QSOs SS SSB, or
log won't be submitted otherwise, or
I'll make too many mistakes, or
2 cents/QSO

Logs must be submitted to Tom within 1 week after the contest, and will be mailed back to the sender, or in the case of SS, hand-carried to ARRL Hq.

A "contest weekend update" skit was performed by K1DG, K2WR, K1DH, K1AR, K1KI, and N2NT.

WB1AVA was thanked for all the work she put in to make the Contest Convention a reality.

K1AR wrapped it up by saying that he feels it's entirely possible for YCCC to make over 100 million points in CQ WW and that we are in a strong position to win it. Meeting was adjourned to pizza at K1KI.

de AK1A

New Crew

Bruce, **KK2A**, formerly K1PTE, gets out from his QTH in Pleasant Valley, NY using either a Yaesu FR101/FL101 pair or a Kenwood TS-120 and an FL2100B amplifier. His 80' tower has a TH6DXX as well as dipoles for 40m and 80m.

Seymour, **N2AIF**, does some of his contesting from K2VV. Ex-WA2KHI, Seymour uses a TS820 and a TA33Jr at 40' and an 18AVT vertical from his station in Rennsalaer, NY.

KA1CLV, Barry, from Marlboro, MA, uses an HW101 to an assortment of antennas, including a 3-element 10m beam, 3-band vertical, and 40m and 80m dipoles. He now has a 5-element 20m beam which he won in the raffle at the October YCCC meeting. Barry is also a member of SNEDXA and the Algonquin ARC.

John, **W1FV**, lives in Arlington, MA. His station consists of T-599/R-599 separates, SB200 amplifier, and a tri-band quad at 45', as well as assorted dipoles. John's old call was WA1CQW. John operated 20 meters at K1OX during the CQ WW SSB this year.

Bruce, **WA1GDX**, is the proud owner of a Collins KWM380. His West Hartford, CT station also includes a Drake TR7 and a Telrex TB6 at 60' on Rohn 45.

KA1GHR, Charlotte, lives in Hudson, MA and has a TS-820, 75S3B and R599VD. The antennas include a TA33 at 25' and a TH6DXX at 90' as well as dipoles. The amplifier is an SB220. Charlotte works for Digital Equipment Corporation.

Ira, **K2RD**, uses a TS830S and a Clipperton L amplifier from his Glenmont, NY home. His 45' tower holds a 4-element 20m beam, 40m vertical, 160m dipole, and an 80m delta loop. Ira's old call was WB2RDO.

Phil, **K3UA**, from Coraopolis, PA uses a TS820, R820, 75A4, and SB220 to generate those top SS scores. He has a TH6DXX on a 40' crank up tower and 40m and 80m inverted vees.

AG9V, John, lives in Peterborough, NH. John has a Collins S-line and an SB220, but is still working on getting a tower and antennas up. As does every other ham in Peterborough, John works for **73 Magazine**.

K1WW, Ray, lives in Merrimack, NH and is KA1VQ's dad. Ray's station is a Drake TR3C/R4C/TR6, Henry 2K4, and a 4-element tribander on a 54' crank up tower. Ray also has 40-80-160 dipoles and several VHF beams. Ray works for the Satellite Tracking Station in Bedford, NH.

Paul, **K1XM**, lives in Hudson, MA. Paul has a TS820, 75S3B, R599VD and an SB220 amplifier. The 90' Rohn 45 tower holds a TH6DXX and a TA33. His old call is WA1OCU. Paul works for DEC (where else?).

K1KI, Tom, lives in Unionville, CT and is well-known to all of us for his stint at ARRL Hq. Tom's station is a TS830S and TL922 amp. His 90' tower holds 5-element 10m and 15m yagis, a 4-element 20m yagi, and dipoles on 40m, 80m, and 160m.

de AK1A

Roster Updates

The following members have been dropped from the Roster for one or more of the following reasons: delinquent dues, absenteeism, moved and/or unknown to the Post Office, expressed disinterest: N1AAP, N1AFC, WB1AUL, K1BU, KA1ESR, N2FB, K1LL, K1IR, W1ZA, K1LOM, K1OT, K1SB, K1TK, K1WB, K2DW, K2PH, K2ZM, KA1CB, WØMHK, W1CWU, W1DYH, W1RT, W1UA, WA1YOJ, and WB2JSJ.

Further roster updates are as follows:

N1ABX	now KD1U
N1BBV	now KA1VQ
WB8BTH	P.O.Box 421 Peterborough, NH 03458
K1DH	Box 90 East Hartland, CT 06027 home phone: (203) 653-2295 work phone: (203) 683-1895
K1EB	home phone: (203) 274-1246
K1FWF	home phone: (617) 562-3045 work phone: (617) 467-6713
WB2FZO	now KR2N
WB1GZD	now KA1RE
WB1HJF	now KF1V Daniel Webster College University Drive Nashua, NH 03063
WA2OVE	now KR2J
N8RK	P.O.Box 421 Peterborough, NH 03458
K1SA	work phone: (207) 797-3585
WB2SJG	now KQ2M
K2VV	home phone: (518) 843-3897
WA1ZAM	last name Landry

New Members

KK2A
Bruce Hamilton
RD4 Tyrell Rd.
Pleasant Valley, NY 12569
home phone: (914) 635-2842
work phone: (914) 463-5960

N2AIF
Seymour Miller
Miller Road RD1
Rennsalaer, NY 12144
home phone: (518) 286-1328
work phone: (518) 457-2540

KA1CLV
Barry Dutcher
114 Linda Circle
Marlboro, MA 01752
home phone: (617) 481-0930
work phone: (617) 258-3931

W1FV
John Kaufmann
993 Mass. Ave. #305
Arlington, MA 02174
home phone: (617) 646-4142
work phone: (617) 862-5500 x208

WA1GDX
Bruce Lomasky
104 Lyman Rd.
West Hartford, CT 06117
home phone: (203) 236-6259
work phone: (203) 236-6250

KA1GHR
Charlotte Richardson
11 Michigan Drive
Hudson, MA 01749
home phone: (617) 562-5819
work phone: (617) 467-7376

K2RD
Ira Stoler
62 Brightonwood Road
Glenmont, NY 12077
home phone: (518) 439-5804
work phone: (518) 445-8474

K3UA
Phil Koch
122 Lang Drive
Coraopolis, PA 15108
home phone: (412) 262-2739
work phone: (412) 777-7076

AG9V/1
John Ackermann
P.O.Box 421
Peterborough, NH 03458
home phone: (603) 525-3796
work phone: (603) 924-7296

K1WW
Ray Crites
Thomas Rd.
Merrimack, NH 03054
home phone: (603) 424-7397
work phone: (603) 472-3911 x370

K1XM
Paul Young
11 Michigan Drive
Hudson, MA 01749
work phone: (617) 467-7165

de AK1A

We Got Some Mail!

Dear Bill,

I was reading K1ZZ's article in the November '**Butt** and found that I strongly disagree with the philosophy described therein.

