IOWA QRP JOURNAL

NEWSLETTER OF THE IOWA QRP CLUB

Welcome to the Summer 1999 issue of the Iowa QRP Journal. With the solar conditions improving, propagation has also improved with the higher bands once again showing welcome life. This past week 20 meters has been open worldwide yielding contacts with an RV1, F5, OK, HA, HB, FM, S53, and NP3. Other countries heard were G3, Z31, 9J, LZ, I3, ZL, ON, OZ, OH, T77, LA, and PY. I attacked some pileups but avoided others depending on the size and competition. All this on a wire vertical sloping towards the Caribbean. QRP is truly amazing and I encourage you to try and snag some DX on 30 meters and up.

My NC20 is finished and giving me many hours of entertainment. For those of you who have built the kit, one of the regulators in the kit may need to be replaced to correct possible problems. If you have the following markings on U2 78L08 A836 JRC then you may need to replace it. The receiver is awesome and very sensitive but the AGC still needs a little work. I've put in the AGC mod but still get blown out of my socks by some stations.

Other projects I'm working on are the VE3DNL marker generator (a version of this versatile kit is available for the Arkansas QRP Club), tick keyer, REGEN receiver, and a little item I hope to write about in the next issue. For those of you who are gunshy about building take the plunge! There is nothing more satisfying than using or operating equipment that you have assembled.

The Sioux City Hamboree in June was fantastic! All the gang in the northwest corner of the state deserves a pat on the back for putting together such an outstanding event. If you missed it this year start making plans for the next because it is an FB event. The Iowa QRP Club had display tables (one with member goodies and the other with QRP literature/vendor information). Paid attendance was over 600 on the final day and I think Mike N0MF, Jerry WB0T, Larry WB0RMT, Ade W0RSP, Paul KB0JIT, and I spoke to almost every one of them. The enthusiasm and interest for our little niche is there.

This summer has especially been busy and as a result no volunteers could host the July meeting. If you would like to host a meeting sometime please contact me. All you need do is secure a location to gather and we will do the rest. This year we have held meetings in Urbandale, Sioux City, and Iowa City. Spreading them around gives everyone a chance to attend at least one meeting outside of the hamfest activities. Because of a conflict I will not be able to attend the Amana hamfest and coordinate display tables. If you would like to put together a table please contact me. I can get you some goodies to display and literature to distribute.

Many of you operated during field day or in some of the QRP related 'outdoor' events. Please jot down your experiences to share with the others in this newsletter. If you attended any of the major QRP events (i.e.

Dayton, Hamcomm, Pacificon, Atlanticon, etc.) then write it down and get it to me. The others love to hear about the events and you may spur someone else to make travel plans. Building a new kit? Please share your experiences with us or review the kit.

I hope your summer is a safe and enjoyable one. Take advantage of short skip opportunities (and there have been plenty on 10 meters) to work on WAS. The fall should bring a harvest of good propagation and much fun. Whether your forte is building or operating (or both), take advantage of your opportunities and enjoy our wonderful hobby.

72, de John NU0V
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Member Profile: N0HB
By Duane Lewis N0HB

When John asked me to do this profile, I thought he could have picked anyone else and ended up with someone more interesting, since I am a rookie to the group, but I guess this will prove there is no specific order to whose turn it is in the barrel.

I am very recently retired from Lucent Technologies/AT&T/NWBell after over 29 years there. I worked on large PBX systems, mostly in software at the machine level. My wife and I ended up here outside of St. Marys, IA, with most of our five kids still in Denver. I am 51 years old.

I learned the code while I was a Boy Scout. Many years later (1972), I was called to repair a telephone at the home of WB0GQX. He told me about ham radio, and I went back to his house after I got off work that day. He gave me the 5 WPM code test and I passed it. He sent off for the written test and I was on my way. My call was WN0HBN, then WB0HBN, then KB0HB, then N0HB.

I moved around with the telephone company quite a bit, which allowed me to operate from Iowa, North Dakota, Illinois, and Colorado. I got my first taste of QRP after getting an Argonaut when they first came out. I used to check into the Iowa Net with 5 watts from the mobile with a Hustler whip. Later I got interested in weak signal VHF and worked 42 states from Fargo, ND, on 2 meters. I never missed a meteor shower for a few years there.

For many years now I've been keeping a schedule with an old friend, K0DT. We've talked on Saturday mornings for the last 22 years. For about the last 20 years, that schedule has been about the extent of my hamming. Recently, I got on the internet looking for homebrew information and ran into a lot of QRP information. I ordered an SST for 30 meters, and picked up an NC20. They both work great; it's amazing how well these new kits are designed, how well they work, and how full-featured they are. I think the next rig will be the NorCal 40A. I'd like to get to a separate QRP rig for each band.

I'm getting ready to put LINUX on my PC, and start designing some PICs. I'm surely enjoying QRP and building again. I look forward to hearing about the rest of you guys when it's your turn in the barrel.

72, de Duane N0HB
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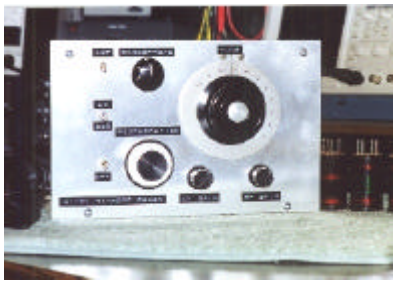
Royal Regens
By Mike Fitzgibbon N0MF



Upon arrival, last (1998) winter's Nov/Dec issue of "QEX", the experimenter's journal published by the ARRL, held a construction article which immediately caught my interest. Written by Charles Kitchin, the article contained the plans to build not one, but two regenerative receivers. Titled "High Performance Regenerative Receiver Design" and running a length of twelve pages, the article covered a lot of ground, including the basics of regeneration, plans for two receivers, a little history, and general building tips. The author, "Chuck" Kitchin, N1TEV, is a radio experimenter and long-time SWL'er, and has spent a considerable amount of time studying, building and promoting these intriguing circuits, so much so that he has widely become known (and deservedly so) as the "Regen King".

After a quick read, my little mind started to reflect upon the contents of my rather voluminous "junk box", because that is exactly the title of the first schematic in Chuck's article, "Junk Box Special"...and hey, I HAD ALL THE PARTS!

BTW, before I go any further, a copy of this article is available to ARRL members for three bucks, and if you aren't a member you only need add a couple more bucks and up the ante to a mere five (see below for address).

Now, I'm not going to go into a lot of detail about building either of these rigs, that's in the plans, but I will tell you this...if you have never experienced a good regen design, you may be in for a shock. I certainly was (quite shocked). There's not a lot "to them", certainly not in contrast to today's multi-IF, IC-laden SMD-riddled SW receivers, but there is a reason that the very first trans-Atlantic voice communications were accomplished using regenerative receivers...they perform amazingly well for the astoundingly few components which they contain. In short, I built the Junk Box Special, and then I was hooked.

As an aside here, if you want an interesting qrp-related read, I will suggest you get a copy of Ade Weiss's "A History of QRP in the US, 1924-1960" (see below for source). Any qrper worth his 2N2222s knows of Ade Weiss, W0RSP, a true cult hero in the low-power world, and this treatise on early amateur communication is full of references to Major Armstrong's regenerative receiver. In fact, in the 20s and 30s it was the mainstay of most ham shacks. Many an old-timer cut his teeth on a "genny". At a recent hamfest (Sioux City, IA) one of my regens caught the attention of several of these "more experienced" hams. The reaction was classic...wide eyes, fixed stare, a slight smile, often opening to a wide grin, and then the opening line "is THAT a regen?...I had one of those when I first started out..." followed by the details, which were usually the beginning to a very interesting story or maybe even two...

