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ORANGE COUNTY AMATEUR RADIO CLUB

VOL. IX No. 8

August 1968

PRES: Dave, W6COJ
V. PRES: Jerry, WA6ROF
SECY: Dave, WB6RVM
TREAS: Ralph, W6WRJ

MEMBERS AT LARGE
Jim, WB6GPK
Bill, WB6CQR

ACTIVITIES: Jack, WB6UDC
PUB. REL. : Bob, WB6IXN
MEMBERSHIP: Dave, W6GPR
TVI: Ted, K6LJA

NEXT MEETING

Monthly meetings are held on the 3rd Friday of each month at the Lincoln Savings and Loan Bldg., 17th & Bristol, Santa Ana. The next meeting will be held on Friday, August 16, at 7:30 p.m., at the same location.

PROGRAM

AUCTION.....AUCTION.....AUCTION.....AUCTION.....AUCTION..

Come one! Come all! Our famous CQR, Bill Hall, will be the presiding auctioneer. Let's bring some valuable gear this year! It will be helpful if the following ground rules are followed:

1. Bring useful merchandise. (No junk please!) Items other than radio equipment is perfectly acceptable.
2. Tag or label everything you bring with your handle and/or call and state the minimum price you will accept for it.
3. Club is to receive 10% of all sales. Please bring cash for bidding.

In fact, start the XYL rummaging through the house right now while you concentrate on the shack!!! See you at meeting with the goodies!!!

LAST MEETING

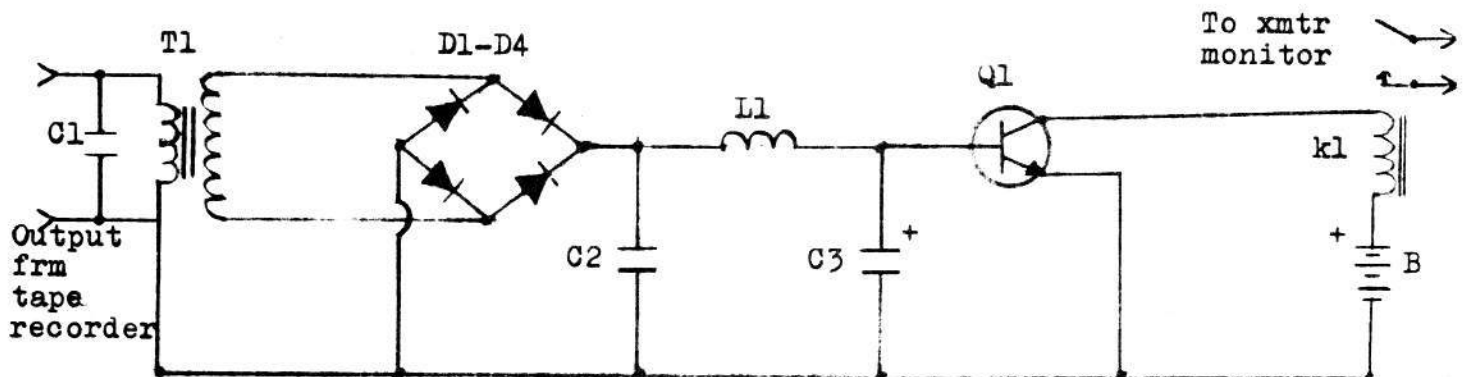
The meeting was called to order at 2000 hr. The group was welcomed by WB6KOQ, host for Northrup Recreation Club. The meeting was conducted by WA6ROF, who introduced OCARC officers. Pres. WB6JFE introduced the officers of the Anaheim Club. Bill Hall, CQR, displayed the Heart Fund Plaque awarded to the Orange Section AREC. Dave, RVM, announced participation by AREC in the coming CIF Tennis Matches. SCM, Roy Maxson, introduced W6WK, John Griggs, who discussed recent ARRL minutes of the board. A question and answer period followed. DEY, Max, spoke on the possible reorganization of the Orange County Council. Jerry, RQN, presented the Orange County Award to Dan, WB6RYE. The meeting adjourned for eyeball QSOs and coffee at 2254 hrs.