First, let me say that I plan to subscribe to **QEX**. I feel there is a definite lack of technical articles, particularly now that **Ham Radio** is becoming more non-technical. Although I question the idea of the ARRL producing this magazine (as opposed to an independent group) I do not disagree with Dave about this specific case.

The generalization of this is what has me worried. Consider the following scenario:

The year is 1985. ARRL dues have remained stable at $25.00 per year. **QEX** is an additional $14.00 per year (I think that's what it was - I don't remember the price, and when I called the ARRL to ask, the secretary had never heard of **QEX** and could not find anyone to connect me to). The contester's mini-magazine (QRM) costs $10.00 per year, and the competition has put NCJ out of business. The traffic handler's mini-magazine (QTC) is also $10.00 and has replaced the CD Bulletin. The DXer's magazine (QRO) is only $5.00 per year, and includes propagation charts and DXCC listings. The VHF magazine is also $5.00 per year.

To get all of these interesting magazines, you would have to pay $69.00 per year! However, I would not have to pay quite so much. I have a Life Membership, bought back in the "good old days" of less than $18.00 per year. Even my Life Membership has eroded, however; I would have to pay $44.00 per year to get stuff which I paid my Life Membership for. This situation is similar to many professional societies, for example the ACM and IEEE, where membership gives you one or two magazines, and you have to pay extra for those you want. But at least these expensive professional societies are tax deductible.

The ARRL is NOT a professional society. Even with dues at $25.00 per year, a significant percentage of hams have trouble affording it. Many hams are high school or college students and would rather put that money into coax than buy a magazine that they can borrow from the library anyways.

There are logistical problems with this new plan. For example, can a non-member buy one of these magazines?

How about a Family Member or a Family Life Member? (Actually, there are other problems with family life membership; what happens when a Family Life Member gets divorced?) If I buy five mini-magazines, will I get five bills per year? Can I get a lifetime subscription to them?

Also, it is possible that separating out contest scores will hurt contesting rather than help it. Many people send in non-winning scores just so they can see them in **QST**. If scores are no longer listed in **QST**, these people may not operate. Also, if only the winning scores are printed in **QST**, neophyte contesters (who are unlikely to purchase the detailed scores) will find it highly discouraging; Imagine operating a contest all weekend and only coming up with a score of less than five percent of the lowest score listed!

Dave also argues that those who use the services should pay for them. Although this sounds logical, there are many times when this is not desirable. Examples are the public library, the Massachusetts state income tax, and the Murphy's Marauders pizza parties, where the active members (those who attend meetings, not necessarily those who operate in contests) eat pizza purchased with club treasury funds.

You mentioned that Dave's view was not official ARRL policy. However, the rumor at the last YCCC convention is that he is being considered for the ARRL General Manager position. And his views worry me.

Granted, unbundling QST into specialized publications may well produce a higher quality publication. But it will cost more money to keep up on what others in amateur radio are up to. So this information will be available to a smaller segment of the amateur community. And this will be detrimental to amateur radio as a whole.

Paul Young, K1XM

CAC Report

A ballot item has been generated from within the Committee regarding the definition of the multi-single category. I'll need input on this from those of you interested in this category. The current definition is (or is meant to be) identical to the **CQ** definition; the proposed definition is: "Multi-operator single transmitter stations in the ARRL DX Contest shall be limited to only one transmitter on the air at any one time. Once a transmission resulting in a valid contact has been made on a given band, no other band may be used for two way contact for a period of ten minutes."

This change is, of course, a retreat from the current position, which permits two transmitters on separate bands, with the provisos that one transmitter works only multipliers and neither transmitter changes bands within ten minutes of its previous band change. The intricacy here was established to provide for enforcement by inspection of the logs, without substantially altering actual practice in the multi-single category. As a result, the entrant with but one transmitter is usually not competitive. The new definition would enhance the chances of these entrants by restricting the "large-scale" multi-singles (perhaps so severely that single-ops would out-score multiops). The fundamental question is: which type of multi-single operation *should* ARRL encourage (maybe both)?

The September Board of Directors meeting accepted a Long Range Planning Committee recommendation to reorganize advisory committees to have one member from each division (instead of each call area), appointed by the division's Director. In the past, advisory committee members were appointed by the President near the end of the year; this will probably be delayed somewhat to allow time for implementing the reorganization. Appointees used to be chosen from a file of nominees, established at ARRL by solicitation of the general membership (three signatures plus nominee consent required). Whether or not Directors will use this approach is unclear. In the meantime, contact me or Hq. for a nomination form; remember, the Contest Advisory Committee is *not* an honor society — it serves an important role as "consulting experts" to both the Board and the Headquarters staff.

de K1GQ

Fall Meeting

1 PM Dec. 5, 1981

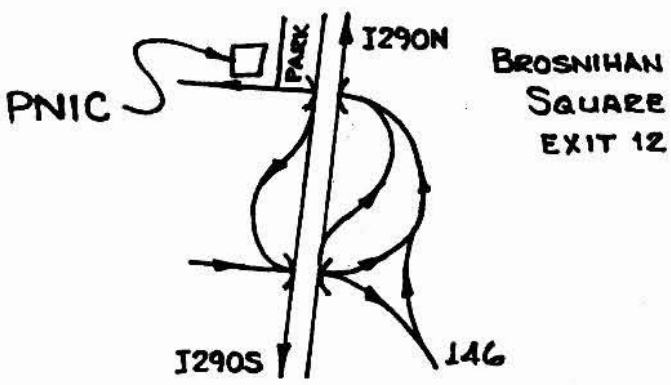
Polish Naturalization Independence Club Worcester, Massachusetts

From the Massachusetts Turnpike (I-90):
Get on I-290 North, take exit 12 - "Brosnihan Square", go around the rotary under I-290 then take an immediate right and park in the lot on the right. PNIC is across the street.

From I-290 heading south:
Take exit 12, go around the rotary passing under I-290 twice, then turn right as above.

From Route 146 (RI):
Follow 146 into the rotary, go around and under I-290 once, then turn right as above.

PNIC operates a bar; there are no quick-food establishments nearby.



Pse QSL

The following results were obtained from an informal survey of incoming QSL bureau services, taken at the YCCC Convention on October 3, 1981.

1) Do you receive cards on a regular basis?
   45% of W1's answered YES
   100% of W2's answered YES

2) How many different mailings have you received in the last year?
   W1 - average about 3
   W2 - average about 8

3) How many cards have you received from the bureau in the past year?
   W1 - about 500
   W2 - about 1000

4) How would you rate the service you have received in the past year? (poor-fair-average-good-excellent)
   W1 - 20% good or better
   W2 - 87% good or better

5) Have you compained to the ARRL about the service in the last year?
   W1 - 10%
   W2 - none

Comments from the surveys: (all from W1's)
- —Tired of receiving 3 cards in an envelope with 3 oz. of postage.
- —Why send 8 first class envelopes when one UPS is cheaper?
- —I constantly receive mis-sorted cards.
- —They keep miscounting the money I send (and always ask for more).
- —The W1 bureau seems to be out of business since March '81.
- —Please get another club to take over the bureau.

