QRP Amateur Radio Club International

QUARTERLY NEWSLETTER - VOLUME 17, NUMBER 4
JANUARY 1, 1980

EDITOR: William W. Dickerson - WA2JOC, 352 Crampton Drive, Monroe, Michigan 48161

THE PRESIDENT SPEAKS:

Seasons Greeting to all. 1979 was a pretty good year for QRP, but 1980 looks even better. The activity for QRP is improving and the October Party was FB. However, we have some goals to achieve, one being voter turn-out - The 1980 Board of Directors elections are now underway, included is a ballot for our FULL members to use. Please vote and indicate your call and return in a sealed envelope.

Secondly, membership drive - let's have a member/new member record for 1980. Each member to join a new member in QRP ARC L. Think of the possibilities. Spread the club feeling, it's contagious....

What about those of you planning Dayton 1980? Perhaps a "QRP ARC Meeting" may be of interest. OR, what about those we haven't heard from in the "Members Say" column? Let's hear from YOU.

Finally, welcome our new Nets Manager, Red - W9LBQ/K5VOL. Give your support by checking-in or controlling a net.

Anyone planning to attend Dayton this year is requested to send a post card to K8IF, Thom Davis, 9920 Musch Road., Brighton, Michigan 48116, to arrange a QRP ARC meeting at Dayton. Please indicate which days you plan to be there and your home address.

CU in April es 73,
Thom, K8IF

FROM THE EDITOR

For those of you who did not note my new address on the mast head, the fact that this newsletter is getting to you nearly two months late indicates a change for me(and the club). With this issue, I find it necessary to step down as Editor. I have a new job as the Executive Director of the Monroe, Michigan, YMCA. My family and I arrived three days a go in a Pinto with two children, four Guinea Pigs, and a cat. The movers arrived yesterday and it took me 24 hours to find my typewriter. My apologies to all for any inconvenience this may have caused. I hope to catch up on all past correspondence that I have missed in the last three months, I promise.

My first issue, consisting of four sheets, was back in October of 1977. At that time, the mailing list numbered less than 100 members. This issue will go to 485 members. The club has prospered during the last couple of years and the newsletter has grown with it, numbering 11 sheets per issue. With the job change, there is no way that I can continue as Editor. Therefore, I am asking for someone to step forward to take over the responsibility of Editor. Some of the tasks can be split up, such as typing, printing, addressing, etc. I will help as I can to get that person started and can be reached at: 352 Crampton Drive, Monroe, Mich., 4816. Telephone (313) 241-8552. PLEASE.....

As a QRPer, if you can hear me, I must be running too much power - BILL, WA2JOC

MEMBERS SAY

K5BOT(ED): I have just finished reading about the Glossamer Albatross, the man powered flight across the English Channel in the November issue of National Geographic. Those men have opened the door to opportunity in man powered flight.

The thought occurred to me that in QRP, there are many opportunities yet to explore. With technology changing so rapidly, many long held theorys have been proved wrong in many fields. Old theorys are being replaced by those individuals who are willing to question and explore.

We have many opportunities to explore the unknown as well as the known of low power communications. Narrow Band Voice Modulation and satellites are some of the newest. Antennas, propagation, VHF and UHF are some that have been around for a while.

With everyone pursuing his particular interest in QRP, many aspects can be approached from many different views. In this way, many ideas can be developed that may lead to newer or better methods of communication.

The answer to the obvious question, how do I know if I have something new or better, is to publish it. Where? The QRP newsletter where we all share the same basic interest, low power communication. Through the pages of the newsletter, we can find those with similar interest and together, the total effort may be much greater than any individual effort.

As with the Glossamer Albatross, only one individual did the pedaling but many contributed time, knowledge and talents to make the craft and flight possible. That flight might well be the beginning of a whole new era in aviation. The same can happen with QRP.

K9SW(DAVE): Dear Bill, - I checked into the 80 meter QRP net the other night using a homebrew 2 watt input Vfo-controlled transmitter, and W9LBQ and K8IF urged me to send the schematic to you for the newsletter. Since the VFO and driver are taken directly from ARRL publications, I don't know if you can legally reprint them in the newsletter. (ED.-Sorry, no)

The driver is described on pages 6-13 and 6-14 of the 1979 ARRL Handbook. I don't know if it is in the 1980 edition. I used a CB driver and final for the power transistors in it. Since there is no tuned circuit and it is a broadbanded (3 - 30MHZ) driver, some sort of harmonic filter is necessary. A good low pass transmatch will do. The VFO is quite stable and provides plenty of output for the driver. It is also described in the 1979 Handbook, and in yet greater detail in the ARRL publication, Solid State Design for the Radio Amateur.

Using this transmitter and an eighty meter half-wave dipole up 25', I have worked Nicaragua. YN1Z commented that my signal peaked at 579. Unfortunately, he is about 500 miles too close for an 80 meter kn/w award!

