OCTOBER, 1993

72

THE "QRP - NE" NEWSLETTER

IN THIS ISSUE:

PLEASE WRITE FOR 'YOUR' NEWSLETTER

Our goal is to make it easy for you to submit your ideas. Send your material, hand written or typed. Please indicate whether or not you wish other newsletters and magazines to copy your article. Floppy diskettes, MS-DOS text files accepted gladly, any size any density. Be sure and send your phone number so that I may contact you. If you have a FAX # please let me have that too. My address is: Carl Heidenblad, N1CUU, 40 Martins Ferry Rd., Hooksett, NH 03106. My work phone number is 603-432-7154. My home phone is 603-647-9864.

Technical articles should be sent to John Collins, KN1H, QRP-NE Technical Editor. Please contact John with questions or concerns about articles of a technical nature.

Deadline for the next newsletter will be **DEC. 30, 1993**

DIRECTORY

Please Contact the following for information:

MEMBERSHIP-
JACK FRAKE, NG1G, PO BOX 1153, BARNARD, VT 05031
802-234-9792

CONTEST MANAGER-
Jim Kearsman, KR1S, 83 Main Street, Apartment 13D, Newington, CT 06111-1330
203-666-1541 x 279

TREASURER-
Paul Kranz, W1CFI, 26 Mettacomett Path, Harvard, MA 01451. 508-687-1501 x 2604.
Fax 508-687-7265.

TECHNICAL ARTICLES --
John Collins, KN1H, RR2, Box 427, Cornish, NH, 03745. 603-542-2057.

NETS--
GREG ALGIERI, WA1JXR, 22 Chacehill Rd., Lancaster, MA 01523.
(508) 365-7128.

MEMBERSHIP NEWS--
William Legge, NT1R, 232 Foreside Rd., Cumberland, ME 04110. (207) 829-5248.

NEWSLETTER --
Carl Heidenblad, N1CUU, 40 Martins Ferry Rd. Hooksett, NH 03106. 603-647-9864.

OTHER CLUB MATTERS, ADMINISTRATION, ETC.
Jim Fitton, W1FMR, POB 2226, Salem, NH 03079. 603-898-6188H
508-960-2577 W

72

QRP-NE COORDINATORS MESSAGE

The past 2 weeks were spent at HP Company in Santa Clara, CA attending school as a result of a sudden career change. Of the 10 students in my class, 8 were younger than 30 years old. I am 54 and felt like an antique. When I arrived at my hotel in CA, Doug KI6DS and Wayne, N6KR met me. Doug started the Northern California QRP club in May of this year. Wayne designed their first club project - a unique 40 meter transceiver with many interesting features. I had just missed the Northern California QRP club meeting by a couple of hours and over 30 members had attended. Doug helped me put up an antenna, while Wayne set up his prototype 20 meter mobile SSB receiver. It sounded great.Wayne left me the NN1G - 20m transceiver, and the NorCal-40 meter club transceiver. From my hotel room in Sunnyvale, with the Norcal 40, I worked many stations while using a couple of RS lantern batteries and a wire out the window into a nearby tree. Stations worked ranged from Canada to South America (Suriname), and California to Massachusetts, and a nice 589 report from a station in Florida. The Florida station could not believe that I was using a 2 watt battery operated HB station from a hotel room. He was running 500 watts to a Vee beam. I worked some people that I know, and also 4 mobile stations with solid, rag-chew type QSOs. 40 meter mobile seems very popular in California. I am sold on the NorCal rig, and sent my $80 check to Jim Cates last night to purchase one. With the NN1G rig I made some excellent contacts. It seemed that I was not at the hotel when 20 meters opened, & poor conditions and limited operating time available made that band difficult to figure out. The next meeting of QRP-NE will be held Nov. 28, Sunday, at the Boxboro, MA Host, 3 - 4 p.m. Details appear elsewhere in this issue. My flight with Continental, out of Newark NJ, was delayed for 7 hours on Saturday, and I missed the Rochester NH get together with QRP-NE. That was the last time ever, flying Continental !!!

72, Jim Fitton W1FMR

MEMBERS' NEWS
by Bill Legge, NT1R

Dennis Vincent, WW1P, writes; "Licensed since 1990, I got into QRP almost from the start. I bought a used HW-8, made a multiband dipole and off I went. I have since purchased the MFJ 9030 and made a 30 meter delta loop. Recently I built the Lectrokit spider for 40 meters. It was easy to build and my first CQ netted a VE3 and I received a 559. I was thrilled and he was so impressed that he asked me to send him information about QRP. I am active in one of the Maine CW traffic nets and sometimes fill in as net control. I do this with the HW-8 and I am heard statewide so even QRPers can perform in public service communications. I'm active in cub scouting and hope to participate in JOTA this year."

