QRP Quarterly

January, 1984 - Volume XXII - Number 1

Journal of the QRP Amateur Radio Club, International

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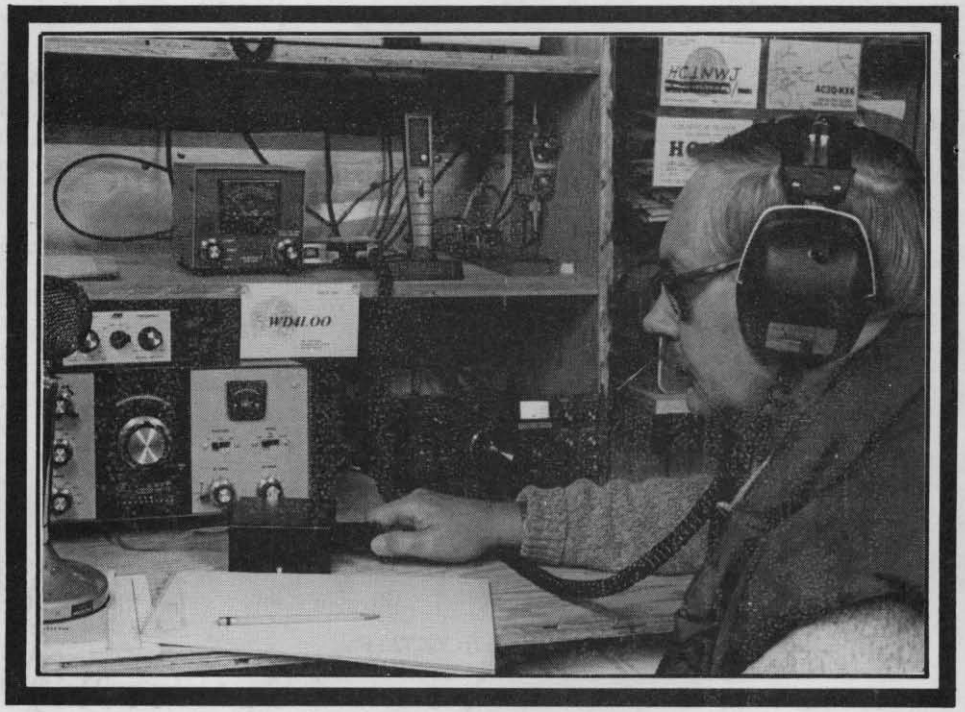

Ed Lappi, WD4LOO steps down as QRP ARCI Secretary/Treasurer

(see story on page 15)

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 organization dedicated to increasing world-wide enjoyment of QRP operation and experimentation (QRP, as defined by the Club, is 5 watts output CW, and 10 watts output PEP). Current Club membership is 5408, QRP Quarterly circulation is 648.

MEMBERSHIP The initial membership fee of $6.00 ($7.00 for DX) covers lifetime membership plus the first four issues of the Quarterly. Membership information is available from the Secretary/Treasurer.

QRP SUBSCRIPTION RENEWAL Subscription renewals are $5.00 ($6.00 for DX) for four issues. Notice of expiration will be stamped on the cover of your final QRP Quarterly. Subscription expiration date also appears on the mailing label following QRP membership number; i.e. 4174-4/84 means that member number 4174's subscription will expire with the 2nd Quarterly in 1984(April). Renewals and new member applications must be received by the 15th of the month prior to the next month of publication will receive that issue. Otherwise service will not begin until publication of the next Quarterly.

Send renewal and new member applications to the Sec/Treas. **Please make all checks or money orders payable to: QRP Amateur Radio Club, International, Inc.** Please include your QRP number and call.

*** * * * PLEASE DO NOT SEND CASH * * * ***

TECHNICAL ARTICLES Submit all technical articles to the Technical Editor. They should be typed, double-spaced and all circuit diagrams should be clear and include a complete list of parts and their values. The Technical Editor and the Club are not responsible for testing profects that are published in the Quarterly.

LETTERS TO THE EDITOR Letters to the Editor, articles of general interest and announcements should be sent to the Publisher. Not every letter can be published and the Publisher reserves the right to edit letters to conform to space limitations. Photographs of your station, construction projects, antennas, etc. are welcome. Black and white photos at least 3" by 3" are preferred.

Requests for the return of materials and those desiring a response from the Officers or Editor must be accompanied by a self-addressed, stamped envelope.

Please include your name, call, address and telephone number on all material submitted for publication as it may be necessary to contact you for additional information.

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BOARD OF DIRECTORS ELECTS 1984 OFFICERS

by Ed Lappi, WD4LOO

Ed Popp, K5BOT, of Austin, Texas, has been elected President of QRP ARCI for the next two years in voting that resulted in several changes in the club's officer ranks beginning January 1.

In addition to naming Ed to his first full term as the club's chief executive, the board also directed that the President serve as the Board Chairman in the absence of an elected Chairman.

The club's new Vice-President is Les Shattuck, WB2IPX, of Port Byron, New York, who succeeds Gary Beam WA9WZV/4, of DeLeon Springs, Florida, who did not seek reelection.

Bill Harding, K4AHK, of Burke, Virginia, is the new Secretary/Treasurer. Bill, who previously was Awards Chairman, replaces Edwin Lappi, WD4LOO, of Carrboro, North Carolina, who stepped down after several years in office.

Bill Dickerson, WA2JOC/3, of Danville, Pennsylvania, also ends a distinguished term as Contest Chairman. He has been succeeded by Eugene Smith, KA5NLY, of Little Rock, Arkansas, who has already tackled the chores for the April contest. The contest announcement is listed in this issue.

Jim Holmes, W6RCP, of Santa Cruz, California, steps up to Net Director, taking over from Robert "Red" Reynolds, K5VOL, of Lake Zurich, Illinois.

Although the Directors refused by a 4-3 vote to approve the proposed permanent merger of the offices of Editor of the QRP Quarterly and Publicity Director, they did name Fred Bonavita, W5QJM, of Austin, Texas, as temporary Editor while continuing him in the publicity post.

The merger proposal was the only one of four ballot issues that the Directors defeated. Ballots were received from only 7 of the 12 board directors, however.

An election to name a permanent Editor and to fill the vacancy as Awards Manager has been scheduled by the club President, and the results are expected by the April QRP Quarterly.

Ed Popp became President in the Fall of 1982 when Thom Davis, K8IF, resigned after more than three years' service. Ed had been Vice-President, and he filled the balance of Thom's term.

The Board's voting also abolished the office of Legal Officer as an elected post and left it to the club President to fill by appointment. The Directors also decided that the offices of President and Board Chairman shall be "seperate and distinct," although -- as noted earlier -- the President may serve as Board Chairman in the absence of an elected one.

The terms of three Board members are to expire on December 31, 1984 (see story elsewhere in this issue). Those interested in running for one of the three-year terms should send a letter to the new Secretary/Treasurer before June 1, 1984, to qualify for the ballot, which will be submitted to all members in the July QRP Quarterly.

QRP LOSES A FRIEND

by BILL HARDING, K4AHK

On November 25, 1983, Victor C. Clark, W4KFC, President of the American Radio Relay League, died after a heart attack. Vic was an exceptionally fine gentleman and a tireless supporter of amateur radio. He had served as Regional President of the IARU, was a Charter member of the ARRL, a Life member of the Quarter Century Wireless Association and had participated in the 1979 WARC at Geneva. He was a Virginia neighbor who I was proud to call friend.

