QRP Quarterly

Journal of the QRP Amateur Radio Club, International

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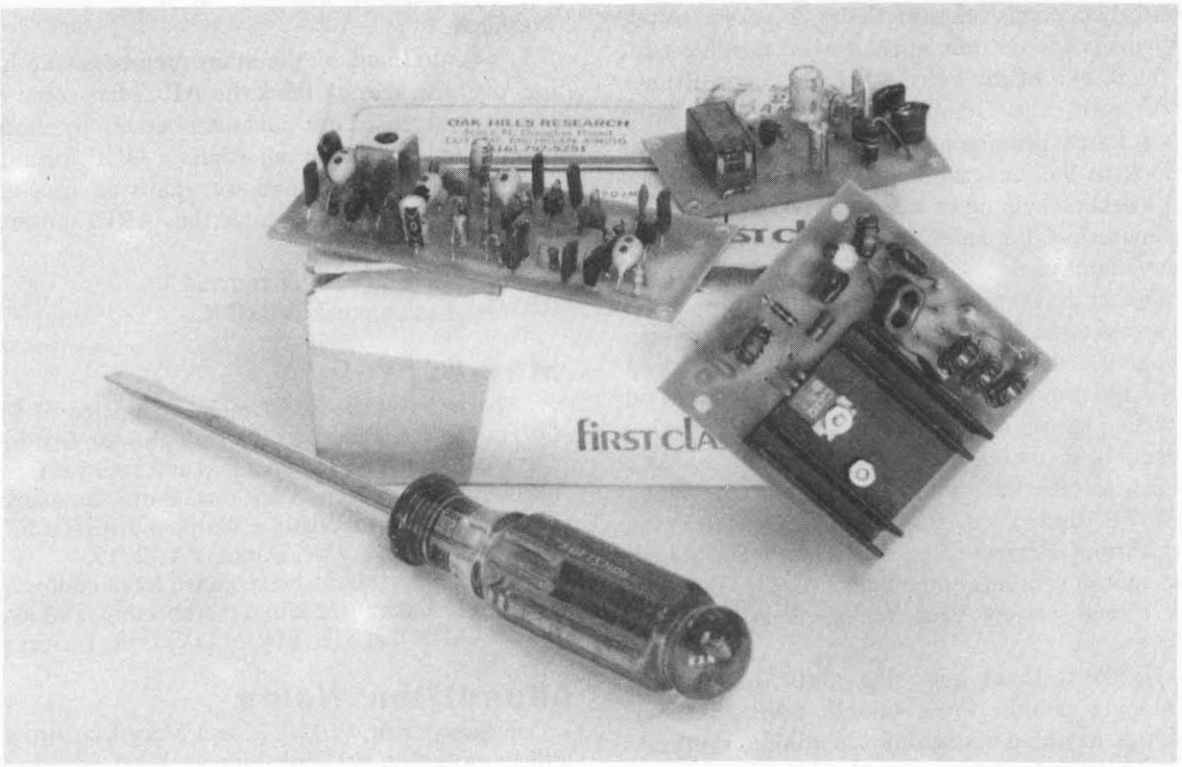


The DeMaw Kits are here from Oak Hills Research and W1FB. Fred Bonavita, W5QJM, put these together in an evening. See his review on p. 16.

Dayton is Coming! - see p. 6

Fall Contest Results - see p. 20

QRP ARCI News

Editor's Word

Welcome, everyone, to a new year and a new Quarterly. When I volunteered to take over as editor of the Quarterly, I knew that a lot of work would be involved. The big surprise was just how much!

The Quarterly depends on more than one person to put out a quality magazine on time at the lowest possible cost. I'd like to thank two of my biggest helpers. Leon Bruner NT8B started, with the October issue, to provide laser printing duties. Laser printing is what gives the professional typesetting look to the magazine's contents. Randy Jones KA9HAO/1 has been helping to alleviate the typing load in preparing manuscripts for laser printing. Thanks guys, I couldn't do it without you!

Other volunteer assistance would be greatly appreciated. If you have access to an IBM compatible computer and can spare a few hours each issue to help typeset, please drop me a note. A large amount of my editorial time is spent on typing and pasting up the magazine. This is quickly turning into a full-time job! If you can help out, please do.

I'd also like to take this opportunity to welcome Doug DeMaw W1FB and Fred Bonavita W5QJM to the Quarterly's Editorial Review Board. To maintain a high quality to technical contents, members of the Editorial Review Board will review each technical article for accuracy.

Finally, I'd like to thank out-going editor, Jim Stevens KK7C, for helping arrange for a smooth transistion. We don't believe that anything has been mislaid in the shuffle.

A couple of housekeeping items: I've been attempting to keep current with the mail situation by getting manuscripts and other submissions acknowledged within a couple days of receipt. If you send me something and don't hear from me within a week or two, please write again (the Post Office has been known to lose things!) My goal is to have each issue of the Quarterly in your hands by the beginning/middle of the particular month. If you think that your copy is late, first QNI one of the QRP nets and ask if it has gone into the mail. Bulk rate mail is slow, but if it's the end of the month in which the issue is dated (Oct., Jan., Apr., or July) then you should file a Publication Watch form with your local post office and drop a note to the publisher, The Territorial Printer.

The QRP Fall Contest appeared to be a resounding success with a LOT of activity (so much so, that I actually heard a few QRO guys complaining about all the QRM!) I enjoyed the QRP competition and all of the great signals, but particularly enjoyed hearing so many 'new' numbers. I hope the newer members had fun and I'm looking forward to the next QRP contest.

73/88 Paula Franke WB9TBU

President's Message

Well, this is it, my final column as President of QRP ARCI. By the time you read this, Jim Fitton W1FMR will be your new President. It was a pleasure having Jim as Vice President and I'm sure he will do justice to the office of President.

I wish to thank all the many members who have written me over the years. I think the ARCI has come a long way. We have increased our paid membership by about 75%. We have learned a lot about running QRP forums from our experience in Dayton and we have an excellent staff of officers and directors to guide the ARCI onward for many years to come.

Best wishes to each of you and 73,

Les Shattuck WB2IPX

Membership

The initial ARP ARCI membership fee of $12 ($14 for DX) covers a lifetime membership plus the first four issues of The Quarterly. THe membership and renewal form is located inside the back cover. Additional forms are available, for an SASE, from Membership Chairman Bill Harding K4AHK, 10923 Carters Oak Way, Burke, VA 22015.

There has apparently been quite a lot of confusion regarding the correct amount for initial membership. I've received word from K4AHK that $12 ($14 for DX) is the correct amount.

DXpedition News

Jan Scheurman, WB2JCE, and Mary Lou Brown, NM7N, will be going on a DXpedition to Niue Island, ZK2-Land. They hope to be on the air February 21-26, 1988. They will be on both CW and SSB. Some time will be set during periods of good propagation for "QRP only", probably CW. Look for them around the following frequencies: 7.025, 7.225, 14.025, 14.225, 21.025, 21.125, 21.300, 28.125, and 28.300. Their callsigns will be ZK2JS and ZK2MB. QSL via WB2JCE and NM7M.

The second QRP DXpedition in 1988 will be WB9TBU, W1FMR, K6MDJ and NU4B. They will be heading for the black sand beaches of Montserrat (VP2M), probably during the middle of July. The group will be meeting at Dayton in April. More details will be forthcoming.

Any other DXpeditions being planned? Let us know!

BOD Election Results

The Board of Directors election results became official at noon on Dec. 1, 1987. Ninety-eight ballots were received. Board members taking seats are: John Collins, KN1H; Paula Franke, WB9TBU; and Red Reynolds, K5VOL. Thank you all to those who took the time to vote.

Jan 21 88

Dear Hank:

Les passed along your letter, and I have included one of the BOD letters FYI. At this time there are no provisions for chapters in ARCI. That does not mean no, for the future. In fact, I presume that if a group organized to provide some service to the club, the BOD would find this active group irresistable and move towards affiliation.
Right now there is a need for help on the QQ (See encl). We would like to include all phases of activity such as those listed by you.
The best way to get others interested, and become a contact person, is to write a short article about your area of interest. You might call it "fishing for Packeteers".

We look forward to seeing you at Dayton Hank, and I hope you will give the idea of a service chapter, some consideration. We will present your ideas at the BOD meetings at Dayton.

My best to you, and your group:

Jim Fitton - W1FMR
Box 2226
Salem NH 03079

Jim

Jan

HANK, FYI!
73 Jim

ARCI - BOD, OFFICERS, and PROJECT MANAGERS. 01/18/88

JIM FITTON - W1FMR - OFFICER/PRESIDENT/BOD CHAIRMAN
FRED BONAVITA - W5QJM - OFFICER/VICE PRESIDENT
BOB BROWN - NM7M - OFFICER/SECRETARY/TREASURER
JOE SULLIVAN - WA1WLU - OFFICER/PUBLICITY MANAGER

PAULA FRANKE - WB9TBU - BOD, OFFICER/EDITOR-QRP QUARTERLY
BILL HARDING - K4AHK - BOD, OFFICER/MEMBERSHIP CHAIRMAN
FRED TURPIN - K6MDJ - BOD, OFFICER/AWARDS MANAGER
DANNY GINGELL - K3TKS - BOD, OFFICER/NET MANAGER
RED REYNOLDS - K5VOL - BOD, OFFICER/CONTEST CHAIRMAN
JOHN COLLINS - KN1H - BOD, TWOFER MANAGER
MIKE BRYCE - WB8VGE - BOD, HW-8 HANDBOOK MANAGER

CHRIS PAGE - G4BUE - BOD
ROGER ROSE - W5LXS - BOD
RICH ARLAND - K7YHA - BOD
TERRY YOUNG - K4KJP - BOD
BOB SPIDELL - W6SKQ - CANDY STORE MANAGER
MYRON KOYLE - N8DHT - DAYTON HOTEL RESERV. MANAGER
LES SHATTUCK - WB2IPX - QRP DAYTON FORUM MANAGER

LES SHATTUCK Thank you for the support, help, and offer of service. During your term as president, the club has grown from 600 to 1300 active members and numerous successful and exciting projects are off the ground. We are indeed rising from the pits up to the pinnacles. Good luck, and thanks. Les plans to attend 14 hamfests before Dayton, in order to promote QRP. He will be selling Twofers, items from the candy store, Quarterlies, and HW-8 handbooks with the proceeds returned to the club. Also Les is printing (free of charge) publicity sheets for Joe Sullivan and for Dayton.

CHRIS PAGE Chris and Colin (G3VTT) will be at Dayton this year, visiting with their DX friends, and I hope we get some time to socialize. The G-QRP club is cordially invited to share in all QRP activities at Dayton again this year. Representatives of the G-QRP club are invited to sell memberships and help with the QRP displays at the ARCI booth. Alternately, G-QRP club membership information can be handed out by ARCI members.

Please consider the possibility of moving the QRP SSB 10 meter calling frequency from 28885 khz, into the new novice - Tech sub-band of 23000 Khz to 25000 Khz, ie...23885 Khz.

FRED BONAVITA Congratulations for attaining the position of Vice President. It will be my pleasure to work with you for the next two years. Thank you for the letters and comments concerning these briefs. I will be on a learning curve for some time and suggestions are earnestly solicited. The major goal, for me in the club, as I see it is to release the natural enthusiasm and creativity of ARCI leadership and channel it in the most positive direction. I will try to send information to the staff on a monthly basis along with Bob Brown's mailings.

ROGER ROSE Would you please ask Bill Brooks if he could put the Quarterly in an envelope for mailings outside of the continental U.S.(incl. HI and AL). There are numerous complaints of shredded QQs being received overseas.

RED REYNOLDS
Congratulations for attaining the position of Contest Chairman, and on your choice of WD5GLO as contest assistant. The home brew sprint and the SSB sprint were certainly challenging, both requiring unique techniques above and beyond those of normal QRP operation. These operating techniques were finally mastered near the end of the sprints when time had nearly run out. It takes strategy and skill in any new undertaking, and especially at very low power levels. Red's analysis of log information finds that most high scores in recent contests resulted from the use of natural power, milliwatts of output, simple wire antennas, and the maximum operating time.

LOU NIX - WD5GLO Assistant Contest Chairman Welcome to the team of ARCI. It is our pleasure to have you working with Red Reynolds in the important area of contesting. Easily, one of the most popular activities of the club, contesting is setting the pace with the addition of home brew sprints and simplified power level scoring. I am sure that you will feel challenged, and that the club will benefit from your efforts. Thank You.

JOHN COLLINS Glad to hear that your XYL is out of the hospital. Our best to her. You have received the Twofers from Bill Harding. Please keep us informed on to see if we should order more before Dayton. OK on the information that the Twofer receiver is a go as it stands. This project is sure to meet the original goal of getting members interested in home construction easily and inexpensively.

Excellent performance by the group that brought this project from figment to fruition. Thank You!

BILL HARDING Congratulations on getting 100 Twofer kits in the mail to John Collins. An almost unbelievable feat from my point of view. Timing is picture perfect to coincide with the QQ ads, contests, and Dayton. Teamwork on this project will be the standard to measure other projects by. It is that hard core of QRP enthusiasts continually doing more than their share that deserve credit for the tremendous growth of the club. Please keep up the teamwork and creativity.

MIKE BRYCE Glad to hear that you are going to Dayton this year, and are working on the club bylaws. We could be ready to vote on them by Dayton providing there is a quorum. How is the HW-8 handbook going ? Do you have enough to meet current demands ? Fine on volunteering to speak at the QRP forum at Dayton. Mike, the QRP forum is always left up in the air because of the way DARA does their last minute scheduling. We never know how much time will be allocated, or when. In order to get more time for ARCI, would you apply to DARA for a speaker's spot independently, (like the Brit's did last year)? That way, QRP could get additional coverage, if needed, at the forum. (There is however, that possibility that you may end up giving two talks.) Flexibility for the club will be greatly increased, as your outside talk would then be advertised in the QQ as if it were a QRP forum presentation. Your talk is always a high drawing card to QRPers and now there is the possibility of exposing others to the secrets of QRP. Did you notice how many hams used battery power this year on FD ? Many others I suspect are eager to learn how to scrap noisy gasoline generators for natural/battery power. They could be potential QRP converts if they knew how much fun it was.

PAULA FRANKE Has the new modem working now, and she took a job with the local newspaper to gain the use of a Lazer printer. She then impressed her new boss by transmitting articles over the phone lines into the newspaper's computer system. Anybody with a computer and a modem can help Paula out by typing a few pages of text for her and sending it over the phone lines.
Please spread the word, that she could use assistance.

TOM ROOT - WB8UUJ The Mi-QRP club is cordially invited to share in all QRP activities at Dayton again this year. Representatives of the MI-QRP club are invited to sell memberships and help with the QRP displays at the ARCI booth. Alternately, MI-QRP club membership information can be handed out by ARCI members. This year at Dayton we are looking for someone with necessary skills to help run the booth. If you can think of a candidate, please let me know.

Please consider the possibility of moving the QRP SSB 10 meter calling frequency from 28885 khz, into the new novice - Tech sub-band of 23000 Khz to 25000 Khz, ie...23885 Khz.

BOB BROWN Bob has done a great job applying for, and getting us tax exempt and non profit status. His dealings with the IRS and Postal Authorities greatly affect our QQ postage costs, and taxes. In addition, taking care of distribution of monthly briefs is very much appreciated and makes it easy for all BOD and Officers to communicate with each other. Bob mails to the staff on the first of the month, so if you wish to communicate, send 15 copies and he will do it.

QRP-ARCI STAFF

In order to help Paula with the QQ, all that is needed is a home computer, modem, and one hour of your time per month.

Type a couple of pages, as you receive them, complete with spelling, grammar, and punctuation errors.

Send it over the phone lines via your modem, and that's it.

Paula will make the corrections on her computer and take it from there.

If tedious, time consuming, typing is done by all collectively, each does a little, and we get a lot.

10 typists each volunteering ONLY 1 hour per MONTH, results in a total of 30 hours of drudgery saved by Paula.

Paula has recently developed a blind spot in one eye, which now prevents her from spending too much time in front of a terminal.

Please, gang, use creativity find a solution to this problem.

Thank you to Randy Jones, KA9HAD/1 for his help in typing up things for the Quarterly. It certainly helps out the editor quite a bit, especially now since it's getting difficult for me to look at a computer monitor for long periods of time. Also thanks to Leon Bruner, NT8B for his exceptional help in providing laser printing for the October 87 and January 88 issues. Having done part of the laser printing myself, I know how much of a chore it can be. Leon has a new job in Cincinnati now, so he won't be able to continue with this help. But I certainly appreciated the help while it lasted, especially the heroic efforts exerted while he juggled packing, moving, tying up loose ends at his former job and doing the laser printing for January all at once. THANK YOU BOTH!

The new modem approved by the board has been purchased and has already proven itself to be invaluable in the production of the Quarterly. There was quite a bit of last minute stuff to be typeset and I was able to transmit the files to my boss at the newspaper office and subsequently print them out with the laser printer there. I've also purchased an inexpensive daisy wheel for my electronic typewriter and have been successful in getting the computer and typewriter to talk with each other. My plan is to use this system as a back-up for contest listings, tables, etc. when time doesn't permit doing them at work. This sort of typesetting is quite time-consuming when not done at the site of the laser printer: the tabs somehow get lost in the transfer.

Mr Brown, please include W6SKQ, N8DHT, WB2IPX for copies; Thanks.

A Happy and Prosperous New Year to all.

73 Jim Fitton Jim

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.

Table of Contents

The Reluctant Pioneers of QRP

by Norman Field G4LQF
14 Regent Rd., Harborne,
Birmingham 17, England

[Ed. This article was originally intended to be given as a speech which Norman intended to give at the 1987 Dayton Hamvention. Unfortunately, he did not have a chance to give it, but he has allowed us to reproduce the text of his comments here.]

This title relates to a time, mostly in the fairly distant past, when, for many amateurs, there existed COMPULSORY QRP. I am not referring to any limitations imposed by the Licensing Authorities of various countries as, for example, until about 1956 the United Kingdom License contained a provision that for their first year of operation, newly-licensed amateurs had their power limited to ten watts, and their mode to CW. After twelve months of this enlightened form of existence, they were permitted full power (150 watts) and all modes. The scrapping of this 'apprentice' period may be seen in retrospect as far as the U.K. goes, as one of the first but significant steps along the road to the all-commercial expensive high-power station that we QRP enthusiasts deplore...or at least keep hidden in the 'other shack' when our fellow QRPers call round.

Going back much further in time to 1921, when amateur transmission was once again authorised - after having been suspended during WWI - the power limit of 10 watts applied to ALL U.K. amateur licenses, any higher power than this only permitted after a good case for genuine experimental purpose had been accepted.

But it is not even this onerous and restrictive condition that I refer to.

The COMPULSORY QRP I mean was that imposed on many of our radio amateur ancestors because of their lack of a suitable power source. In the U.K., for example, as late as the 1950's, there were considerable rural areas without a mains power supply. The licensed amateur who lived in such areas would have no choice but to operate QRP, unless, of course, he was rich enough to have a motor generator installed to supply electricity for the house in its entirety.

This must still leave a considerable number of largely unsung, and indeed probably reluctant, pioneers of true QRP. Always an expensive item, the least costly high tension batteries were obviously designed for receivers only. During the era of battery valves (tubes!) receivers were surprisingly economical of HT, and so the available batteries just weren't designed to give high current. Our imaginary radio ham would have had to spend a fortune both on a series-parallel arrangement of HT batteries, not to mention low-tension accumulators, to power up any of the QRO valves (tubes!!) that began to appear as the 1920's and 1930's advanced.

For many people then, the only practical alternative would be to construct a transmitter from receiver-type components. The usual maximum HT voltage available from a high tension battery was 120 volts. A typical receiver audio output 'power triode' in the early 1930's was like an LP2. It has a 2 volt filament and, in audio application, its current rating, from contemporary data books, is only 5 mA at 120v. This only gives a dc input of 600 milliwatts.

