

*K6MA*

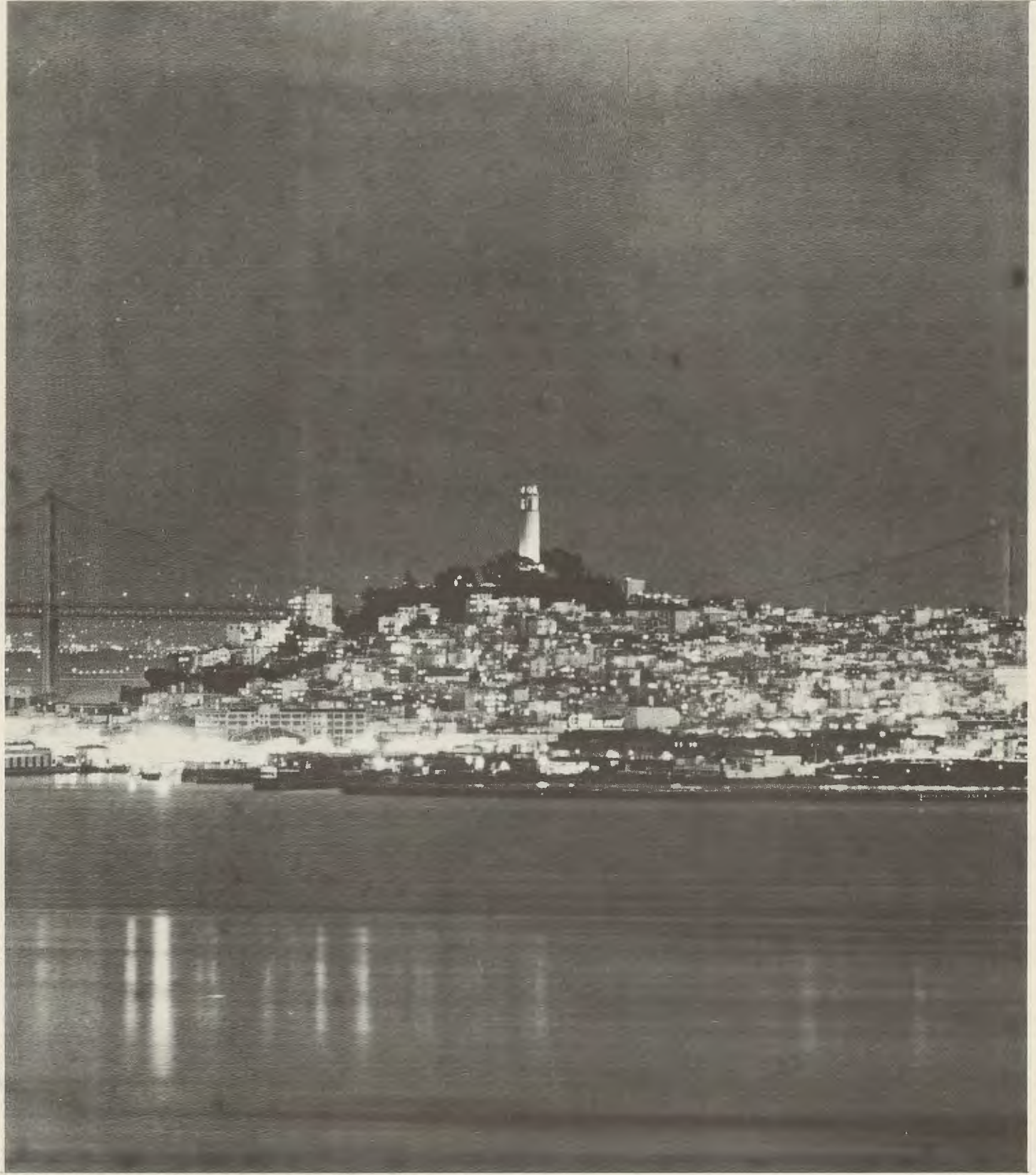
# NCDXC

NORTHERN CALIFORNIA DX CLUB

*Mar 76*

**THE DXer**

*K6MA*





\*\*\*\*\*

THE DX'ER

THE NORTHERN CALIFORNIA DX CLUB, INC.  
P.O. BOX 608, MENLO PARK, CA 94025

Published monthly for the benefit and interest of NCDXC members.