Al Bates, W1XH, informs us, "I've built a little 40 meter transceiver produced by 624 Kits in South Carolina (or NC). Seems to work pretty good. Direct conversion receiver with crystal controlled transmitter for about a watt output. Will have to give it a work out during the Oct. QRP ARCI QSO Party. I did some missionary work at the local radio club during FD. Every time I operated, I cranked the power down to QRP levels. When another operator took over, it would take him a few contacts to realize the power was under a few watts. He'd scream, but then realize power didn't make much difference. We had all the frills: TS-450 and TS-440 for rigs, 160 meter loop up 50 feet, tribander, VHF stations, and laptop computers for logging. With all that, we still didn't make as many contacts as the QRP people did! We didn't even come close! But we did have hot coffee all night long and beef stroganoff and wine for dinner. The laptop computers for logging and duping were nice. Instant duping with out paper and logs and summary sheets completed within minutes of the end of the contest. I have the program if anyone wants a copy (5 1/4 floppy for IBM dos). One of the things that keeps me busy is I play in two musical organizations. I'd be curious if there were other musicians out there. If there were enough, we could get together and form our own "ham-band"."

72

Jack Frake, NG1G, says, "John Collins, KN1H, has just constructed a 2 el beam for 6m and made 6 contacts in the recent VHF contest. He used the 6m rig of his design. I built one of the rigs myself but have yet to make contact with anyone. However, I did borrow John's 6m rig and made my first 6m QSO during the Perseids meteor shower using a 2 el 6m quad about 3 feet off the ground....Hi!. In the near future I'll be putting mine in a case and doing final RX tuning and trying to find a space to put up the quad. Also, I've just finish the W7ZOI/K5IRK superhet rx that has appeared in many ARRL Handbooks. As the article states, "Although relatively simple, this rx is not a toy. It features excellent stability, selectivity and adequate sensitivity." Currently, it's set up for only 30 m, but I'll be adding ALL bands as the proper xtals are located. If anyone out there has any of the xtals sitting around in the junk box, I can give them a warm, safe home...Hi! Also, if any members are building the "Fun Machine" currently appearing in "CQ", I've been in contact with its designer, and new member, Paul Carr, N4PC (NE-184)...There will be a "Fun Machine" QSO party on 30 Dec., 1993 at 2000 EST on 7040...Call "CQ FUN". In my area here, I know of two other new members building the "Fun Machine"; Dave Schaller, W1IS (NE-200) and Mike Schmitt, N1JYT (NE-192), I hope to have mine finished by then. "

Jack continues, "My XYL es I vacationed in northern Maine (the Churchill Lake area) in Aug. I took my OHR "Sprint" and the "Talking Staff"....Tried checking into the Sat NEN QRP net but wasn't successful on two occasions. I could copy everyone FB but WA1JXR or K3TKS couldn't hear me...Hi! Guess the talking staff has its limits...Hi! I'm currently building a monster "Talking Staff" with about 350 feet of wire on a 6' 6" staff. My current version has 70 feet. That's about it for now..."

Wayne Burdick, N6KR, sent in a review of the Northern California QRP Club's NorCal 40 kit written by Chuck Adams: "The case is constructed like the HW-8 and measures 4.6"W x 4.5"D x .2.2"H. RX current drain is 15mA and TX current drain is nominally 175mA at about 2 watts; The receiver is a superhet with the I. F. at 4.915MHz and the VFO at a nominal 2.085MHz, with a novel differential JFET AGE circuit in the AF channel that draws no current; antenna jack and key jack are 3.5 mm. The Limitations are: not enough AF output to drive a speaker; AGC range is limited; VFO tuning range is only 35 to 40 KHz using the varactor diode; there is no I. F. amp so modifying rig for 20 meters or above isn't a good idea."

Speaking of kits, if you are looking for QRP frequency crystals for $5.00 each contact Bill Kelsey, N8ET, 3521 Spring Lake Dr. Findlay, OH 45840. Also, he stocks Kanga Kits, the Super Tee ATU, a 6m converter, a new keyer and the Technowhizzy from Jan. 73 magazine

The summer vacation is now a memory and the Index Labs QRP Plus transceiver still has not arrived. I've talked to them recently and they are anticipating shipments will start around the 15th. I hope they mean October.

My thanks to all who contributed material for this issue. I have saved space in the next column for all of you who have intended to submit something.

