January 1997

72

THE NEW ENGLAND QRP CLUB NEWSLETTER



NE-QRP Club RR 1 Box 221 Canaan, NH. 03741

First Class Mail

TO:

97NE1 Jim Fitton, W1FMR P. O. Box 2226 Salem, NH 03079

72 - THE OFFICIAL NEW ENGLAND QRP NEWSLETTER

Write For 'Your' NEWSLETTER

The goal of <u>72</u> is to make it easy for you to submit your ideas and suggestions for all to read. Send your materials, hand written or typed or MS-DOS to <u>72</u>. Use the Internet to send materials to your editor or floppy diskettes, MS-DOS Windows gladly accepted. All materials in 72 are fully copyrighted and may only be reprinted with explicit permission from the **New England QRP Club**.

THE DEADLINE FOR THE NEXT 1334E OF 22 WILL DE MARCH 22, 1997.

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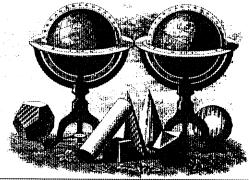
CW NETS - OPEN

MEMBERSHIP NEWS - OPEN

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1996 QRP AFIELD Winner!

I've never been much for contests, and I just got into ORP about a year ago, but I do know Morse Code and consider myself a pretty fair operator on CW-done a lot of rag chewing on CW. The way I got started in QRP was through a friend of mine, Jim Gragg-WB4NPT who Lives in Conyers, GA, who challenged me with a 40 meter 1 watt transmitter that he built. Jim is not much for operating but has designed and built a few projects, QRP rigs and others too. He put a little chirp in this one so he would be able to recognize me on the air. It ran a maximum of 1 watt so I couldn't crank up the power. When he gave it to me, he said, "See what you can do with this." To my surprise, and his too, I worked 33 states and 13 countries in just a couple months. This really got me enthused about QRP; it was kind of fun "wowing" and "gee-whizzing" my friends. Know what I mean, Vern?

Actually, I have been an active ham for only fifteen years and I'll explain that in a minute. I received my first license in 1958 as K5QYY and was pretty active for a few years. At that point, in 1973, I let my ticket expire—burned out on radio. I guess my job as a microwave technician with a major communications company was all the radio I could take. Things do change and about two years ago the ham radio bug bit me again. My job is still with microwave communications but not as demanding as it was back in the sixties and seventies when microwave was mostly vacuum tube-type equipment, big changes here too.

I was bitten by the ham radio bug again and found out that ham radio had changed a lot too since the sixties, and not for the better, in my opinion I might add. We didn't have SSB, digital modes and foreign broadcast stations killing us on 40 meters CW thirty years ago. (Oh, where have all the novices gone?). I learned that now an extra class license is needed to have the same privileges as a general in the sixties, so I started listening to W1AW code practice and to my surprise my code speed was back up to over 20 wpm in no time. I was familiar with some of the theory in the license manual, so after a few months of intensive studying, I was ready for the tests for a brand new ham license. The rest of this story is history and to top it all off, I was lucky enough to receive a call, AC5AM. (I will keep this one, never liked my old one much—too long for CW).

A few months after I became interested in QRP operation, on the bands I heard the QRP ARCI Spring QSO Party going full bore so I jumped in and started making contacts and did fairly well, although I did not send in my logs. After joining QRP ARCI, I saw the results in QRP Quarterly and to my surprise, no one from Louisiana was listed. I thought to myself, "Hhmm, if I would have sent in

my logs, I would have received an award for first place in Louisiana." The next QRP contest scheduled was the Summer QSO Party which I entered and sure enough, placed first in Louisiana by being the only entry from this state. Overall, in the contest I placed fifth. Not too shabby

With this first contest under my belt, I entered the CQC QSO Party and the Michigan Labor Day Sprint contest. I could see contesting was getting to be addictive and it sure was a lot of fun. Next came the New England QRP AFIELD contest and I thought I would need to go whole hog on this one (southern expression for you northern types). I'm sure you veteran contest professionals know this, but this contest game is a grueling ordeal to subject a human through. Here I am sitting, hunched over a QRP rig and paddles, with log book and scratch pad for hours on end...phew. It is sort of like beating your head against the wall—it feels so good when you stop.

Consequently, I went to a place in Grant Parish, LA, high on a bald top hill, about 25 miles from my home QTH, and put up some temporary antennas. When I say high, I mean high for Louisiana. The highest point in Louisiana is only 535 feet above sea level. My location in Grant Parish is like the Rocky Mountains, of Louisiana, of course, being a lofty 280 feet above sea level. Being on this high hill sure seems higher than what it actually is anyway. There used to be an old radio tower there, which is just right to hoist up some sloping dipoles and loop antennas. I guess this is one reason why I like this place. I promptly put a 40 meter and 20 meter full wave delta loop and a 40 meter and 20 meter half-wave dipole all up about a hundred feet. Once an antenna is up about a wavelength off the ground not much is gained by going higher if it's in the clear.

Now, for some really esoteric information and I will give away all my secret techniques to operating a winning station. (I'll probably never win another contest now anyway.) First-have a strategy, second-antennas and third-antennas again. I will explain. First, my strategy. After reading the rules for the contest, I decided to go to the field, use batteries for power and run 950mw power out because I wanted that big X8 multiplier. Running one watt is nothing new to me since that is all the power I ever run ORP anyway (it's only one S unit lower than five watts and I have good antennas to make up the difference). Also, I decided to start out on 20 meters and then move down to 40 meters later and, as I expected, most everyone else did also. I would be with the crowd. It's always best to be with the crowd, especially if you have not worked most of them. Furthermore, I knew 20 meters would be the best band in the daytime with 40 meters becoming better closer to sundown

Second, antennas: I like resonant, full size antennas with no traps and no tuners either. Sorry, but I experimented with tuners back in the 60s and found out I did not like them. Yes, I know resonant antennas, especially half-wave dipoles, are narrow banded and good for only one band, but I only operate CW and a few kHz either side of the QRP frequencies anyway. (In my opinion, this is the key. Yes—full-size resonant antennas, loops if possible, otherwise a dipole is next best. Multi-element yagis are great but sort of clumsy in temporary setups. I shy away from verticals for QRP work). My little half-wave dipole at my home QTH is only 25 feet up and works almost as well as an antenna a hundred feet up, although at home I can not put up any loops, which I like best.

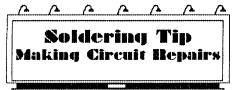
And finally, antennas again. You were probably wondering why I put up a loop and a dipole for 20 meter and another loop and a dipole for 40 meters. It's like, "... if the left one don' get you, then the right one wilf"; or, if the one facing east don' do the job, then try the one facing north. Since I had room to burn at this remote site in Grant Parish, I decided to use this "diversity antenna system." This is the use of two antennas, not simultaneously, but whichever antenna is doing the better job receiving. Generally, the antenna receiving the better signal will also be better transmitting and loops and dipoles are directional too.

Having a loop and a dipole up at the site for each band used, using a two-position coax switch to choose the better antenna, the antenna that received the weaker signal better was the one that was used. I would call CO on one and if no action I would switch to the other. When I heard a weak signal call me I would switch to one antenna and the other to see which was the better receiving antenna. This was the antenna I would use for that contact. I usually stayed with the loop but there were times when the dipole worked better. I eventually learned just how directional loops and dipoles are and they are much more than I originally believed to them to be. It seems that day everything was right, the band was in good condition, my antennas were ready and I was in the groove, so to speak, to make a lot of QSOs. I sat at the operating position at the beginning of the contest and before I knew it, the contest was over and was surprised that I had made that many contacts. I had a hard time walking at first, but that is part of the fun. Right? RIGHT!

That is the whole story and I was very surprised to learn that I won the New England QRP AFIELD contest (with all the big gun contesters around) and of course very happy. When I receive the winning plaque, it will be proudly displayed here in the "Bayou State," right above my ham station. I want to thank Chet Bowles-AAIEX, and the entire New England QRP Club for sponsoring this contest. I am also a proud member of the New England gang with number NE#504. I sent my membership application the day before I found out that I won the contest, good timing. Also, thank you Dennis Marandos-KILGQ for asking me into the club. Dennis is my best DX with a 250 mw 40 meter home brew transmitter, great fun to work New England with 250mw using a 40 meter resonant half-wave dipole up about 25 feet.

This QRP operation is a great learning process for me and probably the only thing keeping me interested in ham radio. Besides it's a rare thing where one can have more fun with less these days. QRP is GREAT—ILOVE IT.

72/73, Bob Stolzle-AC5AM, NE# 504



The local hobby store sells steel wire of various sizes for about 15 cents per yard. They also sell a pin vise for about six dollars. I put a short piece of steel wire in a pin vise to use

as a probe, and also to clear solder out of printed circuit board component holes. Just heat the wire with an iron as you push it through the hole. Solder does not stick to the steel wire. Stainless steel wire would work also.

Jim Fitton - W1FMR



CLUB TREASURER'S REPORT

Paul Kranz W1CFI

Your QRP Club finished the year with a balance of \$2773.06 in its checking account, which is an increase of \$360.04 over the period from August 8, 1995 through December 7, 1996. The details of the year's finances appear at the end of this report.

There are some details which, when examined, modify the picture a bit. Last year, the club spent \$636.50 for the purchase of the patches and had no income to help offset this expense. This year we had \$465 in income from the patch project with no expenses to offset this income. Thus, overall the project to date has a loss of \$171.50. Additionally, we have an expense of \$225 for the mast project this year, but no income to offset this expense. If we were to take the last two years together, and not include the mast project expense, the club would have a positive balance of \$24.23. Generally, the club is covering its expenses in the long term.

Newsletter production is our largest expense. It is currently costing us \$502.13 to produce each printing of the newsletter, which is up only \$5.56 from last year and our dues are just covering the cost to print the newsletter.

QRP-NE INCOME AND EXPENSES FOR 1996

Beginning check book balance \$2413.022 INCOME Dues \$2833.45

Dues	\$2833.45	
Patches	\$465.00	
Total Income	\$3298.45	\$3298.45
EXPENSES		
Newsletter	\$2510.67	
Membership	\$15.00	
Flea Markets	\$30.00	
Mast Project	\$225.00	
Internet Fee	\$115.79	
40-40 Kit Return	\$41.95	
Total Expenses	\$2938.41	\$2938,41
ENDING CHECK B	OOK BALANCE	\$2773.06
Gain (Loss)		\$360.04



RENEW NOW

Don't be left out on coming events, technical articles and fun stories in future issues of 72. Be sure your dues are in and that your address is correct. All corrections are to be sent to the Renewal Chairman, Bill Studley AA1OC, whose address appears in the front of this issue.

QRP AFIELD-1996



FINAL RESULTS



Score	Name	Call	NE #	Pwr	Location
17360	Robert Stolzle	AC5AM		lo/field	Grant Parish, LA
2.000		****	****	*****	
14040	Meriden, CT ARC	W1NRG	300	hi/field	Godek's Farm, Wallingford, CT
11352	Peter Beedlow	NN9K		hi/field	Nr. I-80, 280, & 74, Henry City, IL
9472	Owen "OJ" Quarles	WA1YIA		hi/field	Ranch of KB5YVT, Bedis, TX
			292	lo/field	Indep. Oaks Park, Clarkston, MI
9200	Pete Meier	WK8S			
8680	Bill Stietenroth	K5ZTY	440	hi/field	YVT Ranch, Bedis, TX
7424	Bob Kellogg	AE4IC		hi/field	Backyard, Greensboro, NC
7040	Mike Pulley	WB4ZKA	241	lo/field	Christopher Creek, Payson, AZ
6960	Brian Kassel	W5VBO		hi/field	Backyard, Peoria, AZ
6820	Ken Newman	N2CQ	458	hi/field	Gloucester City 4H Gnds, Mullica, NJ
		**	*****	******	
6232	Glenn Pladsen AEØQ	/NØTBM		lo/field	National Forest, Laramie, WY
6048	Paul Harden NA5N	/AB5OU		hi/field	Manzano Mtns., nr Torreon, NM
4140	Marshall Emm	AAØXI		hi/field	Daniels Park, Denver, CO
3584	Craig LaBarge	WB3GCK		lo/field	White Clay Creek Park, Newark, DE
3024	Russ Carpenter	AA7QU		hi/field	Backpacking in Oregon Cascades
2604	John Perrone	NIØA		hi/field	Frontenac Park, MN
2560	Cam Hartford	N6GA		lo/field	San Gabriel Mt, East of LA, CA
2520	Mark Adams	N2VPK	376	hi/field	Hunting camp, Bethany, NY
2380	Brian Keegan	KF2HC	274	hi/field	Backyard
1296	Dennis Marandos KllGQ	/WA1EYP	151	hi/field	Greeley Park, Nashua, NH
1140	Dave Benson	NN1G	006	hi/field	Nat. Forest nr Arlington, VT
1140	Tim Ahrens	WA5VQK		hi/field	Woods, SW of Austin, TX
1064	Roger Hightower	AA7QY	383	hi/field	Mesa, Arizona (New call-K7KT)
1024	Walt Thomas	WA4KAC		lo/perm	Home, Laurel, MD
684	Monte "Ron" Stark	KV7Y		hi/perm	Home, New Washoe City, NV Hamilton Army Base, Brooklyn, NY
680	Kevin Glynn	KB2TEO		hi/field	
525	Larry Mergen	KØLWV	202	hi/perm	Home, Raymore, MO
520	Ernest Gregoire	AAlik	202	hi/perm	Home, Canaan, NH
480	Anthony Drumm	AAØSM	050	hi/field	Park, Rochester, MN Univ. of MT station, Missoula, MT
472	Chet Bowles John "Jack" Hotchkiss	AA1EX	058	hi/perm	
468		W7CNL		hi/perm	Home, Boise, ID
336	Mal Goosey	AA7WT		hi/perm	Home, Bozeman, MT
308	Dean Marzocca	N2TNN		hi/field	Sandy Hook, NJ
200	Jim Stone	WB8NYV		hi/perm	Home, Detroit, MI
126	John Elliott	VE6ZAA		hi/perm	Home, Calgary, Alberta, Canada
115	Jim Fitton	WIFMR	001	hi/field	Under pier, Saco, ME
70	JackDougherty	KBØPJE		hi/perm hi/perm	Home, Houston, TX Home, San Antonio, TX
16	Bruce Parkes	KA2ZGW	ar. Ca	ni/peim rtificates au:	arded to next nine finishers.
Liadn	e amai.nen no iti.zr btac	C 111112111		, unitables awa	



New England QRP Club 79er SPRINT

When: Each Thursday evening during February and March

Modes: CW-Crystal and VFO Control

Frequency: ~ 3.579 MHz

Power Level: 5 Watts or less output power Time: 9:00-10:00 p.m. EST (0200-0300 UTC).

Exchange: RST QTH NE#X NAME; ie.579 OH NE404X

Ted. Members use QRP-NE number; NE404 and add

X if XTAL control; NE404X. Non-members use
power level; 4W and add X if crystal control: 4WX

QSOs are cumulative: Work the same station on subsequent Thursdays.

Score: QSOs X SPC Crystal Station Bonus: Total score X 1.5.