I cannot recommend too strongly that QRPers purchase a copy of Solid State Design for the Radio Amateur! Written by Doug DeMaw, W1FB and Wes Hayward, W7ZOI, two active QRP operators, it contains both design methods and construction on many QRP projects. The only non-QRP equipment in it is a 300 watt PEP output solid state linear. A quick count of construction projects in the book reveals:

2 VFOs
5 QRP CW transmitters

MEMBERS SAY (CONTINUED)

5 QRP CW transmitters
3 QRP CW transceivers
3 QRP sideband transmitters
2 QRP sideband transceivers
5 portable receivers
2 fixed station receivers
3 QRP rf power amps

In addition there are hundreds of circuit examples and design problems which the authors work out, allowing a builder to tailor-design and integrate equipment that fits his or her operating needs. OOPs! Forgot to mention the section on QRP SWR meters and transmatches. Anyone who wants to build QRP gear should have this book.

The eighty meter net is rolling along. We even had a VE5 check in! Look forward to seeing you there, Bill. Have a pleasant holiday season.

N4AUP(GEORGE): I know the "What is QRP?" argument is getting a little old...but since I haven't heard the following matter discussed I thought I'd rattle your cage.

I've been down here in Florida, busting my chops in an attempt on WAS with 2 watts or less. Operating on 80/15/10 mtrs. I've managed to do pretty well with my random wire and ground plane antennas (the latter brewed up from bamboo poles and twinlead). After over a year of fairly serious operating, it became clear to me that it was going to take a lot more luck than skill to work Alaska or Hawaii (I could hear them ...they just couldn't hear me).

Fortunately, I lucked up on the scrambled remains of a 4 element CB beam last week ...I added here and subtracted there and came up with a maximum gain 4 element design for 10 meters. My firstQSO, running about 1.75 watts was with Poland ... I worked England for a 35 minute ragchew ... I called "CQ D" de N4AUP/QRP and provoked a pile-up. It sure doesn't hurt to have about 8dB gain on the roof ... which leads me to my point:

The QRP power level argument is a bunch of hogwash. Look folks, I could run a KW through a wet rope and not do as well as I did with my beam. With 10 watts output, I'd have a signal ERP greater than the club's 100 watt input ... (with a 5 element beam.) Not only that, but a beam goes a long, long way towards attenating the QRM from New York and New Jersey ... pointed sideways, that is!

Doesn't it strike you as just a little unsportsmanlike to report the "miles per watt" records without regard to the ERP? Heck, if i lived on a Wyoming ranch, I'd put up an umpteen wavelength rhombic antenna and commence to overload receiver front ends from there to Bombay with 25 milliwatts.

While I'm at it, I may as well air another gripe about power level: I'm beginning to run into folks who make their contacts running high power ... and then drop down to a few watts to finish out the QSO ... and claim they've operated QRP!

Running high power to make contacts is substituting muscle for skill. Using an expensive tribander on an 80' tower is substituting money for skill. In qrp work, the ERP and operating method are a lot more meaningful in judging quality of effort than something as simplistic as power input.

QRP AMATEUR RADIO CLUB INTERNATIONAL INC.
1980 ANNUAL APRIL QSO PARTY

CONTEST IS OPEN TO ALL AMATEURS AND ALL ELIGIBLE FOR THE AWARDS

STARTS: 2000 UTC Saturday April 5, 1980
ENDS: 0200 UTC Monday April 7, 1980

EXCHANGES: Members: RST-RS, State-Province-Country, QRP #
Non-members; RST-RS, State-Province-Country, PWR Input.

SCORING: Stations can be worked once per band for QSO and Multiplier credits. Each member QSO counts 3 points. Non-members QSO's, 2 points. Stations other than W/VE count as 4 points.

MULTIPLIERS:
More than 100 Watts input PWR.....X1
25-100 Watts Input.....X1.5
5-25 Watts Input.....X2
1-5 Watts Input.....X3
Less tha 1 Watt Input.....X5

SCORING: QSO points X total number states-province-country per band X power multiplier.

FREQUENCIES:
CW: 1810. 3560. 7060. 14060. 21060. 28060. 50360.
SSB:1810. 3985. 7285. 14285. 21385. 28885. 50385.
NOVICE: 3710. 7110. 21110. 28110.
All Freq's plus or minus 5 KHZ to clear QRM.

CALLING METHOD: CQ CQ CQ QRP DE call sign

AWARDS: Certificates to the highest scoring station in each state, province or country. Other places will be given depending on activity. One certificate for the station showing three (3) "SKIP" contacts using lowest power.

LOGS: Send FULL LOG DATA, including full name, address and bands used, plus equipment, antennas, and power used. Entrants desiring results sheet and scores, PLEASE enclose a business size envelope with POSTAGE. Logs must be received by April 30, 1980 to qualify. Thank you for your cooperation.

