

The Scuttlebutt

yankee clipper contest club

no. 35 August 1981

President John Dorr, K1AR 30 Champa Rd. Billerica, MA 01821 (617) 663-3452
 Vice President Bob Naumann, WA2OVE Box 8265 Haledon, NJ 07508 (201) 427-8881
 Secretary Dick Newell, AK1A 32 Cheyenne Drive, Nashua, NH 03063 (603) 889-4969
 Treasurer .. Bob Czajkowski, N1TZ North Brookfield Rd. Spencer, MA 01562 (617) 885-3841
 Awards Chairman. . . . Bill Pedersen, W1HCS Roberge Dr. Amherst, NH 03031 (603) 673-1678
 Editor Bill Myers, K1GQ Box 501, Hollis, NH 03049 (603) 465-2673

Captain's Cabin

Thanks to the efforts of K1KI and company, the October "contest convention" is beginning to shape up. There is a copy of the preliminary program elsewhere in this **Butt** to give you an idea what we have up our sleeves. Please take the time to contact me if there is an area of contesting you would like to see discussed. I'm especially interested in hearing from some of our newer members so that we can effectively deal with your needs and questions on contesting.

Our Area Manager system worked well for the ARRL contest earlier this year. Below are the AMs for the 1981-82 contest season:

AJ1I NE Mass
 N1TZ Central Mass
 K1OME... SE Mass/RI
 W1ZT West Mass
 K1EB..... Conn
 WA2OVE . NYC
 K2VV East NY
 W1HCS... NH/VT
 K1SA Maine

You will find their phone numbers on the back page of every **Butt**—now is the time to let them know what help you need to get ready for the Fall contests!

YCCC will make a run in the CQ WW this year. Rumor has it that there will be new competition this year from NCCC (many DXpeditions, etc.) which should make things interesting. I'm looking for a CQ WW contest chairman. This person will be responsible for coordinating the YCCC WW effort, and will provide a "real contact" if any YCCCer has a problem such as:

"Hey, my area manager never"
 "I need logs"
 "Should I go m/s or s/o?"

I'm also looking for someone to fill a similar position for the SS. Our number of entries has dropped from over 100 the year YCCC was organized, to less than 40 the last two years—pretty dismal for an "unlimited" club. I see no reason why the club shouldn't make a serious effort in both the WW and the SS, even though few of us can spare four entire weekends out of six. Remember, the only score that doesn't help is zero!

Volunteers for either position please contact me as soon as possible by telephone or 3830. I want to nail this down in time to announce who you are in the September **Butt**.

de K1AR

Ponderings from the Poop Deck

Edward Frederick Lass entered the (contest) world on 27 July, with the usual TR large numbers—9 pounds/23 inches. Congratulations to our ex-VP, Fred.

At least one member was confused by my explanation of the mailing labels on page 9 of **Butt** 33. Fees for membership in YCCC are \$10 per year, due in April. Fees for non-members who want to receive the newsletter are \$5 per year, with the same due date. Incidentally, NCCC is considering establishing dues of \$12/year.

I hope you are all aware that Dick Baldwin, W1RU, is retiring from ARRL in 1982. He currently holds three key

Preliminary Program

YCCC Contest Convention

Avon, CT 3 Oct 1981

900 Coffee and Donuts, Introductions

1000 Strategy (preparation for CW WW, SS, club competition; how FRC does it) K1AR

Antenna Construction (parts sources, feedline, rotator and tower considerations, construction methods) K2TR

Tactics (operating techniques: callsign recognition, propagation, passing multipliers, psyching out the competition, etc.) K1KI

Antenna Performance (how home-brew and commercial yagis compare in gain, pattern, bandwidth) K1GQ

Proficiency Tests (callsign copying, high speed cw)

Show and Tell (owners demonstrate good/bad features—TS830, IC720, KWM380, TR7, etc.)

1200 Lunch

1300 Rules and Paper work (CAC discussion, ARRL and CQ politics, how to make the log-checker happy) K1KI

Station Design (layout, switching, accessories for contesting) K1DG

Contesting Overseas (how it sounds from the other side) K1MM

Souping Up Radios (Drake, Kenwood, SB220 modifications) N2NT

Awards Presentations (ARRL, CQ)
Hello Tokyo

Technical Q and A (expert panel solves your problems)

1600 Official Meeting

posts—General Manager, Secretary, and QST Editor. I'm not sure if these jobs are automatically filled by the same guy, but in any case it behooves us to support contest-knowledgeable people as RU's successor(s). Among the rumors I've heard: W2HD, W4RA, Kk21ZZ, K3ZO. Which of these have you worked lately?

K1CC (MM VP) will be presenting a slide show on DX and contesting at an amateur radio convention in Poland, September 5 - 6. Rich needs slides, so if you want excellent callsign recognition among SPs, send yours to:

Rich Assarabowski, K1CC
1563 Boulevard
W. Hartford, CT 06107

He will make copies and return the originals.

A few of our members have been bitten by the oblast bug. This is the USSR equivalent of WAS, except it is much more difficult. Fanatics need only 10 or so; mere mortals are doing well to have worked all but 40. Anyhow, AK1A has some nifty typeset lists organized by oblast number and by callsign prefix—SASE to Dick.

de K1GQ

Rumors Afloat

What the Competition is Up To

As a rule, YCCC makes no effort to disguise our intentions, although there was some opinion that we should have done so last February (from both inside and outside the club). In any event, this column will report whatever we hear, substantiated or not, about the activities of other "unlimited" clubs. Our major sources are the club newsletters (we currently exchange with PVRC, FRC, NCCC and MM), and personal contacts.

The Northern California Contest Club (NCCC), has become bored by crushing the competition year after year in the ARRL Sweepstakes. This year, they've decided to go after the CQ WW DX Contest. Some of you may feel that West Coast chances in a DX competition are nil, but we must take these guys seriously in view of their past performances. For the CQ WW, you don't need to stay home to make points for the club—expeditions count, and they make lots of points! NCCC's leadership has already laid out a number of candidate expeditions, complete with licensing and expense info.

