

The Contest JUG



NEWSLETTER OF THE
NORTHERN CALIFORNIA CONTEST CLUB
34456 COLEVILLE PLACE
FREMONT CA 94546

JUNE 1983

NUMBER 134

PRESIDENT: K6HNZ VP/CC: NR61 SECTY/TREAS: KC6D
DIRECTORS: K6KLY, W6OAT, W6SZN, K6TMB JUG Post-Prod: K6HNZ JUG EDITOR: K6RU
COMMITTEES: CQP-K6XO AWARDS-KA6ING PROGRAM- MEMBERSHIP- FINANCE-

DUES TIME

COMING EVENTS

JUNE MEETING PROGRAM

LOU BEAUDET, K6TMB WILL PRESENT "ALAND ISLAND DXPEDITION AND LENINGRAD
SIDE TRIP" NARRATION AND COLOR SLIDES.
DON'T MISS THIS ONE!

JUNE 24-25: ARRL FIELD DAY

NO JULY MEETING

JUNE 27: NCCC MEETING, 7:30 PM
CWA HALL, HAYWARD.

NO JULY CONTEST JUG

JULY 9-10: IARU RADIOSPORT CONTEST

SEE YOU AUGUST MEETING

PRESIDENT KEN SAYS

THE N6RO PICNIC WAS A BIG SUCCESS AGAIN THIS YEAR WITH PERFECT WEATHER, GOOD FOOD, COLD BEER AND LOTS OF CONTESTERS IN ATTENDANCE. MANY THANKS TO KEN FOR INVITING US TO THE GOOD OLD ANTENNA FARM AGAIN. THANKS ALSO TO N6QW FOR COORDINATING THE FOOD. A GOOD TIME WAS HAD BY ALL, AND THANKS AGAIN KEN AND JEAN FOR A NEAT TIME!

AT THE JUNE 2 BoD MEETING THE DEBATE CONTINUED ON CLUB ACTIVITIES FOR THE COMING YEAR. AFTER MUCH DISCUSSION THE FOLLOWING CLUB PROGRAM WAS ADOPTED:

1. A REALLY BIG CQP EFFORT HOPEFULLY WITH OPERATION FROM ALL 58 CALIFORNIA COUNTIES.
2. A MAXIMUM EFFORT IN THE CQ WW DX CONTEST WITH LOTS OF DXPEDITIONS.
3. FUN DXPEDITIONS TO COSTA RICA FOR BOTH CW AND SSB ARRL CONTESTS ARRANGED IN COOPERATION WITH T12CF.

THE CQP EFFORT IS A FOREGONE CONCLUSION. WE SPONSOR THE CONTEST AND HAVE MADE IT BY FAR THE BEST OF THE STATE QSO PARTIES. EVERY CLUB MEMBER SHOULD PARTICIPATE IN SOME WAY IN THIS ACTIVITY. AN EXPEDITION TO A REMOTE COUNTY IS THE MOST EXCITING WAY TO PARTICIPATE. PLAN ON THIS FOR THE FIRST WEEKEND IN OCTOBER.

(CON'T. P.2)

PRESIDENT KEN SAYS (CON'T)

THE CHOICE BETWEEN THE SS AND THE CQ WW WAS NOT EASY BECAUSE THERE IS ABOUT EQUAL SUPPORT FOR EACH OF THESE CONTESTS FROM OUR MEMBERSHIP. THE CQ WW WON OUT WHEN IT WAS POINTED OUT THAT THE DECLINING SUN SPOT ACTIVITY WILL PROBABLY MAKE THE SS THE CONTEST OF CHOICE FOR 1984 AND SEVERAL YEARS BEYOND. A COMMITTEE IS BEING ORGANIZED AND WILL MEET JUNE 14 TO GET THINGS STARTED. AN IMPORTANT FUNCTION OF THE COMMITTEE WILL BE TO ASSIST EVERYONE WHO WOULD LIKE TO GO ON A DXPEDITION TO FIND A SUITABLE LOCATION. PLEASE START TO THINK ABOUT THIS AS YOU WILL ALL BE CONTACTED IN THE NEAR FUTURE. ONE OF THE THINGS WE ARE ANXIOUS TO DO IS FIND A FUN WAY FOR EVERY CLUB MEMBER TO PARTICIPATE IN THIS CLUB ACTIVITY.