ADDRESS: Send all logs and data to:

QRP ARCI Contest Chairman
Edwin R. Lappi, WD4LOO
203 Lynn Drive
Carrboro, NC 27510

In an attempt to avoid confusion, I felt a note of explanation to club members might be wise. Those members who check into the club nets might recognize the call W9LBQ. As of 1/1/80 that call will disappear from the nets and all other activities and will be replaced with K5VOL. Currently both calls are issued to the same QRP'er, the W9 as a change to the 9th area, and the K5 as an original 1959 issue. On 6/6/80, one call must be relinquished. I will run my old original K5VOL in early 1980 just to verify that it is the one to keep. Please note that K5VOL is still 'Red', same QTH in Illinois, same QRP NR 4016, still net manager - only the call will change. Hope to see you all on the air with my new (old!) call.

I noted K3YD's comments on attempting to get the power levels in the April's Sweepstakes to recognize QRPp. I just want Blair to know his lone voice is not alone! But then even when I talked to CAC members about QRPp levels, they did not pay attention.

Red K5VOL/W9LBQ

WELCOME TO NEW MEMBERS

W6TZA - Howard R. Sweezey, 4594 Las Lindas Way, Carmichael, Calif. 95608
WB6BWZ - Matthew D. Lee, P.O. Box 1943, Santa Maria, Calif. 93456
KA6CXY - Donald E. Wells, 159-D Madaline Street, Pittsburg, Calif. 94565
W5PIZ - John R. Halliday, 4808 McKnight NE, Albuquerque, N.M. 87110
KA6HGT - Robert E. Wymer, 3810 Wade Street #14, Los Angeles, Calif. 90066
VE3LPE - Kevin Pickles, 441 South Street, Kincardine, Ontario, Canada NOG2GD
WA2PLR - Kevin R. Larkin, RT.1, Box 13, Rodman, N.Y. 13682
WD4LVK - James R. Stephens, Jr., RT1, Box 69L Lockmiller Rd., Estill Springs, Tenn. 37330
W2YJR - John F. Lavigne, 26 Franklin Avenue, Troy, N.Y. 12180
WB4MPQ - Paul T. Jensen, 1472 NE 53rd Court, Ft. Lauderdale, Fla. 33334
KA1CZF - Thomas E. Magera, 106 Chestnut Street, West Haven, Ct. 06516
N5BAK - Jack K. Seale, 4019 Vance Jackson Rd. #104-D, San Antonio, Texas 78213
WB3AK1 - David A. Pisco, RD 1962 Bethel, Berks County, Pa. 19507
KA3DUC - Maria Taylor, 11901 Elmwood Drive, Brandywine, MD. 20613
WB2WHQ - Edward Kaczmarek, 20 3rd Street, Sayreville, N.J. 08872
KA2GIZ - George Kulman, 865 Grant Avenue, Maywood, N.J. 07607
W1EZX - Robert A. Curtis, 17 Cobbleview Drive, Colchester, VT. 05446
W9UJJ - Benjamin J. Finnel, 4209 N. Ridgeway Ave., Chicago, Ill. 60618
WB9DNR - Warren P. McMurry, 1511 1st Avenue, Sterling, Ill. 61081
W9LNQ - Anthony R. Truhlar, 1701 W. 101st, Chicago, Ill. 60643
N8ALE - Don Heise, 404 N. Main, Scottville, Mich. 49454
WB7DIL - Raymond M. Skiles, 433 W. Water St., Stayton, Ore. 97383
WD4RBO - Dennis C. Tate, 1919½ George Road, Augusta, Ga. 30904
W3CEI - Lawrence E. Robbins, 118 Grandview Avenue, Middletown, Pa. 17057
K2CQV - David R. Sousa, 7 Massachusetts Ave., Congers, N.Y. 10920
WB4RRA - Wilbur L. Nist, 1501 Seward Drive, Hampton, Va. 23663
K4KLD - M. J. Thornhill, RT #2, Hoschton, Ga. 30548
WA2TQD - Robert J. Christie, 172-12 Jamaica Ave., Jamaica, N.Y. 11432
WA3JJT - Stephen B. Miller, Jr. 909 Walnut St., Erie, Pa. 16502
K3TKS - George D. Gingell, Jr., 12812 Valleywood Dr., Silver Spring, MD. 20906
WB7VYV - Charles B. Church, Highwood, Mont. 59450
WA2KSM - John P. McNeil, 168 Lexington Road, Shirley, L.I., N.Y. 11967
WA3TKU - Norman F. Shuey, 101 S. Enola Drive, Enola, Pa. 17025

WELCOME TO NEW MEMBERS (continued)

