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ORANGE COUNTY AMATEUR RADIO CLUB

P.O. BOX 95, ORANGE, CALIF. 92668

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DECEMBER 1970



PRESIDENT: Jack, WB6UDC  
VICE PRES: Bill, WB6CQR  
SECRETARY: Ken, W6HHC  
TREASURER: John, W6BNX

MEMBERS AT LARGE

JERRY: W6MNY  
SETH : W6ICP

ACTIVITIES: Ron, WA6FIT  
PUBLIC REL: Frank, WB6TBU  
MEMBERSHIP: Mike, WA6UBW  
T V I : Kei, W6NGC

TEENAGE REP: Dave, WB6NRK

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THE PREZ SEZ:

Congratulations to the new club officers-elect. As usual, the elections came off without a hitch.

The final event of the year will take place this month and this, of course, is the annual Christmas Party.

The past year has seen some real fine club activity, of which we are all proud. I think that all of the 1970 officers deserve mention and credit for their efforts.

Our Vice President Bill, WB6CQR, for his excellent program.

Ken, W6HHC, for his fine job as club Secretary and Orange Council Representation.

John, W6BNX, our Treasurer, who kept us in the black in spite of everyone trying to spend the club money.

Ron, WA6FIT, Activities Chairman, for the great job on field day and of course our regular meeting coffee and donuts, and the raffle.

Frank, WB6TBU, Public Relations, for putting together and printing "RF" under severe handicaps, such as no help and no articles!

Mike, WA6UBW, Membership Chairman, who kept busy mailing "RF", keeping the membership up to date amongst a few things.

Kei, W6NGC, our TVI Chairman, who fortunately didn't have much to do in TVI this year, but assisted our club in other ways as well.

And lastly, our two Members At Large Jerry, W6MNY, whose most outstanding remembrance will be to disassociate him with his old call and try to remember him with his new call. Jerry has contributed much and, of course, is pretty busy as SCM of the Orange Section. Seth, W6ICP, who has attended and participated in all Board activities and usually was available to help when we needed him.

As President of the Orange County Amateur Radio Club for the year 1970, it has been a great pleasure to serve you, and I wish to express my thanks and gratitude to the Board and the members of the club in helping me to successfully conclude my term of office.

73, JACK, WB6UDC

MINUTES OF THE LAST MEETING - NOV. 20, 1970

The last meeting was called to order by President Jack, WB6UDC. Our club was very fortunate to have the President of the Amateur Television Club of Southern California, Paul Stumbl - K6LNQ, give a demonstration of the abilities of "Ham TV". In the parking lot we were witness to an "on-the-air" QSO with Huntington Beach and treated to a visual tour of a typical amateur TV shack (and some pictures of very pretty girls). Later, in the meeting room, K6LNQ offered samples of QSO's he had taped and discussed amateur TV on 435 MHz and 1240 MHz.

The election of new officers was held for 1971. The results are:

Pres.	: Bill Hall - WB6CQR	TV1	: Roger Coult - WA6AAL
V. Pres.	: Ken Konechy - W6HHC	Memb.	: Don Gould - W6EQY
Sec.	: Ron Cade - WA6FIT	Pub. Rel.	: Mike Flaherty - WA6UBW
Treas.	: Bill Robinson - WB6WOO	M/A/L	: Jerry VerDuft - W6MNY
Act.	: Bob Eckweiler - WB6QNU		Jack Hollander - WB6UDC

Visitors: K61XL - Pete, Dan Andrews, Don Granier, W6JZZ - Rick, WB6RLL - Joe, WN6DDH - John, WB6QAT - Bill, WB6FFG - Jim, K6QSD - Mike, WA6GXY - Ernie, WA6USP - Herb, WA8DZL - Ruth Snyder, and WB6ZTM - Don.

Attendance: 48

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I would like to thank everyone who participated in this year's field day for a fine job well done. We placed 6th in the 5A group with a score of 11,777. This is a gain over our 1969 performance. 1971 field day is just around the corner and I would like to see our club come in first in the 5A or 4A group. Bob, WB6QNU, Activities Chairman for next year, will be our field day organizer. Club members please support Bob. He can't do it alone. With everyone's help, '71 could be the best year yet for W6ZE.

Your 1969 Activities Chairman  
Ron, WA6FIT

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SATURDAY BREAKFAST

The Saturday Breakfast on December 5th wasn't as well attended as hoped for. Those who were there had an enjoyable get-together and included: Ken - W6HHC, Bob - WB6QNU, Kay - W6NGO, Ron - WA6FIT, Jack - WB6UDC, Frank - WB6TBU, and Jim - WB6BYZ.