72, Bill

NEXT MEETING

QRP-NE will meet Sunday, November 28, 3 - 4 p.m., Boxboro, MA at the HOST, restaurant/hotel. (This is the site of the ARRL Convention at Boxboro. The HOST was formerly the Boxboro Sheraton.)

Items to be discussed include:

1) Next Homebrew Project.
2) A Mini-QRP Only-Field Day Style Contest.
3) Future meeting sites, W1KKF suggests that we meet at the Nutmeg Hamfest for our fall meeting, 1994. Other suggestions?
4) Renewal/membership issues.
5) How to get more members involved.
6) The direction members want the club to be moving in.

72

Where to find parts.

As a new member of the QRP NE Club I thought it would be nice to start off on a good note, so here is a small contribution to our news letter.

Before I get down to my contribution here is a little about myself. My name is Mike Schmitt, the age is 33, class is General and I make my home in Canaan, NH.

I have been working on the CQ fun machine and found I was having some difficulty finding parts. With the help of Jack , NG1G, I got the name of a few parts suppliers. I also ran across the November issue of Popular Electronics which has an article outlining many suppliers. I took many of them and made a list in my computer. I thought I'd pass what looked like the best of the list on to the rest of you. I hope the list is of use ....**72 Mike (N1JYT)**

OAK HILL RESEARCH
20879 Madison Street
BIG RAPIDS, MI 49307
1-800-842-3748

DANS SMALL PARTS
1935 So. 3rd w. #1
MISSOULA, MT 59801
1-406-543-2872

ACTIVE ELECTRONICS
1-800-933-5918

OCEAN STATE ELECTRONICS
PO Box 14586
INDUSTRIAL DRIVE
WESTERLY, RI 02891
1-800-866-6626

ALL ELECTRONICS
PO Box 567
VAN NUYS, CA 91408
1-800-826-5432

NEWARK ELECTRONICS
4801 N. RAVENSWOOD AVE.
CHICAGO, IL 60640-4496
$25 MIN. ORDER

624 KITS
171 SPRINGLAKE DRIVE
SPARTANBURG, SC 29302
1-803-583-1304
(KITS FROM ARRL PUBLICATIONS)

A&A ENGINEERING
2531 W. LA PALMA, UNIT K
ANAHEIM, CA 92801
1-714-952-2114

ACCORD ELECTRONICS
1001 NW 62ND SE #306-F
FT. LAUDERDALE, FLA. 33309
1-800-998-2242

ALLIED ELECTRONICS
401 E. 8TH STREET
FT. WORTH, TX 76108
1-800-433-5700
820 PAGE CATALOG

SCIENCE WORKSHOP
BOX 310NV
BETHPAGE, NY 11714
(POOR MANS SPECTRUM ANALYZER KIT)

ARROW ELECTRONICS
CATALOG DIVISION
25 HUB DRIVE
MELVILLE, NY
11747-9828
(LARGE CATALOG)

DIGI-KEY
BOX 671
THIEF RIVER FALLS, MN 5601
1-800-344-4539
(NO MINIMUM OR SHIPPING CHARGES)

FAR CIRCUITS
18N640 FIELD CT.
DUNDEE, IL 60118
(PC BOARDS FROM QST, CQ, ETC.)

JOHNSON SHOP PRODUCTS
BOX 160113
CUPERTINO, CA 95016
1-408-257-8614
(CATALOG COST $1.00)

72

FOR SALE

QRP Transmitter kits, 40 meter "Little Joe" all parts, PC Board, Case is pre-drilled. Your choice 7/040 or 7.110. $30.00

G5RV antennas, already assembled, 14 AWG Teflon covered antenna wire, 29 feet, 450 ohm ladder line and your coax
for $25. Same except with 75 feet of 450 ohm ladder line is $30.00

Contact Steve Allen, NE-102
N1NPI
RR1 Box 2409
Moretown, VT 05660 802-496-7696

WELCOME NEW MEMBERS

NE-184	PAUL CARR, N4PC JACKSONVILLE, AL
NE-189	DAVE WELK, KB7ZZ HERNDON, VA
NE-190	RUSS KNAPP (NO CALL) CHARLESTON, RI
NE-191	GEOFF BURNS, N1GQV WABAN, MA
NE-192	MIKE SCHMITT, N1JYT CANAAN, NH
NE-193	ROGER BLAISDELL, AA1DG SAGAMORE BEACH, MA
NE-194	DAVID BESNIA, WK1T LEOMINSTER, MA
NE-195	DANNY STEVIG, KA7JQY MISSOULA, MT
NE-196	JOHN KIRBY, N3AAZ CENTREVILLE, MD
NE-197	BILL WHITE, N10SA BROOKLINE, MA
NE-198	BARNIE REYNOLDS, NX1A WESTBROOK, ME
NE-199	SHELDON DUNHAM, W4OEL MECHANICSVILLE, VA
NE-200	DAVE SCHALLER, WI1S NORWICH, VT

CLUB SHIRTS, HATS, PINS, RUBBER STAMPS, COFFEE MUGS, ETC.

