Bacon Bits

Flying Pigs QRP Club International, W8PIG
1900 Pittsfield St, Kettering, Ohio 45420
E-mail: w8pig@yahoo.com Web Page: http://www.fpqrp.com

FPQRP membership is open to all licensed QRP operators who reside within 12,000 nautical miles of Cincinnati, Ohio.

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NETS:

DAY	TIME	FREQ
Sat	1400Z	14062
Sun	1300Z	7065
Sun	1400Z	14062
Thurs	0200Z	7065

CLUB FREQS.

1,814 kHz	3,564 kHz
7,044 kHz	10,110 kHz
14,062 kHz	18,100 kHz
21,064 kHz	24,910 kHz
28,064 kHz	

ALL FPqrp frequencies are UP 4 kHz from the standard qrp frequencies except for 20 meters.

Happy Holidays!

In this issue:

Ramblings!

Well folks, the sweeps are over and I'm worn out. ☺
Had a great time at the house with the members who showed up and we didn't do too badly. For the CW run, Rick, WB6JBM, Mike, WB8UUW, and Daryl, KD8HT showed up.

This month we have more great stories, tips, and general "stuff" for your reading pleasure.
I hope everyone has a wonderful Holiday season, and remember **be safe**!

72, oo
Dan, N8IE Ω

QRP Borneo Style…

By Sly, 9M8SL

Yet another QRP ramblings!
Though this topic may be so beat up to death for us, QRPers, it is hope that those who are NOT, or are still thinking of whether to jump into the bandwagon, may find it rather amusing ☺

To make my story short my involvement in QRP started off as an accident. No, it's not the kind that you might encounter on the road. God forbid! So, kindly read on…

Some years ago, just as I was starting to get the hang of CW, and on one of those sleepless nights, I began to call CQ near 7.030 MHz. I answered a few Japanese stations as usual (nothing spectacular), and later went on to work a JT1BH (Mongolia).

After signing with JT1BH, I started to tune around a little, and heard W3AS working a 9M2 station. I waited till the end of their QSO, and quickly gave his call. Doug gave me a 599 from Spokane, and mentioned he was going to have his morning coffee. I reciprocate with a 599 too, as he was thundering in this end. To be honest, I did not know where Spokane was until I look it up on the map!

I had never worked the States on 40 meters CW before that day, let alone the East Coast! I was ecstatic. I did bang the shack table several times. You must be wondering why? As I turned my head to have a look at my Daiwa SWR/Power meter, it was showing something like less than 5 watts out. I had accidentally tuned down the carrier level knob on my Kenwood TS-450s to a rather minimal setting without knowing it during all those QSOs. Considering the antenna that I had back then was only a 40m inverted-V up at about 25 feet, I had every reason to be overjoyed. QRP had just became a possibility for me…

About a month ago, I did the same thing again. However, it is not accidental this time round. I purposely tuned the carrier level knob on that same TS-450s down to show exactly 5 watts on a Diamond SX200 SWR/Power meter at a friend's place.

As I tuned around 20 meters, I heard ZL2TX calling CQ. I throw my call several times, and he came back with a 559 report. I gave Nigel a 559 too, and told him that I was doing a demo at 5 watts for some radio friends. The antenna was a friend's homebrew trapped-dipole with one of its ends towards Wellington in New Zealand. It still works! On his next exchange, he started to stroke my call with a QRP. Ooh, how sweet it sounds…

Several years had past since Prof. Rick Campbell, KK7B's QRP lecture (held here before I was a ham),
but his "let's do a dB count" analogy with his wiggling fingers still holds true…

Basically, he was trying to show how power varies logarithmically with those fingers of his, and a single S-point came out to be something like 6 dB. So as he counted on, it shows that a decrease from 100 watts to 5 watts is only about 13 dB down or simply put a decrease of about two S-points! I guess, one may think of it this way, an average 5 by 7 phone signal at 100 watts is still a 5 by 5 at 5 watts. Guess many could still hear that particular signal okay! I am no mathematician, but I now know these figures do get much better with CW ☺

Despite the favorable math's above, I still had my doubts about QRP before the "Spokane" incident. I was a "Doubting Thomas" like most "100 watts" hams here. Having done many QSOs at 5 watts on CW makes me think differently today. QRP works for me, and it will for you too, if you are willing to crank down your power and give it an honest try. We certainly do not have to resort to labels like "Life is too short for QRP" or "QRP is not for Sissy" to prove our point. The QRPers of this world have done it. Just do it…

72 de Sylvester (Sly) Liew 9M8SL, FP#92
Borneo Island, East Malaysia. Ω

Porky Pig's Pro Code!