VE6ARB - Howard D. Biederman, 1903A Lakeside Road, Lethbridge, Alberta, Canada
W9JMG - Everett E. Ellsworth, 325 Nassau Street, Park Forest, Ill. 60466
KB3ED - Bernard B. Fineman, 1839 Carwithan Street, Philadelphia, Pa. 19152
WBQZSA - Gordon E. Juveli, 10925 Morris Avenue S, Bloomington, Minn. 55437
VE3KTZ - G. W. Byer, La Salette, Ontario Canada NQE 1HQ
W5BWF - Joseph C. Kirksey, 134 Pineview, Houston, Texas 77012
WA4LGN - James F. Clarke, 4114 Balmoral Avenue, Richmond, Va. 23228
AG1Z - William A. Harris, Box 48, Jackson, N.H. 03846
AB5L - Michael Hopkins, 4040 Orlando Court, Dallas, Texas 75211
N2AXY - William D. Smith, 20-22 120th St., College Point, NY 11356
WD4PQN - Alfred A. Forte, 3rd, 9302 Spring Terrace, Ocala, Fla. 32674
NQARU - David L. Justis, 14129 Frontier Lane, Burnsville, Minn. 55337
N6BCK - Edward F. Belluso, 2601 E. Victoria #58, Dominguez Hills, Calif. 90220
NQAGW - Jon D. Fogdall, 1903 Oakland Ave. W, Austin, Minn. 55912
WD9CQF - William W. Fourt, Star Route #2, Box 1885, Rhinelander, Wis. 54501
K5PSH - Gerald R. Steck, 3808 Tanglewood, Bryan, Texas 77801
W21OL - Ronald C. McConnell, RD3, 3 Elm Street, Chester, NJ 07930
W5ZNN - Ralston B. Gober, 1115 W. 2nd Street, Corsicana, Texas 75110
KA6FRM - Beverly K. Ridley, 5105 Leigh Avenue, San Jose, Calif. 95124
W3WMT - Ramon A. Muia, 112 August Drive, Coraopolis, Pa. 15108
KA5AGL - James W. Miller, Jr., 209 Soland Drive S.E., Albuquerque, NM 87108
N6BJF - Gary W. Hultman, 24331 Toponas Court, Laguna Niguel, Calif. 92677
WD8ONV - Johnny Estes, RT2, Box A-1, Rainelle, W. Va. 25962
KA4AXS - Ned H. Linch, 212 Neal Avenue, West Point, Ga. 31833
KP4EKK - Osvaldo C. Goyco, PO Box 13572, San Juan, Puerto Rico 00908
W71FZ - John F. Corey, 73 Candlelight Lane, Dover, Ohio 44622
KAQDGN - Nate Bushnell, 7175 So. Grant, Littleton, Colo. 80122
W4RTE - John H. Embry, 1304 Independence, Slidell, La. 70458
KA4EDW - Stanley B. Greenfield, 3593 Hagan Grant Lane, Jacksonville, Fla. 32223
N4ACS - James F. Wood, Sr., 7304 Dixon Ave., Tampa, Fla. 33604
WA7IKZ - George R. Hamill, W. 2317 Providence, Spokane, Wash. 99205
W9NSG - Ivan H. Cox, 1601 Center Ave., Brodhead, Wis. 53520
WB7CVA - David R. Kirkwood, 11740 S W Terra Linda, Beaverton, Ore. 97005
WD9CIX - James M. Sieja, 2541 W. Belden Ave., Chicago, Ill. 60647
WA9KFR - Walter A. Stasiowski, 337 Parkway Court, Port Washington, Wis. 53074
KA6ERF - Selwin E. Carlson, 560 Greenbach Street, Napa, Calif. 94558
WB3HFU - Gilbert Chesney, 91 Cederwood Ave., Wilkes-Barre, Pa. 18702
N2AES - Jeffrey J. Littman, 175-A Terrace Street, City Island, Bronx, NY 10464
WA2BQI - Burdette E. Peterson, Jr., 15 Bush Street, Jamestown, NY 14701
KA6EVN - Charles B. Colin, 611 Hilmar Street, Santa Clara, Calif. 95050
K4OBD - Michael A. Wyzga, P.O. Box 80734, Chamblee, Ga. 30366
KA4FJD - Barbara A. Ledford, 16724 Taylorsville Rd., Fisherville, Ky. 40033
WD4IUF - Robert K. Ledford, 16724 Taylorsville Rd., Fisherville, Ky. 40033
N3AJZ - Leonard Heffner, 9 E. Walter Street, Summit Hill, Pa. 18250
WQVT - Leland L. Bahr, 10406 W. 52nd St., Shawnee, Kansas 66203
N6YD - Orris R. Grefsheim, 1427 W. Park Street, Lodi, Calif. 95240
WBQWKY - Lawrence G. Wencker, 8035 Wynwood Dr., St. Louis, Mo. 63123
K1GKR - Richard G. Moore, 16 Creeper Hill Road, No. Grafton, Mass. 01536
WD4ORD - Samuel W. Adkisson, Rt. 7 & Box 311, Harriman, Tenn. 37748
KA1DQA - John R. Goodwin, Shawmut Street, RFD #10, East Concord, NH 03301
KB6N - John H. Negrete, 645 Mt. Olivet Court, Clayton, Calif. 94517
W9JKF - Rodney D. Bowen, 1802 Will James Road, Rockford, Ill. 61109
WA2PUO - Gary R. Naus, 719 82nd Street, Niagara Falls, NY 14304
WD6EKR - James W. Delconte, 328 Sequoia Street, Salinas, Calif. 93906
KA3CDB - Herbert L. Groh, RD 1, Box 180, Middletown, Del. 19709
DK2BZ - Wolfgang Polak, 1950 Cooley, Palo Alto, Calif. 94303
N2AXL - Gary R Long, 215 No. Main St., Hightstown, N.J. 08520