THE THIRD CLUB ACTIVITY FOR THE YEAR WILL BE CW AND SSB DXPEDITIONS TO COSTA RICA FOR THE ARRL DX CONTEST. DXPEDITIONS SCORES DON'T COUNT FOR THE HOME CLUB IN THIS CONTEST SO THIS WILL BE JUST FOR THE FUN OF IT PLUS THE CHANCE TO MAKE SOME WORLD HIGH SCORES. A STATION CAPABLE OF SIX BAND SIMULTANEOUS OPERATION IF AVAILABLE TO US. ALL WE HAVE TO TAKE WILL BE MIKES, KEYERS, PHONES AND LOG SHEETS. THE AIR FARE IS REASONABLE AND WE CAN PROBABLY GET A GROUP DISCOUNT. I WAS IN COSTA RICA LAST DECEMBER AND FOUND IT AN ENJOYABLE PLACE FOR A WINTER VACATION. THE WEATHER IN FEBRUARY AND MARCH SHOULD BE EXCELLENT. UNLIKE ITS NEIGHBORS TO THE NORTH, COSTA RICA IS PEACEFUL AND FRIENDLY.

THE ANNUAL DUES ARE DUE JULY 1ST. THE ENCLOSED ENVELOPE WILL MAKE IT EASIER TO RESPOND. PLEASE REMIT PROMPTLY SO OUR TREASURER WILL NOT HAVE TO WEAR HIMSELF OUT CHASING DELINQUENT MEMBERS. THIS YEAR, THE JUG WILL NOT BE MAILED TO MEMBERS AFTER SEPTEMBER UNLESS THEIR DUES ARE PAID. JUG POSTAGE IS ONE OF OUR BIGGEST EXPENSES (ALMOST \$500/YEAR - ED.).

AT THE JUNE 27 MEETING WE WILL TRAVEL TO ALAND ISLAND AND LENINGRAD WITH MASTER PHOTOGRAPHER LOU, K6TMB. THIS WILL BE A GOOD SHOW. HOPE TO SEE YOU ALL THERE.

73, KEN, K6HNZ

NEW MEMBER

N6ICV - MIKE H:415)490-0416
MICHAEL E. WATTS W:408)263-1221
44533 PARKMEADOW DR.,
FREMONT, CA 94538

MIKE IS 36 YEARS OLD AND HAS BEEN LICENSED FOR 15 YEARS. HIS FORMER CALL WAS KØAID. HE OPERATES 50% CW AND 50% PHONE. HIS PHONE ACTIVITY IS MOSTLY IN VHF CONTESTS AND HIS STATION INCLUDES LOTS OF VHF/UHF GEAR THROUGH 1296. HIS HF STATION(S) INCLUDE TS430-S, 2 EA. 1C740, AND 3 EA 2 KW LINEAR AMPS. ANTENNAS INCLUDE 5 ELEMENT MONOBANDERS ON 10/15/20. MIKE WAS INACTIVE FOR SEVERAL YEARS, BUT NOW IS BACK AT IT FULL BORE.

NEW MEMBER

WB60TC - ERNIE W: 415)483-1200
ERNEST C. LOPEZ
2555 LONGVIEW DRIVE,
SAN LEANDRO, CA 94577

ERNIE IS 58 YEARS OLD AND HAS BEEN LICENSED FOR 5 YEARS. HE HOLDS AN ADVANCED CLASS LICENSE. HE OPERATES 95% PHONE AND 5% CW. HIS STATION INCLUDES AN ICOM 701, ALPHA 77DX AND A 204BA AND A TELREX 10/15 ON A 54 FOOT TOWER. HE IS DXCC WITH 292 CONFIRMED. ERNIE IS A MEMBER OF NCDXC.

ROSTER CHANGE

KC6D - BOB EHR (EFFECTIVE 6/20/83)
1282 PAMPAS DRIVE, H:408)268-9664
SAN JOSE, CA 95120

THE CONTEST JUG
June, 1983

CQ Worldwide DX Competition 1983

Secret Insert #1

Information For In-Territory
NCCC Members ONLY!!!!!!!!!!