Paul, K4FB sent this QSP from the CQ-Contest reflector:

"After a pleasant SS CW contest theres no better way to unwind, than to zone out in front of the tube and surf a bit.

Landed on an old 1930-40s Porky Pig meets the Lone Stranger cartoon...complete with Porky taking the stagecoach full of gold into the pass, and meeting the bad guy...at gunpoint.
The situation seemed hopeless, until we find Tonto, watching through binoculars, and alerting the Lone Stranger by throwing the switch on the 'broadcaster'.... which sends out the CW signal of alert.... and there it was at 10 WPM in clear CW.....coming through the old loudspeaker on the Lone Strangers' radio.....
"H I.... H A M S...Q S L...P O R K Y...P I G".....

What a hoot!!!!
SS de K7SS"

Dear Ann Landers!

Humor by Graham, VE6KJ

I was going to write a review of the SMK-1 for my club newsletter, but I saw that QST scooped me... That's ok... they write better than me anyway.

Instead, I've adapted a bit of fun I had laying around to QRP. Thought I'd share it with the list..... (No offence to you high power operators out there!)

Ann Landers:

Are QRPers "different"? Spouses have stories??

Dear Ann Landers: This letter, my first ever to a columnist, was sparked by your column about the QRPers wife who asked "Are all QRPers the very embodiment of all the virtues and qualities that are universally admired in humankind? Have they, alone, of all the ham radio operators, achieved a state of grace far beyond that ever speculated by history's most hopeful philosophers and theologians?" The answer is "ABSOLUTELY!"

My father was a Qrp'er. My three brothers and four uncles are QRPers. QRPers ARE a different breed. They are wise, often strikingly handsome, kind to small children and animals, sensitive to the subtleties of everything around them, and when it comes to relationships, well, Mom, my three sisters-in-law, and my four aunts seemed to always have a serene, deeply satisfied look of complete contentment. If only I could have hitched up with one, too.

Signed: A Jealous and Bitterly Resentful Wife of a High Power Operator

Dear Jealous: I've been swamped with letters from lucky wives, daughters, husbands, mothers and sisters of QRPers. They've given me a real education, and made me feel a little jealous, too. Read on:

Portland: QRPers are different. And I say "Vive la difference!" I thought maybe I was the luckiest woman ever to have been born, but I have found that other QRPers wives have similar experiences. My Qrp'er husband has more sensitivity and consideration than ten "normal" men.

He's absolutely wonderful with our children. After he puts in his usual twelve-hour day at the office, he rushes home to be with the kids so I can spend a few hours of quiet time alone. During this time, he teaches the children Morse code while he prepares a delicious meal, balances the checkbook, chases some DX, and catches up on the email from the QRP-L email list. After dinner and the dishes, he helps the kids with their homework. Once the kids are in bed, he hurries off to the radio club where he either teaches a class in radio or operates QRP into the big beam. He gets back around 2:00 a.m., treats me like a young bride on her honeymoon (if you catch my drift), and after four hours of sleep, starts his day again, selflessly making life safe, loving and meaningful for others. I am so lucky to have this man in my life!

Denver: Ann, the best piece of advice you could pass along to your readers is this: If you can't be one yourself, do whatever it takes to associate with as many QRPers as you can. My life has been so rich, so meaningful, since I divorced the high power operator I was married to for twelve years. If I weren't so ecstatic in all my waking hours, I would be in despair over all that wasted time. But in retrospect, I would have traded fifty years with "Mr. Linear" for just a few weeks of the blissful existence I have with my big loveable Qrp'er. He has shown me all the richness that life holds. I spend hours just basking in the warmth of his vast knowledge of life, the universe, and everything. He has so much beauty and understanding.. And he's always ready to share that gift. He's able to explain the most incredibly complex concepts in a way that helps you understand, and makes you feel just plain good all over. And how can anyone be so perfect, yet so warm and sensitive to the needs of others?
Think of the world we would have if everyone were a Qrp'er!