Now, if you've gotten this far, I must warn you...regens ARE NOT for appliance operators. If your thing is to sit down, turn it on and let the microprocessor do the walking, this may not be for you. Regens take a little bit of...well, experience, to operate. It's kinda like sailing a boat or flying a plane...you need to make occasional adjustments to the trim to keep it sailing/flying on the level. No, its not difficult, but it does take a little bit of experience to learn where and when to do the twiddling...something that is easily learned once you have a machine to twiddle...hey, it's just plain FUN!

How well do they really work? Here I will first defer to the master, Mr. Kitchin. Early in the into to his "QEX" article Chuck compares a well-designed regen to a direct-conversion AND a superhet, and simply states that it can perform just as well... And what did I find? Well, the Junk Box Special I first built (also see mods below) entirely from a few ordinary parts pulls in literally dozens upon dozens of SW signals from all over the globe. It easily drives a speaker on moderately-strong signals, and makes a very fine general-listening SW receiver.

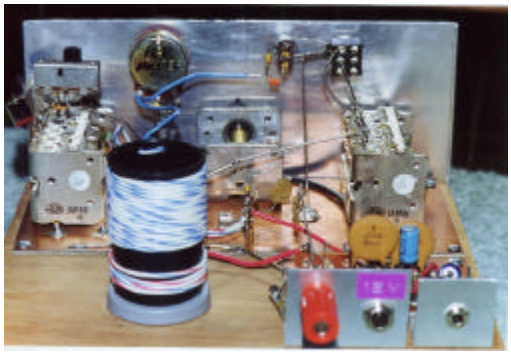


Figure 2. Interior view of the junkbox special REGEN.

It tunes from 3 to over 12 MHz, covering several heavily-used SW bands. Because of the absence of an IF and its associated filters, the sound produced once a signal is properly tuned-in, is clear, clean, and rich in fidelity. In fact, it sounds a heck of a lot better than a moderately-priced SW receiver I have, and I much prefer to listen to one of my "gennys" over the commercial SW receiver. If you happen to have a pair of high quality headphones...use them! You will be richly rewarded.

After the Junk Box was built, I knew that the second, slightly more complex regen was my next project. It employs a low-noise op-amp and plug-in coils, but is otherwise fairly similar to the Junk Box Special. Its performance is absolutely breathtaking... I wound four coils for it, covering from near the bottom of the BC band (600 KHz) to over 18 MHz, with considerable overlap of all ranges. Regens, by the way, not only make good AM receivers, they also let you listen in to CW and SSB signals as well when the regeneration is adjusted to the high side of the critical point (oscillation threshold).

It sort of provides it own natural BFO, so to speak... SSB signals on the 75, 40, 20, and 17 meter bands are easily copied, and the differences in transmitter audio charact-eristics because of the great fidelity. It is a blast to listen in on the conversations taking place using a receiver of vintage design and being able to "critique" the signals! I also met a fellow regen enthusiast, Charles Hansen, N0TT, at the Sioux City hamfest who had used a regen receiver to work 160 M. WAS QRP not once but twice (on two consecutive weekends).

Regens can be deadly serious, no?

This second regen is also a real DX machine. It uses a very quiet Analog Devices AD745JN op-amp and a J310/2N4416A oscillator/detector, coupled with a 2N2907 RF amp on the front end. This adds up to a very sensitive rig. I added a Ten Tec 2-watt audio amp (board mounted on edge, left side in the photos) to drive a speaker, but it does not need the TT amp if only headphone operation is desired. I spent a few bucks on this one. Reduction drives (see parts list below) are used on all three caps...and that really adds to the "tune-ability" of the radio. In fact, the main tuning cap travels so slowly that the second smaller 8:1 drive 20 pF bandspread cap is almost redundant, although it does make tuning even easier. This radio resides on my nightstand and enjoys continual, daily (nightly) use. As can be seen in the photos, it uses two 9 volt batteries, but a circuit for an AC power supply is provided by Chuck should your listening be so inclined.

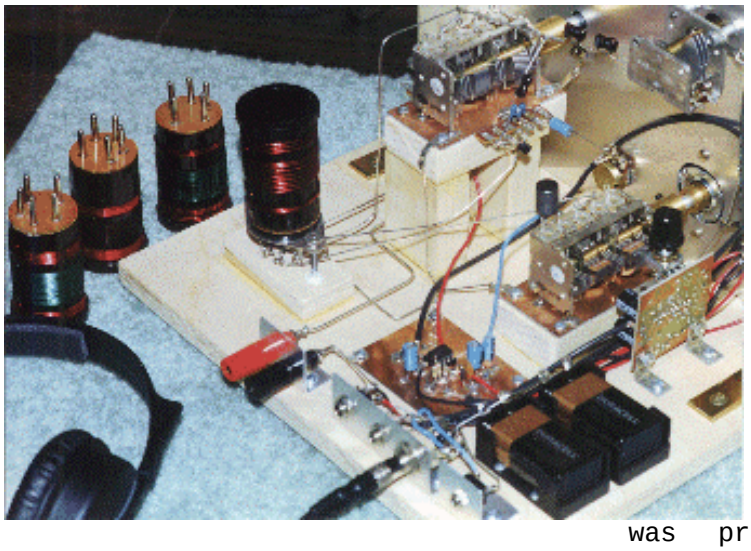


Figure 3: Interior view of the super REGEN.

Now, it is true that there is one small short-coming to the regeneration scheme, occasionally encountered when tuning around in a very crowed portion of a SW band. But, it is a problem that seldom raises it's head, and one that must simply be put up with, i.e., regens tend to "pull-in" to a very strong signal if you try to tune to a very close, adjacent but weaker signal. That is, the tuning point tends to “gravitate" to the stronger signal. By close I mean within 10 or maybe 15 KHz. It depends a bit, of course, upon the particular circuit which is employed, but it is an inherent liability (albeit slight) of the design...but, DO NOT let this sway you from building... So far as I have found this of little practical consequence a great majority of the time.

Take a look at the accompanying photos. As Chuck sez in his building tips, use a metal front panel to eliminate hand-capacitance effects and keep your coil away from metal parts.

The Junk Box Special uses extremely common parts, including a 2N2222 RF amp, MPF102 detector, a LM386 audio amp, and a 35 mm plastic film can/pill bottle for a coil form. The capacitors can often be found in the junk box, and if not, are available surplus from Dan's Small Parts (where I got mine-see below).

There is one modification (and simplification) to the Junk Box Special, which was provided to me by Mr. Kitchin himself: change the 5 volt Zener diode in the circuit to a 6.8 volt unit, and

substitute the choke made from a transformer primary to an ordinary 5.6 K ohm resistor (any wattage will do...). This mod will increase the performance even a little bit more. BTW, Chuck is a very helpful, friendly guy, and he seems to have a soft spot in his heart for regen tinkerers. His E-mail address is listed in the article should you have a question or discovery...

Regeneration is a technology that has been long with us. Although of late it has been largely neglected, it offers surprising performance when employed in a quality circuit utilizing modern solid-state components. Give yourself a treat and build one of these simple yet exciting rigs, and experience a true blast from the past.

Resources / Parts List

ARRL, 225 Main St., Newington, CT 06111-1494; ph. (860) 594-0200 E-mail: hq@arrl.org

"History of QRP in the US, 1924-1960" by Adrian Weiss, W0RSP available by priority mail for $15 from: Adrian Weiss, 526 N. Dakota St., Vermillion, SD 57069

Air vari-caps are available from Dan's. The ones used in these regens are listed as 5-section caps at a cost of $7.00 each. They have three 35 pF sections, one 100, and one 90 pF section. You can use many junk-box type caps, these from Dan's are smooth operating and relatively small. They are also quite versatile in that their five different sections can be paralleled together as needed. Dan's Small Parts and Kits, Box 3634, Missoula MT 59806-3634

http://www.fix.net/~jparker/dans.html

72, de Mike N0MF
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Tall tower, small power.....
By Jon Book KB0EDE

It is not often one gets a chance to go QRP, ...like having a 1283 foot tower normally used for Broadcast use,but for QRP use. That being the case, ham radio and broadcasting often go hand in hand when you have a scheduled down time for tower repairs....that is if you work and play at the same place. There is always at least one ham in every broadcast station...hard to believe isn't it?

