SEPTEMBER / OCTOBER 1992

72

DESK COPY
PLS DON'T TAKE

THE "QRP - NE" NEWSLETTER

IN THIS ISSUE:

AND COMPLETE BOXBORO INFORMATION ON PAGE 11

Jim Fisher, W1FMR '92
P. O. Box 2206
Salem, NH 03079

PLEASE WRITE FOR 'YOUR' NEWSLETTER

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

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

Deadline for the next newsletter will be **November 30.**

DIRECTORY

Please Contact the following for information:

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508-960-2577 W

BE THERE:

BOXBORO, MA ARRL CONVENTION!

GREAT QRP FORUM!

BRING YOUR HOMEBREW PROJECTS!

SWAP INFO!

MEET OLD & NEW QRP FRIENDS!

BE PART OF THE BOXBORO QRP PHOTO OPPORTUNITY!

OCTOBER 3 & 4, 1992

Boxboro Photo Opportunity

Each time we convene a QRP New England meeting, we all enjoy the chance to view the latest offerings from the homebrew "hardcore." Those of us who can't make the journey, however, can only read about it later and share in the fun vicariously.

Our next meeting at Boxboro (October 3) gives us a great opportunity to share the goodies with a wider audience. Please plan on bringing your homebrew gear for display at the QRP-NE table. I'll have 35 mm camera equipment on hand for shooting close-ups for publication in the next issue of "72".

There's an ulterior motive here of course. In addition to the coverage in our own newsletter, I'd like to put a photo spread into the QRP Quarterly detailing the great things our club members have been building. This is a never-to-be -repeated (until next time) offer involving considerable fame and glory for the contributors.

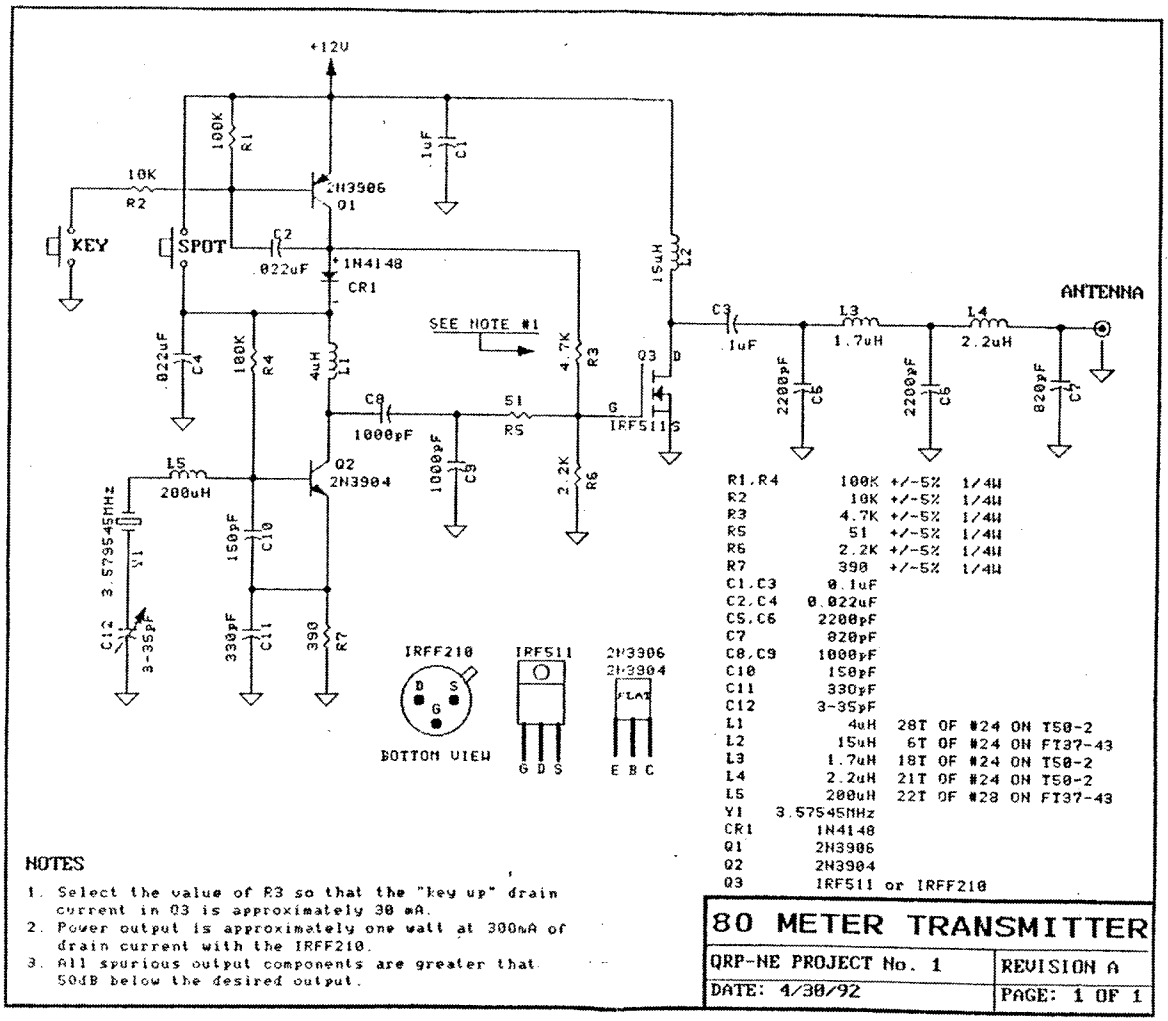
Hope to see you at Boxboro- 72, Dave, NN1G

Dave Benson, NN1G
80 E.Robbins Ave.
Newington, CT 06111

Note from the 72 Editor:

The deadline for this issue of 72 was moved forward to September 17th so that we could draw attention to the QRP activities at Boxboro. I apologize if this caused any inconvenience. Since the QRP activities at Boxboro promise to be exceptional, we wanted to make the club membership aware of the Boxboro program. I hope that we will see you there. Please bring your projects for Dave, NN1G's **Photo Opportunity**. This will allow him to put together a fine article for 72, and feature the technical skills and craftsmanship of the QRP-NE membership in the QRP Quarterly.