Few people knew that among all the activities the ARRL President was involved with, Vic held a warm place in his heart for QRP. Several years ago, just after I had joined the QRP ARCI, I heard Vic on the morning 2-meter 'road show' talking about working DX with a brand new HW-8 that he had just finished building. He was amazed at the contacts he was making with QRP. We talked a little about QRP that morning, and the next day I mailed him a copy of the latest Quarterly and information about QRP ARCI. He called me a few days later to thank me for the QRP material and he told me that he had decided to see just how many DXCC countries he could work with the HW-8 and a single lantern battery.

I don't remember exactly how many countries he worked before the battery went dead, but it seems to me it was about 60. With a second battery, he managed to finish QRP DXCC. This Fall, at the ARRL Convention in Houston, Jim Fitton, W1FMR, and I stopped to talk a few minutes with Vic about QRP. He opened his wallet and pulled out a worn piece of paper that listed the 100 DXCC contacts he had made with the HW-8. Part way down the list was a pencil mark indicating the place where the first lantern battery quit. How's that for an operating goal?

Vic was a true friend of radio amateurs all around the world. We shall miss him.

Experimenters Corner

by Wes Hayward, W7ZOI

Welcome to the first issue of a new column for the QRP Quarterly. It is aimed at the experimenters, the guys and gals who build at least part of theirs stations and seem to have a never-ending list of things they would to try. The emphasis will be on circuits and methods that will, hopefully, be of use to the readers. We'll try to keep things simple within the constraints of sound design practice.

This column is for you, the builder or prospective builder. Please let us know what you would like to see, things you would like to build.

To kick things off, we'll present circuits to aid increased QRP activity on the new 30-meter band. This frequency is ideal for QRP work. Porpagation is excellent, a cross between 40- and 20-meter conditions, with a few extra surprises. The band is not yet crowded. Even a crystal-controlled transmitter is practical.

GPPA

Figure 1 shows a simple general purpose rf power amplifier chain that has formed the basis for many QRP rigs at W7ZOI. The amplifier uses two stages, each with negative feedback. This ensures stability under all load conditions. The design is broadband. As shown, it will deliver a saturated output of +27 dBm (just over 1/2 watt) from 1.8 to 30 MHz with a drive of 0 dBm (1 milliwatt). Changing to "hotter" transistor types should allow the circuit to function well through the vhf range.

Measurements were done on one version of this amplifier with R1 shorted, R2 at 330 ohms, and R3 at 2.7 ohms. Small-signal gain was 47 dB at 5 MHz, decreasing to 40 dB at 30 MHz. These values are within 3 dB of those calculated. R1 sets the gain, allowing the circuit to be adapted to available drive. Gain may also be decreased by elimination of the bypass capacitor across R4. Higher output power is available with a larger transistor at Q2 and by decreased R3 values. Alternatively transistors may be paralleled. See Fig. 39, page 206, of the "Solid State Design for the Radio Amateur" (SSD).

Parts are not critical. T1 should be wound on a ferrit core, but the type is not critical for HF applications. Winding details are given in Fig. 1.

This circuit uses forward bias to produce class A operation. The amplifier may be suitable for some linear (ssb) applications. The Q2 bias is keyed along with the Q1 collector supply. Hence, key-up current is zero. Total key-down current is from 140 to 200 mA, depending upon the rf drive.

The class A operation has distinct virtues. One is the stability mentioned. Another is a well-defined, constant output impedance. This allows a transmatch following the amplifier to be tuned by monitoring the output signal with a diode detector while tuning for maximum. A bridge is not required. This should not be done with class C amplifiers.

A transistor, Q2, is included as a keying switch. Shaping is included to prevent clicks. Such details are often ignored with "simple" rigs. The results are evident when one of these rigs is encountered on the air!

Power dissipation in Q1 is about 300 mW. There is not heating problem in typical keyed operation. However, Q1 should be a larger, metal-type transistor for ssb operation. Construction is not critical, although the circuit should be built over a ground plane. Versions have been built on printed circuits and with "ugly" methods. (see QST, Aug., 1981) There is no performance difference.

(continued on next page)

General Purpose Power Amplifier

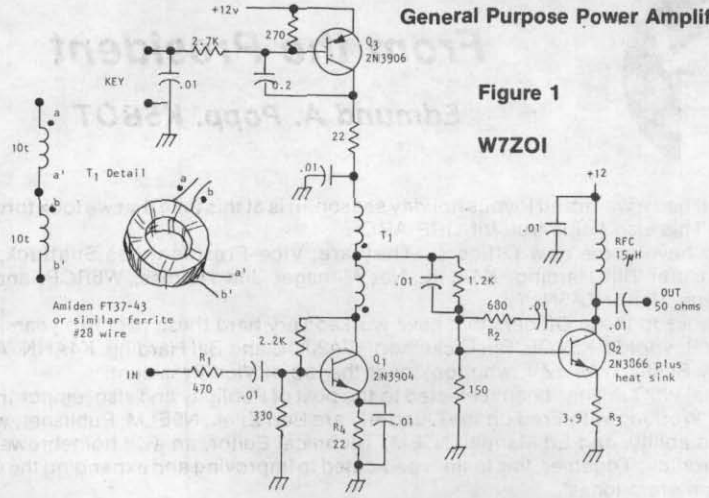

Figure 1

W7ZOI

A Multiband Transmitter

Figure 2 shows a three-band transmitter that uses the GPAA. A crystal oscillator, Q4, determines frequency. This design may be operated on the 40-, 30- and 20-meter bands with capacitor values given in the figure. The builder may either switch trimmer capacitors or use a suitable variable at C2. A tuned circuit is required in the oscillator output, since the waveform is highly nonlinear.

A special low-pass filter has been designed for the transmitter output. This circuit is a peaked low pass that may be tuned over a 2:1 frequency range merely by changing one capacitor. A combination of fixed capacitors may be used at C2 for the 40-meter band. The capacitors should be adjustable for the 30- and 20-meter bands, though. C2 values are given in the figure.

A simple slide switch is used for T/R control. The builder may elect to incorporate more elaborate control circuitry.

A drive control is included in the oscillator output. This is adjusted to provide near maximum output without excessive overdrive. The control is also useful for operation at lower power levels, or "milliwatting," a term coined by G4BUE (and perhaps others).

The half-watt output from this rig is enough to make many contacts, but low enough to be interesting. The writer has worked VK on 30-meters and many JA's on 40-meters with this power. The rig provides ample drive for a single-stage amplifier to go to the 10-watt (or more) output level.

(continued on page 7)

Multiband Transmitter

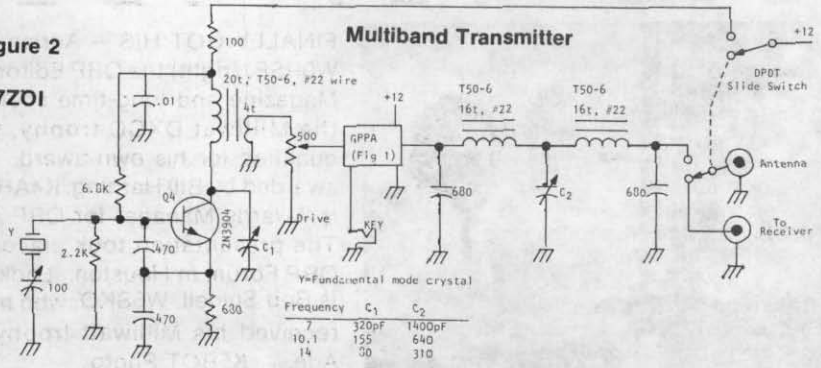

Figure 2

W7ZOI

From the President

Edmund A. Popp, K5BOT

I hope that all had a warm and joyous holiday season. It is at this time that we look forward to the coming year. This also holds true for QRP ARCI.