In August of 1998, I received a call that a tower crew was to be at the TALL Tower (a facility which houses 3 FM; 2 TV; trunking radio systems, etc,) for a multible evening of transmission line repairs for the TV stations. What JOY.....here I thought that I would be placing my 100KW ERP FM Station on exciter peanut power of just 20 watts and wait about 5 hours during the overnights and just sit around and do nothing! How boring! When one sits at a site and waits for the tower crew to perform repairs, it seems like forever, not to mention hungry. Sorry, no vendo-land at the transmitter sites, just bad water in the drinking fountain.

I decided a few days before the project to begin at the tower site, that I might make this a Most interesting scenario of QRP DX and see what happens.

My equipment taken along with me that week was: a MFJ-9040 cw transceiver; a MFJ-971 tuner; a

MFJ CWF-2 filter; a MFJ paddle, gel-cel battery and some spares; A radio shack DSP unit; headsets, adaptors; cables; antenna coax cables, etc. You name it, I probably brought it along those nights with me including the usual tool kit. Several engineers at the site remarked that it looked like I was moving in for a long stay But one needs to experiment on the needs of qrp supplies.....maybe less is better, at least.

That is what I hear for qrp now then, isn't it? I will have to convince my car trunk about this the next time I go play ham radio with QRP cases,etc.

Upon the day before the scheduled tower maintenance night, I strung a 150' long wire out the building front door from the microwave tower
to a small tree located near the site and connected the ground system to the tall tower. Since the broadcast stations will be either OFF the AIR or at extreme low power, this might prove to be quite interesting for a good QRP night! I had hoped that MURPHY didn't show up this night as he usually does during fun projects....just my luck, MURPHY took the week off!

The following night, I appeared at 11 PM at the transmitter site in order to get things ready For the tower crew. As things went by, I started to get the QRP station up and running at 1am and sent a CQ/QRP at 2am. To my surprise, I was able to get 599+ signals from Florida; North and South Carolina; New Jersey; New York; Vermont; and even CUBA. How quaint! It seemed that 7.010 was pretty hot that night, but I did tune up to 7.060 locations looking for other qrp operators. By the way, there were plenty of die hards on the air....oldsters! I had thought that only young people stayed up late at night or just operators who love to watch the infomercials on tv, but this was a dedicated group of qrp operators ..yessiree bob.

For once, I felt like I was the DX Station and at the other end of the receiving locations, were the mosquitos! Speaking of mosquitos, the facility had plenty of them....thirsty ones too! That being a problem, I forgot to bring the bug spray to keep those nasty critters from putting the bite on me the first night, but the following nights, the spray and qrp was a wining combination. By 5am each day, I had to quickly take the gear apart and pack it for storage for another night of fabulous dx'ing.. I am not sure which was longer, settting it up or taking it down for storage but it was fun and and it was exciting.

Since I also do engineering for a 3 tower directional AM Station array (3 towers located next Door to the TV Tall Tower) I am wondering how this would work for QRP? Of course, it's tuned for 1420 Khz, but it would be exhilarating to see just what results could be made with 5 watts of cw to a large hunk of pipe up 625 feet with a tv batwing antenna atop the tower.

But then again, putting a receiver on that large directional array, I wonder just how many 1420 stations I could pick up? This is my next project.....qrp on a directional array or just short-wave listening.,.it is a puzzlement.

72, de Jon KB0EDE
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An Accurate Voltage Reference

By Adam Kanis AK0P

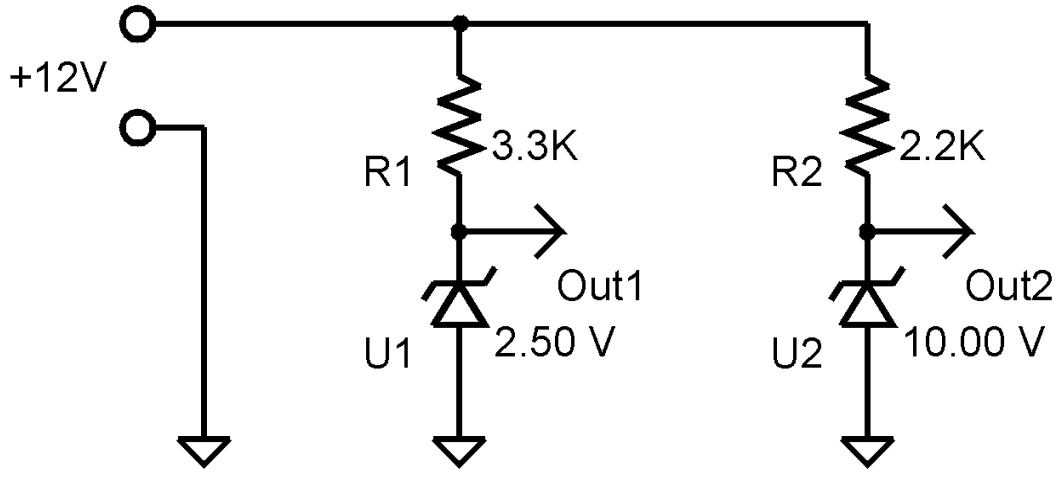
In this small piece I will present a very simple circuit for building a decently accurate voltage reference. I didn't even develop the circuit, it is pretty much straight of the National Semiconductor data sheets.

Most of us have DMMs that are reasonable but not perfect. Typically accuracy might be 0.5% at full scale. Other DMMs are more accurate, some less accurate But what do you do if you want to check on your DMM to see if it is someplace close to its stated accuracy? How close?

This becomes especially true when you check a voltage measurement with 2 meters, and get 2 different answers. As the saying goes, a man (or woman) with 2 watches never knows what time it is.

What you want is a known voltage to present to the meter, and see if it reads it correctly. The problem is, most people don't have a NIST laboratory grade voltage standard, I know I certainly don't. Here is a circuit that you can build to give you a reasonable quality voltage standard. The specs for the devices used claim 0.1% accuracy - but I have no way at home to verify that. Even if it were 2x worse than claimed, it would still be a respectable 0.2% - not bad! By the way, you can save about a dollar by purchasing 0.2% or 0.5% devices, but I would recommend against that - build the darn thing once, and build it the best you can. The $2-4 in overall cost saved will come back to haunt you when you realize that errors are cumulative - if the standard and the meter are both off by 0.5%, in the appropriate directions, you total error can be up to 1%, and still be in spec. And sometime in the future you MAY have the need for an accurate voltage determination.

Parts List:
U1 - Nation Semiconductor LM4040AIZ-2.5 (available from DigiKey $3.47)
U2 - National Semiconductor LM4040AIZ-10.0 (available from DigiKey $3.47)
R1 - 3.3k (1/4 watt
R2 - 2.2k(1/4 watt



The circuit above is how I currently have mine built. I plan on adding the 4.096 V and/or the 5.00 V devices in the future (the 4.096 V unit is made for giving a "full scale" voltage to a 12 bit A/D converter). The resistor values are not sacred, if you wish you can use the same value for each resistor. The values here give a current load of about 1 mA per device [(Vin-Vout)/R]. The devices can handle a maximum of 15 mA, and there is a minimum current required, but I don't recall it off-hand.

I didn't install a switch or any short-circuit protection, though I probably will do both, since it is possible to short between ground and the supply rail with a meter probe on my version. If you don't wish to have the 10 volt device working, you can use a 9 volt battery supply. I built mine using a Radio Shack experimenter board. I'm sure it can be built using "ugly", PC board, or even wire-wrap construction. The enclosure and connectors for power-in and voltage-out are up to the builder. I used a coaxial power connector for the power-in, and a screw-posts for the outputs. Two loops of cut-off leads serve as the ground contact points for the voltmeter probe.

