QRP QUARTERLY

Journal of the QRP Amateur Radio Club International/July 1982/Vol. 20, No. 3

A PEEK INSIDE

LET'S USE 160 METERS; A CRITIQUE

by C.F. Rockey, W9SCH
Box 171, Albany, WI 53502

Quite recently the FCC cleared out the LORAN "coffee grinders" from our 160 Meter Band, giving it back to us. We feel that this chunk of the amateur spectrum should receive more attention from the QRP gang. As we have had some year's experience in the CW segment of this band, may we extend some comments upon it? We speak from the CW viewpoint, of course!

To emphasize the positive side first, this band produces interesting results from the simplest and most inexpensive equipment. A simple "home-cooked" oscillator-amplifier, or even a carefully built Hartley Oscillator, will produce a clean and steady signal and can work from coast-to-coast on a good night. TVI - indeed all RFI effects - are practically nil even from an unshielded rig. The simplest receiver may also be used; you can fix up an old AM BC receiver or even a two-tube (or transistor) regenerative receiver is useful here. This is the ideal opportunity to break into "home-brewing", if you have not already done so and is a paradise for those with junk-boxes.

What can one work on this band? Well, it is an ideal spot for "rag-chews" up to fifty miles almost anytime. During the cool months 300 mile contacts at night are routine. Often there is little QRM...

As with everything else, 160 Meters has a negative side. During the warm months atmospheric QRN can be fierce here (but then 80 Meters is probably equally noisy). A truly efficient antenna is hard to erect on most city lots, but you might be surprised at how well a theoretically poor and simple one will work if carefully tuned-up, but the social-psychological factors disturb us much more than the technical ones. First, there should be much more human consideration extended by the 'phone' set. While most 'phone men are gentlemen, a few forget their manners - they run their big Omnis down into the CW segment, utterly swamping CW operations under a cloud of "monkey-chatter". Secondly, there are the super-boys with their super-rigs and antennas who think of nothing but super DX. Their kilowatts and expensive vertical antenna. Tear a huge hole in an all-too-narrow CW segment. And some of them are awful snobs...

We personally consider ourselves as strictly small-fry in this band, and our operations are purely random. But using a 6V6 crystal oscillator with five watts input and a simple Marconi antenna, we worked fourteen states from coast-to-coast. Using just a bit more power, say sixteen watts DC input, we can work almost anything we hear on our "Radio Shack" DX-160 receiver (bought second-hand from an SWL who graduated to something fancier). You can do as well, or better, and you do not need a 250 foot dipolw or a high vertical to do it. How about some more QRP activity on this fine band when the leaves begin to fall? Build something! Don't let the lack of a fancy transceiver keep you off. 73, Rock, W9SCH

----------QRP ARCI----------

QRP Quarterly is the official journal of the QRP Amateur Radio Club, International, Inc., and is published four times a year: January, April, July, and October. The QRP ARCI is a non-profit amateur radio organization dedicated to increasing world-wide enjoyment of QRP operation and experimentation (QRP, as defined by the club, is 5 watts output CW, 10 watts output PEP). Members agree to voluntarily limit their transmitter power to 50 watts output CW, 100 watts output PEP, except for public service work, where higher power may be necessary. Current club membership is 5120, QRP Quarterly circulation is 6083.

Initial membership fee of $6.00 ($7.00 for DX applicants) covers lifetime membership plus first four issues of the QRP Quarterly. Membership information is available from the secretary/treasurer (see roster below). Subscription renewals are $5.00 ($6.00 for DX subscribers) for four issues. Expiration notice appears in red (rubber stamped) on the mailing cover of final issue. Expiration date also appears on mailing label, following QRP number: i.e. 4174-4/81 means member 4174's subscription expires with October issue, 1981 (or fourth quarter, 1981). Renewals must be received by secretary/treasurer by the 15th day of the month prior to month of publication for continuous service. Otherwise, renewal begins with the next issue. Send renewal notices, changes in call, or address changes to the secretary/treasurer (see roster below). PLEASE MAKE ALL CHECKS OR MONEY ORDERS PAYABLE TO: QRP Amateur Radio Club International, Inc. PLEASE DO NOT SEND CASH. New members will receive first issue following receipt of their application provided it is received at least 15 days prior to month of publication. Otherwise, their subscription begins with the next issue. Please include QRP# and Call on Checks and M.O.s.

Letters to the editor are welcome. Not every letter can be published, and the editor reserves the right to edit letters to conform to space limitations. Those desiring a response from the editor, officers, and directors should enclose a SASE with their letter. Construction projects or articles of general interest are always welcome. Manuscripts should be typed, double spaced, and all circuit diagrams should be clear and include all parts values. The editor andclub are not responsible for testing projects that appear in this publication. Please include name, call, and phone number on all manuscripts and mail to the editor.

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Please use this form, or a reasonable facsimile, to renew your subscription, or report changes of address or call. Send this information to the Secretary/Treasurer.

Renewal ( ) for _____ yr(s). Change of address ( ) Change of call ( ).

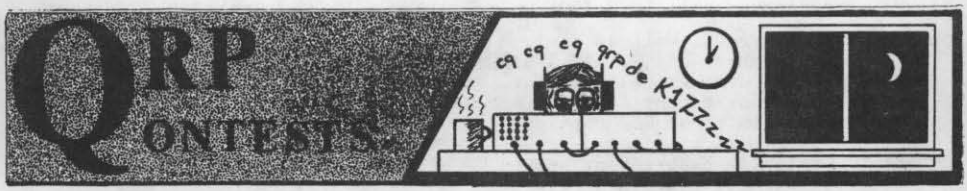
Amount enclosed $ _____ QRP ARCI number _____ Call Sign _____

Name New Call (If applicable)

Address

City State/Province Zip

Country (If DX subscription)



1982 WORLD QRP FEDERATION-INTERNATIONAL QRP CONTEST

Starts: Saturday July 17, 1982 1500 UTC
Ends : Sunday July 18, 1982 1500 UTC

Single Operators must take an 8 hour break. Multi-Operators may operate for a 24 hour period.

Frequencies: All bands, 160-10 meters; International QRP frequencies, 1810, 3560, 7040, 14060, 21060, 28060 Khz, ± 10 Khz.

Exchanges: RST, QSO Serial Number, Operator class. Eg. 599X 001/1A, 599 001/2D. Crystal control stations send "X" after RST.

Classes:

1. Single Operator stations
2. Multi-operator.

A. Fixed stations 2 watts in/1 watt out.
B. Fixed stations 10 watts in/5 watts out.
C. Portable stations 2 watts in/1 watt out.
D. Portable stations 10 watts in/5 watts out.
E. QRO stations over 10 watts in/5 watts out.

QSO Points: 1 point for QRP to QRO contact.
2 points for QRP to QRP contact.

All stations can be worked once per band for QSO and Multiplier Credits.

Multipliers:

1 point per country-within same country
2 points per country-outside of country-same continent.
3 points per DX country-different continent

For scoring purposes, call areas in JA, PY, W, VE, VK, ZS, ZL, are counted as multipliers. Eg. Call areas: 10/W, 8/VE, 10/PY etc.

Bonus Points: Crystal Control Stations: Use a maximum of 3 crystals per band, also: Double QSO and multiplier points.
QSOs with Crystal Control Stations count Double!!!

Scoring:

QSO points per band X Multiplier points per band = Band Points
Add band points of each band used together, for FINAL SCORE.
Eg. 80 m. band pts. + 40 m. band pts..... = FINAL SCORE.

Awards: The QRPARCI is going to offer certificates and trophy plaques.

1 - Plaque to 1st place "WORLD" Multi-Operator QRP station - Portable
1 - Plaque to 1st place "WORLD" Single-Operator QRP Station - Portable
1 - Certificate to 1st Place QRP station - Portable - (Multi or single) in each country with two or more entries.

Logs: Send Fixed Logs to AGCW-DL - DK9FN
Send Portable Logs to QRPARCI - WA2JOC
All logs must be received within six (6) weeks after conclusion of the contest.

NOTE: DL-AGCW is going to offer awards to FIXED Station leaders and Band Leaders.

PORTABLE STATIONS

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

FIXED STATIONS

Siegfried Hari, DK9FN
Spessartstr. 80
D-6453 Seligenstadt
West Germany

In case of QRM or QRN, QRS. It will work.

WORLD QRP FEDERATION NEWS
by Ed Popp, K5BOT

Just a reminder that the WQF QRP Contest is July 17-18. Rules are found elsewhere in this issue plus the July issues of the various amateur magazines.

On the weekend of 11 and 12 September, 1982, there will be the WQF World-Wide Activity Weekend. Here's your chance to get some of that 2-way QRP DX! This is not a contest. But you have the knowledge that other QRP stations around the world will be looking for other QRP contacts. Some suggested times and frequencies are:

7 MHz	0000-0400	UTC,	USA to Europe
	0900-1100		USA to VK, JA, PY
14 MHz	0000-0200	UTC	USA to PY
	0400-1200		USA to JA, VK
	1100-1400		USA to Europe
21 MHz	1100-1400	UTC	USA to Europe
	1900-2300		USA to Europe
	1000-1200		USA to JA, VK
28 MHz	0800-1000	UTC	USA to Europe
	1900-0100	UTC	USA to VK, JA

These are suggested frequencies only. You know from your location which direction and time is best. Check both CW and SSB frequencies.

The QRP Club of Celje has changed their name to "QRP Klub YU3LOP". The QSL address is: Titov trg 3 63 000 Celje, Yugoslavia. They have also published their first edition of their magazine, "CQ QRP". I have a copy of their first issue and it is good. The best of luck and much success to QRP Klub YU3LOP.

Monthly Informal QSO Party Contest

Eligible: Open to all members and members only of QRP ARC I

(Continued on Next Page)

Dates: August thru July each year

Object: For members to work as many other members of QRP ARC I as possible during the course or 12 calendar months in the monthly informal QSO parties.

Reporting Contacts: Each month, members participating are required to send a list of members worked in that months informal QSO party listing Date/Time, Call of member worked, QRP # of member worked, and Freq worked on. List only those members worked on CW or SSB but not both modes. You may work a member only once in any months informal, but you may work same member 12 times during course of the year.

Scoring: Count 1 point for each member worked and 3 points for each officer or Director of the Board worked. No bonus points are available in this contest.

Results: Each quarter in the Quarterly the contest chairman will report by call and score the top 10 or 20 stations as of the end of the previous month prior to publication of the Quarterly.

Awards: At the end of 12 calendar months the highest scoring member station wil have the choice of 1000 Club QSL cards or four year free subsciption to the Quarterly. In the event of ties, the tying stations will split the free subscription prise equally.

Submission: Please submit a log of your member contacts & score by the end of the month in which the informal QSO party took place to:

Dennis Terribile, WA4FKK
3846 Trant Circle
Norfolk, VA 23502

Note: If you fail to have your logs & score arrive by the deadline each month, you will have no score added to your yearly total for the month your report is late. ALSO NO STATION MAY WIN FIRST PRIZE MORE THAN ONCE EVERY FOUR YEARS.

Have you returned a "Pse QSL"d card? Check your files. Someone may need yours. Pse QSL.

QRP AMATEUR RADIO CLUB INTERNATIONAL OCTOBER, 1982 CW QSO PARTY

This contest is open to all amateurs and all entrants are eligible for awards.

STARTS: 1200UTC Saturday, October 16 - 2400 UTC SUNDAY, October 17. PARTICIPANTS may operate a maximum of 24 hours.