However, I suspect that then, as now, the determined amateur would obtain appreciably more than this. After all, the rating quoted is for a standing current, so we could treble or quadruple this for the intermittent duty cycle of CW. But even by using two in parallel or in push-pull and squandering precious power, we can hardly expect our pioneer to obtain more than three or four watts input.

This situation must have existed in all rural areas of all amateur radio countries of the world during this period.

In short, there were many hundreds - even possibly thousands - of these battery-powered stations in the 1920's and 1930's, and mostly running what today we define as QRP.

Because the 1920's and 30's was a period of rapid progress in radio as a whole, and even more so in the case of ham radio, the history books naturally concentrate on the more epoch-making developments...the increasingly-easy attainment of intercontinental DX QSOs; the first QSOs on higher and higher frequencies; first 28MHz and then on into the VHF spectrum at 56 MHz. As these innovations understandably usually occurred at QRO levels, there would seem to have been little scope for the more modest-powered stations.

In order to see what actual evidence I could find, I checked through my collection of vintage QSL cards, particularly looking for rural areas in the U.K. and battery-powered transmitters.

It rapidly emerged that QRP as such was a distinct force in ham radio right from the beginning.

Firstly, rather than aspire to the giddy heights of THE FULL TEN WATTS permitted to him, a card from 2RA in May 1928 shows that his input was only 2 watts. Clearly, Frederick Warner of Stockport, Cheshire, was not a ham to allow constraints of low power to discourage him.

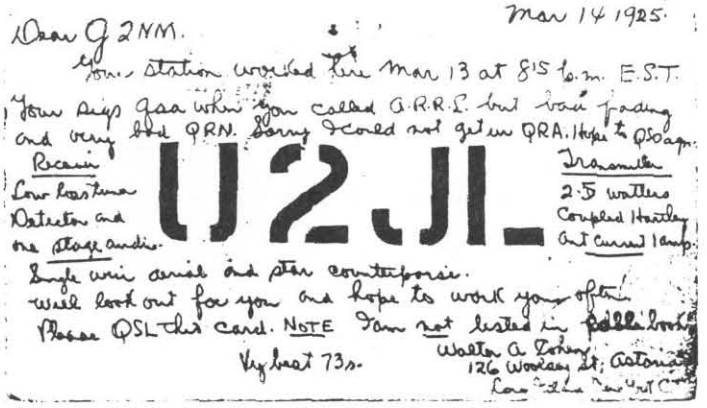
Of course, some amateurs have always had a tendency to show off: in August 1930, 'big spender' G2MR has actually managed 300 volts from dry batteries, giving him the staggering power of 6 watts output!

However, this sort of evidence might be interpreted as hams making the best out of a poor situation and accepting mundane local QSOs as their perpetual destiny.

What we need is some evidence as to POSITIVE pride our forebears might have taken in operating QRP: and you'll be plesed to hear there is no shortage of this at all! Again in 1929, G5JF points out on his card that his MAXIMUM INPUT is 5 watts. Note that he has RECEIVED the whole WORLD, but is somewhat reticent about the amount of DX he has actually WORKED with his modest input. A step in the right direction but, I think you'll agree, inconclusive.

Now, in 1930, G2SJ, running 3 watts input, has endorsed his card in handwriting "WKD SU ON 7 ES 14 mc WID 3 WATTS". (This represents at least 2,200 miles, and to be fair, I think all of us are not exactly disappointed when we match that feat on 7MHz).

Further confirmation of the pride of working with low power comes from G5SZ: his card informs us that he worked NEW ZEALAND in 1925 with 200 watts. Six months later he added AUSTRALIA with the same power, but the most recent achievement he felt worthy of note is that he repeated the Australian feat, but using only TWELVE watts. Admittedly, the frequency is not specified, but it's interesting to remember that since 1926 was, of course, a sunspot maximum year, by 1930 G5SZ presumably didn't have 'anything goes' conditions to help him!



Notable milliwatt-dxer, Chris Page G4BUE, is engaged in research for a book on the Full History of QRP, an event which we all look forward to. In particular, I'm anxious to find out more about the G.C.-QRP Groups mentioned on a Christmas Day 1930 QSL of G2VV. They must surely be the direct ancestors of the G- QRP-Club, although it is significant that the G-QRP-Club itself was formed after a long gap during which, apparently, no 'coordinated' QRP activity seems to have taken place in the U.K., though certain individual amateurs were extremely active in the tradition.

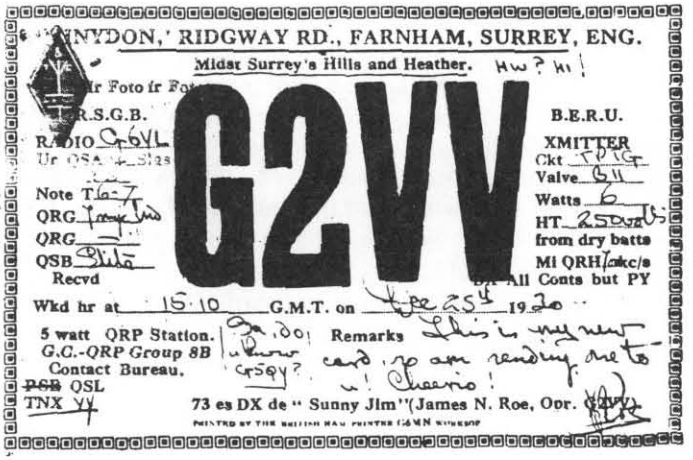
Finally, we come to the most intrepid and devoted G-QRP pioneer I have yet managed to discover...one J. Spafford, G5SP, of Blidworth in Nottinghamshire, whose subsequent career I have not, yet, attempted to trace. On a faded and nearly indecipherable card, dated 27th January 1928, he is using a magnificent HALF WATT INPUT. To an aerial (antenna!) 40 feet long and only 25 feet high against a counterpoise 40 feet long and as much as 8 feet high, it might be deemed that he is perhaps inadvertently making things extra-difficult for himself, but the reverse of his card lists: COUNTRIES QSOD WITH MAXIMUM INPUT OF 1.2 WATTS DC: A, B, C, D, E, F, G, I, K, L, M, N, P, R, S, U.

Translating this cryptic array into modern terms gives us: A, I don't know, Belgium, Czechoslovakia, Denmark, E is almost certainly Spain, France, U.K. (no U.K. country prefixes then!), Holland, Portugal, USSR, Finland, U most likely is Austria. He concludes his written message, on the back of the card, as many of us do to this day, with "HAVE YOU EVER TRIED QRP, OLD MAN?". Considering this card is addressed to G6YL, who was one of only two women amateurs in the U.K. at the time, and who happens to have been a very handsome lady indeed, we can only conclude that his devotion to QRP transcended all other distractions of whatever kind!

Were it not for the fact that G5SP's list is prefixed 'E' (the 'continental' prefix for Europe) we might be tempted to suggest that the 'U' represented the United States of America, which of course employed the 'U' prefix at the time.

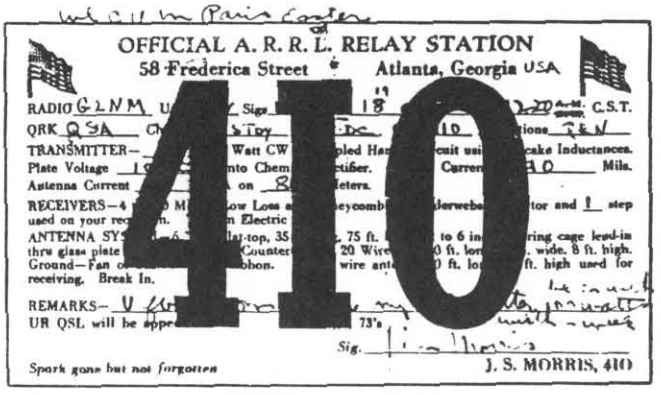
It would be a great achievement to claim the first TRANSATLANTIC QRP QSO of all time! However, great though J Stafford's early QRP attainments were, they could scarcely aspire to the height of TRANSATLANTIC QRP.

This brings us to a paradox in QRP research: basically, much of the significant information we have to go on is IN THE QSLs themselves, which, as long as they exist, obviously contain the details of the transmit power used. But for DX QRP attainments, of necessity, the QSL card will have been sent to THE OTHER END OF THE QSO. Thus, WE in the U.K. have got YOUR QRP-DX QSL cards, and YOU have got OURS, and so on, the world over.



Preliminary study indicates that U.S. stations quoted their power in OUTPUT terms rather than the custom of stating D.C. input as practiced in the U.K.

For example, in 1927, NU2AGU helpfully quotes both output and input, 7.5 and 30 watts respectively, a commendably candid admission of only 25% efficiency, which, by the way, to this day exceeds the performance of several of my own home-brew vintage tube transmitters!


OFFICIAL A. R. R. L. RELAY STATION
58 Frederica Street Atlanta, Georgia USA
RADIO G2NM
QRK QSA
TRANSMITTER—
Plate Voltage
Antenna Current
RECEIVERS—4
ANTENNA SY
Ground—Fan
receiving. Break In.
REMARKS—
UR QSL will be
73's
Sig.
Spark gone but not forgotten
J. S. MORRIS, 4IO

Likewise, in the same year, 1-FN quotes 7.5 watts, but in a less informative way. Alas, neither of these cards appear to QSL an actual transatlantic QSO.

In March 1925, U2JL worked G2NM while using "2.5 watters", how many of these he used are unspecified, and what ACTUAL power input they were possibly submitted to is left to the imagination.

The smallest power I have yet found emanating from the U.S. is the commendable figure of 5 watts from 4IO. Alas, this was not a QSO, but a report. Its extremely early date of 19th October 1924 obviously renders it worthy of mention. We note that Jim Morris has used a plate voltage of no less than one kilovolt to attain this power, presumably transformed up from a 110 volt alternating current supply. This would suggest a relatively low efficiency somewhere down the line, probably his CHEMICAL RECTIFIER is to blame. But who are we, nearly two-thirds of a century later and accustomed as we are to cheap silicon diodes, to criticise this? Instead, we should extend our sympathy to pioneering hams like Jim Morris, who not only had to contend with their XYLs and irate neighbors, but also a potentially lethal bucket of boiling sodium hydroxide in the corner of their shack.

In conclusion, I hope any apparently frivolous comments I have made have not been taken in the wrong light: these CONSTRUCTORS were the genuine pioneers, not only of QRP, but equally of ham radio as a whole.

For the moment, research into early QRP DXing must continue! I'm sure Chris Page G4BUE will be very grateful for any information anyone can give him on the earliest known QRP DX QSOs between various continents, etc.

In the meantime, we are the inheritors of the work of these QRP pioneers. It is up to us to carry this great tradition forward, and in our turn hand it on, splendid and intact, to future generations of QRP enthusiasts!!

DAYTON!!!

It's hard to believe but by the time you get this issue, the Dayton Hamvention will be just a short time away. If you haven't been to Dayton in the past, try to make it this year. The highlight of the convention is the QRP gathering at The Belton Inn in the evenings. It's like a homecoming with a chance to sit down, meet, talk, and generally overdose on QRP comraderie. Ask anyone who has attended in the past: mere words cannot describe the feeling.

Dayton takes a lot of work to put together: the hospitality suite, information booth, forums, etc. If you can volunteer some time with preparations prior to the convention and/or help at the convention, please get in touch with Jim Fitton, W1FMR. Don't think of it as work, think of it as putting together a family reunion.

Myron Koyle, N8DHT, is in charge of room reservations this year. After discussing the situation with officials at the Belton, Myron has come up with the following reservations procedure:

Send the following information to Myron: your name, call, address, and telephone number where you can be reached or a message left; which nights you'll need a room (several QRPers show up on Thursday and don't leave until Monday); a check made out to the Belton for a deposit of $55; two to three SASEs; name, call, address and phone number of any roommates.

Myron will record your name(s) and deposit, then forward both to the hotel. The hotel will send confirmation to him; he'll record the verification and send it on to you in one of your SASEs. That way you only have to work with one person and the hotel only has to work with one person, minimizing the chances of a foul-up.

If you have already made a reservation with the Belton and didn't go through Myron, be sure to check with him to make certain your name is on his list. It is his list that the hotel will use to hold rooms.

If you're already certain who your roommate is, only one of you needs to contact Myron and send in a deposit. But, please remember, if the person who made the deposit cancels out and gets his/her money back, you're in trouble because the hotel may cancel the room reservation, So, it is very important that as soon as you know who your roommate is, that the two of you work out that contigency.

Contact Myron Koyle, N8DHT, at 1101 Miles Ave. S.W., Canton, Ohio 44710.

Call for DX Articles

Several ARCI members will be DXpeditioning in exotic locals this summer. The Quarterly is looking for articles about QRP DXpeditions, QRP DX stations, and anything related to QRP DXing. Are you planning a trip? Have you already made one? Are you the QRP at the other end of that exotic callsign? We're waiting to hear from you.

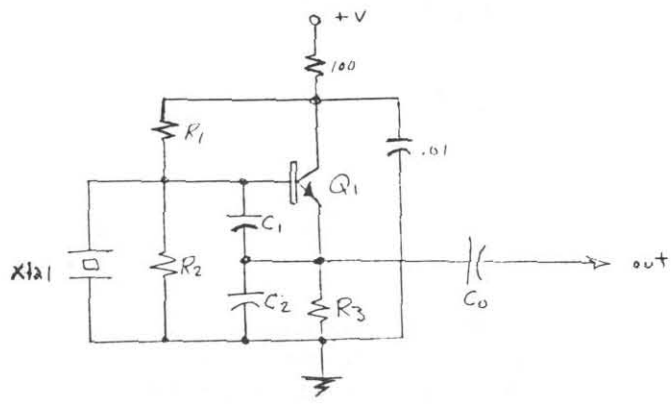
Do You Homebrew?

Many of us are interested in rigs and accessories that we can build for ourselves or use a projects for newcomers to the world of low power. The Quarterly wants both long and short articles on homebrew construction, design and technique.

A Universal Crystal Oscillator

by Paul Levesque KB1MJ,
14 Wesley St. Dedham, MA 02026

[Editor's Note: Paul's article originally appeared in the October 87 issue of the Quarterly. Unfortunately, in my haste to get the Quarterly out on time, I neglected to include the schematics. (A most important part of the article, you'll agree!) To avoid confusion, I've decided to re-run the article WITH the schematics. My apologies to Paul, as well as any of the readers who were ready to start building.]



The Colpitts crystal oscillator circuit has enjoyed popularity with homebrewers since it is simple and reliable. A review of construction articles will, however, indicate a wide range of component values with little explanation of the reasons behind the selections. Since I have been a victim of cranky Colpitts circuits, I surveyed the literature and discovered an excellent reference on this subject*. Implementing the Author's recommendations resulted in a circuit which functions well over a 5 to 1 frequency range with a variety of AT cut crystals.

The first parameter to consider is the impedance which the circuit places across the crystal. In our typical circuit this is the parallel combination of R1, R2 and the input impedance of the transistor. A minimum impedance is required for dependable oscillation and this value is a function of frequency.

FREQUENCY MHZ	2	5	10	20
IMPEDANCE Z(min)	15K	4.7K	3.3K	2.2K

I have observed crystals jump from fundamental to third harmonic when too low a value of shunt impedance was provided for oscillation at the fundamental mode! Since a required Z has an inverse relationship with frequency, the needs for shunt impedance at the third harmonic were satisfied when impedance needs for oscillation at the fundamental frequency were not.

Capacitor C1 is non-critical in value and a good choice for most applications is 47 pf. Optimum performance will result if the time constant R3*C2 follows this approximate relationship:

R3*C2 = 0.5/f where R is in ohms, C is in micro-farads and f is in MHz.

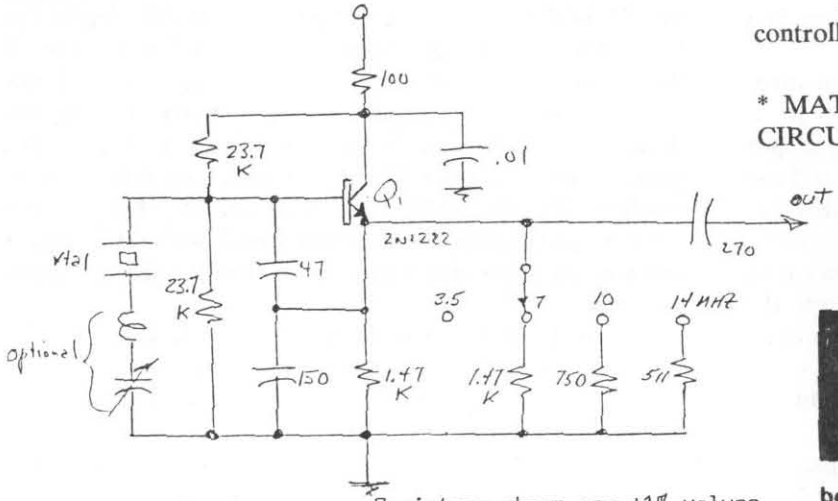
Since the ratio of C1/C2 is non-critical, a value of 150 pf will satisfy a wide range of frequencies and allow the time constant to be adjusted via changes in R3. In this way, lower frequencies will enjoy larger values of R3 and increased input Z to the transistor. Higher frequencies will have lower values for R3, increasing transistor transconductance and providing increased ability to drive circuit capacitance.

Excellent performance has been obtained from the circuit below. A broad variety of microprocessor crystals -- 3 MHz to 18 MHz -- have been tried and found to provide an output of approximately 4.5 volts peak to peak, good waveforms and reasonable use of RC delay in the keyed + Vcc supply.

It follows that the conventional methods for shifting frequency (L and C in series with the crystal) can be used to provide VXO performance.

Next time you are homebrewing a QRP crystal controlled transmitter, give this circuit a try.

* MATTHYS, ROBERT J. "CRYSTAL OSCILLATOR CIRCUITS", New York, John Wiley & Sons, 1983.



Resistors shown are ±1% values, however, nearest ±5% value is OK.

If the sum of all starlight that falls on the Earth could be concentrated in one object, it would equal a 100-watt bulb seen from a distance of 613 feet, or the length of two football fields.

Propagation and DX

by Bob Brown NM7M
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Anacortes, WA 98221

Quite often, when dealing with a new problem, we have difficulty seeing the forest for the trees. Propagation is no different as we can become involved with a whole set of new terms, MUF and the like, without getting into any organized approach or study of the problem. Of course, it helps to have a guide or map for any maze if you are going to walk through it yourself.

On the other hand, if someone is going to do the walking for you, say by means of a computer program, it would pay to at least know what's going on in a qualitative way. So let's take the vocabulary we're familiar with at this point and see how it fits in with propagation programs that are available either commercially, through friends or your local BBS. I'm sure you'll agree that's a lot easier than digging into a big reference book on the topic.

Rather than deal with something in the abstract, let's take a real problem, perhaps out of date now but at least real at the time. I'm referring to the question of when one would have been able to make contact with the recent 3Y DXpedition to Peter I, just off the Antarctic Coast. As QRP'ers, when we approach a problem like that we have to look first to the question of how many miles per watt would be involved with that QSO. Okay, let's use my QTH and work out the geometry, say the distance and beam heading from Anacortes. That's a start and it turns out to be quite simple, just a bit of navigation once you have the proper coordinates. For the answer, we have 8,275 miles or 13,317 km at a beam heading of 167 degrees east of north. If we go whole-hog in trying for a QSO, running the QRP limit of 5 watts output, we're looking at just over 1600 miles per watt. Okay, that's not easy but it's not impossible.