In summary, the W1 QSL bureau has some very serious problems at the present time. Those sorting the ACDJM letters (at least) are unusually bad. The people receiving bad service are not complaining.

In my opinion, the service received by those in the W1 call area is having a significant impact on people's feelings towards the ARRL (negative in this case). Something ought to be done quickly, before a bad situation gets even worse.

People to contact and express your opinion to are:
ARRL New England Director, John Sullivan, W1HHR (203) 228-9111
HQ Membership Services Dept., Hal Steinman, K1FHN (203) 666-1541
YCCC President, John Dorr, K1AR (last resort)

de K1KI

Operating An Efficient Multi-Single

Douglas Zweibel, KR2Q
CQ WW Contest Committee

Paraphrased from **CQ**, August 1981

Not everybody understands the CQ WW multi-operator, single transmitter category of entry. Failure to comply with the CQ WW Committee rules usually results in the log being reclassified as multi-operator, multi-transmitter (MOMT). The guidelines for multi-single are really quite simple, so take a few minutes to understand what is being said.

The Rules currently define the multi-single category of entry as:

III. Types of Competition
1. Single Operator...
2. Multi-Operator (all band only)
   a) Single Transmitter, only one transmitter and one band permitted during the same time period (defined as 10 minutes). *Exception:* One - and only one - other band may be used during the same period - if and only if - the station worked is a new multiplier. Logs found in violation of the 10-minute rule will be automatically reclassified as multi-multi to reflect their actual status.

Now let's talk about the rule. Multi-operator, single transmitter (MOST) was set up to provide a category between multi/multi and single op all band. It allows more flexibility than single op, but not quite as much as MOMT. The main idea to keep in mind is that you are allowed two (2) transmitted signals at once. We'll call one transmitter the **Runner** and the other the **Multiplier**.

The **Runner** will be the main mode of operation. You use it to contact the most stations possible. You don't care if you work multipliers or not, as long as you can run (work stations at a very fast rate). The only limit to the running transmitter is that it must remain on a band for *at least* 10 minutes. After 10 minutes you can QSY to any other band. Which band doesn't matter. Just be sure you stay on each band for *at least* 10 minutes.

The **Multiplier** transmitter allows you to work multipliers on any band *except* the **Runner** band. There are, however, certain important regulations governing the use of the multiplier station. First of all, you can only work *multipliers*. It can be a country multiplier or a zone multiplier. The multiplier *must be* a **new** multiplier on that band. Once you have worked that country or zone on that band, *you cannot work it again using the* **Multiplier** *transmitter*. If you do, you are violating the rules. The other important rule is the "10-minute rule", which not only applies to the **Runner** but also to the **Multiplier** transmitter. Or put another way, there is one 10-minute rule for the **Runner** and *another* **separate** *10-minute rule* for the **Multiplier** station.

Let's take a real-life example. You are running on 20 meters. Ten meters is just opening and you hear a new multiplier. You can call the DX station on 10 meters and work him at 0107 UTC. You have now established 10 meters as the **Multiplier** frequency. You must stay on 10 meters for at least 10 minutes (until 0116 UTC). (Time on band = time of 1st QSO on *next* band minus time of 1st QSO on current band...Ed.) If you hear another multiplier on 10 meters you are allowed to work it. *But if you hear another multiplier on 15 meters, you can* **not** *work him until 0117 UTC.* If you did make contact on 15 but at 0116 UTC, it will not be counted because you violated the 10-minute rule.

How about if you have been running on 20 meters for 2 hours? One of your operators says that 15 meters is opening. It's now 2200 UTC. You change bands and run on 15 for 5 minutes. You've made 7 QSO's. All of a sudden the 10-meter operator comes to you and says that 10 meters just opened and there's a tremendous band opening. Your competition is working 200 an hour! You want to QSY but *you can't.* You must stay on 15 meters for at least 10 minutes or until 2209 UTC. Your first QSO on 10 meters will be legal at 2210 UTC. If you did QSY to 10 meters at 2205 UTC and had 17 QSO's in 5 minutes, they would all be illegal and *not counted.*

Another common situation is this. You're running on 20 meters. You're making 60 QSO's an hour. All other bands are "dead". The 10-meter band opens up and your 10-meter op hears some good multipliers. He works them and has established the **Multiplier** frequency. It's now 1400 UTC. The 10-meter operator starts to work anybody (non-multipliers). At first it's only a few QSO's, but soon the band springs to life. He's working 150 an hour. At 1415 UTC he tells the 20-meter op to QRT because the 10-meter rate is faster. The 20-meter station stops running, and everyone is happy to have more than doubled their QSO rate. But what about the 15-minute overlap? The 20-meter op made 15 QSO's (1400-1415 UTC) that were *not* multipliers, and the 10-meter op made over 35 QSO's (1400-1415 UTC) that were *not* multipliers. There is a big problem. You are only permitted **One Runner** station. The CQ WW Contest Committee does *not* correct a log to give *best* results. They correct it by the *rules.* Since 20 meters was established as the runner first, it is assumed to continue to be the runner until it stops working stations or until it starts working *only* multipliers. The 35 QSO's on 10 meters are illegal and not counted. By working non-multipliers on 2 bands at the same time, you are operating multi-operator/multi-transmitter. You will be subject to reclassification to that category. ■

Excess Cargo

Wanted: Wilson WR-1000 or similar heavy-duty rotor K1XM.

For Sale: Over 800 Murphy's Marauders blank QSL cards (no callsign printed) - K1XM

CQ Trek

Andy Blank, N2NT

Captain's Log: Stardate 3830.0

On a routine mission back through time to correlate historical data, the crew of the Enterprise has stumbled upon a primitive Earth ritual, whose role in society cannot be ascertained by our computers. Both my science officer, Latka SPØCK, and myself, Captain James T Connector K1RK, have encountered no stranger phenomenon since we raided the sleazy dives of Avon IV. Follows the transcript of the ship's log for that day, October 24, 1981.

Mr. Zulu:	Captain, we have established standard orbit around Earth.
K1RK:	Thank you, Mr. Zulu. Willy, what is our altitude?
Willy Chekov, : UK9AAN	600 miles, sir!
SPØCK:	Captain, I'm picking up a small object on my scanners, cylindrical, about 3 meters in diameter.
Scotty, N1EE:	Could be an old style nuclear warhead, Captain!
K1RK	Ready photon torpedos, Willy.
Lt. Uhura, : 9U5YL	No response on all hailing frequencies.
K1RK:	What is it, Latka?
SPØCK:	Insufficient data at present, Jim.
9U5YL:	I'm getting something now, Captain. Old style morse code on 29.402 MHz. Computers working on translation.
Willy:	Captain, at the Academy I read that my Russian ancestors used morse code as the command to detonate their warheads!
K1RK:	Fire torpedos, Mr. Zulu!!!
	BOOOOM
Mr. Zulu:	Object destroyed, Captain.
SPØCK:	Jim, the computers just identifed the object as the AMSAT OSCAR 9 phase III satellite from the U.S.A.
N1EE:	Whoops.
K1RK:	Better change the historical tapes to make it look like an accident, Latka. Got to keep Star Fleet off my back.
SPØCK:	Sure, Jim. One launch failure coming up.
K1RK:	Lt. Uhura, please try to raise Star Fleet Command.
9U5YL:	Aye, aye, sir.