After breakfast W6NGO, WB6QNU, WA6FIT and WB6TBU went to George - W6ZHD's home and reconditioned his quad. George is now back on the air on all bands and puts out a tremendous signal.

DX FROM ORANGE COUNTY  
BY JACK, WB6UDC

The past month has seen some good band activity on all bands. However, West Coast 20 meter activity has been limited to operation between 1500 GMT and 0400 GMT. After 0400 in the evening about all that can be heard is local.

The Kuwait/Sauda Arabia/Iraq Neutral Zone DX'Peditions by 7Z3AB and MP4BHH have been cancelled indefinitely due to problems of personal safety.

Tokelaus almost came off by VE7HE and VESRA. However, last minute cancellation of the ship transportation by the Government due to a problem of Rhinoceros Beetles infesting the island from the ship at night. These boys have been operating as 5W1AH and 5W1AR, Western Samoa.

5Y3CC is not Bouvet Island, but Antartica.

MP4MBB and MP4MBC have been showing up on 15 meters fairly regularly, but haven't heard them yet (Muscat & Oman at 1600Z).

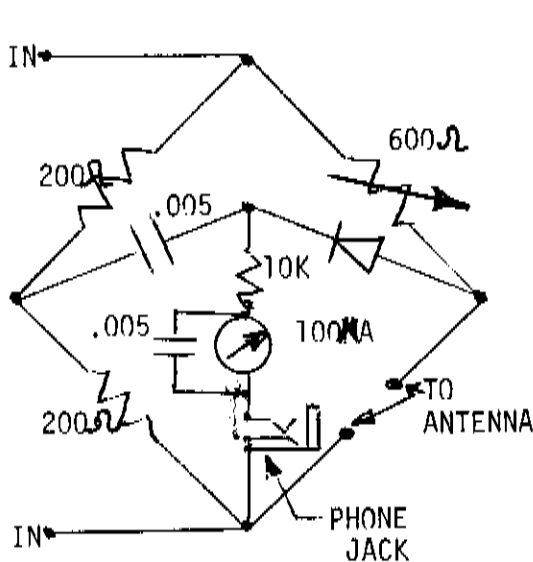
Also noted CQ WDX contest conditions were not too bad either. This was the CW portion.

The following is from the log of WB6UDC from 11/5/70 to 12/4/70.

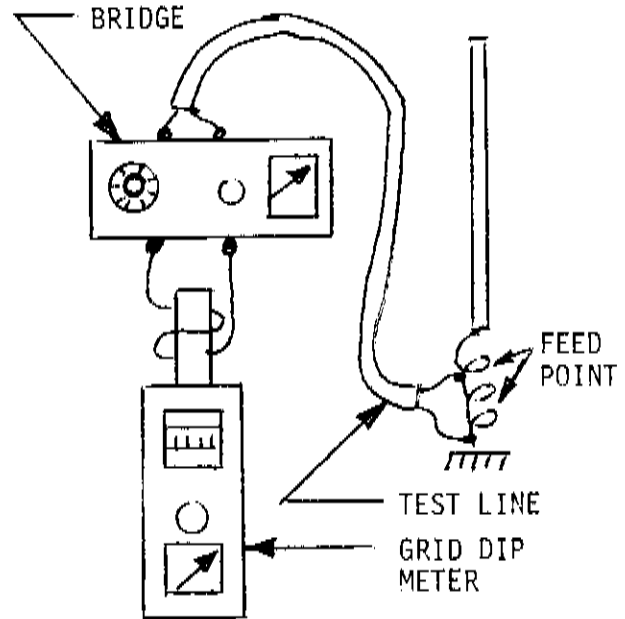
<u>Call</u>	<u>Country</u>	<u>Operator</u>	<u>Frequency</u>	<u>Time</u>
UH8BO	Turkoman	Eugene	14205	0315
KS6DH	Am. Samoa	Jerry	14232	0720
UA1CS	USSR	Vlad	14214	1445
VR5DK	Tonga	Gene	14295	0730
OK1FV	Czechoslovakia	Vasek	14215	1443
ZE1DC	Rhodesia	Gordon	28540	1525
VP8LK	Faukland Isle	Ron	14210	0340
TZ2AB	Mali Republic	?	14255	0400
EA9EJ	Spanish Sahara	Justo	14265	0654
XT2AC	Upper Volta	?	14207	0450
JD1AR0	Marcus	Dick	14217	0510
ZK1CD	Cook Isle	Barry	14277	0605
CR5SP	Sao Thome	Al	14265	0630
UK5JAG	Ukraine	Jura	14061	1559 CW
SV1BV	Greece	Costan	14260	1522
ST2SA	Sudan	Sid	14211	1447
OZ6MI	Finland	Peter	14227	1521
MP4BHH	Bahreïn	Tom	14218	1555
5W1AG	W. Samoa	Ted	14205	1557
4S7AB	Ceylon	Sunl	14202	1645
VR2EQ	Fiji	David	14266	0708
ZM4OL/A	Campbell Isle	Lindsey	14230	0449
7X2AL	Algeria	Jafar	14242	1555
UL7JL	Kazah	Murat	14205	0558
PFOFC	Neth. Ant.	?	3826	0725 CW
LA5KG	Norway	Chris	14208	1455
MLI	San Marino	Ivor	14239	1522
YT2HA	Yugoslavia	Sam	14249	1456
G3QD	England	Gordon	21300	1546