72 de N1CUU



R1,R4	100K	+/-5% 1/4W
R2	10K	+/-5% 1/4W
R3	4.7K	+/-5% 1/4W
R5	51	+/-5% 1/4W
R6	2.2K	+/-5% 1/4W
R7	390	+/-5% 1/4W
C1,C3	0.1uF	
C2,C4	0.022uF	
C5,C6	2200pF	
C7	820pF	
C8,C9	1000pF	
C10	150pF	
C11	330pF	
C12	3-35pF	
L1	4uH	28T OF #24 ON T50-2
L2	15uH	6T OF #24 ON FT37-43
L3	1.7uH	18T OF #24 ON T50-2
L4	2.2uH	21T OF #24 ON T50-2
L5	200uH	22T OF #28 ON FT37-43
Y1	3.579545MHz	
CR1	1N4148	
Q1	2N3906	
Q2	2N3904	
Q3	IRF511 or IRFF210	

NOTES

1. Select the value of R3 so that the "key up" drain current in Q3 is approximately 30 mA.
2. Power output is approximately one watt at 300mA of drain current with the IRFF210.
3. All spurious output components are greater that 50dB below the desired output.

80 METER TRANSMITTER	
QRP-NE PROJECT No. 1	REVISION A
DATE: 4/30/92	PAGE: 1 OF 1

QRP-NE CLUB PROJECT TRANSMITTER

Hello gang....

This has been a terrific 9 months for QRP-NE and the excitement is building !

Since meeting # 1 last December, we have 130 (all new) members; and climbing. This has to be THE fastest growing club in New England. No wonder, with guys like Harry, W1LMU recruiting new members, the HB project, SSB net, membership sprint, logo, newsletter, HB team, and so many other exciting projects that it's hard to mention them all.

The silent (mostly) QRP-NE core team consists of 9 officers: Jim - KR1S, Paul - W1CFI, Carl - N1CUU, Jack - NG1G, Bill - NT1R, John - KN1H, Greg - WA1JXR, Dave - NN1G, and Mark - NX1K, the founding fathers of the QRP movement in New England. They are to be congratulated for bringing us all together.

The 1992 ARRL Convention at Boxboro promises to be even better than in 1990 when we had a "standing room only" crowd at the HB forum presented by W1CFI and KB1RT. The 1992 schedule appears elsewhere in this issue.

It is not too early to start planning for next year, and your comments, ideas, and help are greatly appreciated.

Some possible QRP-NE meeting and get-together sites for 1992/1993 are:

December. Christmas party / QRP-NE first anniversary celebration?
February. ARRL HQ. - Newington, CT (meeting)
April. ARCI - Dayton OH
May. Hamfest - Deerfield, NH (meeting)
June. Field Day - Princeton, MA ?
July. ARRL Convention - Manchester, NH (meeting)
October. Hamfest - Deerfield NH (meeting)

Please let us know what you think....Thanks again for an outstanding 3/4 year !

Jim - W1FMR
QRP-NE Club Coordinator

HOMEBREW TRANSMITTER KITS WILL BE AVAILABLE AT BOXBORO

The QRP-NE 80 meter transmitter kits will be available at Boxboro for $17.

The transmitter outputs 1 watt on 80 M CW (5 watts if a $2 radio shack IRF511 transistor is substituted), contains all board mounted parts, instructions, schematic, (colorburst) crystal, printed circuit board, RF connector, toroid coil wire and winding instructions.

All that is needed to complete the kit is hook-up wire, a case, switch, 12 VDC power and key jacks. A simple 2 pole 2 throw (dpdt) toggle switch can be used to switch the antenna from "transmit" to "receive" while removing 12V power from the transmitter, on "receive".

New QRP SSB/CW Net.

From Danny Gingell, K3TKS
QRP ARCI NET MANAGER

The QRP Amateur Radio Club International is sponsoring a new QRP SSB net. The TCSN (Transcontinental CW-Sideband NET) will be held each Saturday at 1900 UTC (3PM EDST) on 28.322 Mhz. or alternatively on 7.285 Mhz. when 10 meters is closed by poor propagation.

Net control will be KA9JKK, Max Adams in Indiana. Anyone who is interested in QRP is welcome to join us on this informal net. Check ins from both CW & SSB stations are encouraged, and you do not have to be a QRP ARCI member to participate. Club members will earn credit towards the QNI-25 Net Award.

MEMBERS ' NEWS
by BILL LEGGE, NT1R

Steve Capogna, NOIR, writes from Chelmsford, MA:

I wrote this for 72 to get some interest generated by the QRP-NE members in QRP operation on the RS satellites.

Recently, I became interested in tracking and working the Shuttle and MIR passes on 2 meter FM, so I got hold of a satellite tracking program and began listening to the MIR space station. While loading the Kep data from the AMSAT bulletins, I began to wonder about the other satellites and thought I might be able to hear their beacons on 2 meters. That was when I noticed several birds called "Radio Sputnik" or RS for short.

I looked up their beacon up & downlink frequencies and noticed that the Mode "K" transponder used the 15M band up and the 10M band down. I couldn't believe that I had the equipment available to make a two-way contact into space via a satellite! The question was, since I have only the HW-8 and HW-9 available for the 15 meter uplink,would it work for QRP?

I first needed some background on operating strategies, so I scoured my QST's,. the ARRL "Operating Manual", and purchased the ARRL "Satellite Experimenter's Handbook." I also found several excellent articles by WA6ARA describing QRP operation on the RS satellites in the last two issues of the QRP quarterly.