Using the unit I built, I have confirmed that all my DMMs are performing better than spec on the voltage ranges covered by this voltage reference. I have used it to calibrate an inexpensive digital panel meter I am using with my solar energy setup.

Where to go from here. If one could match resistors to a reasonable accuracy, it should be possible to make a precision voltage divider to give outputs say of 0.100, 0.250, and 1.00 V. That will be the next add-on for this. Let me know if any of you have success with this.

72, de Adam AK0P
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Summer QRP Adventure
By Daniel Case KB0JUL

In a previous issue of the Iowa QRP Journal, I wrote about some of my experiences operating QRP from college at Iowa State University. My setup has been quite effective, and I have managed to work a number of states and even some DX on twenty meters, with an indoor dipole that runs around the room near the ceiling.

This summer, I am an intern with a seed company in Hampton, Iowa. Hampton is several miles from Ames or my hometown of Beaman, so it was necessary to secure an apartment for the summer in Hampton prior to starting work. Of course, as an amateur radio operator, I was looking for a place to stay that, in some way, would enable me to remain on the air throughout the summer. Unfortunately, the apartment search yielded a slim picking and I ended up in an eighty+ year old, brick and steel apartment building in downtown Hampton. With no apparent workable place for an outdoor antenna, it was quickly apparent

that I would have to be creative with my operations.

Since I have enjoyed great results with the indoor antenna setup in Ames, I decided to try this approach first. I constructed a twenty meter dipole out of small gauge Radio Shack wire. Instead of using 50 ohm coax, I used TV twinlead as a feedline. I have never used this approach before, but I wanted to give it a try. Unfortunately, this antenna would not load up very well at all. I gave up on this, and borrowed the antenna that I use in Ames. This antenna was strung around the apartment, much in the same manner as it was in Ames. To my delight, it did load up well with the Argonaut 509 and put out a solid 2 watts.

I tuned around the band and heard a lot of strong signals. I answered many strong stations calling CQ. Unfortunately, no one would answer me! All of the settings were correct on the radio, the SWR was in check, and the radio was pushing at least 2 watts according to the wattmeter, but I was unsuccessful at ever getting another station to answer me. I was quite discouraged that this setup would not work in the apartment. I concluded that my signal was just not radiating out very well through the brick and steel construction of the building. Being surrounded by brick, cement, and other metals is not the most ideal QTH for QRP, or any mode for that matter (VHF/UHF is quite dead up here too!)

It was back to the drawing board, so that is when I decided to go "to the field." Beeds Lake State Park is located a couple of miles northwest of Hampton, and I located an ideal operating area on the north side of the lake. There is great access to this area, not much traffic, several tall trees, and a great view overlooking the lake. I constructed a 40 and 80 meter dipole, and took the equipment out to the park.

Recently, I read some postings on QRP-L about using 16oz plastic water bottles to launch antenna wires or supports into trees. I found that this works quite well. The filled water bottle has more than enough weight and momentum to carry the nylon rope that I used as a support for the antenna. After a few throws, I had the rope on the right branch, and successfully hoisted the 40 meter dipole up in the trees.

This setup performed quite well. The dipole needs some fine tuning, but it did load up and I was able to work a few stations on forty meters. I also managed to check into the 3905 SSB Century Club Net. Not many stations check into the net operating 5 watts QRP portable. It was fun to actually be on the air, even with all of the strange looks I received as people drove by wondering what in the world I was doing.

It takes time to set up all of the equipment in the park, and of course, the weather doesn't always cooperate. I still wanted to set up a station in the apartment. One evening, I was reading Richard Arland's (K7SZ) new book, "ARRL's Low Power Communication: The Art and Science of QRP." I came across the chapter on antennas, and in that chapter Richard talks about some of the antennas that QRP'ers can utilize. That's when it dawned on me to try an end fed antenna, hanging out the window of my apartment! I cut a

1/2 wavelength wire for 20 meters, and suspended it out of my window down to the ground in the alley below. This was connected to the tuner, with a counterpoise wire attached to the ground and run around the room. I was skeptical that this antenna would work. Upon firing up the rig, I was amazed that I was hearing so many strong signals! I tuned around and heard KQ2U calling CQ. I answered him, and to my amazement, he came back to me! Unfortunately, the QRM was pretty bad that evening on 20 so I lost him. I tuned around some more, and came across another station putting out a CQ. I answered him, and managed to have an enjoyable ragchew. The end fed wire really works! I look forward to working many more stations with this setup.

I have discovered that no matter what the situation, there is a way to make QRP operation possible. It just takes a little perseverance, experimenting, and some patience. The thrill of working stations across the country and around the world with a couple of watts and a simple antenna is more than worth the effort!

72, de Dan KB0JUL
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Sioux City Hambree is a hit!
By John Burnley NU0V

(Editor's note: the following was posted to IAQRP-L and is reprinted with permission)

The hamfest held in the Sioux City area this past weekend was a total blast! It was a great event and I look forward to it next year.

The Iowa QRP Club had two display tables and it was filled with QRP goodies. Mike KI0AF brought boxes of projects and it was showcase material. I'm doing this from memory so I know I'll forget some items. Mike brought his punch pad SSTs (made from using a sheet metal punch to make the small pads which are then glued to a printed circuit board; components are then soldered to the pads) for 40, 15, and 10 (yes he really does have one). His just completed 2N2/40 rig (of NorCal fame) was really impressive. The designer (Jim Kortge) did a fabulous job and Mike really did an FB job in building it! He also brought two of his regen receiver projects (works of art), OHR WM-2, OHR DDS-1, OHR 100A, LGD QRP autotuner, and a set of NorCal paddles. I know I've left something out and I apologize to Mike in advance.

Larry (WB0RMT) brought his homebuilt complete station consisting of a Dan's NWxx rig, Dan's tuner (parts kit), power supply, and NorCal paddles. It's an impressive station setup with all three projects in matching cases. Larry (like Mike) is an expert builder and really dazzles me each time I see one of his creations. He also brought his NC20 with mods (of course.....those of you who know Larry understand hi..remind me some day to tell you about the HW-8), a keyer (altoids tin), and his modified Pixie II.

Ade Weiss (W0RSP) brought his 'pride and joy' SST, an receiver kit and homebrew transmitter both mounted in the same altoids tin. He also brought a HW-8 that drew a lot of attention from all those who have built Heathkit projects. Ade was also a tremendous help at the display table answering questions and promoting the good word. He

really knows how to sniff out the bargains at the flea market as well. Ade also did QRP presentations on Friday and Saturday. He did a great job (as usual).

Paul Sipes KB0JIT brought a 40 meter transceiver, Heath tuner, power supply, and two slinky antennas. He had these items on display up in the QRP room (we had the room all day for QRP!) where the presentations were held (and yes the slinky antennas were up stretched across the room). Paul also presented a kit building forum and did an FB job! Paul is another expert at building and judges our annual building contest.

Jerry Huldeen (WB0T) brought his complete MFJ 9040 station (one that he used to win the QRP section for Iowa in one of the major contests...I'm sorry I can't remember which one). Jerry also split a presentation with me and he covered reading propagation charts. You did a great job Jerry!

Jim (KC0???....I really apologize for not writing your call down) brought a miniature homebrew set of paddles and single lever paddle (future newsletter articles). Those were a real treat and got a lot of compliments. Wait till you see these. Talk about portability!

I brought an NC20, 38 Special, MFJ 9017, KnightSmite, Pixie II, and a TenTec 6 meter receiving converter. I split a presentation with Jerry as well. It was my first and I must say I admire all you who get up in front of others and promote QRP. I was nervous and made plenty of mistakes (but hopefully covered well hi).