Suppose we spin the beam in that direction; do we at least have a chance in making contact from a physical standpoint? That's another way of saying that we're going to leave out the nasty part of DXpeditions: the pile-ups. Now that particular question has a multi-faceted answer, so let's dig into it bit by bit.

First, we will do some more geometry, seeing how many F- layer hops are involved. As you know, we've talked about that before, so it's not new to our discussions. One just needs to know how high to take the F-layer and the rest can be put in a simple computer program that's less than 1K in length. But if you're any kind of student of the ionosphere, you know that F- layer hops are almost always less than 4000 km in length so, without even turning on the computer, we know we're talking about at least four hops; but by turning on the computer, we put the finishing touch on the question and find that we're talking about a radiation angle of about three degrees.

So far, so good; we're going through the propagation maze on our own power. But if you're the curious type, you might wonder if the computer programs that are currently available for this sort of problem would be moving in the same direction, step by step. If you ask that question, you'll be surprised to learn the answer: "No!" Probably every program that's on the market or on a BBS would do the simple distance/heading calculation but only a small fraction would do the hop or the radiation angle calculations. The reason for that is easy to find. The older approach to MUF calculations did not make use of radiation angles per se, they only came into consideration when going beyond the MUF part of the calculation to find whether one's signal would pass through the E-layer and how much signal was lost due to ionospheric absorption and ground reflections. Since most of the present-day programs stop with an MUF calculation and never go on to the question of E-layer cut-off or signal strength at the receiver, those quantities are never worked out.

Okay, which programs are we talking about and how serious a drawback is the lack of hop information? As for the programs, they are of one class, MINIMUF-3 found in the RSGB publication "Amateur Radio Software" by John Morris, GM4ANB, and the Naval Ocean Systems Center programs MINIMUF-3.5 in the Dec. '82 QST article by Robert Rose K6GKU, and MINIMUF-85 by D.B. Sailors et al in NOSC Technical Report 1121 (July 1986). Those programs all use a control-point method found in the National Bureau of Standards monograph "Ionospheric Radio Propagation" by Kenneth Davies. We'll have more to say about that method shortly.

As for whether that approach has a drawback or not, it depends on where you live. Thus, our friend Joe QRP out in the flatlands around Wichita, Kansas would not be overly concerned about the lack of hop and radiation angle information when using those programs. On the other hand, if you live near hills or a mountain range, you'd like to know what's going on.

Take my case as an example. I have a hill to the north of my QTH that subtends an angle of about five degrees at the center of my Quad. When I look at MUF data to see if the band is open in the direction of Europe, I want to know the radiation angle. If conditions are such that the program shows a radiation angle of less than five degrees, I'm not going to hear or work Europe unless one more hop is involved. To the south, I'm better off as I look over seawater and, except for an isolated peak with the 2 meter repeater on it, nothing stands more than 0.5 degree above the horizon.

Given the above remarks, let's look at the control point method of making MUF calculations. Since our interest is primarily in DXing, we can leave out local contacts, say QSO's between points 4000 km or less apart, and go beyond one F-layer hop to greater distances. There, it was found empirically that propagation would hold up on paths greater than 4000 km in length until the ionosphere failed to support propagation at one point or another that is 2000

km from the end of the path. Thus, the propagation or MUF problem becomes one of finding the critical F- layer frequency at control points 2000 km from each end or, equivalently, at the midpoints of 4000 km paths from each end.

After WW2, the Central Radio Propagation Laboratory of NBS put out global maps giving the critical frequency of foF2 for different times of day, season and sunspot number. With the critical frequency for vertical incidence, the next thing required was the multiplication or M-factor for a path 4000 km in length. The foF2 data could serve also for shorter paths if one knew how the M-factor varied with the distance, but control point information would be obtained from other maps showing the critical frequency, MUF(4000)F2, for a 4000 km path. Thus, the technique was to locate the control points at 2000 km from each end of the path and look up the values of MUF(4000)F2 from the appropriate map. THe maximum useable frequency would then be the smaller of the two values of MUF(4000)F2.

Bringing all this back to the 3Y DXpedition, I would have been okay with the control point method, considering that my beam would be pointed south where there are essentially no obstructions to my RF. But to work out the MUF data, I would have needed a set of MUF(4000)F2 maps for Jan-Feb '87 when the sunspot number was around 10 or so. With that in hand, then it would be simply a matter of locating the control points, one just west of Baja California and the other north of Antarctica in the South Pacific Ocean, reading the MUF(4000)F2 values during a day and taking the lower of the two as the MUF. That's getting one's MUF data the hard way: manually! But it would have worked for me, thanks to my location, but for someone with a hill to the south, it would have been another story.

Of course, in all this discussion of the 3Y DXpedition, there's been no mention of my operating frequency. Obviously, it would have to be below the MUF but, being a QRP'er, I'd have been on 10, 15 or 20 meters where the D-region absorption would be fairly low. Now, reports of the 3Y DXpedition indicated they worked all the bands, from 160 to 10 meters. That means low band operators would need more than MUF data in their pursuit of the elusive 3Y contact. In that connection, the propagation calculations in the days of the manual methods of CRPL went beyond just the control point determination of MUF's. Thus, the path structure was tested by looking at the possibility of various E- and F-layer modes for the same distance. In this way, the radiation angle came into play and with E-layer data, it would be possible to see if an E-layer cut-off would be in effect. In addition, the ground reflection and absorption losses were calculated for each mode. On that basis, the most likely mode for a given frequency would be the one with the least signal loss.

As indicated above, the propagation programs in the MINIMUF series use the control point method. But as programs for personal computers, they cannot use foF2 maps or a corresponding large- scale data base from vertical incidence ionosondes. Rather, they make use of algorithms for the F-layer critical frequency which were developed from oblique incidence sounder data. Since the data base involved a number of paths of different lengths, it was necessary to formulate a function for the M-factor as well. Parameters in those two functions were then adjusted to give a "best fit" of the sounder data. The foF2 algorithm makes use of time-factors such as how long since the sun rose at ionospheric heights at a given location or how many hours since the sun set. moreover, time constants were introduced to take into account the various relaxation processes in the ionosphere. As for the M- factor, it was adjusted to take into account the difference between low latitude and high latitude paths as well as transequatorial paths.

The MINIMUF series stops with the MUF calculation and radiation angle considerations are not taken into account. Thus, the programs use coordinate data to find the path length, locate the control points and then calculate the foF2 and M-factor values for those points. It should be noted that in formulating the foF2 and M-factors, the MINIMUF algorithms are based on geographical coordinates. That turns out to be a serious deficiency of the MINIMUF approach to the problem as the ionosphere is essentially under geomagnetic control. Thus, the oblique sounder data should have been analyzed using a suitable geomagnetic coordinate system in setting up the foF2 algorithm and the M-factor.

The phrase "suitable geomagnetic coordinate system" requires some explanation. That is a way of saying that the description of the earth's magnetic field used in this problem should be one applicable at the altitudes where ionospheric processes are taking place, guiding electrons released by the sun's UV and X- rays. From earlier discussions in this series, you'll recall that the F-region is located at an altitude of about 300 km. Accordingly, the geomagnetic coordinate system used in ionospheric problems should apply there, close to the earth's surface.

Propagation and DX

Now the geomagnetic field is measured regularly, every decade or so, using satellites with magnetic sensors aboard. The data, giving field strength and direction relative to geographic coordinates, are tabluated and presented in the form of maps for the field at the earth's surface. These maps show a wide variety of local variations, magnetic anomolies related to ore deposits and such. The magnetic data, however, are also analyzed using a spherical harmonic analysis and this results in an elaborate mathematical model of the geomagnetic field, ordered by how rapidly the terms for the field fall off in going away from the earth.

The first and dominant term in that analysis is that of a magnetic dipole, the field strength for the dipole falling off as the inverse square of the distance from the center of the earth. That description is the one familiar to everyone, having a dipole area axis which intersects the earth's surface around 78.5 N, 69.0 W and at the corresponding antipodal point in the southern hemisphere. With that axis, it is possible to set up a system of geomagnetic dipole coordinates; the only requirements are to locate the geomagnetic dipole equator on the earth's surface and establish a reference point for geomagnetic longitude. That's easily done but in spite of it, that particular system of coordinates is not the appropriate one for organizing ionospheric data. The reason is simple. The dipole field falls off too slowly and is more appropriate for phenomena taking place out in space, say the Van Allen Radiation Belts, than close in as for the ionosphere.

For the ionosphere, a more reasonable system is one related to the field near the earth's surface. in that connection, those who study the geomagnetic field not only record the strength of the earth's field but its direction, both vertically and horizontally with respect to the geographic coordinate system. When speaking of the vertical direction of the field, the term is "dip" or the angle that the field makes with the horizontal direction. At the magnetic equator, the dip is zero, meaning that a compass needle there would remain in a horizontal position. In contrast to that, at the magnetic dip poles, the dip would be 90 degrees as a compass would point toward the center of the earth. With that definition, it is possible to use the observational material and locate lines of constant compass dip on the surface of the earth, giving a dip equator and two dip poles and other lines of constant dip, say every 10 degrees with respect to the horizontal.

That set of magnetic coordinates provides a better organization of ionospheric observations than one using geographical coordinates. In that way, ionosonde observations of critical F-layer frequencies may be readily converted into a data base for a computer system. However, when the manual system of maps was used, the question never came up. It was just a matter of finding the control points relative to the transmitter and receiver positions and reading off the MUF(4000)F2 maps. In essence, the magnetic control of the ionosphere was already built into the maps.

Since programs of the MINIMUF series uses geographic rather than dip coordinates, they're essentially using the wrong coordinate system and give less than satisfactory propagation predictions when used for paths other than the ones on which they were based. In contrast, the CCIR (International Radio Consultative Committee) has organized its data for numerical mapping of the ionosphere using a system of modified dip coordinates. As might be expected, propagation programs using coordinates along those lines give better results than the MINIMUF series. But beyond a different set of coordinates, those programs take quite a different approach to the MUF problem. Just to keep you interested, that will be the subject of the next article in the Propagation and DX series.

The infamous Zuni-Loop Field Day group are posed for their annual portrait. The group's 4A effort garnered a total of 646 QSO's from their 7,300 ft. elevation Field Day site.

Photo by Bob Spidell, W6SKQ

In the April issue, Cam Hartford, N6GA will tell us the story of antenna raising—Zuni-Loop style!

Product Review: Heath HM-9 QRP Wattmeter

by David E. Blubaugh ND1J
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Peachtree City, GA 30269

When I found a Heath HM-9 QRP Wattmeter kit under the Christmas tree last December, I was thrilled to no end. The QRP 'bug' had bitten me early in the year, but I had found my Bird Wattmeter wasn't satisfactory at the one-watt level. Would this new meter be my answer to accurate power and SWR measurements at the QRP level?

The Heath Company introduced the HM-9 as a complement to their HW-9 QRP transceiver and the two cabinets match in color. Current price class is $40 and it is sold in kit form. Heath specifications are as follows: The HM-9 measures RF power in two ranges selectable by a knob on the front panel: 0-5 watts or 0-50 watts. The SWR bridge is continuous to 50 watts. Frequency range is 1.8 to 30 MHz, 50-54 MHZ, or 144-148 MHz at the builder's option. Impedance is 50 ohms nominal. Connectors are SO-239 type. Weight is 1.1 lbs. and dimensions are 5-3/8" wide x 2-5/8" high x 7" deep. Stated accuracy is +-10% of full scale reading using a 50 ohm resistive load.

Heath considers this a "one-evening kit". Even those who have never assembled a Heath Product before will find this kit easy to build with no unpleasant surprises. I have assembled several major Heath products over the years and have always found them to be very well laid out. This kit is no exception and the manual is excellent. The builder must decide, at the onset of construction, which frequency range he desires. My kit went together with no hitches in a short afternoon. I wired it for 1.8-30 MHz in preparation for some serious QRPp HF work.

This kit has a built-in power calibration circuit containing 1% precision resistors so one can obtain the specified accuracy (10% of full scale) with no additional calibration equipment. A low power signal (about 5 watts) is applied to the meter terminating in a 50 ohm dummy load. A jumper on the circuit board is used to read power using the power calibrate circuit and then the jumper is moved to the normal position and the Power Calibrate control is adjusted until the meter readings match. There are other methods to calibrate the meter and obtain better accuracy. More on that later. The SWR bridge is capable of giving an SWR reading with power as low as 1/2 watt! This is really convenient for the QRPp types.

I have a craving for power measurement accuracy and ideally I would like to know exactly what my output power is for each contact. I thoroughly enjoy QRPp and adjust output on my HW-8 to very low power levels on a regular basis to challenge nature. Accuracy in dealing with any measurement is relative and has a certain amount of uncertainty or error associated with it.

I offer this analogy: You buy gasoline at a service station which has one of those state-of-the-art gas pumps that read fuel sold to the one-thousandth of a gallon. Wow, you say--what accuracy! Oh, not so! Who's to say that pump has been calibrated to a thousandth of a gallon (.128 oz.)? You may read that many digits but accuracy can be an entirely different matter. (Have you ever fueled your nearly empty car and found the pump selling you 14.643 gallons when your car only has a 14 gallon tank?)

To no surprise, I had found my Bird meter very inaccurate at the 1-5 watt level (with a 50W HF element installed) and I was hoping I could obtain reasonably accurate power readings below one watt with the HM-9. The meter's 0-5 watt scale is such that over 50% of the needle's allowable movement is used to get to one watt and over 70% to get to two watts. When using more accurate calibration methods, one has an excellent quality QRPp meter which can be read down to very low milliwatt levels. Two such methods are given in the Heath manual: calibrate using a known, accurate wattmeter or use an RF voltage probe with a high input impedance VTVM or DVM. This latter method is the best way to inexpensively calibrate, so forget the other wattmeter. When you calibrate, decide where on the scale you want the most accuracy and set the meter to read correctly at that point. The beauty of the RF probe is you can check from one end of the scale to the other and know just how accurate each mark on the scale is. I stuck a small paper scale to the top of the meter window and put marks each 100mW up to one watt. I'm confident in its accuracy to better than +-50mW with the RF probe I have. Remember the calibration is only as good as the accuracy of the RF voltage measurements taken.

I feel the HM-9 is an excellent QRP wattmeter. If you don't have a reliable way to assure yourself that you are indeed operating QRP, or if you have no way of checking SWR with that little 700mW homebrew, this kit just might be a good thing to add to your wish list. Of course, the cabinet doesn't match my HW-8 so one of these days it might just sit atop its cousin the HW-9 instead!

Over 65 percent of the world's population goes through the day without coming in contact with a newspaper, radio, television or telephone.

Some Ideas For HW-9 Mods

by Rod Breaux, WA5OIH
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This year the QRP bug bit me again...one month before Field Day. My old homebrew QRP rig had been cannibalized for parts and the QRO rig would not operate on 12 volts. I needed something quick and inexpensive. A quick look around and I picked the Heath HW-9. It was built in short order and debugged in time to operate Field Day. Some of the bug remedies have worked wonders, while others have just worked; but they all add up to a rig that is more fun to operate. I hope some of them help those of you with similar problems to enjoy your rig more.

What's that funny noise ?

My first encounter with a problem started at initial power on. The audio had a peculiar quality I had heard in a homebrew project. A quick look at the schematic and a voltage check revealed the source, capacitor C336 on the T/R board. This 2.2uf electrolytic was apparently designed into the circuit in reverse polarity. A new 2.2 uf was installed "backward" and the problem disappeared. As a bonus, the audio output increased providing a significant improvement in the signal to noise ratio. Capacitor C336 couples the product detector U303 with the lowpass filter U304B. The capacitor value is not especially critical and any unit of 10uf or less and a voltage rating of 15 volts or more will work fine.

Bandpass won't bandpass ?

On 15M I was unable to properly tune the bandpass filter L412, L413 and associated components. When Heath's alignment procedure was followed the output was only 2.3 watts across the band. Several attempts at retuning resulted in either low output overall, or near rated output at the high end of the band and very little at the low end.

The solution to this problem was very simple. I switched transformer cores. Proper tuning was then easily achieved with almost full rated output across the entire band. The cores evidently had enough permeability variation to overcome the effects of out-of-spec components and enable L412 to tune the low end of the band. I suspect a similar problem on other bands might respond to the same solution. Be careful with those slugs, they're fragile and probably can't be replaced.

Low output ?

After assembly and tuning, my HW-9 produced about 4.5 watts out on 80 and 40M, 3.4 watts on 20M, 3.7 watts out on 15M, and 2.6 watts on 10M. I had hoped the output would have been a little higher, especially on 15 and 10M. Some HW-9 owners reported significantly greater outputs, so I began looking for ways to equal their performance.

After a lot of experimenting, my rig now has in excess of 6 watts out on 80 through 20M and in excess of 5 watts out on 15 and 10M.

The mods described are for the rig with normal transistor gain variations. If you have a significant departure from the published output specs, locate the source of the trouble before attempting mods. This is not a plug in the part and start operating approach so, unless you are comfortable with solid state circuits, let someone else do the mods.

The first area I looked at was the low-pass output filters for 15 and 10M. I changed the fixed value half wave filters to 'sloppy network' filters by making the center capacitors, C563 and C566, variable components. I used ARCO trimmers sized to allow capacitance variation well over and under the original values. Keying the rig and peaking the capacitors produced nice broad peaks in output which netted about 1 to 1-1/2 watts greater output. The trimmers were then removed, measured, and replaced with silvered micas. The filters for the other bands were not modified.

The next thing looked at was the driver stage, Q404. This stage utilizes inverse feedback in the form of R414 and C432. The network equalizes stage gain and aids stability at lower frequencies. By increasing the value of R414 in steps and monitoring for instability, I was able to arrive at a point where the 80 and 40M outputs were in excess of 6 watts. I chose to limit the output to a little over 5 watts and lowered the value of R414. As a starting point, you can start with a value of 1.8K and work up slowly. My rig remained stable with 3.3K at R414. There is the risk of overdriving the finals here, so use caution. The effect of this mod is most pronounced on the lower bands and minimal on 10M. I recommend monitoring 80M during this mod.

The last mod to the drive chain was at the emitter circuit of Q402. Resistor R415 was changed to a jumper with a ferrite bead. This change resulted in an increase of about 3/4 to 1 watt on all bands. Q402 is a high gain device with a very high fT and can exhibit instability even without this mod. Use caution here and monitor for any signs of stage oscillation.

With any of the above mods, the power output should increase smoothly as the level control is advanced. A sudden increase in power or a sluggish response indicates trouble. This test is not an adequate monitor of spurious oscillations however, especially if the output is monitored on the output side of the low-pass filters.

My philosophy in achieving greater output was not to turn the HW-9 into a QRO rig, but to run it as close to the 5 watt legal limit for contest operation. Even a 1/2dB increase will make up for a lot of feedline loss.

VFO drift.

From what I've read, everyone has had this problem, including my rig. The answer in my case was to remove the shield can and arrange the components so that none touch each other...or the shield can when it's replaced. This includes VFO coil L118. Bend the top of the can if necessary to allow coil clearance. After this simple job, VFO stability was better than the published specs and will zero beat my Yaesu for hours. This may not cure your drift, but is sure easy to try.

While you are inside the rig, solder a small piece of flexible conductor (ie, RG-174 braid) from the tuning capacitor shield (gold or copper colored metal) to the ground lug of adjacent AF gain control R3. The electrical connection to ground is poor as designed and may lead to instability.

Transmit offset adjustment.

Here is a very easy adjustment that will increase your QSO rate. Connect your regular station rig (not another HW-9) to a dummy load and tune for a few watts output. Set it up for normal CW operation and switch in the sharpest IF filter available. Key the rig and peak the signal in your HW-9 (with selectivity switch in the narrow position). Unkey the station rig and key the HW-9 (also into the dummy load). While it's keyed, turn R131 on the oscillator board until the signal peaks in the station rig. That's it ! Unless your station rig has offset

Zero Set & WWV Mods for the HW-8

Rulon Van Dyke KA7BCD
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A short while after finishing my HW-8, I became disappointed with the way it would shift frequency from one day to the next. It almost seemed like it would change about 5 kHz every time I turned it on. I never really knew where I was unless I had another receiver to constantly calibrate my HW-8. So, I set about to remedy the problem.