From the information I had gathered, it seemed that "Mode K" operation was most reliable on the RS-12/13 satellite. Mode "A" operation, or 2 meters up, 10 meters down seemed most reliable on the RS-10/11 bird. There was also another little tidbit of information that had to be gleaned from the various articles. That is, each satellite has a duplicate station on board (RS-12 or RS-13 for the RS 12/13 satellite), utilizing different transponder frequencies. Only one station is turned on at a time and my experience over the summer has shown that RS-10 and RS-12 are the two stations most widely used. You can tell what station is being used by monitoring the beacon frequencies.

The beacon frequencies are as follows, including the transponder frequencies for "Mode K":

10 M Beacon Frequencies: RS-10 - 29.357 Mhz.; RS-11 -- 29.407 Mhz; RS-12--29.408 Mhz.; and RS-13 -- 29.458 Mhz.

RS-10 Transponder, Mode "K": 21.160 -- 21.200 Mhz. Uplink; 29.360-29.450 Mhz. Downlink.

RS-11 Transponder, Mode "K": 21.210-21.250 Mhz. Uplink; 29.410 - 29.450 Mhz. Downlink.

RS-12 Transponder, Mode "K": 21.210 - 21.250 Mhz. Uplink; 29.410 - 29.450 Mhz. Downlink.

RS-13 Transponder, Mode "K": 21.260 - 21.300 Mhz. Uplink; 29.460 - 29.500 Mhz. Downlink.

There are other beacon frequencies for the other modes that may be turned on such as Mode "T", which utilizes a 15 M uplink and a 2M downlink. CW is predominant in the lower half of each band, SSB on the upper half.

Each satellite has a low earth orbit of approximately 400 Km., and you can expect 2 to 3 good passes a day. The problem is that one of the great passes might be at 3 a.m.! That leads me to the first contact I made via the bird.

I was using my Realistic HTX100 10M rig to monitor the beacon frequencies on my Zepp End-Fed, and had set up my Heath HW-8 on my old ground mounted vertical in the back yard. I was having trouble sleeping and went into the shack to see if one of the birds would be passing soon. Sure enough, the RS-12/13 was due for a 02:45 EDT pass, so I warmed up both rigs and listened for the beacon. Soon I could hear the familiar 20 WPM beacon of R-12 on 29.408 Mhz.

When the satellite had risen approximately 20 degrees elevation, I tuned the HTX-100 into the transponder downlink frequency of 29.420

Mhz. I began sending a series of dits with the HW-8 and slowly moved up frequency. After a bit, I could hear the dits faintly, complete with QSB! I could hear myself in the downlink! Did I dare call CQ? Surely no one would be up at this hour. My Satellite program showed that the bird's shadow covered the eastern half of the US and Canada.

CQ RS CQ RS de NO1R NO1R K. I could even hear the Doppler shift in my frequency as the satellite approached, I hear WW1P WW1P contest style and hoped he was calling me. WW1P WW1P de NO1R ur 579 579 MASS MASS name STEVE STEVE BK. Then came the response -- FB STEVE ur 579 579 hr in ME ME, OP DENNIS DENNIS, NO1R de WW1P.

That's all there was to it. I had enjoyed my first QSO via space! We both signed quickly as signals were fading and the satellite was now getting low on the horizon. An exchange of QSL's followed over the next few days and I had my first satellite QSL.

Since that exchange I have improve my 10M antenna with an inverted V and signals are now much stronger on the HTX100. I have also worked PA, GA, AR, MN, WI, NH, ONT, and our QRP-NE membership officer, Jack, NG1G up in VT. He was running just 5 watts to my 3 watts!

If you are worried about QRM on the bird, don't be concerned. Even though the transponder is only 40 Khz. wide, I have found this bird under utilized. Several times the station I worked was the only other station on the satellite.

My next challenge is to get a 2M CW transmitter so I can work the RS-10 satellite on Mode "A". The Bird is a great way to expand your QRP activities, so why not tune those rigs to 15M & 10M and meet me on the bird for a 2-way QRP space QSO?

72, Steve - NO1R.

References:

"The satellite experimenter's handbook. 2nd. ed. ARRL, 1990.

"QRP and Amateur Radio Satellites" WA6ARA, Part I - QRP Quarterly, April 1992. Part II - QRP Quarterly, June 1992.

"New Russian Satellite Sparks Interest" Part I - QST, November, 1987; Part II - QST, December 1987; Part III - QST, January, 1988.

"A look at the Easybird: RS-10/11. QST, February, 1991.

"More mode A and a look at operating etiquette." QST, April 1991.

"Working the EasySats." QST, September 1992.

"The ARRL Operating Manual." 4th ed. ARRL, 1991.

Steve Capogna
NO1R
23 Cathy Road
Chelmsford, MA

MORE MEMBERS' NEWS

Millie What reports Ten Tec is designing a new QRP rig for introduction late this winter. This transceiver will be a monobander with plug-in band modules covering 160 meters through 10 meters and the price range sounds reasonable. Millie says MFJ is working on a new multi-band transceiver for the QRP'er.

Harry, W1LMU, (8 miles west of Boston) won the last membership drive by signing up the most new members for the period. Dennis, N1GTA, and Paul, W1CFI, recently gave a QRP talk to over 25 hams in Leominster, Ma. The response was great!

DON'T FORGET, EUROPE FOR QRP WEEKEND 1992 organized by G-QRP AND OK-QRP with logs to OK1CZ by 11/15/92. Call "CQ EU QRP" between October 2, 1600 UTC and October 4, 2359 UTC.

MEMBERS' NEWS CONTINUES...