Exchanges: Members: RST, State/Province/Country, QRP #. Non-members: RST, State/Province/Country, power output. Novices and Technicians, add /T or /N after QRP # or power.

Stations may be worked once per band for QSO and multiplier credits. Each member contact counts 5 points regardless of location. Each non-member United States or Canadian contact counts 2 points. Non-member Novice and Technician contacts count 3 points Non-member stations other than W/VE count 4 points.

Multipliers: 4 to 5 watts output X2, 3 to 4 watts output X4, 2 to 3 watts output X6, 1 to 2 watts output X10. Over 5 watt entries will be counted as check logs.

BONUS MULTIPLIERS: If 100% natural power (solar, wind, etc) with no storage X2. If 100% battery power X1.5.

Scoring: QSO points (total of all bands) X Total number of states/provinces/countries (sameS/P/C may be counted on more than one band) X power multiplier X bonus multiplier (if any) equals claimed score. Send SASE to contest chairman for scoring summary sheet.

Suggeste Frequencies: 1810, 3560, 7040,14.060, 21.060, 28.060, 50.360. Any VHF/UHF contacts must be direct-no repeater contacts. Novice/Technician frequencies: 3710,7110,21110, and 28110. All frequencies plus or minus to clear QRM.

Calling Methods: CQ CQ QRP de Call Sign.

AWARDS: Certificates to highest scoring station in each state/province/country with two or more entries. Certificate to highest scoring Novice/Technician overall.

Logs: Suggest that separate log sheets be kept per band for ease in scoring. Send full log data plus separate work sheet showing details. No log copies will be returned. Please indicate if you are a Novice or Technician. All entrants desiring results and scores please include a #10 envelope with one ounce US postage or IRC. It is a condition of entry that the decision of the QRPARCI Contest Chairman is final in case of disputes. Logs must be received by November 20, 1982 to qualify. Logs received after deadline or missing information will be used as check logs.

Send logs and scoring information to:

QRPARCI Contest Chairman
William W. Dickerson - WA2JOC
352 Crampton Drive
Monroe, Michigan 48161

More on the MBX

by Thom Davis, K8IF

Since the last article on the MBX, only a few changes have been made to the system. They are:

1) ZS has been changed to ZG
2) The 5 second delays have been reduced to 1 second.
3) MBX is on 14.065 Sundays, 1500-2400UTC.

These changes have improved MBX performance and user success. However, there are some pit-falls which have been noticed, and I'd like to outline them so that other users may be successful with the MBX. First, let's look at the commands.

1) Preceed all commands with 'VVV VVV'.
2) K8IFZW - Turns on the MBX
3) MBX OFF- Turns off the MBX
4) ZX = - MBX identifies
5) ZG = call = - Gets msgs for call
6) ZL = - Lists all MBX msgs
7) ZR # = - Reads msg #
8) ZD # = - Deletes msg #
9) ZB = To stn/From stn = - Begins msg heading
10) ==(text of msg) NNNNN - Starts/Stores/Closes msg
11) NUZ - Sends news msg
12) Sends system's commands
13) 20Z - Sets MBX to 20 wpm
14) 30Z - Sets MBX to 30 wpm
15) 40Z - Sets MBX to 40 wpm

Here are some common errors which have been observed frequently:

1) Not zero beat with MBX
2) Forgetting VVVs before all commands
3) Inserting spaces between letters of commands
4) Not turning off the MBX

Let's look at these errors in the above order:

1) Your frequency counter may be slightly different than mine. Your best bet is to zero beat the MBX once you have accessed it.
2) You must open the squelch circuit and get the MBX tracking your speed before sending any command. IE- 'VVV VVV'.
3) There are no spaces between letters of commands. That is, NOT N U Z or 2 0 Z, but rather NUZ or 20Z.
4) Please turn off the MBX when you are done - important!

I've had several questions regarding the last article. Here are a few helpful hints:

1) The double-dash (=) is the same as BT or (-...-), and must be used as shown in this listing.
2) After changing the speed of the MBX (eg. 40 to 20 wpm), the MBX will need a few extra 'VVV VVV's in order to track the new speed.
3) The Øs in msg numbers are not necessary. ie, ZR2= is ok, rather than ZRØØ2=.
4) The double-dash (= or BT) is not needed for K8IFZW, NUZ, CMD, 20Z, 30Z or 40Z.
5) Check your VFO frequency after a while, even the best rigs drift a little, especially from a cold start. If you drift off of the MBX frequency, you will have trouble.
6) If your signal is a) marginal, b) off frequency, c) choppy from QSB, QRN, QRM you will have trouble using the MBX. If any of these conditions apply, please don't delete any msgs, wait until conditions are better.
7) The MBX must receive 2 double-dashes (==) before the msg text, and NNNNN to close, otherwise MBX will not respond. If the MBX is "hung-up" during msg text, send VVVV VVVV ==NNNNN and try msg again.

Those of you who have not been able to work the MBX don't fret, keep trying eventually you'll get it. QRP will work, WA9WZV/4 has used it with his 8 watts from Florida, which is proof that when all of the conditions have been met (on frequency, etc), QRP will work with the MBX.

(Next Quarterly will include a circuit from Thom on a crystal oscillator to be used with Omni-Argosy-Argonaut for operations with the MBX - Ed.)

Upcoming event: QRP Workshop. Spekers, Forums, "Reprogramming Seminars", luncheons. Details in future issues. Watch for them!!

Ham radio makes big "Time". Time magazine carried an article on a DXpedition to Navassa Island, 30 miles west of Haiti. May 3, 1982 issue covered some of the more interesting points of the journey, pages 7-8. Anyone can use the article for PR toward amateur radio and they can tie in QRP work also. The article is titled "American Scene."

----------QRP ARCI----------

Listed below are some calendar events upcoming:

Sept 11-12	G-QRP-C Activity CW Weekend
Oct 10	R.S.G.B. 21MHz CW Contest with QRP Section
Oct 16-17	QRPARCI Fall Code QSO Party
Oct 30-31	CQ WW SSB Contest with QRP Section
Nov 14	G-QRP-C/QRPARCI Combined Activities Weekend
Nov 27-28	CQ WW CW Contest with QRP Section
Dec 26-31	G-QRP-C Annual QRP Winter Sports

----------QRP ARCI*USE IT----------

YIs & XYLs. Join in, encourage others, tell new contacts of QRPARCI. Let's strive to keep alive. How about a gift membership. Try one.

From The Secretary's Blotter
By
Edwin R. Lappi, WD4LOO

To clarify a point, your address label contains vital information on the first line: it contains your QRP #, quarter and year or your last issue and your call sign. The figures for the quarter represent the following months: 1-Jan, 2-Apr, 3-Jul, and 4-Oct. So if the top line of your address label contains 4/82 for quarter/year this means that the Oct 1982 issue will be your last issue unless you renew by 15 Dec 1982. Remember that to insure continuous receipt of the quarterly I must receive your renewal at least 15 days prior to month of publication. Thus renewal deadlines are Mar 15th, June 15th, Sept 15th, and Dec 15th. Failure to abide by these deadlines will cause you to miss an issue of the Quarterly.

Elsewhere in this issue you will find profiles and a ballot to elect and fill the other half of your Board of Directors. Please vote and have a say in who runs your club. However, as Secretary/Treasurer, I am extremely dissapointed that no nominations were submitted by the members at large. If you want this club to adhere to your needs and desires, and not those of a small knit group, you the members had better take an interest in this club. The Board & Officers must be representative of you the members and only you can see to it that they do. A note of clarification is in order about the board election. You will note that one member is up for a lifetime seat because of his many contributions to the club. However, please note that at present the By-laws do not allow for a lifetime seat on the Board of Directors. Thus if you think that K6JSS is worthy of this special distinction and you vote accordingly, the board of Directors will then take the necessary action to amend the By-laws. This is a special one time case, so please vote accordingly.

Also in this issue the club is sponsoring a new contest for you the members and only the members. Please take care to read the rules carefully.

Finally, due to, at present a lack of employment, I may be forced to give up my job of Secretary/Treasurer of the club. If I do have to turn the job over to someone else, it will be done quickly and on short notice most probably between 15 June and 15 July. This is to alert you the members so that if you write to me, your answer may be forthcoming from someone else - so be alert and patient.

73
"ED"

Why not join a net? Keep QRP alive by joining one! Listen to see how they operate. Use the proper "Q" signals. Be proud of your operator skills. Be part of the line-up. Join up!

Lets welcome the following new members when you hear them on the air.

KF5F, Leland A. DePue, TX
PY8ZLC, Fred Coates, Brazil
W5HKA, Luke B. Dodds, TX
N6EEG, Donald R. Stiver, CA
KA6IWN, Earl J. Franzel, CA
N7BRG, Frank A. Eldredge, UT
VE2KN, James Lyons, Canada
KC8LA, Richard B. Harris, MI
KC4CS, Harry C. Hardwick, FL
K9IFO, Willis E. Bowser, IL
N2CQH, Rodney M. Holgado, NY
K5SOR, David E. Evans, TX
EA6GP, Toni Fiol, Spain
KA4VCJ, Bobby W. Rose, TN
W8VFT, William B. Randolph, OH
N7AXA, Alan R. Spurgeon, ID
N6ESV, James E. Pearce, CA
N2CQE, Peter Kitt, NY
N8DOE, Henry E. Dean, OH
KAØKKV, Elliott M. Harris, MD
KB5LB, Ralph W. Cearley, TX
KA2KMV, Kenneth Horning, NJ
WB1CDD, Steve Brody, NJ
W4YDL, James L. Jolly, KY
KG1K, Steven J. Faulkingham, MA
WAØGBR, John C. Moore, NE
WA4ETV, David A. Dunville, VA
KA7MNZ, Ted O. Reinke, MT
KC7IG, Ralph A. Sadler, AZ
N7DEN, Ruth M. Sadler, AZ
W5VLT, Benard W. Wright, TX
K9VON, Russell Pakulski, IL
WBØWCO, Donal B. Hicks, MN
KA5ETU, Albert B. Waggoner, TX
KW5X, Hugh Vance, TX
WD4AVY, Standley D. Ward, NC
N7DGZ, Robert R. Brown, CA
JA2XNP, Hiroshi Yamada, Japan
KA8JRW, David B. Vardy, MI
KRØU, Timothy C. Groat, CO
WBØSCD, James B. Rude, ND
KA3CRC, Thomas R. Schmitz, PA
N7AST, Andy Schaefer, AZ
KA5NLY, Eugene C. Smith,JR.,AR
K5HMB, Doyle W. Morgan, TX
KA6QOG, Robert S. Wendling, CA
K5TTE, Randy Seybold, CA
WB4YHF, Beecher A. Waters, IN
WA1PNQ, Panos G. Yeannakis, CT
KC9BT, Terry Jarrell, IN
K2HKS, Russell Gundlach, NY
WB6AAM, James G. Coote, CA
WA6RYZ, Robert L. Crawford, CA
KA2NCW, Peter P. Wagner, OH
WA2ECP, Vincent J. Passione, NJ
VE1BBW, Dave Harrison, Canada
WBØURA, Thomas E. Murphy, IA
N4FSZ, Elliott R. Gee, VA
WA2AHP, Andrew S. Morrison, MA
K6VV, Asa E. Collins, CA
WA5ZLJ, David R. Allman, TX
WD8OPX, Rolla L. Wallace, WV
K7RMV, David P. Johnson, OR
N1AIS, Philop A. Medeiros, MA
W3WIP, Walter J. Gervel, PA
K6IB, Harris Adelman, CA
N5JD, Jack S. Dannels, TX
KB6S, G. Leonard Tyler, CA
K4HMD, Tom Fleming, FL
WA6YVB, Wayne E. Scott, CA
KA7KXA, Lewis Jones, OR
K8NI, A. Norman Into,Jr., OH
KB6UG, Walter A. Hill, III, CA

(Continued on next Page)

1000 MILES PER CUBIC INCH?

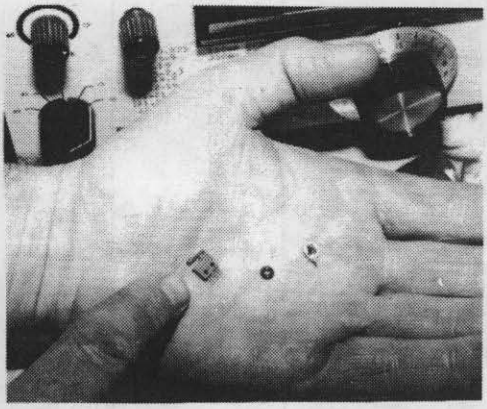
by Dan Lewis, N6HY
1337 Vine St.
Paso Robles, Ca 93446

How about working 1000 miles-per-cubic-inch rather than 1000 miles per watt? Can it be done?