To start, we have some new Officers. They are; Vice-President Les Shattuck, WB2IPX; Secretary/Treasurer Bill Harding, K4AHK; Net Manager Jim Holmes, W6RCP; and, Contest Manager Eugene Smith, KA5NLY.

A special thanks to those Officers that have worked very hard these past two years, Ed Lappi, WD4LOO, Red Reynolds, K5VOL, Bill Dickerson, WA2JOC and Bill Harding, K4AHK. And a tip of the hat to Gary Beam, WA9WZV, who took over the job of Vice-President.

Fred Bonavita, W5QJM, has been reelected to the post of Publicity and also temporary Editor of the Quarterly. Working with Fred on the Quarterly are Bert Zitek, N5ELM, Publisher, who brings experience and ability, and Ed Manual, N5EM, Technical Editor, an avid homebrewer and well versed in electronics. Together, this team is dedicated to improving and expanding the Quarterly. They have some great ideas!

The QRP Forum at the ARRL Convention was a blast. It was great to meet so many folks that are interested in QRP. But the highlight was meeting Chris Page, G4BUE, Bill Harding, K4AHK, and Fred Bonavita, W5QJM. Hey gang, QRP is alive and well.

One item that was discussed and approved by all the QRP ARCI Directors, by mail, is support of the Ade Weiss, W0RSP, Milliwatt Field Day Trophy. This trophy is now sponsored and supported by both Ade Weiss, W0RSP and the QRP ARCI.

Another item that was discussed was the First Sunday of the Month Informal QSO Party. Details are contained in this issue.

While at the ARRL Convention, I had a chat with Carl Smith, W0BWJ, Vice-President of IARU, Region 2. Carl stated that the Board of Directors, suggested that all member nations of Region 2, receive a copy of his proposal for the QRP endorsement of WAC. As a result, a vote on this proposal is approximately six months in the future. One item that Carl emphasized was that if his proposal is adopted, it will not be retroactive. Only contacts after the announced date will count.

Recently, I had a chat with Ray Wangler, W5EDZ, West Gulf Division Director of ARRL, who you may recall, proposed a QRP endorsement of the DXCC award sponsored by ARRL. A vote was scheduled to be taken in Houston at the Board of Directors meeting. This vote did not take place. Ray indicated that the proposal is in committee.

And one other item, two of our Directors are recovering from major surgery. They are Harry Blomquist, K6JSS and Ed Lappi, WD4LOO. Drop these fellows a line or your QSL card, as they would enjoy hearing from you.

See you on the bands. 73's

FINALLY GOT HIS -- Adrian Weiss, W0RSP, (right) the QRP Editor of CQ Magazine and long-time sponsor of the Milliwat DXCC trophy, finally qualified for his own award. It was awarded by Bill Harding, K4AHK who is Awards Manager for QRP ARCI. The presentation took place at the QRP Forum in Houston. Looking on is Bob Spidell, W6SKQ, who had just received his Milliwatt trophy from Ade. K5BOT Photo

(con't. from page 5)

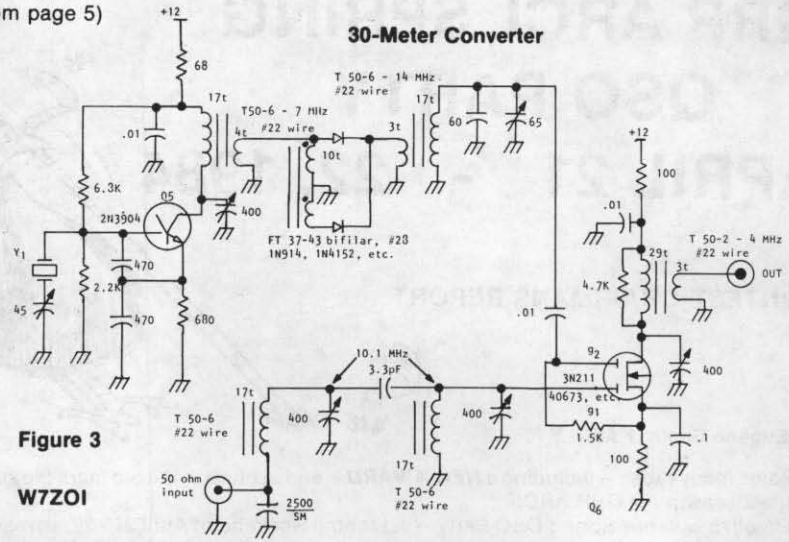

Figure 3

W7ZOI

A Junk-Box Converter for 30-Meters

The first thing needed to participate in the 30-meter action is some sort of a receiver. The writer needed something to get on the band when it first became available about a year ago. A suitable converter crystal was not available. However, a "rock" was in the junk box at half the required injection frequency of 14.1 MHz. The result is the receiving converter shown in Fig. 3. A crystal oscillator, Q5, operates at 7.05 MHz. It is then frequency doubled with a pair of diodes in a balanced doubler. This circuit is simple, but offers excellent performance, a consequence of the balance. Circuit data are given on page 42 of SSD. Doubler output is applied to a 14 MHz tuned circuit. This provides filtering and effects an impedance transformation, providing the required voltage for the mixer, about 5 volts peak-to-peak.

The mixer is a dual gate MOSFET with an output at 4MHz. The double-tuned input filter is designed for a singly terminated Butterworth response and provides a driving source impedance of about 2,000 ohms to the FET gate 1. The converter seems quite "hot" with no need for rf amplification.

This converter produces a backwards tuning. That is, 10.100 MHz appears at 4 MHz on the following receiver, with 10.150 MHz at 3.95 MHz. This presents no problem for the writer, for readout details are handled with the digital counter in the home receiver. An existing crystal at 7030 or 7040 from the QRPer's junk box would work fine in this circuit.

Closing Comments

I'd like to finish this initial installment with a personal note. My wife, Shon, and I recently attended the QRP Forum at the ARRL National Convention in Houston. It was great to meet many of the W5 QRP gang as well as several of the guys from the UK, representing the G-QRP-CLUB. We would like to thank the Texans for the hospitality extended, especially the personal attention from Leo, KC5EV, and his wife, Sharon.

Wes Hayward, W7ZOI
7700 SW Danielle Avenue,
Beaverton, Oregon 97005

A new QRP ARCI member, Adrian M. Kelly, VK6NAM, of Perth, Australia, advises that novice operators in his country are on the lookout for DX.

The VK novice 80 meter band is from 3525 to 3625 kHz, with CW in the 3525 to 3550 kHz segment; 15 meters from 21125 to 21200 kHz, with CW in the 21125 to 21150 kHz segment; and on 10 meters from 28100 to 28200 kHz, all CW. The QRP listening and calling frequencies for VK are 21130 kHz and 28100 kHz, Adrian advises.

QRP ARCI SPRING QSO PARTY APRIL 21 - 22, 1984

CONTEST CHAIRMANS REPORT

by Eugene Smith, KA5NLY

Some innovations -- including a ***NEW AWARD*** -- and a return to the old mark the start of the 1984 contest season for QRP ARCI.

Effective with our Spring QSO Party -- set for the weekend of April 21 - 22, so mark your calendars -- we will return to the single-mode contest. In this case, it will be C.W. only, with the SSB-only contest set for October. The rules for the April contest will appear in the April issue of the Quarterly and all major ham magazines. I would appreciate your comments on this change.

Starting with the April contest, a new ***MILLIWATT AWARD*** will be available, sponsored by Ade Weiss, W0RSP, QRP Editor for CQ magazine. If there are at least two entries in the less-than-one-watt category in our contests, Ade will present a special award to the highest-scoring operator. This contest-within-a-contest does not conflict with the regular awards, so one could walk away with certificates for having netted the highest score in a state/province/country as well as the new milliwatt prize.