Jim, W1FMR. writes, "As a teenager, I was first licensed as a novice in 1954. I was interested in QRP back then and built a tiny subminiature one tube cw transmitter from an article in 73, and actually made a few contacts on the 80m novice band. However, since I could not afford to buy another 67 1/2 volt battery, the QRP activity died along with the battery...I went QRT for about 25 years,until 1986 when a borrowed HW-7 was used to copy CW. The home TV antenna was used as a receiving antenna and many stations were heard. Just for the fun of it I connected a key to the rig and called a strong station on 20m. He came back to me with a decent report. I could have fallen over! We exchanged some basic information but after I told him I was using an HW-7 with a TV antenna, he disappeared, never to come back. I have been a fanatical convert ever since...I was the past president with QRP- ARCI, vice president, NCS for 4 years, and currently on the board of directors. I have been with the QRP-NE team from the very beginning, as one of the founding fathers and enjoy it immensely...I am a single father, with one teenage daughter living with me as of last week, and it is certainly changing the way I think about and do things. Meeting and forming friends in the QRP part of amateur radio has been the best thing that has happened to me. The QRP way is the only way to go...I went on the air during the Russian QRP contest, but heard no Russians. This summer many Asiatic Russians were coming through on 20 & 40 meters. Signals were so loud, they were a snap to work QRP.

AND MORE MEMBERS' NEWS

Luke Dodds and Paula Franke are going to G. B. again this October for the QRP gathering. The QRP-ARCI president gets a travel allowance (airfare) to attend QRP Events...Don't ask yet, Jim.(ed.)

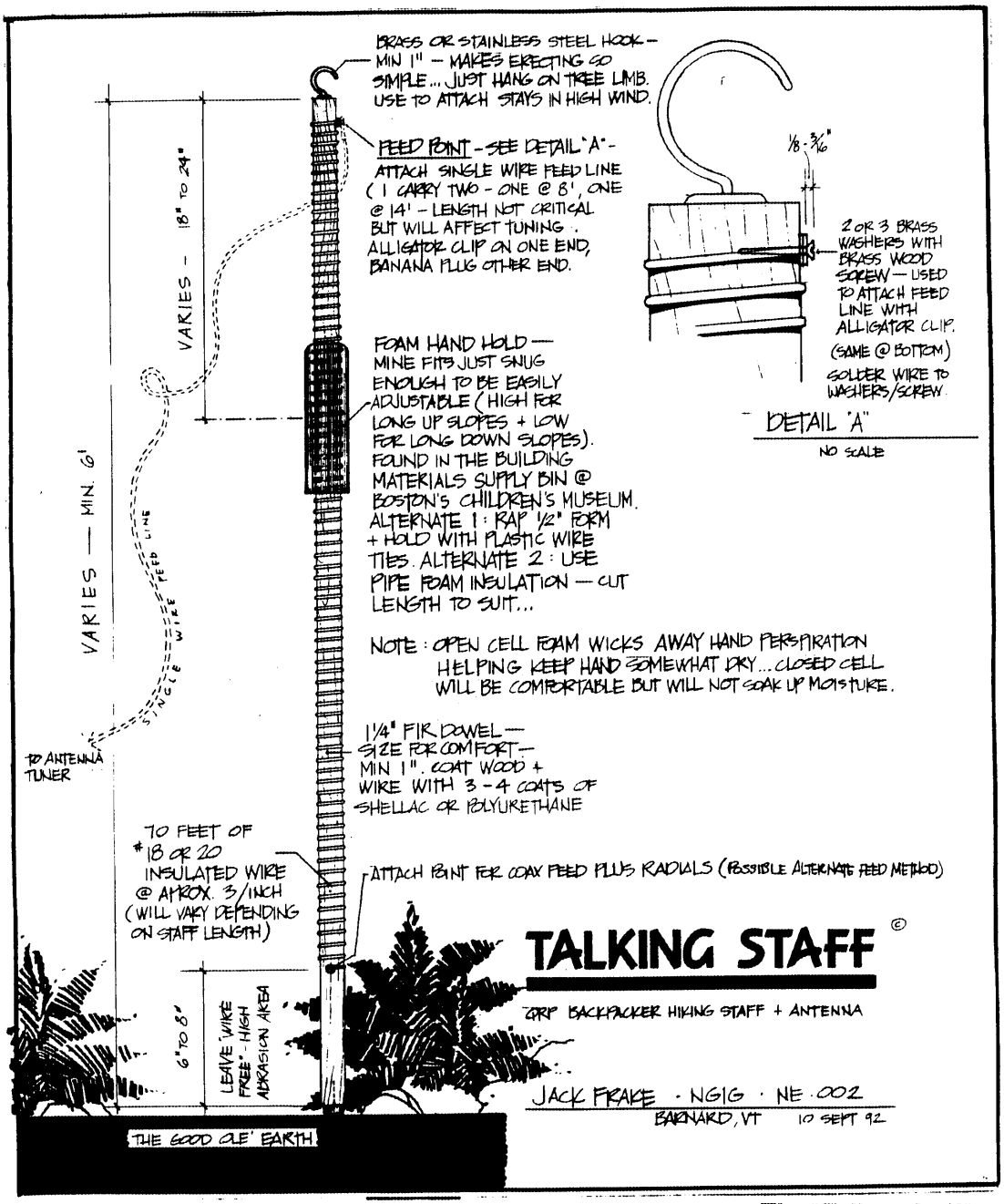
Bob Spidell, W6SKQ, writes, "Fortunately, my XYL and I will be traveling to relax on the island of Molokai (Maui County) in the Hawaiian island chain from October 18 to November 1, 1992. I will be operating W6SKQ/KH6 QRP with a Ten-Tec Argonaut 515 and a planned 135 foot dipole fed with 300 ohm line into a small antenna tuner. Operation will be 99% CW and 1% SSB and I will monitor the standard QRP calling frequencies each hour on the hour plus five minutes and give out calls. The cottage that we are staying at is located inside a coconut grove and I don't know the height of the trees but will try to get up as much of the 135 foot antenna as possible...While I do my hamming, the XYL will be doing her drawing/painting and we both will be doing some snorkeling and swimming while there.