Home-brew submiaturized high frequency transceivers are a reality, but who has the record for the greatest distance from the smallest rig?

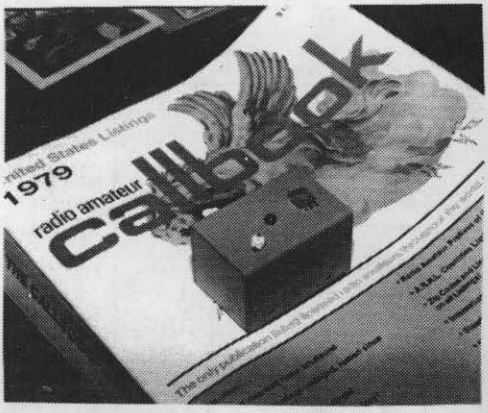
The rules are arbitrary of course, but perhaps the radio should be completely self-contained, including the battery. The only external devices allowed would be the antenna, the ground, and an earplug. The battery requirement would virtually eliminate use of the higher powered rigs in the two-watt range. Perhaps 2 classes could be incorporated, one class with the battery cubic inch size added to the cubic inch size of the radio and another class allowing an external power source. The latter class would probably be the most popular but the "self-contained battery" class does have possibilities.

Just how small can a radio transceiver be? Some of the latest readily available components should allow for some really tiny radios. A few transistors, some tantalum capacitors, 1/8 watt resistors and a small chunk of perfboard should make a transceiver stuffed into a 2 cubic inch box a tangible item. Perhaps point to point wiring would produce the smallest rig. It would look like a lump of parts soldered together but would probably work!



The greatest breakthrough would be if someone would design an IC chip specifically for this application. Imagine a high frequency transceiver designed into a chip with a few toroids and resistors tied in for good measure.

The 1/2 watt rig used here measures 2¼ X 1½ X 4¼ for 11.9 cubic inches without the battery. It has allowed contacts of up to 59 miles per cubic inch but is probably capable of 300 miles per cubic inch on 40 meters under ideal conditions. To keep this in perspective, an Argonaut working a station 6000 miles away would be accomplishing about 14 miles per cubic inch.



Can you beat the 59 miles per cubic inch achievement? If so, write in to the Quarterly and tell us about it. 73, Dan, N6HY

---QRP: AROUND THE CORNER-AROUND THE WORLD---

ooo NO, DX PILEUPS AREN'T A CHALLENGE, BUT PAYING MY ELECTRICITY BILL IS!!

(New Members, Continued)

KAØKDR, Patrick Fitzgerald, CO
W4LKR, George E. Stronach, FL
N3CTZ, Jacob R. Deery, Jr., PA
W1XH, Al Bates, MA
WB4BBH, Francis J. Merceret, FL
N4EHL, Bob Cronau, VA
WB3HLH, Thomas Calantonio, MD
W6YMH, Robert R. Phelps, CA
KA2IST, Charles T. Currey, NY
KH6GAU, Joseph H. Seung, Okinawa
WB2SXM, Gary Huenlich, NY
WA6FST, Gerrard Spencer, CA
KC5TU, Rainford R. Halls, NM
W2EOE, Kenneth Van Houten, NJ
WA6SOK, Albert D. Dunn, CA
EA8EY, Agapito Montero Martin, Canary Ils.
KS8Z, Robert Roth, OH
WB4THL, Huland B. Gardner, NC
VE6ER, M. A. Watts, Canada
PY2NGL, Mauricio Tibirica, Brazil
KA2JLC, Charles Schramm,Jr., NY
KA2OSN, Sara K. Stewart, NJ
KA7FEE, John R. MacKenzie, OR
KC5MM, Clement L. Harris, TX
KC8GP, David Taillard, MI
N1AYW, Richard A. Gardner, MA
KB6PW, John D. Lake, CA
K6BRT, William F. Potter, VA
KRØO, Jell Elson, MO
VE3COP, Gerry Letford, Canada

W.A.S.

CALL	DATE	BASIC	ENDORS. - MILES/WATT - NOTES	POWER	MODE	BAND
WB9HPV	4-28-82	102	40 STATE SEAL	2.0	CW	80M
WA1YIO	5-27-82	151C	50 STATE SEAL	MIX	CW	MIX
WB4LJP	3-06-82	171C	20 STATES	MIX	MIX	MIX
WB4LJP	5-27-82	171C	30 STATE SEAL	MIX	MIX	MIX
N4FLC	4-30-82	172C	20 STATES	2.0	CW	MIX
KA2KMU	5-09-82	173C	20 STATES	2.0	CW	MIX
KA2KMU	5-27-82	173C	30 STATE SEAL	2.0	CW	MIX
PY2TU	5-09-82	174C	20 STATES	2.0	CW	15M
KE6KT	5-09-82	175C	50 STATES - VHF	6 PEP	SSB	6M

W.A.C.

KA1EXG	3-22-82	415C	ONE MODE	2.0	SSB	MIX
DL6QR	5-11-82	416C		MIX	MIX	MIX
W6MUL	5-27-82	417C	ONE MODE, ONE BAND	5.0	CW	10M
K4AHK	5-30-82	418C	ONE MODE, ONE BAND	2.0	CW	20M

DXCC

KC4CS	5-27-82	50C	ONE MODE	5 PEP	SSB	MIX

NET

WA9WZV/4	3-06-82		SEAL FOR SEN-40			
K4AHK	3-06-82		SEALS FOR SEN-40, NEN-40			
K3TKS	4-30-82		SEALS FOR NEN-40, GLN-80			
WD9EGW	4-11-82	8	GLN-80			
K8KIR	5-30-82	9	GLN-40			

QRP-25

WA9WZV/4	3-06-82		100 MEMBER SEAL #301			

KM/W

KA7GXO	3-08-82	719	TO JH1PQD 2,134 M/W NOVICE, 2-WAY QRP	2.5	CW	571	15M 245
WD9EGW	3-22-82	720	TO 3D2ER 2,746 M/W	2.6	CW	572	20M 179
N6ESV	3-22-82	721	TO ZL1AOC 2,640 M/W	2.5	SSB	103	10M 122
GW3SB	3-22-82	722	TO W8FWQ 2,200 M/W	1.5	CW	573	15M 246
VK2PY	3-25-82	723	RCVD ON7QG 1,200 M/W	10.	SSB	104	15M 247
N6EEG	3-31-82	724	TO NØABH 7,350 M/W	.200	CW	574	10M 123
KA1CZF	4-26-82	725	TO 3B8CF 4,605 M/W	2.0	CW	575	20M 180
KG1K	4-26-82	726	TO KD6PY 1,346 M/W HIS 1ST QSO AS A MEMBER OF QRP	2.0 ARCI!	CW	576	20M 181
KA1CDC	4-26-82	727	TO KG1F 2,920 M/W	.050	CW	577	40M 129
K4BNI	4-26-82	728	TO VK5NQ 4,993 M/W	2.0	CW	578	15M 248
WBØURA	5-09-82	729	TO 9J2BO 11,012 M/W	.750	CW	579	10M 124
WB6APP	5-09-82	730	TO ZL2KT 2,253 M/W	6 PEP	SSB	105	6M 15

CALL	DATE	BASIC	ENDORS. - MILES/WATT - NOTES	POWER	MODE	BAND
VK3BXA	5-11-82	731	TO G6FB 8,705 M/W	1.2	CW 580	15M 249
K4KJP	5-16-82	732	TO W4EQR 1,500 M/W	.030	SSB 106	1-¼M 2
JH1MBQ	5-16-82	733	TO JH8ISF 58,000 M/W	.012	AM 38	6M 16
			DISTANCE CHAMP FOR THIS QTR.			
KØVV	5-27-82	734	TO DJØEU 9,268 M/W	.500	CW 581	10M 125
KA3CNX	5-27-82	735	TO VK3BJB 5,160 M/W	2.0	SSB 107	10M 126

CLUB AWARDS UPDATE

by Bill Harding, K4AHK
QRP ARCI Awards Manager

Award applications for the second quarter fell behind those for the winter months. Twenty nine certificates and ten endorsement seals were issued for March through May.

KC4OS was the only applicant for DXCC and qualified for a "One Mode" seal with all SSB QSOs.

An interesting application for WAS was issued to PY2TU, a QRP ARCI member in Sao Paulo, Brazil. His rig is a homebrew, two-tube xmtr pushing 2.0 watts into a multiband vertical. At the time of his application, he had worked 50 states. Listen for him on 15m CW and work a 2-way QRP DX QSO.

I have 500 brand new certificates for the "QRP-25" award and not one was issued during the last three months. Much of the cause, I'm sure is due to the stinko band conditions for the Spring QSO Party. Gary Beam, WA9WZV/4, was the only applicant and received a 100-member seal for his old award.

Our distance champ for the "1000-Mile-Per-Watt" award this period was JH1MBQ. He worked 58,000 miles/watt on 6 meter AM running 12 milliwatts.

A set of sample certificates and copies of our awards program rules were sent to Montero Martin, EA8EY, Secretary of the Canary Islands QRP DX Club. There's another source for some 2-way QRP DX!

Last quarter I requested opinions and suggestions for a new Novice/Tech Award. Thanks to Ed Popp, K5BOT, and Max Adams, KA9JKK, for their responses. Since I only heard from two people, I am asking again for information and suggestions for new awards specifically for the operators limited to the Novice/Tech portions of the bands. A copy of the rules for our current awards is available from me for a SASE.

Until next quarter - 73 & HAPPY QRPing.

Bill - K4AHK

Tune up and key down. Be heard on QRP ARCI.