Example: You work 50 stations during the event in 10 states with a VFO-controlled transmitter. Your score is 500 points. If you used a crystal-controlled transmitter and worked 50 stations in 10 states, your score is 750 points.

The 79er transmitter was NE-QRPs first club project. It uses a 3579.545 kHz crystal to set the frequency. These crystals are used in the colorburst oscillator of all color TV sets in the United States and Canada, and in other devices as well. The 79er event is an on-the-air get together, not a contest. Crystal-controlled stations append the letter "X" to their calls, such as "KF8EE/X." Yes, it's legal. We hope this event will stimulate everyone to build a crystal-controlled transmitter to use during the event!

Ted Albert, KF8EE 1924 Timberidge Drive Loveland, OH 45140

or

E-mail logs to: 72437.651@compuserve.com. Logs need to be received by April 30, 1997. Results will be published in <u>72</u>. State output power level, type of rig, and antenna type on logs. Include comments on the event or how you built your crystal-controlled transmitter for inclusion in the report in <u>72</u>. Watch out: W1AW transmits bulletins at 10:00 PM on 3.581 MHz

Transmitter Reference articles:

In case you were wondering, 79er comes from 3.579 MHz Articles which abound on building a simple crystal-controlled transmitter for 80 meters. Try the Universal QRP Transmitter, page 26 of Solid State Design (ARRL), or The Oner (Sprat), or The Cubic Incher (ARRL), or The 79ER/Colorburst Special (NE-QRP).



WORDS NOT YET IN THE DICTIONARY

CARPERPETUATION (kar' pur pet u a shun) n. The act, when vacuuming, of running over a string or a piece of lint at least a dozen times, reaching over and picking it up, examining it, then putting it back down to give the vacuum one more chance.

A Phone Call to Mama

Joel Dension WA5MCV



Hello Mama: this is your loving son Joel. Don't start with that Joel who stuff. Yes Mama, I'm upset. I missed the QRP fall QSO party. No, Mama that's not some weird sex party. That was my fellow QRPers getting to know each other on the air.

No Mama, it wouldn't be the same over the phone! No, this is not a strange way to communicate. All it requires is skill, dedication, and an open mind.

What do you mean "that eliminates your participation."

Bye Mama, Love you.

The NorthWest QRP Club Digital Contest

Date: Saturday-February 1, 1997

Time: Feb 8 1997-17:00 UTC to Feb 2,1997-05:00 UTC

Frequency: 80 thru 10 meters (no WARC bands)

Note - Limit QSOs on 20 meters to those ABOVE 14070 kHz

Mode: *Use Baudot, Pactor or Amtor only*

Power: QRP = Running 10 watts pep or less (maximum)

Exchange: RS(T), NW QRP Member # (or power output if nonmember), State/Province/Country

Scoring: Submit the best 6 hours of the 12 hour contest.

5 points each for contacting NW QRP Club Member

3 points each for contacting non-NW QRP Member

Classes:

- A. Single Operator (single transmitter)
- B. Multi-Operator (single transmitter)
- C. Club (single transmitter)

Awards:

Top over-all winner (all call areas)

Top DX entry

Top score from each US Call Area

Top Club Score

Submit your log by February 31, 1997 to: Stan Yarema, KG7ME

NW QRP Club Contest Editor 3457 12th West

Seattle, WA 98119

or send E-Mail version of your log to: n7mfb@juno.com



The NorCal face plates in the October 1996 issue of <u>72</u> was prepared by **Preston Douglas WJ2V**. Preston also has several versions of the Sierra with/without options such as the S-meter and VBT. And it was in color originally. Thank you Preston for your wonderful effort in making our home brew rigs just a bit better than commercial! Next time you see Preston, thank him! We salute you. Kudos from the NE Club!



Type 77 ferrite cores for the W7EL Directional Wattmeter Tom Randolph N100Q

NE-ORP 419 Simple and Accurate QRP Directional

Wattmeter", by Roy Lewallen - W7EL, appeared in the February 1990 issue of QST. This simple gadget, accurate from 5mW right up to 10 watts, across a very broad bandwidth, has even appeared in commercial kit form.

In that article, Roy used a small directional coupler made up from three Amidon-type 72 ferrite cores. These cores are no longer sold by Amidon. The recommended replacement is the similar type 77 ferrite. Al Muise - K1NZQ and I, in the process of preparing to build our wattmeters, decided to make up a coupler of FT37-77 cores and test its response. All other details of the coupler are per the article in QST.

I had an old wattmeter based on a simple 20 dB coupler and some germanium diodes already in a box. That meter was only sensitive down to about Ø.75W, so I decided to "gut" it for this project. A microstrip circuit board was prepared per the W7EL article, and the coupler built. The board fit between the BNC connectors at each end of the box, keeping the connector board coupling short. Ground was provided by ground lugs under the BNC connector nuts for the coupling/directivity measurements, and by copper foil soldered from the BNC to the ground plane (considerably shorter than the ground lugs) for the SWR and insertion loss measurements. Two SMA connectors were soldered to the two "diode" ports of the coupler, and grounded directly to the ground plane.

Measurements were made on an HP 8753 network analyzer. This equipment is very flexible, allowing results to be plotted as S-parameters, SWR, dB loss, and many other options. The coupler was swept from 0.3-500 MHz, using a source power of 1 mW (Ø dBm).

The first two measurements were coupling and directivity. Coupling is a measure of how much RF power is delivered to the two "diode" ports when power is flowing through the coupler from source to load. It's typically attenuated by 10 or 20 dB from the power delivered to the load. Directivity is the difference in power the two "diode" ports see, depending on the direction of flow. A very directional coupler is what we want in order to get accurate SWR measurement.

The next measurement was the input SWR with an output 50 ohm resistive load, and source-load insertion loss. Input SWR gives an idea of how reactive the coupler appears to the source (your transmitter). Insertion loss indicates how much power gets absorbed by the coupler on the way to the load,

The coupler was found to be very symmetrical, i.e. reversing the source and load didn't make much difference. Coupling to the "diode" ports was very consistent from 0.3-256 MHz, which would make the coupler useful as a wattmeter throughout the range. Directivity was found to gradually roll off above 32 MHz, rendering the coupler less useful for SWR measurements up in the VHF range. Input SWR was low throughout the measured range except for a rise at very low frequencies, 2 MHz and down. Insertion loss was below Ø.5 dB throughout the MF-HF range, only rising to a high of 1.1 dB above 100 MHz.

As a final check, the coupler was connected to an HP 54120 operating in Time Domain Reflectometer mode. TDR is a quick and easy way of checking the impedance along a transmission line. Any deviation from a smooth 50 ohm line is easily spotted. This allowed the microstrip board to be evaluated. Measured impedance was 55 ohms, with impedance bumps where you would expect them to be-at the BNC-microstrip connection, and at the microstrip-coupler connection. This board was constructed with nothing more than a utility knife, a ruler, and a little heat from a soldering iron to loosen unwanted

The completed wattmeter was checked using a Ø.12W signal from a lab signal generator. The meter reading remained steady from 0.4 MHz right up to 178 MHz, where the meter dipped in response to some sort of resonance in the circuit. SWR into an open circuit was also measured. The meter read a little below infinity for all frequencies up to 64 MHz, the slight loss probably being caused by the insertion loss of the coupler. At 128 MHz, the reading was 7; at 256 MHz it was 3. This nicely confirmed the directivity measurements of the network analyzer.

Conclusion: The coupler, built with type 77 ferrite cores, is useful for power and SWR measurements from 1.8 to 54 MHz. The high SWR at the low end and the loss of directivity at the high end may cause measurement errors at the extremes

Tom Randolph - N100Q

FREQ MHz	COUPLING	DIRECTIVITY	INPUT SWR	INSERTION LOSS
1	-20 ± 1 dB	23 ± 1 dB	1.48	-0.4 dB
2	-20 ± 1 dB	31 0 dB	1.24	0.4 dB
4	-20 ± 1 dB	38 O dB	1.05	0.2 dB
8	-20 ± 1 dB	38 O dB	1.05	0.2 dB
16	-20 ± 1 dB	33 1 dB	1.05	0.3 dB
32	-20 ± 1 dB	27 1 dB	1.05	0.3 dB
64	-20 ± 1 dB	22 1 dB	1.07	0.5 dB
128	-20 ± 1 dB	16 1 dB	1.05	1.1 dB
256	-20 ± 1 dB	08 1 dB	1.11	0.9 dB

Revival of an NE3040 Transceiver Walter B. Thomas, III WA4KAC

I had constructed one of the original NE3040 club kits during the summer of 1995. It performed all right and got me on 30 meters for the first time, but the receiver seemed a bit anemic. Dave Benson had explained the design choices he made in a previous <u>72</u>1. The 8.0 MHz crystal filter in the 30 meter version was more *lossy* than the 4.0 MHz filter in the 40 meter version, so the NE3040 could not hear as well as the NE4040. Lee and Monticelli's treatise on their NExx40 revisions inspired me to revive my NE3040 and see if I could make it "hear better."

Before making any circuit changes, I remounted the board, controls and connectors in a used LMB-139 case (5' ½ x 3" x 1 ½") using nylon shoulder washers and nuts to isolate the PWB from the case so only one grounding point would be used. The gain and VFO tuning potentiometers were installed on the front panel (3 inch side) and the antenna, power, key and headphone jacks and an On-Off switch on the rear. (Yes, they all fit!) All board connections were made using gold-plated pins and receptacles lifted from some military boards retrieved at a hamfest! With this arrangement, the board can be removed quickly without unsoldering all twelve connections.

The following three changes markedly improved the receiver's performance:

- 1. wire the stereo headphone jack in series, per2
- change the T/R (transmit/receive) switch to a Hayward/Levallen configuration^{4,5} using two diodes per leg and the series L-C, and
- change the circuitry between the crystal filter and the U2 product detector to an L network.

Before the changes, I almost never heard a signal loud enough to turn down the RF gain control. Now, I hear many very loud signals and often I have to run with the gain turned down to three-quarters or one-half or more. I made no quantitative measurements, but I would guess there was at least a 10 to 15 dB increase in receiver sensitivity. The before and after comparisons used on-the-air signals with the same antenna.

TO MODIFY YOUR TRANSCEIVER

Headphone jack: Use a 3.5 mm stereo (two circuit) headphone jack (e.g. Radio Shack #274-249) and insulate it from the case using a plastic or fiber shoulder washer around the metal threaded bushing. Connect the audio output from the board's PWB audio output pad to the jack's "tip" connection, and wire the "ring" connection to ground. The "sleeve" (ground) is simply left floating. When stereo phones are plugged in, each earpiece is in series so the effective impedance is four times what it would be for the normal (parallel) connection. Lee and Monticelli' reported a +6 dB improvement with just this change. Monaural phones also will work with the jack wired as described.

T/R Switch: Remove the existing two 1K resistors, the 0.01 μ F and 47 pF (C31) capacitors and diodes D5-D8 which form the original T/R switch. Drill two 0.025 inch (minimum diameter, a #72 drill) holes in the ground trace at the locations shown on the sketch. I made all the added holes using a pin vise with the appropriate drills. Enlarge the two holes where the 0.01 μ F capacitor was located to at least 0.041 inch (#59 drill) and

install a 9-50 pF Xicon trimmer (Mouser #24AA024) in this location. Install four new silicon small signal diodes (1N914, 1N4148, 1N4152, or equivalent) in the locations and orientations shown in the sketch. Wind a 7 µH inductor (e.g., 48 turns #30 enameled copper wire on a T37-6 toroid) and install it in the location shown. (A 6.8 µH or 7.5 µH miniature RF choke also may work, though it is unlikely to have as high a Q as the toroid.) On the bottom of the board, install a bare wire jumper (J1) from the pad for the newly installed trimmer and (former) D8 to the (former) D7 pad per the sketch. Violal You now have a Hayward/Lewallen T/R switch in place of the original bridge circuit. And, there was 6 to 7 mA less current drawn on receive!

CRYSTAL FILTER - PRODUCT DETECTOR MATCHING

The original circuit used a 470 ohm resistor between pins 1 and 2 of U3 to terminate the crystal filter. This resistor *forced* an impedance of about 400 ohms (400-1500 ohms) at the filter's output. Dave Benson stated this was a design trade-off to simplify the transceiver and keep its cost low. (Remember the original kit was only \$40.00!) Since the filter has a lower impedance (RFC1 and C12 at its input transformer U1's 1500 ohm output impedance down to about 400 ohms), installing an identical L network between the filter's output and U3 transforms the low impedance back to the 1500 ohms needed by U3's input. And the added L network also provides some voltage amplification through its impedance step-up, which improves the receiver's sensitivity!

To perform this modification, remove the 470 ohm resistor and the 0.01 μ F capacitor at U3's pin 1. Drill one small hole (0.025) about 0.1 inch to the left-center of U3 in the wider trace going to its pin 2. This is the triangular trace coming from Y2 and one side of the 470 Ohm resistor. Drill a second 0.025 inch hole in the ground trace directly below the one you have just drilled, to the left of U3. Turn the board over and carefully cut the triangular trace to the left (right, when viewed from the trace side) of the newly drilled hole. See the sketch which shows the trace cut from the component side of the board. Now install a 10 μ H RF choke where the 470 Ohm resistor used to be and solder a 22 pF capacitor (NPO or silver mica preferred) where the 0.01 μ F capacitor was. Next, install the 0.1 or 0.01 ceramic capacitor to the left of U3 in the two newly drilled holes.

With these changes, you have swapped the connections to U3's pins 1 and 2. Since the NE602 is a balanced device, it does not matter which pin receives the single-ended input signal. The end result is the filter's output is terminated, the impedance between it and U3 are match, and the receiver's sensitivity is increased by the voltage step-up introduced by the L network impedance transformation—instead of absorbed in the resistor.

Audio Amplification Modification

With all that increased gain in the receiver, I heard some hiss and noise in the audio amplifier (U4) that I hadn't heard before. The audio output is through a 10 Ohm series resistor. I bridged several different capacitors between the output side of the 10 Ohm resistor and ground and found that a 10 or 15 μF capacitor quieted the amplifier very nicely; 22 μF decreased the desired CW signal too much. What we're making here is an RC low pass filter using the existing 10 Ohm resistor. The -3dB point is at 1/(2 TLRC), so 22 μF is 723 Fiz, 15 μF is 1061 Fiz and 10 μF is 1591 Hz. The rolloff is about 6 dB per octave, so "zero" rolloff should occur about 34 of the calculated fc. The calculations verify what I heard when I bridged the capacitors while listening to on-the-air signals; either a 10 or 15 μF capacitor will work.

You'll have to be creative in adding this component. I used a 10 µF radial-leaded tantalum capacitor mounted on top of the board. Its plus (+) terminal was put through a new 0.024 inch hole

drilled at a 0.1 inch spacing and a "ground" lead (J2) spliced onto the capacitor's minus (-) lead and connected to U4's pin 4, it was insulated with shrink tubing. If you have enough clearance below your board, you probably could use an axial capacitor tack-soldered onto the trace side of the board.