The Iowa QRP club sponsored a building event on Friday night. Several members got together and built the FB40 kit from the NJQRP Club. It was great fun but I've been sworn to secrecy about any of the details. The following hams participated: Shirley W0OOZ, Jerry WB0T, Mike KI0AF, Jeff AA0PN, Larry WB0RMT and son Alex KC0EBK, Paul KB0JIT, and John NU0V. All I can say is that the hotel will allow us to return. Thanks again to the NJ group and George Heron for helping us with the kits.

On Saturday IAQRP had a QRP luncheon for everyone interested. During the lunch Jerry (WB0T) and John (NU0V) were given certificates of appreciation from the club. Jerry does a lot of work (behind the scenes) for the club and really is busy helping the club to prepare for the Sioux City hamfest. I would like to thank all those involved for the certificate. It was a great honor. The lunch was fun with a lot of good QRP fellowship!

I would also like to thank the following people / organizations for donating items for IAQRP to give away in Sioux City. Gary and Brad from Embedded Research provided a Tick 4 EMB kit; Paul Washa donated a copy of Rich Arland's new book 'Low Power Communications; Mike KI0AF provided a Tick EMB kit, and MFJ helped us out with some anniversary mugs. All went to good homes and again my thanks.

Also thanks to Larry (WB0RMT), Mike (KI0AF), Jerry (WB0T), Paul (KB0JIT), Ade (W0RSP), Jim (sorry but I did not write your call down), and I know I've left someone out (apologies in advance) for helping out at the display table. It was a lot of fun and all of you made it a

success! Also cudo's to the vendors who supplied info on their products: Small Wonder Labs, Embedded Research, TenTec, MFJ, OHR, Hands Electronics, and Kanga US. If I've left anyone out my apologies.

Finally I want to again thank Ade (W0RSP). At the end of his presentation on Saturday (in front of a packed room) he paid me quite a few compliments. I was and still am totally stunned by the recognition. He then presented me with a gift which I will treasure forever. He gave me a first edition copy of his book 'Joy Of QRP' and an original copy of his CQ article which started it all. Both are autographed and inscribed with a message to me. I cannot thank you enough for your gift and I can't tell you how much they mean to me. You are a true friend and a gentleman and again I thank you.

Sorry for all the bandwidth but with all the fun over the weekend I'm really energized and excited about our special niche called QRP!

72, John NU0V
burnley-ia@worldnet.att.net

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Adding Receiver Incremental Tuning (RIT) to the SW40+ QRP Transceiver

by Jim Larsen AL7FS

(The following article was copied from the author's web site and is reprinted here by permission. Visit Jim's home page for a wealth of QRP information at: http://www.qsl.net/AL7FS/)

Visit the Alaska QRP Club HomePage at: http://home.gci.net/~bhopkins/akqrp

In an earlier article I discussed building an 80, 40 or 20 meters superheterodyne (superhet) CW transceiver (2 watts). The theory within the radio was covered in an online course called Elmer 101 and was published in QRPp (NorCal QRP Club). This radio is from Small Wonder Labs and is called the SW40+ (mine is for 40 meters). (If you can access the referenced material at the end of this article, you will find a wealth of additional information including the SW40+, schematic, kits, and other items mentioned in this article.)

The RIT Upgrade

I recently decided I needed the Receiver Incremental Tuning (RIT) add-on for the SW40+ transceiver that I use for business travel trips. I ordered the kit and shortly thereafter, I was melting solder and building up the small PC board RIT. After the modification, I found that my frequency range had changed from 7.009-7.044 down to 7.009 to 7.033. This was what was predicted in the RIT Instructions.

I began to tack on capacitors to the bottom of the board to change the value of C8. I followed the range suggestions in the Instructions sheet but nothing I did seemed to improve the tuning range. I finally gave up on C8 and left it at the stock value even though my tuning range was still reduced.

Again, per the Instructions, I changed C7 (68 pf in my case) to move the range back up the band. I chose to use the next smallest value in my parts drawer (56 pf - I did not go all the way down to the 47 pf in the chart in the SW40+ manual) to give me a range of 7.0226 to 2.047. (Thank you, NorCal Capacitor Kit.) I also

tweaked on the spacing on L1 to help bring the range closer to what I needed. I decided this new range was ok as I seldom use my extra class privileges and it gave me a more even spread on the dial. The RIT works as advertised and I am sure I will enjoy this when I call CQ and have to tune around for stations. I have found stations off frequency by over 1 kHz from time-to-time.

There are no new contacts with the SW40+/RIT but I expect some on my next business trip to the Lower 48. This is primarily my travel rig. The power output to a slightly mismatched inverted-V antenna reads 2.8 watts on the Oak Hills Research, OHR WM-2 wattmeter. I suspect it would read closer to 2 watts into a 50 ohm load.

For you Spartan Sprint folks, the SW40+ with the RIT now weighs 11 ounces. I have the SW40+ custom case. Batteries are 8 ounces, Micro-Key is 1 ounce, and Kenwood earbuds are only an ounce or two. The next addition to the SW40+ will be a built in Tick Keyer. With all these upgrades, I now just need to be in the Lower 48 for a Spartan Sprint.

72, de Jim AL7FS
AL7FS@QSL.NET

References:

SW40+ transceiver:(http://smallwonderlabs.com/swl_swp.htm) •Receiver Incremental Tuning (RIT) add-on:(http://smallwonderlabs.com/swl_rit.htm) •SW40+ Schematic:(http://www.qsl.net/k5fo/schematic.jpg) •NorCal Capacitor Kit and QRPp:(http://www.fix.net/~jparker/norcal.html) •Spartan Sprint:(http://www.natworld.com/ars/) •TICK Keyers:(http://www.frontiernet.net/~embres/) •Oak Hills Research:(http://www.ohr.com/) •Elmer Projects for QRP-L:(http://www.qsl.net/k5fo/)

AL7FS was originally licensed as WN0LPK in March 1965 (WA0LPK from 1965-1985). Jim is a member of the Anchorage Amateur Radio Club and the South Central Radio Club. For a while he was a Moonbounce (EME) fanatic and earned 2 meter WAS #36. Even then he operated in QRP style, using only about 600 watts output. Jim has participated in HF from 160-10 meters (CW and SSB), packet, satellite, 6 meter, UHF, VHF, ATV, DX, and QRP. QRP has lasted the longest and the strongest - 1970 to 1999.

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Slinky Antenna
By Paul Sipes KB0JIT

The common metal slinky that is 2.75'' in diameter is a good candidate for a portable antenna. For 40 meters two slinkys connected as a dipole will work very well. This antenna will be useful for backpacking, vacations, field day or any time you don't have access to your regular antennas. I use a slinky antenna in motel rooms when I am working out of town. Stringing the antenna

from one corner of the room to the other will give enough length to be able to tune properly. You can use the curtain rod as one support and the doorframe as the other support.

Usually in the top of the doorframe, there is a crack between the frame and the wall that will allow a curtain hook t slip in to use as an anchor. Drapery hooks work well to hold the slinky. A piece of nylon string is strong enough to hold the weight of the slinky. Hook one end of the string to the curtain rod with a drapery hook tied to the string. This will allow you to quickly and easily put up and take down the antenna. For the 40 meter antenna it is not necessary to support the weight of the center of the antenna. For the 80 meter antenna you should support the center.