(Borrowed from the CSPG Reservoir... and I don't know where they got it!)

72 de Graham, VE6KJ, VO1DZA

Batteries!

By Rick, WB6JBM

1. What are gel batteries or SLA batteries?
Gel or sealed lead acid batteries are basically the same chemistry as a wet (flooded cell) battery. The battery's electrolyte is in a gelatin form and is absorbed into the plates and the battery is sealed with epoxies. These batteries may be used in any position and the batteries are exceptionally leak resistant. Battery uses are UPS, emergency lights, and camcorders. These batteries are 2 volts per cell so the common batteries are 4, 6, and 12 volt.

2. What are battery ratings and how battery ratings are used?
Some of the common battery ratings are: Amp-Hour battery rating: This is a common battery rating of batteries. Amp-hour rating of battery capacity is calculated by multiplying the current (in amperes) by time (in hours) that current is drawn. Amp-hour battery rating is commonly used on sealed lead acid batteries used in UPS systems, emergency lights and camcorders. For example: A battery which delivers 2 amperes for 20 hours would have a 40 amp-hour battery rating (2 * 20= 40). Cold Cranking Amperage battery rating: CCA is the discharge load in amps which a battery can sustain for 30 seconds at 0 degrees F. and not fall below 1.2 volts per cell (7.2V on 12V battery). This battery rating measures a burst of energy that a car needs to start on a cold morning. This rating is used mainly for rating batteries for engine starting capacity and does not apply to NiCad batteries, NiMH batteries or Alkaline batteries. Reserve capacity battery rating: RC is the number of minutes a new, fully charged battery at 80 degrees F. will sustain a discharge load of 25 amps to a cut-off voltage of 1.75 volts

per cell (10.5V on 12V battery). This battery rating measures more of a continuous load on the battery.

3. What is a battery cycle?
Battery cycle: A cycle of a battery is a discharge plus a charge. For example, if your battery is full charged and you apply load (use) the battery and it discharges some (maybe completely) and then recharge to full battery charge, that is one cycle. Cycle life is the total number of cycles a battery yields. The cycle life is very important in battery applications such as laptop batteries and emergency light batteries. A Ni-cad battery has a cycle life of 500-1000 or more cycles.

4. What are deep cycle batteries?
Deep-cycle batteries typically feature thick plates with a high-density active material. The thick battery plates allow for reserve energy to be stored deep within the battery plate and released during slow discharge such as trolling or electronic instrument use. The high-density active material remains within the batteries' plate/grid structure longer, resisting the normal degradation found in cycling conditions. They are typically used where the battery is discharged to great extent and then recharged. For example, a battery powered trolling motor on a fishing boat.

5. How can batteries be connected? Note: When interconnecting batteries (cells) they must be the same batteries (cells)!!
Ways to connect batteries:
Batteries may be connected in series. The positive terminal of the first battery is connected to the negative terminal of the second battery, the positive terminal of the second is connected to the negative of the third, etc. The voltage of the assembled battery iis the sum of the battery voltages of the individual batteries. So the batteries are connected: + to - to + to - to + to -, etc. The capacity of the battery is unchanged.
Batteries may be connected in parallel. The positive terminal of the first battery is connected to the positive terminal of the second battery, the positive terminal of the second is connected to the positive of the third, etc. and The negative terminal of the first battery is connected to the negative terminal of the second battery, the negative terminal of the second is connected to the negative of the third, etc. So the batteries are connected: + to + to + and - to - to -. In this configuration, the capacity is the sum of the capacities of the individual batteries and voltage is unchanged. For example, if you take 5 6V 10AH batteries and connect the batteries in series, you would end up with a battery array that is 30 Volts and 10AH. If you connect the batteries in parallel, you would end up with a battery array that is 6 Volts and 50AH. By the way, this is how ordinary auto batteries are made. 6 2volt cells are put in series to give 12v battery and the 6 cells are just enclosed in one case. Many ni-cad batteries are done the same way.