## The Impedance Bridge

When attempting design of a new antenna, a most useful tool is the impedance bridge (refer to figure 1 for circuit). The bridge is used in conjunction with the grid dip meter to (a) give resonant frequency of the antenna and (b) give the impedance of the feedpoint. (Figure 2 shows the interconnection between the grid dip meter, the bridge, and the antenna).



IMPEDANCE BRIDGE  
(HEATH MOD. AM-1)  
FIGURE 1



BRIDGE/DIPPER/ANT  
HOOKUP  
FIGURE 2

### PROCEDURE

(1) Cut a piece of twin lead 300 ohm TV feed line to a multiple of 1/2 wave, using the formula:  $l = \frac{468 V}{f}$ .

$$l = 1/2 \text{ wave length (ft)}$$

$$V = \text{Velocity factor (.82 for TV twin lead)}$$

$$f = \text{Frequency}$$

This will be used as a test line to connect the bridge to the antenna feed point. The 1/2 wavelength test line is used because the impedance at the far end (antenna feed point) will be the same as the impedance at the bridge. Also, the impedance of the test line itself is unimportant - 50 ohm, 300 ohm, 600 ohm, etc., all give the same results. Check for accuracy by following the calibration procedures given later.

(2) Make connections as shown in figure 2. Couple the grid dip meter to the bridge through a one or two loop coil shorted across the bridge terminals.

(3) With one end of the test line attached to the antenna at the proposed feed point and the other end attached to the bridge, vary grid dip meter frequency for minimum reading on the bridge meter. Then adjust bridge resistance dial to reduce dial reading to zero. It may be necessary to repeat these steps once to get an accurate determination of frequency (from the grid dip meter) and

(3) Continued  
feed point impedance (from resistance reading of bridge resistance dial).

(4) If the frequency is not the desired value, adjust antenna length (shorten antenna to increase resonant frequency, etc.). Repeat until antenna resonates at the operating frequency. Then proceed with impedance matching.

Vary the location of the feed point or the adjustment of the gamma match, etc. and repeat step (3) until the input impedance is approximately 52 ohms (or the impedance of the feed line which will be used).

(5) Connect transmitter and feed line (not the 300 ohm twin lead test line) to the antenna with an SWR meter for a final check of the results. Anything greater than 1.5 to one indicates an error in procedure or something.

#### Calibration Procedures and Hints

(6) The grid dip meter frequency scale can be accurately calibrated by feeding grid dip meter and a small amount of transmitter RF (set to desired frequency) into the impedance bridge. The grid dip meter frequency is varied until a zero beat is detected by earphones (refer to figure 1 for circuit).

(7) The impedance bridge dial and length of 1/2 wavelength test line are calibrated/verified by attaching a 50 ohm resistor (non inductive) to the far end of the test line. Procedure (3) should result in the frequency measured in (6) and a bridge resistance reading of 50 ohm. If the frequency is off, adjust the length of the test line. Once the frequency is "on", the resistance reading must be 50 ohm. If not, position the dial to read this value or put a mark on the dial to represent 50 ohm.

(8) SWR should always be measured at the antenna or a multiple of 1/2 wavelength away. Compute this length by using the formula given in (1) substituting the velocity factor for the feedline to be used..

(9) An SWR reading should also be made at the transmitter feed point to assure that the value is within the loading range of the transmitter. If, for some strange reason, an SWR of greater than 2:1 is read, a match box is required or the coax must be cut to find a spot with a low SWR. This process in no way changes the true SWR which is the ratio of antenna feed point impedance to feed line impedance.

#### Conclusions

(10) We'll be glad to answer questions, if possible.

(11) Have fun, 73 - - WB6 W00.