WELCOME TO NEW MEMBERS (continued)

KA1BTI - Stephen A. Clang, 46 Leahaven Terrace, Braintree, Mass. 02184
KA5EEZ - Eugene H. Robertson, 1420 S. Fannin, Denison, Texas 75020
WB3DKD - Joe E. Kelson, 39 Yeager Dr., Shippensburg, Pa. 17257
KA2GSD - Anthony J. Buczko, 5312 King Avenue, Pennsauken, NJ 08109
WA4YRN - William H. Behrends, Jr., 1050 W. Carlton Rd., Pensacola, Fla. 32504
WD9CXY - Charles R. Seyler, 514 S. Goodling St., Winnego, Ill. 61088
KL7FDQ - Wayne E. Leman, Box 127, Busby, Mont. 59016
WDØEGC - Robert J. Goos, 8-H N. Aggie Village, Fort Collins, Colo. 80526
WB4HWM - F. Clarke Walker, Jr., 1396 Girard Drive, Louisville, Ky. 40222
KA5AMD - Albert L. Delangy, 22527 Millgate Street, Spring, Texas 77373
WBØZAW - Larry J. Burchett, Box 85, Fontana, Kansas 66026
KA5BIY - William L. Mott, RT. 1, Box 142A, Cheneyville, La. 71325
KA4DTG - William B. Humphrey, Jr., 1954 Farley Drive, Wilmington, N.C. 28405
WB4AOG - Felix Karpinski, 1312 13th St., Zephyr Hills, Fla. 33599
KB4IP - John H. Parmenter, 4605 Latimer Road, Raleigh, N.C. 27609
WA2NGY - Joseph L. Kahler, RD 1, Box 58, Waldron Rd., Union Springs, NY 13160
KA3DBN - John L. Rouse, 2703 Bartlett Lane, Bowie, Md. 20715
KL7JHM - Joseph V. Lauricella, 1-A-8 Dixon Apts., Fairbanks, Alaska 99701
W6TRA - Wilbert R. Courtney, 21842 Windsong Circle, Huntington Beach, Cal. 92646
KB4BE - Ernest L. Johnson, 2698 Elkhorn Dr., Decatur, Ga. 30034
WD4JMD - William T. Sexton, 6411 S. Cameron Ave., Tampa, Fla. 33616
KA8HLU - Marc P. Shaberman, 29359 Spring Hill Lane, Southfield, Mich. 48076
KA9FHL - Jonathan Fast, 14 West Oak St., Lake-In-The-Hills, Ill. 60102
WB3AEV - Eugene C. Rummel, RD #2, Box 260-A, Cherrytree, Pa. 15724
WD4KWD - Thomas W. Hyer, 235 Marne Street, Memphis, Tenn. 38111
WDØCGA -Daniel T. Alit, 2511 Lynn Circle, Lincoln, Neb.68506
AG1Z - William A. Harris, P.O. Box 48, Jackson, N.H. 03846
WN5MBS - Raymone E. Wormley, 3244 Richmond Ave., El Paso, Texas 79930
W8TDY - Earl Ryder, 3304 Lakeview Ave., Dayton, Ohio 45408
W5ZNN - Ralston B. Gober, 1115 West Second Ave., Corsicana, Texas 75110
WAØHQB - Robin G. Madsen, 521 E. Competine, Knoxville, Iowa 50138
KA2EAO - Richard C. Peterman, 79 Pompton Ave., West Paterson, NJ 07424
W4IVT - Frank W. Coke, 2125 Donnington Cove, Germantown, Tenn. 38138
W8TDY - Earl Ryder, 3304 Lakeview Ave., Dayton, Ohio 45408
WB2CCO - Charles McGuoid, 128 Stuhr Place, River Vale, NJ 07675
WØGK - Charles O. Files, Box 33-G, Hermitage, Mo. 65668
N4AØJ - Robert G. Templeton, 328 S. Washington, Clinton, Ky. 42031
KAØAZQ - Edward G. Wigle, 1503 College St., Baldwin City, Kansas 66006
KA8BEG - Harold W. Abbott, 6160 Muffly Ave, RD #2, Navarre, Ohio 44662
WD4ANO - Ernest D. Wilkes, 632 Heard Ave., Macon, Ga. 31206
KAØFDL - Charles B. Bright, III, 4115 Buckley Ridge Court, St. Louis, Mo. 63125
N5AML - Noyes B. Livinston, Jr., 6302 War Hawk Drive, San Antonio, Texas 78238
KA2FQG - Susan Giera, 11 Furman Avenue, Sayreville, NJ 08872
WB2ØNA - Warren Whelan, 13 Furman Avenue, Sayreville, NJ 08872
WA3WYQ - Willis A. Taylor, RD #2, Knox, Pa. 16232
WB1GGJ - Keith E. Collins, 17 Ashworth Street, Manchester, Conn. 06040
KA6AOJ - Bernard F. Stadler, 6629 Leyland Park Drive, San Jose, Calif. 95120