That's it for this issue. Thanks to all who contributed. Please send your members news to me at 232 Foreside Rd., Cumberland, Me. 04110 or fax to 207-761-4746. 72 de Bill, NT1R!

"Talking Staff" by Jack Frake, NG1G

This is not a technical antenna article but more of a shop project. All the heavy thinking was done by Gus Taylor, G8PG in developing his 6 foot linear loaded vertical. (G-QRP Antenna Handbook, April, 1992.) The following takes his work and applies a different wrinkle.

On past camping/backpacking trips it became clear to me that simple end fed or dipole antennas, although efficient radiators, failed to provide "hassle free" operation. Supporting trees are not always convenient or may not be present at all as was the case while hiking above tree line in the Presidential range of the White Mountains. Last winter while camping in the Florida Keys, I couldn't operate at all because State Park rules prohibited use of trees for any reason (I was caught attempting to erect a 40 meter 1/4 wave wire vertical with four radials in the highest available 15 foot coconut palm. The ranger was courteous but for 10 days kept a watchful eye...) My home QTH is five minutes away from the Appalachian Trail and 25 minutes from the Long Trail. I spend much of my free weekend time day hiking with a W7EL rig. Getting antenna supports up and over tree limbs have



The "Talking Staff"
by Jack Frake, NG1G
P.O.B. 1153
Barnard, VT 05031

resulted in the catapult weight tangling, creating frustration and extra work. Besides, on overnight trips, I'm usually just too exhausted to even want to erect an antenna.

I needed a better and more reliable solution...

After thinking about GP8G's vertical, an idea came to mind. While hiking, I'm never without a hiking staff. Why not combine the two -- antenna and hiking staff! A perfect solution if it worked...

Several prototypes were constructed and field tested. the results were very satisfying. (See sketch and notes for construction info.) The first version utilized 1 1/4" black plastic water pipe which comes to construction sites in 4 to 6 foot rolls - you've probably seen it...

Even though this one seemed to work best, I could never remove it's naturally curved shape. Prior to winding the wire, I used a propane torch to carefully heat and straighten the pipe, only to find it returned to it's original banana shape a few hours later. The second prototype used a 1 1/4" fir dowel. It is strong, lightweight and the wood grain appearance is most appealing to me.

Both prototypes were tested inside and outside with great results. While leaning against my barn workbench (the barn has a metal roof) I have worked the Midwest using 3-4 watts and received 549 to 569 reports. Compared to a full wave loop, received signals are down about 3 db, but that sounds about right for a 1/2 wavelength of wire (70 feet) for 40 meters, versus 1 wavelength.

On the trail is where it shines! With good band conditions, I have easily worked many stations. The antenna's most appealing attribute is it's ease of operation -- it only takes 30 seconds to erect and attache the single wire feed line. What could be easier?!

The only negative is that you need an antenna tuner. The antenna is sensitive to surrounding objects (including human) and to weather conditions. My first trail test proved interesting. While sitting on top of Vermont's Pico Peak, the clouds rolled in and out every 10 minutes or so, and there was a stiff breeze. As the humidity rose, the vertical dripped with moisture, requiring re-tuning. As it cleared and the wind dried, I had to tune again! It should be noted that these were inordinately harsh conditions!

If you camp in a casual fashion or backpack in the wilds, this antenna might work well for you. Try it as is or experiment with your own rendition.. There are many variations which I have not had time to try. 52 ohm coax feed and one or two 1/4 wave radials is a possibility. (Attach to bottom instead at top.) If you talk your hiking spouse or partner into using a "talking staff" you could double the length to approximately 12 feet by attaching the two together. Or... how about a 12 foot rotatable dipole (coax fed)? Remember the longer the vertical or the more wire you use, 140 feet or more, the more efficient the antenna becomes.

If you do not have Gus, G8PG's article and would like a copy, send an SASE and I'll be happy to send you one.

A note to the serious backpacker: As you know, weight is always a consideration when out on a trail. My fir version is relatively light, but a lighter staff can be fashioned using Sitka spruce wood. It can be ordered if not available at the local lumber yard. (SASE please for the source.)

A woodshop can "turn down" a 2 x2" to your specifications, and most likely cut in a groove to accept wire. Also, other types of plastic pipe can be tried such as schedule 40 and the type used by electricians. If I decide to produce a final version, I will use Sitka spruce with it's interior carved out (except at top and bottom for strength.) I would use the smallest wire possible for good operation. Remember the wire must be well protected against trail abrasion.

There are endless possibilities with this project and it's been great fun to think about.

Jack Frake, NG1G
POB 1153
Barnard, VT 05031 802-234-9792

Mobile QRP CW.
by Lloyd Roberts, N1HJL

This is the first of a 2 part series by Lloyd!

Why mobile CW? I had a one hour commute and was bored with 2 meters. I had been doing a lot of HF CW but was tired of writing it all down and couldn't break the habit. I had worked a few mobile CW stations so I knew it could be done and really wanted to be able to read code in my head. The solution: MOBILE CW.

The rig is an Argonaut 509 as it is relatively small, I already owned it, and my Drake would fill the whole rear seat where I couldn't reach it anyway. I just put the rig on the right seat, plugged it into the lighter, and ran RG 8 to a Hustler whip. No RF ground is used other than the RG 8. I used RG8 because I had some and the RG 58 that I had wouldn't work. The straight key was placed on a piece of plywood that jammed under the seat back. I now use a GI leg key which is much better. There is no ignition noise in my diesel VW and no alternator noise either!

The Argo is ideal for operating while driving because there are so few controls and there is room between the controls. I tried a Kenwood 440 for a while but kept hitting buttons on bumpy roads! I QSY'd several times unexpectedly!