ANOTHER U3 CHANGE

On the original board, the BFO components around U3 are grounded to the board's center ground trace which also grounds the voltage regulator (U2) and the final amplifier PA (Q6). I felt better if the BFO circuit was grounded at U3's pin 3. I drilled two small holes to relocate C18 next to C17. In my case, C18 was a 0.1 inch lead-spaced monolithic NPO capacitor. The trace was cut between the newly drilled holes for C18. Jumper W1 was removed and a long lead on Y3 was bent and soldered to C18's new ground pad. An insulated wire (J3) was run from the C18-Y3 ground to U3's pin 3.

This change was done on an NE3040, but there is no reason this modification can't be done for other bands. The reactance for the series L and C in the T/R switch are 450 to 500 Ohms; for 40 meters and below, you'll have to pad the 50 pF trimmer with a fixed capacitor. The added L network at U3 uses the same L and C values as the output of U1 (RFC1 and C12).

Dave Benson - NN1G did a superb job in designing such a small, simple, low cost QRP transceiver. Lee and Monticelli made many changes to reduce the power draw to about 6 mA (on receive). I've noticed that the backpacking and adventure radio folks are using this transceiver because of its small size, light weight and good performance. I would encourage anyone making the described changes on "other band" Nexx40 or SWxx rigs to share your results in 22.

Walter B. Thomas, III - WA4KAC - NE#238

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Acknowledgment:

I thank Dave Benson - NN1G for his review and comments on these modifications to his design. He also encouraged me to share them with 72 readers and membership.

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Date/Time: Sunday, February 23, 1997 2200 UTC and Feb.23 to 0359 UTC Feb.24 Exchange: RS(T), State/Province/Country, First Name, and Member # if CQC member, power output if not i.e.: 579 CO Jim NR 04 SUGGESTED PREGUESCES

CW 1825, 3560, 3710, 7040, 7110, 14060, 21060, 21110, 28060, 28110

ssm 1910, 3985, 7285, 14285, 21385, 28385
 No contacts on 30, 18 and 12 meters
 allowed

CW-CQC member 6 points, non-member 4 points

ssm-cqc member 3 points, non-member
2 points

Multiplier: States, (Provinces), Countries worked. The same station may be worked on different bands for additional QSO points and multipliers.

Contacts on the same band using a different mode counts for QSO points, but not as an additional multiplier.

Names: Total of first names from Name sheet. One first name per letter of the alphabet. Name must be your commonly used name only.

Score: Total Score = QSO Points x Multipliers x Names.

*Bonus points for working Club Station

WØCQC #00. Add 1,000 points to your

FINAL score for working WØCQC.

Power: Stations must use 5 watts or less output, CW or SSB. There are no power multipliers.

Awards: To Be Determined, Highest Score in each class.

Submit log showing: Band, Mode, Time UTC, Station Called, RST received, SPC received, Name received, Member # received, (or power out if not CQC member), Multiplier Points.

For sample Log, and Name sheets, send SAE and one first class stamp to:

Jim-K@PP-CQC Contest; P.O. Box 31575; Aurora, CO 80041-0575

DRY TRANSFER LETTERING

Cameron CR Bailey

KT3A

kt3a@hano.com

I have been using a method of lettering front panels that rivals the silk-screened ones.—I use dry transfer lettering. Since I worked on a production line some years ago, I still like to produce "exameroial quality" equipment. There is nothing wrong with "ngly" construction or even hand lettering using a permanent marker, but I like to produce the best looking equipment panels as possible.

First, you may be put-off by using dry transfer lettering because of bad experiences with them. Maybe, you can reconsider using dry transfer again. Make sure that you are using good, fresh lettering. They are fresh when they feel just a little "tacky" on the back. There should be a paper film that is kept against the back of the lettering. This ensures that they stay clean and free of dirt, etc. The film has a slick side to it. This side should stay toward the lettering. When using the sheets, try to protect the letters with the paper as much as possible.

Dry transfer lettering can be purchased at stationary stores or even craft stores. They may still be sold at Radio Shacks. Not just letters are sold, sometimes you will find whole words or even electronic symbols! The letters may come in the form of sheets or booklets. They range in point size and font style as well. They come in mainly black or white, but I have seen other colors as well. If you have these two colors, you will be able to letter almost any color panel.

The surface you will letter is important. It must be planned. Lay out the knobs, connectors, or switches to get an idea of what it is really going to look like. I plan my panels by tracing them on paper and laying the letters over them to get an idea of whether or not I need to change the font size. Your panel should be drilled, primed, and painted shead of time. If you have just painted your panel, you may have trouble removing the "errors". But, if you feel confident, you can use this to your advantage because the letters will really stick!

Start with the center of the word and work out. Determine the middle letter or letters. It could be a space if using the larger letters. If you use block style letters, you will find most letters the same size. Account for narrow letters such as "L" The one key to lining up the letters is to find a reference to line the letters up. The letter sheets have a line which can be transferzed to the panel for reference. I prefer to use the top or bottom of the panel since most of them are small in size. I then line up the letters using other lines of letters on the sheet.

To transfer the lettering, I prefer to use a not-so-sharp #2 lead pencil. Just rub the letter off until the letter is transferred. You can tell because the darker letter will become lighter as it is transferred. Now if you goof and get it wrong, don't panic. Just use a piece of scotch-type tape and apply the sticky side to the letter and transfer it back off the panel. When you are sure that you are complete, coat the panel with some sort of non-yellowing coating. I use acrylic types that are sold in hobby or craft stores. Whatever you use to protect the panel, test it first. Don't use too much, as the coating may dissolve the letters. Also, read the safety labels on the can. If you need to add something later, no problem, just add to letters and re-coat. If you need to delete something, you have to scrape the letters or repaint the panel. Your friends will want to know what company made the QRP rig you lettered!

72 - Cameron CR Bailey - KT3A

LESSONS I'VE LEARNED FROM MY LONGWIRES

Mill Moore AA1PB

Hartland, Vermont mill.moore@valley.net

Longwire antennas are among the most simple and easy to erect antennas one can use, and used with a transmatch longwires provide easy multiband coverage. Since longwires work well as fixed station and as portable antennas, they're good candidates for QRP operation. After using longwires for many years, I've learned a few things that may be useful to others who are now using or thinking about trying a longwire.

A wire is considered "long" when it is at least a half-wavelength at the lowest operating frequency. I'm currently using a 230 foot longwire. This wire is about thirty feet short of a full wavelength at 80 meters. The only reason I chose that length is because it was convenient—it's the distance from

my house to a nearby tree. Since there's no need to trim a longwire to a resonant length, nothing about longwires needs to be figured or cut exactly. Until a few years ago, when I lost an advantageously located tree, I got many years of good performance from a 330 foot longwire.

Theory says a onewavelength longwire generates a nearly omnidirectional radiation pattern which has four major lobes, resembling a four-leaf clover. As the number of wavelengths is increased, the lobes narrow and move closer to the wire axis. Wires

which are many wavelengths long have appreciable gain. A chart in the longwire antenna chapter of the ARRL Antenna Book illustrates how gain increases as a longwire is lengthened.

Multi-wavelength longwires are very practical on the higher bands. A wire that's one wavelength at 80 meters is six wavelengths at 15 meters and eight wavelengths at 10 meters. Such an antenna will show much the same gain on the higher bands as a triband beam might, though without the front-to-back ratio of a beam.

Since there's no free lunch in this world, getting "gain" in one direction inevitably means "loss" in another. If one has a choice of trees or other supports to hang a longwire, then checking the ARRL Antenna Book, or other longwire reference source, for information about where the antenna's major lobes are likely to fall probably is worthwhile.

My old 330 foot longwire was oriented almost exactly north and south. According to the ARRL Antenna Book, the major lobes were twenty-four degrees away from each side of the wire axis on 20 meters, where the antenna was about 4.5 wavelengths long (i.e. bearings of 24, 156, 204 and 336 degrees). Applying these bearings to a great circle map of the world, I could see from my Vermont QTH one of the antenna's major lobes was aligned on northern Europe and central Asia, another was aligned on South America, and another on Japan. I worked a lot of European and Russian DX on 20 CW with that antenna.

When intended for multiband operation, a longwire must be fed either at the end or in the center, and because very high SWR conditions are likely to occur on some frequencies, the longwire must be fed with a low-loss feeder, usually ladder-line or window line. A high SWR will occur when an end-fed longwire is near a multiple of half-wavelengths at the operating frequency (i.e., 1 wavelength, 1.5 wavelengths, 3.5 wavelengths, etc.) or when a center-fed longwire is near a multiple of full wavelengths at the operating frequency.

Like much else about longwires, the choice of the feed point depends mainly on the user's convenience. Choose center feed if both feedpoint choices are roughly equally convenient, as center-feed will make the system balanced. Unbalance in the end-

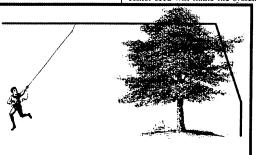
fed choice may result in feedline radiation (and possibly in RF feedback problems in high power stations). Feedline radiation is not necessarily bad; however, it will distort the antenna's radiation pattern, and unless you're trying for a high-gain array with a major lobe aimed in a particular direction, there's no need to be concerned.

I bring my ladderline feeder back to the outside of my house where a balun makes the transition to a short run of coaxial cable through the shack wall to a transmatch. The key word here is "short." Coax has higher loss than parallel conductor lines. This will cause

significant feedline losses under high SWR operating conditions. These problems are minimized by using good quality coax, and keeping the run from the shack to the balun as short as possible.

I discovered early on that having a counterpoise connected to the ground side of my transmatch was very helpful. With a counterpoise the transmatch tunes smoothly and is easily reset to previously recorded settings for each band. Without the counterpoise, the transmatch tunes erratically and finding a good combination of control settings sometimes is difficult.

My counterpoise is a fifty foot piece of insulated wire draped over the roof of my house that I otherwise use as a receiving antenna for the AM broadcast band and WWV. I know radiation from the counterpoise and from the feeder likely distorts the radiation pattern that my antenna should theoretically produce. Probably the net result makes the antenna more omni-directional



My 230 foot longwire is supported by a tree at about seventy-five feet at one end and is attached to my house at twenty feet at the other end.

than theory says it should be-a result that's just fine as far as I am concerned!

As an example of how well this antenna performs, last March I worked 3B8CF on Mauritius-an Indian Ocean island about 9,000 miles from my QTH-using 3 watts on 40 meters. I easily work stations in North America on 40 meters and DX on 30 meters is no problem at QRP power.

My 230 foot longwire is supported by a tree at about seventy-five feet at one end and is attached to my house at twenty feet at the other end. For several years, I had good luck with just tying off the antenna support lines at each end of the antenna while leaving some slack in the antenna to allow for wind swaying the trees. This past summer, however, my luck ran out when my longwire came down during a thunderstorm. The failure occurred because there wasn't enough slack in the wire to allow the treetops to move freely in high winds.

I solved this problem using a technique recommended in many antenna books-using a counterweight and pulley arrangement to keep the antenna taut while allowing for the inevitable sway in the treetop supports. Keeping the wire taut also is beneficial because it keeps the wire as high as possible off the ground. Height is important-the higher the antenna the lower the radiation angle, and consequently the better the DX performance of the antenna.

I use a slingshot to get antenna supports high up in trees (look for the Wrist Rocket slingshot in a sporting goods store—it is inexpensive and very effective). I attach some monofilament fishing line to a one ounce fishing sinker and shoot it over a tree branch or treetop. A small piece of brightly colored ribbon attached to the sinker is enormously helpful in making the end of the line visible after it has passed over the tree and settled to the other side.

I've had mixed success with paying monofilament line out through a casting rod and reel. Now I simply wind the monofilament around a plastic pail. I set the pail on the ground, upside down, and allow the line to pay out over the smaller end. Any similar large-diameter object which has a slight taper in the direction toward which the line is paying out should work similarly well.

Once the monofilament is up in the tree, I attach a lightweight line and gently pull it through the tree, and then finally attach the antenna or supports to that line for the final connections. Over the years I've used nylon line for antenna supports but lately I have started using 30.6-inch braided dacron line. It is inexpensive, lightweight, nearly invisible and reputedly is tough and long-lasting.

ting.

Mill Moore - AA1PB

(Elest licensed in 1965, Mill Moore has been using Longwires since 1979.)

THE REAL MEANING OF QRP

Ernest J. Gregoire - AA1IK

Have you wondered who was the first QRPer? Well, it was a long time ago so gather 'round and I'll tell you the story of David, the first QRPer.

Most of you know the Biblical story of David and Goliath, and we all know that David killed Goliath with a sling and a rock. But what the story doesn't say is how David and Goliath came to be oπ different sides in the confrontation.

You see, David and Goliath were really ham buddies and they did everything together. They went to hamfests, club meetings, worked on home brew projects—actually, everything in those days was home brew.

All the trouble began preparing for Field Day, the original Field Day. David would go to Goliath's house, as he often did, and work DX. Goliath had a much bigger antenna system and did pretty well on the bands. So when David got to use Goliath's antenna farm, he also did quite well hauling in the DX.

As they chatted one night, happily drinking some "Exome brews", they discussed the possibilities of David getting his own antenna farm some day. You see David lived in a condo with antenna restrictions. DX just wasn't the same at the condo.

Why don't we bring an antenna farm out to the country and use it there?", said Goliath. "That way we can set it up and you can use it without any trouble." They talked it up big at the next club meeting and the idea was a big hit. Others wanted to do the same thing, too. As it turned out, the whole country wanted to get out of the city and picnic about the same time of year.

Consequently, whole families got involved, some did the cooking and although they were not all hams, the event had something for everybody. They stayed up all night making contacts and having a ball.

"Let's improve our antennas for next year." the club members said. And since it was Goliath's idea in the first place, they made him Field Day Chairman. So through the winter, David and Goliath worked out a plan to get the antennas up really high, higher than ever before.

"If we can get a Vee beam into that grove of cedar trees, we can own the bands." David said. "I have an idea for launching a line into the top of those trees so that we can pull up the Vee beam. I have this sling here and I can throw a rock as high as those trees. With a line attached we can pull up the antenna".

"Why bother said Goliath, just use more power, it all comes out to be the same thing anyway". David was insistent, a higher antenna would be up next field day if he had to do it himself. As they argued the matter, Goliath got fed up and said he would do his own Field Day next year and own the bands himself. "Fine by me!" said Dayid.

On that account, Goliath took one side of the cedars and

David took the expect, some of to Goliath's Field activity, and the side of the cedars.

(You can can't you?)

It was a Day that year and on both sides of



other. As you might the club members went Day site for some QRO rest went to the QRP

see where this is going,

windy start to Field the turn-out was good the cedars. Goliath had

most of the QRO antennas set up, but needed one more dipole for 80 meters. He went to scout out a likely spot when at that very moment, David had just made the best shot of the day, hurling a line-attached rock over the top of the cedars. The line broke as the wind caught it and wrapped around a limb. The rock continued on to hit Goliath "Right between the lookers".

Field Day was never the same after that,

As Paul Harvey would say, "Now you know the rest of the story."

Ernest J. Gregoire - AA11K NEQRP#202

New England QRP AFIELD Contest A Huge Success!



NEW ENGLAND: A lot of excitement surrounded the weekend of September 21, 1996 when anxious members of hams across the country spread their ORP gear onto table tops, inside tents and even on the roofs of cars to enjoy one of the best contests in amateur radio. The scene was orderly and intense for the New England QRP AFIELD contest as many people derived joy from contacting other QRP aficionados in trying to raise the best scores they possibly could with as little power as they might spare. The following excerpts from the ORP-lister, via NorCal WEB page, is testimony to that wonderful day back in September.