Club membership has increased enough to now contemplate polishing up the club logo artwork and seeking prices on an assortment of club items. Before we do, however, we need to know if there is enough interest so that we may offer these things at reasonable prices.

If you would be interested in purchasing any of the above items, I would greatly appreciate hearing from you. Send me a QSL expressing your interest. If you have ideas, please include those. If the interest is strong enough, we will try to have an order form published in the next issue of "72".

Also, if there is a club member out there willing to manage this program, please let Jim Fitton, W1FMR or myself know. I'm willing to provide the necessary artwork, plus assist with establishing the program, but we would need a permanent manager for this program to ensure it's success.

I look forward to hearing from you --

Jack Frake, NG1G, Membership Manager.
POB 1153, Barnard, VT 05031

(Editor's note: Jack wrote and let me know that he only heard from 3 or 4 members who were interested in this. If you are interested, please take a minute to let Jack know, otherwise a good idea could die prematurely.)

WANTED

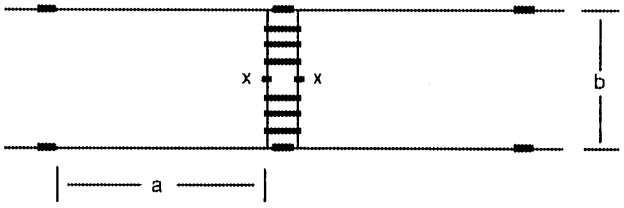
CRYSTALS FOR ALL BAND RX AND TX: 3.0, 3.3, 6.5, 10.02, 10.5, 11.0, 13.5, 14.5, 15.25, 17.065, 17.5, 21.0, 24.5, 25.0, 25.5, 26.0 Mhz. WILL PAY FAIR PRICE.

JACK FRAKE, NG1G
POB 1153
BARNARD, VT 05031
(802) 234-9792

QRP NETS

NET NAME	FREQ	DAY	UTC
BC Group (SSB)	3.729	Every Day	0300/0530
New England QRP	3.855	Monday	0200
North West QRP	10.123	Monday	0200
SEN (QRP-ARCI)	7.030	Tuesday	0100
Michigan QRP	3.535	Tuesday	0200
GSN (QRP-ARCI)	3.560	Wednesday	0200
GLN (QRP-ARCI)	3.560	Wednesday	0200
WSN-80 (QRP-ARCI)	3.560	Wednesday	0300
Northeast Illinois	3.560	Thursday	0200
NEN (QRP-ARCI)	7.040	Saturday	1300
Northwest QRP	7.035	Saturday	1530
WSN-40 (QRP-ARCI)	7.040	Saturday	1700
OK QRP Group	7.060 /3.560	Sunday	1330
VE QRP	14.060	Sunday	1800
TCSN (QRP_ARCI)	28.332	Sunday	1900
TCN (QRP-ARCI)	14.060	Sunday	2300

THE LAZY H ANTENNA
de STEVE ALLEN, N1NPI



72

THE LAZY H ANTENNA

Gain in an antenna is the same as an equivalent increase in the RF power output of your transmitter. This increased gain also improves reception. This gain in signal strength is very important when operating at QRP levels or working DX. An antenna with a gain of only 3 db has the same effect as doubling your power output.

When the subject of gain antennas comes up most hams think of rotary beams. Depending on the number of elements, beams can have a considerable amount of gain. The greatest draw-back to them is the cost of the antenna itself as well as the tower and rotor necessary to utilize the antenna to its fullest potential. Another type of multi-element directive antenna which offers gain at a much lower cost is the broadside array or Lazy H.

Also known as a curtain array, the Lazy H uses a combination of parallel and collinear elements fed in phase to give it broadside directivity. Gain and directivity will depend on the spacing of the collinear elements as well as the height above ground. The recommended spacing is 3/8 to 3/4 wavelength. The approximate gains over a dipole are as follows:

3/8 wave spacing - 4.4 dB
1/2 wave spacing - 5.9 dB
5/8 wave spacing - 6.7 dB
3/4 wave spacing - 6.6 dB

As you can see, the gain figures are quite good. According to the ARRL Antenna Handbook, arrays of this type will give the best gain when the lower element is at least 1/2 wavelength above ground. In some instances this is not practical, as on 40 meters this would be 65 feet. As always, the best advice is to get the antenna up as high as possible.