Your club also is considering sponsoring a series of "sprints" scattered throughout the year to spur interest in low-power operating and give those who cannot participate in the traditional weekend contests a shot at capturing some awards.

For instance, there could be two C.W. and two SSB contests of 4, 5, or 6 hours' duration to offset the six-month lapse between the spring and fall worldwide QRP outings. How about a six-hour Sunday afternoon sprint; a four-hour, late-night "hoot owl sprint;" a weekday, four-hour sprint on a single band; or a weekday, evening milliwatt contest?

As your new Contest Chairman, I am anxious to have input from as many members on these proposals as possible. My address is on page 2 of the Quarterly. And, I would like your suggestions for other contests.

Wes Hayward, W7ZOI, started the ball rolling on some new approaches to contests with a proposal to do away with the usual exchange (RS(T), QTH, membership number and power output) and try one that, while taking no longer to send, would give others more of an idea of what the station set-up is at the other end of the QSO.

For example, the exchange might include the type of antenna used (D for dipole; V, vertical; Q, quad; L, longwire, etc.); whether a QRP ARCI member (M), or non-member (X), but without exchanging numbers; and power output (3 for 3 watts or 1 for a watt or less).

A typical report from Ade Weiss, who is a member running less than one watt into a quad from South Dakota would be: 469 SD M1Q. Or Wes, who might be running three watts into a vertical from his home in Oregon would report: 559 OR M3V.

This is a variation on a theme and is open to suggestions and comments, which should be directed to me, please. I also would like to have copies of your logs from other QRP contests or contests with QRP divisions, such as Field Day, CQ Worldwide DX, WPX. etc., and I'll try to publish the results here. Also send along information about the equipment you use, power output, comments, etc., about all contests. I'll try to compile them and give others more of an idea of what the members are using.

Special thanks go to Bill Dickerson, WA2JOC/3, who is stepping down as Contest Chairman. He has served the club well over the years and has made my job much easier by sharing with me his secrets of success.

THE MICHIGAN QRP CLUB FOURTH ANNUAL QRP CW CONTEST

The Michigan QRP Club will sponsor its Fourth Annual QRP CW Contest from 1500Z on Saturday, January 21 to 1500Z on Sunday, January 22, 1984.

Certificates will be awarded to the highest scoring station in each State, Province or Country.

Calling method: CQ CQ CQ QRP DE (your call)
Information Exchange: RST, QTH and Power Output.
Frequencies: 1810, 3560, 7040, 14060, 21060, 28060, and Novice bands 3710, 7110, 21110, and

Frequencies: 1810, 3560, 7040, 14060, 21060, 28060 and Novices on 3710, 7110, 21110 and 28110.
Scoring: Each contact is worth one(1) QSO point. Multiply total QSO points (ALL BANDS) times the number of stats, provinces or countries worked per band for TOTAL POINTS.
Bonus Multiplier: 100% natural power, or 100% battery, multiply TOTAL POINTS times 1.5.
Log Information: Complete log data with a seperate log for each band, plus your name, call, address, equipment used and power output.
Categories: Each station will be competing against other stations in their own State(W), Province(V), or Country(C) in one of the following categories; One watt or less, five watts or less, or over five watts of output power.
Entry Deadline: Submit logs by March 4, 1984 to Contest Manager. If contest results are desired, W and VE stations send a SASE, DX entrants send two IRC's.
Contest Manager: Michigan QRP Club
281 Crescent Drive
Portland, Michigan 48875

THIS IS A GOOD OPPORTUNITY TO POLISH YOUR OPERATING SKILLS AND FINE TUNE YOUR EQUIPMENT FOR THE QRP ARCI SPRING QSO PARTY.

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ACTIVITY WEEKENDS ANNOUNCED BY THE G—QRP-CLUB

Chris Page, G4BUE, advises that the G-QRP-CLUB has finalized its 1984 schedule of QRP Activity Weekends. These events, he said, are intended to promote QRP activity on the times and frequencies suggested. Members of all QRP clubs throughout the world and all amateurs interested in QRP are invited to join in.

SPRING QRP CW ACTIVITY WEEKEND **March 17 and 18**
LATE SPRING QRP SSB ACTIVITY WEEKEND **May 5 and 6**
LATE SUMMER QRP CW ACTIVITY WEEKEND **September 22 and 23**
QRP CW WINTER SPORTS **December 26, 1984 to January 1, 1985**

Times (UTC) and frequencies for the QRP CW Activities are:

0900 - 1000	14060
1000 - 1100	21060/28060
1100 - 1200	7030
1200 - 1300	3560
1300 - 1400	10106*
1400 - 1500	3560
1500 - 1730	21060/28060
1730 - 2000	14060
2000 - 2100	7030/10106*
2100 - 2200	3560
2200 - 2300	14060

*Because this is an Activity, not a contest, operation in the 30 meter band is allowed.

Times (UTC) and frequencies for the Late Spring QRP SSB are:

0900 - 1000	14285
1000 - 1100	21385/28885
1100 - 1200	7090*
1200 - 1300	3690*
1300 - 1400	14285
1400 - 1500	3690*
1500 - 1730	21385/28885
1730 - 2000	14285
2000 - 2100	7090*
2100 - 2200	3560*
2200 - 2300	14285

*These frequencies are out of band for U.S. amateur radio operators.

January, 1984

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
					NEN - 7040 - 1300Z GLN - 3560 - 1500Z SWN - 7040 - 1600Z	1 QRP ARCI FIRST SUNDAY QSO PARTY TCN - 14060 - 0001Z
2	3 SEN - 7030 - 0100Z	4 GLN - 3560 - 0200Z GSN - 3560 - 0200Z	5	6	7 NEN - 7040 - 1300Z GLN - 3560 - 1500Z SWN - 7040 - 1600Z	8 TCN - 14060 - 0001Z
9	10 SEN - 7030 - 0100Z	11 GLN - 3560 - 0200Z GSN - 3560 - 0200Z	12	13	14 NEN - 7040 - 1300Z GLN - 3560 - 1500Z SWN - 7040 - 1600Z	15 TCN - 14060 - 0001Z
16	17 SEN - 7030 - 0100Z	18 GLN - 3560 - 0200Z GSN - 3560 - 0200Z	19	20	21 MICHIGAN QRP CW CONTEST NEN - 7040 - 1300Z GLN - 3560 - 1500Z SWN - 7040 - 1600Z	22 TCN - 14060 - 0001Z
23 30	24 31 SEN - 7030 - 0100Z	25 GLN - 3560 - 0200Z GSN - 3560 - 0200Z	26	27	28 NEN - 7040 - 1300Z GLN - 3560 - 1500Z SWN - 7040 - 1600Z	29 TCN - 14060 - 0001Z

February, 1984

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
		1 GLN - 3560 - 0200Z GSN - 3560 - 0200Z	2	3	4 G. MARCONI QRP PHONE CONTEST NEN - 7040 - 1300Z GLN - 3560 - 1500Z SWN - 7040 - 1600Z	5 QRP ARCI FIRST SUNDAY QSO PARTY TCN - 14060 - 0001Z
6	7 SEN - 7030 - 0100Z	8 GLN - 3560 - 0200Z GSN - 3560 - 0200Z	9	10	11 NEN - 7040 - 1300Z GLN - 3560 - 1500Z SWN - 7040 - 1600Z	12 TCN - 14060 - 0001Z
13	14 SEN - 7030 - 0100Z	15 GLN - 3560 - 0200Z GSN - 3560 - 0200Z	16	17	18 NEN - 7040 - 1300Z GLN - 3560 - 1500Z SWN - 7040 - 1600Z	19 TCN - 14060 - 0001Z
20	21 SEN - 7030 - 0100Z	22 GLN - 3560 - 0200Z GSN - 3560 - 0200Z	23	24	25 NEN - 7040 - 1300Z GLN - 3560 - 1500Z SWN - 7040 - 1600Z	26 TCN - 14060 - 0001Z
27	28 SEN - 7030 - 0100Z	29 GLN - 3560 - 0200Z GSN - 3560 - 0200Z				