Jay Miller - WANWHN...Since there are not many Lighthouses & Towers in New Mexico, we had decided to operate from a small town, by the name of "Tower", translated into New England pariese "Towah". K8BI-Gary & I had headed up to the site, Friday afternoon (Sept. 20th). After we had (KCSDT, K8BI-Gar) & I had headed up to the site, Friday afternoon (Sept. 20th). After we had (KCSDT, K8BI-Gar) & From Socorto, New Mexico. NS2GT had driven out from Albuquerque, We were set up 35.4 miles SE of Albuquerque, on the east slope of the Manzano Mountains & an altitude of 7,200 feet. NNSW was our first contact, on 20 CW. NASN had worked a Ham in France on 20 CW. Next, AB50U & NASN & I had erected a Windom antenna for 40 meters. First contact, on 40 CW around 2 PM MDT, was AA7QY. The QRP+ had a bit of a chirp, but a quick battery check had fixed that. (something shout the regulator not liking voltages below 13.0 VDC). 40 CW was great. Paul had his NN8040 on line. I think there were over 63+ contacts in a 6 hour run. NASN has the log & dupe sheets. The humor, guips & camaraderie were great. My thanks to Tim-ABSOU, Wynn-KSOUT & 500 (His YUL, Very Young Lady), Gary-K8BI & Brian-N5/GT for making this syeat Saturday. Also, thanks to the New England QRP Club, and to my former co-Morker Chet Bowles, AAIEX, for making this event happen. Muchos Gracious...Jay Miller - WASWHN Jay Hiller - WASWHM: ... Since there are not many

Doug Hendrick, KIGDS: It was a beautiful day in Dos Palos, about 85 degrees, and I set up in the school yard where I teach. I moved the whole station, Sierra, Keyer, DSF Filter, Paddles, Tuner, and MFJ 259. I tuned the antenna, put on the headphones. I tried 20 and I heard 2 or 3 plus the digital guys. Who is that cailing CQ? KSFO. He is weak but I give him a try, since I know that he is running 0.95 watts; it ought to work, theory of reciprocity, and all of that. I wait for the end of the CQ, and call him back, I get 85F out and I hear him start to CQ again. NAIAIM, yeah, there you are. I call and call and call. QSB is terrible. Decide to go check 40 again. It is with a QRC station in Washington and he is weak, weak and weaker. KIGDS Score: Worked 1 station 1 State. Heard KSFO and about 4 or 5 other stations. Lousy propagation here today. I had fun, and I will always remember the bloody New England contest of the fall of 96. Thanks to the New England group for a great contest. It was fun and I did get to go out to the field and operate, which is slways a fun time. Thanks guys. 72, Doug Hendrick KIGDS.

Ron Stark KUTY:, Just wanted to let everyone know that conditions here were less than good. Very loud QRN and lots of weak signals. But there were many that I did get a chance to hear and work. Wound up with 36 Q3 and 18 states. Congratuations to the NE QRP gang and all the stations out there that worked so hard. (Even worked that elusive KSFO!) CUL, 73, Ron, .Monte "Ron" Stark, Washoe Lake, Nevada

Claim AERQ: Well, Brian NOTEM and I were on the road north to Wyoming at 0300 Saturday morning for the NE-QRP contest. It turned out to be a little too early, it was still pitch-dark when we got to where we thought we had operated in the QRP-To-The field in April, so we kept going west and up in altitude, following a paved road through the hills. Got the Carolina Windom (full size) up an hour before the contest started, and Europe was coming in on 20 meters.

The rig was a TS-450s, MFJ-949E tuner, Oak Hills QRP watt mater, CMCS-III keyer and iaptop running LOGic-4 for logging. We kept the radio set to just below 1w output, for the low-power QSO points.

This was the first time I've tried running less than 5 watts in a contest, and it sure makes a difference. Calling Glann ARSO: Well, Brian NOTEM and I were on the road

5 watts in a contest, and it sure makes a difference. Callin CQ wasn't very effective in the middle of the day, so it was

mostly search-and-pounce on 20m. We worked a couple of stations on 40m, but it was terribly noisy. After 5 hours 20m seemed to clear out, most of the Clover and Pactor stations on 14.061 shut down. I tried calling CQ again, and worked a string of 12 stations! Sure wish that could have happened a few nours earlier: Our totals are: 41 stations worked (30 m 20m, 3 on 40m) 18 states, 1 province (less than 1w output) total score: 6,232 points it was a great day to be out in the woods, enjoying nice fall WW and some fun hamming, too. These weekends don't seem to happen often enough, do they?!

73 Glenn AEDQ / V31RY ext GMSBRC, ZBZNZ, SVDWY, WARMYEK

Marshall AAAXI: It was a very pleasant afternoon in Daniels Park, south of Denver. CyC decided to make it an informal "open house" operation, and two of us (Dick, ABACO) set up stations using our own calls. We used our "normal" mobile setups, an FT1576X2 and an ICT06, both with Hussler antennas, and did pretty well despite somewhat discouraging band conditions for a large part of the afternoon. I think between us we racked up about 60 G90s on 20 and 40. We had a number of visitors and "relief ops," including Samson the QRF dog, but he didn't actually get on, just ran around keeping an eye on things. It was great to see so many guys on and it was a very pleasant afternoon in pleasant surroundings. Now I have to ask myself what I'm doing in front of the computer again 73 Marshall AAAXI.

Bob Marsh-RB2SGM: What a weekend! I figured I'd set up at a local park and operate for a few hours later in the day. (even built a light weight dipole!). Saturday morning found me with a nasty head cold and I wound up spending most of the day in bed. I did manage to get on the air for a grand total of maybe 45 minutes, though, and worked a few stations: KF2HC - NJ (no big deal, he lives about a quarter mile away) KRIDN - OH WALDOV - NC N4OLN - GA (He was a challenge - I had to crank it up to 5 watts to get him) I was using my Argosy and SW-40 from the shack. There didn't seem to be a lot of activity on any band except 40. I did enjoy myself in spite of being sick. This was my first QRP contest, and only the second contest I've worked. I'm looking forward to the next one. 72/73 Bob Marsh-KB2SGM. 72/73 Bob Marsh-KB2SGM.

Paul Douglas NSARB: Well, guys, the bands were not very hot were they? Results, one QSO from HCME with all of my best antennas available, two Sierras and a 5 watt NNBO/ZO on 40--(it took the five watter to get that one lone contact). I worked Bob Kellogg, AEAIC, sent him a couple of extra HI's and pulled the piug. My hat's off to you folks who went out in the wilderness and worked 30. Thanks to NE QRF for the setup, but mother nature is just not being nice. Had a chat by land line with Father Bowles last night. He reported similar conditions in upstate NY. I assured him that things will be different once the sun spots start up again. Maybe next year. Faul Douglas-NSARB.

Byron Johnson-WASLCE: With a minor solar storm and thunder Byron Johnson-WABLCE: With a minor solar storm and thunder boomers in the Detroit area, not many contacts were made Saturday. I operated from 1600z to 1930z and made 9 QSOs. Worked: K5ZTY TX, MINGR CT, WJTH UT, ANTK CR, MINH MA, ACSAM LA, ARAQY CD, WTCHL ID, WAIYIA TX. 20m was the only band that produced any activity, 40m was S-9 noise the entire day, nothing was heard on 15m and 10m. 72, Byron WABLCE-Detroit.

Bill Jones-KD78: I spent less than one hour on the air but managed five contacts in Arizona, Utah, Oregon and Washington with 750 mm output from my central California CTH. Worked W9UQB, AA7QY, WUJTH, WBGINM and KO7I. Thanks to these gentlemen (and the NE-QRP club) for making my day a little brighter. KD7S Sanger, California.

Brian High, KV9X: Friday night we finally got to our QRP AFIELD location. We were at about 8300 feet near Ridge and Gravel Lakes, just north of Kendall Peak and Snoqualmie Pass. After breakfast, we talked a bit about bagging QRP Afield all together and hiking out the last 7 miles to the pass to catch the Greyhound and fixing out the last 7 miles to the pass to catch the Greyhoun home, but we compromised and threw up the antenna for a few QSOs see how the band was. We had QSOs with KJ7NS (WA), WB5QYT (MM), a AAOXI (CO), although we heard (but could not work) WU7F, NASN, NIOA, KCSVUJU, WSYBO, WOMAE, AAOQY, N4SO, KSYV, and WH84EXA. So, wa it worth hand-carrying the QRP+ more than 70 miles in the snow an rain just to make 4 contacts? Absolutely! It was a good time and are grateful to the four hams who pulled us out of the mud (pun intended) and made the trip a success. Brian High, KV9X.

James R. Duffey KKGMC: I worked the QRF afield from my James R. Duffey KRGMC: I worked the QRF sfield from my home location, although on battery power. I was on 3 hours, 33 contacts, 17 multipliers. I spent the first hour up on the roof repairing the antenna which had broken, turning my ladder line fed delta loop into a MBEDP of sorts. I worked from 17:092 to 18:002, and again from 22:002-24:002. The hole was due to family commitments. 20 and 40 were both nice, but 20, as in many QRF outlings seemed underutilized, particularly during the last hour. There was virtually no QRN and a Sl or less noize level on both bands at my QTH. I had listened on 15 M at 15:30 and heard some CW, so I thought it would open. It (the band) did not despite me calling CQ several times during the contest. I would, on occasion, hear some weak back scatter on 15M, but no QSOs. I did not hear the Torreon bunch and they were just 20 miles or so south of me. The path is not strictly line of site as it is mountainous terrain, but I had hoped to snag a NM and talk to Paul and his operators. The best DX was CT on 20. (1) Worked all over the west on 40 including MT and NV, but no NM. Hope everybody had a good time. Next year I will try going afield.

- James R. Duffey KKSMC.

Bill Acito-KCIGS: "Ail that shines is not a lighthcuse" I thought I had a bad day until I read Doug's reportLouch, Plans for Portland lighthcuse fell through_too much homework to spend 29 hours each way in the car, Revert to plan "3." I pack the night before_QFP+, MFJ CRF tuner, Gel ceil, CMOS II keyer, mag mount, Hamsticks, Where's the 40M Hamstick Drive to Wachusett Mountain (FN42BL) in north central Mass. 2100', 1600' vertical, public access road to the top. Crest the top of the access road and see the usual compliment of hikers, bird watchers and day trippers. It's now 1700Z; I've missed the first hour. Set everything up. Fire up the rig_bands are quiet, way too quiet. Autek is showing some strange stuff, Check the NMO/mobile coupler_gee, that contact seems bent. Let me just pull that up a bit. Reconnect; QRF+ springs to life. It is now 2000Z. Spend the next hour between 40 and 20, manage 6 contacts. WBSGCK, (nice signal Craig), Dennis KLIGQ, and a few stations in Texas. AE4IC, thanks for the try on your end. Pack up and head for home. Score-wise, this was pittful. A waste of a day? Not buy a long shot. A lesson in checking everything before you head out. Who says you have to go to a lighthouse for illumination? Bill Acito KCIGS.

Ernie Gregoire-NAITK: Did anyone else notice the aurora on 20 meters? Darned if it didn't sound like some of you were under water. Here in NH, 20 got noisy as the afternoon wore on. I did my usual hunt and pounce for a while and didn't find a whole lot of folks calling CQ. So what the heck, I tried calling CQ myself. I love contesting to build up my code skill, but I never have run a pile up or run stations before. Well I did it this time, and I'm glad I did. I won't be so shy shout that next time. I had to move frequencies a couple of time when the signals got to be too much for this first timer. 27 contacts and 20 states later I quit at 18:00 local time. I picked up Montana for a needed state for WAS-QRP. I need RI, and NY to finish the job. I hope to do that by years end. I love hearing from all those folks that actually did get into the field. God willing, I'll be there next year. 3 AAIIK Ernie.

Bob Kallogg, AEAIC: What a great day! Of course, it helps to be ignorant. Since I've never worked a contest during a period of high sunspot activity, propagation was great Saturday! Me Knightlites tried to get up a group to go to a nearby park, but it just didn't work. I didn't plan to participate until the last minute. I set up in my back yard with a 4ah get cell and threw up the MREDP wire antenna. Started about 16302 on 20 meters. What a bail! I'm pretty slow, and was working guys nearly as fast I could! Morked is states from MO and MN west to Ca, including some coughtes like WY (thanks to AEOQ) and Mt. Worked the New Mexico tower, NASN, lots of guys from this list, including KSFOS group. About 18452 switched to 40M and again, there was plenty of action. It was noisy, and there were QRO stations hanging around 7.040 (so, what's new?). First station worked was WB3GCK in DE. Worked another 14 states and quit after just over 4 hours on the air. My daughter was visiting and I figured 4 hours was about the limit of female understanding. Hated to leave, though-quit while going strong: 58 GSOs and 32 states. A great afternoon. Many thanks to NE QRP and the guys who put this together and publicized it. CUL, Bob Keilogg, AE4IC.

Pete NNSK: Finally a day to play radio. Looks like 86 Qs and 33 multipliers. Most Qs on 40 meters but will have to look at the printout to determine the ratio. Only operated on 20 and 40 though. Heard nada on 15 or 80 meter QRP frequencies. Had a good portable operating location and things really played well, except for my logging computer. Equipment used: Rig was my old standby 100M 735, with a Heath watt meter and MSJ tuner. Antenna was a dipole with about 70 feet of wire on each leg, fed with 450 ohn ladder line. Center sagged to about 40 feet. Miscellaneous stuff included a CMOS II keyer, Jencher paddles, granola bars, thermos of coffee and a van to operate but of. Contest logging program used was NA. If does contain a contest template for the CRP ARCI contest which is a very similar format to this contest. So all in all a good day, weather cooperated, there was activity on the bands and a good time was had by all. 72, Pete, NNSK

Tom WB5QYT: My son Andrew(AB5DX) and I took off for the foothills of Albuquerque at about 1300 hours. Kite,

battery, wire and IC-786 in hand, we set off to put a dent in the ionosphere: Got set up at 1330 and decided to try to put up a 132' wire held up by my new Kite. We made about 25 contacts and really had a good time. 20 meters was really great. Learned one thing, when you fly kite antennas, you need two people, one to operate and one to fly the kite! 72 Tom WBSQYT.

Chuck Adams-KSPO: I packed up the TenTec Argosy II-D (it sits in the closet the rest of the year), the paddle, a MFJ Grandmaster Keyer, assorted cables, the cooler, the lawn chairs, and other miso: items including log books and pens, and loaded them into the car and off to North Dallas area to the field. No lighthouse, but hey it's an event to have fun. I get there and Wayne, WSWO, and Smitty, NaSK, are already at the site just after 9a.m. Smitty has the Gates 25AHr battery pack and as it turns out the R/S Molex fits the one I have on the power switch/circuit breaker combo. We combine 120' of \$18 stranded wire for a long wire in the trees at the park. This combo only up 15' or so. Using the TenTec and MFJ-941c (I actually took this thing off the long wire at home) and misc. stuff, at 16552 I got on 20M and called CQ. First shot outta the starting gate got an NI in Pittsburgh, PA. I have witnesses. Power output at 2M. We're ready to rock and roll. Bob Mmak, KCSPAS, brought his CMOS III and I programmed it for the CQ. We sent the exchange by hand. Good practice for the group. Operators were KCSPAS, KSPC, and NSOSG haven't figured the point total yet but we got 33 Q's and 18 states in 5 Hours of operation.