For operation on the 20 through 10 meter bands the following dimensions may be used. Make each of the four elements 20 feet long. The spacing "b" should be between 16 and 24 feet with the larger dimension giving slightly greater gain. The height above ground should be at least 15 feet. However, better results will be obtained if the bottom element is 30 to 35 feet above ground.

The configuration that I use with good results is as follows. Each element is 50 feet long with a spacing of 25 feet. The lower elements are 25 feet above ground. This antenna works very well on 80 through 10 meters when fed through an antenna tuner.

The Lazy H is basically two center fed dipoles in phase. The four elements are made from 14 gauge antenna wire. The phasing line connecting the two dipoles is 450 ohm ladder line. The antenna is fed with the same 450 ohm line and attached to the phasing line at its center point marked "x" on the diagram. The insulators are standard variety. To obtain the lowest SWR the antenna should be fed through an antenna tuner.

For further information on this design I recommend the following articles: R. Olsen, "The NRY'" QST, March, 1993. P. Carr, "The N4PC Extended Lazy H Antenna", CQ, April 1992; and the ARRL Antenna Handbook.

The Lazy H is not much more work than putting up the venerable dipole but a lot more gain for your effort.

72,

Steve Allen, N1NPI
NE-102
RR1, Box 2409
Moretown, VT 05660
802-496-7696

WANT MORE INFORMATION ON THE NORCAL-40 KIT?

Contact: Jim Cates, 3241, Eastwood Road, Sacramento, CA 95821.

(Received Info That They Are Sold Out as of 10/24/93)

72

PLEASE SEND BLACK AND WHITE PICTURES OF YOUR PROJECTS TO N1CUU TO ADD INTEREST TO THE NEXT ISSUES OF "72"

KA7QJY SMALL PARTS NEW LOCATION

Danny Stevig, KA7QJY has moved. His new address is listed below. Also, please take note of the fact that he is offering a kit version of NN1G's 20 meter superhet transceiver for $49.95. He offers other kits, including the Neophyte receiver and the Two-fer transmitter. Danny has been known to QRP'ers as an excellent parts resource. You may want to write him and request his latest list of kits and parts.

Danny Stevig, KA7QJY
Dan's Small Parts & Kits
1935 S. 3rd. W. #1
Missoula, MT 59801
Phone/FAX 1-406-543-2872

FOR SALE-

BUILDERS! Hard to find 4-pole, 5 position ceramic rotary switches. Ideal for bandswitching rigs, antenna tuners. etc. Silver contacts. Limited supply. One per person. $5 via first class mail. Also: FAR p-c board and ten crystals for filter for K1BQT 15 meter transceiver (CQ, September, 1990). $10 shipped.

Fred Bonavita, W5QJM
PO Box 2764
San Antonio, TX 78299-2764

AA2U - P40C QRP DXPEDITION

I am going on a QRP DXpedition at the end of the month. I will be operating from Aruba and my call sign will be P40C. Operation will commence on 26 or 27 October on the usual QRP frequencies or down around .020 if activity is light. I will be using an Argonaut II to a tri-bander and dipoles on a 7th floor roof. Hopefully, I will have a good signal. Also, I will be active in the CQ WW SSB contest as P40C(a QRP entry). Please look for me and give me a point. The contest starts at 0000z, 30 Oct. and ends 2400z, 31 Oct. I will be on continuously throughout the contest period. I would guess the best places to find me during the CQ WW would be in the upper portions of the phone bands where activity is lighter and my weaker signal will stand out better. If you find me and work me, post me on the local packet cluster so others can find and work me. This goes for before the contest also, it will make it easier for some of you to find me. All QSL's will be answered as I will be logging with a computer and will print out all labels upon my return. QSL to my call book address with an SASE , or if you want to wait, you can pick your cards up for free at Dayton. I will bring along cards and labels. QSL's via the bureau for non US stations are welcomed. Some activity is planned for the WARC bands before the contest for those that are interested in WARC.

72, **Randy Rand AA2U / P40C**

REMEMBER QRP-NE SSB NET, MONDAY EVENING, 9:00 PM LOCAL AT 3855 Khz +\- QRM.

72

QRP NEW ENGLAND PROJECT # 2 - A PROPOSAL

After getting inspired by my peek "under the hood" with N6KR's club offering for a 40 meter transceiver, I wondered if we couldn't do something even simpler and cheaper.