The Potomac Valley Radio Club (PVRC) has been a strong SS club over the years, and intends to mount a special effort this year in view of the likely drop in NCCC score. For those with short memories, here's how the large clubs finished in SS over the last 10 years:

71	MRRC
72	PVRC
73	MM
74	PVRC
75-80	NCCC

The '71 winner, Mad River Radio Club, was later DQ'ed; PVRC got the gavel.

By "large", we mean clubs capable of generating more than 50 entries —there aren't many of us! Some interesting additional data—NCCC set out to win SS beginning in the late 60's; YCCC mustered less than 50 entries for the last two years in a row (we backed into winning the 79 gavel for the medium class!); FRC does appear in the listings, but with relatively few entries.

de K1KI, K1GQ

Bash Breakdown

Were you one of the 43 YCCers/friends at the Bash that I missed talking to? If so, maybe next year! Here's a rundown on what I remember (pizza and Diet Dr Pepper kills as many gray cells as alcohol, I think).

Attendees were AK1A, K1DG, K1EB, N1EE, W1GG, KA1GHR, K1GQ, W1HD, K1KI, K1OX, KC1Q, KA1R, N1RC, K1RQ, K1RT, K1RX, WA1TQP, WA1TZV, W1XK, K1XM, WA1ZDW, W1ZT, K2EK, WB2FZO, W2IB, WB2JSJ, WA2KCL, N2ME, N2NT, K2OIX, WA2OVE, K2OY, W2PA, N2RM, W2RQ, WB2SJG, K2SS, K2WR, K2XA, N2YL, W2YV, W2YX, and WA3ZAS. That's 22 1's, 20 2's and 1 3; the 1's still got beat at softball, but only because K1OX dislocated a knee in batting practice. The somewhat less than humble victors then took on the local jocks and were edged out by one multiplier, 15-14 (while missing the first expedition to pizza-land).

There were many interesting conversations. W2YX was groaning over the most recent EIMAC price for 8877s and brainstorming stratagems with K2EK and WB2FZO to get CAT scanner pullouts. WA3ZAS suggested that single-band amplifier builders reconsider the 4-400, which is available in virtually limitless supply from broadcast stations. AK1A was heard quizzing K1KI about how Tom nearly doubled Dick's multiplier in the Radiosport — which gave Tom an opportunity to explain his scheme for plotting the terminator (gray line) on a great circle map. In a CAC issues discussion with W2IB and me, W1GG said he believes single-ops should be allowed to use spotting nets, even though Gary has no nets available himself! WA2OVE was seen doing a flip card number with a 2-inch stack of photos spanning 2 years of W2RQ field days (with slides later), the Dayton Hamvention, and some of K2GL's antennas (I saw a gin pole the size of Rohn 45!). K2SS and I spent some time off in a corner babbling about Hallen integrals, three term current expansions, and other computer antenna analysis esoterica. I never did get to show anyone except K1KI the information I brought on the effect of good/bad ground on low dipoles. K1KI, AK1A, W1ZT, W1GG, and W2RQ talked over the apparent collapse of the W1 QSL bureau, and various methods for penetrating their defenses to stimulate corrective action. K1KI and I approached collector K1RT about accessing his set of CQ magazines to get statis-

tics on contest writeup page counts and club competition winners. WA3ZAS and K1RQ contributed thoughts on the "do I need Rohn 45" issue; Paul promised to send me some information which he had presented at PVRC (he's their VP).

In addition to the FD slides, N1RC showed us the W1FC Pack Monadnock operation, and other visual entertainment was available (continuously with no reruns) via videotape distributed to three monitors throughout the house. There was some discussion over whether or not the 40m transmitter should shut down to prevent upsetting the guys in the den, but Dave's 2-el is loud and everyone worked the 9U5 before the confrontation materialized. Dave's station was on the air almost all the time, operating the HK contest. (The cw sometimes sounded a little strange, but I don't know whether it was due to beer or to the in-shack TV.) N1EE found a way to set up the N2NT Sprint Box to parallel two radios and blew up Andy's TS-820. AK1A handed out breakdown packages for the ARRL DX test, and also passed around copies of the first issue of the YCCC typeset DX dupe sheets.

At my request, N2NT went out of his way to pick up a grocery bag full of DX EDGE terminator slide rules to bring to the Bash. After selling one to me and one to AK1A, Andy got excited and sold so many he earned a commission. He says his most effective pitch was "How are you going to show your face on 3830 knowing Jerry bought one and you didn't?"

Was it worth the 4.5 hour drive each way? Well, I left my lawn chair there (again), so either I'm incredibly forgetful, or I'm planning on going next year!

de K1GQ

Excess Cargo

Two brand new Rohn 25G straight sections for sale. Mortgage payment is due. Contact me on 3830 khz. K1DG

R4C - \$350. K1AR

Wanted: 5-30Hy high-voltage swinging choke and 12 μ F 4000V capacitor. AG1C ■

Scuttlebutt Quiz

The answer to the last quiz was—none of the famous testers/DXers listed had Extra Class licenses. Several eagle-eyed readers pointed out that KBØFC was a busted call; it should have been RC. We insert these screwups to see who is paying attention. Incidentally, WB2SJG no longer qualifies for the list.

New quiz—what call sign goes with these antennas: 2-el Telrex on 80, 3-el Telrex on 40, 5-el KLMs on 20, 15, and 10. Hint—the station is in the USA but not within YCCC territory.

de K1GQ

CAC Report

There has been virtually no mail in the CAC box lately, other than the results of the first 81 ballot. I'm reprinting the ballot questions exactly along with the vote tallies, to avoid the confusion introduced in the past by my paraphrasings. I voted YES on items 2, 4, 8, and 9; NO on the others.