FOUNDED 1946

\*\*\*\*\*

OFFICERS

President	Bill Johnson	W6MUR
Vice Pres.	Orm Meyer	K6QX
Secretary	Dave Palmer	W6PHF
Treasurer	E.Howard Hale	W6SC
Directors	Merle Parten	K6DC
	Robert Smithwick	W6JZU
	Bob Thompson	K6SSJ

\*\*\*\*\*

Permission to reproduce any of the contents is hereby granted, provided that credit is given to "THE DX"ER".

\*\*\*\*\*

CLUB REPEATER - WR6ACZ

Input frequency	147.96 MHz
Output frequency	147.36 MHz
Suggested SIMPLEX freq.	147.54 MHz

The NCDXC NET meets on the repeater at 8:00 PM Thursdays for the purpose of exchanging DX and other information of interest for the mutual benefit of its members. WA6AHF is net control station.

\*\*\*\*\*

W6TI BULLETINS are sent Sundays at 18:00 GMT or on Monday at 2:00 GMT on a frequency of 14.002 MHz. The W6TI Trustee is Bob Vallio, W6RGG.

\*\*\*\*\*

Please send member report forms by the 28th of month to John Brand, K6RXZ.

Deadline for all other contributions is the first day of the month, to:

Adam A. Mentis, VE3DXV/W6  
P.O. Box 951,  
Mountain View, CA 94042

\*\*\*\*\*

MINUTES OF THE FEBRUARY 13, 1976 MEETING OF THE NCDXC INC.

The meeting was held at the Cabana-Hyatt House, Palo Alto, CA.

After a well-prepared meal, the meeting was called to order by President Bill Johnson, AC6MUR.

Introduction of the following guests followed next: WA6OEY & XYL, WA6OBX, W6OL & XYL, K6LP.

A most informative slide illustrated talk on the controversial subject of UFOs was presented by Dr. Thomas M. Gates, director of the Space Science Center at Foothill College. At the conclusion of his talk, several club members asked a number of very pertinent questions, which were answered by Tom. The UFO matter has progressed from a fad, because of the increasing number of sightings and contacts that are being reported and has stimulated the interest of a number of scientists with substantial reputations.

Bill Eitel, W6UF, ARRL Vice-Director of the Pacific Division spoke on the necessity of radio amateurs to justify their use of the radio spectrum at the coming WARC, a subject that all of us should seriously consider.

Stanley Kaisel, K6UD and Richard Adachi, W6RVS were given their second readings and were voted into full membership. Dennis Ross, W6KHI was given his first reading for membership and Al Clark, K6LP was reinstated as a full member after several years of absence.

Bill Johnson then read a letter from Don Schliesser, W6MAV, stating that he will not be the 1977 Chairman of the Fresno convention and recommended K6SSJ for the position.

Howard Hale, W6SC, the Treasurer stated that the club's financial position is healthy and that the DX'er may deplete the bank account in the next six months.

Checking Account	\$ 626.37
Savings Account	\$1500.00
Total	\$2126.37
Repeater Fund	\$ 897.00

Mike, WA6TUF spoke on Oscar and its problems of mode jumping and the use of excess power by a few users.



(minutes, February meeting cont.)

Charlie Kump, W6ZYC said that the new solid state repeater is being assembled, but will not be in operation for several months yet.

Bill Johnson said that the original supply of QSL stock is practically depleted and that a decision should be made whether to order more of it. The majority of members present expressed a desire to use the older style card and Bob Thompson, K6SSJ suggested a contest for a new card style.

Because of the proximity of the May meeting to the Fresno convention, an expression of opinion was desired by President Johnson by the members present.

Meeting for the night before	Ø
Friday, May 6, the week before	14
Week after	1
Cancel	6

The club's next meeting will be held at the Cabana in Palo Alto on Friday, the 12th of March with Jack Troster, W6ISQ as guest speaker, who will relate his experiences on the recent CR9AK DX-pedition. The April meeting will be held at Sabella's in Marin County, at which time Jo, WB6ZUC will talk on her travels.

Rules were suggested for use of the repeater, specifically ragchewing vs. DX info and it was mentioned that the repeater should be permitted to drop after each transmission to allow others to break if desired. The repeater committee was requested to investigate methods of muting receivers during ragchewing. Charlie Kump then mentioned that it is hoped that the solid state repeater will be in operation before the Fresno convention.