First I thought it would be simple to put the 15 MHz WWV into the HW-8, since you only had to shift the 14 MHz heterodyne oscillator by one MHz. Usually the bandwidth and injection level of the heterodyne oscillator have enough overkill to allow the slight retuning to accomodate the 14 and 15 MHz oscillators with no degradation of sensitivity or performance in the transmit mode.

I ordered an experimenter crystal from ICM [1], catalog no. 031310 at 23.895000 MHz for less than ten dollars. A DPDT WWV switch and the new crystal soldered on a small PC board were mounted on the back panel near the heterodyne oscillator crystals. One side of the crystal is connected to the radio ground from the ground foil on the small PC board, through a metal L bracket mounted on the back panel. Make sure you scrape the paint off around the L bracket mounting hole to ensure a good connection.

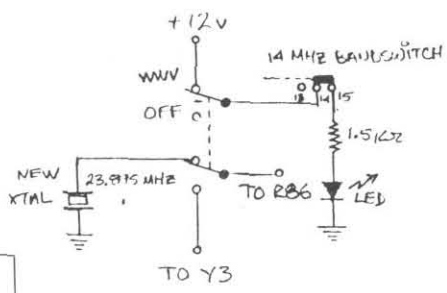


Fig. 1

Fig. 2

The foil between R86 and Y3 was cut with a small knife (see figure 2). Two holes were then drilled in these two foil halves, one near Y3 and the other near R86. A wire should be soldered from the center pole of one half of the DPDT switch to the drilled hole near R86. The new hole near Y3 and one side of the new crystal should also be soldered to the remaining positions of this switch half. The other half of the DPDT switch is used to turn on a small WWV indicator LED. I mounted the LED near the lower right corner of the meter on the front panel. Twelve volts is routed through the DPDT switch through an unused section of the 14 MHz bandswitch, then through a 1.5 kilohm resistor to the anode of the LED (see figure 1).

The heterodyne oscillator is the only adjustment needed to make WWV work. Set the bandswitch and the WWV switch to the 14 MHz position, then measure the RF voltage at TP-1 with an RF probe. The RF voltage on my HW-8 was about .12 volts. Now set the WWV - 14 MHz switch to WWV and turn the bottom slug of L19/21 until the RF voltage measures slightly less than that in the 14 MHz position. This was about one or two turns on my HW-8. My RF voltage in the WWV position was adjusted to .1 volt RF. I checked my HW-8 on a communications service monitor and found there was no degradation of sensitivity on the 14 MHz band with this particular tuning procedure. The sensitivity of the WWV position was also the same as the sensitivity ont he 14 MHz band!

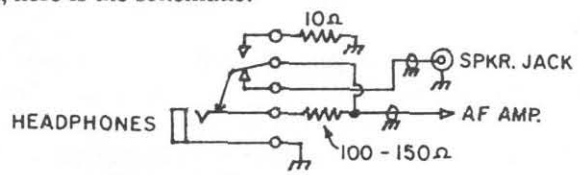
The second modification took a lot of time, patience and some intricate work. This modification shouldn't be attempted unless you are patient and are very careful about your work, since tolerances and room for error are limited. My HW-101 gave me the idea for the zero set modification for the HW-8. Basically, the dial plate is changed to work on a clutch system. So when you hold the zero set button

SOME IDEAS...

problems of its own, you are now set to peak a received signal in the HW-9 and answer him in or near his sharpest passband. After this adjustment last Field Day, my QSO rate increased from 11/hr to just over 19/hr. All those contest filtered rigs were simply not hearing me !

Headphone Operation

As designed, the HW-9 operates with the headphones connected directly to the AF amp output without providing a means of phone sensitivity reduction. Not only does the signal-to-noise ratio suffer to a degree, but the inbalance between speaker and headphone audio levels is annoying. Replacing the existing phone jack with a unit incorporating an automatic SPDT switch (used in commercially built ham gear) remedied the problem. The addition of 10 ohm and 100-150 ohm resistors completes the mod. If you are not familiar with the circuit, here is the schematic.



B- ground connection

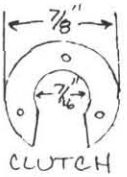
The B- lead from the power plug connects to ground at J3, the speaker phone jack, and via the audio cable shield to other chassis locations. The connection of J3 to the chassis is only a pressure connection; in the interest of the shortest low resistance joint, install lockwashers between J3 and the chassis. The lockwashers insure a good, low resistance bond and prevent the negative leads path to ground being via audio lines and the T/R board.

Summary

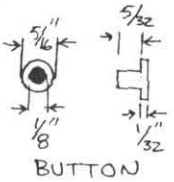
These simple and inexpensive modifications have been a lot of fun and have resulted in a more competitive rig. I hope that those of you who try some of these mods have as much a success. I have also modified the rig to incorporate an AGC on/off switch and manual IF gain control. Time permitting, I hope to submit the procedure to the Quarterly in the near future.

down, this holds the dial plate from moving thus allowing the tuning capacitor to slip in the dial clutch assembly as the tuning capacitor is changed.

First I found a small one inch square piece of plastic about 1/16 inch thick. The plastic needs to be thick enough so that it won't strip out when a small screw is tightened down. See figure 3 for the dimensions of the clutch plate. Three holes were then drilled in the clutch plate equilaterally. The holes need to be at least 10/32 inch from the center of the clutch plate.



CLUTCH
Fig. 3



BUTTON
Fig 5.

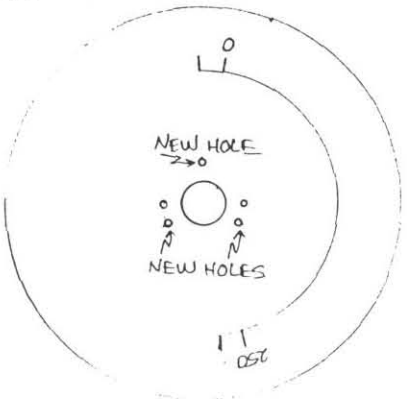


Fig 4.

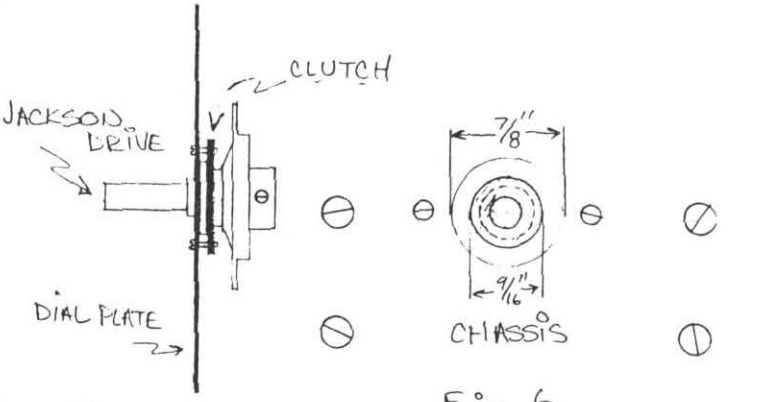
The holes need to be small enough to allow a small screw to be threaded when it is screwed in the clutch plate. Two of the screws used to mount the dial plate to the Jackson drive can be used for clutch screws. After the holes have been drilled in the clutch, the clutch can now serve as a marking guide for the new holes that will be drilled on the dial plate. The pattern that worked well for me is shown in figure 4. These holes can be slightly larger than those in the clutch plate since they don't need to be threaded. If you make these holes too large, it may introduce some play in the dial/clutch assembly.

You should try to remember what position the clutch was in when the dial plate was marked, since the dial and clutch will be mounted together later on.

Next I found a small piece of plastic that I could cut and sand into the shape of a button, as shown in figure 5. An old escutcheon may work.

The face plate and Jackson drive should be carefully removed. The dial plate mounting flange on the Jackson drive should be filed down to about 9/16 inch in diameter and the hole in the chassis should be expanded to 7/8 inch, as shown in figure 6. I then expanded the diameter of the hole in the faceplate to 7/8 inch and drilled a hole for the zero set button as shown in figure 7. I located the button far enough away from the center of the dial so that the back of the button wouldn't rub on the dial scale and markings. This measurement came out to be almost 1-1/2 inch from the center of the Jackson drive hole.

Finally, the Jackson drive can be reinstalled in the VFO assembly. Slip the clutch behind the dial mounting flange, then mount the dial plate to the clutch with three small



DIAL ASSEMBLY
Fig. 8

Fig. 6

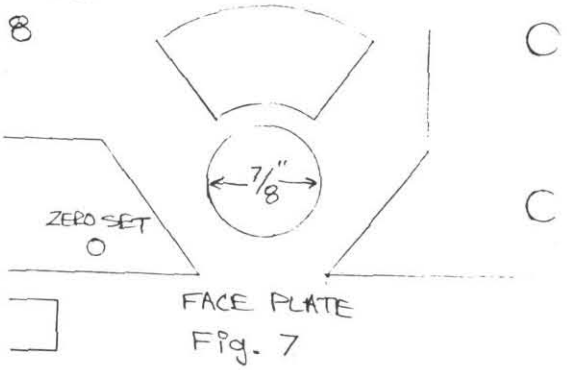


Fig. 7

screws. You'll want to make sure the clutch doesn't drag on the enlarged chassis hole. You should tighten up the mounting screw until the dial takes a little bit of effort to slip the dial/clutch assembly on the Jackson drive. You should also make sure the clutch screws don't drag on the dial mounting flange.

You can now reinstall the faceplate with the zero set button in place. The clutch screws can be adjusted without taking off the faceplate. you should make sure the screws won't drag on the faceplate hole. See figure 8 for the completed assembly.

After tuning in QQV, you can easily calibrate your dial and know where you are and never have to worry whether or not you are out of band. On my HW-8 I added the 25 kHz calibrator as described in QST for October 1978. Now I can keep my HW-8 calibrated to within 25 kHz across the entire range of the VFO and I never have to worry if my VFO is calibrated.

[1] International Crystal Manufacturing Co., Inc.

P.O. Box 26330, 701 W. Sheridan, Oklahoma City, OK 73126- 0330


Sunlight has weight. That is, it exerts a pressure on anything that obstructs it.

Tune-up Bridge Fits Inside Your HW-7 or HW-8

by Jerry L. Bartachek KD0CA
1114 DeForest Ave.
Iowa City, Iowa 52240

This bridge is based on the resistive bridge networks found in "Solid State Design" by DeMaw and Hayward. It uses parallel resistors to increase the power handling capability and is built on a tiny scrap of circuit board which can easily be installed inside your QRP rig. The schematic is shown in fig. 1 and my circuit board layout is shown in fig. 2. The circuit board is installed on an "L" bracket which I attached to one of the mounting screws on the SO-239 antenna connector. The toggle switch is mounted in a hole I drilled in the back panel halfway between the antenna connector and the key jack. This switch interrupts the wire from the T/R relay to the antenna connector and inserts the bridge into the line for antenna tuning.

Here is a list of advantages for having this bridge installed inside your HW-7 or HW-8:

1. A dummy load and a reflected power indicator go with you inside your rig; no extra junk to carry.
2. This bridge attenuates your transmitted signal when you tune up, thus reducing QRM.
3. You can adjust portable antennas and transmatches without endangering your finals since a proper load is always presented to the transmitter.
4. It is so small that it can fit inside the most compact rigs or can be included in your homebrew rig designs.
5. You don't lose any of the operating functions of your rig with this installation.
6. All of the parts are available at your local Radio Shack store.
7. With a descriptive note about the bridge stapled into your operating manual, it can increase the resale value of your rig.

In operation, you throw the 3PDT switch and the bridge is placed between one transmitter and the antenna connector. The rig's relative power output meter is "borrowed" for the bridge, yet is "returned" to its normal function when the bridge is bypassed for normal operation. The antenna can be disconnected from the rig to give a rough estimate of relative forward power when the bridge is in the circuit. The only adjustment of the bridge is to remove the antenna and adjust the little 10K PCB pot so the meter reads what it normally would as a relative power meter with the bridge bypassed. Then with an antenna connected, the meter reads a null when the impedance presented to the rig is close to 50 ohms resistive.

This resistive network bridge can easily handle 2 or 3 watts output. Even though it does not give a quantifable SWR reading, it very accurately shows when the antenna system is matched and that is all that's necessary. With this bridge, my HW-7 reads 1.2:1 SWR at meter reading 1; 1.5:1 SWR at meter reading 2; and 2.5:1 SWR when the meter reads 3. You may want to substitute known resistances at the antenna connector and jot down a calibration chart for your meter after you build this handy little bridge.

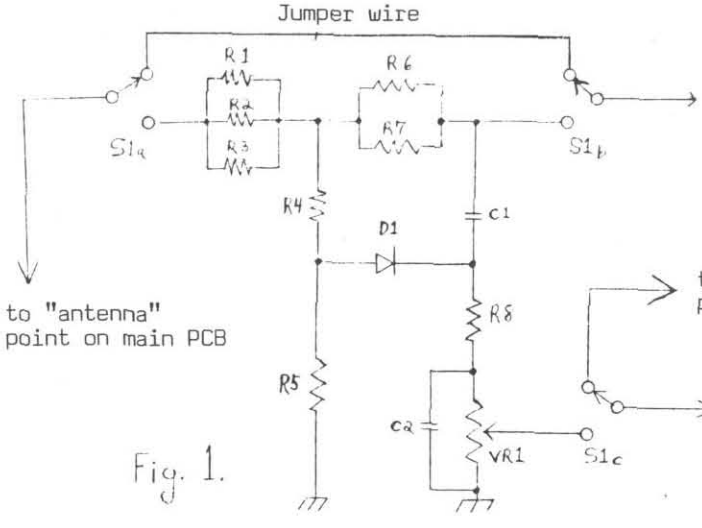


Fig. 1.

Parts List:
C1, C2: .01μF, RS 272-131
D1: any Si or Ge small signal diode 1N914
R1, R2, R3: 82Ω; 1/2W, RS 271-011
R4, R5: 15Ω; 1/2W, RS 271-003
R8: 10K, 1/2W, RS271-034
S1: 3PDT Switch RS271-034
VR1: 10 K pot RS271-218 trimpot
R6, R7: 100Ω; 1W RS271-152

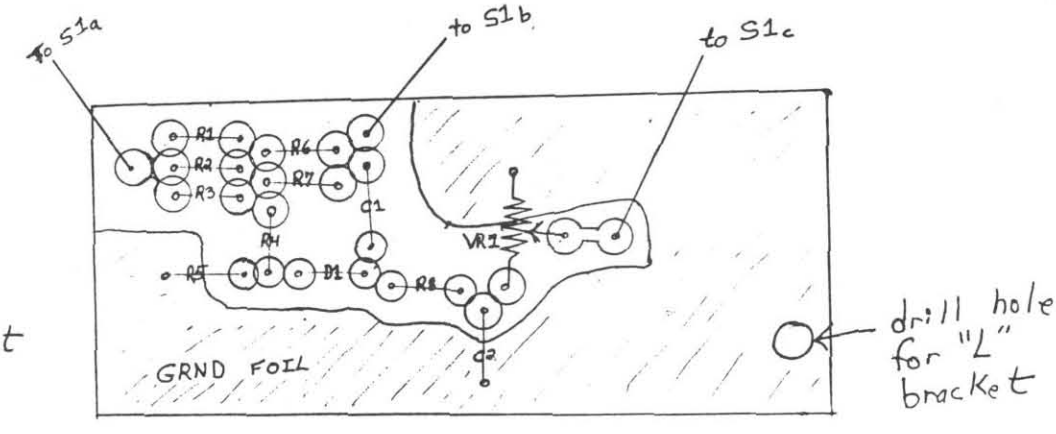


Fig. 2

Circuit Board Layout

DeMaw Kits - A Review

by Fred Bonavita, W5QJM
P.O. Box 12072, Capitol Station
Austin, Texas 78711

The new line of kits introduced recently by Doug DeMaw, W1FB, is proof positive of the merits of the old Amateur Radio adage: KISS -- Keep It Simple, Stupid.

Doug, who is well known in QRP ranks for his fine technical articles in QST and for being the author or co-author of numerous books, is marketing three modules which can be combined into a VXO-controlled, mono-band transmitter with up to 5 watts' output and with break-in keying and antenna switching. And, as can be seen in the photographs, this trio can fit into the palm of a hand.

Readers of Doug's well-received QRP Notebook will note a similarity between some of the designs in that publication and those for this series of kits. The simplicity and straight- forwardness of the designs are evident in both and enhance their appeal.

In this collection are the TR-1A break-in module, the EX-1A CW exciter and the PA5-HF power amplifier, which will kick out up to 5 watts when driven by the EX-1A or similar unit capable of about a quarter-watt output.

Units for 40 and 20 meters are available now as standard, and Doug says he can provide a special-order kit for 80 or 30 meters on request. Factory wired-and-tested units are available.

Even for a kit klutz like me, this series can be assembled in one evening. The break-in module took less than 20 minutes; the VXO went together in less than an hour; and the amplifier required slightly more than an hour, primarily because of the need to wind coils and transformers.

Assembly of the amplifier is made easy by the fact the printed-circuit board for it arrives with the final transistor and its heat sink already mounted.

The whole process is boosted by legible circuit diagrams; x-ray views of the boards, showing where components fit; and easy- to-follow instructions. The boards are of good quality and by A&A Engineering, and the components are fresh although, as Doug warns at the outset, some do not have the same shape or size as shown in the parts-replacement diagram. Not to worry.

The TR-1A break-in module could just as easily be incorporated in another rig as in this assemblage. The relay keeps up with keying to more than 20 wpm, and it will handle up to 25 watts of r.f. There's even provision for muting a receiver.

The exciter module (EX-1A) is a transmitter in its own right, and by swapping emitter resistors, the power can be controlled from about 10 mW to a whopping 500 mW! Doug reports working some interesting DX with the exciter running "barefoot" on 20.

The VXO tuning capacitor is not included in the parts, nor are a crystal or other items of hardware, such as jacks, switches, etc. But Doug advises he has had success tuning his EX- 1A with a 100-pF trimmer capacitor, which sells three for $1. [1]

Deadlines for this review prevented complete testing of the power amplifier, but that will be gone into together with other aspects of these kits in a later piece.

Pricing for these modules is reasonable: The EX-1A and PA5-HF are $29.95 each, and the TR-1A is $21.75, all plus shipping and handling.

For more information, send a large S.A.S.E to Oak Hills Research, 4061 North Douglas Drive, Luther, Michigan 49656. Be sure to ask also for the company's flyer on components for homebrewing gear.

[1] The 100-pF trimmers are priced at three for $1 (stock number CP24) from Hosfelt Electronics Inc., 2610 Sunset Blvd., Steubenville, Ohio 43952. A free catalogue is available for the asking.

Classified Ads

WANTED: Dow Key "BUG", this old lefty urgently needs one to improve his fist. Hollis Button WF6U, 1025 W. Parr Ave., Campbell, CA 95008. 408-378-0436 call eves.