Ken N	evininan	#NB45	8: Call	used: 1	veco.	location:	NJ
Entry	Class:	Multi	Op, Si	ngle Xm	it		
Band	QSOs.	Pts	QTH	DX			
80	0	0	0	0			
4.0	30	116	15	0			
20	26	104	13	0			
15	0	0	0	0			
10	0	9	0	9			
Total	56	220	31*	0*			
			50	ore: 69	20		

Score: 8920
Club Participation: NJ QRP Club (SOUTHERN), XCVR: OHR Explorer II (40m: 24 watts, MFI-9620 (20m) 4.0 Watts Power: Gel Cell 7aH 12 Volts, Antenna: Delta Loop up 25' Location: Gloucester Courty 4H Fair Grounds-Mullica, NJ Operators: K2HPV, Rerb and NZCQ, Ken plus Visitor: K3VSP, Brian Comments: Just a fabulous day with perfect weather (in So. Jersey). Lots more mults worked on 20 (thanks quys). Also delighted to work the famous QRP-L and NE Leaders on 'Affeid' like KSFO and NIFMR and many more. A great event and then some! Ken Newmman #NE458 81 Holly Drive Woodbury, NJ 08096.

Dave Benson-HNIG NE #06: This year's QRP Afield operation was from the Green Mountain National Forest near Bennington, VT. I worked 19 stations, same as last year's total. Most of those were on 20M, with good conditions to the western states. The antenna was a length of wire tossed over the nearest small tree and some ground radials. Every time we tripped over the radials (which was often) I had to retune the antenna. I left my keyer cable at home and had to rate covers off the equipment and use clip leads. Also discovered my watch among the missing-"plan B" involved a lot of trips to the car for time checks! The weather Saturday was clear and breezy-just great. We woke up Sunday morning to 45 degrees and foggy weather. We piled the wet gear in the trunk and headed toward civilization for hot coffee (yeah, forgot that too!) and home. Ya gotta love it: 12, Dave-NNIG NE #6.

Joe Everhart-NZCX: NM has wind, CA has sun, the Cascades have snow and New Jersey has mosquitoes-aren't they the state bird? Those of us NJ-QRFers who operated on Sandy Hook can attest their abundance. The location was excellent, a grassy area with trees in the Fort Hanocck section, nice temperature, some sun, ample trees and loads of winged bandits. Tony WZGUM and Vince WAZECP arrenged the location and arrived early to guide us in on 146.52. They quickly set up a 20 meter station with a simple dipole and proceeded to enjoy themselves. Fortunately there were plenty of trees for the antennas, but naturally they were all spaced wrong. An hour of hutling things into trees to attach the antenna wires and some pruning with my handy-dandy Autek RF-1 gave me a 20 meter half-loop. The perspiration generated by my exections were an absolute olfactory beacon to the little flying vampires (did I mention the morquitoes?). Meanwhile David NZSMG had arrived and apatiently set up his walking stick vertical/Filame-thrower 20-40 fan dipole and was cranking way on 40 meters. Finally, I got things working only to find loose connectors in my Argo 509 and a dead battery in the MFG audio filter. My fist was shaky and intermittent swatting mosquitoes and scratching as I worked my first station in the event KSFO. A couple of other 20 meter contacts ensued during troubleshooting and liberal applications of DEET. I almost worked NASM. After his CQ, I answered and got a QR2. A repeat of my call sing got through and he sent it back to me. Then after my part of the exchange, he returned with a SEL and started CQing without sending his information.! 40 turned out better. An inverted we outsher-II up about 20 feet did well to a number of stations.

the bugs started biting through the canvas camp stool lyou can guess where), Dean N2TBN took over and had a bail. He asked if the keyer was famble A or B and I replied bether, so he had to rough it: Elmar KEZYTN got a chance to operate Tony's rig and was impressed by how well QFR works. His friend Vince (call sign?) seemed to just take it all in. Also visiting was Dave, N2ZHY, a relative new ham, who enjoyed our company. Doug, KAZUFW showed up to meet with us and show pictures of his QFR Oscar satup at the NGPR meeting earlier in the year held at ARRL HQ. As WAZECP and Tony left in early afternoon, James KASDVs and his wife Kathy showed up and took over Tony's location. David switched over to 20 SSB and managed to work a number of stations with his Cascade, including the west coast and from Portugal! We probably could have had more contacts but I suppose we're not a hot and heavy contest group. It was a good day to get out and enjoy the weather (did I mention the mosquitoes?) and each other's company. Thanks to NEQRP and AALEX for giving us the opportunity. 72/73, Joe Everhart - NZCX. the bugs started biting through the canvas camp stool (you

Jim Male, KJ5TF: The WX was perfect: blue sky, breeze, a wonderful fail day. Fall colors were getting started here in the Ozarks: A buck deer even ran across my field as I made GSOs for extra added scenery. My field is elev. 2200' I'm 2 miles from the Ozark National Forest and almost as near the Buffalo National River. My working conditions were; Green Mountain 20 transceiver 2 watts, my Walking stick vertical, 5AH battery charged by the Bun, a my Walking stick vertical; 5AH battery charged by the Bun, a my Walking stick vertical; 5AH battery charged by the Bun, a my Walking stick vertical; 5AH battery charged by the Bun, a my Walking stick vertical; 5AH battery charged by the Bun, a my Walking stick vertical; 5AH battery charged by the Bun, a my Walking stick vertical, a should be sounded like something they wanted to do too! Thanks to all those who could copy me! WIXH, WINRG, ABIC, WSVBO, WTCML, WGHAL, KUTY, WATFCU, AAIIK, NISNB, KAMF, NGGA, WBUQB, KMBU, AASEA, WJTH, NCCO, NNIG !!, WARZAK, MGGEL, and KDAKLE, At 22:105 I went down to 14.026mHz and OHSNG was calling CQ with takers! I called several times but heard "KJ57? try later". Still no takers, so I tried again. This time I heard my call and we called several times but heard "KD5?" try later". Still no takers, so I tried again. This time I heard my call and we exchanged information. But I didn't get his power, so didn't count that QSO for the test. But I'll never forget the QSO with NNIG the "father" of my GM-20, and the DX contact with Finland I had from my portable station in my field! Thank you NE QRP ! 72/3'z de Jim KUSTF.

OJ, WALTIA: Howdy from Texas: Some results and thoughts concerning QRP Afield. For this contest, three teams were invited to the 'ranch' of gentleman farmer Mike (KBSYTT) near Anderson, TX. Fellow contester and friend Bill (WASDWN) and I drove from Houston north about '5 miles and arrived about 9:30. The GSRV was up at 65 ft. or so in no time. The transceiver, logging computer and keyer with hopefully enough battery power to last 6 hours was also on-line quickly. The first QSO was AATQY, nice signal: 20m is in very good shape. We ran 20m all day except for the last 45 min or so when we went to 40m looking for some new 'mults'. We worked several familiar calls AATQY, WLTWO, KSFD, AAIIK, NGGA, NNIG, etc. We had Qs from FL to NH and VT on the east and CA to WA on the west. Also worked Ontario and Manitoba to the north. Final result was 74 Qs, 32 Mults and more fun than I can score! Many thanks to NB-CQR and all the QRPers in the contest. Perfect WX, beautiful location, and good friends…it just doesn't get any hetter than this. 73 OJ WAIYIA

Peter C. Wotherspoon, VE3GYYI: The tower sits atop about 100+ foot high cliff and is about 100 ft as well. Two trips up with my NW40 MC bat, Vectroics Tuner, Vibroplex bug, 100 ' of wire with a rock attached and launched into the tops of the trees. TV table and aluminum chair. I worked 2 testers and 2 rag chews. All the people that climbed up the tower that day were surprised and intrigued with the operation. One of the most enjoyable afternoons I've spent. Only too bad, I had to be out by TPM when the park closed. Rats 72s Peter VE3GYY Whitby, Ont. Canada.

Tim Ahrens, WASVQK: Hi folks-really had a good time here! Operating was with so-so band conditions. It was probably the dipole at 15 feet that contributed to the lack promably the dipole at 15 feet that contributed to the lack of signals! The Sterra did a good job, a snagged 19 Qs, with 15 mults in about 4 hours on 40 s 20. Took a peek on 15 with the Argosy (no module for the Sierra), but only heard 1 signal.40 started to heat up about the time I quit. Worked a bunch of stations from places I've never worked in 29 years! Also worked KSFQ.seems the last CM QSO I had with Chuck was labura 50 have some other community on a hours booking! It ALSO WORKER KNYLU-Seems the last CM QSO I had with Chuck was about 25 years ago.incling comm. work on an Aggle bonfire! It was also neat to see how our QRP signals sound to one another, since we were all basically running the same kind of gear, etc.except for ACSAM. he had to be running a 3 element beam. 950mm! really booming here in Austin: Thanks again guys-a great time.

Mike Pulley, WB42KA: Our final score this year 7640 points. We didn't do that on purpose honest! I bet

be audited. Unfortunately, lighthouses are scarce in landlocked desert A2 and fire towers live up in the higher mountains, so we settled for campfires beside a bachling brook. The Arizona Canwas Slappers are a loose collection of Phoenix desert rats who equally enjoy QRF radio, camping among the cool pines, kibitring, and the ever popular eating. The folks on hand were Rocky Evans (RGTVG), Larry Gass (RGTWS), Debble Pulley (WB4UTS), Elizabeth Pulley (KCTJED), and Mike Pulley (WB4XA) plus wives and kiddos. We did caravan up Friday after work. Saturday morning we surveyed trees for the aneena and started launching lines with the trusty wrist cocket and casting reel. Not to say we're awkward or inefficient, but we spent over 3 hours stringing up one lowsy dipole. Pondersa pides aren't the most obliging trees for antennas sometimes. At liam MST we put WB4XAA on the air. Right away we started on our Worked All Celebrities endorsement. We worked.Chuck Adams, KSDO (RWS Caspenter, AA7QU The Meriden, CT ARC, WHNRG last year's QRP Afield Winners!) Marshall Emm, AAXXI Monte Stark, KUTY Sob Fellett, NA7CQU ind Duffey, KK6MC Paul Harden, NASH The best exchange was with Mark, KSCQO (not a QRP calebrity). He wasn't in the contest, but graciously handed out points to those of us who were. When I saked his transmit power, he said, "On-N-E OLIGATI"; I told him he could reduce power a lot since I was only running 0.95W and still earling 999 from him. Mark said, "On-N-E MILOMATI"; I told him he could reduce power a lot since I was only running 0.95W and still earling 990 from him. Mark said, "ONE WATT IS KIND OF HARD TO BELIEVE". LESSONS LEARNED 1. Use separate batteries to keep the Reyer microprocessor RFI out of the radios. 2. An antenna up among the tree limbs still w

Brian Kassel, MSVBO: Had a great time here set up in my back yard with my new portable dipole made from two chalk line spools, and hung via my trusty glingshot in my largest Cottonwood tree at about 20 feet. I used my QRP +, my large ? AH Sealed Lead acid battery, my DSP-59+ filter, and one of my 2 trusty \$ 15 MEJ 496 CM keyboards. I spent most of my time on 20M, but did a little 40M at the end. In 6 hours I wound up with 60 QSOs and 29 multipliers, and a tremendous buzz from having just a really great time. The high point for me was when FMSCM came book to my 20M CQ with a new multiplier at SW from Martinique. On my very next CQ none other than Dave Ingram, KqTMJ, came back, also on QRP! Man, it just don't get any better than that... Thanks to all who worked so hard to make this event so pleasurable for all the rest of us.Brian D. Kassel WSVBO. D. Kassel WSVBO.

Rob Heiss JR. ROCKA: The late afternoon hike up Cerro Alto (1500 feet vertical gain) took just over an hour. My full size dipole was strung across a saddle point in the ridge, up 15 feet in the middle. With one hour left in the ovent, I got on 40 meters and managed to work five of the crowd using my trusty NW-8. I packed and hiked down before dark and felt that was a very enjoyable way to play radio.73, Rob KO6KA.

Tim Cook, NEST: The best laid plans sometimes (most times?)don't work out. I did manage to operate for about a 30 minute period late in the day from the house and worked 9 stations. Conditions were not too good here in SW Ohio. Used my OHR Classic at about 3 watts to a 3 element tri-bander or 135' Zepp. worked: WINRG,WOLK, ACSAM, AEQQ7 (20M), NASM, 207, NNSW, KF2MC, NCCQ, AND KFEM I am looking to get either the OHR 400, Sierra, or possibly the Ten Tec Scout to replace the CHR Classic. Hope to have better luck next year Time NZ8J NE\$50.

PAUL NARDEM, NASM: It used to be, when I got back from Field Day, I'd say "Never gonna do that again." But with these QRP contests, I find myself looking at the calendar hoping there's another one next weekend. Gosh they're fun! Tim Pertibone AB50U and I met in Socorro and made the 1.5 hour drive to Torroson, New Mexico...where we met up with Jay NASWEN and the gang from Albuquerque. They had erected the station, nice tent, 3-element beam up 25 feet or so in a nice spot in the pine trees on the eastern flank of the Manzano Mountains. Used Jay's QRP on 20M and my NM40 on 40M (with a dipole). Total was 61 contacts, 28 SPCs made by (using the call NASM: NASMEN 1 AB50U 26 NASN 24 NSIGT 10 for contest purposes (adhering to that "6 hour thing") looks like 54 Qs x 27 SPCs = 5832 points. The QRP+ worked well as one would expect, but found the NM40 to be a nice contest rig as well. The variable bandwidth IF filter and the CW filter makes for some tight selectivity when you need it (which I did on a few occasions). Like, to filter out AB4IC, NG6A, NN9K, NFOZ. MUTR, AA7QY, WA7CU and a couple of others that sported a 579+ signal into NM for several hours also. Nice signals, fellas. Oh, and ACSM with his 950mW was well heard all day also. About 6-3 stations we worked asked about the wind. Great contest. Kudos to the NE QRP gang. And

enjoyed working all those familiar calls, even if I couldn't remember some names.72, Paul NASN / Tim ABSOU / Brian NS2GT Jay WASWHN PS.