Respectfully submitted, Dave, RVM, Secretary.

Below, you will find described, a TAPE RECORDER DECODER, submitted to "RF" by our own Randy Hoffman, WB6WQN:

(How abt some of you homebrew addicts submitting some more technical articles for "RF"??? Pse remember to make drawings with BLACK ink or draw lines dark with a No. 2 pencil. Please present explanations typewritten if possible.)
Tnx, Randy!

TAPE RECORDER DECODER



Q1- For maximum sensitivity, a high gain transistor such as a 2N447A (gain of 200) shud be used. But any transistor of reasonable gain is OK. (2N338, 2N3641, 2N3843, etc.). A PNP transistor can be used as easily by reversing polarity at battery and C3. (2N1307, 2N404, 2N408, 2N1025 (gain of 100, costs .60¢), etc. Not critical.

C1- .001 to .005 rf bypass (mf or mmf? Call Randy)

C2- .1 to .25 disc ceramic, mylar, electrolytic - at least 6 V breakdown voltage.

L1- .5 Henry choke (toroid is best becuz of small size, low losses), value is not critical and can be replaced with a 68 to 100 ohm resistor, though performance is degraded slightly when demodulating low frequencies.

C3- 1 mf to 2 mf electrolytic or other capacitor - breakdown voltage at least 3 volts

T1- Miniature transistor audio output transformer, primary 8 ohms (to match tape recorder output); secondary 500 to 1000 ohms.

D1-D4- 1N34s or equivalent. Just about any small signal germanium diode will work.

K1- Reed relay - 3 to 6 volt coil. A 10 watt reed relay with coil can be bought at Lafayette Radio in Buena Park for \$2, or a range of relays, with and without coils can be obtained at R. V. Weatherford in Anaheim.

B Battery- 3 to 6V.

The tape recorder decoder can be very useful and is easy to duplicate. It converts an audio signal to D.C. to key a relay. Code can be recorded on a tape recorder, then played back through the decoder thus keying a transmitter, moni' or both. Works just dandy for a "CQ" tape or a "CQ Field Day" tape. CW can also be recorded frm a receiver and played back keying your transmitter, letting a fellow amateur hear his own fist! A delayed test transmission wid a timer can also be arranged, allowing you to check signal quality from a friend's shack.
(Next page, please)

None of the part values are critical. The volume control setting on playback and record will have to be adjusted to obtain the best results. Playback volume whould be as low as possible to prevent background noise from causing odd clicks, or overloading frm causing mushy characters.

The PROGRAM for SEPT. MEETING will feature a HOMEBREW CONTEST with judges, prizes...the works!!!

Your entry must be something that you have built!
Now, OCARC members, here is a chance for everyone to get into the act!
Build something now for the September contest!!!

OBNR 177 dtd 11 July 68: The Indonesian Government has begun the issuance of amateur licenses with the prefix YB. However, United States and Canadian amateurs still should avoid working Indonesian stations until official word has been received from ITU Geneva that Indonesia has withdrawn its objections to international communications by its amateurs. When the country is withdrawn from the banned list, there will be a further bulletin from WLAW. A full list of banned countries, including Indonesia, appears on page 82 of July QST AR

OBNR 178 dtd 18 July 68: The FCC has adopted rules providing for slow scan television in the high frequency & very high frequency amateur bands. Effective Aug 30, slow scan TV is permitted in the Extra Class and Advanced Class voice portions of the 80 meter and higher bands, with bandwidths no greater than a properly operated SSB voice signal. On six meters and above, bandwidths equal to a double sideband standard amplitude modulated signal will be permitted. Nov. 1967, Feb. 1968 and the forthcoming Sept. 1968 issues of QST contain additional information on the rulemaking AR

FIELD DAY REPORT

From the shack of UDC comes the following FD report:

Field Day Call Used (Indicate Portable) W6ZE/6 .F.D. Location. SANTA ANA CALIF. . . .