Mobile QRP is no different from stationary QRP with lots of listening, going after strong signals for the most part, and very little CQing. I work 15 meters when it is open, otherwise 20 meters. There are a fair number of mobile CW ops on 20, a few on 15. 40 has not been successful. I think the short whip is too much of a compromise. When 15 is open, I regularly work Europe in the morning as I travel the Maine coast. I work the continental U.S. in the afternoon as I head inland. The most memorable QSO to date: a 20 minute chat with Melbourne, Australia! I received a 229 RST while the Australian fended off the DX'ers! As always with QRP it helps to have a good antenna and a fine operator on the other end of the QSO!

In summary, QRP mobile works, the installation can be simple and stray RF is not a problem. I can now read CW in my head, and the first mobile CW qso without writing anything down was a real thrill. Driving must be a priority and takes maximum concentration if there is any traffic at all.

Start on an empty, straight, road. As you get into it you will find additional challenge in sequencing gear shifting and stop signs and lights in the qso without resorting to AS. In hilly country, timing the exchange so you are transmitting on the rise and tops of hills. Avoid proximity to power lines, avoid transmitting while in towns under wires. This all helps to maintain the qso and minimize qsb. There is also the hazard of getting so involved with the radio that you get lost -- you can pilot the car, avoiding moving and stationary obstacles and still lose all awareness of where you are or how long you have been driving.

It's fun!

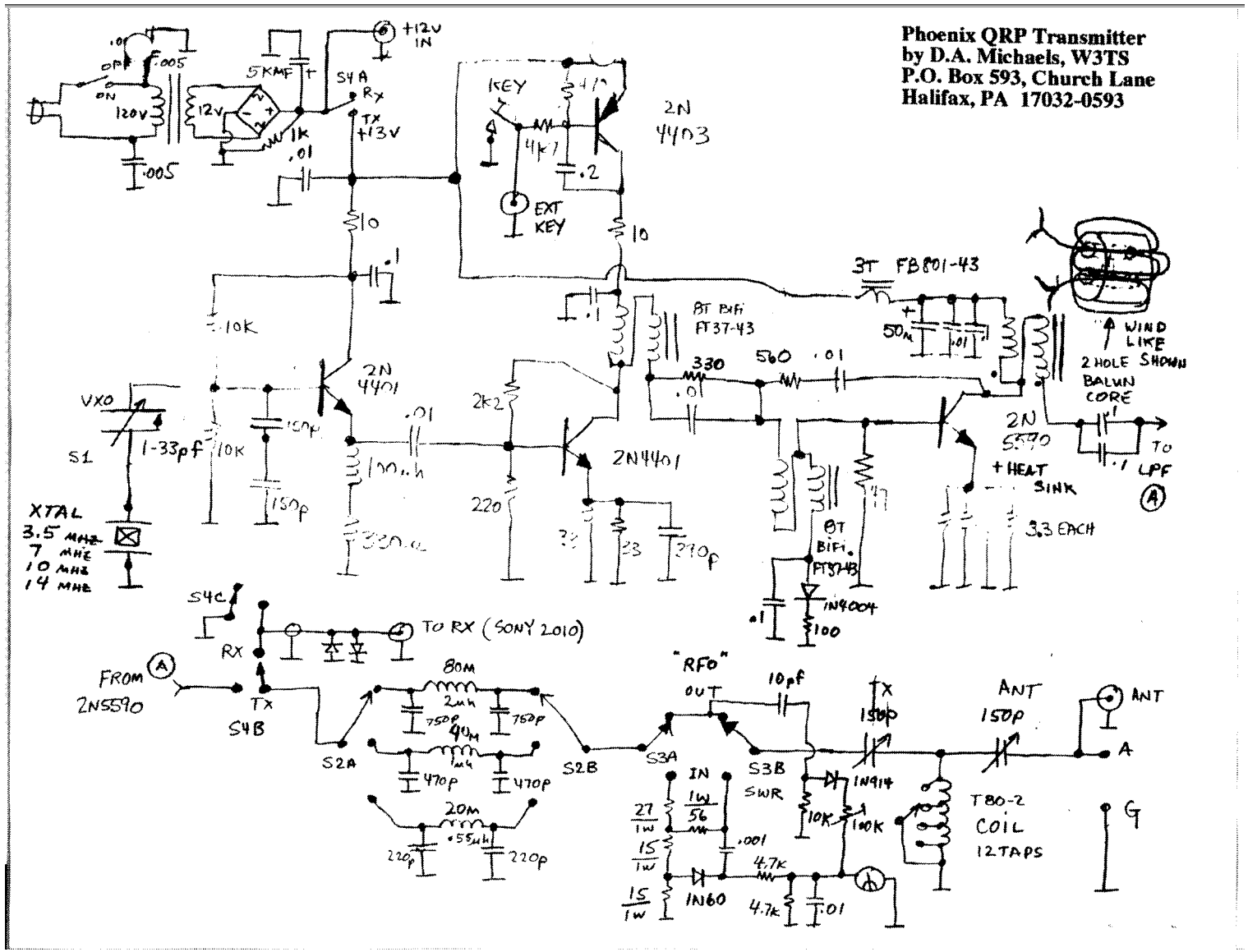
Lloyd Roberts, N1HJL NE-078
2 Central Street, Box 278
Camden, Maine 04843

Lost & Found:

Following Field Day at the Windmill Site, Princeton, MA., N1CUU found a sling shot. If it's yours, please give Carl, N1CUU, a call (603) 647-9864, and it will be returned to you!

WANTED!:

Welz RP-120 QRP inline power meter. I will pay top dollar and ask no questions - hi hi! Also want to purchase a Ten Tec Argosy II digital display transceiver with accessories. Bob, WA6ERB/VE2DRB. Call collect at 514-441-7942 (EDT Evenings).