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March, 1984

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
			1	2	3 NEN - 7040 - 1300Z GLN - 3560 - 1500Z SWN - 7040 - 1600Z	4 QRP ARCI FIRST SUNDAY QSO PARTY TCN - 14060 - 0001Z
5	6 SEN - 7030 - 0100Z	7 GLN - 3560 - 0200Z GSN - 3560 - 0200Z	8	9	10 NEN - 7040 - 1300Z GLN - 3560 - 1500Z SWN - 7040 - 1600Z	11 TCN - 14060 - 0001Z
12	13 SEN - 7030 - 0100Z	14 GLN - 3560 - 0200Z GSN - 3560 - 0200Z	15	16	17 G—QRP—CLUB SPRING CW ACTIVITY NEN - 7040 - 1300Z GLN - 3560 - 1500Z SWN - 7040 - 1600Z	18 TCN - 14060 - 0001Z
19	20 SEN - 7030 - 0100Z	21 GLN - 3560 - 0200Z GSN - 3560 - 0200Z	22	23	24 NEN - 7040 - 1300Z GLN - 3560 - 1500Z SWN - 7040 - 1600Z	25 TCN - 14060 - 0001Z
26	27 SEN - 7030 - 0100Z	28 GLN - 3560 - 0200Z GSN - 3560 - 0200Z	29	30	31 NEN - 7040 - 1300Z GLN - 3560 - 1500Z SWN - 7040 - 1600Z	

12

QRP ARCI FIRST SUNDAY QSO PARTIES

Looking for a way to survive New Year's Day without having to suffer through hours upon endless hours of football games?

Want to have some fun while building up your QRP contact total for the club's certificates?

Well, after more than a year's absence, the QRP ARCI monthly informal QSO Parties are returning with the start of the new year.

Beginning January 1 at 1500Z and running until 2400Z, these once popular parties will be held the First Sunday of each month, unless there is a major national and/or international contest on the air at the same time. By major, we mean ARRL's Sweepstakes or CQ's WWDX Contest -- not some competing minor QSO party.

The idea is for QRP'ers to get on the air the First Sunday of each month to provide oldtimers and newcomers alike an opportunity to build their membership QSO totals for the club's awards program. It offers a chance to introduce other hams to the world of QRP.

These informal QSO parties are**not** contests, and operators should not call "CQ QRP CONTEST" but should simply call "CQ QRP". However the traditional exchange of RS(T); State, Province or Country; and QRP QRCI number applies.

And take some time to do a little ragchewing instead of the usual contest-like hit and run exchange.

The traditional QRP frequencies should be used. And since this is not a contest, contacts on the new 30 meter band **WILL** be allowed. The QRP frequencies are listed elsewhere in this issue.

Don't forget the novice bands. And send your applications for the QRP 25 Award, the Kilomile-per-Watt Award and/or other certificates to the Awards Chairman.

The First Sunday QSO Parties are listed on the calendar. And remember the Transcontinental Net takes place immediately after the QSO Party at 0001Z on 14.060 MHz. After grabbing some QSO credits, grab a QNI credit also.

GENERALLY RECOGNIZED QRP CALLING FREQUENCIES

CW	SSB	NOVICE
1810	1810	
3560	3985	3710
7040	7285	7110
10106/10120		
14060	14285	
21060	21385	21110
28060	28885	28110
50360	50385	

Some European QRP groups recognize 7030.
Check 'em all!

G. MARCONI CONTEST SET FOR FEBRUARY 4 AND 5, 1984

The purpose of this contest is to increase the activity of low power amateur radio stations.

The contest will begin at 0000Z on February 4 and conclude at 2400Z on February 5, 1984.

Each station can operate a maximum of 24 hours, or else divide that time into a maximum of four operating periods.

Competition will be in two classes:

Single operator, single band, or

Single operator, multiband

SSB will be allowed on 80, 40, 20 and 15 meters, and SSB and AM will be allowed on 10 meters.

The maximum PEP output is 10 watts, and the contest exchange is just like a standard QSO, RS reports only.

Contacts between stations in the same country are worth 1 point, those between stations on the same continent but different countries are worth 2 points, and contacts between stations on different continents are worth 5 points.

Each different DXCC country contact for the first time gives 1 multiplier point. The same country, but on another band is not another multiplier. The multiplier counts only once.

Contacts effected with a *"not directive"* antennas have double QSO point values. Considered as *"not directive"* antennas are:

a) wire antennas, on condition that they are not turnable, without passive elements, and with just one active element.

b) vertical antennas, without passive elements and with just one active element.

All other antennas will be considered directive.

There is a power bonus for those using 0 to 1 watt PEP of 3, and for those using 1 to 4 watts PEP of 2.

To compute your score, multiply the sum of your QSO points (including antenna multiplier) times your DXCC-country multipliers, and that times the power bonus, if any.

Electronic kits will be awarded to the 1st, 2nd and 3rd place overall finishers, with certificates being awarded to first place in each category.

Log sheets must be filled in the following order; date, UTC, call of station worked, RS reports (sent & received), band, DXCC-country multiplier and QSO points. DXCC-country multipliers shall be indicated the first time the country is worked.

Summary sheets must be enclosed with the log. It must show all scoring information, contestants name and address, class of competition, specifications of equipment and the antenna used, the method used to measure power and a singed declaration that all rules were complied with.

The usual disqualification rules will apply. All actions and decisions of the G. Marconi contest committee will be official and final.

All logs must be mailed within 30 days from the date of the contest to the contest manager:

Massimo Capozza, I0OAY
Via Sierra Nevada 99
00144 Roma, Italy

DON'T MISS OUT ON THIS GREAT OPPORTUNITY TO MAKE THOSE DX CONTACTS

— — - — - — - - — — -

Bowing to requests, the Gulf States Net (GSN) has returned to 80 meters for the duration of standard time rather than remain on 40 meters. Propagation dictated the change, since too many members could not be heard by the NCS. Effective immediately, GSN meets on 3,560 kHz Wednesday nights at 0200Z (Thursday). The net returns to 7,040 kHz at the same time and night with the return of daylight time in the Spring.

POWER IS NO SUBSTITUTE FOR SKILL

From the Secretary's Blotter

Ed Lappi, WD4LOO

This will be my last comments to you the members of this fine club. I wish to thank each and every one of you for your cooperation, and the many kind words during the past years that it has been my privilege to serve you as Secretary/Treasurer.

However, Bill Harding, K4AHK, will, I am positive, do an outstanding job as your new Secretary/Treasurer. Please give him your fullest cooperation as you have given me. It makes the job so much easier.

Remember fellows and gals to send your renewals to the *Secretary/Treasurer* and *not - repeat not* - to the Editor of the Quarterly. The Editor does not have time to take care of renewals as well as put out a quality product.

I will continue to serve on the Board of Directors and will always welcome your comments and suggestions as to how to improve the club for your benefit and pleasure. Feel free to write at anytime and I will forward your comments to the other Board members.

Thank You, Ed, for a job well done!