1. The scoring system for the IARU Radiosport shall be changed from the 1-3-5 points/QSO zone-based system to a ITU Region based system with one (1) point/QSO within and two (2) points/QSO outside of a station's ITU region.

Item 1... Yes 5 No 6

2. In November Sweepstakes, multioperator stations shall be permitted to operate the entire 30 hour duration of the contest.

Item 2... Yes 7 No 4

3. In November Sweepstakes, multioperator stations shall send the precedence letter "M" in the exchange.

Item 3... Yes 5 No 6

4. A "TOP TEN" certificate shall be issued to each of the top ten single operators, all band contestants in the DX Competition and to each of the top ten contestants in the November Sweepstakes. (Note: this does not stipulate whether a certificate separate from the section/division certificate that, in many cases, would be awarded to such contestants. If your vote is contingent on this issue, please indicate in your comments.)

Item 4... Yes 8 No 3

5. A contest participation certificate shall be issued to all persons who (1) submit a log to an ARRL operating event, (2) request the certificate, and (3) enclose SASE for the return of the certificate. Suitable endorsements shall be established for subsequent entries.

Item 5... Yes 6 No 5

6. For multioperator stations entering ARRL operating events, the operator(s) during each time period the station is on the air shall be indicated in submitted log.

Item 6... Yes 3 No 8

7. The scoring system for the Ten Meter Contest shall be changed to give a 2-to-1 point advantage for CW vs. Phone QSOs; the entry categories shall be changed to Mixed Mode only instead of the present Mixed, Phone, and CW.

Item 7... Yes 5 No 6

8. Field Day shall continue to be scheduled on the last full weekend in June.

Item 8... Yes 11 No 0

9. The all-battery category shall be retained in Field Day.

Item 9... Yes 11 No 0

The next vote will take place late this year. If you want me to generate a ballot item, let me know (preferably in writing—so that HQ can see your supporting arguments).

de K1GQ

A CW Trceive Indicator for the TS-830

(Or any Transceiver)

Andy Blank, N2NT

Since the invention of the transceiver, there has been one major drawback to the cw operator: how do I know where I'm actually transmitting? How often have you found yourself questioning your transmit frequency when that rare DX won't answer? Or, have you had a guest op ask that age old question: how do I know when I'm zero beat with this rig?

Well, most transceivers on the market today (excluding the KWM-380) suffer from this problem. However, they all use some preset offset frequency (usually 500 to 1100 Hz) to permit transceive operation. Not being blessed with perfect pitch, I've often wondered whether I'd exactly tuned in an 800 Hz note (the offset in the TS-830). Then the idea occurred to me to have some kind of indicator when the proper note is tuned and hence this article.

The circuit described here may be used with any transceiver. Once installed and calibrated, the LED will indicate presence of the proper offset frequency and the operator can be sure of being zero beat with the incoming signal. Connections shown are for the TS-830, with no external modifications required. The entire circuit is built on a 1"x2" piece of perfboard, using a handful of parts available at any Radio Shack. This is small enough to fit into almost any transceiver.

In the TS-830, I have made use of the "FIX" LED readout. It is not normally used, and does not hinder FIX channel operation. In operation, the FIX LED will blink with the incoming code when a perfectly tuned cw signal is heard. The PLL circuit requires a few milliseconds to lock onto the proper frequency; however it will respond to high speed cw. The circuit functions well at normal volume levels, is highly immune to noise, and will respond to weak signals. It is disabled during SSB operation.

To calibrate the circuit, you may use a counter, the readout in the 830, or a separate receiver:

1. Connect the counter to the audio output of the transceiver and tune in calibrator so that the counter reads 800 Hz (or whatever your transceiver offset is). Adjust the decoder frequency control, R1, so that the LED turns on. Reduce the audio volume and readjust R1 slightly until you reach the point where the volume is too low, then raise the volume slightly and give R1 a final tweak.

2. Tune in the calibrator (e.g., 14.2000 MHz), then reset the tuning so the readout is 800 Hz below the calibrator frequency (13.9992 MHz). Perform the R1 adjustment as above.

3. Find a carrier with both receivers. Switch the transceiver to low power transmit and tune the transceiver frequency to zero beat the carrier in the separate receiver. Switch back to receive and adjust R1 as above. Let the rig warm up before calibration, as a slight frequency drift may be encountered.

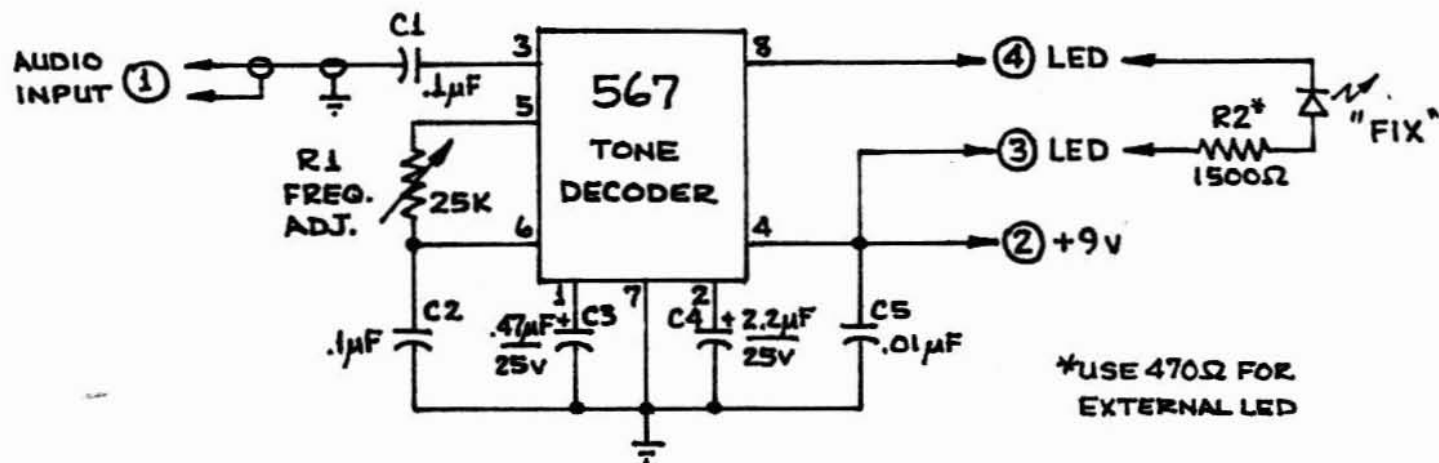
Make sure the RIT and XIT are **off** during calibration and normal operation. Some operators like listening to a different frequency beat note than the one provided, and consequently tune the RIT for a slight shift. This is okay, but the circuit must be calibrated in this mode and care should be taken to operate with this in mind normally. My original intention was to disable the circuit during RIT or XIT operation, however the required connection points in the 830 would demand disassembling half the radio. Therefore, as always, try to remember to keep the incremental tuning off when operating transceive.