As I understand our clubs direction we are trying to

1) Keep it simple.
2) Keep it simple.
3) (You get the idea)

It should be possible to put together a compact single-board superhet that's easy to build and adjust. Parts count would be comparable to a DC VFO transceiver. Coverage would be on the order of 40 Khz with a single turn tuning pot.

We'd provide the board and parts. The enclosure we would skip and leave that to the builder. Cost for the parts to the club would be $15 to $20. including the controls and PC Board.

The only functional downside with this barebones approach is the need for a manual T-R switch. (An SPDT relay and key up delay timer could be peddled as an outboard option on a 1 x 1.5 board.)

This is not intended as competition for N6KR's fine effort. It's intended to get folks up and running with a minimum cost homebrew project, with fair performance.

I'd like to hear comments back on this, PLEASE! What do you think? If you would take a minute and write or call and let me know what you think of this idea, I would appreciate it.

Thank you --
Dave Benson -- NN1G

TELL US WHERE TO GO... FOR OUR FALL '94 MEETING

It has been suggested that the FALL 1994 QRP-NE meeting might want to consider meeting at the Nutmeg Hamfest, at "the Fairgrounds in Durham", Durham, CT. This year, the Nutmeg 'fest was held on Sunday, October 10th. Preliminary information indicates that the 'fest will be held Sunday, October 11, 1994.

The Nutmeg Hamfest has much to offer. It has been the ARRL State Convention for CT. It has overnight camping on the grounds. There are both indoor and outdoor spaces for sales, plus tailgating.

How about it folks? There were only a handful of QRP-NE types at Rochester, NH this fall. Should we consider the Nutmeg Hamfest for a fall 1994 meeting? **LET US KNOW WHAT YOU THINK!**

INTERESTED IN SERVING AS EDITOR OF 72?

N1CUU and QRP-NE need an active, dedicated, QRP'er to take over as editor of 72. 'CUU will have served for 2 years and 8 issues when the upcoming December/January issue is released, and feels it's time to step down .

If you would be interested in serving as general editor of 72, please let either W1FMR or N1CUU know of your interest.

72

QRP Tidbits, by Bob Gobrick, VE2DRB/WA6ERB

For those who were not able to attend the Dayton Hamvention 1993 and visit the ARCI QRP Hospitality suites I offer these QRP tidbits.

The new location for the ARCI QRP hospitality suite was first class and a good time was had by all (record attendance). This year had a special treat with both Roy Lewallen, W7EL and Wes Hayward, W7ZOI stopping by and passing around some of their QRP toys that we've read about over the years. I believe this was Wes's first time at Dayton and he mentioned that next year maybe his son would join him.

Of interest at the hospitality suite were the QRP vendor displays with some of the demo rigs being put through the rigors of hospitality / portable operation (a few soda waters helped that CW swing - hi). Of note were the kits by Oak Hills research: the new QRP Spirit superhet; the new, reasonably priced QRP Sprint (based on the W7EL Optimized QRP Transceiver with a new mixer front end and new audio section). Also a new OHR QRP wattmeter (nice) and the new hot, Switched Capacitor Audio Filter. Radiokit was at the suite after an absence from Dayton for a few years, with a cadre of QRP kits and a special back in business sale on its mini (4 x 4 x 2) K1BQT designed superhet. A newcomer S&S engineering showed off their new digitized ARK40 QRP kit. Other folks showed off their wares like sunny Mike Bryce, WB8VGE with his Sunlight Energy Systems array of solar equipment.

On the Hamvention floor, the ARCI, G-QRP Club, and Kanga UK/USA QRP kits held down their sacred booths at Dayton. Across the aisle, Tejas RF Technology had a booth with their new Backpacker I on display. Jack Frake, NG1G shared the boot and had his rare Russian Oblast maps for sale.

Ten Tec introduced their new 50 watt CW/SSB Scout with plug in band modules.

Ramsey had a new surprise rig which most people missed. Their new SX-20 10 watt CW/SSB synthesized 20 meter transceiver featured a minimum of knobs (most functions handled by flat sealed membrane pushbuttons) yet some very nice features. The units were prototypes and I was not able to determine if the kit version would be available. Assembled price was close to the cost of the Ten Tec Scout (approximately $500).

Finally, Dayton was a place to see up close some rigs and kits that we hear about but don't always get to view, like the UK line of C.M. Howes Kits distributed by Townsend Electronics, and the super compact Mizuho single band CW/SSB QRP handhelds distributed by J-Com, as well as the new HT-750 triband QRP handheld by Tokyo Hy-Power. MFJ was there with their full line of QRP transceivers and accessories. (At the hospitality suite a MFJ factory mod kit to increase audio output was on display).