QRP AMATEUR RADIO CLUB INTERNATIONAL INC.
MEMBERSHIP BALLOT

TO: ALL MEMBERS(FULL) OF QRP ARC INT'L INC.
FROM: W8JKB, SECRETARY-TREASURER OF QRP ARC INT'L INC.
SUBJECT: ANNUAL ELECTION.....

The following members of QRP ARC INT'L INC have been nominated to serve on the Board of Directors of QRP ARC INT'L INC. Following each nominee's name is the Term of Office he will serve, subject to election.

Harry E. Bloomquist - K6JSS ..... Term expires March 1, 1983
12430 Ted Avenue
Saratoga, Calif. 95070

Hugh F. Aeiker - WA8CNN ..... Term expires March 1, 1983
5 Keiffer Drive
St. Albans, W. Va. 25177

Robert L. Jenks - K7ZVA ..... Term expires March 1, 1983
11714 Masonic Road SW
Tacoma, Wash. 98498

Robert L. Liggett - W3FLA/Ø ..... Term expires March 1, 1983
1125 East 11th Street
Ogallala, Neb. 69153

Fielding E. Behrman - K7LNS ..... Term expires March 1, 1983
3425 S.E. King Road
Milwaukie, Ore. 97222

Each member(full) who votes must put this ballot in a sealed envelope and if the sending envelope is used as the sealed envelope, please mark the outside with the indication "BALLOT". Each sending envelope must include the sender's call letters, to verify the "ACTIVE" status of membership. Ballots must be returned by FEBRUARY 29, 1980 in a sealed envelope to be counted as VALID. PLEASE RETURN ALL BALLOTS TO THE SECRETARY-TREASURER, Joseph C. Szemplas, 2359 Woodford Street, Toledo, Ohio 43605.

FOR SALE: Collins 51J-3 (R-388/URR) receiver, very clean, in excellent shape with Bud cabinet, Central Electronics Model "B" SSB Adapter/"Q" Multiplier, Heath HO-13 panadaptor, books, some spares and a 2nd "junker" receiver for parts (still has transformers, PTO, etc.) The works for $400 FOB New Orleans. Sandy Blaize, W5TVW, 417 Ridgewood Dr., Metairie, La., 70001. (504) 834-8064, No collect calls please. Reason for selling: To raise cash for new rig.

FOR SALE: Argonaut station - Argonaut 509, $290; 405 100w amp. $170, 206 calibrator $20, Shure 444 $15, 210 power supply $20, MFJ keyer and audio filter mounted in Ten Tec Box $50. All for $500.00. Will pay shipping. D. C. Fletcher, WA5KCZ, Rt 12 Box 280-U, Tyler, Texas 75708, tel. 214 593-3954

NET NEWS

The net check-in lists as of 30 November includes all check-ins. Future lists will include only those with at least one check-in since the last report. Note that the Wednesday night net 9 PM eastern time (0200 GMT Thursday) has moved to 3560 khz. It seems that the Wednesday net in the summer is a choice of 80 QRN or 40 QRM! Thanks to all who kept it alive this last summer. The Saturday net is still in 7060 khz at 1 PM eastern time (1800 GMT). Also a special thanks to all those acting NCS and who volunteered to take NCS with little notice before the nets were to meet.

We have nets going now with check-ins from the east coast and midwest. How about getting something going on the west coast? What we need are some volunteers to NCS an informal net so the west coast fellows can get QNI credit. Can anyone take a Wednesday 9 PM or Saturday 1 PM NCS job? Please let me know if you want to try it out.

Tom, K81F has done a great job getting the nets running. Lets keep them going and not let him down.