Good luck, and hope to hear you in my passband from now on!

TS-830S Installation Instructions

1. Install the assembled board with approximately 12" wire pigtails (trim each as installed) in the space under the chassis behind the VFO unit near the bottom of the large electrolytics.

2. Use stiff bare wire to ground the board to nearby chassis terminals. This may be used to support the board.



3. Connect shielded cable (1) inner lead to headphone jack lug 2 (junction of two 100 ohm resistors). The shield may be connected under the ground screw of the PLL unit.

4. Connect +9v wire (2) to the mode switch, larger white/green wire on wafer closest to front panel and towards the VFO unit (bottom view). This wire should have 9v in TUN/CWW/CWN positions only. Be careful not to burn any wires! 5. Route wires (3) and (4) up through the chassis. remove the two screws holding the LED board to the front panel. Remove and *insulate* the gray wire from the board. Connect wire (3) to the foil on the back of the board.

6. With a sharp knife, cut through the ground foil for the FIX LED. Check with an ohmmeter, then connect wire (4) to the diode side of the cut through the foil on the back of the board.

7. Reinstall the LED board and make sure the gray wire is insulated from any connection. Proceed to calibration.

Vertical Stacking

Part II — Out of Phase Horizontal Yagis

Bill Myers, K1GQ

One afternoon Bill came bursting into Jane's real estate office. "I just saw your blurb for 25 acres of orchard on Abbott Hill with a view of the Boston skyline. Let's go see it."

"Sorry," said Jane. "That was just sold, to a pilot who said he wanted to talk home simplex while he commutes to Logan."

"Another hilltop wasted on 2-meter FM," muttered Bill. "Probably couldn't hack the payments anyhow. You ready to tell me about BOP yet?"

"As a matter of fact, I was just finishing up a comic strip for you. Here's a set of plots showing ground reflection patterns for different heights, and another set showing the stacking patterns for different spacings. As you recall, the combined pattern for two identical in-phase stacked horizontal antennas is the product of these two factors, times one other pattern determined only by the antenna itself."

"How come you show such huge spacings?" interjected Bill. "Nobody is going to put two yagis that far apart."

"I'll come to that in a minute. First, let's draw a couple of conclusions from this series of graphs. One — increasing the height lowers the wave angle at the peak of the first

lobe. Two — increasing the spacing decreases the gain, by narrowing the zero-wave angle stacking pattern lobe. Thus, closely-spaced high stacks will have more gain than widely-spaced high stacks or closely-spaced low stacks. We're talking about differences of around 1 dB."

Bill asked, "If closer is better, why don't your stacking patterns go below 90 degrees?"

"Somewhere below half-wavelength spacing, the assumptions needed to apply pattern multiplication start to break down. As a rule of thumb, I'd be skeptical of any simplistic analysis where stacked antennas are spaced within 180 degrees of each other, or within a boom length for really big antennas.

"Now listen carefully. These plots can also give you the pattern for out-of-phase antennas. What you do is multiply the ground reflection pattern for height equal to one-half the true spacing, times the stacking pattern for spacing equal to twice the effective height. This is why I made plots for large values of spacing."

Jane continued, "Since you look confused, let's do an example. What are the heights of your two 20-meter yagis?"