Entry Class (Check Only One)

A. Club or Non-Club Group Portable Number of Transmitters In Simultaneous Operation 5

The number of people participation at this Station- - - - - 30 - - - - -

Check Power Source: Generator Commercial Mains Battery Other

Description of Power Source (Generator Type, etc.) GASOLINE + SURPLUS MILITARY

Band	NRQSOS	Independence of Mains Multiplier	D.C. Input Multiplier	Score	Transmitter	D.C. Input
80CW	10	X3 30	X 2	60	GALAXY MK 3	200w.
75PH	224	X3 672	X 2	1344	GALAXY MK 3	200w.
40CW	62	X3 186	X 3	558	RANGER	50w.
40PH	396	X3 1188	X 2	2376	WRL DUB RANGER	200w.
20CW	93	X3 279	X 2	558	HEATH SB401	200w.
20PH	328	X3 984	X 2	1968	HEATH SB401	200w.
15CW	24	X3 72	X 2	144	SWAN 350	200w.
15PH	430	X3 1290	X 2	2580	SWAN 350	200w.
10CW	—	X3 —	X —	—	—	—
10PH	68	X3 204	X 3	612	HALL, SRIED	50w.
6PH	9	X3 27	X 3	81	Communicator II	20w.
2PH	145	X3 435	X 4	1740	GC105	8w
Total	1789	Total QSO's		12,021	Claimed Score	



100% Emergency Power (200 points per transmitter class)



Publicity (200 Pts)



Message Orig. (200 Points)



Messages (10 pts/HDLG maximum 200)

This certifies that the Station whose call appears above was operated in accordance with the current FIELD DAY RULES (See May QST) and that, to the best of my knowledge, the points and score as set forth in the above summary are correct and true.

7-16-68 DATE

Law Hollander W6COT Signature/Call Club

President

Tnx Loggers Bark



"Come on, Ed, I'll show you how to make an oscilloscope out of your TV set."



Deadline next "RF" Sept. 11

NOT IN VAIN

To talk with God
No breath is lost —
Talk on!
To walk with God
No strength is lost —
Walk on!
To wait on God
No time is lost —
Wait on!

(Author Unknown)

From LeTourneau 'Now!

The 11th annual 'Jamboree-on-the-air' is scheduled from 0001 hrs GMT on Oct 19 to 2359 hrs GMT, Oct. 20. Scouts or Scout Units can participate through ham stations. Write to ARRL for the name of the radio club in your area. A participation certificate will be sent to hams, scouts, etc., who send a report to the Boys' Life Radio Club, New Brunswick, N.J. 08903. For more details, see the Sept. Scouting Magazine and Boys' Life. *** Radio stations WB6IZF, WB6MTB, WB6LVB, and WA7G00, in conjunction with other stations, are forming a world scout net meeting at 1800 GMT on 21.360 Mhz. each Saturday. All scout stations are invited to participate.

American English: Gone to 'Pot'?

Psychedelic Tremens
by Jane Goodsell via Readers' Digest.

Remember when HIPPIE meant big in the hips,
And a TRIP involved travel in cars, planes and ships?
When POT was a vessel for cooking things in,
And HOOKED was what Grandmother's rug might have been?
When FIX was a verb that meant mend or repair,
And BE-IN meant simply existing somewhere?
When NEAT meant well organized, tidy and clean,
And GRASS was a ground-cover, normally green?
When light and not people were SWITCHED ON and OFF,
And the PILL might have been what you took for a cough?
When CAMP meant to quarter outdoors in a tent,
And POP was what the weasel went?
When GROOVY meant furrowed with channels and hollows,
And BIRDS were winged creatures, like robins and swallows?
When FUZZ was a substance that's fluffy like lint,
And BREAD came from bakeries, not from the mint?
When SQUARE meant a 90-degree angled form,
And COOL was a temperature not quite warm?
When ROLL meant a bun, and ROCK was a stone,
And HANG-UP was something you did to a phone?
When CHICKEN meant poultry, and BAG meant a sack,
And JUNK trashy cast-offs and old bric-a-brac?
When JAM was preserves that you spread on your bread,
And CRAZY meant balmy, not right in the head?
When CAT was a feline, a kitten grown up,
And TEA was a liquid you drank from a cup?
When a SWINGER was someone who swung in a swing,
And a PAD was a soft sort of cushiony thing?
When WAY OUT meant distant and far, far away,
And a man couldn't sue you for calling him GAY?
When DIG meant to shove and spade in the dirt,
And PUT-ON was what you would do with a shirt?
When TOUGH described meat too unyielding to chew,
And MAKING A SCENE was a rude thing to do?
Words once so sensible, sober and serious
Are making the FREAK SCENE like PSYCHEDELIRIOUS.
It's GROOVY, MAN, GROOVY, but English it's not,
Methinks that the language has gone all to POT.