Ed Lappi, WD4LOO, is stepping down as QRP ARCI Secretary/Treasurer after four years of dedicated service. Prior to his current office, Ed served as Contest Chairman for QRP ARCI.

Ed is one of those hams who did not need to be converted to QRP. When he was first licensed in 1977, necessity caused him to build his first rig, a receiver and a one-tube QRP transmitter. He has stayed QRP ever since.

Ed's current station consists of a Heathkit HW-101 and a Ten Tec Argosy. The HW-101 was used to handle traffic for the ARRL Sectional Net, but hasn't been used lately as he prefers the argosy.

He has lead a very active ham radio life, having contacted all 50 States, about 40 of them QRP, having enough DX QSO's for DXCC, about 25 of them QRP and having 50 confirmed QSO's with QRP ARCI members. Ed has also placed first in the Wisconsin QSO Party and the North Carolina QSO Party, QRP of course.

Ed recently had open heart surgery and a triple by-pass so his radio activities have been curtailed temporairly. In a recent conversation with Ed, he said that he was feeling much better and expected to be back to work shortly. I'll bet that means we can look for him back on the bands.

Although Ed has given up his QRP ARCI office, he will remain on the Board of Directors.

WELCOME, NEW MEMBERS IT'S NICE TO HAVE YOU ABOARD

K3IIZ, Robert Jlanowicz, MD
KA9OLS, Bruce Hale, WI
KA4OUA, Victor Allebach, VA
KA9IHG, Thomas Nicholas, IL
WA8JTQ, Victor Jacobson, VA
KA6ZAB, Chris Calhoun, CA
WB4WRL, Daniel Bivens, NC
KA1GPG, James Kueppers, CT
N9DHX, Russell Ryle, IN
KA1IOV, Daniel Sterner, MA
WB8RAZ, Donn Brown, FL
KA2NWP, Charles Hudson, NY
KA4MKF, Neo Strickler, Jr., VA
KA3K, Charles Strawser, PA
KA4TKG, Larry Jones, VA
WD4KAV, Joseph Burnham, FL
KD5YR, Darrell Boyer, OK
W0VMN, Dale Newman, IA
WB2DHL, Robert Hanson, NY
KW7L, Michael Morris, WY
ND8H, John Ludwig, MI
KA4LKH, Barry Strickland, AL
W5UXI, Gary Elliott, LA
KA0JWO, David Gauding, MO
KA8OUT, James Herbert, Sr., OH
W9GJS, Woodrow Cook, IN
N4ELM, William Redfern, Jr., NC
WC4Y, Rod Nowakowski, FL
K0HLA, Avery Finn, MN
KB4DOF, Ernie Semsky, FL
KA6SPY, Arthur Horner, CA
KG2A, Arthur Searle, III, NY
W7JQY, A. Jack Smith, CA
N5ELM, Bert Zitek, TX
KC4SN, William Sexton, FL
W3CKU, James Doyle, MD
KL7XA, R.D. Kenyon, AK
KB1DH, Robert Moore, Jr., CT
KA6SOC, Susan Ludemann, CA
WA6DKY, Roland Marshall, CA
WA3GYW, Francis Dill, Jr., MD
KA2OQW, Robert Sweet, Sr., NY
WA6JVM, Juan Anderson, CA
W8VPV, Cuyahoga Falls ARC, OH
NY4M, Dr. James O'Callaghan, FL
KA9LEC, Wayne Bush, IL
N1BXC, Stephen Capogna, MA
KE4AE, George Gardner, GA
KA9PNN, Norman Wald, IL
N5GFX, Charles Stokes, TX
KB0ZM, William Young
KB6CFK, Todd Ferry, CA
WD9CQF, William Fourt, WI
N9EEP, W. Fleming Brown, IL
WB8BHP, Daniel Pope, MI

GM3OXX, George Burt, Scotland
VE3DRB, Dennis Buckberger, Canada
VK6NAM, Adrian Kelly, Australia
JR4BYH, Toshifumi Fujiwara, Japan
DE1BMH, Bert Matthies, Germany
TI2KD, Carlos Diez, Costa Rica
VU2USA, K.S. Shama Sunder, India

HOUSTON: QRP FORUM HIGHLIGHT OF THE 1983 ARRL NATIONAL CONVENTION

by Leo Delaney, KC5EV

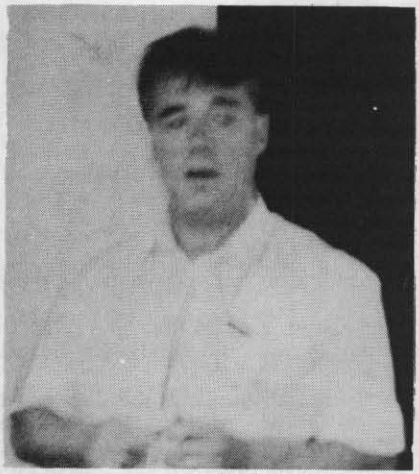
All of the many QRP activities at the 1983 ARRL National Convention were a hugh success for all participants! The activities began with the opening of the hospitality suite on Friday afternoon, followed by an evening banquet dinner at Angelo's Fisherman's Wharf. Standing room only was the order for the day on Saturday at the QRP Forum, which included such speakers as; Rev. George Dobbs, G3RJV, Wes Hayward, W7ZOI, Chris Page, G4BUE, George Burt, GM3OXX and Ade Weiss, W0RSP.

In the hospitality suite, on Friday afternoon, several of the speakers and fellow QRP'ers had an excellent opportunity to meet each other in person for the first time. Although the suite was filled to capacity at times, everyone shared in the conversation and refreshments while working their way around to make new friends and greet old acquaintenances. Additionally, some homebrew equipment and several publications were on display and the topic of several discussions.

The doors of the hospitality suite were closed after a few hours of fraternization and transportation was arranged for the re-assembly of the party at Angelo's Fisherman's Wharf. A delicious family style seafood dinner was served to a crowd of three dozen QRP'ers in a casual atmosphere. There was even a couple there that had decided that all of the Convention Dinners planned, ours looked the most inviting and entertaining. They were convinced that ther must be something to this QRP business and vowed to get into QRP as soon as they returned home. There was also some sort of photographic session with Ade Weiss, W0RSP, and a young lovely. Is this going to be the next trophy girl for some new award?

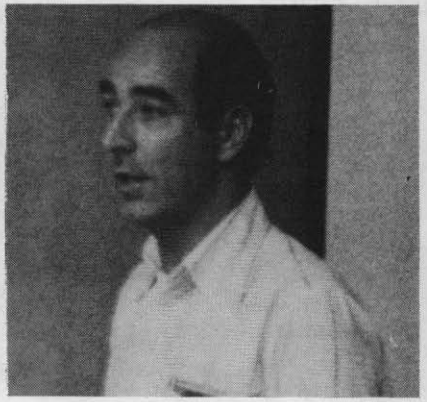
Saturday morning brought the QRP Forum starting with George Dobbs, G3GJV, with his discussion of "Amateur Radio on a Shoestring". George had several tales of his early QRP operating, as well as an interesting senerio as to how one might bring up the subject of QRP in a chance meeting of Amateurs at a local 'pub'. He provided a brief insight into the SPRAT newsletter content and style with the use of slides and overhead projection. George also announced that the G-QRP-CLUB Circuit Handbook has been reprinted and is now available through RSGB.

Wes Hayward, W7ZOI followed with his discussion of QRP equipment in the mountains of the Northwest. Included were such tips as painting the small fishing weight, used in portable antenna installation, a bright color so it can be seen well enough for easy recovery. He then showed several slides of QRP equipment needed, as well as some of the necessary hardware for hiking and camping he used during several of his ventures into the mountains. Wes also explained and demonstrated the need for simplicity and reliability in backpacking into the mountains. Attendees were given a spectacular slide show of the mountain areas where Wes has camped and come away with a greater appreciation of why it is difficult to keep your mind on Field Day Contests with such beautiful scenery.