WANTED: Kenwood TS-130V. Must be in good condition. Contact Carol Kernats NS9L, 506 Melody Lane, Verona, WI 53593

WANTED: Ten Tec Calibrator for Argonaut 509. Art Trick WA4HXS, Rt. 6 Box 39, Jonesboro, TN 37659

WANTED: TenTec Model 670 Keyer; TenTec Model 247 Tuner. Les Shattuck WB2IPX, 46850 Muirfield Court #104, Sterling, VA 22170

FOR SALE: Ten Tec Accessories: #220 2.4kHz SSB filter for Argosy, Omni or Argo 515 $45; #217 500Hz CW filter for Argosy, Omni or Argo/Triton (see April 87 Quarterly) $48; Circuit board (complete with components) to use #217 with Argo/Triton $5; Argosy noise blanker (#223A) or audio filter (#224) $23 each. Charles Bright KA0FDL, 4115 Buckley Ridge Ct., St. Louis, MO 63125. (314)544-5584

SWAP: QRP coleectors' items: 15 near mint copies of "The Milliwatt, National Journal of QRPp," Adrian, K8EEG, Weiss' classic and now defunct QRP magazine, various issues from 1970 to 1975. Will swap for any equally interesting QRP material. Bill Lowenberg W2OOJ, 52 St. Clair Dr., Delmar, NY 12054

Classified Ad Policy

The Quarterly will accept short "classified ads" from its members who desire to sell equipment and other items of interest. They will be printed on a space available basis. Send information to the editor labeled "QRP Quarterly Classified".

Call for DX Articles

Several ARCI members will be DXpeditioning in exotic locals this summer. The Quarterly is looking for articles about QRP DXpeditions, QRP DX stations, and anything related to QRP DXing. Are you planning a trip? Have you already made one? Are you the QRP at the other end of that exotic callsign? We're waiting to hear from you.

Do You Homebrew?

Many of us are interested in rigs and accessories that we can build for ourselves or use a projects for newcomers to the world of low power. The Quarterly wants both long and short articles on homebrew construction, design and technique.

Members' News and Activity

by Fred Bonavita W5QJM
PO Box 12072, Capitol Station
Austin, Texas 78711

[Ed. Note: Beginning with this issue of The Quarterly, the column formerly titled "Activities and Awards" by Fred Turpin, K6MDJ, will be split into two columns. Fred Turpin will continue to write the Awards column and Fred Bonavita, W5QJM, will be taking over the activities portion. We'd like to welcome W5QJM back to the Quarterly staff. Older members will recall that he is a former editor of the Quarterly.]

The response to the offer in the October issue of The QRP Quarterly for WELZ RP-120 QRP power meters was overwhelming and gratifying. The 30 meters the club had went in a matter of days, and more than twice that many requests for them had to be returned, unfortunately.

Those meters are imported by ENCOMM, and a letter to Tom Gentry at the Dallas-area company could turn up the names of some dealers who might stock them. Don't expect to get them at the bargain-basement price the club had, however.

It was interesting to note how many members reported never having heard of the RP-120 meter or having seen it mentioned in ENCOMM's ads in the various major ham magazines. The club will endeavor to have additional offers of QRP-related equipment in the future.

One of those who ordered an RP-120 (but whose check had to be returned) was Tony Colaguori, W2GUM, who wanted it for use in a radio construction class he teaches at a Florida trailer park where he winters. He reports eight newly licensed hams in his group (mostly retirees in their 60s and 70s) and they are building the "Little Joe" transmitter -- a one-watt CW rig from the pages of QST.

Lou Berry, KF5OW, reports feeling lonely. He's the only QRPer in his radio club in Albuquerque, he says, and takes great pleasure in showing others what he's done in his seven years of hamming.

Lou reports working all 50 states in a week, running low power. His station consists of a pair of FT-7s, a 6-meter rig, and a Butternut vertical using a metal roof more than 250 feet long, 30 feet wide and eight feet off the ground.

From Al Clark, KD4EO, of Madison, Alabama, comes word that after four years of being an "armchair QRPer," he's planning on being back on the air this winter with a homebrew rig. Al formerly ran an Argonaut 509 and 515 into a 70-foot wire or a Zepp, and he logged WAS in the process.

John Geach, KS7R, reports moderate success in building a compact QRP rig before running into some trouble: "I got the oscillator running and the audio amp going, but nothing in between! This fall or winter, I'm going to rebuild it...I enjoy homebrewing. You learn from your mistakes."

John stays on the air in Helena, Montana with an HW-8, but is eyeing either an HW-9 or an Argonaut 509/515.

From South of the Border, R.C. "Jake" Jacobs, XE2IOF, advises he has moved to a new QTH not far from his old one at Mulege in the Southern Baja. He's using an Argosy II and recently got cards from 5N0WRE in Lagos, Nigeria, which he worked at 3.5 watts output SSB, and from EA2BNU, San Sebastian, Spain with 2 watts CW.

Jake drives an old school bus back to his home in California and, on a recent trip, he returned with a two-element beam, a used quad in need of repair, a homebrew QRP transmitter, and a "big bag full of stuff from Radio Shack and swap meets."

"I was maxed in the old school bus," Jake says. He also managed to find a refrigerator and a stover for the bus, which he plans to rig for living and then drive around Mexico, working QRP as he goes.

J. Kelly, KI6LC, of Santa Ana, California says he found a used HW-8 at a swapmeet and is busy adding modifications to it. Included with it (or was it in it?) was a 12-watt amplifier.

Steve Hutcherson, WB5CTS, who describes himself as an "off- and-on ham for 23 years," has recently become active on the hf bands again and is "hooked on QRP." Steve lives in "one of those high-density housing subdivisions (in Oklahoma City) which do not allow towers or large antennas of any kind." He's running an FT- 78 and an HW-8.

From up Cornwall, Ontario way comes a note from Peter Purdy, VE3NVP, who says he is an avid QRPer and recites the following station data to prove it: Argonaut 515, Argosy 525, a TH3Jr. at 40 feet, a 40 meter inverted vee at 35 feet, a quarter-wave vertical (32 feet) for 40 meters and a ground-fed, quarter-wave wire vertical for 80.

As of mid-September, Pete's tally was 44 states worked (38 confirmed) and 58/31 on the DXCC scorecard. Most of his QRPing is on the Argonaut, with the Argosy as a back-up rig. A few states confirmed were worked at 400-500 mW output.

And finally, A.E. "Geno" McGahey, AL7GQ, advises there is plenty of QRP activity in the Jackson, Miss. area where he lives. Dennis Smith, N5HGN, is writing a QRP column for the monthly newsletter of the Hattiesburg ARC, and interest in running low power is growing.

Geno says there will be a QRP seminar at the Jackson hamfest in February "with displays and the works." And QRP check-ins on the local CW net are on the upturn -- almost to the point QRPers will be in the majority.

The following is Fred Turpin's last official contribution to the activities column:

The second printing of The Hotwater Handbook is now history, with the 300-copy printing being gobbled up by QRPers all over the world. Mike, WB8VGE, and Lynette Bryce were able to edit and publish the book and produced a clear profit of $1,000 for the club. Our sincere thanks to both of you for this act of kindness, and to Fred Bonavita, W5WJM, who donated the rights to the book.

Mike has proven, with this project as well as the Two-fer, that this sort of endeavor is clearly a viable supplement to club financing. Are there other such ideas out there, something that the club might finance, the membership produce and the Candy Store market to help finance our growing club? Good ideas are of no value unless they're put into action, so let your officers and directors know your ideas and feelings; you may be holding a key.

We all missed seeing Ade Weiss, W0RSP, at Dayton this year. Ade was laid-up n the hospital for a spell and is very much on his feet now with his new book, "The History of QRP in the U.S., 1924-1960." It's now on the streets, and I'm told it's a dandy. Write Milliwatt Books, 833 Duke St. #83, Vermillion, SD 57069

Did you read about Cam Hartford's bicycle/QRP experience, in the October issue of 73's QRP forum? Cam, N6GA, doesn't stop there with ingenuity. Cam brings this sort of energy to FD each year in the Zuni effort and leads in the group's all-band CW attack and aerial antics.

Vic, G0BVZ, reports a lot of 20, 40, and 80 meter activity in Europe and enjoys operating portable from the bogs in the Peak District with his half-sized G5RV and QRP.

KA3OQQ, Carl Moore, has returned to QRP radio after a few years absence. Except for his crank-down Century 21, his station is all home-brew and usually running less than one watt to a 1100-foot long wire.

Lowell Corbin, KD8FR, reports that the Hoot Owl Sprint was a bust with only six stations worked on 80m as the other bands were being clobbered by the CQ-WW DX contesters; so he joined them! Wes, AC5K, does a lot of WPX chasing and is getting close to 5BWAS with his Argosy, 3-element beam and

wires. John, G4SVE, hangs out on 20 CW and just worked W8RSW running 2.4W!

Interesting letter from Dan Walker, WG5G, via NM7M. Dan gave up on adding a third element to his Mini-Quad due to lack of response from the manufacturer. Most HQ-1 owners I've talked to won't dispute the gain, say it's well built and they like its neighbor-friendly design. The same folks will agree that it's quite narrow, has a lousy F/B and you should buy it through a dealer from stock.

Stimulated by the QRP Golden Jubilee quest of Mary Lou Brown, NM7N, Dan jumped into the Jubilee race on January 24th and wrapped it up on June 4th with VS6DO. Dan also mentioned his friend Bob, WY5L/KH3, on Johnston Island, as QRP friendly. Bob is the same fellow that Lou Berry, KF5OW, had me send a complimentary KM/W certificate to for pulling him through. Lou sprang for enough postage to send Bob and the Johnston Island Radio Club a real QRP ARCI care package, including a color picture of our Candy Store girl to hang on their QRO switch. Bob has seven elements on 15m and will really lean into a QRP signal, we're told.

Petr, OK1DKW, is a founding member of the OK QRP group, and he writes a QRP column in a Czech radio amateur journal. Petr has earned the DXCC-QRPp and DXCC-Milliwatt trophies, and he assures me that the Czech QRPers are listening and anxiously anticipate Cycle 22. Petr would also like to work out a radio magazine and book exchange with other QRPers of Czech or Slovak ancestry.

The daughter of Wayne, WB8ZWW, and Nancy Watson, Brianna (pretty name) who is now ten and a girl scout, went to camp for a week this summer and came back a "Ham". She just blew Wayne away, as Brianna had never shown more than a casual interest in the hobby. Wayne explained that part of the proceeds from the Dayton Hamvention each year go to support summer youth programs such as the one to which Brianna was exposed. Just 36 of the more than 5,300 children who were exposed to the program received their licenses, so Pop is pretty proud of the new ham in the house: Brianna Watson, KB8DUU - QRP of course!

Max Svoboda, WB8IOA, runs an Argosy 515 and a long wire, with 50 countries and 44 states confirmed. Max suggests that living on a large lake brings out the best in just about any antenna he hangs.

"My DXCC-QRP is now up to 40, including a bunch on SSB," says Ed DeBuvits, W5TTE. "Big thrill was a DJ followed by an IK2 on 20 CW running 2.5 watts...and that's with my 40 m horizontal loop. Darndest antenna! Got a 569 from a G3 running 4 watts; he was amazed, I almost fainted!"

Keep an ear to the ground for the mW 14 MHz of G4RAW, Stephen Ortmayer, as Cycle 22 picks up.

Mark Gustof, KE7JH, says his 80 acres and trees of Illinois with its poor Pacific propagation is a trade-off for their city lot in Phoenix with its pleasurable openings to the South Pacific.

Dan Walker, WG5G, wants to know if anyone has modified the HW-9 RIT? He wants to work split, but one kHz just isn't enough. Any suggestions will be greatly appreciated.

I like the NO5W, Chuck Sanders, perspective of QRP: Quality radio through Reduced Power, Right Perspective, Real Patience, Reduced Pennies, Real Projects, and I'm sure we could add more.

Hope you're enjoying the QRP column of Rich Arland, K7YHA, in WorldRadio. Rich just recently retired from the Air Force and has relocated to the Pennsylvania area and into the ole 8-to-5 grind. No more NCO's club for you, bud! Having experience the magnetism of the G-QRP club while serving abroad, Rich brings this and other experience to add depth to our BoD.

"Doc", W8AVB, was in QSO with QRPer Jack, N7IGP, who was burning up the sky with his W9PNE button beam when they connected. Doc was impressed with Jack's QRP signal and wanted to now more about his beam. Jack sent the Quarterly article to Doc plus an ARCI application. Doc is hooked, but he knows the sympthoms well, having retired as a physician 13 years ago. He can't stand it any longer and joined the ARCI. At 78, Doc still enjoys ham radio and QRP as much as he did in 1923 when he started out with a small coil and crystal detector, and he appreciated Jack for introducing him to QRP. So, make sure you keep a few applications on hand for just such an opportunity. you can get good sharp copy for your local reproduction from Membership Secretary Bill Harding, K4AHK, for an SASE.

Please send along news of your activities to the above address. Deadline for the April issue of The Quarterly will be January 25, 1988, so let's hear from you.

Awards

Awards Manager Fred Turpin K6MDJ
Box 9145
Cedarpines Park, CA 92322

As I write this, the Fall QSO Party is in full swing and, unless I miss my guess, we're going to see scores in the mega region and a gob of them in the 100 K's. I can't ever recall that level of participation before. It was cause to reflect on my 1969 California first place certificate hanging on the wall when, as I recall, there were less than 20 participants in the entire contest! We sure have come a long way since then and we're going to go even further.

With the January QQ due date just days away, I had to restrict my contest participation to the last several hours, which only served to remind me how much I miss it and how easy it is to over-extend oneself in club related work to the point that I have, where you're unable to participate in the activities you love and serve to preserve. I would much rather do a few things well than a lot of things poorly, so in that connection I had asked Paula to keep her ear to the ground for a new "Activities" columnist and I would continue generating a separate "Awards" column. This would provide a lot of relief for me and improved awards service to you. Well, none other than Fred Bonavita, W5QJM, saw the flare and offered to help. Fred is certainly no stranger to QRP ARCI and I couldn't be more pleased with Paula's choice. Please continue to send your award applications and related correspondence to me. All other activites and tid-bits should be directed to Fred Bonavita.

On to the Awards:

Danny Gingell, K3TKS, chose a Welz RP-220 swr/pwr meter for his first place QNI prize, since the Autec filter is no longer available. This gave me an opportunity to compare the model 120 and 220 against a friend's calibrated home-brew standard before shipping it off. We found both units to be well within their advertised specs. I felt like kicking myself for not trying a little harder in the QNI competition after checking out Danny's 220, but then it's hard to beat a determined winner and Danny was determined to win! By the way, your local discount camera store carries a variety of the small 110 camera cases, some for just a few bucks, and they make a perfect case for the portable RP-120. Some even have divisions inside for a couple of coax adapters, etc.

Attention! Rollie Crider, K9VCM, breaks the ARCI's oldest awards record! Rollie equaled the April 1979 QRP-1000 record of

the apparent inactive WA8CNN last May and was issued endorsement #2. Rollie's second 100 numbers set a new record with the issuance of QRP-1100 #1. Our records indicate that the most dramatic increase in awards activity in the past appeared on the up-swing of the new solar cycles; must be all that pent-up bottom-end energy! If the Fall QSO Party was any indication of what we can expect as we gain momentum in cycle 22, it would not surprise me to see a few keen operators picking up several hundred new numbers in a single contest.

A question from Burl, N5DUQ, about net contacts counting toward our various awards prompts me to remind you all that the nets are indeed a good way to fill out that WAS or QRP-25. Burl has set his sights on a 1W CW and a 5W SSB WAS. Take Burl's lead and set your cycle 22 goals now. Map out your strategy and hang on! The next five years or so are going to be some of the most exciting radio we've ever experienced. If this is your first cycle and you've been around for just a few years, you're going to love it to death!

Eric, WS6L, finds that QRP sort of grows on you, as he now operates QRP about 75% of the time. I think you'll find yourself drawn even closer Eric, now that you've joined the QRP-25 number collectors.

As you can see from the awards issued, Lou Berry, KF5OW, is hard at work wallpapering the shack. Lou's KM/W QSO with CT2AK was the first RTTY KM/W endorsement ever issued. TV anyone?

Harold Kraus, K2UD, just earned KM/W #6 on 6 meters running 150 mW for 4667 MP/W. As I recall, Lou, KF5OW, in Albuquerque hangs out up there also.

Most of you reported poor to worse conditions for the Hootowl, so we were glad to hear that Wayne Glover, KA7SCW, snagged the elusive VT for his WAS/QRP #40. he still needs NM, DE, NH and RI.

Joe Vrabel, KD2JC, has been waiting sometime for that "just right" QSO to submit for his KM/W certificate and it surfaced last February in a pile-up: 9Q5KI Zaire on 20M. Joe just kept repeating "QRP" until he finally heard him - I wonder who walked away from that pile-up the proudest that day?

Mary Lou Brown's side of the NM7M/NM7N shack now sports a new WAC and DXCC/QRP certificate and it appears she still has a good chance to qualify for the unique ARRL "Golden Jubilee" award with just 13 more needed at about mid-October. However, growing YLRL responsibilities will likely make those final yards tough. The Browns have a new pooch, Sadie, who is currently under the tutelage of Fred, K9dog SDA (Senior Dog Afloat) and veteran of countless FD, contest and portable outings.

W5TTE, Ed deBuvitz, just picked up his WSN-40, GSN-80 QNI seals and went over the top to join the ranks of the elite QNI- 100 club. Fair's fair guys! Ed had gone to the wire in support of your club well over a hundred times. How about some of you from Nebraska, De;aware and Arkansas dropping him a QSL for a sked to finish out his 2x QRP WAS? Or better yet, cross signals with him on the WSN, TCN, GSN, SEN and NEN through the winter. Try them all for one week and I guarantee you'll meet Ed and I know he'll appreciate it.

The October QQ arrived just last week and, aside from my own lack of input, I thought it was one of the best. Being the combined editorial effort of Jim Stevens, KK7C, and Paula Franke, WB9TBU, it becomes Jim's final issue and Paula's first. Most of the scars will go away in time, Jim, and just about all of the breaks will mend, you'll probably recover some of the nerve damage, but the hair that went south is gone forever. P.S. Thanks Buddy!

By imposing the QQ size restraints, etc. that were mandated at Dayton, Secretary Brown has been able to get a handle on our financial direction and rate of ascent to the extent that everyone got on and off safely and the conductor even got paid! The editors were able to bring the October QQ in at $300 under budget, right on schedule and the quality didn't suffer a bit. Correct me if I'm wrong, but I think the good ship ARCI and the Quarterly have just successfully negotiated a mine field and we hardly felt a bump!

I'm looking forward to the next quarter, even though it will be nose to the grindstone for some time to come. The prospects of getting on top of things looks brighter every day. Please understand that my workload is not all club related. It's just that when push comes to shove, these are my priorities: wife, life, and radio, in that order and anyone out there married will know what I'm talking about! Assuming we're back on course between now and next quarter, sometime I would like to get started on the various Award Program changes we've talked about in the past. I need your input on the following: the QRP Honor Roll, the Triple Crown Award, and the KM/W Award. Give me your opinion on how they should be structured.