Those present approved the suggestion that applicants be permitted to attend the meeting of their second reading, but be asked to leave the room during the reading and voting.

Meeting adjourned by President Johnson.

Respectfully submitted,  
David H. Palmer, W6PHF  
Secretary, NCDXC

\*\*\*\*\*

CLUB BADGES

There is no need to badger you about club badges, however, Dave Palmer, W6PHF, the Secretary has in his possession some of those beautiful three color (bicentennial?) indentifiers for the following members:

- K6ILM, K6MA, K6OJO, K6VY, WB6CQY,
- W6DD, W6YK, W7UR, OH5VT

See Dave at the meeting, he will have them along.

M - TRON

2811 Telegraph Ave., Oakland, CA.  
763-6262

"Serving the Bay Area and the World"

ATLAS - DENTRON - DRAKE - ICOM - KE  
LARSEN - TEN-TEC - KLM

NEW GEAR -

- Dentron 160m Random Wire Tuner \$59.50
- NYE Keyer Paddles from \$23.95
- K.E. 1:1 2 KW Baluns \$9.95
- K.E. 80/40 m doublet w/balun \$35.00
- Dentron Super-Super tuner, 3 KW
- 160-10 m antenna tuner \$229.00
- Dentron 160/40 m Vertical with radial kit \$84.50
- Dentron 80/10 m doublet ant. \$24.50
- Drake TV3300 Low Pass filter \$19.95
- DX Engineering Speech Processors
- for Collins \$98.50
- for Drake \$128.50
- Ten-Tec Keyers and Paddles
- Vibroplex Bugs and Paddles
- DX Callbooks \$12.95
- 24 Hour Clock \$24.00
- Dentron 160/10 2KW Ant.Tuner \$119.50

USED GEAR -

- Drake MN4 \$69.95
- Unique Wire Tuner \$49.95
- Heath HW101 \$249.00
- Drake TR4 w/Noise Blanker \$459.00
- Collins KWM-2 w/AC P.S. \$675.00
- Drake TR-22 (new Nicads) \$149.00

\*\*\*\*\*

SALES AND SERVICE

\*\*\*\*\*

- HY-GAIN
- CUSHCRAFT
- NEWTRONICS
- CURTIS
- NYE-VIKING
- CORNELL-DUBLIER
- VIBROPLEX
- ARRL BOOKS
- CALLBOOKS

\*\*\*\*\*

HOURS

- Monday to Friday 9 AM to 5 PM
- Saturday 9 AM to 4 PM



FROM THE PRESIDENT'S SHACK

The response of our club members in getting on the air for the ARRL DX contest was gratifying. Several, who ordinarily do not work CW, and several who ordinarily do not work phone, were heard in both weekends. It remains to be seen how many of the "dual members" will mark their log entries for the credit of NCDXC. and whether this in fact will be sufficient for us to again win the golden cup which we must surrender this year at Fresno to the Southern California club.

If it turns out the interest is not there or the loyalties tend toward the contest club, I would propose we abandon the Southern California competition entirely after this year, and let whoever has had the cup the most times simply keep it as a reminder of an era gone by. What do you think?

Elsewhere in this issue you will find a survey by the repeater committee seeking guidance as to adopting repeater rules or techniques to decide the question of how AF6ACZ/WR6ACZ should be used. There have been varying opinions on this and as with many questions on which views are divided, the majority should rule. Please respond to the survey so your opinion will be recorded.

We plan to have a board meeting at 5:30 PM at the Cabana the night of the next regular meeting, March 12. Members are invited to attend as observers. We will have the following to discuss: Club QSL card stock, Policy and Procedure Manual, progress on the "Rogues Gallery" publication, DX'er finances vs. dues increase, approval of expenses, and the like. The meeting will probably be in the same room as for the regular meeting; if not, we'll leave a note on the door where it is.

R.W. Johnson, W6MUR  
President.

\*\*\*\*\*

SAN JOSE BICENTENNIAL AWARD

The City of San Jose is celebrating its 200th birthday during 1977! SCCARA is offering a special award to any amateur working the required number of San Jose stations. For detailed info, write: SCCARA, P.O. Box 6, San Jose, CA 95103

REPEATER QUESTIONNAIRE

We have received a number of comments related to operating practices on the club's two-meter repeater, WR6ACZ. We intend to formalize operating ground rules in the forthcoming DX Club Policies and Procedures Manual, and need your inputs on how it should be used.