QRP design and Construction Techniques were the topic of discussion by George Burt, GM3OXX. An excellent demonstration of an extremely efficient and fast technique for designing and making printed circuit boards was offered as well as a beautiful slide tour of Scotland. George also warned us of being frustrated with ideas that simply do not work and must be thrown away. "It happens to all of us, just because we are in the profession does'nt mean we don't make mistakes." Following this remark George passed around some of his homebrew equipment, which exceeds the quality of most commercial manufacturers. Most of the construction material George uses is one-quarter inch square aluminum bar stock and one-eighth and one-quarter inch aluminum plate stock. Practically all circuit boards had their own individual compartment within his rigs and all bundles of wires are laced with waxed thread as we used to see in the old military surplus gear.

Starting with a chat comparing power to s-units, Chris Page, G4BUE, led a discussion on Milliwatting The Ten Tec Argonaut 509 was used as a demonstration rig, but the theory could be applied to most any rig. The interesting thing that Chris noted was that as he decreased the voltage to the final amplifier of his Argonaut, the rig actually became more efficient! This bit of information might start some sort of contest to design and build the most efficient QRP rig. Think of it, a QRP rig that puts out say two watts with the least current drain. It also might be interesting to compare the voltage required for the most efficient rigs. If lower voltage is more efficient as suggested by Chris' experiments, perhaps less batteries are necessary for some designs which certainly would lighten a backpack for those QRP'ers who enjoy carrying their equipment into the wilder-



After a short lunch break, Ade Weiss returned to the QRP Forum with "QRP DXing and single hop propagation to great distances." Profound words of wisdom literally crammed into the short time available tended to be a bit heavy in theory for most, but the results for those who followed through the discusion were that very good, clean and clear propagation paths exist at certain times and under certain conditions that allow for great distance communications with extremely low power. Reading the full discussion in Ade's new book should prove most interesting.

Wes Hatward, W7ZOI brought forth the final topic of the QRP Forum with his discussion of Simple Phase Locked Loop Design. Using several slides of block diagrams, schematics, and a discussion of theory and techniques, Wes demonstrated the utility of phase locked loop design in QRP equipment. Wes noted that a more complete discussion of this and several other topics is presented in his latest book, "Introduction to Radio Frequency Design", printed by Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 07632.

After the Forum the Hospitality Suite was open for business. Several acknowledgements were made, including: Jim Smith, KA7APJ, of Spectrum West for the donation of a 40 meter QRP kit presented at the Forum as well as the use of his video recorder to tape the Forum; Ed Popp, K5BOT; Fred Bonavita, W5QJM; Dave Farris, K5NT; and the Texas QRP committee for their work and planning for the convention; Ed Manual, N5EM and Glen Reid, K5HGB for their assistance and beer-tending; and to Carlos Byars, K5BNA, for hosting Ade Weiss in his home; and especially my wife Sharon, who although not a ham, assisted me in the planning and logistics of the convention as well as hosting most of the speakers and their spouses in our home.

SHARPEN YOUR PENCILS & WARM UP THOSE SOLDERING IRONS

FOR THE

1984 QRP ARCI HOMEBREW COMPETITION

by Ed Manual, N5EM

Those of you who are also members of the G-QRP-CLUB have noticed the fondness of our European comrades for competition of all types. Most recently, the G-QRP-CLUB sponsored a contest called the G3RJV Twenty-Twenty Contest. For those who did not hear of this one, these were the rules:

> "Design and build a transceiver for the TWENTY metre band, using no more than TWENTY components in the receiver and TWENTY components in the transmitter and submit a log of TWENTY DXCC countries worked with the transceiver."

The results of this contest were quite a few interesting and novel designs. I memtion this for two reasons. Over the next several issues of the Quarterly, I will be including several of these designs for the benefit of those members not in the G-QRP-CLUB. Even if you do not attempt to duplicate them, I am sure you will find them thought provoking and educational. I am also using the G-QRP-CLUB's competition as a springboard for the first annual (I hope) QRP ARCI Homebrew Competition.

The purpose of this contest is threefold. First, it is to encourage homebrewing among the members. I am using the logic that many of you are interested in building your own equipment but just haven't found the appropriate excuse to begin. Second, the contest will provide recognition among our membership for those who do construct and enter their ideas. Finally, the competition will provide the QRP fraternity with new ideas that will encourage even more building.

I feel that there are enough members who are capable of contributing in their respective areas of interest and expertise that the Quarterly would have to be quite a bit larger to publish the contest entries. We are certainly ready for that kind of expansion!

Originally, I had hoped to create a competition that would encourage both original design work and construction of previous designs by those who do not feel qualified to create their own circuits The intent of the contest is, afterall, to encourage every QRP'er to discover the great satisfaction of building and using home-made gear. Judging executions of other designs would, however, require physical examination of the gear. This did not seem practical. With this in mind, let me list the rules of the competition.

QRP ARCI HOMEBREW COMPETITION RULES

1. All entrants must be current members in a WQF society.
2. All entries must use parts readily accessible in the U.S., and must list sources for any part that might be difficult for the builder to locate.
3. Each entry must be accompanied by a legible and correct schematic diagram, as well as a short narrative describing the theory of operation. Because some builders may not have the capability to photograph their gear, photos are not required. However, every entrant is encouraged to provide good black and white photos to assist fellow builders in later duplication.
4. Entries can be in one of three categories:
   - A. Transceivers
   - B. Transmitters/Receivers/Transvertors
   - C. Accessories/Antennas
5. Entrants must provide a statement, signed by the builder and two other amateurs, that all rules of the competition were followed. Further, it must state that the entry was actually constructed, as described, and is completely functional. The signers must attest they have used the gear on the air.
6. Entries will be judged on the basis of a list of different attributes, such as uniqueness, engineering soundness, ease of reproduction, pc board information, simplicity and appearance. An additional category for judging will be use in the QRP ARCI QSO PARTY. Each fo these characteristics will be assigned a maximum point value and the total of the judges assigned points will determine the score.

7. Judges will be electronics professionals, and their decisions will be final. QRP ARCI reserves the right to publish all designs submitted. No information can be returned to the entrant (i.e., make copies!).
8. Plaques will be awarded to the First Place winner in each category. Certificates will be awarded to the Second and Third Place winners. Certificates will also be awarded to those designs that, in the opinion of the judges and Technical Editor, deserve honorable mention.
9. All entries must be postmarked by August 31, 1984. Judging will take place during the month of September, 1984. Winning entries will be announced and published in the January, 1985 issue of the Quarterly. Every effort will be made to publish all entries.

There you have it. Unfortunately, I cannot offer the winners great wealth. You will have to settle for the glory and honor we QRP'ers will heap upon you. You will, however, have the satisfaction that comes from designing and building your own equipment, as well as the knowledge that you have helped encourage others to build by providing new thoughts and ideas with your design.

Don't forget special areas of interest, such as RTTY, Oscar, VHF/UHF, computer interface and test equipment, to mention a few. I will answer any question you may feel is inadequately addressed by the aforementioned rules if you include an ASAE with your inquiry.

John McNeil, WA2KSM

RECEIVES THE 1983 QRP ARCI

TECHNICAL ACHIEVEMENT AWARD

John McNeil, WA2KSM, of Shirley, Long Island, New York has won the second annual QRP ARCI Technical Achievement Award in balloting by club members.

Second place went to Antoine F. Galindo, AC6G, for his article on a 40-meter transmitter.