Confucius say: To drive a nail without
smashing fingers, hold hammer with both
hands. Keep this in mind, girls!

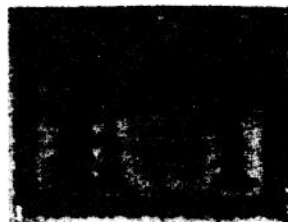
In the next ISSUE of RF, you will find a montage of the joint OCARC-Anaheim Clubs Picnic, and, a picture of OCARC members who participated in Field Day 1968.

We are deeply indebted to Jack Shaw, WA6YWN, for his continued services in this department.

These pictures can be framed and hung in your shack. They make a great conversation piece for the visiting OM. Also, they hold many a fond memory for one to ponder over as the years roll by. Ted, LJA, has hung many of these pictures in his shack. Why don't you try it!!!

(TNX YWN!!- Frm all OCARC members)

AWARDS



Cont'd
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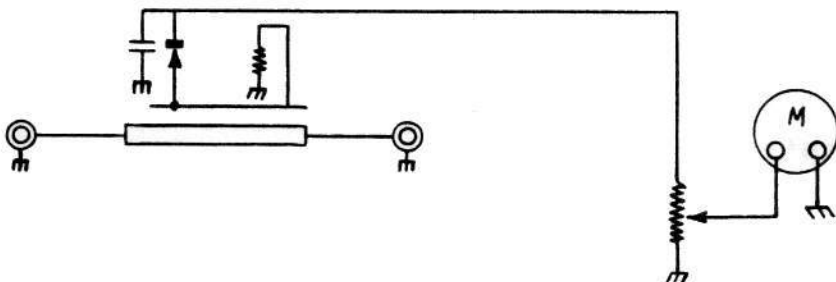
Oregon Counties Award is sponsored by the Oregon Chapter, QRP Amateur Radio Club. Basic award issued as follows: Oregon stations need 25 confirmed counties. W/VE stations need 18 confirmed counties. DX stations need 12 confirmed counties. Endorsement seals available for 25, 30 and 36 counties. Endorsements also given for AOMB/M. All GCR rules apply and if the signatures of two other amateurs cannot be obtained, the applicant must secure notarization or his application will be rejected. Any applicant must furnish QSL cards upon request of the Award Custodian. Basic award cost is 40¢ and the endorsement seals are free for an s.a.s.e. Data on active stations in the various counties is also available for an s.a.s.e. There is no amateur activities in Jefferson county at this time. Custodian, R. Peschka, K7QXG, 2580 S.W. 195th., Aloha, Oregon 97006.

S.W.R. METERS

This meets Bill Foley's definition of a copyrighted article in that it was copied from articles that were written by others.

Most of us are using a SWR meter, home brew, kit or commercial instrument to tell us how well our feed lines match our antennas at the feed point. Perhaps it would be more accurate if we were to say that they tell us when the match is improved or worsened by any adjustment that we make at the antenna, because under some circumstances our SWR does not tell us how bad the match is.