8P6KX--FOØJO--G5CFJ--N6HR/KH6
AHØC--J2ØDU--ZK2RU--K6HNZ/CT3
5W5DM--VP5KP--T32AL--P42E----
4T4O--KG6RE--N6KT/HKØ--VE7WJ-
ZK2ZZ--XE2BC--VP2VFL--8P6QL--
J6LIR--N6BT/AHØ--8P6J--J6LZA-
FOØKP--VP2MEV--AH6BK--VP2VHX-
K6BR/KP4--P41E--FCØFOO--9Y4KG

Spread the word! Around the NCCC, that is. And don't tell YCCC. Or FRC. Or PVRC.

The Northern California Contest Club is making its third consecutive all-out effort in this year's CQ Worldwide DX Competition. Our goal is to again capture the Club Competition title as well as to set a new Club scoring record for the contest--and to have a lot of fun in the process. Since contest expeditions count toward Club score in the CQWW, we'll need to send out as many expeditions as possible during both weekends of the contest.

As of today (June 19th), no less than 20 NCCCers are planning expeditions for the '83 CQ. It's a great start, but it's not enough to win. So, if you've ever thought about going on a contest expedition, now is the time to consider doing it!

There are, of course, lots of good reasons to go on an expedition. Most importantly, it adds to the Club score. And, there's no question about what kind of score you can make. The answer is: BIG! It's also lots of fun to be the center of attention in pile-ups. Imagine, if you will, the thrill of SSB rates exceeding 250 QSOs per hour! Or of hourly CW rates topping 150 Qs! And for hours on end. You don't have to have monster antennas and big power to do well from a DX location, and it's a great way to combine radio with a bonafide vacation.

A contest expedition also doesn't have to be an expensive proposition. Sure, if you want to operate from 8Q7, it'll cost at least a couple of thousand dollars. But, you can make a big score from a place much closer to home and not have to spend that kind of money. For example, you can go to most places in the Caribbean, Central America, and the northern part of South America for \$600-\$750 round trip plus expenses. A plane trip to CT3 runs about \$1,000; AHØ costs \$1,100; KH6, \$350; VE7, \$250; or, if you're on a limited budget, an expedition to XE2BC in Tijuana will cost you a couple of tanks of gasoline and food expenses. All in all, there's an affor-

ble place available for any Club member who wants to go somewhere.

Here's the list of NCCers who have tentative fall expedition plans:

PHONE

AH8 by AA6DX, KN6Q, NA6T, and others (multi-multi)
J6LIR by WB6FCR
YV by K6KLY and others.
PJ2FR by N6KT
8P6J by N6TJ
PJ by N6TU (multi-single)
TI by K6HNZ and others

Somewhere in Central
or South America,
or South Africa

? by W6KG and W6QL
? by W6SZN

No location selected yet: N6BT, KS6H, W6OAT, and K6ZM.

CW

5N by AA6AD
AHØ by N6BT and WA6VEF
FOØJO by W6GO

Somewhere in Central
or South America,
or South Africa

? by W6KG and W6QL
? by W6SZN

8P6J by N6TJ
TI by N6TV
VP2MEV by AJ6V
ZK2 by K6ZM

No location selected yet: N6TU.

With propagation declining as rapidly as it is, this year will probably be our last chance to compete effectively with our "friends" back East. In both our '81 and '82 CQ Worldwide efforts, approximately 45% of our Club totals resulted from contest expeditions. So please think about it. Within the next two weeks, you will be receiving a telephone call from a member of this year's NCCC CQWW Planning Committee. If you're interested in going on a contest expedition, let him know, and he'll put you in touch with this year's Contest Expedition Co-ordination Committee, who'll help you find a place to operate and aid you in planning and organizing your trip.