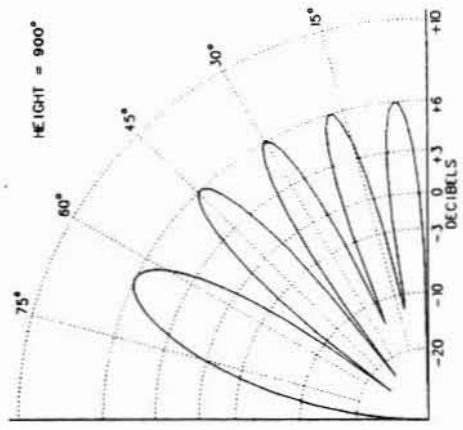
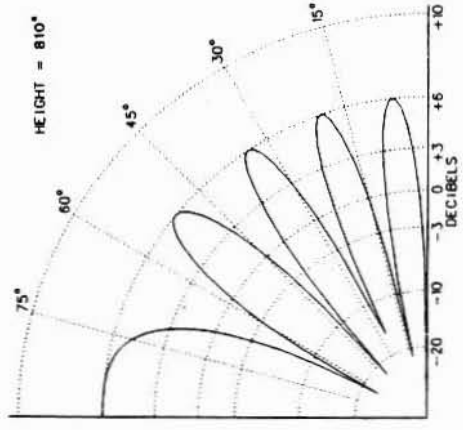
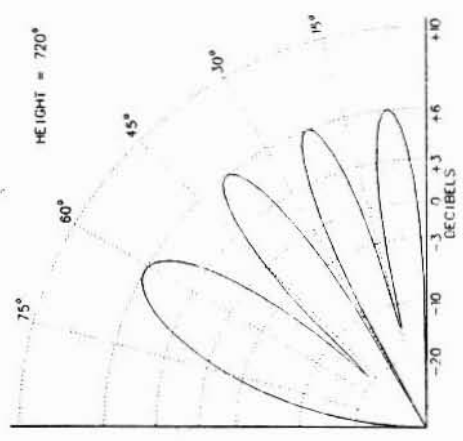
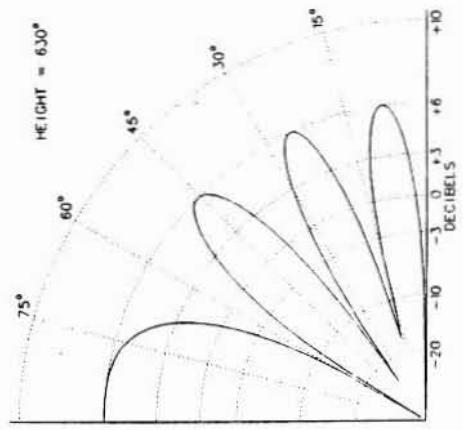
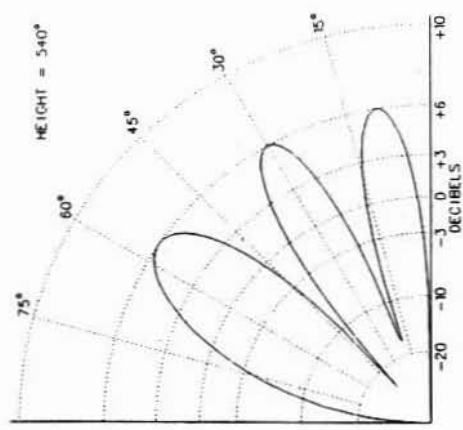
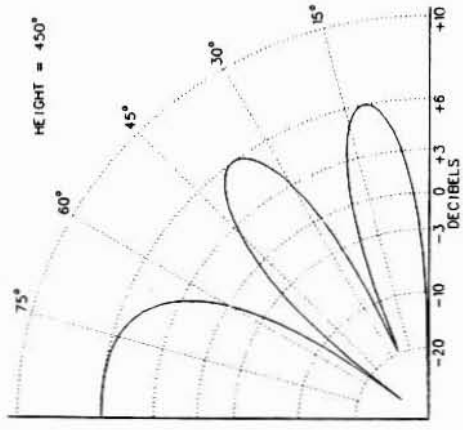
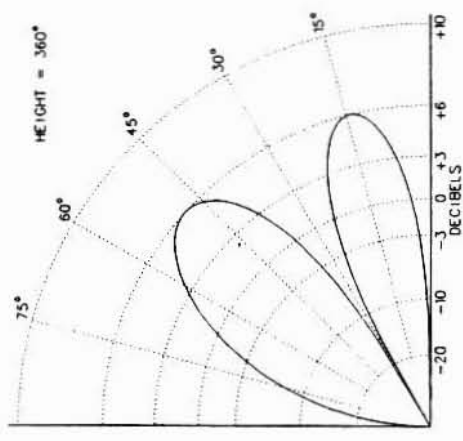
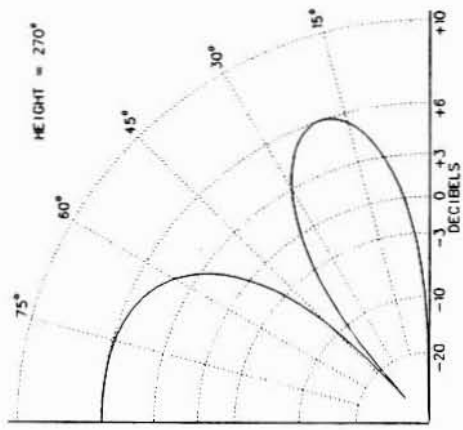
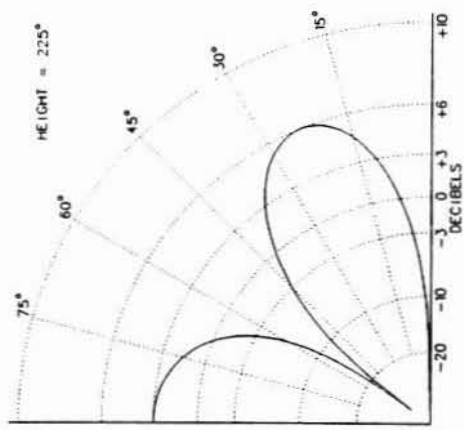
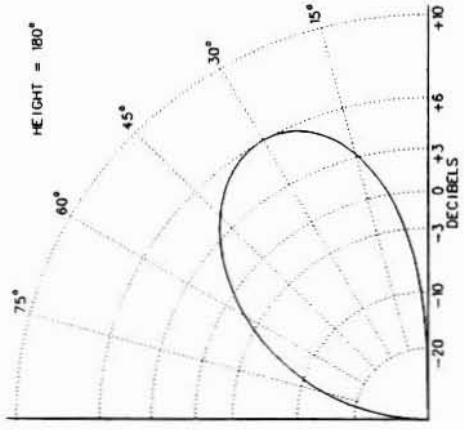
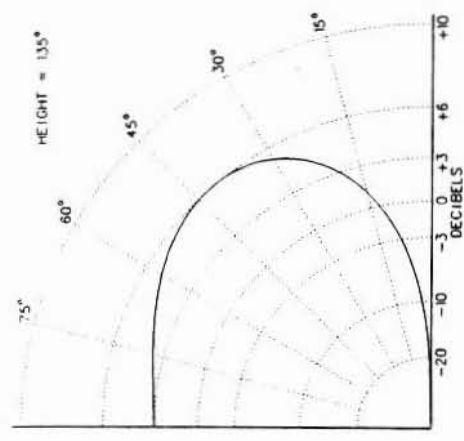
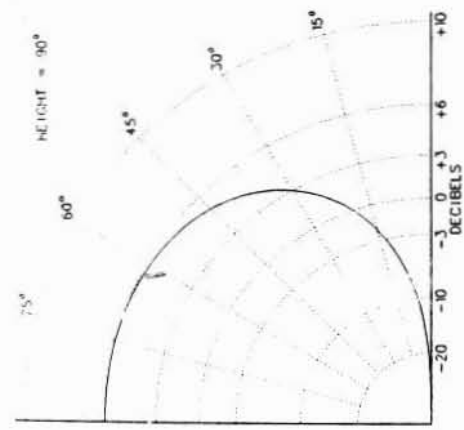
"140 feet and 55 feet", replied Bill.