Phoenix QRP Transmitter
by D.A. Michaels, W3TS
P.O. Box 593, Church Lane
Halifax, PA 17032-0593
+12V IN
120V
12V
5KMF
S4A
Rx
Tx +13V
1k
.01
.005
KEY
2N 4403
4K7
.2
EXT KEY
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S1
1-33pf
XTAL
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10 MHz
14 MHz
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270p
3T FB801-43
8T BiFi FT37-43
330
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560
50M
WIND LIKE
2 HOLE SHOWN
BALUN CORE
2N 5590
+ HEAT SINK
3.3 EACH
To LPF
A
8T BiFi FT37-43
IN4004
100
S4C
RX
TO RX (SONY 2010)
FROM 2N5590
Tx
S4B
80M
2uH
750p
40M
1uH
470p
20M
.55uH
220p
S2A
S2B
S3A
S3B
"RFO"
OUT
10pf
IN
SWR
27 1w
56 1w
15 1w
15 1w
.001
IN60
4.7K
4.7k
.01
IN914
10K
100K
150p
150p
ANT
ANT
A
T80-2
COIL
12 TAPS
G

The Phoenix QRP Transmitter. by D.A. Michaels, W3TS

No, this little transmitter did not arise from my junk box ashes. It was built for a business trip to Phoenix, Az. When I travel, I like to take my SONY 2010 portable receiver along and listen to the ham bands. I thought it would be nice to have a small, QRP gallon (5 watt) transmitter to throw into the suitcase to use with the 2010 to make a few QSO's to pass the evenings. Also, I had never operated from that far west before, and so it was a new challenge to see what could be worked with QRP from a motel room in Phoenix.

The transmitter is a collection of different circuits that have worked well in the past. I wanted a built in power supply and SWR bridge and antenna tuner. The whole package is built into a 2X5X7 inch aluminium chassis. The bottom lid, which now becomes the top panel, is a piece of 5x7 inch single sided copper clad board. The transmitter and SWR circuit and the antenna tuner parts are mounted to the copper side and hooked up using "SKY WIRING", another name for ugly construction. (An engineer friend of mine picked up the circuit board and took a look and said "Oh! Sky Wiring")

Inside the chassis I mounted an old brass hand key, the power transformer and the filter capacitor. I also placed a small barrier strip and a fuse holder for the AC wiring. The brass hand key is mounted so that its arm sticks out through a hole in the front. That way, only the knob is exposed and it makes the package smaller.

The VXO capacitor has one plate bent to contact the other plates when fully meshed. This saves a switch and gives a different frequency than when the VXO capacitor is in the circuit. I did not include the usual inductor in the VXO because it would have to be optimized for each crystal and band. The SWR bridge can be used to reduce the transmit power if required. It can also be used as an attenuator for the receiver if needed. Just remember to switch it out for full power TX. I used the manual T/R because I ran out of room in the small box and it also saves some power drain when operating with batteries.

This small rig coupled with my SONY 2010 have made quite a few QSO's from some interesting vacation places. To complete the portable station, I take a small pair of folding headphones, a few crystals for the QRP frequencies and some wire for antenna in a small band aid box.

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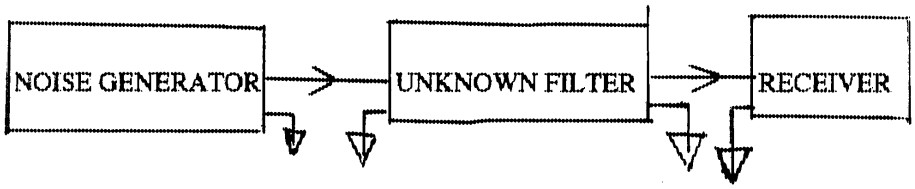
Identifying Unknown Crystal Filters Michael A. Czuhajewski, WA8MCQ

I recently came across an old McCoy crystal filter, which contained absolutely no hints as to the specs. Even the part number didn't help. Here's an old trick that I have used before as a quick and dirty test of known filters, as a crude go / no-go test (see QRP Quarterly, April 1990, Idea Exchange Column), and it works just as well to roughly identify an unknown filter. Hit it with energy at all frequencies simultaneously (i.e. wideband noise) and see what frequency gets past the filter.

I connect a wideband noise source to the filter input and my station receiver to the output (in CW mode) then tune the receiver (which may be general coverage) to all standard filter frequencies starting at 455 Khz. You may hear some faint noise in the background due to leakage in the test lash-up, but at the filter frequency you'll get a major blast. With careful tuning you can tell the approximate center frequency and bandwidth. If nothing is heard at the typical filter frequencies, go through the entire spectrum, starting at 455 Khz or lower, until something is heard. You should tune fairly slowly, since it might be

WA8MCQ FILTER IDENTIFIER



Identifying Unknown Crystal Filters
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easy to miss the noise if the filter is sharp. Remember, this is just a quick go / no-go test and we don't care about impedance matching, etc. -- that comes later. (By the way, the mystery filter turned out to be approximately 50 Khz. wide, centered on 20.0 Mhz.)

The noise source is essentially an antenna noise bridge without the bridge components, and it comes in handy in the shack for many things. I used the circuit form the ARRL handbook, minus the audio modulating components. I started at the noisy diode and went to the right, through the 2 transistors. It does have one drawback -- it isn't a perfect 50 ohm generator, although that can be taken care of easily with a 6 or 10 dB attenuator at the output. The "bare" generator as built puts out an S9 + 20dB signal directly into my receiver on 40 meters, dropping to S9 at 10 meters, so it can tolerate the attenuator. It does have one annoying quirk, though -- the S meter can be seen bouncing up and down slightly, and a Tektronix 465B scope confirmed that the noise is of very uneven amplitude. A future project will be to add an overdriven amplifier to it to clip the peaks and provide a more constant output.

In addition to the noise sources in the ARRL handbook (one in an antenna bridge, and another in the Troubleshooting and repair chapter disguised as a signal injector) Ham Radio magazine had several schematics over the years: December 1970, p 19.; February 1989, page 82; February 1977, page 17; March 1983, page 53; and January 1977, page 50. They are all similar, although the last one in the list is a bit unique since it takes the output across a 75 ohm resistor which could be changed to 50 ohms.