6. How does overcharging damage batteries?
Overcharging a battery occurs when the total capacity removed has been replaced by recharging and the battery remains on charge. This overcharging creates excessive heat, which can cause the battery plates within the cells to buckle and shed their active material. The battery will react to the overcharge by producing an excessive amount of hydrogen and oxygen. These gases are the result of the breakdown of the water molecules within the electrolyte. The water that has been displaced by overcharging can be replaced in a serviceable (non-sealed) battery, but, in the maintenance-free sealed batteries, permanent capacity loss will result. Excessive discharging a battery can also damage a battery. The amount of discharge a battery can have without damage depends upon the chemistry of the battery, but in general a lead acid battery will not tolerate as deep a discharge as a Ni-cad battery or Ni-mh battery. Sealed lead acid batteries function best if they are discharged to only about 85% of nominal voltage (10.2V on 12V battery).

7. What is sulfation of batteries?
Sulfation is the formation or deposit of lead sulfate on the surface and in the pores of the active material of the batteries' lead plates. If the sulfation becomes excessive and forms large crystals on the plates, the battery will not operate efficiently and may not work at all. Common causes of battery sulfation are standing a long time in a discharged condition, operating at excessive temperatures, and prolonged under or over charging.

8. What are some types of batteries? A few types of batteries are: Sealed Lead Acid, Flooded Lead Acid, Ni-Cad, Alkaline, Silver Oxide, Lithium, Mercury (not mfg. in US any more), Manganese-Dioxide, Zinc-Air, and Ni-MH

73
Rick, WB6JBM Ω

Quartz

By Dan, N8IE

SiO2, Silicon dioxide
Quartz is an old German word that originally meant something like hard or tough.
Common uses are silica for glass, electrical components, optical lenses, abrasives, gemstones, ornamental stone, building stone, etc.
Additional variety specimens include Amethyst, Citrine Rock, Crystal, Rose Quartz, and Smoky Quartz.
Color is as variable as the spectrum, but clear quartz is by far the most common color followed by white or cloudy (*Milky quartz*). Purple (*Amethyst*), pink (*Rose Quartz*), gray or brown to black (*Smoky Quartz*) are also common. Cryptocrystalline varieties can be multicolored.
Quartz is the only material known that possesses the following combination of properties:
1. It is piezoelectric ("pressure electric"; piezein means "to press" in Greek).
2. Zero temperature coefficient resonators can be made when the plates are cut along the proper directions with respect to the crystallographic axes of quartz.
3. Of the zero temperature coefficient cuts, one, the SC-cut is "stress compensated."
4. It has low intrinsic losses (i.e., quartz resonators can have high Q's).

5. It is easy to process because it is hard but not brittle, and under normal conditions, it has low solubility in everything except the fluoride etchants
6. It is abundant in nature.
7. It is easy to grow in large quantities, at low cost, and with relatively high purity and perfection.

There are 92 naturally occurring elements on earth but only eight elements make over 98% of the minerals on the Earth's crust. They are, in decreasing quantity, 1 oxygen, 2 silicon, 3 aluminum, 4 iron, 5 calcium, 6 sodium, 7 potassium, 8 magnesium.
Quartz is the most common single mineral on Earth. It can be found in almost any geologic setting, but it most typically forms sedimentary rocks like sandstone and is the defining mineral of igneous rocks like granite. It is found in nearly every geological environment and is at least a component of almost every rock type. It frequently is the primary mineral, >98%. It is also the most varied in terms of varieties, colors and forms. This variety comes about because of the abundance and widespread distribution of quartz

Quartz is not the only mineral composed of SiO2. There are no less than eight other known structures that are composed of SiO2. These other substances and quartz are polymorphs of silicon dioxide and belong to an informal group called the Quartz Group or Silica Group. All members of this group, except quartz, are uncommon to extremely rare on the surface of the earth and are stable only under high temperatures and high pressures or both. These minerals have their own unique structures although they share the same chemistry, hence the term polymorph, which means *many forms*

Quartz is an important mineral with numerous uses. Sand, which is composed of tiny Quartz pebbles, is the primary ingredient for the manufacture of glass. Transparent *Rock Crystal* has many electronic uses; it is used as oscillators in radios, watches, and pressure gauges. Quartz is also used as an abrasive for sandblasting, grinding glass, cutting soft stones, and in the manufacture of soaps and ceramics. Quartz is essential in the computer industry, for the all-important silicon semiconductors are made from Quartz.
For all these practical uses, Quartz is also important in the gem trade. Many varieties are faceted as gems, and some are well known. *Amethyst* is the most popular Quartz gem, and *Citrine* is the most valuable. *Rose Quartz*, *Smoky Quartz*, *Rock Crystal*, and *Aventurine* are also cut into gems. Clear Quartz crystals are worn by some as pendants for good luck.