## A CHRISTMAS (ISLAND) STORY

by Bob - WB6QNU and Ken - W6HHC

The roar of the motorboat added to our enthusiasm as the island loomed into view. For six months we had been planning this DX'Pedition and now it was near. In Australia we had received our call...AX9MAS/XMAS and were given permission to operate from Christmas Island. Upon arriving, we went about setting up the station and antennas. It was early Christmas Eve back in the States as the generator first started up. The band was crowded and around our frequency were many stations just calling us blindly. It looked as if the trip was really going to turn out great as we loaded up the linear for the first QSO! But as the VOX tripped in, the linear tripped out....and with a shower of sparks a quick examination revealed two shorted 3-500Z's. We hurriedly looked in the goody box. Hmmmm....some beer....a playboy calendar....more beer....some "807's".... "How about that, no spare finals"!!!

We called and called with just the QRP exciter, but were not able to break through the buzz of stations waiting for us. Suddenly, after one last call, the lights dimmed....the clock slowed....and meters everywhere dropped. Oh no, what now? Suddenly the S-meter caught our attention as it continuously went round 'n round. As we stared at the S-meter, a voice came booming over the speaker and as it did all the lights flickered: "AX9MAS/XMAS this is W6NGO. How copy? You're very weak."

Well, needless to say, we were very happy. After informing Kei of our problem, he said he'd see if he could locate some spare tubes. As Kei signed, another station called....it was Jack, WB6UDC. We returned his call and after passing along our regards, realized he must have been using his field day rig, since in true "field day tradition" he was 5X9 on all five bands.

The next station to call us was Ron - WA6FIT. We gave him a report and turned it back. "AX9MAS/XMAS this is WA6FIT...thanks for the call, just wanted to see if I was getting out...if you want my QSL, it'll cost you 7¢....75's."

Then Kei returned to report he had found a pile of 3-500Z's at the shack of Paul - W6GENT. Kei promised to try to get these tubes to us, but reported our signals were barely readable. After we signed with Kei, it was quite obvious that the trip was going to be a failure if we didn't get those new finals. After all, what good is a DX'Pedition if nobody can hear you.

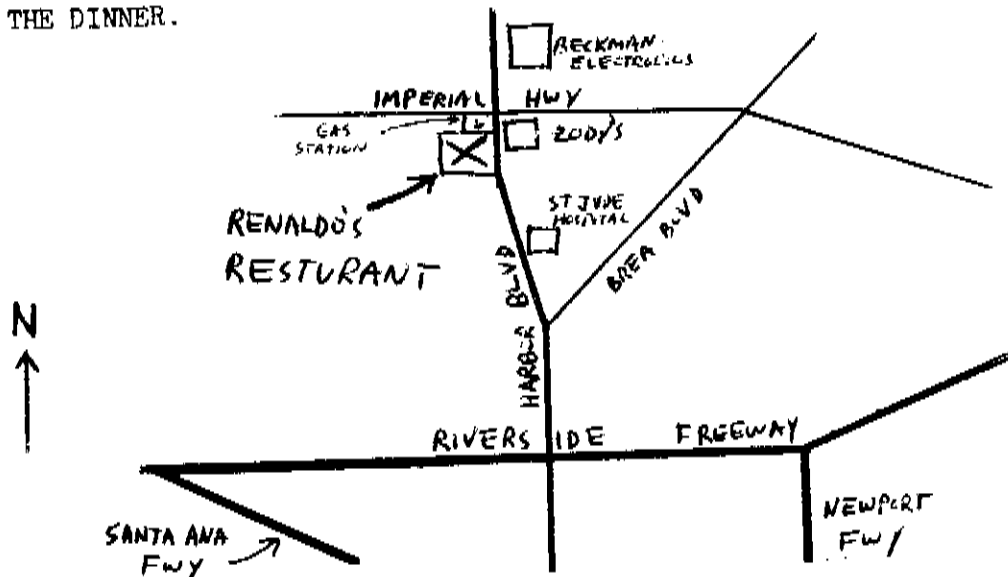
So, tired from our trip and the day's happenings, we put up our make-shift Christmas tree and quickly fell off to sleep. Later that night, a loud jingling sound woke us up. Thinking that we had left the rig on we went to inspect. Sure enough....the rig was on and the speaker suddenly exploded...."AX9MAS/XMAS this is VE8SC/Aeronautical Mobile. Fellas, I just dropped your presents off under your tree". We looked around....and there under the tree was a pair of huge yellow boxes, each with a red ribbon and the wording "3-500Z Electron Tube".

We hurried back to the mike to thank VE8SC/AM and ask him to QTP and share a few tin cans with us. Just then, that funny looking airplane with some guy in a red flight suit buzzed our tent and yelled...."A Merry Christmas to all and to all a good night".

MERRY CHRISTMAS AND HAPPY NEW YEAR

ANNUAL CHRISTMAS PARTY  
RENALDO'S RESTAURANT  
Thursday, December 17, 1970, 7:30 P.M.

SEE YOU AT THE DINNER.



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First Class

Dated Material

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