Net Results
New Awards: 40 Meter - #10 K8KIR

40 Meters: #1 WB9LKC, #2 VE3JHG, #3 W8MGF, #4 WA2JOC, #5 K9PNG, #6 K4JO, #7 W81M, #8 W9LBQ, #9 WA3ZBJ, #10 K8KIR.
80 Meters: #1 K8IM, #2 W2YVQ, #3 WA3NTJ, #4 W2EMW, #5 AA2R

40 Meters (11/30/79): WB9LKC-73, W9LBQ-32, K9PNG-29, W8MGF-28, K8KIR-26, K4JO-25, W8IM-24, VE3JHG-23, WA2JOC-22, WA3ZBJ-22, WR85GD-18, WA2TDL-16, WD8MCN-10, W3GXT-9, WA4BTL-9, WA2OTC-8, VE3LPE-8, K8AJT-8, W8HZA-8, K80VA-8, W2EMW-6, WD8DW2-6, W9NAX-6, AEQR-6, K2RS-5, W8JKB-5, N2GR-4, K3TKS-4, WD4LOO-4, WB9TIF-4, KA3ARF-4, K9VCM-4, NQWM-4, W2LPJ-3, VE3BQL-3, K4EXC-3, W4ZRJ-3, WA8CNN-3, W8JKM-3, WA2KWN-2, WB2PEF-2, WB2VTK/8-2, N3AAZ-2, WD4KJF-2, W8DYF-2, K8IF-2, WB8UFS-2, WB8VGE-2, K9SW-2, WB9WOM-2, WDQFFE-2, WAQ5X1-2, WB1GWS-1, N1QY-1, WA1RHS-1, N2AWT-1, K2EU-1, W2NRD-1, K2ZR-1, WB3AJB-1, N3AVK-1, VE3DP-1, VE3GNP-1, VE3LIA-1, W3VW1-1, N4CBP-1, WA4EBN-1, W4KWT-1, WD40NV-1, W4RHZ-1, N8B1K-1, K8BX-1, K8ERF-1, AD8J/3-1, WB8PKL-1, WD8RYY-1, WB8SYZ-1, K9KUP-1, W9LUS-1, KQDEV-1.

80 Meters (11/30/79): WA3NTJ-41, W2YVQ-40, W2EMW-28, AA2R-23, W8IM-22, N3AAZ-17, K4JO-16, WB9LKC-15, WA3ZBJ-14, K9PNG-12, W9LBQ-12, K8KIR-10, W3TS-8, WD8DWQ-7, W8JKB-7, W8MGF-7, WD91FF-7, K9SW-6, WB8AZN-5, WB8SGD-5, N4HV-4, AE4Y-4, WA4ZXC-4, K5BOT-4, W8HCR-4, K8IF-4, WA2JOC-3, WD4LOO-3, VE5JQ-3, N1AEP-2, W2ALE-2, VE3FVU-2, WD8MCN-2, WB8VGE-2, K1THP-1, W1TM-1, WA2DUV-1, W2EZ-1, WA2IAX-1, W2NUF-1, WB2PSK-1, K2RS-1, WB2STK-1, WA2TDL-1, VE3EZZ-1, WA3FNK-1, VE3FNK-1, VE3FNM-1, W3RLL-1, K3YD-1, WN4CKF-1, KK4X-1, K4YFH-1, WD8JCR-1, KB8JJ-1, WB8WOJ-1, K9VCM-1, WDQFFE-1, WBQW1W-1, WBQYVJ-1.

Nets: 40 Meters - 7.060 mhz Saturday 1 PM EST (1800Z)
80 Meters - 3.560 mhz Wednesday 9 PM EST (0200Z Thursday)

NCS: 40 - K9PNG 1st week
WB9LKC 2nd & 5th weeks
WA3ZBJ 3rd week
K4JO 4th week

80 - W2YVQ 1st & 3rd weeks
W9LBQ 2nd, 4th & 5th weeks

THE COHERENT CW TECHNIQUE: SPACE AGE QRPp

The Milliwatt readership may be interested in participating in the development and evaluation of a technique for CW transmission and reception that promises to yield a 20db improvement in received signal-to-noise ratios. That technique is termed "coherent CW." The technique is absolutely brand-new and in the process of being translated into actual working equipment. The following information will be helpful.

What is coherent CW? It is a technique for sending and receiving messages in morse code or other binary code which utilizes extreme frequency precision and time-discipline of the transmitted signal to achieve typically 20db improvements in received signal-to-noise ratio at moderate codespeeds when compared to present, non-coherent methods.

What advantages does it offer: Amateurs who heard the demonstration of a coherent receiving filter at the 1974 Tacoma Hamfair had "armchair" copy of a tiny CCW signal that was buried in QRM when heard through an ordinary receiver. The 20dB improvements makes 1 watt sounds like 100 watts. With CCW, stations only 100Hz apart could operate without mutual interference, greatly relieving problems of congestion and QRM on the bands. Reductions in transmitted power under given conditions can make a CCW signal less troublesome to other stations, and still permit successful QSO's. CCW is to CW like SSB was to AM phone: narrower bandwidth, better use of available power, higher frequency accuracy and stability required.