QRP ARCI Awards Summary

Call	Date	Basic	Endors. Miles/Watt Notes	Power	Mode	Band
DXCC						
NM7N	7-2-87	81c		5.0	CW	Mix
WAC						
NM7N	7-2-87	461c		5.0	CW	Mix
WAS						
KF5OW	6-11-87	252c	WAS 50	3.0	SSB	3.9MHz
KF5OW	6-11-87	253c	WAS 50	3.0	SSB	7MHz
KD8FR	8-7-87	254c	WAS 10,20	5.0	CW	Mix
N1EAV	9-11-87	255c	WAS 10,20,30,40	5.0	CW	Mix

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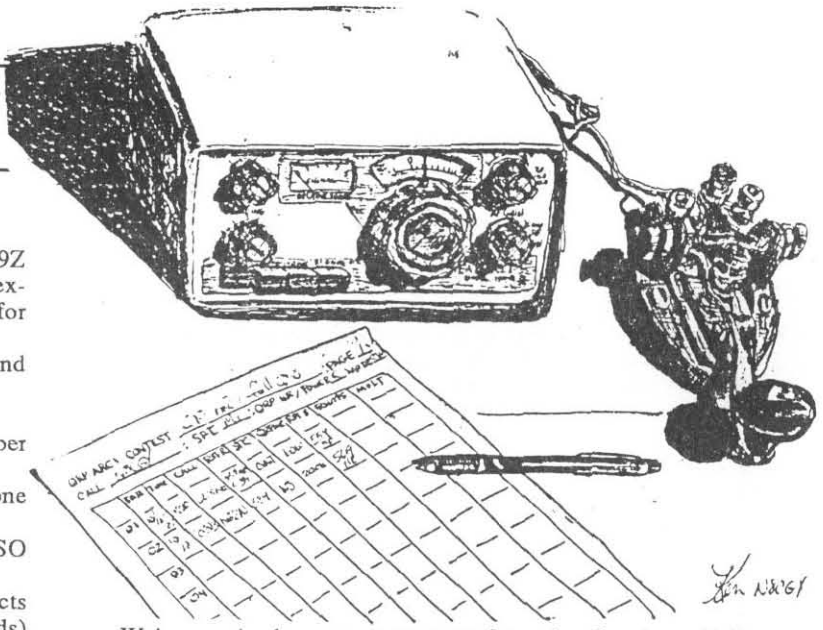
Contesting

by Red Reynolds, K5VOL
835 Surryse
Lake Zurich, IL 60047



Announcing the 1988 Michigan QRP Club Eighth Annual CW Contest

Date: January 16, 1988 - 1200Z to January 17, 1988 - 2359Z (36 hours). CW only, 160 through 10 meters (WARC bands excluded). Contest is open to all amateurs and all are eligible for awards.

Frequencies: 1810, 3560, 7030, 7040, 14060, 21060 and 28060 kHz

Novice: 3710, 7110, 21110 and 28110 kHz

Exchange: RST, QTH (s/p/c) and M-QRP Membership Number (non-members send power output)

Classes: A = Less than one watt output; B = Five watts to one watt output; C = Over five watts output

Scoring: Stations may be worked once per band for QSO points.

Member contacts are 5 QSO points each; non-member contacts are one QSO point each. Multiply total QSO points (all bands) by number of s/p/c worked per band, for total points.

Bonus Points: total points X 1.5 for 100% battery or natural power.

Award Certificates: Certificates will be issued for the highest score in each s/p/c.

Logs must contain: full log for each band, name, call, address, equipment used, power output and signature.

Logs must be received no later than 01 March 1988. Please send an SASE (or 2 IRCs) for results.

All Logs to: L.T. Switzer, N8CQA, 654 Georgia, Marysville, MI 48040.

A set of one log sheet and one entry form are available for an SASE to K8DD, 1640 Henry, Port Huron, MI 48060.

Fall 1987 QRP ARCI QSO Party Results

Call	Name	Score	Pwr	Bnds	Rig	Antenna
Arizona						
WD7I	Jack	668,520	.9 B	4	Century 22	Loop
W5VBO	Brian	125,970	5	4	IC-735	Verticals
Alaska						
NL7DU	Dale	32,120	4.5	3	TS-430S	Yagi
California						
N6GA	Cam	1,033,305	.9 B	5	HW-9	Yagi/SkelCone
KA6SOC	Sue	505,716	1.5 B	3	HW-8	---
W6SKQ	Bob	360,612	2.4	4	Argo 515	Yagi/SkelCone
W6SGJ	Dick	334,464	1.5	3	Kenwood 930	Yagi/Dipole
W6YVK	Ev	286,440	2.5S	4	Argo 509	Yagi/Dipole
WJ6Q	Budd	273,591	2.9B	3	TS-430S	Yagi/Zepp
WI6M	Gary	232,389	2.5B	5	Argosy II	Vertical
K1EQA	Jay	134,400	2	4	Argo 509	Sloper/InvVee
N6NMI	Jeff	37,296	4.3	3	Argo 509	Yagi/Loop
W6SIY	Keith	3,540	2.5	40m	Homebrew	Dipole
WF6D	William	3,264	5	4	IC-735	ZL Spec/Skeltn
Colorado						
NF0Z	Larry	1,780,500	.9 B	4	Century 22	Yagi/Zepp
KR0U	Timothy	475,300	.9 S	4	HW-9 (mod	Vertical
NX0Q	Howard	74,712	4.5	5	---	Yagi/Loop/Vert
K1OG	Bob	15,552	3	20m	HW-9	Yagi
Connecticut						
KH6CP/1	Zack	1,173,290	.86B	6	HB/Argo 509	Loop/Dipole
KV1M	Mike	586,080	2 B	4	Argo 509	Vee's
KA5GIS	Carol	172,480	4	3	TS-120S	Mini Quad/DP
W1KKF	Bill	99,032	2.4B	40m	Homebrew	G5RV
W1IKB	John	95,566	5	5	IC-740	Yagi/Dipole
NN1G	Dave	65,988	3.5B	4	TS-130SE	Dipole
Florida						
K4KJP	Terry	711,540	.95S	4	Argo 509	Yagi/dipole
W4FLR	Leo	92,232	4	2	HW-8	Vertical
K4FS	Don	32,076	2.2	2	Argo 509	Vertical

continued next page

We've received an announcement from the Cuyahoga Falls (Ohio) ARC about their Crazy 8's HF, VHF & UHF Contest. Send an SASE to Anthony Luscre KA8NRC, 5441 Park Vista Court, Stow, Ohio 44224, for information and summary sheet. For this contest you're going to need it. There is a QRP category.

A number of comments about the great conditions and activity were received on the Fall QSO Party. This was further proven with an increase of 56% in logs submitted over last year, reversing the trend of declining entries of 1983 to 1985. Nine members submitted scores of more than one million points! Fifteen members took advantage of the new single-band entry class. A lot of membership numbers of 6000+ were noted, and quite a few commented on their logs that this was their first QRP contest.

Now that the results are in, some heavy analysis can begin to evaluate potential changes in the multiplier system. There are some interesting trends apparent in the "Dipole vs. Yagi" and the "Time on the air" areas.

There are a few changes planned for 1988. Look at the new requirements for certificate qualification. A requirement in logs submitted includes dupe sheets for entries with 100 or more QSOs. Slated for mid-1988 is a revamped power-multiplier system and a power structure written for both CW and SSB. Watch the Quarterly for details.

Top Ten

NF0Z	1,780,500
W3TS	1,745,400
KN1H	1,541,620
AA2U	1,359,300
AC8W	1,248,225
KH6CP/1	1,173,290
K8DD	1,033,965
N6GA	1,033,305
AA4CO	1,033,200
VE5VA	920,745

Single Band

N8CGY	160M	1,260
W1KKF	40M	99,032
WB5CTS	20M	23,520
KA0OMX	15M	6,050
EA3EGV	10M	2,464

Soapbox

"Was amazed at all the new members!" - KA9HAO; "Most fun I've had in years, I'm hooked!" - WB5CTS; "It's good to hear so many 6XXX members" -AA4CO; "Where was Maine?" - W1XH; "QSO Party + .9 watts = delta loop = fun" - WD7I; "Don't know how (or why) the hard- core contest guys do it." - NG1G; "Conditions great!" - KD2JC; "Great to hear all the new calls" - KR0U; "My 1933 style 40 M rig was fun but hard to zero beat" - W7LNG.

Contests ... continued from page 20

Georgia							
K5TF	Dick	521,424	4	5	IC-735		Dipole/Vert
Hawaii							
KH6IJS	Howell	74,304	3 B	3	HW-9		Vertical
Idaho							
NJ7M	Chuck	292,668	4	4	Argo 509		Double Zepp
Illinois							
WB9TBU	Paula	563,200	1.5	4	Argosy		Loop/Dipole
K9EIJ	Norman	476,784	1.5	5	Argo 515		Yagi/Vertical
K9PNG	Jim	296,400	1 B	4	Argo 515		Longwire
K5VOL	Red	229,350	.85	4	Argo 509		Longwire
K9IFO	Will	140,400	.9	4	FT107M		Yagi/Dipole
KD9NT	Norman	59,136	5	3	Argosy II		Vertical
WD9EGW	Chuck	17,520	2.5	3	Argo 509		Dipole
KA9NZI	Gary	16,992	1.5 B	40m	HW-8		Inv Vee
NC9O	Skip	6,660	.75B	40m	HB/FT757GX		Wire 60'
Indiana							
KC9UR	Robert	56,160	.9	3	IC-740		Vertical
KA9JKK	Max	81,000	2.75	5	Argosy		Quad/Loop/DP
WB9VID	Charles	14,268	3.5	3	HW-9		G5RV
Iowa							
WB0T	Jerry	80,256	2.5	2	Argo 509		Yagi/Zepp
Kansas							
W0UY	Tom	147,834	3 B	3	TS-130V		Yagi
Louisiana							
WA5OIH	Rod	213,616	3.9	3	---		---
NO5W	Chuck	53,700	4.8B	3	HW-9		Dipoles
Maine							
WA1VGB	Ron	2,496	2.5	40M	Argo 509		---
W1SZJ	---	2,144	3	2	HB TX/SW3		Longwire
Maryland							
K3TKS	Danny	516,928	.9	4	Argo 509		Loop/Dipole
WA3GYW	Francis	18,816	2 B	3	HW-8		Dipole
Massachusetts							
KZ1L	Andrew	717,750	.98B	5	IC-735		G5RV
W1HH	Bob	376,740	1	5	---		---
N1FJ	Frandy	371,280	.9 B	5	Argo 509		Yagi/Dipole
N1BXC	Stephen	239,904	.9	5	HW-9		Zepp
KB1MJ	Paul	29,260	.75	2	HB RX/TX		Dipole
W1XH	Al	20,580	5	4	TS-530		Vert/Random W
AD1C	Jim	4,464	5	4	Homebrew		G5RV
Michigan							
AC8W	Stan	,248,225	9 B	5	IC-735		Yagi/Loop/DP
K8DD	Hank	1,033,965	.9 B	5	Argo 515		Yagi/DP/Sloper
N8CQA	Buck	760,320	.9	5	TR-4C		Vertical
N8ITE	John	269,100	2.5	4	Argo 509		Zepp
WB8UUJ	Tom	98,580	1.9B	3	Argo 509		Longwire
KD8FR	Lowell	91,800	3	4	Century 22		Dipole/Vert
NM8L	Mel	52,600	3	3	Argo 509		Zepp/Vert
KE8P	Ellwood	43,479	2.5	4	Argosy		G5RV/Dipole
K8KIR	Lester	20,790	5 B	4	IC-735		Yagi/Dipole
N8FGL	Charles	10,296	2	3	HW-8		Vertical
N8CGY	Ken	1,260	2	160m	HW-8 (mod)		Loaded Vert
Minnesota							
WB0BJP	Paul	98,652	1.5B	3	HW-8		Dipole/Vert
KA0OMX	Mary	6,050	1	15M	Homebrew		
Mississippi							
K5MX	Larry	405,536	4	4	TS-940S		Yagi/InvVees
Missouri							
NF0R	Dave	357,750	.9 B	4	Argosy II		Attic Zepp
KC0PP	Keith	203,820	.9	3	Argo 509		Yagi/SkelCone
New Jersey							
AA2U	Randy	1,359,300	.9 B	5	IC-730		Loop/Dipole
K2JT	Joseph	674,520	2 B	4	Argo 515		Dipole
KD2JC	Joe	426,736	3	5	HW-9		Yagi/Dipole
W2JEK	Donald	117,180	1.9B	3	Argo 505		GndPl/DP/Wire
WA1KWJ	Douglas	31,668	3	4	HW-9		Random Wire
KB2MI	Bob	5,440	2	2	---		---
New Mexico							
W5TTE	Edward	336,900	.9	5	HW-7/505		Loop/Dipole
AA5CL	Tom	5,956	1.5	40M	Homebrew		Inv Vee
New York							
N2GGW	Brian	916,965	.8 B	5	Century 22		Dipoles
W2PFS	Harold	375,144	2 B	4	Argo 509		Dipoles
W2QYA	Merl	274,680	.9 B	4	HW-8		Longwire
W2DW	Joseph	238,080	3.5B	4	TT Omni		Dipole
New Hampshire							
KN1H	John	1,541,620	.9 S	6	Argosy (mod)		Zepp
W1FMR	Jim	344,648	2	5	Argo 509		Loops
KT1H	Brad	12,660	4	5	Corsair II		Yagi/Dipole
North Carolina							
AA4CO	Joe	1,033,200	1 B	5	Argo 515		Yagi/G5RV
North Dakota							
WB0FDJ	Clarence	22,650	2.5	4	Argosy 525		Vertical
Nevada							
NM7N/M	Marylou	258,448	3.5S	3	Argosy II		Hustler Whip
Ohio							
NN8B	Don	524,805	.9 B	4	Argosy		Yagi/G5RV
WB8ZWW	Wayne	458,964	1.8B	4	Argosy		Inv Vee
N8GJR	Jim	227,000	.9	5	SB104A		Zepp/PhasedV
AA8V	Gregory	29,012	1.5	40m	SB104 (mod)		Vertical
W8DYF	Joe	13,904	3.5	3	Argosy		Yagi/Loop
W8EAO	Corker	12,240	3 B	3	HW-8		Vertical
Oklahoma							
WD5GLO	Lou	36,176	4	3	HW-8		GP/Inv Vee
WB5CTS	Steve	23,520	1.5	20m	Corsair		Yagi
Oregon							
K7KJM	Greg	18,112	5	3	HW-8		Random Wire
W7LNG	Robert	12,960	4	3	HB/R4B		Yagi/Dipole
Pennsylvania							
W3TS	Mike	1,745,400	.9 S	6	Homebrew		Tee/DP/Zepp
KA3CRC	Tom	117,576	2.5	3	Argo 515		Yagi/dipole
WA3SLN	Mike	81,972	3 B	3	HW-8		Quad/zepp/vee
WA3SRE	John	48,384	3.75	4	Argo 515		Yagi/vert
Rhode Island							
KA9HAO	Randy	534,600	.9 S	4	Argo 515		Random wire
South Carolina							
K4ADI	Frank	33,840	4	3	Argo 509		Yagi/longwire
South Dakota							
WB0RXF	Max	48,872	3.5	3	Argo 509		Yagi/G5RV
NR5A	Jerry	18,348	4	3	HW-9		Inv vees
Tennessee							
KV4B	Dick	292,320	1.5	3	Argosy		Yagi/Inv vee
NU4B	Larry	252,912	1.5	5	HW-9		Yagi/vert
W0SK	Jim	38,480	1	2	Century 21		Vertical
WA4HXS	Arthur	23,616	2.5	2	Argo 509		Vertical
Texas							
W5XE	Ray	697,392	2 S	5	FT757GX		Phased Verts
WA5ZKL	Mack	483,300	.9 B	4	Argosy II		Loop
W5HKA	Luke	145,632	1.5S	3	HW-8		Zepp
WB5FKC	Chris	86,980	.5 S	3	Homebrew		Phased Vees
K5HDX	Sam	60,192	1.5	2	HW-8		Dipole
N5AE	Dick	32,886	3.5B	3	Argo 505		---
KD5VD	Glenn	8,736	5	4	TS-430		Yagi/SkelCone
K5SN	John	1,792	1.5	2	HW-8		---
Utah							
KK7C	Jim	5,280	3.5	2	Argo 509		G5RV
Vermont							
NG1G	Jack	665,994	2.75	5	HW-9		Loop
Virginia							
K4JM	Tom	674,856	2.5	5	TS-520		Dipole/LW
W4XD	Joseph	105,984	4	3	Swan 102BX		Vertical
N3OS	Oiva	68,888	2.9	40M	Homebrew		---
N8GM	Godfrey	6,192	2.5	40M	HW-8		Vertical
Washington							
NM7M	Bob	229,900	5	4	Corsair		Yagi/Inv Vee
WB7SNH	Dennis	109,872	1 B	4	HW-8/509		Yagi/Slopers
WN7U	Scott	86,940	3.5B	4	HW-9		Yagi/vertical
KV7X	Jay	22,878	5	40M	IC-730		Loop
K7WA	James	5,796	5	2	IC-735		Yagi/Loop
West Virginia							
NW8O	Keith	29,736	2 B	3	Argo 505		Zepp/Vert
Wisconsin							
NA9M	Paul	106,218	4	3	---		---
N9ZZ	Bob	62,660	.9	3	Argo 515		Loop
British Columbia							
VE7EKS	Pete	8,904	2.5	3	HW-9		Loop/Vert
Ontario							
VE3OOL	Dave	233,226	2.9	4	Argo 509		Yagi/Dipole
VE3NYT	Steve	4,512	2	2	HW-7		Dipole
Quebec							
VE2ABO	Adeoda	47,104	2	2	HW-8		Loop
Saskatchewan							
VE5VA	Pete	920,745	.9 B	3	IC-735		Yagi
Dominican Republic							
HI3JEI	Julio	671,004	2.5	5	Argo 509		Longwire/Vert
Japan							
JH4UYB	Masaki	200	5	15M	IC-760		Yagi
Spain							
EA3EGV	Miguel	2,464	4	10M	TS-120V		Yagi
Check Logs							
AE7K							

Net Activity

by Danny Gingell K3TKS
3052 Fairland Rd.
Silver Spring, MD 20904

Net activity is running very high these days. Danny has been very busy getting his net records organized and has been forwarding volumes of net statistics to the editor. Space is at a premium this issue, so we will only be able to publish a small portion of the statistics.

In the 1987 QNI Contest, 155 QRPers have QNI'ed the nets as of mid-November. These 155 are responsible for a total of 2,343 QNIs to the six regional nets. WHEW!

During the week of Sept. 20 through 26, Paula Franke, WB9TBU, set a new net record by QNI'ing all six ARCI nets plus the MQRP net within that one week period. The WSN on Sept. 26 was the toughest, but with the help of Tim KR0U in Colorado, the record was set. As word of this achievement got out, a few other net folks have tried to match it. Alas, as of mid-November the record stands unchallenged.

Haven't tried the nets yet? The nets are a good place to fill in your WAS holes, find out late-breaking club news, and just to talk with other QRPers for an hour or so. Next time you think your Quarterly is late, QNI one of the nets first to see if there's a problem.

QRP QNI 100 Honor Roll

K3TKS	Danny Gingell	709
W6RCP	Jim Holmes	579
W1FMR	Jim Fitton	406
NM7M	Bob Browm	407
NJ7M	Chuck Lindsay	322
K8IF	Thom Davis	246
K4AHK	Bill Harding	226
W6JHQ	Tom Brown	277
WB2IPX	Les Shattuck	201
W5LXS	Roger ROse	244
K6MDJ	Fred Turpin	193
WN6F	Brian Greer	158
WA9WZU/4	Gary Beam	150
W5QJM	Fred Bonavita	170
KV7X	Jay Sturdivant	163
K5BOT	Ed Popp	156
N6GA	Cam Hartford	148
W3TS	Mike Michael	162
W6SKQ	Bob Spidell	128
WB8ZWW	Wayne Watson	117
XE2IOF/ NW6F	Jake Jacobs	127
W6SIY	Keith CLark	125
N7IS	George Bowman	109
KH6CP/1	Zachary Lau	131
W5TTE	Ed DeBuvitz	125

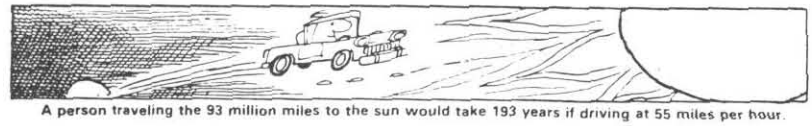
The following QRP ARCI members are very close to being added to the QNI-100 Honor Roll listing.