Dr. McCoy: Dammit Jim, how many times do you think you can fool Star Fleet before they catch you? That's the fifth satellite you've destoyed this light year.

K1RK: Aw, go back to sick bay, will you Bones??

9U5YL: I had Star Fleet Command on subspace frequency 21.251 Captain, but suddenly I have enormous interference.

SPØCK: Put it on audio, Lieutenant.

"cq contest cq contest whiskey two papa victor whisknorway two america amermushi mushi nippon kilowatt seven radio india"

SPØCK: Sounds like the chant of a Vulcan fertility dance, Jim.

K1RK: Patch it through the universal translator, Uhura.

"ja4pdp go kyu o-san k7ri dozo
o thank you fiveninetwofive ja4 papa bravo papa
ja4pbp qsl qrz nagasaki two asia asia dozo"

9U5YL: Computer circuits overloading, Captain.

Mr. Zulu: Could it be the Romulans Captain? Deliberately jamming us?

Willy: Sounds more like those Cossack Klingons to me!

SPØCK: Captain, on Vulcan I prided myself in my knowledge of Earth history. I would say these transmissions are coming from Earth, from a group of crazed terrorists whom I believe were called CBers.

N1EE: Yes Captain, my ancestors told me many tales of Scottish CBers who roved Scotland with handheld units and ravaged the countryside with foul languange and vulgarity.

Willy: That would never happen in Mother Russia!

K1RK: Calm down, gentlemen. Let's hear some more, Uhura.

"cq dx cq dx k one alpha radio radio japan radio japan
w3rj the frequency is in use
radio japan radio japan"

McCoy: Jim, its those Japanese behind this. They are getting ready to attack Pearl Harbor!

K1RK: I thought I told you to get back to sick bay Bones. This is 1981, not 1941.

McCoy: Dammit Jim, I'm a doctor, not a historian!

Mr. Zulu: Must be the Russians, bootlegging Japanese.

Willy: Take that back, Cossack!!

K1RK: Gentlemen, no fighting on the bridge.

SPØCK: Lieutenant, see if you can locate the source of these signals.

9U5YL: Triangulating now, Captain. They seem to be emanating from all over the planet. However, the strongest one is america america from Tuxedo Park, New York.

N1EE: They must be using a high powered transmitter.

SPØCK: Captain, my scanners show an unusually large aluminum deposit at that location.

K1RK: More audio, Lieutenant.

" cq quince cq quince metros ka uno ka y adelante
k1ki the frequency is in use and you're out of the band qsy qsl? qrz w2pv"

9U5YL: Captain, the universal translator is smoking!

SPØCK: It is overloaded due to confusion, Jim.

K1RK: Mr. Zulu, ready phasar banks 1, 2 and 3, just in case.

Mr. Zulu: Phasars ready, Captain.

K1RK: Uhura, Keep monitoring the transmissions.

"uk9aan from k1ar fivenineofive how you doing buddy?
well you know john we are multi-multi o yeah well pv is going to blow you away hi"

Willy: Captain, that's my great-great-great-great-great-great-grandfather. They're going to destroy him!

Mr. Zulu: I think Willy is right, Captain. Sounds like war.

K1RK: We'll see about that! Mr. Zulu, lock onto those hostile transmissions.

Mr. Zulu: Locked, sir. Location is Billerica, Massachusetts.

K1RK: Fire phasars!!!

BOOOOM

9U5YL: Captain, now receiving military transmissions. The U.S.A. is going to retaliate against the U.S.S.R.

Dr. McCoy: Now you've done it, Jim. You've started World War III.

K1RK: I'm warning you Bones.....

SPØCK: Shall I take care of it Jim?

K1RK: Yes, Latka, erase the tapes. Lucky we studied Watergate on our last mission, huh boys? ■

Beamwidth and Pointing Accuracy

Tom Frenaye, K1KI

One of the most common complaints heard by contesters is that it is impossible to compete with the super stations like W2PV, W4BVV, or N2AA. That may very well be true when trying to work that weak 9M2 or the 749th DL, but when it comes to single operator competition, there are usually more than enough stations to work.

If I was purely a DXer, chasing those last few countries needed for 5BDXCC or the Honor Roll, I would want a very sharp beamwidth antenna with lots of forward gain. But since I'm a contester at heart I need lots of QSO's to fill my log with and I can't afford to have an antenna too narrow or I'll not hear and not be heard by many of those I want to work. The question is, what beamwidth antenna is best for this application?

A look at my last CQWW CW log shows the QSO's broken down as follows:

Africa	26	1.4%
Asia	233	12.7%
Europe	1379	75.1%
North America	122	6.6%
Oceania	27	1.5%
South America	48	2.6%

Just over 75% of the QSO's come from Europe so that looks like the key area. The great circle map centered on my QTH shows that the beam headings for Europe range from 30° for Scandinavia to 70°for Spain, so I need a beamwidth of about 40°.

Antenna beamwidth is usually measured between the -3 dB points on the antenna pattern. For instance, my Hy-Gain 5-el 15 meter beam has a 57° azimuth beamwidth according to the manufacturer. However, the 1 dB beamwidth is 0.3 x the 3 dB beamwidth, or only 17° for my 15m yagi. So, for best results into Europe, even my small yagi has to be repositioned — and I'm better off than the long-boom set.

I want to aim my antenna within half of the 1 dB beamwidth or about 8-9°. The dial on my Ham-III rotator is calibrated in 5° segments, but the manual doesn't really say how accurate the indicating mechanism is. The only relevant statistic in the specifications is the number of segments in the housing where the brake wedge comes to rest. For the Ham-M through Ham-IV series, there are 75 segments (4.8° apart) and for the Tailtwister the number is 60 (6.0°). So maybe plus or minus 3° is a good number. W3RJ (**CQ**, June 1978) estimates worst-case error in circuit accuracy of 3.5°. Thus the rotator itself could cause more than 5° of aiming error.

There are two things we've not considered yet. First is wind moving the antenna (I've seen mine move up to five degrees on the indicator). There are three components here — twisting of the tower itself, slop in the rotator and mechanical connections, and bending of the boom of the antenna. Enough to add another degree or two? I don't know.

Second, and most important, is orienting the boom when you bolt the antenna to the mast and tighten the U-bolts on the rotator. I calibrated mine carefully last summer, by looking up the local sunrise and sunset times (within 50 miles is close enough) and finding the midpoint, when the sun is straight South and the shadow cast by my tower points straight North. (I put out a marker so I can align things on a cloudy day next time.) It turned out I was off by a full 20°... I bet this isn't too unusual.