BOB TELEFEZH, NGWG: Couldn't get away for a field operation this time, so operated from my home station. I used my Keemeod TS-180 at 5 watts, and a full size diamond loop with vertical polarity on a 50 ft TV mast. Used my field Day battery for power. Managed to pull out 24 GSOs, with 9 states. Got all the western states except UT for some reason. I finished with 24 contacts and 9 SPC multipliers for 216 points. The weakest signals were just modularing the noise in my headset, but we worked enough for contest exchanges. For once I'm glad I worked from home, as it was much easier to raid the refrigerator, etc. Anyway, I enjoyed myself. I see others d.d too. 72 Bob N6WG

Bob Edwards, AE4CA: I was able to operate from the backyard until the static crashes overpowered the QRP signals, Started on 20 meters, waited out the storm inside, then operated the last few hours on 40 meters. I used my backpack Off-Center Fed Dipole Vertical, NNIG mod for 20/40 at one watt, 8AAs, home-brew keyer circuit, home-brew single paddle key. This is my ABS rig and it goes together quickly. I heard and almost contacted NNIG and KSFO, and I really tried, but no 90. The storm may have had something to do with it. Did contact: NASN, AE2QY/7, NYBA, WINGG ON 20 meters. Them: NNSW, AE4CW, WAADOU, KALWA, AC5AM, WINGG, KSBWP, KJSMG, NSBO, KEDSS, AE4JA, and KA5DGS on 40 meters. 16 contacts in 12 states. Thanks to all for a good 73/72 Bob, AE4CA

Ken Freedman, NIQQV: NIQQV, NIQRU, WTIM QRP-AFLGAT Friday afternoon Jack and I made the trip to Westerly to a marina on the Pawkatuck River. There followed about 3 hours of fotch and carry and small jobs to get the boat ready for sea and an antenna rigged from bow to masthead to stern, end fed with 450 chm ladder line from the BAL output of the tuner. Saturday morning, the alarm went off at Ch-dark-thirty. With a wind of about 10 knots, we flew it from the stern of the boat with 100' of string, then 130' of fine woven copper wire, then 300 chm TV twin lead for a feed and about another 15' of string. The kite was amazingly stable. Just sat there, hour after hour while we operated and boats in the harbor kept company by to see what-the-hell was going on: Butch and I swapped off alternately operating. We got My Turn settled down on the long tack for the mainland and Butch tried a little CQ CQ with the antenna on the boat. Not much luck. Butch decided to try flying the kite while under way. Much Better: Butch and I worked several stations on 40 meters in this fashion over the next hour and a half. Good company, good salling, lots of radio! What a weekend. 73, Ken Freedman AKA: NIQQV/QRP

Dan Tayloe, MBONUMS: (ORP A Field was great! I own one working rig, a 40m Sierra like home-brew transceiver (different IF and has an IRF510 MOSPET for a final). Although it will put out up to 2 watts, I ran 0.93 watts for the contest. I was on the road at 4:30 am, headed for the Four Peaks mountains about 50 miles northeast of Phoenix. I reached the ridge by 7:30 am. I had chosen two telescoping sections of 128 schedule PVC to support a 40m inverted V. This was a poor choice for a support mast. However, after two hours of struggling with my "spaghetit tower", I had the antenna secure at the top of a steep 300 ft rise off one side of the ridge road. At a 4500 ft elevation, this was a perfect place for an antenna. I could hear much better than I could be heard with my 0.95 watt signal. Way down just above the noise I could copy stations from TN., and further east, but they could not hear me. I called NH9K many times, but could get no response. I heard KUTY and his QRPS stations several times, but did not get a chance to work him. The rig was QRO here. In a QRP content, it is strange to think of 5w and 2w stations as "big guns", but for me NA5N (NM) and KGSN (CO) certainly qualified all afternoon long. On down, I got out to CA, CO, UT, NM, OR, and AZ. Out of the 26 stations, I worked six states, and four of them were from AZ (ABTPF, AA7CY, ABOTOA, and NSYBO). Thanks to one and all for putting up with my somewhat shaky (NM. Great contest) I cannot wait until the next one. Dan Tayloe, MBONUB, Phoenix, AZ

Cam Hartford, N6GA: A backpack effort in QRP Afield seemed to be the logical choice, since it also allowed me to make a piggy-back entry to the Adventure Radio Society. I got up a 40M dipole at about 18 feet. Since I was up on the top of a ridge, I figured the height of the antenna wasn't a big concern. 40 was dead city, with just a few Os made in several tries. 20 was much better, but it was a very curious experience. There was absolutely no QRN since, I was many miles from the nearest power line. Coming from a noisy urban environment, I was used to hearing QRP signals come and go out of the noise. But up here, they just boomed in, popping out of the quiet background like mini-kilowatts. I had the

Sierra turned down to 1 watt, and found that at that level, I was hearing people much better than they were hearing me. It seemed like pulling teeth to get Qs into the log. Final results: 20 Qs in about three hours of operating, 4 on 40m and 16 on 20M. Best DX for the day was NNIG from VT. It sure was good working all those familiar calls. Golly, this contesting stuff is fun! Think I'll try to do some more of itm72/73,Cam NGGA.

Tony Drumm, AAØSM: Sunny and warm? I'm jealous. Here in southeastern MN, it was cold and drizzly, Dave, KGØZT, and I met at a local park (too close to the highway noise, as we decided later). I strung up the home brew GSRV I built for boy scout summer camp and connected by twin lead to an MTD QRP tuner. Had AAØSM on the sir a few minutes before 18002. Had my 20 meter Explorer I and Dave's 40 meter Explorer II. Started off pretty well on 20 meters. Tried 40 meters a little but didn's seem to have much luck. But we did manage one QSO on the 19er with N9DD in South Bend, IM. My first QSO used a 9 voit battery. I think it was probably around 200 mW but I gave a liberal 250 mW for the exchange. I used my Curtis Keyer in a mouse and Dave used a straight key. I used the straight key with the 49er since my keyer lacks its own sidetone. Eventually, we weren't hearing very many new stations and the QSOs started coming farther apart. I kept wishing WSVBO would change his started coming farther apart. I kept wishing WSVBO would change his call sign. He was there with a great signal and working others left and right. After about 3 hours and a couple coffee runs, we called it a day. We nested only 12 QSOs but 10 states, east to New England, west to Oregon, south to Texas. Dave was thrilled to see QRP in real action. Of course, Sunday was sunny, warm, and beautiful. 72. Tony Drumm AAØSM.

Mark Adams, NZVPK: I had a super time in the contest. I was located on a nice hill overlocking the family farm in Sethany, NY which is shout 40 miles east of Suffalo, NY. I set up near our hunting camp using two lawn chairs, one to sit on and the other with a board across its arms for a table. I had planned on setting up 3 antennas: the PVC Gusher II from NZCK in the 20/40 fam dipole configuration supported by a 20 foot PVC mast, a 20 meter half-square, and a 40 meter vertical. But after setting up the Gusher, I tuned up 20 meters and answered a CQ from a W7 running in the WA QSO party. We had a nice chat and he was impressed with my audio and 4W power level. He gave me an honest 5/8 so I figured, what the heck, why not save the time of putting up the other antennas and use it to check my tree stands and do woods maintenance for the upcoming turkey and deer seasons. A simple fan dipole and nothing more. This would be my first operation in 3 years without the luxury of a full wave loop antenna. Finally, the contest started. I found plenty stations on both 20 and 40 meters. It was neat using coax and being able to switch bands without a timer. Between the family stopping by, and chores, I was able to get about 2% hours in front of the rig. I worked 32 QSOs and 22 multipliers. It was neat working N2CX, Joe, who had just sent me the Gusher Kit in tho mail sarlier that week! Also interesting was bearing N2CQ call CQ with no takers for a while. He was an S9 to me but he didn't here me call him for the first mine tries. On the tenth he came back to me with a 599! Near the end of the contest. I tried S8 and worked 2 special event stations and a fellow in Ohio who was tuning up his rig. All in all, the contest was tons of fun. After a day in and out of the woods, I was pretty beat. The 40 minute ride home was no problem because the end cent was tons of fun. After a day in and out of the woods, I was pretty beat. The 40 minute ride home was no problem because the adrenaline was still flowing. And when I got back home, th

Russ Carpenter, AA7QU: Well, this was both a fulfilling and a sad day. It was my last opportunity this year for a backpack QRF contest in high country. On the other hand, it was an extraordinary experience, as days on mountain peaks generally are. The mountains were dressed in brilliant red with the leaves of vine maple and huckleberry. A snow storm last week left all the high peaks coated with ice and snow. And a flock of birds hung out with me most of the day. My Sierra tried its best, but contacts were pretty challenging today. I ended up with just 36 of them, In 22 states. As I hiked down the mountain, snow was in the air. To be honest, my thoughts were not entirely on the joys of QRP, but were now a bit more focused on the host tub at home. Thanks to the members of the New England QRP Club who once again put on a classy event. Russ Carpenter, AA7QU, McKenzie River, Oregon.

There were many more comments from around the country and you certainly have the idea as to how much fun QRP AFIELD certainly is. Next year's contest will be bigger and better and the thrills will continue to make this event a standout in the crowd. Thanks from the New England QRP Club! 72

Club Patch On Sale

The New England logo patches are still available for your hiking kit bag, QRP jacket, fishing hat with flashing LEDs, or anything you can pass a needle. No doubt, you want to be included in the easy identification of having others know you're a special member in great standing with the New England QRP Club. Order your logo patch as soon as you can and be a part of the most progressive QRP club in New England, and beyond. These patches make great gifts, too, so get two and share one with a friend. You'll see why so many people agree that when it comes to the New England QRP Club----

THE EXCITEMENT IS BUILDING!

Order you patch for your back-pack, summer jacket and tent door ornament for \$4, or two for \$6 (post paid) from:

Bob Moeller - KA1PXF Project Manager

9 Corey Lane Bennington, Vermont 05201-2116



Who's On First?

Now that the FCC has opened gate II and released the second phase of call letters, the following list will give you a score card as to WHO IS ONE first, WHAT'S on second and I DON'T KNOW is on third.

OLD CALL	NAME	NEW CALL
K1MON	George Caswell	W1ME
WAIYIA	Owen Qualres	K1OJ
NW1J	Mike Rioux	WIUSN
KB1GO	Phil Rutledge	K1HS
NIKTM	Clinton Walker	W1LP
KH6CP/1	Zak Lau	W1VT
KC1GS	Bill Acito	W1PA
WA2YTE	Larry Deering	W2GL
KG2DP	Bill Creekmore	W2DP
WA2UAX	Gary McCaughey	W2UX
KB2TEO	Kevin Glynn	N2TO
WA3ULH	Rob Capon	W3DX
N3MBY	Bob Okas	W3CD
WA3YON	Bob Nygren	N3RN
WM3B	Vic Celani	N3RN
KA3YJG	Robert Schnick	K3TE
KE3NV	Scott Bauer	W3CV
KJ4XR/K3RFN	Ken Evans	W4DU
AE4CA	Bob Edwards	W4ED
AC4QO	Bob Scott	W4FPJ
AA4YZ	Kirk Staats	W3AW
WA4OSR	Mitch Mitchell	W4OA

N5OCD	Brian Lewis	K5RV
KB5DQ	Paul Ridley	N5PR
WA5VQK	Tim Ahrens	W5FN
WB5LXA	Felix Barreras	W5BX
AC5GY	David Kreinberg	NR3E
WB6AAM	Jay Coote	W6CJ
WT6P	P. Grover cleveland	K7TP
N6PDX	Jim Bennet	W6JHB
N6HCS	Paul Carreiro	N6EV
N6XI	Rick Tavan	N7TN
N6MVE	Mike Wood	K6MW
N6ULU	Stan Goldstein	N6XU
AA7QY	Roger Hightower	N7KT
AA7WT	Mal Goosey	N7GS
W7UOX	Phil Wheeler	W7OX
KC7CKP	John Shuster	K7MP
KF8AT	Floyd Soo	W8RO
WB8ZJL	Paul Valko	W8KC
AA8VN	Frank Forsyth III	W8XI
W8KUX	Chas. Kadesch	W3KC
K9DZE	Allen Jones	W9DZ
N9AZ	Paul Christensen	W9AC
N9HXX	Steve Holland	K4AH
WAØRPI	Jim Lageson	N0UR
AAØUB	Mike Robinson	N7MR
A special thanks to B	Bill Acito W1PA (ex-KC1GS) for	or the helpful list.

QRP AFIELD

WA5WHN Jay Miller with Logger - ADORA



QRP AFIELD Albuquerque, New Mexico



NA5N Paul Harden



N5ZGT Brian Mileshosky



AB50U Tim Pettibone



John McKee - WB4OFT

WinSnith, by Eagleware, is a program that automates the Smith Chart and makes it easy for someone with only a limited knowledge of the Smith Chart to solve transmission line and matching problems. The program operates under Microsoft Windows 3.1, Windows for Workgroups, and Windows 95. WinSmith is part of the Smith Chart Toolset from Noble Publishing, which also contains a new edition of "Electronic Applications of the Smith Chart" by Phillip Smith, and a video tape entitled "Introduction to the Smith Chart" by Glenn Parker. Each of these is available separately or as a package.

What's all this Smith Chart stuff anyway? It goes like this. The horizontal line along the chart center represents a pure resistance. For most amateur applications, the center of the Smith Chart is usually 50 ohms, although it can be whatever impedance you want it to be. Moving to the left, the resistance decreases and moving right the resistance increases. The left edge represents zero ohms and the right edge represents infinity. The top half of the circle represents inductive reactance and the bottom half represents capacitive reactance. Most real world impedance's are made up of a resistive part and reactive part and are expressed as R + jx or R - jx, where R is the resistance in ohms and X is the reactance in ohms. The object of the game is to find a network that gets you from the load impedance back to the 50 ohm reference at the center of the chart. That's about all you need to know to begin using the program.

WinSmith accommodates up to nine passive components in a ladder-circuit format. When an element is placed into the schematic, the program draws an arc on the Smith Chart that represents that elements affect on the overall network response. Elements include resistors, capacitors, inductors, transformers, and transmission lines.

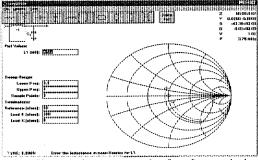


Figure 1 shows an example of an L network that matches a 50 ohm source to a 300 ohm load. In this example, the load impedance is puzely resistive. Three points are shown that correspond to the top, middle, and bottom frequencies of the

80 meter band. The data displayed in the upper right of the window is for the center frequency. Placing the tip of the mouse cursor on any point inside the chart causes the data for that point to be displayed. Actually, the data changes continuously as you move around the chart. Although this example shows three sample points, you can look at a single point or as many as you can fit on the chart.

The left side of the schematic is the reference impedance and the right side of the schematic is the load impedance. This is important to remember, especially if you are designing an output network for a transmitter. You get some strange results if you switch the load and source ends of a transmitter output network around. I know, I did it.

All information is presented in one window. Placing a component is as simple as point and click. The WinSmith menu bar contains three user menus: File, Options, and Tune. Most of the WinSmith options are similar to options in other simulation and word processing software.

Circuit tuning is done with the Page Up and Page Down keys. The tuning percentage is shown at the bottom left corner of the screen. The tuning percentage can be changed by using the Tune menu option or the F7 (increase) and F9 (decrease) keys. The up and down arrows move between data fields or you can use the mouse.

I really like having all the information together on one screen. Saving a file works like most other software programs and you can save as many files as you want. Another nice feature of this program is the default file. When you exit WinSmith, the displayed information is automatically saved in the default file. The default file is reloaded next time WinSmith is started. The Print Window option prints the current window, or saves it in a Windows format BMP file.

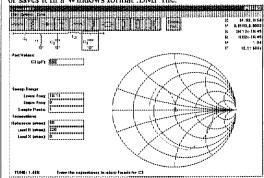


Figure 2 is a real world example of an output matching network for a homebrew 30 meter QRP transmitter. The matching network was designed for a power output of approximately 1/3 of a watt. The PI matching network consists of C2, L2, and C3. C1 is for DC blocking and L1 represents the RF choke in the Vcc path. The final result was 315mW. I used standard value capacitors and you can see the match was not quite dead center, but close enough.