These instruments are usually of the reflectometer type and are essentially a short section of transmission line with a pickup wire parallel to the center conductor and the shield. This wire is coupled both inductively and capacitively to the line. Current flowing in the line is sampled by the inductive coupling and voltage across the line is sampled by the capacity coupling. These samples are added and their amplitude relationships adjusted so that forward components remain but the reflected components cancel. If you are using a kit this has been taken care of by the instructions in the construction manual. If a load resistance, a diode detector, a sensitive meter and a sensitivity adjustment potentiometer are connected as shown in the sketch we have an RF voltmeter, the pickup wire acting as the RF source. The meter will indicate the forward component in the line. The condenser shown is a filter to smooth the rectified AC:



If a second bridge which is a mirror image of the first is included it will measure the reflected components when the phase reversal occurs. The meter and sensitivity control is usually switched from one bridge to the other but two meters and two controls may be used.

If you are interested in how well your two bridges match you can insert the instrument in a line between a transmitter and a load, either a dummy or an antenna (some reflected reading is desirable) and tune the transmitter on the highest frequency band to be used with the SWR. With the switch in the forward position, adjust for full scale on the meter, switch to reflected note the meter reading. Reverse the instrument in the line and without tuning the transmitter or changing the switch adjust the sensitivity control for full scale. Now switch to the forward position and the meter should read the same as it did in the reflected position in the first case. If the readings differ the two bridges are not identical and there is some error. Since this not a highly accurate instrument small differences can be tolerated.

There are some errors inherent in the reflectometer type SWR, some too small to worry about and some that need to be taken into account. It is possible also to introduce error in results by misuse of the meter. One error is in the microammeter used. This is a DC meter and has a linear scale. Unless you have paid much more than the average price for your instrument the meter is 5 percent meter. If the meter is a 100 microammeter it may give a reading that is 5 microamperes high or five microamperes below the indicated reading. If the sensitivity is set for full scale in the forward position and reads half scale in the reflected position a SWR of 1 to 3 is indicated, however, due to the inaccuracy of the meter the actual ratio may lie between 1/3.4 and 1/2.6.

If a SWR of 1/2 is indicated the actual ratio may lie between 1 to 1.8. Another source of error in these instruments arises from the non linearity of the diode detectors. All of the instruments that I have seen (except the one in the Johnson Patch Box) are calibrated as though the diodes were linear detectors. Actually the response turns out to be between a square law detector and a linear detector and varies some with transmitter power and frequency. An experimental curve with an instrument using IN69 diodes showed a SWR of 1/3.8 with a reflected indication of half scale but if calibrated as a linear detector would have indicated a SWR of 1/3.

These errors do not actually render the instrument any less useful but it may point out that we may have at various times reported findings that are questionable when we consider the accuracy of our SWR meter.

The SWR read at the transmitter end of the line always looks better than the SWR read at the antenna end of the line but unless the line is long or lossy or both this difference is small and can be ignored. The difference comes about because with the meter at the input end the forward power is read before the line losses attenuate the power and the reflected power is read after the line losses attenuate the power. This makes the SWR look better. With the SWR at the antenna end both the forward and reflected components are measured before attenuation and SWR is more nearly correct.

Losses due to standing waves if the SWR is 1 to 2 or better are quite small compared to line loss. The heathkit assembly manual for their reflected power meter has a graph in which line loss is plotted against additional loss due to standing waves for standing waves from 1/1.5 to 1/20. Let us assume 100 feet of R8B with a loss of 0.9 db at 21 mg. With a SWR of 1/2 the additional loss would be 0.45 db.

This article and AWARDS frm Florida Signal Report. (Both cont'd on page 7).

TREASURE STATE AWARD



TREASURE STATE AWARD

BY: OLD FAITHFUL RADTO CLUB

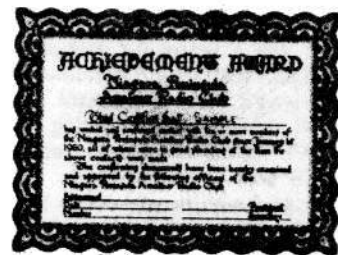
Award given for working Montana Counties. Montana stations work 35; other 49 States work 20; DX work 10.