KD6OQ	98	Joe Knowles	California
WB7BIV	93	Bob Joiner	Oregon
KA6SOC	86	Sue Ludemann	California
WD9EGW	85	Chuck Kuhn	Illinois
NJ1T	85	Doug Crittendon	Massachusetts
KZ3I/KL7	85	Bill Slabonik	Alaska
K2JT	84	Joe Mead	New Jersey
WF6D	83	Bill Young	California
K5VOL	82	Red Reynolds	Illinois
WB9TBU	81	Paula Franke	Illinois
WD4LOO	81	Ed Lappi	N. Carolina
WA1JXR	80	Greg Algieri	Massachusetts
WA6FLN	80	Alex Podovinnikoff	California
NS2L	79	Bob Hazelton	New York
W5XE	79	Ray Colbert	Texas
WB9WOM	76	Ken Robertson	Illinois
K9PNG	71	Jim Jones	Illinois

Net statistics indicate quite a bit of activity thus far this year. Their have been 2,343 check ins to the six regional QRP ARCI nets. The following table shows the breakdown by net.

Net	QNI's	stations
TCN	763	136
NEN	358	66
SEN	270	74
WSN	426	49
GSN	218	39
GLN	308	38
	2343	402

continued page 27



A person traveling the 93 million miles to the sun would take 193 years if driving at 55 miles per hour.

10 Meter Beacons

by Joe Gumino K2OLG
303 Old Stage Rd., Spotswood, NJ 08884

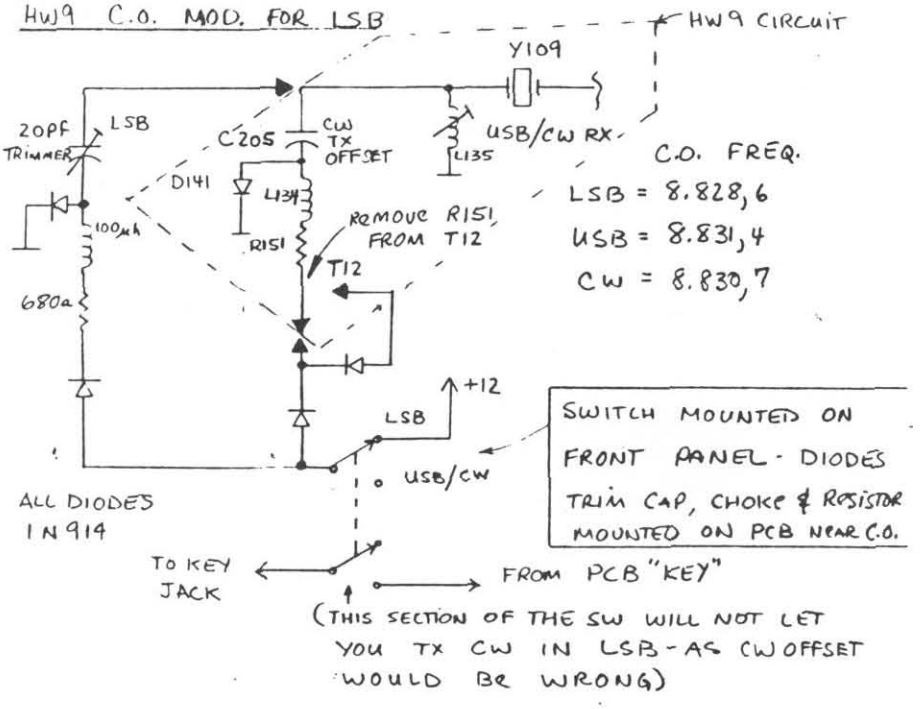
FREQ.	CALL	OP	LOCATION	NOTES
28.050	PY2GOB		Sao Paulo, Brazil	15W Vert.
28.175	VE3TEN	C	Ottawa, Canada	10W GP
29.195	IY4M		Bologna, Italy	20W 5/8 GP
28.200	GB3SX	C	Crowborough, England	8W Dipole
28.200	KF4MS	C	St. Petersburg, FL	75W GP
28.201	LU8ED		Argentina	5W
28.2025	ZS5VHF		Natal, RSA	5W GP at 1800 ft. ASL
28.205	DL0IGI	C	W. Germany	100W Vert Dipole
28.2075	W8FKL	C	Venice, FL	10W Vert.
28.208	WA1IOB	C	Malboro, MA	75W Vert.
28.210	3B8MS	C	Mauritius	GP Ant.
28.210	K4KMZ	I	Elizabethtown, KY	20W Vert.
28.212	EA6ROM		Palmade Mallorca	4W, 5 EL NNE
28.2125	ZD9GI	C	Gough Is.	GP
28.215	GB3RAL	C	Slough, Berkshire	20W, GP
28.215	LU4XI		Cape Horn	
28.2175	WB9MVY	C	Oklahoma City, OK	4W, GP
28.220	5B4CY	C	Cyprus	26W, GP
28.222	W9UXO	C	Chicago, IL	10W, GP
28.2225	HG2BHA	C	Tapolca, Hungary	10W, GP
28.2275	EA6AU	C	Mallorca, Balearic Is.	10W, 5/8 GP
28.230	ZL2MHF	C	Mt. Climie, NZ	50W, Vert Dipole
28.232	W7JPI/AZ	C	Sonoita, AZ	5W, 3EL YAGI-NE
28.2325	KD4EC	C	Jupiter, FL	7W, GP
28.235	VP9BA	C	Hamilton, Bermuda	10W, GP
28.2375	LA5TEN	C	Oslo, Norway	0W, 5/8 GP
28.240	OA4CK	C	Lima, Peru	10W
28.2405	5Z4ERR		Kenya	
28.2425	ZS1CTB	C	Capetown, RSA	20W, 1/4 Vert
28.245	EA3JA		Barcelona	
28.245	A92C		Bahrain	NW/SE Dipole
28.2475	EA2HB	I	Spain	6W, GP
28.248	K1BZ	C	Belfast, ME	5W, Vert Dipole
28.250	4N3ZHK		Yugoslavia	
28.250	Z21ANB	C	Bulawayo, Zimbabwe	15W, GP
28.252	WB4JHS	I	Durham, NC	7W, Vert
28.255	LU1UG		Gral Pico, Argentina	5W, GP
28.2575	DK0TE	C	Arbeitsgen, W. Germany	40W, GP
28.260	VK5WI	C	Adelaide, SA, Australia	10W, GP
28.262	VK2RSY	C	Sydney, NSW, Australia	25W, GP
28.264	VK6RWA	C	Perth, WA, Australia	
28.266	VK6RTW	C	Albany, WA, Australia	
28.2685	W9KFO	I	Eaton, Indiana	3/4W, Vert.
28.270	ZS6PW	C	Pretoria, RSA	10W, 3EL Yagi on G-land
28.270	VK4RTL	C	Townsville, QLD, Australia	
28.2725	9L1FTN	I	Freetown, Sierra Leone	10W, Vert Dipole
28.275	AL7GQ	C	Jackson, MS	5W/1W Broadside Loop
28.2775	DF0AAB	C	Kiel, W. Germany	10W, GP
28.280	YV5AYV		Caracas, Venezuela	10W, Rotary Beam
28.280	LU8EB		Argentina	5W
28.282	VE1MUF	C	Fredrickton, NB	500mW, Dipole
28.284	VP8ADE	C	Adelaide Is. NR Antarctica	8W, V Beam to G-Land
28.286	KA1YE		NR Rochester, NY	2W, Vert Dipole
28.287	W8OMV		NR Ashville, NC	5W, GP
28.287	H44SI	C	Solomon Is.	15W
28.288	W2NZH	I	Moorestown, NJ	3W, GP
28.290	VS6TEN	C	Hong Kong	10W, Vert.
28.2925	LU2FFV		San Jorge, Argentina	5W, GP
28.295	WB8UPN	I	Cincinnati, OH	10W, Ringo
28.296	W3VD	C	Laurel, MD	1.5W, Vert Dipole
28.297	WA4DJS	I	Ft. Lauderdale, FL	10W, 250 ft longwire
28.299	PY2AMI	C	San Paulo, Brazil	10W, Vert Dipole
28.300	ZS1LA	C	Stillbay, RSA	20W, 3EL Yagi NW
28.315	ZS6DN	C	Irene, South Africa	100W, Vert
28.888	W6IRT		California, USA	5W, GP Code Practice
28.992	DF0ANN			20mW, 1EL Delta Log

C= Continuous Duty I=Intermittent Duty

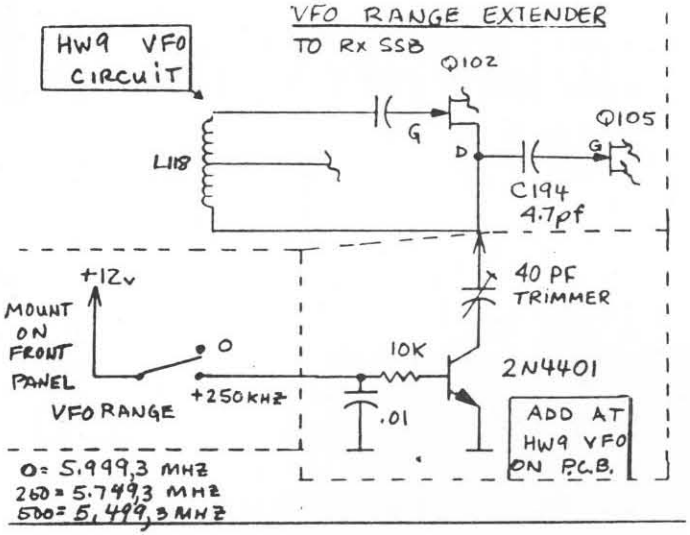
From Mike's Notebook More HW-9 Mods

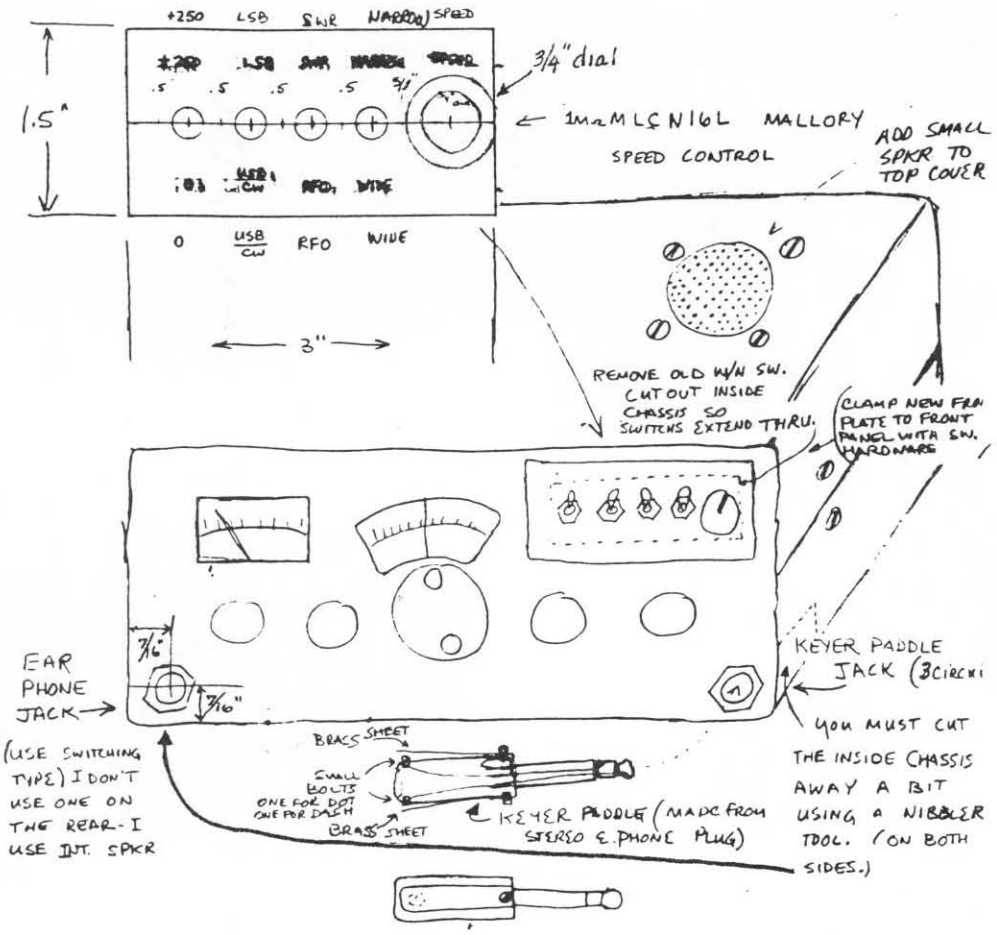
EDITOR'S NOTE:

This is a collection of drawings from the notebook of Mike Michael W3TS. Since some of Mike's comments and labels did not reproduce well during photocoping, I've taken the liberty of typing the parts that were faded.

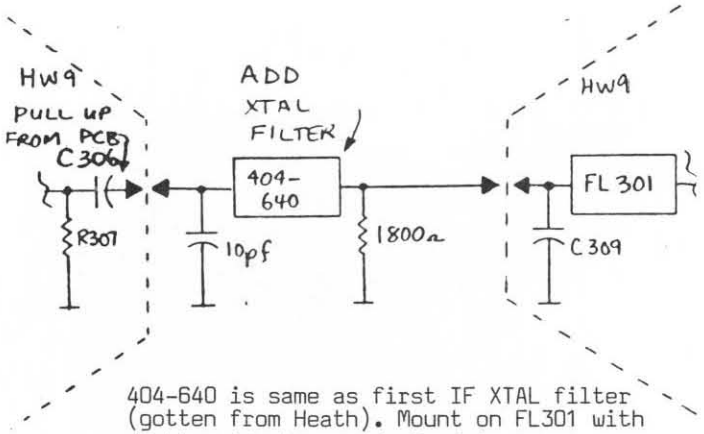


More From Mike's Notebook



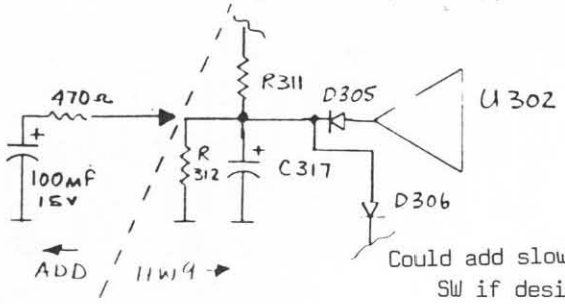


CASCADE XTAL FILTERS — IMPROVES ULTIMATE REJECTION



404-640 is same as first IF XTAL filter (gotten from Heath). Mount on FL301 with double side tape and wired in.

SLOW AGC MOD. (NEEDED TO RX SSB - I LIKE IT ALSO FOR CW - NO NOISE FILL BETWEEN DITS & DAHS)



Could add slow/fast SW if desired

Index To "QRP Quarterly" Publications

January 1980 through October 1987
Compiled by Chuck Dobbines, KA5PVB
2615 Washington Dr., Denton, Texas 76201

[Note from Chuck: This index includes all issues from January 1980 through October 1987. So far I've heard from the following people regarding older issues: Roy Lewis, W7CBA in Arizona; Robert Vitullo, K9TWK in Illinois; Charles Bright, KA0FDL in Missouri; and Jim Stevens, KK7C in Utah. Maybe we don't have as many pack-rats in the club as I thought. Hope we can stir up some more of the back issues of the Quarterly.]

Index . . .continued

Volunteers Needed!

What does ARCI membership mean to you? Active membership is now well over 1000 world-wide. It takes a lot of work to make an organization run smoothly. When all of the work is handled by only a handful of members the fun can quickly be displaced by overwork and burnout.

Volunteers are always needed to help the ARCI grow and prosper. Do you have access to an IBM/clone computer? We can use you to help prepare manuscripts for the Quarterly. Do you have access to a laser printer? The editor can definitely use your help! Technically oriented or like marketing? Perhaps you can spare a few hours for the Two-fer project or the Candy Store. A people person? Volunteers are needed to help arrange and staff forums, information booths, etc. at ham conventions such as Dayton or Dallas or even smaller, local hamfests.

Other ARCI projects have been suggested, but volunteers are needed to make all of this a reality. If you can spare the time, please drop a line to Jim Fitton W1FMR, PO Box 2226, Salem, NH 03079. Tell us what you can do. Tell us what you'd like to do. Or just tell us that you are available to help out.

Information for Writers

The Quarterly welcomes articles on all aspects of low power communications: equipment construction and modification, antenna experimentation, and operating practice, as well as reports of experiences, presentations on QRP for local clubs, announcements and letters.

Photos of your station and projects should be good quality black and white when possible.

The editor can accept manuscripts via modem (312-946-2198) or on disk for IBM or MacIntosh.

Send contributions to individual members of the editorial review board or to the general editor. Material will be selected and edited according to space limitations. Please send a business size SASE to the general editor (WB9TBU) for a copy of the Quarterly's Writers Guidelines.

Editorial deadline dates are Jan. 25, Apr. 25, Aug. 1 and Nov. 1. Remember, your editors are volunteers who, like yourself, must squeeze this work into busy family and work lives and still get on the air from time to time.

Please include your name, address, call and telephone number on all correspondence. Enclose an SASE if you wish material to be returned or when requesting a reply from officers and authors.

Net Activity ... continued from page 22

The following listing is of those stations that have checked in to one or more of the QRP ARCI weekly nets. Each call is followed by the number of check ins made for the period Jan. 1, 1987 through Nov. 29, 1987.

VE1BF	4	W3TS	35	W6SKQ	8	KK7C	10	K7YHA	1	WD8PRW	2
W1CFI	3	NB3V	3	KA5SOC	3	VE7EII	6	NN8B	19	NM8U	5
KA1CZF	1	K4AHK	8	NV6X	2	VE7EKS	2	N8CGY	1	AA8V	1
W1FD	2	KA4BQM	2	AC6Y	1	N7FEG	14	N8CQA	21	AC8W	2
W1FMR	65	WQ4C	7	KA7BCD	4	VE7FOU	9	N8CSX	12	WB8ZWW	45
WB1GYZ	1	AA4CO	6	WL7BDK	13	N7HR	1	K8DD	10	N9BDL	7
W1HH	1	N4EL	42	WB7BIV	21	KU7I/1	2	K8DSL	3	KA9HAO	1
WA1JXR	48	W4FOA	5	W7BQY	1	N7IS	16	W8DYF	1	K9IFO	17
W1KX	1	KI4IO	25			KA7KXA	1	KD8FR	22	KA9JKK	3
W1MBK	2	K4KJP	17			W7LNG	6	KD8G	3	KY9L	2
KB1MJ	1	KA4LKH	3			NJ7M	49	NW8I	2	WB9TBU	81
K1MPM	2	WA4NBE	3			NM7M	72	N8ITE	1	NF9X	4
NJ1T	9	NR5A	4			KA7QNZ	5	WD8JCR	27	NM9X	9
K1THP	1	K5BOT	10			NN7T	3	K8JRO	12	N9ZZ	2
N2EIA	1	KB5DQ	5			KO7V/9	10	NM8L	6	WØCH	2
WB2EUF	1	KG5F	8			NO7V	10	W8LCU	2	KAØEGJ	1
W2GUM	6	WB5FKC	4			KV7X	15	W8MGF	23	NSØL	1
XE2IOF	45	WD5GLO	3			KE7XN	10	KE8P	1	WBØT	18
WB2IPX	32	K5HPJ	10							KRØU	23
KD2JC	28	N5IZW	11								
W2JEK	1	W5LXS	75								
KA2JIZ	6	K5PSH	7								
K2JT	36	W5QJM	23								
W2KJ/4	4	WB5QQF	8								
VE2KN	1	K5TF	9								
W2PFS	1	W5TTE	92								
K2QJ	2	VE5VA	16								
K2RS	4	W5XE	76								
AI2S	5	NF5Y	27								
AA2U	1	WA5ZKL	1								
K3AS	2	VE6BLY	7								
WB3BDQ	2	KH6CP/1	69								
VE3CLX	6	WF6D	18								
K3DML	1	WN6F	2								
N3DGN	21	WA6FLN	5								
W3FAF	15	NY6G	3								
W3GBG	7	N6GA	16								
W3GW	2	KA6HGT	4								
WA3GYW	4	W6IUA	5								
KZ3I	10	W6JHQ	59								
KA3K	23	K6MDJ	25								
W3PNL	2	WJ6Q	20								
W3QF	1	W6RCP	62								
WA3SLN	3	WY6S	12								
KY3T	1	W6SGJ	1								
K3TKS	111	W6SIY	35								

Awards ... continued from page 19

QRP-25

KD8FR	5-30-87	981	QRP-25 CW 7MHz
K3DML	7-12-87	982	QRP-25
AC5K	9-12-87	984	QRP-25
KD2JC	9-12-87	985	QRP-25
WS6L	9-12-87	986	QRP-25
W1XH	5-30-87	526	Seal #50
N1BXC	5-30-87	312	QRP-100
KN1H	5-23-87	105	QRP-200
KH6CP/1	5-30-87	106	QRP-200
K9VCM	5-30-87	#2	QRP-1000!!!
K9VCM	5-30-87	#1	QRP-1100!!!