73,

THE 1983 NCCC CQWW CONTEST EXPEDITION
CO-ORDINATION COMMITTEE

Rich Smith N6KT

Rusty Epps W6OAT

Kip Edwards W6SZN

Gary Caldwell WA6VEF

INDIVIDUAL OPERATOR SCORES - CQWW DX CONTEST 1982INDIVIDUAL OPERATOR - COMBINED SCORE ON BOTH MODESMULTI/OP OPERATORS - MULTI/OP SCORE DIVIDED BY THE NUMBER OF OPERATORS.

CERTIFICATES WERE AWARDED AT THE APRIL BANQUET TO ALL OPERATORS WHOSE COMBINED SCORE ACCORDING TO THE ABOVE RULES WAS 750K POINTS OR HIGHER AS FOLLOWS:

N6BT	4,902,496	WB6DSV	1,086,593
W6SZN	4,542,401	K6XO	1,086,593
WA6VEF	4,498,039	N6XI	1,084,237
N6KT	4,498,039	N6QW	1,059,297
K6KLY	4,155,551	W6BH	958,000
W6GO	3,887,772	WA6IQM	958,000
K6PU	3,842,360	AA6G	948,092
N6BV	3,630,508	N6AUV	948,092
K6HNZ	2,832,154	N6RO	945,736
N6QR	2,401,753	N6NE	945,736
N6TU	1,813,844	NI6D	945,736
WB6SHD	1,813,844	KT7W	945,736
K6RU	1,809,674	WA6DIL	945,736
AA6DX	1,562,547	WB6EXW	924,462
A16V	1,481,563	W6KG	903,798
AA4KB	1,378,202	W6QL	903,798
KN6M	1,300,000	N6HR	902,739
KB6XN	1,300,000	N6KB	869,637
NJ6D	1,300,000	N6RZ	850,216
N6BPL	1,300,000	WA6OCV	850,216
KD6T	1,300,000	AJ6V	837,865
NJ6P	1,300,000	W6RJ	819,333
KC6D	1,205,900	W6UA	801,732
KB6JK	1,134,750		

TNX TO: KA6ING FOR COMPUTED SCORES.
K6HNZ FOR COMPUTER TABULATION.

Minutes -- NCCC Board of Directors Meeting -- 2 June, 1983

The meeting was held at the home of W6OAT, and attended by W6OAT, K6HNZ, KC6D, K6TMB, K6ZM, W6RGG, and WA6VEF.

The following proposed 1983/84 budget was approved to be presented for approval at the June, 1983 membership meeting:

<u>Item</u>	<u>Income</u>	<u>Expense</u>	<u>Net</u>
Membership dues and donations	\$2100	\$100	\$2000
Self-funded events (dinners)	250	0	250
Raffles	200	140	60
1981 CQWW T-shirts	30	0	30
Publications (Jug)	600	1250	<650>
Hospitality (picnics, Visalia)	50	250	<200>
Membership Awards	0	1000	<1000>
Club-sponsored awards (CQP)	0	170	<170>
Meeting programs/entertainment	0	100	<100>
Meeting room rental	0	120	<120>
Contingency	0	100	<100>

Total	\$3230	\$3230	0

It was decided that the NCCC membership roster will be updated and published with the August Jug, and that the Jug will not be published in July since no membership meeting will be held during the month. It was decided that members whose dues are delinquent at the end of September will be dropped from the Jug mailing list at that time.

It was decided that the NCCC 1983/84 club contest activity concentration will be on the CQP, the CQWW, and an expedition to Central America in the ARRL DX contest.

The program for the June membership meeting will be a presentation by Lou, K6TMB, on the 1981 Radiosport contest as experienced from Leningrad AND ALAND ISLAND.

The July Board of Directors meeting will be held on July 7 at the QTH of K6TMB.

Bob Ehr, KC6D, Secretary/Treasurer

DUES SCHEDULE

REGULAR MEMBERS.....	\$12.00	PER YEAR
STUDENT AND ASSOCIATE MEMBERS.....	9.00	PER YEAR
JUG SUBSCRIPTION ONLY.....	6.00	PER YEAR

HUMAN ENGINEERED RIT AND INDEPENDENT XIT FOR THE KENWOOD TS-830

By Bill Zachary, N6OP

Trio-Kenwood's engineers generally do a very fine job of designing amateur radio transceivers. They, like most JA designers, are much more willing to build in those "extra" features which make operating so much easier than is true for so many American designs. However, some of their human engineering leaves a lot to be desired. In particular, why do they insist on assigning the RIT control a tiny knob and placing it halfway up the front panel to the right of the main tuning knob? Cramps and/or numbness and accidental bumps are inevitable with this design!