Picking up her calculator, Jane said, "Fine. One wavelength at 14 mhz is 983.6 divided by 14, or 70.25 feet. Thus, your lower antenna is at 55/70 or 0.79 wavelengths, or, multiplying by 360 degrees per wavelength, 283 degrees. The upper antenna is at 720°. The average height of the stack is 502° and the spacing is 437°."

Bill said, "Those numbers don't show on your charts, so we're out of luck, huh?"

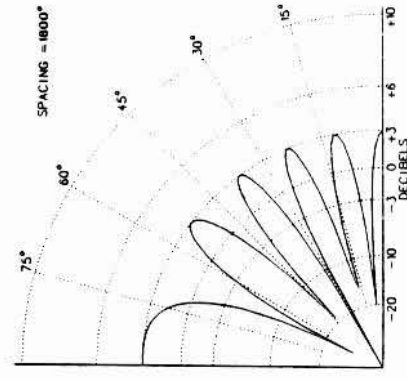
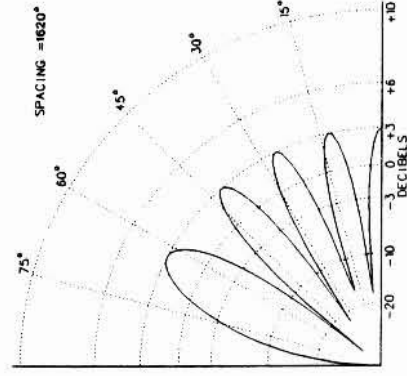
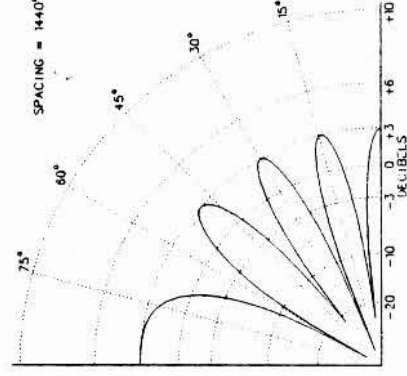
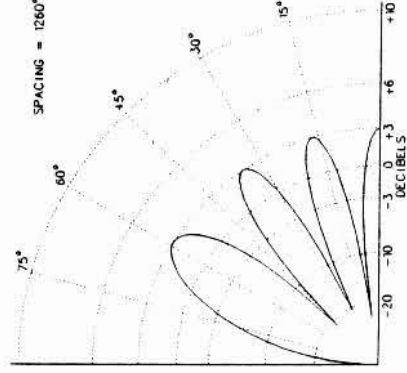
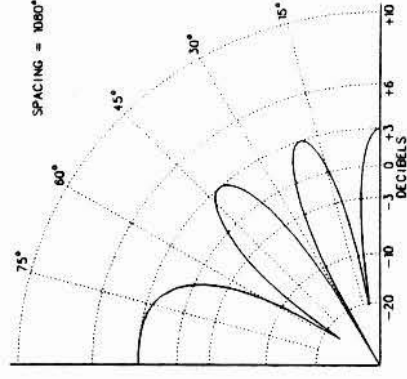
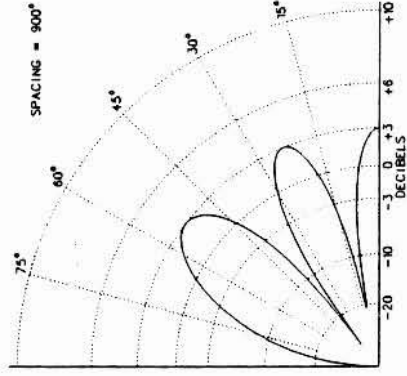
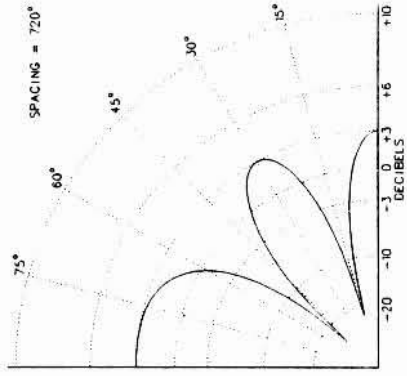
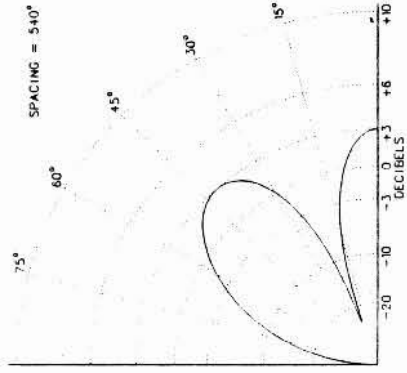
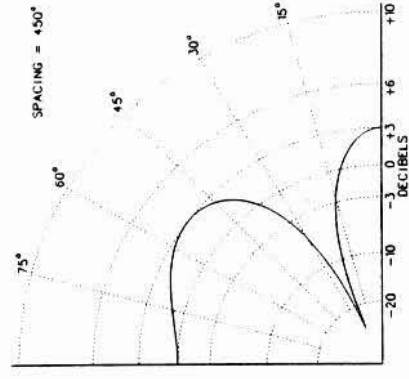
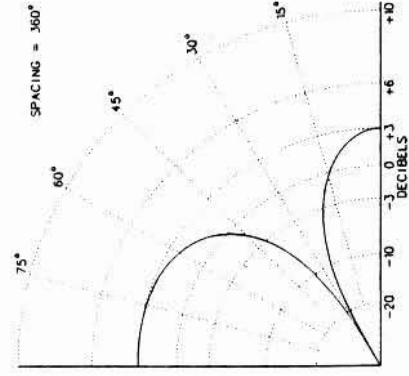
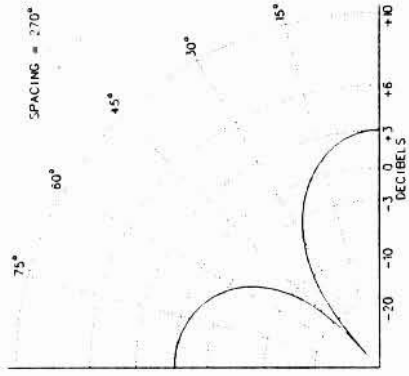
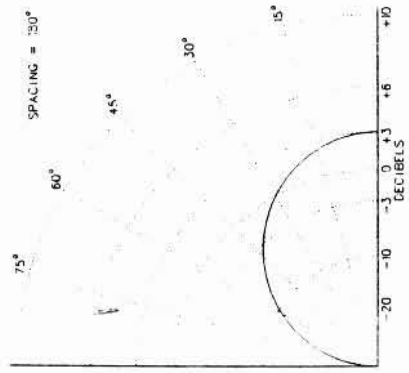
"No, we can still get a good idea of how the pattern will appear by using the closest plots — height = 540° and spacing = 450°. At 14 mhz, normal ionospheric propagation supports wave angles up to about 20°, so we only need concern ourselves with the lowest-angle lobe. The ground reflection pattern peaks at about 10°. At this angle, the spacing pattern gain is about 1.5 dB. Thus, for the in-phase stack, we can expect a peak near 10° (actually, slightly lower than the ground pattern, peak) with net gain of 6 + 1.5 or 7.5 dB.