QRP AMATEUR RADIO CLUB INTERNATIONAL
APRIL, 1982 SSB CONTEST RESULTS

Connecticut		
WA1OFP	83,664	Argonaut
KA1CZF	6,552	Argonaut
Florida		
N4BP	1,657,260	TS-130V
WA9WZV/4	518	TS-130V
Illinois		
KA9HAO	22,784	Argonaut
K5VOL/9	2,646	Argonaut
WD9EGW	1,260	Argonaut
Kansas		
NØCLV	5,640	Argonaut
Michigan		
N8CQA	32,670	Argonaut
K8IF	25,427	Argosy
Minnesota		
NØBYC	7,137	TS-130V
Missouri		
KAØFDL	1,740	Argonaut
New York		
AD2Y	128,700	Argonaut
KB2ZS	2,400	Argonaut
Ohio		
N8ATZ	162,192	
Pennsylvania		
W3TS	87,360	Argosy
N3CNZ	57,640	Argonaut
N3AWS	Check Log	
WA2JCC	Check Log	
Texas		
N5EM	299,400	TS-130V
N5QQ	228,528	Argonaut
NF5F	5,360	
VERMONT		
WB1GMG	5,252	Argonaut
WB1GMH	4,250	Argonaut
Virginia		
KX4V	20,400	FT-101B
Canada		
VE3ATZ	Check Log	
DX		
VK2VVA	8,064	Argonaut

Participation was down compared to last year. In 1983, we will probably have two contests and allow each station to work another on CW as well as SSB. This will provide two opportunities for proponents of the two modes to participate.

(Continued on Page 15)

NET NEWS

by Red Reynolds, K5VOL
Nets Manager

There are two major items for the nets this quarter. First, our 80 meter nets have moved to 40 meters for the summer to try to eliminate QRN. Many of the evening nets are running into a lot of QRM instead.

Second, due to lack of support, two nets are being terminated. They are theTranscontinental Novice (TCNN) and SSB (TCSN) nets. Thanks to the Net Control Stations who worked the SSB net and the few check-ins they found, five certificates/stickers are being issued for TCSN as follows:

K8IF - Sticker
K4AHK - Sticker
WD4LCO - Certificate
K5BOT - Sticker
WA9WZV/4 - Sticker

Other 25 QNI awards issued since the last quarter are:

K3TKS	GLN-80, NEN-40	Stickers
K8KIR	GLN-40	Certificate
WB9WOM	GLN-80	Certificate
WA9WZV/4	SEN-40	Sticker
KC4ZA	NEN-40	Certificate
WA4OOD	GSN-40	Certificate
N8CDP	GLN-40	Certificate
W8SFK	GLN-40	Certificate
KE8P	GLN-40	Certificate
WB1ESN	NEN-40	Certificate
K4AHK	NEN-40	Sticker

Currently 30 certificates/stickers have been issued in the last year and a half since the program was revised. By nets:

TCN-20	(6)	
TSCN-20	(5)	(Net discontinued)
NEN-40	(4)	
SEN-40	(2)	
GSN-40	(2)	
GLN-40	(5)	
GLN-80	(4)	
SWN-40	(2)	

We still need some alternate NCS for GLN-40 and SWN-40, plus some net managers and NCS for the Ariz/New Mexico and Northeast USA areas. We have added a new net for Ariz/Nevada areas. Current operating nets are:

TCN-20	0001Z	Monday	14.060	K8IF (Net Mgr)
NEN-40	1300Z	Sat	7.040	WB2IVX
SEN-40	0100Z	Wed	7.030	WD4LCO /WA9WZV/4
GSN-40	0200Z	Thurs	7.040	K5BOT
SWN-40	1600Z	Sat	7.040	W6RGP
GLN-80	0200Z	Thurs	7.040	K5VOL/9
GLN-40	1400Z	Sat	3.560	N8CDP
SWNN-40	1600Z	Sat	7.110	KG6JII/ W6
SWNA-40	0200Z	Thurs	7.040	KC7IG

Best QRPing on the nets.
73, Red, K5VOL/9

Renewals-QRP number and call sign on checks.

RTTY-QRP Style

by Michael Bryce, WB8VGE
2225 Mayflower, NW.
Massillon, Ohio 44646

When someone starts talking about QRP operation the first thing that pops into mind is CW. This is true in that most QRP operators build their own gear. There are some of us who try SSB and do quite well in that endeavor. But have you ever thought of radio teletype, or "RTTY" for short? Well, sit back and read on. I'll tell you how to do it.

To begin with, RTTY is much like CW. In fact, we could use CW, but with conditions like they are on the low bands this would be impractical. Instead we shift between two frequencies. One we'll call the "MARK" or resting frequency and the other the "SPACE" frequency. By moving between these two frequencies we have what is known as Frequency Shift Keying, or "FSK".

The RTTY code, "Baudot" as it is called, consists of 5 "bits" of information (plus a start and stop pulse). Each letter then has its own code. When transmitted, this code for each letter will take about 22 milliseconds at the running speed of the printer. This is about 60 words per minute (WPM). There are some stations that run 75 and 100 WPM, but 60 is standard. Note that this 22 millisecond time is the same (at 60 WPM) at any typing speed.

It would be above this article to go into detail on how the RTTY code is generated; we will look at what is needed for operation.

First off, we need what is called a "terminal unit" or called by some as the "TU". This makes the proper tones along with the printer needed for transmitting. When connected to the receiver it takes the warble-warble sound and makes the machine print out the message. The terminal unit can be home-brew with little cost and, in fact, listening on the RTTY bands one would be surprised to see how many have made their own units. They can be as simple or as complex as you feel is needed to do the job.

Let's assume that you have either brewed one up or gave away your money and purchased your own. The next thing that you have to get is a printer (you can, of course, use a video and a computer).

Here is where the hamfest comes into play. I am sure everyone knows what a model 15 TELETYPE machine looks like. Big, old, and heavy. Very heavy! These machines can be picked up for a very good price. Depending on the condition of the unit it can be anywhere from 20 to 60 bucks. While the TELETYPE corporation no longer makes replacement parts, a well oiled machine will last longer than most hams. Next up the line is the model 19. Again made by the TELETYPE corporation. It is really a 15 but with a tape punch and tape reader called a tape distributor, or "TEE-DEE" for short. More on that later. The one that is in a lot of shacks is called the model 28 and it's a real gem. Got all the bells and shistles on it and cal still go for rather high prices, even used. A good working one can cost about $500. They are still being made today. Several other companies make printers, but

these are the ones that you will see more often.

So we have the TU and the printer. What's next? Well, we have to look how to get all of this into our QRP rigs. Let's start out simple. We have an Argonaut, right? That rig has SSB. Good! We can in fact use any SSB rig such as the Triton 4 running at QRP levels. Now our TU has what is called "AFSK" or Audio Frequency Shift Keying. Hold on!! Now what is this??! Some time ago someone decided to use audio tones on the VHF bands and they picked the tone of 2125 Hz as the "MARK" and 2295 as the "SPACE" tone. If you look, now you would see that they are 170 Hz apart. This is known as the shift, and this then is 170 shift. Now and then we see 850 shift, but not too often anymore.

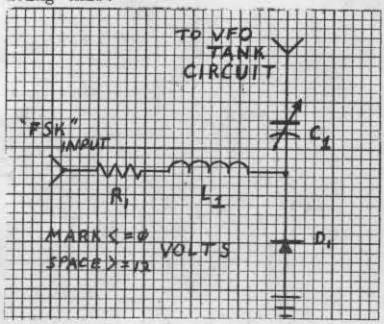
Back to the Argonaut. By placing the AFSK tones into the microphone jack we have for all practical intents and purposes frequency shifted the transmitter and we can then send out RTTY. However the tones must be really clean with no buzzes or clicks as this would cause the transmitter to put out extra spurs. The tones must also not move around. That is, they must stay at 2125 and 2295 and not drift. As an owner of the Argonaut you need not worry about the VFO drifting, but take steps when using a homebrew rig so you will not be calling CQ till your a really old Ham.

Because RTTY is just like holding a brick down on the CW key, final amplifier transistors must be watched carefully (not to worry about the Argonaut). Power supply components will have to be looked after to avoid overheating of the current-pass transistors. Provide extra cooling if needed.

Let's get back to the tape reader. Just like in CW, a quick, error free CQ will bring back more calls than one with all types of mistakes and sloppy sending. Unless you can type better than most hams then you will need some tape equipment. The tape is really paper and there are holes punched into it with the tape punch (clever). Remember that the tones coming out of the TU are really audio and that we can very easily put these on audio tape and play them back at will. If you don't have a tape punch ask around and have one made up by a fellow RTTYer. You'll need a CQ tape and more than likely a "brag tape" that lists all the goodies in the shack. The tape can be read and put on a cassette tape. Ths really saves both space and time.

Receiving RTTY is a bit easier to do than send. Here again we need a stable VFO so we don't have to retune every other second. A good filter in the IF and audio is nice to have but remember, we can't have it too narrow because we have to pass the 170 Hz shift.

So far so good, right? But you say you don't have an Argonaut. Well, not to fear. You can still enjoy RTTY on the low bands. What we have to do is shift the VFO 170 Hz. This is easily done with a handful of parts. Looking at Figure 1, we'll take the "FSK" output of the TU which unlike that of the "AFSK" is a voltage that follows the "code" exactly (the AFSK tones follow exactly also). This voltage may be something in the order like "mark" zero volts and "space" 12 volts. When this FSK voltage is connected to the circuit shown, we can see that when in "mark", nothing happens, but when we have a "space" the 12 volts turns on the diode and the extra capacitance moves or shifts the VFO. C1 is adjusted for the proper 170 shift. R1 limits the current for the diode and L1 keeps RF in its place. No one gets a free lunch. So there are two things that must be taken into account when doing this.



The first thing being many homebrew transmitters use what is known as a multiplying VFO. That is, the VFO runs on 40 meters and then is multiplied to get on 20 meters. If we adjust the capacitor in our circuit for 170 shift on 40 and then move to 20 our shift is now twice that of 170 or 340 Hz and we just can't use that. Problem number two: We may have to invert the FSK signal to get the proper shift. If not, we'll be upside down. This is simple and would only take a few more transistors. If you use a transmitter such as the HW-8 where its VFO is heterodyned we have little trouble as the output of the VFO is the same no matter where we go. This is true of all VFOs that use this method.

Well, that should take care of the basics. But you say you heard that you need at least a Kw to work RTTY? Wrong! As Thom, K8IF, would say, "Power is no substitute for skill".

No one has to be told what the RTTY sounds like. It has the warble-warble sound unlike any other. RTTY can be found on all bands. For some strange reason most of the RTTY will be on 20 meters, but RTTY can be found at the high end of the CW portion of each band.

Here are some tips for QRP RTTY:

Work if you can in the middle of the week as there will be less QRM from other stations.

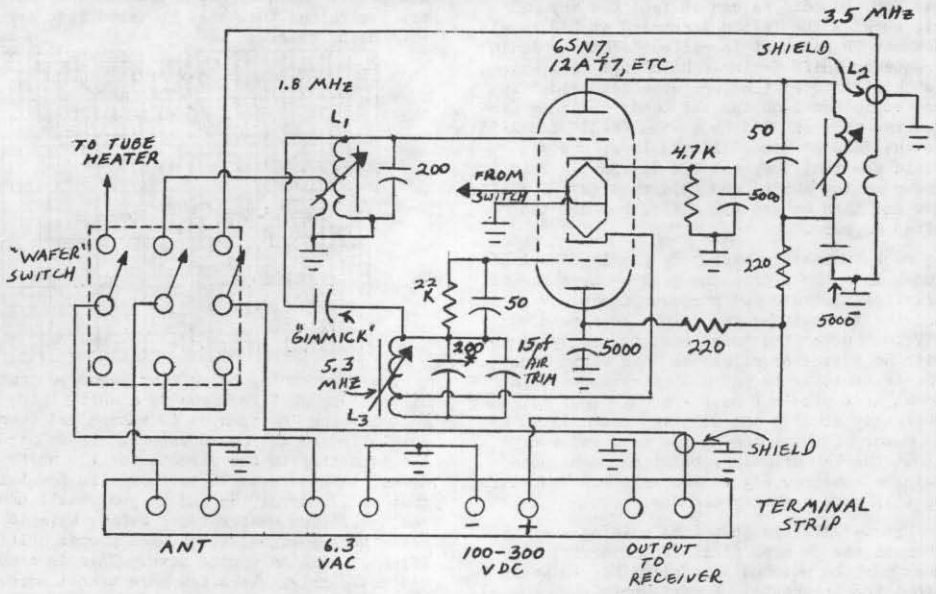
Always look at the highest band for RTTY. While you may not be able to find a spot to sit on 20, there will be a DX station calling his heart out on 15 meters.