John's winning piece was on converting the HW-8 to 30-meter operations by modifying the 20-meter section of the rig. The conversion required only a crystal and a handful of capacitors.

He receives a plaque for his winning entry. Both first- and second-place articles appeared in the April 1983 issue of The Quarterly.

Competition for the 1984 Technical Achievement Award begins with this issue of The Quarterly. Ballots will appear in the October issue, and the results will be announced a year from now.

Efforts are under way to have a no-host QRP breakfast in conjunction with the popular Midland Swapfest over the St. Patrick's Day weekend. Roger Rose, W5LXS, says the event will be held on Saturday morning early enough for those participants to return to the Swapfest and other programs. Those interested should notify him, 2203 Gulf, Midland, Texas 79701, by February 1, 1984, so final arrangements can be made.

WHEN DOES *YOUR* LICENSE EXPIRE?

ROBERT PATTEN, N4BP SWEEPS THE FIELD IN THE QRP ARCI OCTOBER QSO PARTY

by William Dickerson, WA2JOC/3

If the results of the October QSO Party are any indicator, the average contestant was running an HW-8 or an Argonaut 509 at less than two watts' output into a dipole and was powered by a storage battery.

These were the findings of a survey of entrants' letters which accompanied their logs and scoring sheets.

While not all logs were accompanied by letters, a sampling of those whi did write showed 22% ran the venerable HW-8, an equal percent operated the Argonaut 509, 19% used the Argosy, 7% used the 515 Argonaut and 22% operated a variety of QRO rigs with, as one put it, "the drive cranked WAY down." A few HW-7's and one home-brew rig were also reported.

The mos popular power output level was between 1 and 2 watts (39%), while levels of 2-3 and 4-5 watts out were reported by 21% each. Milliwatting (less than 1 watt out) attracted 14%, while the 3-4 level was cited in only one entrants letter.

The dipole was used by 45% of those who wrote, including two who said their's were indoor antennas because of landlord problems. The beam was next with 31%, followed by the vertical with 14%. A few reported using longwires, ZL Specials and/or quads.

The storage battery was the most commonly used power source reported, although two letter-writers said they used solar power direct.

Several writers took the time to suggest well-thought-out changes in the rules. Chris Page, G4BUE, said the time of the contest should be changed so that non-U.S. stations can have better chances of making higher scores. And Dave Evans, K5SOR, a natural-power enthusiast, proposed making the power bonus a little more realistic, especially when dealing with solar energy and storage.

Alaska	
KL7XA	16,968
KL7DG	45

California	
W6YMH	183,168
W6SKQ	77,940
K1EQA/6	57,018
N6GTI	4,560
KE6VY	20,328
KA6SIQ	880

Colorado	
KV0K	64,260
KR0U	2,688
W0IZV	Check Log

Connecticut	
W1FD	228,144
KA1GPG	208,566
WA1YLN	24,564

Florida	
N4BP	2,573,532
K4KJP	143,181

Hawaii	
KH6IJS	1,056

Idaho	
N7FEG	15,136
KA7PMP	9,044

Illinois	
WD9EGW	327,168
K5VOL/9	262,668
KA9NZI	13,888
W9OA	12,352
K9FYV	Check Log

Indiana	
N9DHX	162,648
WD9CTB	94,320

Iowa	
KC0Q	9,936

Kansas	
K0KD	450
KA0MRS	Check Log

Maine	
W1HHV	18,000

Massachusetts	
W1FMR	110,504
W1XH	432

Maryland	
N3PM	10,032

Michigan	
N8CQA	163,200
K8IF	52,578
KW8B	22,200
KE8P	7,200
WB8UUJ	2,295

Missouri	
KR0O	225,008
KA0FDL	46,440
KC0PP	23,840
WA9FWO/0	10,292

New Hampshire	
KN1H	367,920

New Jersey	
WA2GTJ	35,136
W2JEK	29,400

New York	
WB2IPX	276,640
AI2T	48,330

Ohio	
W8PCS	142,800
WA8MLV	97,356
KA8NRC	4,592

Oklahoma	
W5MFD	34,472
KB5OX	28,608

Pennsylvania	
W3TS	541,872
KH6CP/3	267,750
KV6V	3,780
WB3GNJ	1,248

South Carolina	
K4ADI	30,672

South Dakota	
W0RSP	83,080

Texas	
W5LXS	948,000
WB5FKC	391,170
W5QJM	43,680
KE5EH	10,404
N5AF	8,624
W5USJ	6,256

Utah	
WN7SIU	2,754

Vermont	
WB1GMH	21,252

Virginia	
KC4ZA	93,120
KX4V	72,180
W4XD	50,600
WD4EXG	35,250
KA4MKF	1,400

Washington	
N7DGZ	66,236
KV7X	29,000

Wisconsin	
K9GDF	2,337

Canada	
VE3DRB	364,480
VE3KTZ	5,340
VE3NYT	2,560

DX Operators	
G4BUE	210,560
GM4ELV	124,320
G4EBO	19,872
F9YZ	15,678
ZS6PT	4,092
G3IQF	696
EA1AER	600
JA1KFX	152

Top Scorers	
N4BP	2,573,532
W5LXS	948,000
W3TS	541,872
WB5FXC	391,170
KN1H	367,920
VE3DRB	364,480
WD9EGW	327,168

THE QRP ARCI BOARD OF DIRECTORS IS LOOKING FOR A FEW GOOD MEMBERS

ARE YOU INTERESTED?

The following are the current members of the QRP ARCI Board of Directors. At the present time the Board does not have an elected Chairman, the President serves in that capacity at this time and is called upon to vote only in case of a tie.

Life Term:
Harry Blomquist, K6JSS - California

Term to Expire December 31, 1984:
Bill Dickerson, WA2JOC - Pennsylvania
Robert "Red" Reynolds, K5VOL - Illinois
Fred Bonavita, W5QJM - Texas

Term to Expire December 31, 1985:
Gary Beam, WA9WZV/4 - Florida
Christopher Page, G4BUE - England
James Holmes, W6RCP - California
James Lyons, VE2KN - Canada

Term to Expire December 31, 1986:
Val Valentine, K4JO - North Carolina
Bill Harding, K4AHK - Virginia
Ed Lappi, WD4LOO - North Carolina
William Welsh, W6DDB - California

Those members interested in running for the Board should send their names, membership numbers, etc., to the new Secretary/Treasurer (listed on page 2). This information should be coupled with an outline of your amateur radio experience, professional work or employment, and goals for the club. The deadline for submitting names for the 1984 Board elections is June 1, 1984, so that the ballot can be published in the July QRP Quarterly.

NEW NORTHWEST QRP NET TO START ON JANUARY 7, AT 1800Z ON 7040 kHZ

by Jim Holmes, W6RCP

We are kicking off 1984 with the formation of a new regional net to serve the upper 7th Call District.

Robert R. "Bob" Brown, N7DGZ, will manage the newly formed Northwest QRP Net (NWN), which will meet beginning Saturday, January 7, at 1800Z on 7040 kHZ.

Bob has sent notices to several dozen QRPers in the area, inviting and encouraging their participation, comments and suggestions.

NWN will serve a several-hundred-mile radius of the Seattle area, reaching into Canada and Alaska as well as Oregon, Idaho, Montana and Wyoming. Check-ins count toward the club's QNI certificate, which is awarded with each 25 QNI's.

Bob, who was W6PDN from 1937-41, lives at 504 Channel View Drive, Anacortes, Washington 98221, and welcomes hearing from club members.

This information was received too late to be included in the Quarterly Calendar, so please mark them now. Lets give this Net a good start.

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