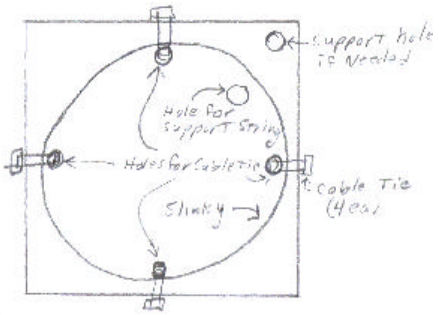
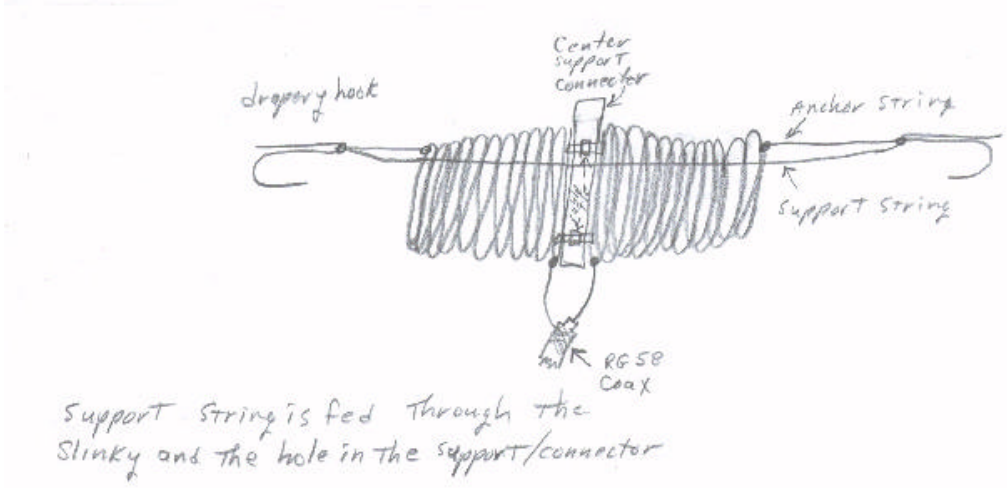


Figure 1 above. Figure 2 below.

I use a piece of 1/4'' Plexiglas 3'' square for the center support/connector with four holes drilled in the plastic so they are just inside the diameter of the slinky (figure 1). Cable ties are used to hold the slinky to the center support. The slinky is also very easy to solder so you can solder the feed line directly to it. I use a piece of RG-58 coax with alligator clips soldered to it for the feed connection. These clip directly to the slinky at the center support. You could solder a short piece of wire to the slinky and connect the alligator clips to it. If you want to use the antenna for 80 meters, you can solder two of them together to make an antenna that is twice as long. It will also work in a small space, as the inductance of the coils will tune to 80 meters with a small QRP tuner. I use a Heathkit HFT-9 QRP tuner with a MFJ-816 SWR meter. I have always been able to tune the antenna to a very acceptable SWR. The rig I have is the EMTEC 2020 for 40 meters. It puts out about 4 watts and works very well on the slinky antenna. Figure 2 will show the center support and how the antenna is strung for good support.

72, de Paul KB0JIT
Pasipes@pionet.net



CW Net Moves!
By Jerry Huldeen WB0T

(Editor's note: the following is a combination of two posts to IAQRP-L and is reprinted with the author's permission)

Hi gang! Our morning net is not as successful as we all had hoped. Partly because of the early hour for a Saturday, or family commitments, and last Saturday, lots of qrn.

Sooo, the net has moved to Wednesdays at 9:00P.M. at 7.125 mHz. (or near, depending on BCI or other qrn

Again, 9:00 Central Daylight or 0200 UTC Thursday. Most everyone has 40 meter xcvrs and antennas. If it doesn't work, we can try something else.

Anyone wishing to take a turn as Net Control Station, please let me know. I will be happy to act as net manager, working out a schedule for those of you wishing to be NCS. We can probably work out a regular rotation.

It is good experience and fun.
I hope many of you can make it.

72, de Jerry WB0T
jerrydeen@juno.com

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The Care and Feeding of the MFJ-259 SWR Analyzer
By John Burnley NU0V

Photo 1: MFJ-259 SWR Analyzer

One of the most useful pieces of test equipment that I purchased over the years is the MFJ-259 SWR Analyzer. It can be used to measure SWR, impedance, capacitor values, inductor values, velocity factor, 1/4 and 1/2 wavelength feedline lengths, tuning a tuner to proper settings, can be used as a frequency generator, plus many other functions. The oscillator is a bit unstable to be used in peaking a receiver, but it can be used to make sure the receiver is working!

I've had my analyzer now for at least 5 or 6 years. Over this period of time I've noticed that the calibration on the resistance meter slowly went out. The resistance meter itself began sticking which became quite annoying. A quick call to MFJ to order the replacement meter was made and in a few days my order arrived. Like most of my projects there is a certain aging requirement before I actually get started. After all as long as I remembered to flick the meter with my finger the sticking meter was no problem. I also just had to remember that 30 ohms was actually 50 ohms on the resistance meter as well (hi). The final motivation for beginning this project was the SO239 connector giving up (I used the analyzer so much that the connection was loose and the male PL259's would not make contact).

At last the time had come to get the MFJ-259 back into proper operation. I 'dug' out the package containing the meter (that had gathered a couple years worth of dust) and opened it. Inside I found the replacement meter and instructions for calibrating.

The instructions were from an upgrade kit that MFJ sold to convert their 249 analyzers (without the resistance meter) to the 259 (which did contain that function).

First you must remove the eight black screws holding the back/side cover. There are four screws on each side and all eight must be removed. Now remove the back/side cover. Carefully remove the battery clips from the battery packs. The cover should now be totally free. Be sure to save the screws as they can easily be misplaced.

Next remove the panel nuts from the input and gate switches. Slide the switches through the chassis holes so that they are free of the chassis. Next unsolder the wire to the BNC jack. You may leave the jack where it is but I recommend removing it to give yourself a little extra room when removing the display assembly. Now unplug the meter wire harness (located on the side). Next remove the 'Tune' and 'Frequency' knobs with an Allen wrench. Remove the plastic grommet around the 'Frequency' switch and the four small screws around the 'Frequency Counter' display. Now unsolder the SO239 connector from the PCB board. This connector is attached by two ground lugs soldered to the PCB and the center conductor is soldered directly to the PCB. Carefully unsolder the grounding lugs on both sides of the center conductor. Then unsolder the center conductor. If you are replacing the SO239 then just clip the center conductor (you can unsolder the remainder once the display board is removed).

Now remove the three interior (silver) screws securing PCB to the chassis. Carefully slide the PCB and display out of the chassis. You must remove the main PCB along with the attached display PCB. Headers are used to connect the main board to the display board and it is impossible to reorient them properly when reassembling (at least I couldn't). It was much easier to remove both and replace the entire assembly.

Both the 'Resistance' and 'SWR' meters are secured by a metal strap. First unsolder the connecting wires from the meter and remove the capacitor from the meter leads. Now remove the two small screws holding the retaining strap in place. Remove the strap and replace the old meter with the new one. You may need to apply a little force in removing the old meter. A small dot of some type of glue was used to help secure the meter in place. Replace the defective meter with the new one. Place the metal retaining strap back into place and secure with the two small screws. Now solder the capacitor and connecting wires back into place. Be sure to position the tabs from the meter so that they will not make contact with any components on the main PCB (trust me on this one since I got to repeat the process when the smoke test failed and I found one of the tabs shorting out against a transistors metal case).

If you are replacing the SO239 then remove the mounting screws and nuts from the chassis and discard the old connector. Place the new SO239 into position and secure with the screws and nuts from the old connector. Be sure and replace the ground lugs (which attach to the main PCB) from the same position they were removed from. Reposition the main PCB and display PCB. Be careful to

ensure the operating LED is in proper alignment. I didn't discover this until too late in the process. I apparently bent the LED downward when reinstalling the PCBs but I'm not going to tear it apart again just for the LED (hi). Now secure the main PCB with the three screws removed earlier. Reinstall the four screws around the 'Frequency Counter' display. Place the plastic grommet back into position on the 'Frequency' switch. Solder the ground lugs and center conductor of the SO239 to the main PCB. Place the 'Gate' and 'Input' switches back into position and reinstall the BNC connector and solder the connecting wire. Reconnect the wire harness. Place the knobs for the 'Tune' and 'Frequency' switch in position and secure with an Allen wrench. Reconnect the battery clips or connect external power.