For example, we have received complaints that the rag-chewing on the repeater causes many members to turn the volume down on their two-meter boxes while they are tuning for DX. Any DX announcements that get through during the breaks in the rag-chewing are missed because the box is turned down.

Before we force everyone to buy a tone encoder/decoder to separate DX news from other chatter (at a cost of more than a pair of crystals for another two-meter channel), or shorten the timer to ten seconds, we would like to know how you feel about it.

Also, we are officially listed as a "closed" repeater. A closed repeater restricts its use to club members. Lately we have had a number of non-club members using the repeater for conversations unrelated to DX. If we are to remain closed non-club members should be informed of our status so that they can move to an "open" machine.

While you have your pen out to complete the questionnaire, remember that many of you haven't contributed to the repeater fund and we need your help to complete the solid state machine and to meet operating expenses.

CHARLIE, W6ZYC

\*\*\*\*\*

NEW AMATEUR BANDS? (!) by K6SSJ

Frequencies in consideration by the FCC for WARC 1979:

- 160 - 200 KHz
- 1715 - 2000 KHz
- 3500 - 4000 KHz
- 7000 - 7500 KHz
- 10.1 - 10.6 MHz
- 14.0 - 14.5 MHz
- 18.1 - 18.6 MHz
- 21.0 - 21.5 MHz
- 24.0 - 24.5 MHz
- 28.0 - 29.7 MHz
- 890 - 942 MHz



WE GET LETTERS....

\* Need SU and TA, a better antenna, less QRM and a lotta luck. "old Ern", WB6UOM

\* Worked Lloyd & Iris 80m, 40m, 20m at VR1Z and VR8B. Good activity on 80 m - VE2AQS/TG9, JT0OAQ, 9Y4SF, FG7AN, YN8ODM, 6Y5BF, SM5BLA, VP8LP, HR3JJR, HI8RRD, CO2JA, VP9HE, VP5GT, VR8B, YB7AAY, FP8DH, 8P6GG, VP1BJ, JA8IEV/JD1, & EA8CR/EA9. - Now try to get the QSLs! Also worked Sable Slim - VX9C, 80m CW. Most needed are South Sandwich, Bouvet, TN8, EA9 Ceuta, VS9, Saudi/Iraq Neutral Zone, 8Z4, YI. Stan, K6MA

\* My FR7ZL/G card came the other day. Activity here has fallen off due to poor band conditions and too few hours in the day to do all the things I want to. Pres, K6WD

\* Got my mobile going on 20 CW! Now maybe I can "sort of" keep up on my long commute to work. John, W6YKS

\* Heard the following on OSCAR 6/7 pass 05:30 to 05:55 UT 2-15-76: W7YXZ, VE7AHG, W7JDZ, W7MCU, VE5DX, W7MKW, K7ICW, WA6UFQ, KH6IHP, W6ASA, W6NZX, W7KYA and ZK1DA. 5W1AZ was supposed to be on but did not hear him. Ray, AD6FD

\* AC6MUR has 135 worked and 4 confirmed for CW DXCC '76. Bill, W6MUR

\* A recent letter from Wil, CR6IK was very distressing. Wil had to flee the country in a private plane right after the CQ WW CW contest. All his equipment was confiscated. At the present time he is located in Rhodesia but his XYL is back in Portugal. (He got his logs off OK however).

WA3HUP's new address is R.D.2, Box 5A, York Haven, PA 17370. Mary Ann Crider is QSL Mgr. for quite a few rare ones... Frank, W1WY

\*\*\*\*\*

QUOTE of THE MONTH....

From an ad in the RSGB "Radio Communication" by Campione Electronica, selling the NEC CQ-110 transceiver: "...the CQ-110 using the 7369 beam deflection tube as mixer, guarantees the highest cross-modulation for your QSO." That's what happens when an Italian company sells Japanese equipment in a British magazine....

DX NEWS FROM THE PRESS.....

From the SCDXC "Bull" :  
South Orkneys, LU1ZA appears to favor 14060/0100Z; 14330/0200Z; 7003/0400Z.  
South Shetlands, CE9AV active, often near 14209/0030Z.