What is the frequency accuracy required? This depends on the codespeed. At the 12 w.p.m. level, the bitlength is 100 milli-seconds, and the 3db bandwidth of the coherent receiving filter is about 9 Hz. For good performance, the receiver and transmitter should be within 2-3Hz of each other. The accuracy required is inversely proportional to the codespeed; so is the received S/N ratio. The slower the codespeed of the matched system, the more accurate must be the frequency match, and the better will be the received S/N ratio, and the narrower the bandwith will be.

Is my present rig accurate and stable enough for CCW? It is very unlikely that it would be adequate. Amateur equipment sold today is never specified for accuracies better than 100Hz, even though some manufacturers specify 50Hz drift after warmup. Also dial back lash and inadequate tuning resolution present additional problems. The required accuracy can be obtained inexpensively from a temperature compensated crystal oscillator using an International HA-1 crystal in a circuit like W6FFC's "Mainline FS-1 Frequency Standard" (QST, November, 1968, p. 34), or K4EEU's "Universal Frequency Standard" (ham radio, February, 1974, p. 40). The frequency standard serves a duel purpose: 1.) the local oscillator of the CCW receiver, with proper outputs to operate the CCW receiving filter; 2.) the time-base clock of the keyer which operates the transmitter, as well as the frequency determining circuit of the transmitter.

Why don't I just use a phase-lock loop and track the signal? This will work fine, provided that the S/N ratio at the receiving end is high. But under these conditions, there is not much need for CCW. A PLL will lock onto the strongest signal present in its bandwidth, but under the conditions (very low signal level) that we want to use CCW, the desired signal is likely to be one of the weakest present. Also, if the CCW signal is not exactly positioned at the center frequency of the PLL, lock is lost every time the sender lifts the key. It is a basic fact of nature that the more you know about the incoming signal (its frequency, amplitude, timing, spectrum, etc.) the better you are able to receive it. With ordinary CW, the frequency, phase, amplitude, and timing of the signal are all unknown at the receiving end (from the standpoint of the filters used). With CCW, only the phase and amplitude are left unknown for practical purposes.

What about the time discipline? The success of CCW depends upon the receiving filter knowing in advance that, if a dit or dah is to begin or end, it will begin or end at a precisely known time. The filter analyzes its input during the intervals between those known off-on-off constants, and provides an output representing the accumulated signal (and noise) energy received at the precise frequency during the interval. For 12 w.p.m., these intervals are 100 milliseconds long.

How can I generate more code with the required time discipline? You will need an electronic keyer which uses a master clock signal derived by frequency devision from a precision frequency standard. The keyer must not be the type which starts its clock when you operate the paddle and stops the clock when you pause or quit sending.

How about the Coherent Receiving Filter? A suitable circuit, which is simple and inexpensive, will be presented in a future issue.

Some practical comments. A CCW Net is being formed for operation on 3550KHz. Some eight hams in the NW area intend to participate. Deadline for the initial construction of the frequency standard and suitable keyer is the end of October. The COSMOS keyer described in June, 1974, ham radio is fine. All the circuits in the top row of the diagram (page 8) can be omitted, and the 10Hz output from the frequency standard is connected to the keyer clock line (the diagram line connected to U6B pin 12). In order to keep things simple at this stage or early development, the CCW Net will operate on 3550kHz, and the frequency standard and keyer will use a crystal for 4Mhz, which is then capable of sub-division to provide the following proper outputs: 4MHz local oscillator to provide 450KHz I. F. output following the first receiver mixer; 2.) .400KHz output to provide second I.F. output at 50kHz; 3.) outputs of 200KHz, 4Khz, and 10Hz outputs for operation of the CCW receiving filter and keyer clock. All designs will use readily available parts.

The Milliwatt will attempt to keep readers informed of the progress of the CCW project. Any interested readers are asked to contact Raymond C. Petit, W7GHM, Petit Logic Systems, PO Box 51, Oak Harbor, WA 98277. Practical interest need not be limited to W7 land--the CCW technique, once put into operational form, should make it possible to have a nationwide net in operation with a good chance of success. In the next article, a diagram of the Coherent Receiving Filter will be presented, along with the ideas on the receiver front end I.F.'s, and synchronizing circuits.

CCW appears to be the "thing of the future" with respect to CW operation. If the technique works (as tests appear to indicate) later stages of development will involve frequency flexibility etc.

Raymond Pettit W7GHM

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MONTHLY CLUB QSO PARTIES:

REMEMBER THAT THE FIRST SUNDAY OF THE MONTH IS FOR OUR MONTHLY QSO PARTIES. PUT THAT SUNDAY ON YOUR CALENDER NOW AND PLAN TO BE ACTIVE STARTING AT 1500 Z. TRY THE HIGHER FREQUENCIES AND WORK DOWN: 28060, 21060, 14060, 7060, 3560. Phone: 28885, 21385, 14285, 7285, 3985.

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