"For the out-of-phase stack, we want to combine the ground reflection pattern for height = 437° / 2, or 219°, with the stacking pattern for spacing = 502° times 2, or 1004°. The closest we have are 225° and 1080°. Here, the ground reflection pattern peaks near 25° and the closest stacking pattern lobe peaks at about 20°. So, somewhere between these two angles is the lowest angle lobe of the out-of-phase stack and the gain looks to be about 8 dB.



Ground Reflection Patterns

$$G = 4 \sin^2 (h \sin \alpha)$$



Stacking Patterns

$$G = 2 \cos^2 (s/2 \sin \alpha)$$

"For more precision, we can compute some array factor gains using the true height and spacing for a few values of the wave angle (α), by the formulas shown on the plots. I've got a little program in my HP-41C which does this — your in-phase stack should have a peak of 7.2 dB at 8.5 degrees, and the out-of-phase stack peaks at 8.9 dB near 22 degrees."

Bill muttered to himself for a moment, then said, "I'm a bit befuddled by all these gains and wave angles. Is the stack better than a single yagi or not?"

"Okay," Jane said, "let's make a table. Assume that your 4 element yagi has 8.7 dB gain in free space over an isotropic source — this is about right for the Skywalkers. The column labeled G gives gain relative to isotropic for the largest low angle lobe and the column labeled α gives the wave angle at the peak of the lobe:

	G	α
Upper (140')	14.63	7.0
Lower (55')	14.16	7.5
Both in-phase	15.84	8.5
Both out-of-phase	16.97	21.0

"Hmmmmm," said Bill. "Looks like the in-phase stack only buys me 1.2 dB over the upper yagi alone, which isn't worth the trouble. The out-of-phase stack gives me 2.8 dB over the lower yagi, but at a high angle, which is only good for working W8's and mid-day stuff when the MUF is high. I'm a single-op DX contester, so I guess I don't need it."

"Right," Jane said. "A multi-op which must dig out QSOs all day long on 20 and 15 may find the BOP arrangement useful, but a single-op should normally be on a higher frequency band when DX is coming in at high angles. If you have two yagis, the extra hassles of switching, matching, and perhaps rotating the lower one may not be worth the extra gain and flexibility in wave angle."

Bill had been fiddling with Jane's calculator while she spoke. "Wait a minute, you goofed. 8.9 dB + 8.7 dB is 17.6 dB and you only have 17.0 for BOP in the table."

"You're pretty sharp today," Jane said. "The table includes a factor we haven't talked about yet, the yagi pattern. Next time you drop in, I'll show you what typical yagis produce for radiation patterns in both horizontal and vertical planes, and how to use the simple approximation which I've got in the HP calculator." ■

Roster Updates

Please update your rosters to reflect the following changes:

K1DG	Home Phone: (617) 851-7606
WA2OVE	Work Phone: (201) 684-1400 x25
N2NT	Work Phone: (201) 529-4800 x511
W1RR	RFD2 Box 361 E. Kingston, NH 03827
W1XX	Home Phone: (203) 727-9296 Work Phone: (203) 666-1541

de AK1A

Sunrise/Sunset Maps

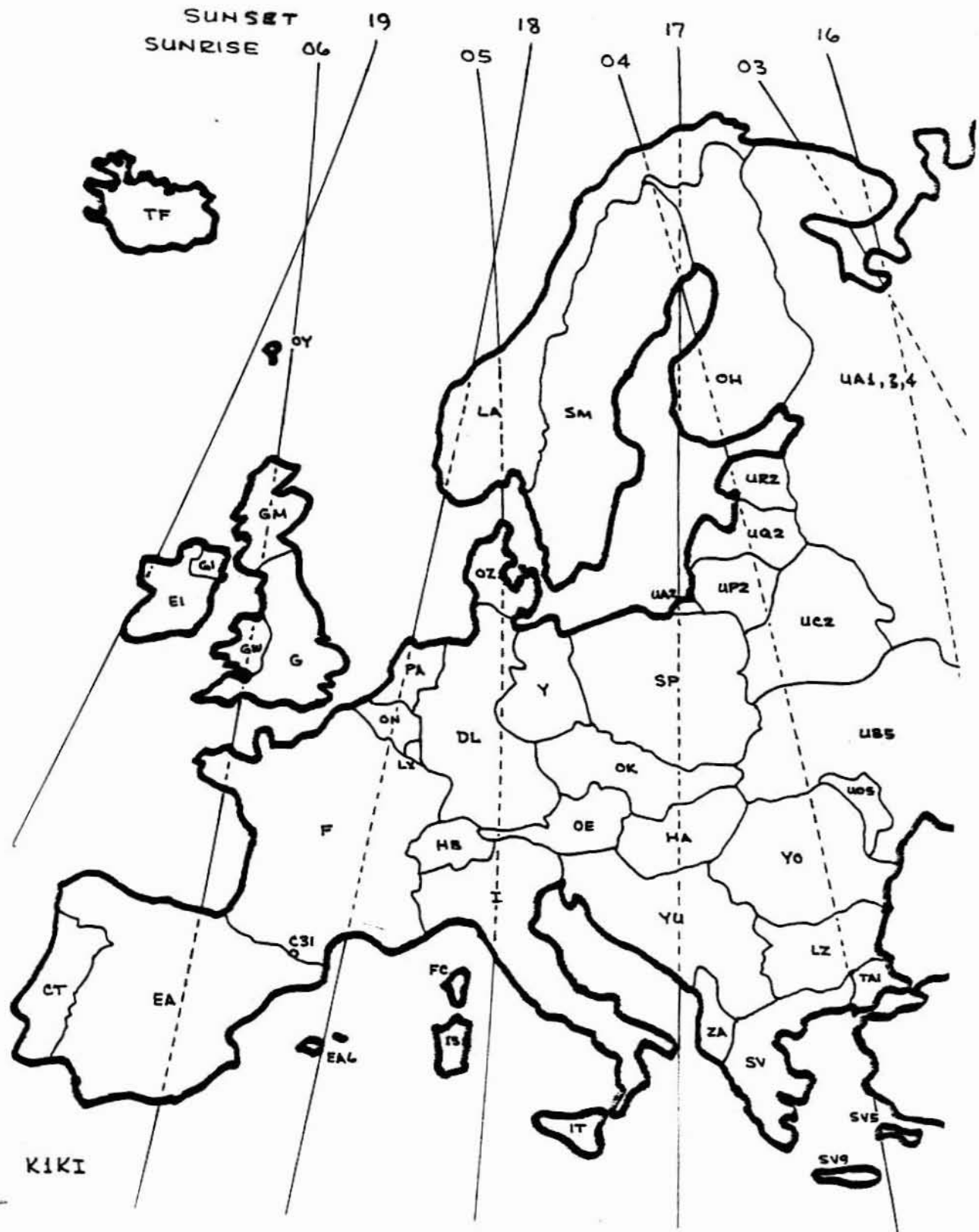
Some of you may have been interested in the sunrise/sunset map of Europe in the last **Butt**. It was specially drawn for the WAE cw weekend—maps for the AA cw and WAE phone weekends appear in this issue. There are a couple of very important ways these maps can be used. In order to maximize multipliers, you need to keep track of what you have worked on each band. When it gets to the second night and you need a YO or UO5 on 80 meters, it is very worthwhile to know that sunrise is at 0300 or so. Signals will peak at sunrise and your best shot will be then. At 0100 you can start looking on 40 or 20 for a likely station to QSY with. Another important use is to tell when the band is likely to close on 15 (around sunset), and when the peak period on 20 meters will be (6 - 9 PM local time in Europe). It really does help to pay attention to sunrise and sunset. While many things you will do in a contest are "automatic," this may give you enough of an edge to move you up a notch.

de K1KI

[illegible]

KIKI

WAE phone 12 Sep



YCCC Area Managers *

K1EB.....	Gary Firtick.....	HOME: (203) 938-3361	WORK: (203) 264-4091
W1HCS.....	Bill Pedersen.....	(603) 673-1678	(603) 673-1678
AJ1I.....	Everett Hudson.....	(617) 667-1150.....	(617) 452-1511
K1OME.....	Rich Roth.....	(617) 429-6119	(617) 429-6119
WA2OVE	Bob Naumann	(201) 427-8881.....	(201) 427-8881
K1SA.....	Bernie Cohen	(207) 773-6589.....	(207) 774-1334
N1TZ.....	Bob Czajkowski.....	(617) 885-3841.....	(617) 885-3841
K2VV.....	John Yodis.....	(518) 843-3877	(518) 346-8711
W1ZT	George Johnson.....	(413) 443-3084.....	(413) 494-2269

* Your AM is listed on your mailing label

AUGUST
All Asian DX Contest cw

SEPTEMBER
6
NA Sprint

12 - 13
WAE Contest phone

OCTOBER
3
YCCC CONVENTION MEETING Avon, CT
24 - 25
CQ WW DX Contest phone

NOVEMBER
7 - 9
ARRL Sweepstakes cw
21 - 23
ARRL Sweepstakes phone
28 - 29
CQ WW DX Contest cw

DECEMBER
5
YCCC FALL MEETING, Worcester, MA

Bill Myers K1GQ
Box 501
Hollis, NH 03049

FIRST CLASS