Finally what "made" Dayton, was the jolly gang of New England QRP Club representatives, Jim, W1FMR, John, KN1H, and Jack, NN1G to name a few.

I can't wait until Dayton'94 --- How about you?

An Antenna That Really Doesn't Work All That Well

Someone at the QRP session at the NH Convention suggest we all might be interested in different antenna designs. I doubt it, but here is my latest.

This one isn't complicated. It's a simple folded dipole. Length is 468 divided by frequency in Mhz, so 40 meters comes out at 66 feet plus. It is made out of 300 ohm twinlead including the feeder (horror!) I got 100 feet of twinlead at a fleamarket for 50 cents. There are small plexiglass insulators at the ends and a plastic tape insulator in the middle.

Does it work? Yea, sort of. It is broader on 40 meters than a plain dipole. It works on 40 and 15 meters, but doesn't load for beans on the

other bands. I twist the wires together and load as a random wire on the rest of the bands. (This is kind of gross.) As predicted, it works about as well as a regular dipole.

I got a good report from a guy on Long Island, NY. He gave me an RST 119, but copied everything I said. I don't think he knows what RST 119 means.

A folded dipole is easy to build. It works reasonably well as long as you don't want more than one or two bands. I didn't want to be stuck on 40 and 15 meters, so after a few weeks, like most of my antennas, this one came down and was replaced.

Anyone want some short lengths of light weight twin lead?

72,
Al Bates, W1XH

THANK YOU HARRY, W1LMU!

Before any more time passes, we want to say THANK YOU to Harry. For a period of time, Jack NG1G, was unable to serve as membership coordinator. Harry stepped right up to the plate and helped out admirably. Your help was much appreciated! THANK YOU!

"HAMBREW" -- A NEW PUBLICATION

72 has received a letter from a new amateur radio publication which will be called "hambrew" ; for Amateur Radio Designers and Builders. They ask that members who design and build rigs contact them as they are interested in publishing articles. (Send them to 72 first of course, hi hi!) Interested? Contact George DeGrazio, WF0K; Editor and Publisher; POB 260083, Lakewood, CO 80226-0083. For subscriptions and Ad orders contact them at 1-800-5-HAM RIG.

New Product Review N6KR/NorCal 40 QRP Transceiver Kit

By Dave Benson, NN1G

I met with Wayne Burdick, N6KR on a recent business trip to the Silicon Valley. After hearing rumors of a great new club kit project from the Northern California QRP Club, I wanted to see this group's effort for myself. Suffice it to say I wasn't disappointed - Wayne's prototype wound up in my shack for several very enjoyable weeks!

The most striking attribute of this offering is its packaging scheme. Wayne's design utilizes a single 4.25" x 4.25" printed circuit board and a clamshell (2 piece) top and bottom cover assembly. Each cover attaches to the PC Board via a pair of standoff posts. With the covers removed, the PC-mounted controls and connectors remain attached to the front/rear panels, and the rig may be aligned or serviced in this state. Slick indeed!

The front panel controls (RF gain, RIT and tuning) mount directly to the PC board to ease assembly. Rear panel connectors are also PC-mount types. so there's truly little wiring required to put this rig together. There are only 2 discrete wires underneath the PC board, as well as several short jumpers on the topside. (Sad but true-it sounds easy, but a single-board, no-jumpers transceiver design is a true layout challenge!)

Wayne attempted to minimize the number of toroids in the kit to further speed assembly. He uses subminiature RF chokes and trimmer caps in lieu of the usual IF transformers or toroids for bandpass functions. As a result, there are only five toroidal cores to wind.

As a point of interest, there's no IF amplifier stage in the receiver design. The design retains differential input/outputs wherever possible on the mixer and product detector (NE602) and AF Amp (LM386) inputs. As a result, an IF amp isn't really necessary since those other sections yielded adequate gain. I tried both

good quality lightweight and padded hi-fi headphones, and each yielded plenty of audio. Speaker volume is adequate for "quiet room" listening. The crystal filter selectivity is good. Bandwidth is about 500 Hz, and passband skirts are steep enough so that only the very strongest signals are audible on the other side of zero beat.

QSK operation was free of unwanted disturbances on key-down. There was a fair amount of AGC "thump" on very strong CW signals. The AGC function is the height of simplicity itself, and shares the series-switch AF muting circuit to minimize the overall parts count. In actual practice, merely reducing the RF gain (front panel) setting eliminates the large-signal AGC thump. Wayne intended ths function merely as an "ear protector" and it serves admirably.