Back to where this discussion began. Good optimized 4-el yagis on Europe for 10, 15 and 20 meters should be quite adequate, and within most budgets. Get them up 60 to 100 feet and you should be very competitive on those bands. The next biggest block of QSO's comes on 40 meter cw from Europe. A 2 or 3-el yagi will make a big difference over the competition here but will probably require a second tower and a higher degree of financial resources. The fifth largest block of QSO's comes from Japan. In this case a large fixed yagi on Japan would be quite useful as Japan is only 5° wide from the northeastern USA. Depending on whether you like 15 or 20 meters better (or perhaps which band you think propagation will be better on in the next few years) you ought to be able to settle on one antenna.

Obviously, the main strategy in a DX contest from the northeast is to work as many Europeans as possible and make sure you scan the bands often enough to catch a maximum of multipliers. Don't waste your time working a second ZD8 on 20 meters, or PY on 10 meters. Of the 1835 stations I worked in the last CQWW, 1515 were Europeans or JAs. Of the rest, the 320 QSO's accounted for 189 country multipliers and 109 zone multipliers. You have to keep accurate track of zones and countries working during the contest — and be planning to have a YO QSY to 40 during the last half hour for two multipliers, or to find CE2AA and move him from band to band for several more.

So what does all of this boil down to?

1) From the northeast, the super stations do not have an advantage when it comes to single operator competition.
2) Your antenna is probably not pointing where you think it is (and you should fix it).
3) You should concentrate on working Europeans when the band is open in that direction.
4) When the band isn't open to Europe you should be working multipliers only, unless you can run JA's (or VK's).
5) A good tribander and a 40 meter beam might actually be better than 20-15-10 meter monobanders and a dipole. ■

Flotsam

Transmission Line Loss

If you have an RF wattmeter, there is a very simple way to measure the attenuation of your feedline. First, disconnect the far end. Next, read the forward and reflected power at the input end. The one way loss in dB is

$$A_{(}) = 5 \log_{10} \frac{P_{REFLECTED}}{P_{FORWARD}}$$

A result of more than -2 dB would be cause for concern — either your cable and/or connectors are too lossy, or the length of your line is too long for the type of coax you are using.

The loss depends on frequency, so make the measurements on the highest frequency which you use. A simple formula for loss in dB per 100 meters for frequencies between 2 and 30 MHz is

$$a_{(}) = c\sqrt{f_{MHz}}$$

The constant c is 0.70 for RG8, RG213, RG11 (solid dielectric, *not* foam), and 0.15 for 3/4-inch hardline. If you know the physical length of the line, you can check its condition by comparing $A_{(}$ with $a_{(}$ x length (in hundreds of meters). If $A_{(}$ is much larger than $a_{(}$, you have either cruddy coax or bad connectors. Start disconnecting pieces until you find out which is defective.

New foam dielectric flexible coax will have somewhat lower loss than does solid dielectric, but it degrades rapidly when exposed to weather (chemicals in the jacket migrate into the cable, contaminating the dielectric). Stay away from anything not identified as having a non-contaminating jacket (i.e. use RG8A or RG213, *not* RG8 or CB coax).

de K1GQ

Antenna and Tower Suggestions, or How Do I Get the Most For My Money?

First: Find out where you can put up the most tower on your lot. If you plan ahead, you won't have to move your tower if you ever decide to raise it.

Second: What are your major interests? SS? DXing? DX contests?

Third: How much money can I spend?

Here are some proven combinations and what they will do:

1) Rohn 25G 60 feet, TH6DXX, 402BA, 80-meter dipole
Very good SS station. Good for DXing. Fair for DX contests.

2) Rohn 25G 90 feet, TH6DXX, 402BA, 80-meter G.P. or whatever, lower tribander...maybe rotatable.
Very good SS station. Very good for DXing. Fairly competitive in DX contests. You'll do better on 20m and the low bands with this setup.

3) Rohn 25G 90 feet, 4-el 20m (204BA etc.), 3-el 15m, 3-el 10m, 2-el 40m quad or some type of fixed antenna on Europe, 80-meter wires. You must guy tower at top with this combination and use the best mast you can afford. I suggest 4130 stainless steel. This is beginning to push the tower specs a bit.

4) Rohn 45G 90 feet, 5-el yagis on 20, 15, and 10. "Negative stack" the 10m beam (mount 10m lowest). Same wires on low bands as in 3).

5) Two Rohn 25G 60 foot towers, 2-el 40 and 5-el 10 on one and 5-el 20 and 5-el 15 on other, 80-meter dipole.
Excellent SS station. Very good in DX contests. $1.98 multi single or multi-multi. Can be done on 1/2 acre lot safely. Works "real good" into Europe and the west coast of U.S. on all bands.

Notes: Use TB-3 thrust bearing and Ham IV or T²X on all towers. Torque bars are mandatory on all towers. Schedule 80 galvanized pipe 1.5" ID mast except where antennas are "christmas treed". It is rated at 20,000 psi. 4130 stainless is rated around 90,000 psi, so you better use it if you plan to put a big load at the top of your mast.

This is not meant to be gospel, but it is good sound practical information based on a lot of experience and the Rohn catalog. Also, you *must* use a good 2K PEP amplifier to be effective. Also consider beverages on the low bands if space permits.

de WA3ZAS

The Magical 6 dB

More than a few hams have challenged my statement that the presence of (perfect) ground yields a gain of 6 dB. The usual counter-argument goes as follows: "The ground acts like a mirror, so the half of the power radiated downward from the antenna reflects upward, increasing the total power above the horizon by a factor of two. The gain in decibels is thus 10 log (power ratio), or 3 dB."

The defect in this argument is that the electromagnetic fields generated by the antenna and by the ground reflection do not simply add together, they combine vectorially. In directions where the two fields are exactly in phase, the total field intensity is twice the original antenna field intensity, because the reflection field intensity is equal to the incident field intensity. In directions where the direct and reflected fields are 180 degrees out of phase, the total field is zero. In other directions, the total field intensity varies between these two extremes - a plot of total intensity versus

direction is called a field pattern in electromagnetics, and an interference pattern in optics.

Now, at large enough distance from the antenna, the *power* density in a given direction (P), is related to the field intensity in that direction (E) by

$$P = \frac{1}{2} \frac{E^2}{Z_0}$$

where Z_0 is the intrinsic impedance of free space (377 ohms). Then, for directions corresponding to the maximum field intensity (2 times the field intensity without ground), the power density is 4 times the power density with no ground. The ratio of powers is thus 4, or 6.02 dB.

This argument is, perhaps, not very satisfying for the non-mathematically inclined. If those of you will accept some hand-waving, here's another approach.