Turtle Island, 9L1, getting attention of 9LLJM. It may qualify as a new country under the separate administration clause. Operation targeted for April 10-11 for 24 hours. (ed.note: if it does qualify and there is only 24 hrs operation, there will be an awful lot of screaming both in the pile-ups and afterwards..)

South Pacific tour by JA2PJC, JA3KWJ and JA0CUV will feature among other stops: Tuvalu, VR8 from March 25, two weeks; Fiji, 3D2 from April 8, three days; New Hebrides, YJ8 from April 11, 4 days; Solomons, VR4 from April 14, 3 days. VE1XU/SU is reported to take CW breakers during lulls in phone patch traffic on 14140 around 19:00Z. He will often move to 14205 around 21:30Z.

Malawi, 7Q7RM reported active around 19:30Z 14025 or 14210.

A new independent republic will be formed June 29, 1976 by the merger of Seychelles, Aldabra, Desroches, and Farquhar.

From the CanaD-X "Long Skip" :  
TY2, the former Dahomey Republic is now re-named to "People's Republic of Benin".  
Albania, ZA. Frank, DL7FT is said to be planning a DXpedition sometime in April.  
Agalega, 3B6DA. Alex, 3B8DA plans to be QRV from the island, end of March or early April. QSL to home QTH.

\*\*\*\*\*

EDITORIAL OPINION by VE3DXV/W6

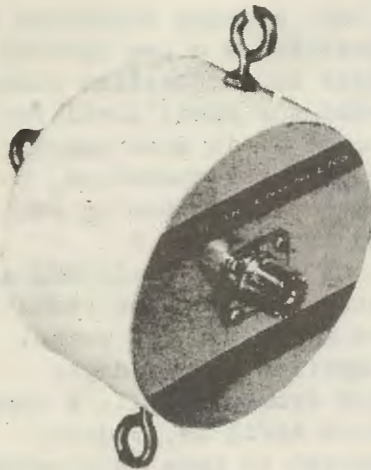
Considering that this is the monthly publication of one of the foremost DX clubs in the world, it must be painfully obvious to all, how little hard DX info we carry each month. It is not by choice. Your editor, being busy with a million other things (publishing the DX'er being just one) is almost never on the air, except some contests.

I'm not about to twist any arms or "force volunteer" someone else. However, think about it for a minute. If you are one of those members who spends a lot of time tuning, are in the swim of things, how about considering a monthly column? It would be a great contribution..'nuff said.



# 5 KW PEP INPUT

WITH THIS NEW BALUN



on all bands 160 to 10 meters. Runs cool as a cucumber at its CCS rating of 2 KW (Continuous output power through the balun at matched load). 4" dia. Wt. 24 oz. \$32.50 PPD.

### AND FOR FULL LEGAL POWER

the time tested Model 1K balun is still available. Rated at 1 KW CCS (3 KW PEP input). 2 1/4" dia. Wt. 9 oz. \$16.95 PPD.

### ONLY PALOMAR BALUNS HAVE ALL THESE FEATURES

- Toroidal core for highest efficiency.
- Teflon insulated wire to prevent arc-over. OK for tuned feeders.
- Stainless steel eyebolts take antenna tension. Won't rust, won't pull apart.
- Epoxy filled case. Absolutely waterproof.
- Lightning protection built-in.
- Wideband 1.7 to 30 MHz.
- Hang-up hook provided.
- Now available in either 1:1 or 4:1 ratio. 1:1 ratio matches 50 or 75 ohm coax to 50 or 75 ohm balanced load (dipoles and inverted Vees). 4:1 ratio matches 50 or 75 ohm coax to 200 to 300 ohm balanced load.

Free descriptive brochure on request. Order direct.

Model 2K \$32.50    Model 1K \$16.95  
Center insulator without balun \$7.95  
Postpaid U.S. & Canada.  
Specify ratio 1:1 or 4:1  
California residents add 6% tax.  
Send check or money order to:

## PALOMAR ENGINEERS

BOX 455, ESCONDIDO, CA 92025

Phone: (714) 747-3343

MINI-BIOGS... MINI-BIOGS...  
MINI-BIOGS...

by W6EYY

WB6EXW, Gary, Sunnyvale. Sr. Thermodynamics Engineer, Lockheed Missiles and Space Co. Attended Tri-State and Michigan State Univs., where he received his B.S. and M.A. degrees. First licensed in 1970. Holds Advanced Class amateur license. Operates CW & SSB equally. Has Wilson HT on 2 meter FM. Rig is 75S3B, 32S3, 30L1 & FT-101B. Antennas: 4BTV & dipoles. DXCC 137 wkd, 123 cfd. Needs 3 states to complete 5BWAS. Holds DXCC, WAC & CP15 while a novice. Placed 1st, Mono County in 1975 Calif. QSO Party, 2nd in SCV 1972 ARRL SS, SSB. Member ARRL, NCCC, Lockheed ARC & 10-10 International. Enjoys fast pitch softball & snow ski racing.