Before applying power visually recheck everything (especially the meter tabs) to ensure nothing is shorted. Now connect a 50 ohm dummy load to the SO239 connector. Apply power. The 'SWR' meter should be flat but the 'Resistance' meter reading is unpredictable. On the back of the main PCB there are three holes in a straight horizontal line. R31 may be accessed

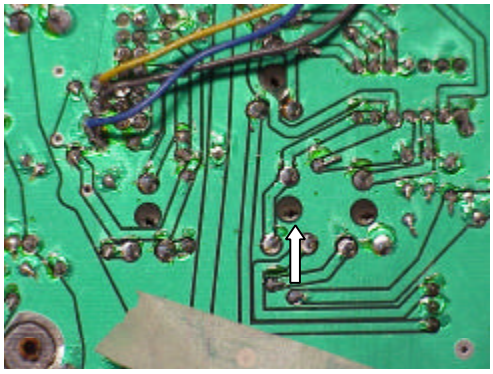

Photo 2: Relative position of R31.

through the middle hole. R31 controls the 'Resistance' meter. Carefully insert a small screwdriver or nonconductive tuning tool and turn R31 until the 'Resistance' meter indicates 50 ohms.

Install the back/side cover into place with the eight screws previously removed. Smile your done!

The MFJ-259 SWR Analyzer is a useful test instrument and I have been very satisfied with mine. Like all things electronic or mechanical, a little TLC is required every now and then. Now mine is back in working order and functioning perfectly.

72, John NU0V
burnley-ia@worldnet.att.net

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Operating Events
By Mark Milburn KQ0I

Here are some QRP operating events that will be coming up. Turn your power down and join in...they are fun events and the people you meet will be some of the best hams on the air.

ARS 1999 FLIGHT OF THE BUMBLEBEES
July 25, 1999

This is a four hour event during the last Sunday of July, running from 10:00 PDT/11:00 MDT/12:00 CDT/1:00 EDT to 2:00 PDT/3:00 MDT/4:00 CDT/5:00 EDT. Thus, the hours of operation accommodate all four time zones. No matter where you live, there is time to for the Bumblebees to travel to their sites, set up their stations, operate the contest, and travel back to their cars.

Both home-based and portable operations are encouraged.

Participants who want to operate in the Bumblebee category apply to Adventure Radio Society for Bumblebee status. ARS assigns each Bumblebee a Bee number. Bumblebees agree to walk, bike or boat to their sites. The distance traveled to the site is at the Bumblebee's discretion. Bumblebees add "/BB" to their calls.

Group operation is welcome in the Flight of the Bumblebees. You may operate under a single call and report a single score, or under multiple calls and report multiple scores. In any event, you are limited to operating a single transmitter at a time.

Maximum power is five watts. We operate CW on 40, 20, 15 and 10 meters, on the standard QRP frequencies. We want this to be a national contest, so we encourage long-range contacts by giving double points for 20, 15 and 10 meters. 40 meter contacts will receive one point. The same station can be worked on different bands for additional QSO points and multipliers.

If you are a Bumblebee, your exchange is RST, state/province/country, and your Bumblebee number. If you are homebased, your exchange is RST, state/province/country, and your power.

Contacts with Bumblebees generate a 3X multiplier. So your score equals QSO points times (number of Bumblebees times three). Here is an example. If you make 20 contacts on 40 meters and 30 contacts on the higher bands, and make a total of 25 Bumblebee contacts, your score is (20+60) X (25 X 3), or 6,000.

Separate but equal commendations are awarded to the high scores for the homebased and Bumblebee participants. Starting this year, we will also commend Bumblebees in the following new categories:
- Most interesting equipment,
- Most outrageous venture, and
- Most beautiful site.

Participants are strongly encouraged to use our automated contest reporting system, which is found in the ARS Sojourner. Participants may submit paper logs, with a two week deadline. Results are posted during the third week of August in The ARS Sojourner, the QRP-L Internet Group, and by direct email to ARS members.

If you choose to use a paper log, please include at least the following:

- Your full name and callsign;
- Your status (Bumblebee, or homebased).
- Date of the event;
- Total number of completed QSOs with Bumblebees, and
- Total number of completed QSOs with all other stations.

You may also want to add soapbox information, such as the equipment used, your operating location, interesting contacts, successes and challenges.

You are encouraged to submit stories and photographs of your Bumblebee adventure for publication in The ARS Sojourner. See Advice for Contributors, http://www.natworld.com/ars/pages/pageone_material/advice.html.

Russ Carpenter, AA7QU, is the Contest Manager. Mail paper logs to him at 47227 Goodpasture Road, Vida, OR 97488. You can reach Russ in the following ways:

- By mail, at the foregoing address
- By phone, at (541) 896-026
- By fax, at (541) 896-031
- By email, at russ@natworld.com

Georgia QSO Party

1800Z July 31 - 0359Z August 1
1400Z Aug 1 - 2359Z Aug 1
Two periods, all stations may work the full 20 hours. Phone and CW, 80, 40, 20, 15, 10 meters

Entry classes: Single Op, Multi-single, Multi-multi rover, novice/tech, all of the above in three power levels, QRP, Low Power (less than 150 watts), and High (over 150 watts)

Rover requires operation from at least GA counties. Mobiles and portables must move complete station including antennas at least 100 yards to change counties...no county line operation.

Work stations once per band and per mode. Multiplier count on each mode. Exchange RST and GA county, SPC, or DX. Count 1 point per phone contact, 2 points per CW contact.

Multipliers are GA counties; for GA stations 50 US states, 11 VE provinces.

Awards.

Send logs by Aug 31 to Neal Sulmeyer, K4EA, 530 Doss Dr., Canton, GA 30114-8057, email k4ea@contesting.com web http://www.contesting.com/secc/

Summer Daze SSB Sprint
August 1, 1999

2000Z-2400Z, SSB HF Only..work stations once per band, operate all four hours.

Categories: All-band, Single-band, High bands, Low Bands, Multi-OP, and DX.

Exchange: Signal report, SPC and ARCI Number (non-members send power).
Suggested frequencies: 1830, 3865, 7285, 14285, 21385, 28385

QSO Points: members = 5 pts, non-members same continent = 2 pts, non-members different continent = 4 pts.

Multipliers: SPC total for all bands, SPCs count once per band.
Power: >5w = x 1; 1-5w=x 7; 250 mw- 1 w = x 10; < 250 mw = x 15

Final Score = QSO points x total SPCs x Power Multiplier

Entries must include copy of log and summary sheet, callsign(s) of operator(s), power out, and station description.

Send entries within 30 days of contest date to Joe Gervais AB7TT (Attn: Summer Daze Sprint), PO Box 322, Peoria, AZ 85380-0322, or download the QRP ARCI contest entry form for the website, edit it to include your information, and paste it to an email (ASCII text) to: vole@primenet.com

Adventure Radio Society Spartan Sprint
August 2, 1999
September 6, 1999
October 4, 1999
November 1, 1999
December 6, 1999

The Spartan Sprint will be held as usual on this first Monday of the month). We will be operating on three bands--80, 40, and 20. There are winners in two categories: points (the Tubby Division), and points per pound (the Skinny Division).

1. Start at 9:00 PM EST, 8:00 CST, 7:00 MST and 6:00 PST. Finish at 11:00 PM EST, 10:00 CST, 9:00 MST and 8:00 PST.

2. The frequencies will be 3560 kHz+-, 7040 kHz+- and 14060 KHz+-. (You may operate one, two or three bands--your choice.)

3. Exchange RST, SPC (state, province or country) and power output.

4. If you choose to call CQ, use the format "CQ SP," or "CQ SP TEST."

5. You can take credit for working the same station on a second band.

After the contest, you may use an autolog, which is part of the ARS Sojourner. Just go to www.natworld.com/ars and follow the link for "Direct access to autologs". Or you can speed things up by going directly to the Spartan Sprint autolog page at www.natworld.com/ars/ss_log.html .