WinSmith is available from Noble Publishing for \$79. Noble Publishing, 2245 Dillard Street, Tucker, GA30084, TEL (770) 908-2320, FAX (770) 939-0157.

John McKee - WB4OFT



The New Improved "QRP

Joel Denison - WA5CVM jdenison@aisp.net

Get comfortable and let me have your attention for a while, for I have something to say to you. From one ham to another, with a bit of humor thrown in, I want to tell you about my new QRP rig and all the worry and stuff that went into purchasing and using this little rig.

The adventure began one evening when I decided I was going to learn to hang glide and decided to sell my ICOM 735 to pay for the lessons. I had no problem selling the ICOM, as I gave someone a steal at \$500. At this time, I started to get a new education. I found out that winters up north would continue for another three or more months and without the ham rig, I would go nuts watching the sneaux melt. (Sneaux - Southern spelling)

I started searching around for another new rig and came across an advertisement which said, "The New and Improved QRP PLUS. 5 WATTS SSB & CW, BUILT IN KEYER VARIABLE AUDIO FILTER" and many other things that got me all excited.

The first thing I noticed was that it was made by Index Laboratories. Who is Index Labs? How good is their work? These and other such questions came to mind. I then thought about their advertisement and got to thinking.... If this is the "new improved" version then there must be an older, not so improved version. Logical, damn right that's logical.

I contacted someone who owned one of the "earlier versions" and found he was very happy with his rig and evidently he had the factory modify his rig to present standards. I was nervous but willing to gamble. I noticed that the ARRL had Index Labs. advertised in QST, so I decided to go for the gusto or whatever it is that people go for. I called the factory, E-mailed the factory and I guess I made a bit of a nuisance of myself, but I was betting \$705 dollars on their product.

On one of the calls to the factory, the guy who answered the phone assured me that the little rig would do all they said it would. I told him that I was concerned about that because what this rig promised seemed too good to be true. And, you know what people say about things that seem too good to be true! I called a bit later, after I sent my check in the mail, to see if the set would be coming soon. I was told that I would have it in about a week or so with no problems. I don't know exactly how the conversation got around to this but I told this guy: "You know how you guys are looking at my check and wondering if it is good or not? You guys don't know me either and assume the check is good but would not ship the rig till the check cleared the bank. Well this is how I was viewing the QRP rig." Index Labs was unknown to me and I had a bit of money invested.

Well, the rig came wrapped up in a very well-protected package. I took it out and glanced at the instructions, and after about forty-five minutes of reading and making sure of the power polarity, I fired the honey up. The first station I worked was in Ireland!

The AGC had a tendency to overload, however, the problem was some of the boards were not modified. The factory sent me a resistor with instructions on where it went and gave me the option of installing it myself or returning the rig and they would repair it. I was beginning to learn that this is a company that will work with the QRPer, not against him. I was extremely delighted when I took the cover off the rig and saw all these nice, picture perfect soldering connections. I put in the resistor and noted that my solder connection stood out like a sore thumb!

I invited a friend over and he brought his bug and I used the iambic KEYER and we worked a couple of log pages of QRP. There was a QRP contest or field day on that weekend and I worked stations till I was tired of working stations.

I noticed immediately that neither my friend nor I had any problems making the little rig do what we wanted it to do. The controls just seemed to work naturally. The variable audio band pass filter is a marvel to use. The memory tuning, split operation, RIT, everything reacted as the advertisement said it would—160 to 10 meters—5 watt SSB or CW, break in CW, general coverage receiver, speed readout on the built in iambic KEYER, digital readout.

Check out one of the ads for this little radio and I am here to tell you that my rig did everything that ad said it would do and my reports on the CW and SSB are just fantastic. I know we all flinch at the price tag, but you get your money's worth and the peace of mind knowing you have the new QRP "classic radio." I loved my Argonaut 509 and still regret having sold it. However, a new and greater QRP rig is here, and I have one. It's called The New Improved "QRP PLUS."

I've had it for several months now and still have not thought of anything I would add or take away from this rig. Somebody put a lot of thought into this little rig and I am proud to say that this is the only rig (HF) that I own and see no need to even think about buying another. I am now 100 percent QRP, working more DX than ever before and have found that "excitement" that I had when I first started hamming in '62.

If you want to QRP all bands, want to use SSB as well as CW and want to have a rig to take camping, you need to look at this QRP PLUS from Index Laboratories. I did and I am a very happy camper. It really is a marvelous rig.

Here's a PS. If you go to Radio Shack and get the adapters for the plugs and some cable to make a short jumper, you can use your HT speaker mic with the QRP PLUS. With the adapters and a short jumper, you can also use the mic/headset/VOX that radio shack sells. Now I have VOX on the QRP PLUS.

72/73 - Joel WA5CVM Farmington, Maine BREEN MOUNTAIN-SERIES POWER INCREASE

by Jim Fitton W1FMR

The GM-20 is an excellent performing transceiver. While chasing an audio popping problem I had, I slid an Amidon ferrite bead onto the 220 ohm resistor lead that feeds DC to the 4 terminal MAR 3 amplifier device located in the transmitter driver circuit chain. That didn't cure the problem, but after touching up C40 & 45, I noticed a 0.24 watt increase in output power. This occurred running the rig on a 12.6 volt DC battery. Changing to a 13.2 volt DC battery, the power increased by 0.33 watts. Placing 2 beads on the resistor lead increased power output even more.

Here's how to do it. Working from the top of the board, cut the lead going to the top of the 220 ohm resistor. Next, slip a ferrite bead over the lead and resolder the lead to the resistor. If 2 beads are used, a short piece of resistor lead wire can be used to bridge the gap between resistor lead and resistor.

Retune C40 and C45 and measure power using a durumy load.

Jim Fitton-W1FMR

Dave Benson's NN1G - response

The mod is a good one. The 220 ohm MAR-3 supply resistor parallels the load seen by the MAR output. By adding inductance in series with this resistor, the loading is less pronounced. With a high value of inductance (such as with a separate toroidal inductor) there's a gain ifferease of up to 2 dB at the MAR-3 stage. The addition of ferrite beads is a simple and useful way to improve GM output power, and I'll be adding this feature to all GM deliveries. 73, Dave-NN1G.

QRP IS A CHALLENGE IN HAWAII

Like everywhere else, my first landfall is just a bit farther. I won fourth place World-Wide in last DX test QRP contest. I used verticals from the edge of Kaneoke Bay, on Oahu, northeast of Honolulu. Old Ten-Tec C-21 with OHR watt meter to bring about 4.5 to 4.75 watts output. I also use classic tube gear...HRO-m (circa 1944) receiver, TCS-12 (circa 1944) on 160-30 meters-with a home brew ac power supply. FT-101E at 5-50 watts output.

Miscellaneous: QRP projects on various bands 1-5 watts. These days, I am trying to leave a message on the MIR BBS system and so far I have connected, but the satellite goes away before I can finish. (I am still working on that. Butternut, Cushcraft R-5, and G5RV from a 25 foot coconut palm, down to the water's edge.)

72/73 Greg Greenwood WB6FZH/KH6 NE#287

Ultimate "No Holes" Mobile Antenna Zack Lau W1VT

I first got a Yakima bicycle rack for my Saturn automobike and then added a 12 volt Emoto 2Ø1AAX rolator. Initially, I was going to mount VHF and UHF yagis on a little H frame, but decided to go for the gain! A little bit of calculating indicated that a 12-inch dish would do just fine, even at highway speeds. By feeding the dish with a high

efficiency dual mode horn, I optimistically estimated a gain around 28 dBi at 10 GHz. Feedlines are a bit of a problem at X band, but half inch Heliax works pretty well if it doesn't have to flex. Luckily, a dumpster-diver had given me a piece of low-loss Gore Flex a few years ago, complete with the right connectors (N female, SMA male). This is precisely what I needed for the turn loop.

Even with 2 dB of cable loss, I still have an EIRP of over a kW---enough for an S9 signal report from WB1FKF, operating from his home in Woburn, MA about 126 miles away. Nice thing about operating from MT Washington---you can test an antenna's performance at "highway speeds"-----while parked. Winds, according to the observatory, were 55 mph, gusting to 70 mph. The rotator worked just fine in the high winds, but the wind noise was rather fatiguing, so I drove to a quieter spot after putting up with the rushing noise for half an hour. This antenna sure beats trying to lear down a station when the temperature outside is 35 degrees. Now, if I just add computer-control to the rotator....

Zack Lau WIVT

A Good-bye Note For A Friend

It's cold and overcast and sleeting here in Farmington, Maine and I got to thinking about home and about a good friend that used to stay up nights with me in my pickup truck playing QRP.

I would park in my friend's driveway and had a vertical dipole set up on the side of his yard; I also used the mobile antenna on the truck. I made a table top in the bed of the pickup to place my ICOM 735 and ran a wire to the battery for power.

I would spend the night playing CW QRP and my friend would be there beside me, or take off for a few minutes and come back and just say hello. When the bands were dead, we would have fun together till we got too tired and went to sleep.

We did this for I guess a year or so and then, on a day like today, I was told that my friend was gone. The nights became too full of memories for me to continue operating alone. I wrote this good-bye note to him before I left Louisiana and moved to Maine.

Bandit

The winter sky was crying,
The river left its banks,
And I wondered why tear drops
Filled the land.

Nowhere was Bandit, The summer of my life. Nowhere was Bandit That awkward, joyful sight.

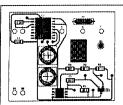
In the silence a bell tolled With its slow mournful sound While, as if in sorrow, Nature cried upon the ground. Bandit was gone. I knew before I was told. I felt it in the rain With its biting cold.

> Until now, He was not a thief. I recall nothing He never stole.

But in parting, He stole my heart, And left me grieving In the cold.

Bye now God Bless Joel Denison WA5CVM 81 High street

Farmington, Maine 04938



A Tiny 1 Watt RF **Amplifier** Steve Weber, KD1JV

Not long ago, I finally got around to buying some MMICs (microwave monolithic integrated circuits). These are tiny class A amplifiers the size of a match head. They are available in a variety of gains, output levels, noise figures and frequency response. DC to 1 GHz is common and DC to 8 GHz is also available. They require only three additional parts to make them work; an input and output coupling cap and a bias resistor. They have a 50 Ω input and output impedance and are unconditionally stable; a nearly ideal amplifier.

A lot of QRPers are into extreme miniaturization so I decided to use some of these MMICs and see how small I could build an amplifier with a reasonable amount of power output. Since I was interested in building a small power amplifier, I bought some of the "high" output types. The MAV-5SM, by Mini Circuits Labs, have a gain of 8 dB and output levels up to +18 dBm. Since they are class A amplifiers, input power is fairly high, up to 1500 mw.

Figure 1 shows the circuit for the amplifier. Two MAV-5's are cascaded and drive a SMT (surface mount technology) medium power transistor. The transistor has a 2 watt rating and an Ft of 150 MHz. I got a solid 1 watt output power up to 14 MHz with a drive signal of about 0.5 V p-p. A small balun core with a 4:1 turns ratio is used to match the output of the MMIC to the transistor base. A small ferrite core is used as the output transformer. Power output can be adjusted by varying the supply voltage to the MMIC's.

The amplifier is built on a 1 inch x 2 inch piece of copper clad board. A hobby knife is used to cut the pads into the copper foil. Use an ohm meter to make sure the pads are indeed isolated from the rest of the board. I used regular leaded capacitors and resistors, but chip capacitors and resistors could be used. Power up the amplifier the first time with a variable supply. Use a watt meter on the output if possible. You don't want to over-drive or over-voltage the amplifier. More than one watt out is possible with sufficient drive and supply voltage, but the tiny power transistor will smoke when you hit about 3 watts out. At one watt out, the transistor only gets slightly warm to the touch. If you need more drive, you can use a MMIC with a higher gain for the first stage or cascade another one.

If you're into tiny gear, it's time to start playing with-SMT. All you need are good tweezers and a good magnifying glass. SMT parts are not as hard to work with as you might think. In fact, since you don't have to drill holes, making a circuit board is actually easier and construction is faster than with normal sized parts. Get in on the fun!

You can buy the MMICs directly from MCL, but they do have a hefty fifty dollar minimum order. The MAV-5SMs are less than two dollars each, but you have to buy ten at a time. You might want to get a selection of amplifiers, such as the MAV-1SM and MAV-3SM, to round-out your stock supply. You might want stock up on some SBL-1 mixers while you're

(Call MCL at: 1-800-214-6428) MAV-1SM

18.5 dB gain @ 100 MHz, +1.5 dBm out

ma @ 5V (output pin)

12.5 dB gain @ 100 MHz, +10 dBm out MAV-3SM 35

ma @ 5V

8.0 dB gain @ 100 MHz, +18 dBm out MAV-5SM

ma @ 8.5V

(The value of the output bias resistor is calculated by using the input current divided by the supply voltage minus the output voltage. i.e., for the MAV-1 using a 12 volt supply, 12-5 /0.017 = 411 Ω resistor.)

Steve Weber - KD1JV

50 States In 50 Days. Why?

Jim Hydzik K3QIO

(Formerly from Hudson, NH)

Delaware

Every year I have run across fellow operators, of both power persuasions, who start the year off reworking DXCC or WAS just for fun. And every month there is at least one piece of E-mail requesting a sked with Delaware. Even in the last issue of QRP Quarterly, editors were hinting about needing my little state.

Every winter, the ratio of solicitations hit 10-20 a month for request to Delaware and often it's from the I-do-it-every-year ham. And QRP operators have it a little tougher getting the smaller states on the rare bands, so doing it early is akin to getting it out of the way and back to planning for Dayton Field Day, and of course the predictable 38 Special 30 meter activity. plus TESTIFY-Thirty Eight Special To Indefinitely Forestall Yardwork.

Fifty states...Yup. Twenty-five days, maybe or fifty states in January-FSIJ. Sometimes an acronym means the difference between acceptance and failure, so the hunt went on for a good name. It takes on the appearance of a QSO party, Fox hunt, and Sprint rapped into a 24 hour shot for each state.

The original announcements are on Bob Hightower's web site at: http://www.dancris.com/~ki7mn but here are a few of the guidelines in case you're without Internet access:

- 1) Each state's volunteers (solicited from the QRP-L reflector) can work any bands/times/frequencies they desire during their states scheduled day and can post their schedule on the reflector, so we know where to find them. An emphasis is placed on 40 meter coverage in the evening.
- 2.) Multiband and multi-op action is welcome and desired. Trying to get each state on the air on as many bands as possible is the central goal. The request still stands for as many volunteers to sign up as possible.
- 3) Start date is January 1, 1997 and will run alphabetically A-Z through February, 19 (50 Days). Some of the rare states will require juggling of dates and we'll be as accommodating as possible to get every state on at least 40 meters

By the time you read this, we will be around a third of the way through the list (the M-states start Sunday Jan. 19). If you are interested in helping with your remaining state, please E-mail me at the address below:

Jim Hydzik K3QIO E-mail: congress@magpage.com

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The **brosted**

Joel Denison - WA5CVM

Tonight was like most any other early winter night QRP operation in Maine. But, this was not an ordinary night and before the dawn would break, lives would change and QRP would never be the same. The problem precipitated as the temperature dropped below twenty-seven degrees Fahrenheit with a high humidity of seventy-five percent. QRP rigs went sterile and were incapable of making even the shortest QSO. No RF was heard,

There I was, Joel Cool-QRP specialist, sharing QRP tips on 7.040 MHz when my receiver went silent. My SWR climbed to 100 percent. My voice alarm on my new QRP Plus transceiver (a modification I installed myself) started yelling, "Stop. SWR out of control!" "Stop! You're killing me!" and other attention-getting hints that trouble was brewing. Brewing---hell, it was blossoming!