Stay away from the Kws. This only makes sense, while you may be able to rub shoulders with them on CW, they will blast you on RTTY.

If you do work 20 try and wait till the "California Kws" are off the air. This will require you to stay up early in the morning, but it does pay off in lots of DX.

Try not to worry about running only 2 watts as most of the transceivers tha t run tv sweep tubes will have to run at quite reduced power levels (because of the 100% key-down). Many QRO stations will now be running only 10-30 watts out.

(Continued on Page 15)



All resistors 1/2 watt.

See text for coil data.

"THE ROCKVERTER" for 1.8 MHz -W9SCH

All capacitors old micas or disk ceramics unless otherwise marked.

* SILVER MICA.

Use That Old Receiver on 160 - Build A "Rockverter"

by C. F. Rockey, W9SCH
Box 171, Albany, Wis. 53502

Have you an older, "Tube-Type" receiver which yet works well but doesn't cover the 160-meter band? If so, this cheap and simple converter is for you. "Top-Band" is the fun band; why deprive yourself of it any longer?

Our "Rockverter" was built entirely from our junk-box, it thus cost us nothing but our time. We used a 6SN7 GT tube because we have so many of them around. But you may use a 12AU7 if you wish (this is an ideal "recession" project).

The coils are wound upon iron-slug tuned forms, ours were old National types 1/2 inch in diameter. Those salvaged from TV sets or picked-up at a ham flea-market will probably do. L_1, the input coil, tuned to 1.8 Mhz, has an inductance of about 40 microhenries for the secondary with a 5.0 turn primary wound around the "cold" end. L_2, the output coil, tuned to 3.5 Mhz, has a primary inductance also of about 40 microhenries. The secondary is of 5.0 turns, wound around the "cold" end. L_3, the oscillator coil, tuned to 5.3 Mhz., is of about 4.5 microhenries, tapped about one-fifth of the way above the grounded end. It is impossible to say exactly how many turns will be required as this depends on the permeability of the iron slug as well as the form diameter. A "Grid-Dip" oscillator will enable you to check each coil directly (We used about 40 turns on L_1 and L_2 and about 12 on L_3, but yours will probably be different). That the coils tune to the correct frequencies is the only critical thing in this device. Everything else can well be what you have on hand, if it is "in the ballpark" (Use No. 26 B.US. wire for coils).

The "Gimmick" is a handmade capacitor made by tightly twisting two pieces of enamelled magnet wire tightly together (insulation left on, of course) for about an inch.

The 15. pf air capacitor marked "trim" on the diagram is mounted in a convenient place and equipped with a knob. It is to correct the inevitable drift of the oscillator frequency over a long time-span (short-time drift is hardly noticeable with 100 volts applied to the oscillator plate).

We use a "wafer" switch to disable the converter when using the receiver upon other bands. It shuts off the heater voltage when out-of-use, saving both plate and heater power (this is a nicety that you may omit if no such switch is at-hand). We suggest that you shield the input and output leads to the switch as suggested (if you have no small coax or shielded wire, simply wind another piece of hookup wire around the lead and ground it. This is to reduce interaction and possible mixer oscillation.

THE PRESIDENT'S FORUM

by Thom Davis, K8IF
QRPARCI President

Hi fellow QRP'ers, hope your summer is going well. First I'd like to bring to your attention that due to the tough economic times, some of the officers of QRPARCI may have to leave us, therefore it is IMPORTANT that you make note of this before sending in new applications or subscription renewals. It is possible that a sudden change in the offices of Secretary/Treasurer, and Awards Manager, may occur. Be sure to check the MBX, Nets, or the V.P., K5BOT, or I, before sending such material.

Let us proceed with this issue of QRP Quarterly. In this edition of QRP Quarterly you will find the rules for the first WQF contest on July 17-18. A great deal of time and effort went into its planning, and there are many categories to choose from - Portable, Fixed, Single or Multi Op. World-wide participation is the aim of this contest - be sure to be a part of it - PARTICIPATE.

Also in this issue you will find a ballot for our annual meeting this year. Please take time to fill it out and return it. The response to the April ballot was rather weak. So c'mon gang, let's do better this time. This year, there are several board seats to be filled, and many selections. Take an active part in the club - send in your ballot ASAP.

The April ssb test was a disappointment. Conditions were poor and so was participation. Because of this and the termination of the SSB Net, it appears likely that we will return to our old schedule of two regular contests per year. ie., combined CW/SSB for April and October. This would allow our Novices two opportunities at the Triple Crowns of QRP Novice Trophy. SSB participation would be left up to other participants, but not required for eligibility, for the US/VE or DX Trophies.

A word about participation. Every year at this time participation drops dramatically. Now I know the good weather, lawn duties, bar-b-ques and the like is partly to blame. Face it we had a rough winter - but give us a break!!

It always comes down to the "Ol' Reliables" when things are slow. Take for instance material to QRP Quarterly, or our monthly informals. Next issue, a questionaire will be included for your selection of the best article for the Technical Achievement Award. The selection may be difficult based upon the few articles that have appeared so far this year. But, more than that, articles eligible for the TAA also make QRP Quarterly interesting. So pick up your pencil and scratch down your project or article and sent it in to the Editor. Your "diamonds in the rough", no matter how simple they may seem, could turn out to be "gems".

Another sad case has been activity in our monthly informals. That's right - S-A-D!. Again, only a handful of regulars have been showing up. Well, Ed, WD4LOO, has devised an idea which may help, called "QRP Mini Tests." Check out page and get in on it.

Happy hunting. I hope to work ALL of you in the WQF contest.

GL es 73, Thom, K8IF

(Continued from Page 11)

Check into the RTTY nets. Most net control stations will go out of their way to let a QRP RTTY station check in. One of the best nets is the BNR net which meets every night 365 days a year at 6:00 pm est at 3605. This is a traffic net, but all RTTY checkins are welcome. WD8MBN, John and W8EK, Ken, are net control and both listen just for QRP stations.

Get the antenna tuned as best as can be done. Here an antenna tuner may help as the transmitter will need to look into a good load with the long key down to keep things running cool.

Don't forget about the tape which will be great on calling CQ. I call 3 lines CQ with the station call and then with "THIS IS WB8VGE QRP RUNNING 2 WATTS SOLAR POWERED RTTY".

Listen for CQ and calling CQ is running about the same here. Don't sit all day long listening, call a couple yourself (listen to the frequency first, as RTTY transmissions are long).

With the microprocessor, we now have the small computer in the RTTY field. Why, now a few companies have converters to take the CW off the keyer and send out RTTY. Just think! Running an Argonaut in the middle of nowhere with a hand-held converter-display unit no bigger than a couple of cigarette packs.

I hope that this will spark some interest in QRP RTTY. I have only just touched the surface. There are many books on the subject and they should be read before starting. While I am somewhat lazy, and I use the Argonaut for RTTY here, I have not tried the modification of the HW-8.

Will be looking to see you "down in the roll" QRP RTTY style.

Don't forget the QRP ARCI monthly Informal QSO Party Plan. First Sunday of each month.

Wanted: Shack of the Quarter Photos. Let others know who you are. Pictures and details to the editor. See page 2 for further details.

QRPARCI CW QSO Party. October. See details in January issue. Novices and Tech too.

We didn't have such trouble but you may not be so lucky...).

You may build this gadget into any kind of metal chassis or enclosure you wish. Keep it reasonably well shielded to avoid pickup from possible powerful 3.5 Mhz signals. We used a small metal cakepan, about 5" X 9" swiped from the XYL's kitchen, but you may use something fancier if this matters to you. To us: "Pretty is as pretty does".

When wired and checked, set each coil to the correct approximate resonant frequency with a "Grid-Dip" oscillator. Then connect to your receiver and antenna. Turn on the VFO of your trans'itter to 1.8 Mhz, and your receiver to 3.6 Mhz. With the "trim" capacitor at half-capacitance, adjust the oscillator coil slug to tune in your VFO signal. Then adjust input and output coil slugs for maximum signal strength (receiver gain turned down). Then shut off VFO and touch up slugs upon an "outside" signal, or even upon the noise pick-up, if no signal present, tune for maximum signal.

Because of the oscillator frequency chosen, the band will "tune backwards" upon the receiver dial; that is, 1.8 Mhz will be at 3.6 Mhz on the receiver dial and 1.9 Mhz will be at 3.5 Mhz. - confusin' but amusin'.

Having no laboratory instruments at our disposal, we can publish no precise performance data for this unit. But we do find the converter-old-receiver setup (an old Knight model A-2516 is in use) "hotter" than the receiver previously used. We find no spurious "birdies" in the 1.8 to 1.850 Mhz. CW section in which we are solely interested and are not bothered by broadcast harmonics, etc. We can hear about anything we are likely to work with our 25 watts (maximum) and compromise antenna on this band. What more does one wish...?

Note...We get power from the receiver itself - if this isn't obvious. The unit's drain is small, so no trouble will result.

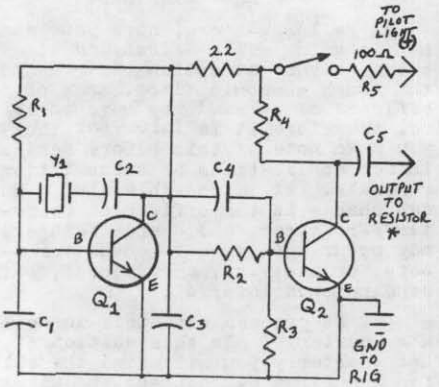
****QRP-AROUND THE CORNER-AROUND THE WORLD****

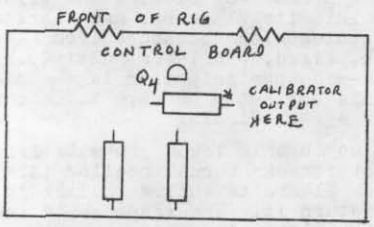
Calibrator for Argonaut
by Cliff Soper, WA2PJW
Box 303 Rd #1
Lowman, NY 14861

Here is the way I add CW filter to my rig. Maybe it will help give someone (an) idea.

I use the Radio Shack 100 Khz Frequency Standard Kit which is no longer available but they can supply the parts.

I placed all parts on perforated board keeping them as close together as possible and the leads short. Remove Argonaut cover and have front toward you. Wire the board and test using a 4.5 volt supply. Drill hole in right end panel toward the front top of panel and install switch (I used a small miniature SPST). Next lay board over top of components at front left of rig near pilot light. Cut all leads to length and solder plus lead to switch and from switch to 100 ohm resistor and then to pilot light plus side. Board is grounded to nearest lug. Output from board is connected to resistor on control board. Wrap with thin sponge and lay over components and replace cover. Board will fit in front of speaker.