If you don't have access to the web, send Russ Carpenter, AA7QU, an e-mail with your total QSOs and the total weight of your station (i.e. the combined weight of all transmitters, receivers, keys, keyers and batteries used during the Sprint). You may also include your comments from the soapbox. Russ' email address is russ@natworld.com.

Results for each Spartan Sprint are published on the Thursday following the Sprint. This may be the world's quickest contest reporting! Please send your log as soon as possible, but in no event later than Wednesday afternoon.

The Spartan Sprint is based on a simple but stimulating concept. The ARS is encouraging all of you to cobble together the kind of station you'd use in a portable environment — lightweight transceiver, keyer, key, and battery. Then put that turkey on the air, and participate in a two hour sprint.

All operators are invited to play, whether or not they are members of Adventure Radio Society. Even if you don't have lightweight equipment, your participation will be rewarding, both for you and the other participants. We'll report the score in two different Formats/absolute scores, and points per pound of station weight. So you can get your kicks from running up a magnificent score, or achieving an remarkable ratio of points per pound.

If you're thinking about becoming a member of Adventure Radio Society, just send Richard Fisher (membership chairman) an e-mail expressing your interest. Richard's e-mail address is nu6SN@aol.com. Membership is free, and the organization has a great group of men and women who combine their love of ham radio with their affection for the outdoors. You don't need to be a macho person; ARS welcomes people of all ages and levels of ability.

Russ Carpenter, AA7QU, Contest Manager russ@natworld.com

The Michigan Challenge - Saturday, August 21, 1999 from 1600 UTC to 2000 UTC

This 4 hour CW sprint is meant to promote an event combining Amateur Radio with a visit to your local or state park. It is sponsored by Chapter 3 of

the Michigan QRP Club. The "challenge" is simple. Visit a local or state park, set up your station and work as may other stations as possible. While operating try to locate and work the designated "FOXES" operating from Michigan for added bonus points. You may enter the contest as an individual, group or club. There may be only one station per contestant entry. The station may be operated by any number of operators. A unique and attractive certificate will be awarded for the winning entries. Suggested Contest CQ Call - " CQ CQ MC TST"

Exchange - RST, SPC, Power output (designated Foxes will also send "Fox") Examples of exchanges - 579 MI 5W FOX, 599 OH 900MW, 469 Ont 100W

Operating frequencies in kHz (+/-) 7040, 14060, 21060 and 28060 (WARC not allowed)

Scoring - (QSO Points x SPC multiplier x Pwr multiplier x QTH multiplier) + Fox bonus points

QSO Points (Based on the power output reported by stations you worked during the contest)- 1 pt for each QRO station worked (>5 w) 3 pts for each QRP station worked (1 to 5w) 5 pts for each QRPp station worked (<1w)

SPC multiplier - Total number of States / Provinces/ Countries worked

Pwr multiplier - Your highest power output used during the contest: 1 for QRO(>5w), 3 for QRP (1 to 5w) and 5 for QRPp (<1w)

QTH multiplier - 2 for operation from a state or local park, 1.5 for other afield ops, and 1 for homebased operation.

Fox bonus points - 1,000 for each QSO with a designated FOX station

Scoring example:

Station operates from a local park using a 4 watt output and works 2 designated Foxes.

Station has the following QSOs:
18 QRO stations worked = 18
25 QRP stations worked = 75
6 QRPp stations worked = 30
Total QSO points = 132

Total SPCs worked 32

Station score: QSO Pts = 123
SPC Multipiler = 32
Pwr Multipler = 3
Qth Multiplier = 2
(123*32*3*2) = 23,616
Plus Fox bonus pts = 2,000
MC Contest Score = 25,616

Contest logs are to be submitted by no later than September 21, 1999 to:

Pete Meier WK8S
4181 Rural
Waterford, MI 48329

Log must contain the following information: Callsign used during the contest and contest operators operating location; highest output power used during the contest; QSO details - time, callsign, exchange details (state, output power); your mailing address. Please also include details regarding equipment and antenna used, as well as any other interesting event or occurrence which happened during the contest which others may be interest in reading about.

Michigan Labor Day CW Sprint
Sept 6 2300Z to Sept 7 0300Z

All MI-QRP Club contests/sprints are run under the rules below.

All contests/sprints will be run on 160 thru 6 Meters (no WARC bands). All amateurs are invited to participate.

CLASSES:
*A - 250 milliwatts or less output.
*B - One watt to 250 milliwatts output.
*C - Five watts to one watt output.
*D - Over five watts output.
EXCHANGE: RST, QTH State/Province/Country) and MI-QRP Membership Number (non-members send power-output).

SCORING:
Stations may be worked once per band for QSO points. All member contacts are 5 points. Non member contacts in W & VE are 2 points. Non member DX contacts outside W & VE are 4 points.

Multiply total QSO Points, on all bands, by the total number of States/Provinces/Countries worked on all bands for total points. U.S. & Canada do not count as countries.

BONUS POINTS:
Total points may be multiplied by 1.25 for home brew RX or TX w/commercial RX or TX combinations w/commercial RX or TX combinations. Multiply by 1.5 for a total homebrew station. Home brew = any kit or home made gear, it is not necessary for you to have built it yourself. Those using homebrew gear on some, but not all bands, may claim credit by listing the proper bonus points in each band's "BPts" column on the score sheet, adding them up and dividing by the number of bands used. Enter the average (round to 2 decimal places) in the "Totals" row, under the "BPts" column.

AWARDS: Certificates awarded by class for high score in each State/Province/Country.

A legible, chronological log is required. Please include your name,call, address, equipment description and Power output . Results will be printed in the next issue of The Five Watter. Final decision on any contest matters rest with the contest manager. E-mail logs are encouraged. E-Mail Logsto: n8cqa@tir.com

Mail logs to:
L. T. SWITZER N8CQA
654 GEORGIA AVENUE
MARYSVILLE MI 48040-1243

Log and entry sheets available for an SASE to the above.

Enjoy....

72, de Mark KQ0I
kq0i@juno.com

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Des Moines Hamfest Recap
By John Burnley NU0V

The Iowa QRP Club had a display table at the Des Moines hamfest on April 24, 1999. I knew right off that the day would be a good one.

As I was setting up the table I noticed that my neighbor across the aisle was Paul Washa. Paul as you may remember helped us with the group buys on the 1999 handbook as well as other titles. He was very thankful to all who participated in the earlier group buy and will be working with me on some future ones (stay tuned).

I had vendor info from MFJ and TenTec but very little from any of the other QRP vendors. I found a few bits and pieces in my display box and I put it all out. It didn't take long before it was all gone. I was only

able to stay for 2 1/2 hours because of a family commitment but that was all that was needed.

The hamfest had a very good crowd and the QRP display was always busy. My 'next door' neighbor was the ARRL display manned by some of the locals along with some ARRL brass. I'm sure they couldn't help but notice the constant traffic. On display was an MFJ 9017, NorCal 38 Special, Knightsmite, Pixie II, Emtech ZM-1 with AZ Scorpion SWR LED indicator kit installed, power supply break-out box, and a prototype project that some of the club members are independently developing. Information on MFJ 90's Newsletter, NorCal, G-QRP, and ARCI was also available. If your club wasn't listed then you didn't get back to me with any information (but it's not too late for the next hamfest so send me your info!). There were plenty of questions and a lot of enthusiasm!

I hope to see you at our next event in Sioux City, IA on June 4 and 5, 1999.

72, John NU0V
burnley-ia@worldnet.att.net

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The Iowa QRP Club was formed to promote amateur radio low power operations, to hone operating skills, improve building skills, and introduce the hobby to perspective new amateurs.

Membership is limited to current Iowans, former Iowans, those with strong Iowa ties, border states (border counties), and in some cases by invitation. To join, email a request to:

IowaQRPClub@juno.com

or surface mail to:

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