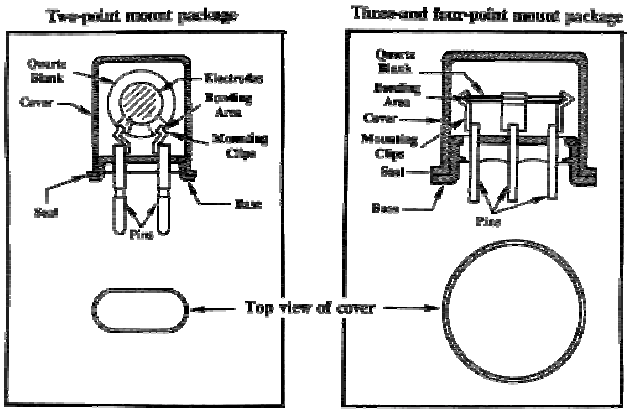
Quartz can occur in massive, microcrystalline forms called chert, agate, flint, chalcedony, or jasper depending on various characteristics. The chipped stone tools made by our prehistoric ancestors commonly use these materials. Sand is generally composed of quartz, and when clean sandstone is subjected to high pressure and temperature, it metamorphoses into the rock quartzite. When bodies of igneous rock crystallize deep underground, quartz is generally the last mineral to form, and in these settings it can sometimes form very large crystals, as long as a meter.

The structure of quartz involves corkscrewing (helix) chains of silicon tetrahedrons. The corkscrew takes four tetrahedrons in order to repeat itself, or three turns. This structure is not like the structure of the chain silicates or inosilicates whose silicate tetrahedronal chains are not directly connected to each other. The structure of quartz helps explain many of its physical attributes. For one, the helix makes three turns and this helps produce the trigonal symmetry of quartz. Likewise a helix or corkscrew lacks mirror planes of symmetry, as does quartz. The corkscrew structure would also disrupt any cleavage which requires a plane of weakness not found in quartz and breakage would result in the curved fracture, *conchoidal*, that is found in quartz. Quartz can also have left and right handed crystals just as a corkscrew can screw in a left handed way or in a right-handed way. There are even some very difficult to identify crystals of quartz that are twinned with alternating one sixths of the crystal being right handed and then left handed.

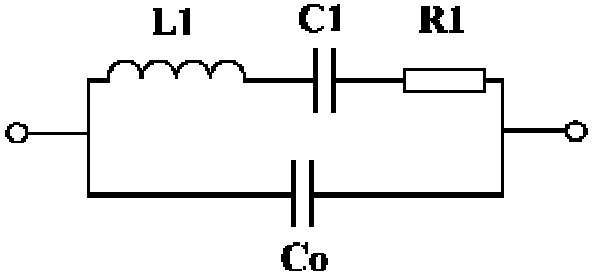
Quartz crystals exhibit a property called the piezoelectric effect-that is they produce an electric voltage when pressurized along certain directions of the crystal. Because of this property, quartz crystal has important applications in the electronics industry. Quartz also rotates the plane of polarized light and is used in polarizing microscopes.
The Curie brothers discovered the direct piezoelectric effect in 1880. They showed that when a weight was placed on a quartz crystal, charges appeared on the crystal surface; the magnitude of the charge was proportional to the weight. In 1881, the converse piezoelectric effect was illustrated; when a voltage was applied to the crystal, the crystal deformed due to the lattice strains caused by the effect. The strains reversed when the voltage was reversed.
Of the 32 crystal classes, 20 exhibit the piezoelectric effect (but only a few of these are useful). Piezoelectric crystals lack a center of symmetry. When a force deforms the lattice, the centers of gravity of the positive and negative charges in the crystal can be separated so as to produce surface charges. The piezoelectric effect can provide a coupling between an electrical circuit and the mechanical properties of a crystal. Under the proper conditions, a "good" piezoelectric resonator can stabilize the frequency of an oscillator circuit.