PARTS LIST:

Y1 - 100 Khz Xtal
R1 - 180K 1/2 Watt
R2 - 15K 1/2 Watt
R3 - 6.8K "
R4 - 1K "
R5 - 100 Ohm "
Q1,2 - 3904 Transistor
Sw - Miniature SPST Switch
C1 - 0.005 mf Disc
C2 - 4-40 Pf Trimmer
C3 - 0.001 mf Disc
C4 - " "
C5 - 0.005 mf "

NOTE: See next issue for details on installing the MFJ CWF-2 Filter PC Board Kit into an Argonaut... (Ed.)

CLUB ITEMS

QRP ARCI Club rubber stamps for use with your QSLs or personal stationery! Comes in three styles:

A) 5/8" X 5/8" stamp of club logo, $2.00

B) 1-1/8" X5/8" stamp of club logo, $3.50.

C) Same size as (B), but includes your call and QRP number, $4.95

All prices are postpaid. Order from:

Mickey Koelble - N8BKB
324 Oneida NW
Canton, OH 44708

QRP ARCI name/call badges: These sharp-looking plastic badges are 2" X 3", have black lettering on white background, and includes your name (first or last), call, and the club logo. Price: $4.00. Order from:

George Collier - WØLG
1816 Third Avenue
South Anoka, MN 55303

A CHEAP BEAM.....THAT WORKS!
by Ed Popp, K5BOT

Everyone knows that a beam will improve the transmitted as well as the received signal, not to mention other benefits, especially when QRP.

Ever entertain the idea of taking a beam on an outing or camping trip? Backpacking a beam?

These are no problems when you consider a wire beam. Especially one that is light in weight and easy to put up. One other benefit, it's very low in cost. Depending on the materials that you use, a 20 meter version is less than $10.00.

The beam is monoband, has good front-to-back ratio, very light and easy to build. It is a low Q antenna, so it is broadbanded and can be used for both the cw and phone portion of the band.

The beam.....the ZL SPECIAL

The beam proper is made from 300 ohm tv twinlead. The feed impedance is about 70 ohms, so it can be used with most rigs.

Basicly, the ZL is two folded dipoles fed out of phase. (fig.#1)

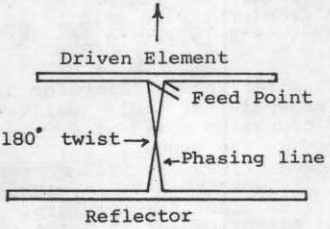


fig. #1

Dimensions for the ZL are;

Driven Element
length (ft) = 444/f(MHz)
Reflector
length (ft) = 472/f(MHz)
Spacing
length (ft) = 121/f(MHz)
Phasing line
length (ft) = (spacing)x(velocity factor)

When the ZL has been assembled it should be as shown in fig.#2. The reason being that the phasing line is shorter due to the velocity factor of the line.

The ZL can be used in the configuration as shown in fig. #1 with a slight decrease in gain.

Since the ZL requires a balanced feed system, a bazooka balun can be used to accomplish this transformation, (fig. #3).

Take a piece of 72 or 75 ohm coax and cut a quarter wavelength using the frequency of operation that you used to calculate the center frequency of the antenna. Don't forget the velocity factor of the coax.

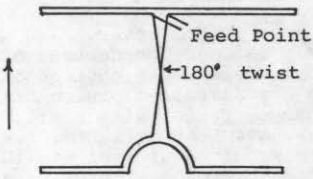


fig. #2

Using this length, remove from an old piece of RG-8 or 9, the braided shield. Place over the 72 or 75 ohm coax that was cut for the balun. Do not remove the outer covering of the 72 or 75 ohm coax. Solder as shown in fig.#3. Cover the balun with tape to weatherproof.

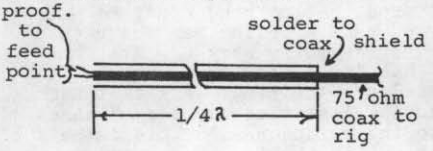


fig. #3

The ZL can be supported in several different ways. A frame can be made from PVC pipe or wood, with the ZL taped to the frame. It can be suspended from the middle similar to an inverted vee, or whatever your situation calls for.

The ZL has been known to lay on a roof, strung up in attics, hung by one end as well as installed on the top of towers.

The ZL can be rolled up and packed for trips, unless of course, you build the 80 or 40 meter version. It takes up little space and is light in weight.

On your next trip, take a beam along. Better yet, take a ZL Special.

Got a problem? Maybe someone else did and worked it out. Drop us a line so we can put your request to the public. Let others help.

(Contest Results, Continued)

I am now settled down in Pennsylvania. My new address is:
230 Mill Street,
Danville, Pa 17821.
Telephone: (717-275-5171)
or: 275-8609

William W. Dickerson - WA2JOC/3
QRPARCI Contest Chairman

----------QRP ARCI----------

New board members are to be voted on. Keep an eye out for possible nominations. See March issue for details on who is coming up to be re-elected. Secretary's Blotter. Be a voting part of this club. Be voting minority, not a silent majority. Vote when your vote is needed.

THE EDITOR'S SOAPBOX

by Terry M. Gregg-KA5EXI
QRP QUARTERLY Editor

The year is half over. The QRP Quarterly is over two decades old. Ham radio overall has changed its complexion dramatically: rules and regs have changed faces quite a bit; frequencies have been assigned, reassigned, and withdrawn; equipment has taken a drastic change of character. Techniques have also changed: some amateurs polish theirs with exquisite care, others...

QRP has also taken on a new face. Operating skills pick up where high power leaves off. There is a saying, "If you can't hear 'em, you can't work 'em". This may support QRO operations but does that mean if high power is not used, he (or she) won't be heard? Do you know a fellow ham who uses QRO? Does he generally work QRO stations? QRO has its place, true, but is it needed all the time? Ask that ham when the last time was they "leaned into the headphones." This is half of what QRP is about.

When was the last time you were on the radio and someone gave you, say, a 339, but due to condx, the copy was poor at the other end. What was your reaction? Did you maintain your code speed but send repeats? I had a QSO with a ham in the other day and received such a report. Instead of using repeats, making me sound like a very "nervous" ham, QRS was the answer. With the aid of an electronic keyer to control my sometimes "runaway fist", I maintained a slow and constant speed. It was slow, consistent...and effective. The copy was solid on the next round and I was pleased. Operating technique.

Soapbox No. 1: Do you have a favorite technique that helps? Why not send it in to the Quarterly and let us know so we can let others know. There may be some newcomer to the hobby that may have had the wrong "Elmer" help them get their license. Spread the word through the Quarterly, if you're reluctant to say it on the air.

Soapbox No. 2: Articles, pictures, etc. We are getting articles in now for the Quarterly and they are good. The reject rate is practically nil. We want more pictures. If you send any pictures, read page 2 for info on them. Don't let yourself get discouraged. If you have any doubts about the quality of the print and the negative is good, send it along and we will work it up here. The input of photos is low, discouraging at times. We need "Shack of the Quarter" and accompanying stories. This is a threat! My shack will be the next issue filler unless some are sent. Now who wants to see the editor when they would much rather see themselves? Wouldn't you? Next in line will be the club officers. Guaranteed, some will be repeats.

Soapbox No. 3: Renewals. All renewals are to be sent by the member to the secretary/treasurer. I cannot process renewals or new subscriptions here; they must be sent to the sec/treasurer. Save the club postage, and you processing time, by forwarding to him direct. Delays will result.

Soapbox No. 4: Reprints from previous quarterlies. If any checks are to be sent to cover printing, please make out checks to the editor, Terry M. Gregg, KA5EXI. This way I can process the request faster. Due to the gas prices, I must consolidate orders and runs to the printer. If there is a delay, please bear with me. If a reply is wanted on arrival of the request, send a postpaid card so we can advise you. Several requests were delayed and our apologies go out to these people. Workload conditions.

Final stand: Last Issue!!! Yes, this is the final edition to be published from this QTH. Stakes will be pulled, records handcarried, and a new office will be set up in North Dakota. Continue sending articles, letters, etc. to my present address and they will be forwarded. The new address will be prominently be printed in the next QRP Quarterly, so be looking for it.

The quarterly is looking for new blood for articles. This publication goes to countries world-wide. Let them know we are proud of our magazine. If the need arises, we will expand the size off it...but we need inputs from everyone, not just the regulars. Don't let long editorials overrun the pages. Give me a challenge! Defy me to compress my column. This is a club for amateurs and by amateurs. Let's everyone chip in. CL fm TX.

73, Mike, KA5EXI

From the club Secretary/Treasurer:

1) Club Bylaws - Send #10 envelope SASE for one (1) ounce.

2) Club history, 1961-1971, $1.00 plusSASE for two (2) ounces.

   Supplement I, 1971-74, 50¢, #10 envelope SASE 2 ounces.

   Supplement II, 1974-75, 50¢, #10 envelope SASE 2 ounces.

   Supplement III, 1975-77, 50¢, #10 envelope SASE 2 ounces.

3) Membership applications, 16 for $1.00.

4) Membership roster, 50¢, #10 envelope SASE 2 ounces.

Make check or money order payable to club and send your order to the Secretary-Treasurer (see page 2 for address).

Slinking Around

by Thomas F. Kelly, W3AEC
From Southwest QRPer March-April 1982

How about a super portable QRP antenna made from a child's toy costing less than $1 and capable of being carried in a pill bottle?

Many of you probably have seen advertisements for commercially produced ham antennas made from a spring-like toy called the "Slinky". They sell for about $50 with coaxial cable, but a much less expensive version can be had at the toy counter. The item I have in mind is the "Slinky, Jr.", a scaled down version of the other. I paid 89¢ for one at a drug store near my Maryland home. I also got a 30-dram pill bottle from the pharmacy to carry it (be sure to make sure the coil fits the bottle).

First thing to do to convert this to an antenna is to scrape the metal bare at both ends of the coil to make sure of a good, electrical contact. Get some nylon cord to hoist the coil into place and stretch it to the correct length.

I started by stretching my "Slinky, Jr." to a length of 12 feet between two living room lamps and about 2.5 feet off the floor. Using a length of No. 16 plastic-coated wire with an alligator clip on one end, I fastened it to one end of the stretched coil. I then fastened the other end of the lead to an antenna tuner/SWR meter. For a ground, I connected another wire to a nearby heater vent on the baseboard of the room.

Into all this I fed a 4-watt P.E.P. ssb signals from a converted CB rig and worked Japan, Alaska twice, Wyoming, Texas and Colorado on 10 meters. Later I tried the same arrangement at a Virginia Beach, Va., motel and bagged 14 countries on 10 meters.

Swapping the feed point from one end to the other changes the direction of signals. The Slinky Jr. can be stretched as much as 15 feet for tuning purposes.

I later tried it on 15 meters with much the same horizontal arrangement but stretched to 17 feet or until I got the SWR down to 1:1. With 5 watts P.E.P. ssb from Maryland, I worked Miami with a 5/8 report; Virginia, 5/9+; 9G1ZF in Ghana, 5/3; and Iowa, 5/5. Leaving the Slinky Jr. at the 15 meter length, I then worked ZB2GR (5/3) on Gibralter on 10 meters.