Suppose, for convenience, that the antenna radiates the same power in all directions (this is the famous and fictional "isotropic" antenna). By the argument in the first paragraph, the ground reflection redirects the power radiated into the lower hemisphere back into the upper hemisphere, so that the total power radiated into the upper hemisphere is twice that for the antenna without ground. In addition, the interference effect redistributes this upper-hemisphere radiation, increasing the power density in some directions and decreasing it in others. The maximum density is exactly twice the density which would be observed if the total radiation were uniformly distributed over the upper hemisphere (take my word for it). Gain (actually, directivity) is the ratio of power density in a particular direction to power density when the power is radiated uniformly in all directions. The maximum power density for the isotropic antenna above ground is 2 x 2 x uniform power density, so the (maximum) gain is 4, or 6.02 dB.

These arguments assume that the proximity of ground does not influence the antenna itself. Of course we know this is untrue, but for heights of one-half wavelength or more, the effect is unimportant for horizontal antennas. At lower heights, the reflected field disturbs the currents on the antenna, almost certainly upsetting the delicate vectorial combination which yields the antenna radiation pattern — thus reducing gain and front-to-back ratio. This effect is less pronounced for tightly-coupled antennas (quads, short-boom yagis, driven arrays) than for loosely-coupled antennas, which may provide some support for the folk wisdom that low quads work better than low yagis, and that driven wire arrays are better than parasitic wire arrays on the low bands.

de K1GQ

Yagis

Bill Myers, K1GQ

Reaction to my multi-part article on stacked yagis was not what I expected, so I'm terminating the series before completion. I may repackage the information later.

Beginning with this issue, the **Butt** will contain a centerfold exposing the features of an "antenna of the month". Since the computer analysis program available to me can handle only yagis with one driven element and full-size elements, that's what I'll be disecting — no tribanders, KLM log-cell drivers, shorty-forty's, wire arrays, etc. I will show free-space radiation (power) patterns for E-plane and H-plane cuts near the frequency of maximum front-to-back ratio, and plots of directivity, front-to-back ratio, and SWR versus frequency. Also, I'll give a physical description of the antenna, so you can build one yourself.

The next few paragraphs define exact what the parameters are. Skip to the next story if you don't care.

The H-plane pattern cut is the (vertical) plane perpendicular to the elements. The angle ϕ (think of it as the wave angle) is zero along the boom towards the directors. The E-plane cut is the (horizontal) plane containing the elements, with angle θ measured from the direction of the elements (not the boom).

The directivity which I plot is the ratio of the radiation intensity in the direction along the boom towards the directors, to the radiation intensity of an isotropic antenna with the same input power, expressed in decibels — thus, dBi.

The front-to-back ratio is radiation intensity in the direction along the boom towards the directors divided by radiation intensity in the opposite direction. Although good arguments can be made that the average over some range of ϕ and θ is more representative of real-life performance, I've found the front-to-back ratio defined above quite useful for comparisons with measurements.

The "SWR" plot is the voltage standing wave ratio obtained from

$$S = \frac{1 + |\rho|}{1 - |\rho|}$$

where ρ is the complex voltage reflection coefficient given by

$$\rho = \frac{Z_A - Z_0}{Z_A + Z_0}$$

with Z_0 the antenna input impedance, and Z_A the antenna input impedance at the design frequency. This definition excludes the effects of whatever matching system (e.g. gamma match) is used to transform Z_A to the characteristic impedance of the transmission line. However, the agreement with measurements isn't bad.

The antenna description is given in SI (metric) units, because I'm a physicist, and because metric tape rules are much easier to use than are English. The element description is for each *half* of the full element, and must be followed exactly in order to reproduce the performance as described. If you must use other tubing diameters or lengths, then you should use W2PV or W1RR procedures to convert the equivalent (cylindrical) element diameter and halflength given with the antenna description to your particular element construction. The same applies if you want to use another design frequency — especially on another band. At HF, the effects of normal boom to element brackets are negligible.

John Kenny, W1RR, has designed several *large* yagis for W7RM. The design method involves a computerized search for element length and spacings which give maximum gain and reasonable E-plane sidelobes for fixed boomlength. Not many of us can manage arrays this big, but their performance does provide a useful "upper limit". Incidently – DO NOT contact John (or me) to request that we design a yagi for you. What you see here is all you will get – and it will be more than adequate to design whatever you need yourself.

This month's centerfold is John's 28 MHz 6-element design, for a 36' boom. It has excellent gain, and good front-to-back bandwidth. The peak in F/B below the design frequency is deliberate; *all* of the rear E-plane lobes are down 29 dB at 28.5 MHz, whereas there is a sidelobe down 26.8 dB at 28.4 MHz. The VSWR bandwidth looks a bit narrow, but it will probably be flatter in practice (particularly on the low side) if my experience with a shorter-boom design can be generalized. ■