There's one receiver birdy at 7022 Khz, but it's not overwhelming. The kit supplies extra components with instruction for adding these parts to the bottom of the PC board to minimize this spur. You'll want to add these parts if you're planning operation in the Extra segment of the band.

VFO stability was excellent. Chuck Adams, K5FO reported measuring drift from cold start as 25 Hz. The VFO section uses a Colpitts oscillator using polystyrene caps and a T-68-7 toroid operated at 2.0Mhz. Tuning coverage is roughly 40 Khz using a MVAM108 varicap diode and a single turn tuning pot. This coverage is fairly well linearized by the biasing network design. An air-variable trimmer allows a bandset adjustment to your favorite portion of 40 meters. An RIT function is also provided, and seemed to work well. Minimum RIT range is about +/- 1 Khz, at the minimum capacitance end of the varicap tuning. Maximum range (+/-2.5 Khz) occurs at the low frequency end and affords you a fighting chance at those "split frequency" pileups.

Power output is adjustable, with a recommended range of .5 to 2.0 watts output. As delivered to me, the prototype measured out at 3.5 watts, but this power level is not recommended for long key down intervals due to the modest heat sinking. The keyed transmitter waveform is quite hard, less than 1 msec rise and fall time. This isn't fatal to a QRP transmitter though, and somewhat improves readability under adverse band conditions. I solicited comments in on the air tests, and no one could fault this rigs signal! If you are a purist, the instructions supplied with this kit provide information on softening the keying waveform.

Mechanical fit and finish are good for a kit offering in this price class ($75). The printed circuit board features silk screening of all component designators or values. The front and rear panels are not labelled; rather, this aspect of the project is left to the builder's ingenuity. The club felt that many builders would prefer to customize the front panels legends, and this decision also helped keep the cost reasonable. All panels and covers are made of unpainted .060 aluminium with an attractive textured finish.

Would I recommend this rig? You bet! While there are always a few things that could be done differently, none of this rig's design features detract from its attractive combination of low price and good performance. The good news spread fast with the ranks of the NorCal QRP Club, and the original run of 50 kits was increased to 100 before the design hit the streets. There are a few of these kits left as of this writing, but I suspect they won't last long! Contact Jim Cates, WA6GER if you're interested.

72, Dave Benson, NN1G

(Editor's Note: Recently received word that NorCal has sold out of these, however they or other vendors may offer it again! Let's hope so!)

"FUN MACHINE QSO PARTY"

For those who have been building the "Fun Machine" featured in CQ and authored by new member Paul Carr, N4PC, there will be a QSO Party on December 30, 1993 at 2000 EST. Frequency will be 7040. Call "CQ FUN".... and have fun!

72

1994 MICHIGAN QRP CLUB
14TH ANNUAL CW CONTEST

1200Z, JANUARY 1, 1994 TO 2359Z, JANUARY 2, 1994. (36 hours). CW only, 160 through 6 meters (WARC bands EXCLUDED). Contest is open to all amateurs and all are eligible for awards.

CLASSES:
A - 250 milliwatts or less output
B - One watt to 250 milliwatts output
C - Five watts to one watt output
D - Over five watts output.

Exchange: RST, QTH, (State/Province/Country) and MI-QRP Membership number. (Non-members send power output.)

Frequencies: 1810, 3560, 7040, 14060, 21060, 28060, and 50060 Khz.
Novice: 3710, 7110, 21110, and 28110 Khz.

Scoring: Stations may be worked once per band for QSO points. Member contacts are 5 QSO points each, non-member contacts are 1 QSO point each. Multiply total QSO points (all bands) by the number of States/Provinces/Countries worked (all bands) for total points.

Bonus Points: Total points x 1.25 for homebrewed RX or TX with commercial RX or TX combination. Total points x 1.5 for homebrew transceiver or RX/TX combination. HW8/9 not eligible!

Award Certificates: Certificates will be issued for the highest score in each State/Province/Country. A separate log is required for EACH BAND, as well as your name, call, address, equipment description and POWER OUTPUT.

Logs must be received by 5 February, 1994. Please send an SASE for a copy of the results.

All logs to L.T. Switzer, N8CQA; 654 Georgia, Marysville, MI 48040. A SET OF 1 LOG SHEET AND 1 ENTRY FORM ARE AVAILABLE FOR AN SASE TO THE ABOVE ADDRESS. HELP US CELEBRATE OUR 16TH ANNIVERSARY!