I connected my dummy load to the transmitter output and BANG, five watts out. I connected a signal generator to the receiver and it sounded great without a waver. Coax problem I thought, so I grabbed a 110 foot piece of new RG-58 and put the ohm meter to it. I fired up the rig with the dummy load and checked the receiver with the new coax in line with my trusty signal generator. That was smart thinking!

I grabbed a long extension cord and the heavy duty

soldering gun and headed outside. I was going to change the coax cable to the antenna, making sure all the connections were tight and correct. This was no small show of dedication as the temperature was about twenty-seven degrees Fahrenheit and the humidity was in the 70 percent range. When I returned to the shack, I checked the old coax with the ohm meter and it checked good. I connected it between the rig and the dummy load and it was just fine. I reconnected it to the signal generator and it worked just fine again. I checked the connectors, flexed the coax. Everything was

Disturbed (aren't most people), I connected the new coax to the transceiver and--nothing. I keyed the transmitter and the audio warning sounded again: "Hey stupid, didn't I

just tell you to stop transmitting till you found and corrected the problem?" (Annoying little device isn't it.)

This was getting serious. I again went outside and lowered the antenna. I checked it for shorts, continuity, and everything checked with approval. Out of desperation, or nothing better to do. I brought the antenna inside and wiped the wire clean. There was a rust-colored film on the wire. I then went outside and put the antenna back up.

This time the receiver was booming when I turned it on and the SWR/watt meter showed five watts out with nothing reflected. In no time, I was able to make good QSOs again. In fact, I made contacts for the next four hours before retiring to bed. This was indeed a puzzle.

The next day I checked with my buddy, Dennis - K.IL.GQ. He laughed and laughed and finally said, "Joel, you're a flat-lander in hill country. What you had was Wire Frost,

"Wire Frost? You're nuts!" I said.

"Wire Frost," you flat-lander. Didn't you say you removed a rust-colored film from the wire? That was the RF blocking "Wire Frost." No RF can penetrate that stuff and in effect, it shields your antenna wire and you can't transmit or receive while it's on."

"Oh, maybe you have something there Dennis. I'll get back in touch a litter later." I said... puzzled.

Gee, this was humiliating. I should have known about Wire Frost. Down south we didn't have to worry about this sort of thing. I checked with a local ham, who had a packet station, and he smiled and asked if I had read the packet notices that week. I told him that I didn't have packet. He smiled and showed me some of the alerts that were sent the night before.

Temperature in the low thirties right now. Expecting a light frost tonight.
Hams are being encouraged to leave some power in their antenna during the early hours before dawn to prevent RF stopping Wire Frost from forming.

Frost from forming.

QRP operators are advised to take their antennas inside for the night. The low sunspot activity combined with Wire Frost could cause some hams to be QRT till tomorrow afternoon.

Novices should be alert for high or changing SWR in the morning.

I asked my ham friend about Wire Frost and he said it was an unusual phenomena that occurred only at night as the temperature drops to 27 degrees Fahrenheit when there is high humidity, such as the night before. When the Wire Frost forms, you have to wipe the wire clean or let the sunlight hit the antenna for a few hours. These are the only two cures known to the electronic industry.

Now fully informed, and trying to regain some self respect, I sent an article to the ham club back home entitled Danger, Wire Frost. I can still hear them laughing.

> Joel Denison WA5CVM jdenison@aisp.net 81 High St Farmington, Maine 04938



DRP COSTEST ASSOURCEMENT



FYBO (Freeze Your B____ Off) Winter QRP Field Day
Sponsored by the Arizona ScQRPions

→SAFETY FIRST! Please respect the weather and your own limitations.← When: 1700Z Feb. 22, 1997-0500Z Feb 23, 1997. QRP Only. Modes: CW, Phone. Bands: HF, standard QRP calling Frequency. (no WARC). For Novice portion of bands, suggest 3.710, 7.110, 21.110, 28.110 MHz. Work stations once per band. Exchange: RS(T), state/province/DXCC country, power output, and temperature (Fahrenheit) at OPERATOR'S POSITION. Indoor stations must report indoor temperature. Example: "RST 579 AZ 2W 58F." Novices sign with /N, Techs sign with /T. Points: 5 points /QSO with a Novice/Tech ham (i.e. contact a Novice/Tech, get 5 points). - 2 points /QSO in Novice portion of bands with General class or higher ham. - 1 point /QSO all other. Example: W1AW (Extra) completes QSO with KD6PRD (Novice). W1AW gets 5 points. KD6PRD gets 2 points. Multipliers: - States/provinces/DXCC countries - Field Location = x 4 - Alternative Power Source (battery/solar/wind/etc.) = x 2 - QRPp (less than 1w) = x 2- Lowest temperature recorded at OPERATOR'S POSITION while on the air: 60+ 1 F = x 1 50-59 F = x 2 40-49 F = x 330-39 F = x 4 20-29 F = x 5Below 20 F = x 6 Final Score: QSO points x Multipliers. Awards/Prizes: - Lowest operating temperature. - Most Novice/Technician stations worked. - Highest score (single operator, multi-operator, Novice/Technician). - Random drawing from logs received. - Send 9x12 SASE with log for certificate. E-mail: vole@primenet.com for more information. Send logs by March 21, 1997 to: Joe Gervais (KC7NEV) PO Box 1822

WIAW WINTER MEETING · MARCH 9 · SUNDAY AT 9:30

Goodyear, AZ 85338

This year's meeting at the ARRL office will be March 9 at 9:30 AM. We will meet in the parking lot in front of the Hiram Permcy Maxim building. It will be an all-day meeting with a gab session from 9:30 to 10:00, followed with QRP show-and-tell. Bring your ideas and your latest projects for all to see and for you to brag about. In addition to the brief meeting, a lunch will follow at noon (you're on your own) for all to see Newington's best road side cafes. At 1:00 PM, the WIAW station will open up for all to operate their homebrew projects using the league's antenna systems. The March 9th scheduled meeting should prove to be the best meeting of the year, judging from last year's comments. You don't want to miss this one! Car pool, mark your calendar, bring your wife...but be there!



QRP-AFIELD The Gusher III Antenna Kit

Jim Fitton - W1FMR

Jim Fitton - W1FMR: I operated QRP-AFIELD from a fishing pier in Saco, Maine and that is where the only available supports were 15 feet over the pier, and 25 feet over the salt water at low tide. For portable work, I have used an endfed wire and tuner, but supports have to be much higher. Great to have the dipole kit in my back pocket.

The Gusher III kit was unpacked from the mailing carton, measured, cut and assembled on the spot per kit instructions for 40 meters. It took about 20 minutes to assemble the dipole from scratch. Thank you Joe for the clever design and excellent, simple, lightweight hardware.

The dipole was strung over an arc-lamp hung inverted VEE fashion, with each leg cut eleven inches longer than the formula. The arc lamp was used to illuminate the pier.

The Autek RF-1 impedance bridge quickly showed a resonance at 6.878 MHz. I had a bugger of a time running around, trimming nine inches off both ends, but it then resonated at 7.066 MHz (SWR of 1:3). Good enough. (I have an idea for a quicker way of resonating, that III share with you later)

I worked twelve stations before the tide started rising and nipping at the legs of the inverted VEE. I spotted a way to get one dipole leg horizontal and wondered if the commercial



fishermen would yell at me, or even worse, throw me off the pier as bait.

While I was there, no one asked what I was doing. Maine social code of silence, I suspect. The typical social distance for a northern-most Mainiac must exceed 100 feet.

After getting half of the dipole horizontal, the antenna resonated at 7.168 MHz with an SWR of 1:7. I stripped and twisted seven inches back onto

each end, and it resonated back at 7.068 MHz.

I worked a total of twenty-six stations from IL to NC running about 1 watt with the NC-40. I was quite pleased. The only regret, was that the GM-20 transceiver was not finished in time for the contest.

Thanks Joe for your antenna, Gusher III.

Jim Fitton - W1FMR NE#01

New England QRP Clu Newest Members	b !
Nawasa Mambasa	
TACMC21 TATCTH OCT 8	

Please greet the newest members for the New England QRP Club.
When you make contact with them on the air, congratulate them and

say you saw their name in the <u>72</u> newsletter. We welcome each and everyone one of you to the absolute challenge of low power communications! The bands are yours to use as freely as you like. Burn the RF and go for it!

491 James L. Hensarling KD5KP	499 Edward R. Mann KA18VB
492 Patrick O'Brien K8LEN	500 Huston H. Green K7ITA
493 Reg Tremblay VA3GMG	501 Marty Lynch KAILXG
494 Rev. Francis E. Sullivan (call')	502 Peter E. Michaud VE3PET
495 Robert Anderson KE1CM	503 A. Robb Frederickson WIEEL
496 Brian D. Kassel W5VBO	504 Bob L. Stolze AC5AM
497 Jim Ford NM1F	505 Neil Tanner WA4CHQ
498 Mark Clark N1KWM	506 Richard A. Bachmann N3SLR
	492 Patrick O'Brien K8LEN 493 Reg Tremblay VA3GMG 494 Rev. Francis E. Sullivan (ali'') 495 Robert Anderson KE1CM 496 Brian D. Kassel W5VBO 497 Jim Ford NM1F

An Open Letter from WA5CVM, Joel Denison Dear Astro Flyers Amateur Association,

Greetings from the town of Farmington, ME. I have forgotten the name and call of your fearless and faultless leader, so I will refer to you as your Hamness, if that is okay. My name is Joel and my call is WA5CVM. My QTH is Farmington, Maine. I'm the QRP guy in the blue and white Chevy pickup at Field Day '96. Boy that was a field day! The hams there had their acts together: generators, batteries, tents, antennas, long, tall crane, and best of all...Porta-toilets.

I want to thank your Hamship for the invitation to join your merry band of RF generators. Most certainly, you picked the cream of the crop-good Hams one and all. I want to join this merry group of distinguished amateurs. I was unable to attend the September meeting to make my request in person, so I decided to write your Hamship and beg acceptance into your group of fine hams.

I can only offer my best efforts and some limited experience in ham radio since 1962. I am operating QRP for the foreseable future. I have worked all states on 2½ watts output and also all continents at this same power level. I am now operating on the upper end of the QRP scale at five watts and have made numerous overseas contacts since I've been here in Maine.

Should I be permitted to join your most wonderful group of amateurs, I would like to organize a QRP team for the next field day. I am convinced that with some good wire beams and conventional beam antennas the club could do extremely well in the QRP category during this next field day. That it would be fun is a 'given' and I would not be surprised to see one or two members playing with QRP operation long after the next field day.

I also have two two-meter hand-helds (walkie-talkies?) and a quad for 2 meters. (It's made out of wood dowel rods.) I almost forgot to mention the magnetic mount for mobile operation. I also have a computer. Actually, my wife has a computer and I use it. There are no ham programs on the computer and I am hoping that I will learn a bit about this aspect of ham radio from the members of the Astro Flyers Amateur Radio Club.

As you can see, I am in most need of good amateur company and would be most grateful if I were permitted to join your wonderful group of amateurs. Would your Hamship please let me know what procedure is necessary to join your fine amateur community...?

God Bless - Joel Denison WA5CVM

Application For Membership and Renewal The New England QRP Radio Club



For a **NEW** membership, send your application to *Bill McNally—AE1D* Membership chairman, and **RENEWAL** to *Bill Studley - AA1OC*, Renewal Chairman.

Last Name:		_ First Name:		
Call Sign:	NE-QRP Numbe	er (renewal only)		
Mailing Address: (Street, City & ZIP)				
Phone number :	License Class:	Age:		
Former Amateur call[s]: (Year first licens	sed)			
Please write a couple of paragraphs about yourself (use another sheet of paper), and we'll pass it along to our Membership News Editor.				
The membership is \$10.00 and renewal is per year. Outside USA please add \$5.00. The club year begins in January and renewals are from September to December for the following year. Please make your check or money order payable to: QRP Club of New England.				
Mail your <i>new</i> membership applic	ation to:	Mail your renewal to (Please put your NE-QRP number on		
Mr. William McNally - AE1D your correspondence.) Mr. Bill Studley - AA10C				
New Membership Chairman NE-QRP Renewal Chairman				
7 Blueberry Road Windham, NH 03087		133 Baboosic Lake Road		
VVIIIUIIAIII, IVII VOUO7	l	Merrimack, NH 03054		

♥4,395,833 MILES PER WATT—NEW RECORD SET BY AA4XX AND KA3WTF &

This will remain in the books for a long time to

come and the challenge is on to see who will

make the next 4 million mile per watt QSO.

QRPers are constantly trying to beat their own records in designing, building, and operating and Paul Stroud AA4XX along with Fran Slavinski KA3WTF have accomplished another first in QRP communications! On December 28, at 13:45 UTC (8:45 EST), Paul sent his 96 microwatt signal to Fran's QTH with a secret word, LAMP, which was received 219. Fran's two watt signal report to Paul in Fuquay-Varina, NC (16 miles south of Raleigh) was 589. Fran's QTH, Larksville, PA, is 422 GPS air miles from Paul's QTH

and the two have broken their previous December 26, 1994 221 microwatt record. Paul attributes his extremely small QRP signal to be heard in PA by his NES-T II

antenna system. Both stations were using QRP Sierra transceivers with wire antennas, which should blow wide open the myth of expensive gear for recording record breaking events. This is truly a feat which has yet to be beat and will remain for a long time to come. According to Fran, the solar flux for that QSO was 75, however, the Boulder A index was 2. Interestingly enough, the Boulder R index was also 2 but dropped to Ø forty-five minutes later. Conditions

The antenna used by Paul Stroud - AA4XX was featured in an earlier issue (October 1995 and January 1996) of 72 which discussed the 40 meter array using an inverted Vee phase array. Paul has two large oak trees which he used to hoist the ends of his NES-T antenna beaming north and south. Paul has excellent results into the north east covering Pennsylvania as well as New England using the NES-T II configuration. AA4XX used his eighty meter dipole as a reference antenna to "see" how his antenna array was functioning.

The ends are elevated sixty feet on each end which helps a great deal. One interesting aspect of Paul's antenna was the fed-line was over 200 feet long. It was fed with RG-

8X and has a considerable dBm loss. It will be further testing for Paul to see exactly what his final output to his NES-T antenna actually was.

Congratulation and kudos to Paul AA4XX and Fran KA3WTF for their Herculean QSO and new QRP record. This will remain in the books for a long time to come and the challenge is on to see who will make the next 4 million mile per watt QSO. Good