W6ZM, Bill, San Jose. Chairman of Industrial Education Dept. & Electronics Instructor, James Lick High School San Jose. First licensed as W6LCF in June 1934. First QSO was W7KVQ. Extra class license received in 1968, call changed to W6ZM. Earned BA degree at San Jose State & M.A. at Stanford. Has IC-20 on 2 meter FM. Rig: TS-520, R-599A, CX-7A & Henry 2K Ultra linear. Antenna is Telrex TM 30C up 60 feet. DXCC Honor Roll, both CW and Phone. Currently president of Santa Clara County Amateur Radio Assn., Vice Director - Pacific Division, Vice Chairman 1976 Pacific Division Convention. Business Manager of East Shrine football team for East-West Shrine game past 15 years. Member of 10-10 International. During 1970 world trip was licensed as 3AØFD, ON8VO, PA9LF, W6ZM/DL and W6ZM/LA using Swarr 270 and Newtronics vertical.

K6KQN, Vince, San Francisco. Self employed as Tax Accountant. Attended University of Notre Dame where he received his BBA degree. First licensed in 1958. Holds Advanced amateur class license. Operates SSB 99%, CW 1%. Has ICOM 230 on 2 meter FM. Rig: Signal 1, Drake TR4C with Alpha 77 linear. Antennas are 4 el triband Quad and Inv. Vee. DCCC 275 wkd, 265 cfd. Life member ARRL, Founder Northern Calif. DX Foundation. Accountant for the Northern California DX Club.

\*\*\*\*\*

If you have not sent in your Mini-Biog Information Card yet, please do it now. See your name in print, take an ego trip down the DX'er canal, extend your fame world-wide.....etc., etc.

(...and if that is not sufficient to motivate you, consider the humanitarian aspects: when you send in your card, you're giving Hal, W6EYY a purpose in life grinding out his monthly column.... ed.)

\*\*\*\*\*

PLAN FOR FRESNO NOW!!!! Dates; May 15-16, 1976.

\*\*\*\*\*



CONTEST CALENDAR

March 20-21 ARRL DX CW  
 March 27-28 CQ WW WPX SSB

\*\*\*\*\*

CQ WW WPX SSB CONTEST

This is a favored contest with many operators in our club. If you are out to win a certificate, it is a comforting thought that in this contest you dont have to kill yourself to achieve it. You can enter the contest as a Single Band entry, and be highly competitive, "work the band dry" and yet not miss sleep or meals....

This years' affair promises to be an especially good one. With the double multiplier credit for working US stations using the Bi-centennial prefixes, the DX stations are going to concentrate on working the USA.

Check complete details and rules in the January issue of CQ Magazine.

\*\*\*\*\*

ROSTER CHANGES AND ADDITIONS

Additions:

W6LP, Al Clark,  
 11431 Alford Ave.,  
 Los Altos, CA 94022

K6UD, Stanley F. Kaisel,  
 595 Albion Way,  
 Woodside, CA 94062

W6RVS Richard R. Adachi  
 2 Coleman Place,  
 Menlo Park, CA 94025

Change:

K6VFT Gordon R. Kiefer  
 196 Michele Circle,  
 Novato, CA 94947

\*\*\*\*\*

NCDXC MEMBER CALIFORNIA AWARD WINNERS

- # 1 JA2KG - W6KG
- # 74 KX6BU - W6HRS
- #132 FS7RT - W6ITH
- #135 ZD8Z - W6BHY
- #146 WA6AHF/HKØ - WA6AHF
- #171 DL4QQ - WA6PMK
- #251 KP6KR - W6OAT,  
 K6AHV  
 WB6OOL  
 WA9UCE/6