A word of caution: If you try slinking around in some newer motels, you'll find the plumbing made from PVC, and you'll have to hunt for a ground. One possibility is the metal rail around the balcony or the metal frame for the sliding door. You may also want to try the Slinky Jr. in a vertical position. I will be glad to compare Slinky Jr. notes but would appreciate an S.A.S.E. (2713 Pinecreek Place, Forestville, Maryland 20747).

Foreign language buffs: The club has Newsletters from the following countries: Japan, Netherlands, and Italy. All are in the native language. U.S. copies can be obtained from the editor, $2.50 each, overseas, add $1.00 more, U.S. currency. SASE will get list of what is available. Suggest wait till after September. Order from the Editor. Some U.S. copies too.

FROM THE READERS...

Boy Scouts of America On the Air

We are Troop #52 here in Mobile, Alabama. During our BSA Expo held at the Battleship USS Alabama last October, we had set up an Amateur Station to take part in the BSA Jamboree on the Air.

While we were a great success and stimulated a lot of interest in Amateur Radio among the boys (18 Boy Scouts completed the Electricity, Electronics and Raido Merit Badges), we realized that most young Radio Operators can hardly afford expensive radio equipment and antennas. Also, most young boys have very little extra room in their homes for a radio shack (Maybe an Elmer could help here? Ed.)

So, to us, QRP Radio seemed to be perfect for the young amateur. Even though good operating procedures and good operating skills are needed to make repeated contacts, we felt that with some proper training a young boy could operate QRP with success. The radios are inexpensive or can be built easily, antennas can be light weight and again easily made since everything is small, little space is needed (a corner of a study desk will do).

Since the troop was going on a camping trip on the weekend of January 30-31, we decided to try a QRP Field Day.

Our radio was a Heathkit HW-8 I had built, our power supply was a 12 volt lantern battery and the antenna was a dipole cut for 7.125 Mhz., fed with RG-58U coax. The antenna was hung between two pine trees and was about 20 feet up. Out power output was a mighty one watt. I told the boys we were a flea scratching on the back of an elephant. To talk to the elephant, you must first get his attention.

During the day, we tried to operate with good QRP procedures. Our objective was to show our boys the need for good operating procedures. No matter what type radio you used or the power output. Nothing can compensate for bad operating procedures.

The Novice of today is tomorrow's general or extra. A Novice who developes good QRP operating skills operating on a few watts is going to be some kind of good general or extra when he operates with 50 or 100 watts.

Because of other training programs that day we could only operate a few hours. Our QSO total for the day was 53 contacts in 16 different states. No DX contacts, although we heard several stations, but we were unable to cut through the QRM. I guess our one watt stick just wasn't big enough to get the DX elephants' attention that day!

I realize that our log that day was not heavy as compared to what some of the really good QRP operators could have done. But our boys did see you can get through with QRP power and a little trained skills. So we felt our QRP Field Trip paid off in furthering our troop's interest in Amateur Radio and QRP. In March we plan another trip and are going to try to do it on solar power.

Profiles of Candidates for Board of Directors

Edwin R. Lappi, WD4LOO, QRP # 4227

Personal: Age 52, Employed as Lecturer University of NC, married, one son, licensed since 1976-Advance class. Member of QRP ARC I since 1978. Positions held-Contest Chairman, and currently Secretary/Treasurer and member of Board of Directors.

As a Board member I will continue to support those policies which will truly make this club responsive to the needs and desires of you the members. I will continue to try to find ways of improving the club renewal rate, participation in the monthly informal QSO parties as well as regularly scheduled contests.

Further, I will support those activities by the members which will help make the quarterly the best such publication in the QRP field.

I will always be responsive to your comments, criticizms, and suggestions as to how to improve this club.

Last but not least I will always encourage each member to vote his/her conscience in all of our elections. Thank you for your support.

Gary Beam, WA9WZV/4, QRP # 4126

Personal: Licensed in 1968; age 30, Components Engineer for Defense Contractor; QRP Net Manager for TCN & SEN.

My interest in QRP began during my college days when housing restrictions and cash-flow (or lack thereof) demanded station simplicity. I became addicted to QRP, which was certainly a safer substance of addiction than other popular choices of that time. In late 1978 my QRP interests were still alive, but the thoughts of another Indiana winter were killing me. My "warm" Florida QRP station presently consists of a Kenwood TS-130V, Vertical and Mini-Quad antennas, and a lot of homebrew goodies. Operation these days is mostly in QRP Nets, contests, and often frustrating attempts to get K8IF's MBX to respond to my flea-power "Hi Y'alls."

I feel that the club has made some good changes within the past year,in particular the elimination of a membership power limit. An all-out effort now needs to be made to encourage more activity (both on-the-air and off) on the part of our members. We need more participation in QRP operating events, such as contests, nets and activity periods. We also need more input, via the QRP Quarterly, from you to our club leaders and fellow members. My efforts as a board member would focus on this increased QRP participation, so that QRP ARCI can continue to grow and serve.

W. K. "Bill" Harding, K4AHK, QRP # 4647

Personal: Age-46; Licensed in 1954; General Class; Member QRP ARCI since July, 1980; QRP ARCI Awards Manager Since Jan, 1982; Member ARRL, QCWA, N. VA FM Assoc., Carolinas-Virginia Repeater Assoc., Woodbridge Wireless, Inc.

As a Board member, my responsibility to the membership will be to provide suggestions and guidance in the operation of the QRP ARCI. This guidance must reflect the wishes of the membership majority and serve our established goals of increased QRP activity.

The excellent efforts of your current Board of Directors has enabled our club to grow at a healthy rate. Concurrent with this growth is the problem of how to increase the QRP activity of ALL of our members.

The many fine letters that I have received as QRP ARCI Awards Mgr over the last 5 months have really demonstrated to me how much a good awards program and publication of these awards will provide incentive for QRP operation.

EVERYONE likes to be recognized for their efforts. Few people will contribute more than once to a project if not given an incentive.

It is my goal to help find the key to increase membership participation in all club activities-not only on the air but also through technical achievement, publicity and contributions to the QRP Quarterly and World QRP Federation. Our club will be only as good as we make it. Don't wait for the officers to make all the decisions. Let's do it together - NOW!

Bill Welsh, W6DDB, QRP # 1438

Personal: Born Boston 1927; First licensed in 1944 as a commercial operator as first class Radiotelegraph & Radiotelphone with all endorsements, worked as a radioman on ships and at WBL, Buffalo. Bill received general class license 1948 and is currently an extra class licensee, averaging 2500 contacts per year with 1000 in novice bands, holds more than 300 operating awards plus the DeForest and Edison awards. Bill has taught licensing courses since 1948 helping license or upgrade several thousand amateurs. He has written in all five major Amateur radio publications and at present writes the CQ Novice column. Bill is married to Marie(W6JEP), they have 2 daughters, 5 sons, and 4 grandchildren. Their station includes an argonaut, ATLAS 350-XL(Marie's) and homebrew 40-watt input Xcvr, plus 7 antennas. Most of Bill's work has been in electronics, operating &

Bill Welsh (Cont)

writing. He is a senior Engineer, Lockheed's Burbank plant, where he has worked for 20 years.

Bill's interests include more than Amateur Radio, having been involved in Scouting, Camping, Sports officiating and Red Cross communications and blood programs activities.

Bill as a member of the Board would like to see improved programs to help the NOVICE member participate more actively thus serving two purposes. Increased club activity and improved operation for the NOVICE so he/she can upgrade.

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Board Member for Life Term

Nominated by Paul Smolarz, WA2HYY
QRP # 384

Harry E. Blomquist, K6JSS, QRP # 1

Harry E. Blomquist, K6JSS, founder and father of the QRP ARC I has over the years toiled to create an outstanding QRP Club, and to promote QRP activity around the world.

In the early days of the club, Harry and a small nucleus of dedicated members struggled to build a club with definite principles - QRP power.

Throughout all the trials and tribulations of the club, Harry over the years has worked and served the club in various capacities. He has held a seat on the Board, the longest of any officer. Harry has been an officer since the day he started the QRP club.

I feel for all the service and dedication that Harry has given, the club can HONOR Harry by placing him on the Board of Directors for life. This Harry deserves.

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Christopher Page, G4BUE, QRP # 4292

Personal: Age 38, first licensed in 1973 and have been interested in QRP since 1976. I am active on SSB and CW, 1.8MHz to 28MHz with QRP, but prefer CW DXing (QRP DXCC is 214 confirmed). I also enjoy contesting (past winner of the QRP Section of CQ WW and ARRL contests) and also participating in QRP activity periods. I have been a member of the G-QRP-C since 1976 and a committee member since 1978. I am the author of "Members News" in Sprat, the magazine of the G-QRP-C and organize the Club's annual activity periods I am interested in all aspects of QRP and in particular I enjoy experimenting with very low power levels.

I would like to see greater co-operation between the QRP Clubs of the world through the World QRP Federation in order that QRP can be organised and promoted on a common basis. I would like to see the QRP ARC I taking a leading roll in this as they have by far the largest membership of the clubs in WQF.

I was very pleased when the QRP ARC I adopted the international QRP definition of 5 watts output (10 watts input) as it meant the Club was accepted as a "real" QRP Club outside of the United States. I would like to see the Club organised for the benefit of QRPers within that definition and strive to encourage the skillful use of QRP equipment (commercial and homebrew) by maintaining regular two-way QRP QSOs whilst at the same time setting high standards of operating and first class conduct on the bands.

Our overall objective being to try to have at least six of our boys make their Novice ticket this year. What better group for community service with Amateur Radio or emergency or disaster situation than a Boy Scout Troop made up of Amateur Radio Operators? Each of them a good QRP Operator.

Felix E. (Smokey) Stewart, Sr.
N4FLC
Asst. Scoutmaster Troop #52
7049 Carrabell Key
Mobile, Alabama 36609

IT PAYS TO ADVERTISE!
by Bill Harding, K4AHK

Many thanks to N1AIS, WA2KSM, WD4LOO, KA9BBT and others who sent me information in response to my one sentence request in the April QRP Quarterly. You may recall that I asked for an APPLE computer program for calculating great circle distances. I received several listings for great circle calculations as well as some other interesting things related to ham radio.

John McNeil, WA2KSM, sent me a real winner which he found in a "73" magazine. From this program, I have written a short program for the APPLE to compute and print great circle distance and miles/watt. It produces a single sheet report which I am now including with each "1000-Mile-Per-Watt" award.

Thanks again to those who offered the help.

K1KSY, John Biro, MA
KA2JIZ, Richard D. Downey, NY
WA9FXI, Arthur Semeyn, IL
KB4ACD, Jack A. Belew, Jr., AL

Not getting QSOs? Wonder why? Could it be your fist? Record it sometime. Don't like it? Try a change. It may pay off.

Looking for a change? Try QRPp, less than 1 watt. Try for a Km/Watt Award. Think you may qualify? Send it to Awards Chairman.

BY-LAWS OF THE QRP AMATEUR RADIO CLUB INTERNATIONAL, INC.

PREAMBLE:

The QRP Amateur Radio Club International (QRPARCI) is a non-profit organization of radio amateurs dedicated to increasing world-wide enjoyment of Amateur Radio by promotion and support of extensive QRP equipment designing, building, and on-the-air operation. These By-Laws delineate the principles and policies necessary to achieve these goals. The Organization depends on the Integrity and Honor of its members to keep the Club's operation in the original spirit of its founding. Membership is not legally or financially binding other than for Newsletter dues and purchase of supplies from the Secretary. A member may resign at any time but as a courtesy, resignation should be made in writing to the Secretary/Treasurer. Finally, the QRP operation referred to above is defined in Article I (b) below.