COST: W/K and Canada, \$1.00; others free. Free to P/B.

IRC INFORMATION: IRC's accepted.

ENDORSEMENTS: All one band, one mode.

CUSTODIAN: BERTHA A. ROYLANCE, P. O. BOX 621, HARLOWTON, MONTANA 59036.



ACHIEVEMENT AWARD

BY: NIAGARA PENINSULA A. R. C.

Work 10 active members of Club, or 8 members and Club station, VE3VM.

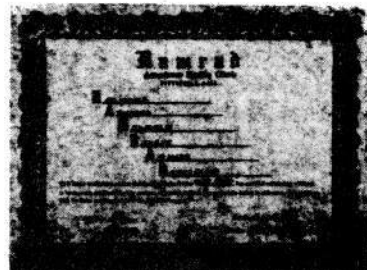
Member list for SASE.

CHC - Credit.

COST: No charge.

ENDORSEMENTS: All one mode: band. Mixed.

CUSTODIAN: DAVE DIGWEED, VE3FOI, 42 1/2 BESSEY ST., ST. CATHARINES, ONTARIO, CANADA.



HAMRAD, sponsored by the HAMRAD Amateur Radio Club of Pittsfield, Massachusetts, is issued for working towns in Massachusetts starting with each letter of HAMRAD (Name of the Club). There are at least 22 towns in Massachusetts for each letter of the club name. QSOs after WW2 with no time limit are OK. Send GCR list (Not QSLs) and 10 IRCs or \$1.00 to Club Custodian, George F. Martin, KITNB, 15 Maple Street, Dalton, Massachusetts.

The Handbook has a plot of power ratio versus decibels and by referring to it or to a table of logarithms we can convert this to watts loss in the line. If a transmitter delivers 100 watts output to a line which is matched at the antenna there will be a loss in the line of approximately 20 watts. With a mismatch giving rise to a SWR of 1 to 2, the loss will be 27 watts.

If the SWR at the antenna is 1 to 2, eleven percent of the power is reflected so of the 73 watts delivered to the antenna approximately 8 watts is reflected back to the line and six of this is delivered back at the transmitter end. This loss of reflected power is the reason that the SWR at the transmitter looks better than it really is but unless the line is very long or very lossy or both this is not serious and can very well be ignored.

In fact in the case of this 100 watt transmitter and 100 foot feed line we are talking about the total loss turns out to be 27 watts or approximately a power ratio of 1/4 which is a 6 db loss, one S unit at the receiving end. You cannot get all of that S unit back but a matched feeder will get you 7 watts and you can get some of the 20 watts due to line loss by using a shorter line or a line with less loss.

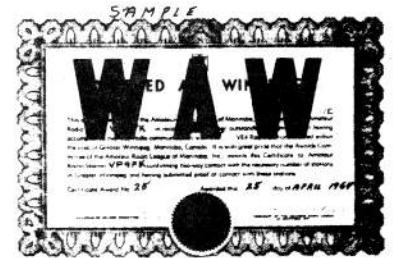
When you struggle to get your SWR below 1 to 2 and your line loss below 10.7 db you are fighting the law of diminishing returns.

The following are the source of this material and are listed for those who would like to follow the subject in more detail:

- The Radio Amateurs Handbook, ARRL
- The Antenna Handbook, ARRL
- Single Sideband, Collins Radio Co. Bonny and Staff
- Accuracy of SWR Measurements, Hall, QST, Nov. 64.
- Smith Chart Calculations for the Radio Amateur, Hall QST Jan. and Feb. 66.

de W4RUN

Florida Sig. Rpt & SPARC-GAP



WORKED ALL WINNIPEG

BY: AMATEUR RADIO LEAGUE
OF MANITOBA, INC.

Non VE4's must work 15 Greater Winnipeg Stations, any mode or band since January 1, 1958. QSL cards must be in possession of applicant, but do not need to be sent - have list certified by two other licensed hams.