What follows is a modification which rectifies these concerns and provides the operator with the freedom and flexibility of independent RIT and XIT. In addition to relieving operator strain while tuning for a response to a CQ, this mod makes it possible to instantaneously select any TX offset one wishes - independent of any RX offset selected. The mod involves moving some parts around the radio and adding a new pot to act as the RIT pot. The present RIT/XIT pot becomes an XIT-only pot. The RIT or XIT circuit is switched into the main circuit automatically with the T/R relay changeover.

Control Relocation

In many contest situations the RIT control is used more often than any other control on the radio, and it seldom ranks lower than second (below the main tuning knob). From a design standpoint, therefore, it should be allocated as desirable a location as the main tuning knob, and should occupy a substantial amount of front panel space. The RIT knob should be easy to hold for long periods of time without straining the operator's fingers, hand, wrist, or forearm. And finally, it should not be located where it is likely to be accidentally bumped when the operator manipulates other frequently-used controls.

In the TS-830S, the space which meets the above criteria (especially for right-handed cw contest ops) has been allocated to the Mic Gain/Carrier Level/Calibration set of controls. Hmmm. The Carrier Level control is easily shifted elsewhere (any 10K pot will do), the Calibrator is seldom if ever touched during a contest, and who cares about Phone anyway?! Without drilling any holes, simply:

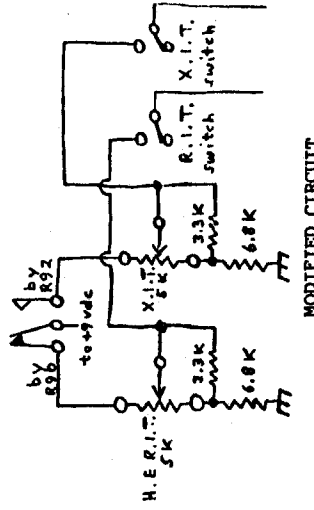
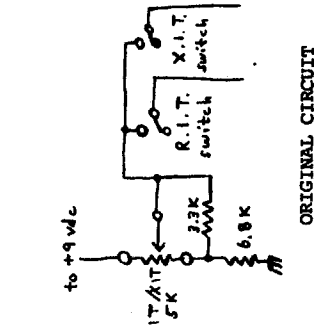
- 1) shift the Mic Gain/Calibrator set of controls elsewhere out of the way (to the back panel of the radio, for example).
- 2) replace the NB Level pot with a 200-500 ohm trimpot located inside the radio (how often do you change this level during a contest?), and fill its former location with a 10K Carrier Level mini pot (just like the Comp Level pot - it's Kenwood Part Number R01-3410-05).
- 3) insert an RIT/IF Shift pot designed for a TS-820S (Kenwood Part Number R08-9011-05) where the Mic/Car/Cal controls were.

- 4) attach a large, easy-to-grasp knob about one inch in diameter (a coaxial switch knob is perfect) to the protruding shaft of the '820 RIT/IF Shift pot.

Wiring Changes

While my original modification adapted the Fix switch to choose between the new HERIT pot and the old RIT/XIT pot, I do not recommend this approach. Getting at the Fix switch connections is pretty nasty. Besides, once you've tried HERIT, you are unlikely to want to go back to using the original RIT knob anyway.

The key to adding an independent RIT control is to arrange to switch +9vdc between the top ends of the HERIT and XIT pots. A set of relay contacts on the AF Unit (X49-1140-00, under the chassis) does exactly what is wanted. These contacts appear immediately adjacent to R90 near the top of the AF unit schematic on page 36 of the standard TS-830S manual. The wiring is straightforward, though some connections are buried pretty deep in the radio. (Hint: remove the VFO unit if you get frustrated.) Wiring the circuit in this manner results in either the RIT or the XIT circuit being automatically active depending on the position of the T/R relay and whether the RIT and/or XIT selection switch is activated. Note that the old RIT indicator LED still lets you know when the new RIT is engaged.