\*\*\*\*\*

# NCDXC MEMBERS' STANDINGS

Compiled by K6RXZ

CALL	DXCC HONOR ROLL			DXCC INCL. DEL.			5 BAND DXCC					WAZ		WPX	
	MIX	PH.	CW	MIX	PH.	CW	10	15	20	40	80	MIX	PH.	MIX	PH.
WA6AHF					313		100	100	100	100	100		40		800
K6AHV	316			333			100	100	100	100	100	40			
K6AN	317			351								40			
K6AO	305			317	247		45	41	106	29	53	40			
W6BH				308	302		20	201	271	155	1				
W6BJB					268		68	100	100	35	4		40		
WB6CAB				303	303								40		
K6CQF	310			324			100	100	100	100	100	40			
WA6CXK				270			42	126	205	54	24	40			
W6DOD	315			323	245		110	120	132	101	64	40	40		
K6DC	320			345	200							40			
WB6EXW				121											
W6EYY				274			125	118	172	29	17	40		550	
W6GPB	317			347								40	40		
WA6HRS				295			100	100	100	76	32	40		753	
W6ISQ				333	311		157	189	219	122	110	40	40	847	
W6JHN					146										
W6KG	318			342	251		118	159	182	122	92	40	40	731	
W6KOE					310								40		
K6LQA	300			306								40			
W6LQC		293			299		65	100	100	13	47		40		500
K6LU					337										
W6LV				222											
K6MA	314			331	300	70	110	100	100	102	108	40	40		
W6MUR				330								40			
W6MZ				277								40			
W6NKR				289								40			
K6OJO				296	294							40	40		
W6OKK							74	100	100	95	57	40			
W6OWL				200											
K6OZL				308	100		5	100	100	100	96	40			
W6RGG	317			327	311							40	40	x	x
WB6RIU				257	257		84	119	227	36	70	39	39		
K6RK				223	223		55	92	100	48	87				
K6RU				300	250		100	100	100	100	97	40	38		
DJ6RX				301			100	100	100	100	100	40			
W6TSQ				321			148	100	100	216	183	40			
K6TXR					311								40		
K6TZX				222	84	48						40		536	
K6UGS				129								40			
WB6UJO					294								40		
K6UJS				296								40			
WB6UOM		284			288								40		
W6VQD					290		25	130	252	51	54	40			
K6VY						161						38			
K6WD				261								40			
PA9WRR				149	145	149	12	18	121	38	55	38	38		
WA6WXP					304							40			
W6YK	319			346											
W6YKS				170	55	94	26	49	110	37	25	39		345	



CALL	DXCC HONOR ROLL			DXCC INCL. DEL.			5 BAND DXCC					WAZ		WPX	
	MIX	PH.	CW	MIX	PH.	CW	10	15	20	40	80	MIX	PH.	MIX	PH.
W6YVK					222		102	177	138	46	27		38		553
WB6ZHD				196	101							39	39		
W6ZM	322	321					126	137	315	41	99	40	40		
WB6ZUC				249		100						40			
W6ZYC				279	275								40		

\*\*\*\*\*

## ANTENNA MART

Box 7, Rippey, Iowa 50235  
Phone 515-436-7718

BANKAMERICARD

MASTERCARD

**SW-5—\$87.50**



The SW-5 is a remote controlled RF switch with indicator lights telling which antenna is in use. It will handle 4 kW PEP and more. Remote switch is housed in weather tight hinged box. A six wire #18 cable is required to operate the SW-5. Ham M control cable works fine up to 150'. Heavier cable necessary for longer distances. Remote cable necessary for longer distances. Remote switch operates off 28 VDC built in power supply. No visible effects on SWR. Zero dB insertion loss. Not recommended above 30 MHz. Standard unit is equipped with UHF connectors but BNC, N, HN, C connectors are available at additional charge. Models available are SW3, 4, 5, 6, 7, 8, 9. Also heavy duty 10kW units. Special switching systems are available. Tell us your needs.

MODEL	UHF	BNC	N
SW3	\$83.00	\$83.00	\$90.50
SW4	85.50	85.50	95.00
SW5	87.50	87.50	99.00
SW6	115.00	115.00	128.50
SW7	120.50	120.50	136.00
SW8	126.00	126.00	144.00
SW9	131.50	131.50	151.50
SW10	137.00	137.00	159.00
SW6V	137.50 special for phasing 3 verticals*		