ARTICLE I: Power Definition.

(a) When engaged in special or routine NON-QRPARCI sponsored activities such as traffic, other club nets, backscatter, meteor scatter, moonbounce and similiar QSOs and tests, members agree to carefully ovserve FCC Rule 97.67 (b). This Rule states - "Notwithstanding the provisions of paragraph (a) of this section (the KW limit), Amateur stations shall use the MINIMUM amount of transmitter power necessary to carry out the desired communications." When engaged in QRPARCI QSOs for awards, contests and nets sponsored by QRPARCI, as well as general QRP QSOs, members agree to adhere to the power levels delineated in (b) below.

(b) QRP operation for QRPARCI purposes is defined as operation with a transmitter power output of any amount less but in no case more than 5 watts output (CW)(A1) and 10 watts PEP output (SSB)(A3J). QRPARCI awards are keyed to these levels.

(c) If necessary to develop comparable input.power levels to the output power levels of (b) above, the Club acknowledges, as an equitable average factor, a multiplier of two, i.e. 10 watts input equals five watts output. However, the output levels of (b) above are the criteria for QRPARCI awards and activities.

ARTICLE II: Membership Status.

(a) Membership is for life unless cancelled by reason of voluntary resignation or official Club action. The Club will not cancel in this manner except for flagrant and repeated violations of QRPARCI rules with subsequent failure to satisfactorily answer official Club inquiries within a reasonable time.

(b) A member may be active or inactive. An "active member" is one who participates, whenever possible, in Club functions, meetings, contests, and other activities; and who pays fees on a current basis for the Quarterly Newsletter. A member not in compliance with these stipulations is classified as "inactive."

(c) The Club issues only one grade of membership. It is designated "Full Member" with all participating and voting rights. It is based on the operating and technical standards as given in Article I. All former members and associate members now in good standing are hereby designated "Full Member" with all participating and voting rights.

ARTICLE III: Club Officials.

(a) The Club officials are designated as President, Vice President, Secretary/Treasurer, Editor, Awards Manager, Legal Officer, Publicity Officer, Contest Manager, and Board of Directors. The Board of Directors shall consist of at least six (6) but not more than fifteen (15) members.

(b) Members of the Board of Directors shall be elected to serve for three (3) years. All other Officers shall serve for two (2) years. All terms of office shall begin on the first day of January of the applicable Calendar Year.

(c) The Board of Directors may combine Club offices, such as Editor/Publicity Director, or President/Director for example, if it is in the best interest of the Club. If the office of President and Director are combined, the President has the same voting powers as Director. When the Board does initiate such a combining, it must be approved by a 2/3 majority of the ballots received for this question.

ARTICLE IV: Meetings, Elections, and Appointments.

(a) An annual meeting of the active members shall be held on the last Monday of August in each year. The purpose of the meeting is to elect members to fill Director vacancies, and transact any other business brought before the Meeting. Notice of this meeting and its agenda shall be printed in the July-August-September QRP Quarterly which should be in members hands no later than twenty (20) days prior to the meeting. On reasonable notice, the President may call ad-

ARTICLE IV, Cont'd:

(a) Cont'd - ditional meetings if required. In lieu of personal attendance at the meetings, each active member may cast his or her vote by proxy ballot which will be provided in the third quarter QRP Quarterly.

(b) Directors shall be elected by the active members, One third (1/3) of the Directors shall be elected in each Calendar Year.Prior to the election the President shall appoint a nominating committee. This committee will nominate candidates for the Board of Directors. The names and platforms of such nominees shall be printed in the third quarter QRP Quarterly. This issue will contain a ballot for each active member to record his or her vote by proxy. The outcome of this vote and any other membership referendum will be determined by a simple majority of the ballots received by the Secretary/Treasurer.

(c) Officers of the Club shall be elected by a 2/3 majority of the ballots received from the Board of Directors.

(d) If a vacancy occurs on the Board of Directors or other Club office during a term by reason of resignation, removal, or similiar valid cause; it shall be filled by a 2/3 majority of the ballots received from the remaining Directors, to fill the unexpired term of the vacated office.

(e) Only active members, as defined in Article II (c) shall be eligible to vote or to hold office. To determine this eligibility, the membership records shall be closed ten (10) days prior to any vote.

ARTICLE V: Duties of Officers.

(a) PRESIDENT: He shall serve as Chairman of the Board of Directors without Board voting privilidges. There are two exceptions to this rule. 1) In the event that the Board is deadlocked in a tie vote he may cast the deciding ballot. 2) If the office of President and Director have been combined as provided for in Article III (c) the President has the same voting power as if he were simply a Director. The President shall appoint all special committees, or delegate a committee member to act in that capacity. The President shall conduct the office in a manner calculated to retain and increase the present Club membership. The President's services shall be available to all Club Officials in an advisory capacity. He should be available for direct contact by our members via radio, mail, or in person if possible or warranted. The President is responsible for the maintenance of Club policies and principles. The President coordinates all activities of the Board of Directors.

(b) VICE PRESIDENT: The Vice President shall assume the office and duties of President in the event the President is unable to discharge the duties of the office for any valid cause. The Vice President shall act as Chairman of Committees when the President is unable to function in that capacity and has not designated an alternate.

(c) SECRETARY/TREASURER: The Secretary/Treasurer shall be the keeper of the Official Club Seal. He or she will receive and process all applications for membership. He or she will issue the Certificate of Membership and assign the applicant an official memberhsip number. The Secretary / Treasurer will reply to all correspondence of a general nature addressed to the office and shall maintain Club records. He or she will receive and tabulate all ballots of votes authorized by the Club. The Secretary/Treasurer shall submit a Quarterly report to the Board of Directors outlining the activities of the office for the preceding three months. This will include membership status and similiar pertinent information that will serve to keep the Board informed of QRPARCI progress.

(d) PUBLICITY OFFICER: The Publicity Officer shall handle general correspondence to and from the members with respect to publicity. He or she will assist the Secretary/Treasurer in promotional activities beneficial to the Club. The Publicity Officer shall coordinate contest activity publicity with the Contest Manager.

(e) EDITOR: The Editor shall be responsible for the production and distribution of the QRP Quarterly.

(f) LEGAL OFFICER: The Legal Officer shall act as Club representative in fulfilling the requirement of the Club's incorportation in the State of Tennessee.

(g) AWARDS MANAGER: The Awards Manager shall evaluate and process all applications for Club Awards and issue them to those qualified. He or she shall furnish the Secretary/Treasurer with a monthly report of cash received and disbursed in connection with the Awards program.

(h) CONTEST MANAGER: The Contest Manager shall be responsible for the administration and maintenance of the Club sponsored contests and for the timely compilation and reporting of the contest scores. The Contest Manager shall coordinate contest publicity and membership notices of pending contests with the Publicity Officer and the Editor as required.

ARTICLE V. Cont'd;

(i) BOARD OF DIRECTORS: The Board of Directors shall elect Club Officers and conduct an annual meeting and such other meetings as provided in Article IV. During the period between meetings, the Directors shall establish policies and programs for the Club. These policies and programs may reflect changes and additions necessary to ensure the best interests of the Club. In all matters of concern or dispute, the Board of Directors shall be the final authority.

ARTICLE VI: Removal of Club Officers.

(a) Any Officer of the Club may be removed from office for just cause by a 2/3 majority of the ballots received from the Board of Directors for this vote.

ARTICLE VII: Membership Fees.

(a) An Entrance Fee for new members, payable by the applicant on his or her submission of application for membership, is required. The amount of this charge is established by a simple majority vote of the ballots received from the Board of Directors vote. The Board of Directors may undertake to change this amount as economic conditions warrant, by voting as above. The entry fee shall cover life membership, subject to the conditions given in Article II (a) and no other fees or assessments against a member shall be made. Each new member shall receive, upon payment of his entrance fee, a life membership Certificate and the next four (4) issues of the QRP Quarterly. Beginning with the second year of membership, and in any subsequent years, members shall be charged a reasonable sum to cover publication costs of the QRP Quarterly and Club operational costs. This charge is to be determined by a simple majority of the ballots received from the Board of Directors vote taken on this question.

ARTICLE VIII: The QRP Quarterly.

(a) A Club Newsletter, presently known as the QRP Quarterly, shall be produced and distributed in the months of January, April, July, and October of each year, to all paid up active members. Responsibility for this action is given in Article V (e). Material contained therein shall consist of construction projects, schematics, experiments, hints and kinks, new QRP ideas, National and International news and similiar items of interest to the general membership. Outstanding accomplishments of individual members shall also be recognized in the appropriate columns. A short paragraph, not to exceed one page, shall be carried in each issue and titled "From the President." The President shall furnish this copy from his comments on the conduct and progress of the Club.

ARTICLE IX: Geographical Distinctions.

(a) Two distinct geographical groupings of the membership shall be recognized and known as the "Domestic Region" and the "International Region." The Domestic Region includes the 50 states of the United States of America, and the International Region includes the remainder of the world. The Board of Directors at its discretion may subdivide Regions into areas. Where areas have been established, the President may direct the Secretary/Treasurer to appoint "Area Representatives" with duties to be determined as conditions warrant. Regions are administered by the Board of Directors in cooperation with the President and Secretary/Treasurer who represent QRPARCI in connection with International Regional affairs.

ARTICLE X: Revision of By-Laws.

The By-Laws may be amended, revised, added to, or diminished by a simple majority of the ballots received from the Board of Directors voting on such revisions.

FINIS FINIS FINIS

The ballot below needs some explanation so that you the members may have the knowledge to vote accordingly. First, concerning K6JSS, the club's By-laws do not at present allow for a life term on the Board of Directors. However, if you the members decide that K6JSS, based on his long time contributions to the club, should be elected to a life term as indicated by your votes, the Board of Directors will take the necessary action to change the By-laws to cover this one exceptional case.

Second, you will note that you will be electing Board members for differing terms of office plus extending the term of K4JO. The By-laws require that 1/3 of the Board be elected each year for 3 year terms. This election is therefor an attempt to arrange terms of office to meet the requirements of the By-laws.

Please return your marked ballots to arrive at the following address no later than August 15, 1982. Any ballots received after that date cannot be counted. Send your ballots to:

Edwin R. Lappi, WD4LOO
Sect/Treas., QRP ARC I
203 Lynn Drive
Carrboro, NC 27510

Please mark your envelope by writing "BALLOT" in the lower left hand corner - Thank you.

For Life Term	YES	NO
Harry E. Blomquist, K6JSS, QRP # 1	☐	☐
Term to expire Dec 31, 1985 (Vote for 2)		
Gary Beam, WA9WZV/4, QRP # 4126	☐	☐
Christopher Page, G4BUE, QRP # 4292	☐	☐
Term to expire Dec 31, 1986 (Vote for 3)		
W. K. "BILL" Harding, K4AHK, QRP # 4647	☐	☐
Edwin R. Lappi, WD4LOO, QRP # 4227	☐	☐
William Welsh, W6DDB, QRP # 1438	☐	☐
To extend term to Dec 31, 1986		
Ellicott Valentine, K4JO, QRP # 3186	☐	☐

Name:_____ CALL:_____ QRP NR:_____