-- TNX TO THE NCJ

Minutes -- NCCC Membership Meeting -- 23 May, 1983

K6HNZ presided over the meeting, which was attended by 20 members and guests, including NS6A, N6ICV, and WB6OTC.

WA6VEF presented the 1981 CQWW No. 4 World-Wide/No. 1 Oceania award plaque to N6BT.

K6HNZ presented the 1981 CQWW Club Championship award plaque to WA6VEF in recognition of his efforts.

K6HNZ solicited ideas from the membership for meeting programs.

WB6OTC and N6ICV were voted and welcomed as new club members.

A discussion of proposed 1983/84 club contest activities was held: club efforts and possible goals in the CQP, CQWW, SS, ARRL DX (with club expedition), and WPX were considered. WA6VEF reported that a number of expeditions are already planned by club members for the CQWW. The matter was referred to the Board for further consideration.

K6HNZ requested volunteer(s) for 2-meter NCCC net NCS, to relieve W6RGG.

Bob Ehr, KC6D, Secretary/Treasurer

UNCLAIMED AWARDS

THE FOLLOWING AWARDS WERE UNCLAIMED AT THE APRIL BANQUET:

- W6BH - PLAQUE AND CERTIFICATE
 - WB6SHD - " " "
 - AA6DX - "
 - KN6Q - "
 - WA6IQM - PAPERWEIGHT AND CERTIFICATE
 - W6UA - CERTIFICATE
- PLEASE CONTACT LOUESE, KA6ING
415)583-5333

BADGES

OUR SCTY/TREAS HAS BADGES FOR THE FOLLOWING PEOPLE: N6AHA, KS6C, K6GSS, W6ISQ, W6MTF, NJ6P.
PLEASE CONTACT BOB EHR, KC6D,
408)268-9664

BoD MEETING JULY 7 AT K6TMB

NEXT JUG DEADLINE: AUGUST 10

CLASSIFIED

FOR SALE: KLM ANTENNAS ALL PAINTED AND IN GOOD CONDITION AND DOWN:

- 5 EL 20M WITH 6TH EL KIT.....\$400
- 4 EL 40M..... 350
- 6 EL 15M..... 200
- 6 EL 10M..... 140
- 11EL 2M..... 30
- 80M ROTATABLE DIPOLE..... 350

SPECIAL-ALL ABOVE ANTENNAS.....\$800
K6RV DON SCHLIESSER 415)654-3166

FOR SALE: KLM KT-34A NEVER USED, AND KLM 2 EL 40M BEAM, BOTH FOR \$350.
KD6DY JOE 415)939-6567

Tired of post-contest paperwork?

Try the N6TV Duping Service. Just mail me a copy of your log, and I'll send you:

- * A list of all duplicate QSOs and multipliers (NEW)
- * An alphabetical list of all call signs, by band (dupe sheet)
- * Hour by hour QSO rate sheet
- * Computerized self-stick labels for your QSL card (optional)

Price: 4¢ per QSO. For self-stick labels, add just 1¢ per QSO.

Bob Wilson, N6TV, 4950 Cherry Ave. #46, San Jose, CA 95118,
(408) 264-6688 evenings.

So who needs the hassle anyway?