QNI-25

NM7M	4-19-87		Seal #3 WSN-40
NM&M	8-9-87		Seal #4 WSN-80
K6MDJ	4-19-87		Seal #3 NWN-40
K6MDJ	4-19-87		Seal #4 NEN-40
NJ7M	9-12-87		Seal #1 TCN-20
KH6CP/1	8-9-87		Seal #1 GLN-80
KH6CP/1	8-9-87		Seal #2 SEN-40
W5LXS	7-19-87		Seal #1 GSN-80
W5TTE	10-10-87		Seal #1 GSN-80
W5TTE	10-10-87		Seal #2 WSN-40
KK7C	8-8-87		Seal #1 NWN-40
WA7NZN	7-28-87	46	NWN-40
KA6SOC	8-8-87	47	WSN-40
N7FEG	8-8-87	48	NWN-40
NO7V	8-8-87	49	NWN-40
KI4IO	8-8-87	50	NEN-40
WA1JXR	8-8-87	51	GLN-80
W5XE	8-8-87	52	TCN-20
KR0U	8-8-87	53	WSN-40
WD8JCR	9-11-87	54	GLN-80

The Idea Exchange

Conducted by D.A. "Mike" Michael W3TS
Box 593 Church Lane
Halifax, PA 17032-0593

[Editor's Note: In the October 87 "Idea Exchange" Mike W3TS included some very interesting modifications to the TenTec Digital Argosy. Standard Apology #1 applies here: I forgot to include the necessary schematics.]

Switchable RF Amp for the TenTec Digital Argosy

The Argosy II is a very good QRP/QRO xcvr, but when I use mine on 80 and 40 meters it seemed to be more sensitive than really needed causing the AGC to pop on attack and a higher than necesary background noise. Most signals were well over S9 and my normal background noise was above S4. I was looking for a way to reduce the Argosy II sensitivity about 10 dB.

At first I thought of adding an attenuator pad, but that does not help the dynamic range or reduce the internal noise from the RF amp stage. After looking at the schematic of the RF/MIXER BOARD #80784-D, I thought of turning off the RF AMP Q2 in RX only (it needs to be on for TX or no output results as it is a TX pre-driver stage). Turning off Q2 makes a great attenuator - it was too good - signals were very weak.

Next thought was to reduce the amplification of Q2. So I clipped off one end of C12 (.01), the emitter bypass in the Q2 emitter circuit. That worked very well, it reduced the gain about 16dB on Rx and TX. I experimented a bit using my step attenuator and an external xtal calibrator as a signal generator and by putting a 100 ohm resistor (1/4 watt) in series with the grounded end of C12 I had a gain reduction of 10dB, which I found to be the best compromise between gain reduction and sensitivity loss. This causes a 10dB reduction on all bands.

Now for a way to have full gain on TX and switchable gain on RX. I don't have a noise blanker so I used the noise blanker switch as my RF GAIN reduciton switch. I tried a diode and a transistor as a switching element. The diode showed a slight loss over the transistor in the TX mode, so I stayed with the transistor (the transistor also requires less "on" current). By using "sterring" diodes and hooking one from the +T line to the switching transistor, I regained full output in TX. Hooking the other sterring diode to the +R linethru the noise blanker switch gave me switchable RF gain on RX.

Figure 1 shows the final circuit. The noise blanker switch cable #24 is hooked up to the circuit, I didn't have a small mating connector, so I used 18 AWG solid copper wire as pins and soldered smaller 24 AWG stranded hook-up wires on to reach to the transistor circuit which was built ugly-

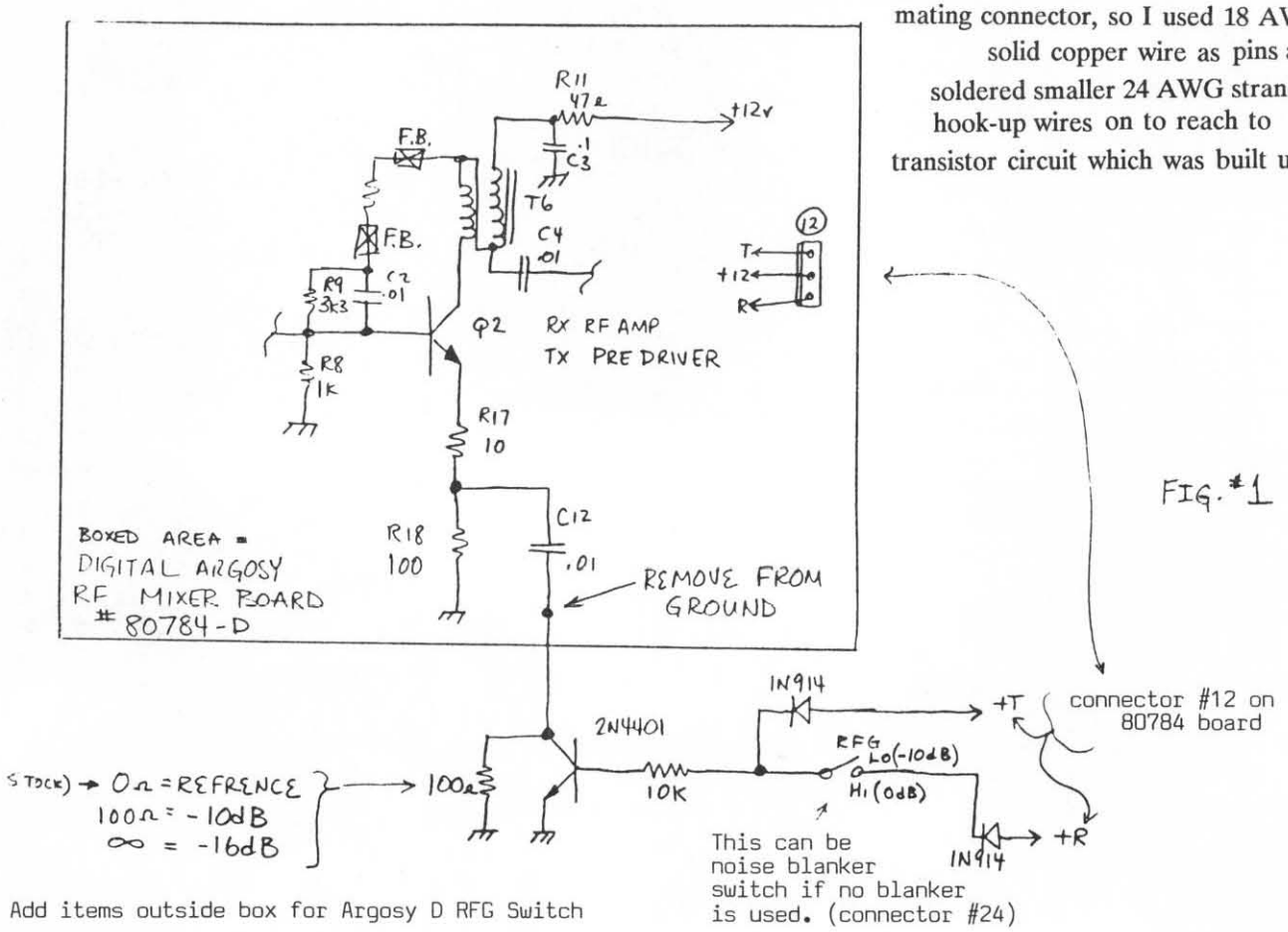


FIG. #1

style on top of the RF/MIXER board near Q2 and C12, with the grounded end of C12 pulled up out of the board and the control transistors emitter puched into the C12 ground hole.

The result is very pleasing, with reduced internal noise from the RF AMP and an improved AGC action because not all signals are S9 and over and an ANT. background noise of less than S1. Also improved was the DYNAMIC range and the crystal filter rejection because the mixer sees 10dB less signal.

Wattmeter Calibration

From C.F. "Rock" Rockey, W9SCH, I have received two good suggestions:

"When calibrating a 'homebrew' RF output wattmeter, it is useful to use flashlight cells (the ordinary carbon zinc variety) and your DC power supply as checkpoints. To do this, just connect your wattmeter to the battery (or your power supply) and note the reading of the wattmeter.

"To make this convenient, I provide the appended table. Most QRP wattmeters provide a 50 ohm load but some may be set-up for 40, 60 or 70 ohms. Pick the column closest to the load resistance of your instrument and follow that down to the applied voltage value. Then find what your wattmeter should be reading. This information will be found to be sufficiently accurate for most amatuer QRP purposes.

"Another useful suggestion: Get a piece of 'log-log' graph paper from any well equiped stationery store or college book store (the 'three cycle' variety will probably be best). Lay-off watts upon the vertical axis and meter readings upon the horizontal. When you then plot calibration-points upon this paper, they should all fall upon a straight line, or very close to one.

"Furthermore, the slope of this line ('rise' divided by 'run', measured by ruler) should be very close to two. Not only will this be a check upon how carefully you have calibrated your wattmeter but, since it follows directly from basic theory, you may use this curve to locate and correct any 'wild points' that show up. It will also provide data for making a 'quick reference' table for your wattmeter.

"Every earnest QRPer should have an RF output wattmeter. Such an instrument is relatively cheap and very easy to build; much construction information appears in past issues of this Quarterly and other QRP literature. If you haven't one, build one today!"

A Tango-Trap for 15-meter Direct Conversion Receivers:

Also from Rock:

"Latin-American tangos are pleasant but not when they fill up the 15-meter CW band at S-89+ level! Powerful SW-BC stations serving South and Central America, operating just outside of our band, occasionally overwhelm a simple direct-conversion receiver. To reduce this problem, we suggest the simple little device diagrammed below:

"This entire gadget may be built upon a two terminal tie point strip and installed anywhere convenient within the cabinet. Tune in an amateur CW signal near the center of teh band and adjust the trimmer for maximum strength. The Q of the circuit seems such as to pass most of the 15 meter CW band, yet reject the broadcast signals 250kHz higher. It's insertion loss for amateur CW signals is barely noticeable.

"There are more sophisticated techniques for handling this problem: multiple-filters or double-balanced mixers, for instance. But we like this approach because it is simple, inexpensive and applies classical 'wireless' principles which should be easily understood. Installed in out one-watt, 15 meter CW transceiver (described April, 1987 Quarterly), it seems to do its job. Try it yourself and see.

"Incidentally, the same idea can be used on other bands, too. For instance, for 20 meters, try 21 turns on a T-50-2 toroid or for 40 meters, 35 turns on the T-50-2."

WATT READING

DC VOLTS	40	50	60	70
3	0.10	0.09	0.075	0.064
6	0.45	0.36	0.30	0.26
9	1.0	0.81	0.68	0.58
12	1.8	1.44	1.20	1.03
13.5	2.3	1.82	1.52	1.30

Subscription Renewal

Subscription renewal is $10 ($12 for DX) for four issues. The renewal date appears on the mailing label following the QRP membership number, i.e. 4174-3/88 means that member number 4174's subscription will expire with the third (July) issue in 1988. Renewals and new member appplications must be received by the first of the month prior to the next publication to receive that issue, otherwise service will not begin until the publication of the following issue.

The average person in the course of a lifetime walks a distance equivalent to almost three times around the equator.

Letters To The Editor

MOuSeFET Transmitters

Dear Paula.

I noticed that the October 87 issue featured a write-up concerning Mike Masterson's MOuSeFET Transmitters. Please note that we created circuit boards and kits for this project prior to its original publication in QST in December 1986.

Your readers may wish to know that we still offer these ktis and boards. A kit for 30, 40 or 80 Meters (specify which) sells for $49.50 plus $2.50 shipping. The kits are complete at the board level, i.e. cabinets are NOT included.

Stas J. Andrzejewski W6UCM, President
A&A Engineering
2521 W. LaPalma #K
Anaheim, CA 92801
(714)952-2114

[Ed. Stas also sent additional literature and a price list. A&A carries several items that may be of interest to QRPers. Send a business SASE to him for further info.]

Mississippi QRPers

Paula,

A note of thanks for accepting the Quarterly Editor job and for doing a FB job on the Oct 87 issue! Have enjoyed your work in "Radiosporting", also. Many MS QRP ARCI members meet at the Magnolia Net on 3877 daily at 6 AM and 6:30 PM and all agree the Quarterly is the single most important publication we receive.

Geno McGahey AL7GQ, Jackson MS

[Ed. Well Geno, I'm blushing a bit. The October issue was a joint effort between Jim Stevens and myself. I hope you and the rest of the Mississippi gang like the Quarterly's "new look".]

Homebrewing

Dear Paula,

Let me say how much I enjoy the Quarterly. It is now the best amateur publication for the homebrewer. I know since I subscribe to them all!

Please send me a copy of "Writer's Guidelines".

Orton Duggan W4EQE, Cocoa FL

[Ed.: Writer's Guidelines are on their way. Thanks for writing Orton and we're looking forward to seeing something from you soon. Any other members out there with a burning desire to write? Send a business size SASE to the editor for your very own copy of the Quarterly's Writer's Guidelines.]

Wire Antennas

Dear Ms. Paula,

Bob Brown NM7M has suggested that I write to you concerning those of us who are interested in a bit of DX now and then but whom, for one reason or another, do not use a "gain antenna" (Yagi or Quad, usually).

Would it be expedient to suggest a possible informal subgroup in QRP to include those of us who yet use a wire antenna (dipole, simple vertical, inverted vee, random-wire, zepp, etc.) more or less exclusively? Bob has suggested that some sort of contest be directed at these. He would call it a "hot wire sprint" or something like that. I would have no objection to this (although I am personally "allergic" to contests; when a contest comes on I ground my antenna and "console myself with philosophy"). But, contest or no, I wonder what you would think of an informal 'hot-wire' or 'wire-workers' group in QRP? (Must every QRPer use a beam?)

"Rock" Rockey W9SCH, Albany WI

[Ed.: Being a 100% wire antenna person myself, I can understand your feelings. I do have a beam, but it's been broken lo these many years now and I just never got around to fixing it. Seems to me that a suggestion had been made in the past that in contests some sort of equalizing factor should be used for wire antenna folks. The Hootowl Sprint this past summer included an additional 1.5 multiplier for using wire antennas. Anyone else have any thoughts on the subject?]

More on the Argonaut 515

The article by Jim Jones, K9PNG, about the Argonaut was very good. On Nov. 7, I spoke with Joe Redwine of TenTec and he also stated that TenTec could produce another run of Argonaut 515 rigs if they saw enough interest. His comments stated that if members of the club were to send TenTec a post-card asking for Argos, it would convince management and we could see Argonaut 515s by next year.

Les Shattuck, WB2IPX

Mention was made that if an order for around 200 Argonaut 515s was filled, that TenTec would consider tooling up for a re- run. Well, I'll bet that there are 200 members who would be willing to place a deposit on that unit! Why not poll the membership to pursue the possibility? As you know, this is a much sought after XCVR as very few were made. I think the time is ripe for such an undertaking.

Brad Hutton KT1H

The QRP Candy Store

Operated for QRP ARCI by Bob Spidell, W6SKQ 45020 N. Camolin Ave., Lancaster, CA. 93534

The QRP Candy Store is a clearing house for all member or ARCI sponsored, QRP related products. Promote QRP in your area; send your ideas, suggestions and a sase to Bob Spidell, W6SKQ for store flyer.
LOGO: T-Shirts, Ball Caps, Hat Pins, Stickers, Stationary & more.

New Member / Renewal Data Sheet

Call Handle Recommended by
Age Occupation
License Class Held since Other calls
Rig TX RX Ant
Bands most used (rank in order of use:
160 80
40 30 20 15 12 10
6 2 VHF/UHF

Please circle your interests and elaborate if desired on separate sheet. Thanks!
Rag Chewing DXing Contests Traffic Award
Homebrew Experimenting CW SSB RTTY
ATV Packet VHF/UHF Satellite Other:_____

Do you plan to participate in club activities? Y/N
Would you like to be a club officer/director? Y/N
Do you have access to duplication equipment? Y/N
Are you interested in our award program? Y/N

Have you applied for any of the club awards? Y/N
Are you in favor of QRP calling frequencies? Y/N
Are you in favor of member QSO parties? Y/N
Would you help write for the *Quarterly?* *Y/N*

What subjects?
What awards/achievements have you won with QRP?

Why do you run low power?

[ ] Renew for _____ years. (U.S. $10, DX $12)
[ ] New Member _____ years. (U.S. $11, DX $13)
[ ] Change of Address
[ ] Change of Call/New Call _____

QRP# ___ Inc Rec ___ Apl Rec ___
List File _ MCert _ _ Rep Cpy
p23

Name:_____ Address:_____
City:_____ State/Country:_____ Postal Code:_____
Amount enclosed_____ QRP ARCI #_____ Call_____

PLEASE MAKE YOUR CHECK OR MONEY ORDER PAYABLE TO:
QRP Amateur Radio Club, International
* * * * * PLEASE DO NOT SEND CASH * * * * *

Bill Harding, K4AHK
10923 Carters Oak Way
Burke, VA 22015

QRP ARCI Winter Net Schedule

Net	QRG	NCS	DAY/HR	UTC
TCN*	14060	W5LXS	Sunday	2200
SEN**	7030	K3TKS	+Wed.	0100
GSN	3560	W5LXS	+Thurs.	0200
GLN	3560	K2JT	+Thurs.	0200
WSN-80	3558	NM7M W6RCP	+Sat.	0400
NEN	7040	W1FMR	Sat.	1300
WSN-40	7040	NM7M W6RCP	Sat.	1700

* On weekends of major contests TCN will meet one hour later. Please note new time which will remain in effect until daylight savings time change in the spring.
**If conditions on 7030kHz are poor, QSY to 3535kHz at 0130 UTC.
+Evening of the day before for W/VE.

Other QRP Nets

MQRP	3535	K8JRO	+Wed.	0200
WSNSSB	7285	NJ7M	Wed.	2000
VEQRP	14060	VE6BLY	Sun.	1900

NEWS Of Contests

Upcoming Contest Dates

QRP ARCI Winter Fireside Sprint - Phone
Date/Time: 01/10/88 2000Z to 2400Z
General Contest Rules apply. Power is average, PEP is twice listed amount.

QRP ARCI Spring QSO Party - CW
Date/Time: 1200Z 04/09/88 through 2400Z 04/10/88 (24 hours max.)
General Contest Rules apply.

ARP ARCI Hoot-Owl Sprint - CW
Date/Time: 05/28/88 2000Z to 2400Z (Local Time)
General Contest Rules apply.

QRP Quarterly
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Alpine, Texas 79831