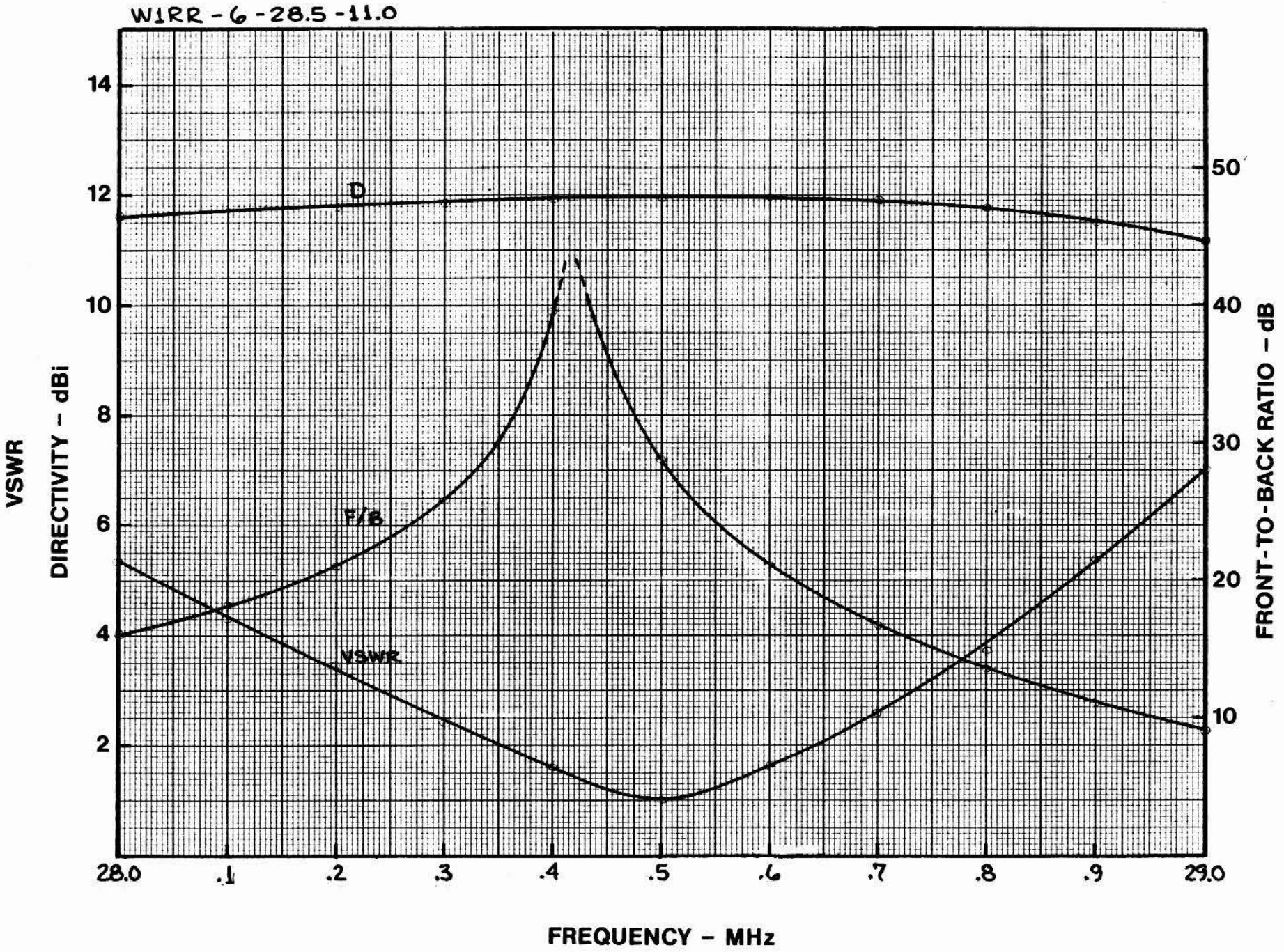
Yagi Description For: W1RR 6-element

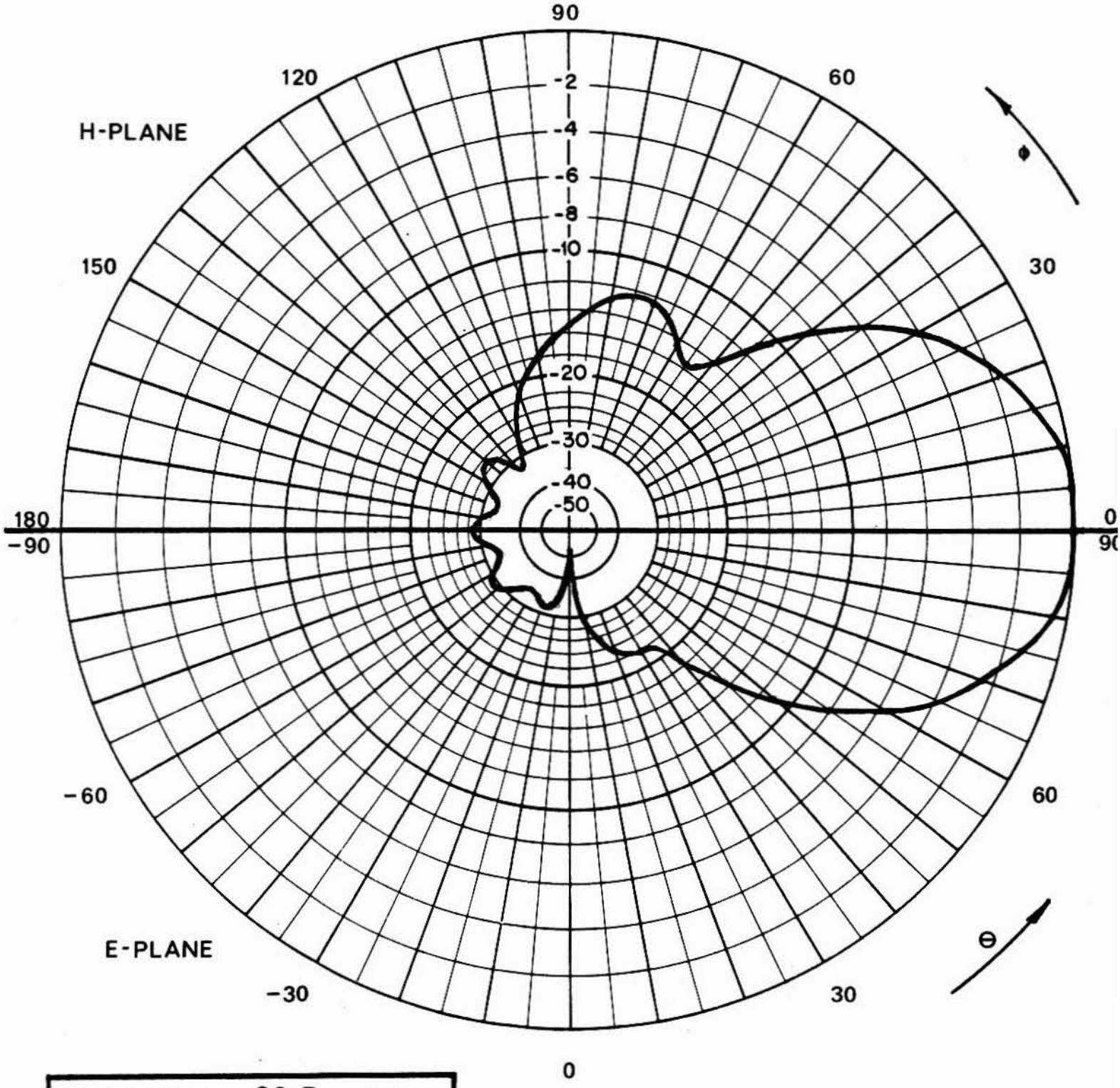
Design Frequency: 28.5

Element	Spacing From R (m)	Equiv Diameter (cm)	Equiv Halflength (m)	Number of Parts
R	0	3.2131	2.6086	2
DE	1.3843	3.2131	2.4992	2
D1	3.2715	3.2131	2.4257	2
D2	5.7353	3.2131	2.3165	2
D3	8.1737	3.2131	2.3800	2
D4	10.9220	3.2131	2.2962	2

Half-Element Construction

Element	Part Number	Part Diameter (cm)	Part Length (m)
all	1	3.4925	0.3408
R	2	3.1750	2.3139
DE	2	3.1750	2.2047
D1	2	3.1750	2.1311
D2	2	3.1750	2.0218
D3	2	3.1750	2.0853
D4	2	3.1750	2.0015


W1RR-6-28.5-11.0
14
12
10
8
6
4
2
D
F/B
VSWR
50
40
30
20
10
28.0
.1
.2
.3
.4
.5
.6
.7
.8
.9
29.0
VSWR
DIRECTIVITY - dBi
FRONT-TO-BACK RATIO - dB
FREQUENCY - MHz



FREQUENCY	28.5 MHz
ANTENNA	W1RR-6-28.5-11.0
DIRECTIVITY	11.97 dBi
FRONT-TO-BACK	28.7 dB
IMPEDANCE	8.9 + j2.3 ohms

Who Gets the Logs?