By Stan Brokl, N2YQ

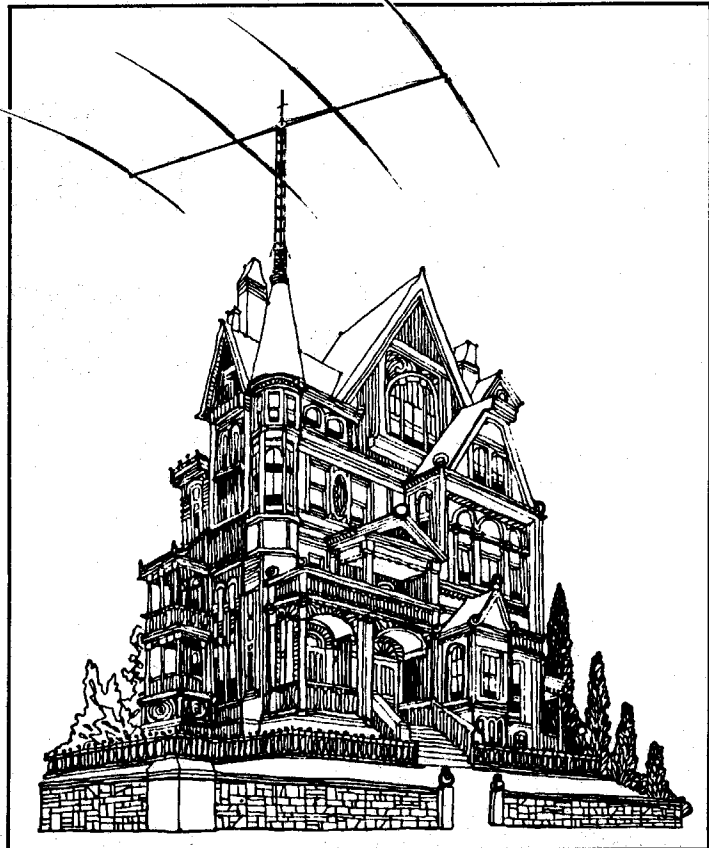
With all these restrictive antenna ordinances being put through by local city governments, the time has come to ask the big question: *who needs this hassle?* Hams are outnumbered by the general population 100 to 1, so why not spend our money in other ways?

Besides, I don't think *higher* is necessarily *better*. N6VI told me one antenna of his wouldn't work at 150 feet and had to be lowered to 90 feet before it would. My 20-meter antenna is only 40 feet off the ground, and I can work everything. Almost.

Another friend uses buried antennas. He has a ten-meter dipole, in fact, that is two feet underground. He claims great success with it—WAC with 10 watts, for example. (He decided to go QRP when he attempted to run a kw and discovered that the worms in his lawn frantically squirmed about making a great racket. This partially explains why the U.S. Navy in Wisconsin has the world's largest underground antenna system for communicating with submarines.)

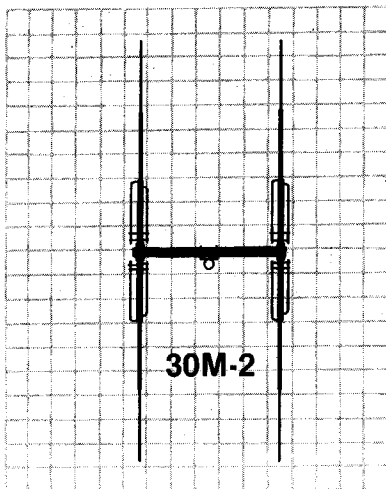
Another advantage to low antennas is that they can have dual purposes. For instance, one can design a flagpole around a 40 or 80-meter vertical, or create a rain gutter system out of large aluminum dipoles. It also turns out that at certain frequencies and power levels a human heating system by RF excitation could be created, thereby eliminating the need to heat one's house. (As we know, microwave ovens use this principle. It would be most effective on the FM bands.)

Also by induction, low antennas on 160 and 80 meters can serve double duty as remote wireless lighting systems. I remember about 20 years ago hearing a scream at 2 AM from the woman next door. It seemed my low 80-meter antenna was periodically lighting the fluorescent fixture in her kitchen. The next day they took her away to the state hospital and her husband has been grateful to me ever since. Thus, the creation of goodwill is just one more of the many advantages of having a low antenna.



TNX TO: SCDXC BULLETIN - JUNE 1983

KLM 30 Meter Monoband Yagis



30M-2: SPECIFICATIONS
 Bandwidth: 10.1 to 10.150 MHz
 Gain:
 VSWR: less than 1.5:1
 F/B:

Feed Impedance: 50 ohms
 Element length: 35'3"
 Boom: 3" O.D. x 12'
 Turn Radius: 18'6"
 Weight: 35 lbs
 Windload: 4 sq ft