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QRP-NE Nets, by Greg, WA1JXR, NET COORDINATOR

Greetings to all the New England QRP Club Members. The QRP-NE SSB net has been in existence for about 6 to 7 months now, and we have had a good turnout and much success with the net.

I thought it would be interesting to give you some statistics on who and how many have been checking in to the QRP-NE SSB net.

The data is from Feb. 3, 1992 to the present time (9-14-92), and out of the 33 net meetings, I am missing data for 9 nets as I was not able to check in myself for one reason or another,

To date there have been 166 check ins. The number of check ins per week has varied form a low of two to a maximum of fifteen, Maximum number of check ins by a single station is 24. The average is 5 tp 6 stations per net. Thirty nine different stations have QNI'd into the net.

What does all this data indicate? Heck, I have no idea, but I think it means we have been having fun on Monday nights.
A variety of power levels have been used to check in to the net. Some QRP SSB, some QRO at 50 - 100 watts. Due to the summer time static conditions on 75 meters, many check in with 50 - 100 watts in order to have good communications, without straining everyone's receivers. When I run the net as Net Control, I usually run about 50 watts.

Let me list some of the QRP - long distance QNI's and some of the ones that stand out as I go down the list in my log.
KX1E- Bob, Portland, ME using 2-3 watts
N6KR/1- Wayne, MA using 5 watts to a long wire antenna
NZ8J- Jim, Dayton, Ohio
N9BDC- Lee, Wisconsin using 50 watts and a G5RV antenna
VE3DJX- Jim, near Ottawa using 5 watts and an Argo II
W2JEK- Don, using an Argo at 2 watts
N2IGX/1 mobile- Steve, Preston, CT

W1KKF- Bill, 10 watts
W1FMR- Jim, using an Argo at 3 watts with an indoor loop antenna
N1GTA/m- Dennis, mobile near Hartford, CT
NT1R/mm- Bill, maritime mobile near Cape Small, ME.

I even dragged out my old Ten-Tec Argo 505 and used it to run the net on evening using 3 watts to a 160 meter zepp antenna at 30 feet!

These are just a few items that caught my eye as I was flipping through the pages of my log book.

Conditions on 75 meters have been a bit rough with lots of QRN being the norm during the summer months. Now that we are entering our fist fall and winter season of QRP-NE SSB net operation, I am looking forward to some nice quiet band conditions during the Monday evening sessions!

NOTE: There has been a slight time change . During the QRP-NE meeting in April, 1992 at the Deerfield, NH Hamfest, a request was made to move the net time from 9:30 PM EST to 9 PM EST. This was accepted and since then the net has been starting at 9:00 PM.

That's it for now. I hope to hear more of the members during the next few months. We have 120 plus members now, so if 10% check in, it should be easy to double our average to 10 - 12 members per net. With the cold winter season coming, and more time indoors, lets try and get more net check ins!

72 - Greg, WA1JXR

QNI LIST QRP-NE SSB NET

CHECK INS

WA1JXR	24
W1FMR	18
W1CFI	17
W1LMU	16
NT1R	12
NN1G	10
N1CUU	08
NG1G	06
NT1V	06
KA1VYX	05
KB1RT	05
KA0IQT/1	03
KX1E	03
K1ZL	03
NX1K	02
W1XH	02
N9BDL	02
K1MBX	02
W1FD	02
N1GTA	01
K1NDV	01
N6KR/1	01
N1HFE	01
KA9HAO/1	01
AA2U	01
NZ8J	01
KN1H	01
W3TS	01
WB1HBB	01
WB2QAP	01
KA1CVL	01
VE3DJX	01
W2JEK	01
KA1MOW	01
K2LGS	01
N2IGX/1	01
W1KKF	01
N1HJL	01
NV1B	01

BOXBORO SCHEDULE

The ARRL Convention at BOXBORO will be held on Oct. 3 & 4, and QRP-NE will be participating big time. There will be two QRP-NE forums held in a large room seating 200, an indoor information booth, and a small club meeting room seating 20. Depending on interest, we may also attempt to secure a couple of tables at the banquet.

QRP-NE MEETING - Saturday, 5 - 6 pm. for officers and volunteers.

QRP-NE FORUM - QRP - From A to Z " (2 sessions)

Session 1 : Saturday, from 11:00 - 12:00 am. - Colonial Room

10 min. - All about QRP clubs - (*Jim Fitton, W1FMR) What is QRP ? Awards, events and organizations.

20 min. - Portable and QRP operation - (*Greg Algeiri, WA1JXR) Kits, Commercial or Home Brew gear? Battery, solar power, "easy up" and efficient antennas.

20 min. - Home Brew QRP - (*Dan Halbert, KB1RT) The basic secrets of homebrew for the QRPer

Q & A

Session 2 : Saturday, from 2:00 - 3:00 pm. - Colonial Room

25 min. - Simple and Efficient QRP - (*Paul Kranz, W1CFI) Crystal control transmitter and DC receiver construction.

25 min. - The QRP Options - (*Dave Benson, NN1G & John Collins, KN1H) The VFO transmitter and Superhet receiver.

Q & A

For the Information Booth and Forums:

NN1G will photograph Home Brew gear for upcoming issues of "72" and the "Quarterly".

W1FMR will bring QRP-NE HB transmitter kits to sell.

AE1D will videotape the QRP forums.

NG1G will take new/renewal memberships and has new USSR maps.

Help is needed:

QRP-NE members to work the booth.

HB and commercial QRP gear to be displayed and photographed.

Back-up photographer w/B&W film and flash.

Literature, posters, and hand-outs.

Application forms with membership numbers.

Additional booth help esp. during QRP forums.

Please don't be bashful about volunteering.

72/73, Jim Fitton, W1FMR
508-960-2577 W,
603-898-6188 H

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