COST: \$5.50 or \$5.50 Canadian Postage.

IRC INFORMATION: IRC'S not accepted.

ENDORSEMENTS: None.

CUSTODIAN: H. F. SKAPTASON, c/o P. O. BOX 26, WINNIPEG, MANITOBA, CANADA.



WORKED ALL MASSACHUSETTS
CITIES AND TOWNS AWARD

BY: MASSACHUSETTS CHAPTER NATIONAL
AWARD HUNTERS CLUB

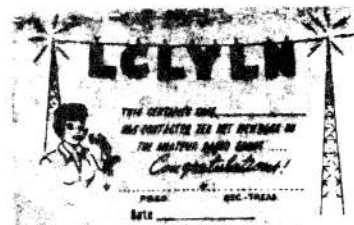
For confirmed contact with the 351 Cities and Towns in Mass. Issued in 5 Classes. No date or time limits. Portables count, but not mobiles. Class D for 50 towns in 5 Counties; Class C for 100 towns in 8 Counties; Class B for 200 towns in 11 Counties; Class A for 300 towns in 14 Counties; Class AA for all 351 Cities & Towns. The QTH on card will determine the town unless the card states otherwise. Contacts with "community" subdivisions count only for the town. Ex.: Hyannis is part of Barnstable, etc. No charge for seals at time of application for basic award. Fee for second band or mode endorsement is 25c as another award will be issued.

COST: GCR list & \$1.00. Seals 10c. Free to B/P.

IRC INFORMATION: IRC's accepted.

ENDORSEMENTS: Band and mode only.

CUSTODIAN: STEVEN RICH, W1DFL, 31 ARLINGTON AVENUE, REVERE, MASS., 02151.



LOADED CLOTHES LINE YOUNG LADIES NET

BY: LOADED CLOTHES LINE YL NET

Award is given in Classes as follows:

CLASS A: 10 phone contacts off net of any of the members.

CLASS B: 15 phone contacts off net of any of the members.

CLASS C: 5 c. w. contacts off net of any of the members.

CLASS D: 10 c.w. contacts off net of any of the members.

CLASS E: 15 c.w. contacts off net of any of the members.

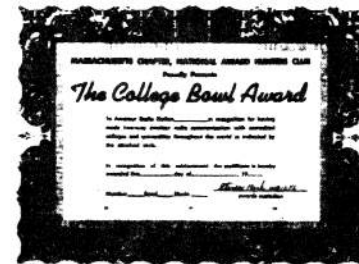
A copy of the applicant's log must be sent to the Certificate Custodian to qualify for the certificate.

COST: No charge.

IRC INFORMATION: IRC's not accepted.

ENDORSEMENTS: None.

CUSTODIAN: HELEN L. DRAKE, K5ECP, 1717 VIRGINIA ST., N.E., ALBUQUERQUE, NEW MEXICO, 87110.



THE COLLEGE BOWL AWARD

BY: MASSACHUSETTS CHAPTER NATIONAL
AWARD HUNTERS CLUB

For working radio club stations of accredited Colleges or Universities anywhere in the world. Issued in three Classes: Class A, work 50 in at least 20 states and/or Countries. Class B, work 25 in at least 10 states and/or Countries. Class C, work 10 anywhere in the world.

Submit application with certified log data showing call of station, date, time, band, mode and name of College or University. No date or time limits. Award will be endorsed for band and mode. If application is made for another band or mode, fee is 25c as a second award is issued. Free to B/P. No charge for higher class seals at time of application for basic award.

C O S T: \$1.00. Seals 10c.

IRC INFORMATION: IRC's accepted.

ENDORSEMENTS: Band and mode only.

CUSTODIAN: STEVEN RICH, W1DFL, 31 ARLINGTON AVENUE, REVERE, MASS., 02151.

ORANGE COUNTY AMATEUR RADIO CLUB, INC.
P.O. Box 95
Orange, Calif. 92668
Vol. IX No. 8 dtd August 1968

FIRST CLASS!!!

DATED MATERIAL!!!