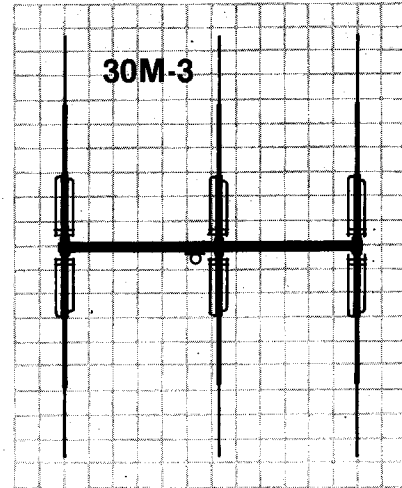
KLM is proud to announce two new high performance monobanders for 30 meters. The KLM 30M-2 and 30M-3 are carefully designed to combine moderate size with superior performance. Either of these compact powerhouses can be a valuable addition to your antenna system without overloading the tower or rotator.

- Construction materials feature strong 6063-T832 alloy aluminum element and boom tubing, massive Lexan insulators, and stainless steel hardware for years of reliable service.

- A DC grounded Beta match and KLM's proven 4:1 DC grounded Balun make the 30M-2 and 30M-3 as lightning/static proof as possible. The unique linear loading system keeps element lengths manageable without sacrificing performance.

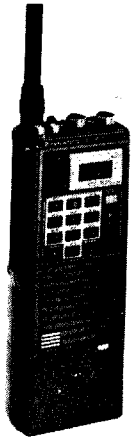
- The adventure of a new band awaits you. Double your pleasure with the great gain and broadband response of the KLM 30M-2 or 30M-3. See your KLM dealer now!

KLM Electronics, Inc.
 P.O. Box 816,
 Morgan Hill, CA 95037
 (408) 779-7363



30M-3: SPECIFICATIONS
 Bandwidth: 10.1 to 10.150 MHz
 Gain:
 VSWR: less than 1.5:1
 F/B:

Feed Impedance: 50 ohms
 Element length: 35'3"
 Boom: 3" O.D. x 24'
 Turn Radius: 21'5"
 Weight: 50 lbs
 Windload: 7 sq ft



TR-2500

KENWOOD

Save substantially!
Call now for
your price.



TR-7950
2 METERS, 45 WATTS,
21 CHANNEL MEMORY

NEW

TS-930 S



TS-430S



**BUY IC-740 NOW
AND GET YOUR
\$50 REBATE!**
DIRECT FROM THE FACTORY



IC-R70



**GENERAL COVERAGE
RECEIVER**

KLM/TRI-EX

KLM KT-34A
4 element tri-bander

Regular \$389.95 **\$299**

KLM KT-34XA
6 element tri-bander

Regular \$569.95 **\$459**

KLM 7.2-1 40M rotatable dipole.
Regular \$199.95 Special \$159.00

KLM 7.2-2 40M, 2 element beam.
Regular \$349.95 Special \$299.00

KLM 7.2-3 40M, 3 element beam.
Regular \$529.95 Special \$449.00

KLM 7.0-7.3 4A 40M, 4 element beam.
Regular \$749.95 Special \$629.00

TRI-EX W51, 51 foot tower.
Regular \$999.95 Special \$829.95

W51 TOWER w/ KT-34A
\$1099

W51 TOWER w/ KT-34XA
\$1239

ETD ALPHA

ALL ALPHA AMPLIFIERS
IN STOCK FOR FAST DELIVERY
CALL FOR SPECIAL PRICES



ONE EXAMPLE:
76PA
REGULAR \$2395

SALE! \$1699



BURLINGAME, CA 94010

999 Howard Ave., (415) 342-5757
5 miles south on 101 from S.F. Airport.

OAKLAND, CA 94609

2811 Telegraph Ave., (415) 451-5757
Hwy 24 Downtown Left 27th off-ramp.

THE CONTEST JUG-PUBLISHED MONTHLY BY
THE NORTHERN CALIFORNIA CONTEST CLUB
34456 COLEVILLE PLACE
FREMONT, CA 94536

FIRST CLASS
FIRST CLASS
FIRST CLASS

W6OAT EXPIRES: 0683
EPPS, CHARLES K
948-H KIELY BLVD
SANTA CLARA CA 95051