If you subscribe to **CQ** magazine, you are probably confused about where to send your CQ WW logs. Last year, the rules asked that phone logs be sent directly to one of the CQ Contest Committee co-chairmen, and the cw logs to the other one. The rules also stated that the co-chairmen would alternate modes each year. But, the very next year, the rules say send your logs to CQ Magazine, and these instructions are reiterated in Frank Anzalone's Contest Calendar (e.g., page 97, November **CQ**). However, in the *same* issue, the editorial tells us that they really didn't mean it; please send phone logs to N6AR and cw logs to K3EST! Under the rather tenuous assumption that the editor represents the highest authority, here are the pertinent addresses:

phone (deadline 1 Dec. 1981)
Larry Brockman, N6AR
7164 Rock Ridge Terrace
Canoga Park, CA 91307

cw (deadline 15 Jan. 1982)
Bob Cox, K3EST
6548 Spring Valley Drive
Alexandria, VA 22312

If you have already mailed your logs to CQ, don't panic — they will still get to the right place eventually.

CQ asks that you show your entry class on the outside of the envelope (for example: CQ WW phone single band 75). YCCC asks that you double check that you have assigned your score to the Yankee Clipper Contest Club on your summary sheet (spell it out to avoid confusion with the Yugoslavian Communist Creative Contesters). Also, you may want to include a self-addressed postcard to confirm that the logs arrived.

For me, this is the last straw. I'm letting my subscription to **CQ** lapse (again).

de K1GQ

NOVEMBER

7-9

ARRL Sweepstakes, cw, from 2100Z Saturday, November 7 until 0300Z Monday, November 9. Operate no more than 24 hours, with off periods not less than 30 minutes. Single operator (one person performs all transmitting, receiving, spotting and logging functions) and multioperator single transmitter. Work U.S. and Canadian stations on 1.8 through 30 MHz, exchange consecutive serial number, precedence (B if more than 200 watts, A otherwise), callsign, last two digits of year first licensed, and ARRL section. Count two points for each complete QSO. Count each station only once regardless of band. No crossmode contacts. Multiply QSO points by total number of ARRL sections plus VE8/VY1 (maximum of 74). Suggested frequencies: 1800 - 1810, 3550 - 3650, 7050 7100, 14,050 14,100, 21,050 - 21,100, 28,050 - 28,100; Novice: 3710, 7110, 21,110, 28,110 kHz. Check sheet required with entries over 200 QSOs. Log deadline: December 8, 1981.

21-23

ARRL Sweepstakes, phone, from 2100Z Saturday, November 21 until 0300Z Monday, November 23. Suggested frequencies: 1810 - 1820, 3850 - 3950, 7200 7250, 14,250 - 14,300, 21,300 - 21,400, 28,550 - 28,650 kHz. Log deadline: December 8, 1981.

28-29

CQ Worldwide DX Contest, cw, sponsored by CQ Magazine, from 0000Z November 28 until 2400Z November 29. Amateurs around the world work as many other amateurs in as many zones and countries as possible, on all bands from 1.8 MHz through 28 MHz. Single operator, single band and all band (one person performs all of the operating, logging and spotting functions - use of DX spotting nets or any other form of DX alerting assistance places the station in the multi-op category); multioperator (all band only) single transmitter and multitransmitter; QRPp (single-op, not more than 5 watts output). Multi-single entries may use only one transmitter and one band during a 10 minute period, with the exception that one other band may be used during the same period if the station worked is a new multiplier. All transmitters must be located within a 500 meter diameter, or within the property limits, whichever is greater, and must be physically connected to antennas by wires. Exchange signal report and zone (sign portable if in a zone or country different than your prefix). Count three points for QSOs with stations in another continent (WAC boundaries), two points for QSOs with stations in North America except W, zero points for W QSOs. Final score is the sum of zones (CQ Zone Map) and countries (ARRL DXCC country list plus WAE country list - including W) worked on each band, times QSO points. Club competition is for local groups (not national organizations) with members operating within a local geographic area (except for DXpeditions organized for the contest and operated by club members). Logs must show times in GMT, and indicate each multiplier the first time it is worked, with separate sheets for each band. Entries must be checked for duplicate contacts (mark dupes in the log) and correct multiplier and QSO points, and must include a summary sheet showing scoring information, category, name and address, and a signed declaration that FCC and CQ rules and regulations have been observed. The entry must also include cross-check sheets for bands with 200 QSOs or more. Send entries with postmark no later than Jan. 15, 1982 to CQ Magazine, 76 North Broadway, Hicksville, NY 11801.

DECEMBER

5

YCCC FALL MEETING, 1PM at the Polish Naturalization Independence Club, Worcester, MA, Saturday December 5.

4-6

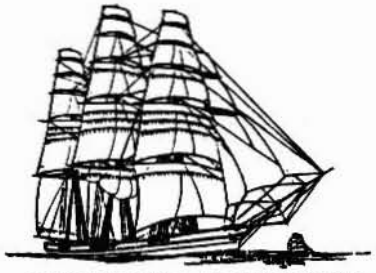
ARRL 160-Meter Contest, cw, from 2200Z December 4 until 1600Z December 6, no time limit. W/VE work W/VE and DX, DX work only W/VE. Single operator and multioperator single transmitter. W/VE send RST and section, DX send RST and country, maritime or aeronautical mobile send RST and ITU region. Count two points for QSOs between ARRL sections, five points for DX - W/VE QSOs. Multiply QSO points by sum of ARRL sections, VE8/VY1, and DXCC countries. W/VE transmit only on 1800 - 1825 and 1830 - 1850 kHz. Check sheet required with entries over 200 QSOs. Log deadline: January 5, 1982.

12-13

ARRL 10-Meter Contest, from 0000Z Saturday, December 12 until 2400Z Sunday, December 13. Operate no more than 36 hours. Single operator, mixed mode, phone only, or cw only; multioperator single transmitter mixed mode only. W/VE send signal report and state/province, DX (including KH6, KL7) send signal report and consecutive serial number, maritime or aeronautical mobile send signal report and ITU region, novice sign /N, technician sign /T. Count two points for each QSO, four points if novice or technician. Multiply QSO points by sum of states, VE call areas (VE1 - 8, VY1, VO1 - 2), DXCC countries (not W and VE), and ITU regions. Mixed mode entrants may work the same station once on each mode. Check sheet required with entries over 500 QSOs. Log deadline: January 12, 1982.

YCCC Area Managers

		home	work
K1EB	Gary Firtick	(203) 274-1246	(203) 264-4091
WB8BTH	Jeff DeTray	(603) 525-3796	(603) 924-3873
AJ1I	Everett Hudson	(617) 667-1150	(617) 452-1511
K1OME	Rich Roth	(617) 285-5203	(617) 285-5203
KR2J	Bob Naumann	(201) 427-8881	(201) 684-1400x25
K1SA	Bernie Cohen	(207) 773-6589	(207) 774-1334
N1TZ	Bob Czajkowski	(617) 885-3841	(617) 885-3841
K2VV	John Yodis	(518) 843-3897	(518) 346-8711
W1ZT	George Johnson	(413) 443-3084	(413) 494-2269



Box 501
Hollis, NH
03049-0501

YANKEE CLIPPER CONTEST CLUB

FIRST CLASS