Warren Marrison developed the first quartz clock in 1927
In the early 20th century, as telephone wires carried more messages and radio broadcasting matured, maintaining stable electrical frequencies and devising means to monitor the frequencies became critical technical problems. In 1927, Canadian-born Warren Marrison, a telecommunications engineer, was searching for reliable frequency standards at Bell Telephone Laboratories. Building on earlier work in piezoelectricity by W.G. Cady and G.W. Pierce, he developed a very large, highly accurate clock based on the regular vibrations of a quartz crystal in an electrical circuit. Marrison's clock proved to be more accurate than previous time standards. Marrison and others demonstrated that the quartz oscillator used in this way was more accurate than the best existing mechanical clocks used in astronomical observatories as time standards.

Because the properties of a quartz crystal unit depend strongly on the angles of cut of the crystal plate, in the manufacture of crystal units, the plates are cut from a quartz bar along precisely controlled directions with respect to the crystallographic axes. The orientations of the plates are checked by means of X-ray diffraction. In some applications, the orientations must be controlled with accuracies of a few seconds of angle. After shaping to required dimensions, metal electrodes are applied to the wafer. Circular plates with circular electrodes are the most commonly used geometries, although the blanks and electrodes may also be of other geometries. The electroded wafer is mounted in a holder structure. The figure below shows the two common types of holder structures used for resonators with frequencies greater than 1 MHz. (The 32-kHz tuning fork resonators used in quartz watches are packaged typically in small tubular enclosures.)



The figure below is the L/R/C equivalent of a crystal:



73
Dan, N8IE Ω

RADIO OP WWII

By Arnold CW Timm

[Book report by Arnold Timm] Sam Hevener W8KBF "The Signal Corps" 3583 Everett Rd Richfield OH 44286 has a photocopy available ($8ppd) of this book; or did back in 1997. A 108-page manual TM 11-454 was printed in the year I was born (1947). An Army Radio training book for field telegraphy, signal lamp, and wigwag flags. Phone procedures were covered in FM 24-9. Sections containing security concepts, operating conditions, and message handling follow. TM 11-459 was used for teaching International Morse Code. Radiotelegraph procedures were strict and very complex. I imagine once battle stations were called, crib-sheets became handy alternatives. I wonder what manual they used in 1940-42? Correspondents to Common Ham maintain beachhead action lost a prescribed directive. Early combat radio must of been reading from a WW1 manual? Some said at boot camp this was so.

Terms were clarified (a little) -- freqs assigned, prosign given, etc. The booklet was (most probably), issued for reference upon establishing beachheads. Think about those ships that U-boats sank. How officers had to improvise paperwork that never made it ashore. I can see recruits hunkered over this manual during bombing attacks by enemy aircraft (Anzio). Those who have served in the military know our rules of engagement change rapidly. At Anzio the beachhead died.

International direction finder freq at 375 kHz and distress (1943-911) was 500KC. Most equipment handled traffic nets on 75 and 80 meters. Division net stations (3.210kHz); regular net (4.460kHz + 3.780kHz). As you know, Morse code number groups were encrypted at 18-12wpm (depending on the slowest ops). Interference became common due to these ground wave monitoring posts. (In 1942 land mobile VHFM tanks etc moved up freq. giving combat networks spectrum to deploy traffic.) Check out http://gordon.army.mil/museum/storyline.html Signal Corps history overviews only. Details are long forgotten I am afraid.

A "Trick" was a tour of duty or shift. It was the duty of the NCS to see that all SCR equipment was on freq. Traffic handling (while routine), removed personnel from battlefronts. Their daily duty-call experienced very little action, over laying landline under mortar attack. Inside the trick truck, jungle heat or cold hands and feet, made code copying uncomfortable. Field phones were order of the day. So many miles of telephone wire were laced over the forward entrenchments. Enlisted personnel assembled, maintained, and operated 100,000 different signal items. Assault wire and field wire was consumed at 250,000 miles a month.

(April 18 1997) from Tony Grogan Museum. The Waradio museum here consists of 200 plus field type units, some unique aircraft radio equipment, a few fixed station, and an extensive repair/refurbishment facility that allows me to bring & keep alive what i collect. The museum is open (per request) basis or whenever I am home. My inventory has been restored to working order. I keep a fairly extensive supply of spare parts, however, I am always open to donations of equipment for display or spares. We are a SC federally recognized IRS code 501 (c) 3 nonprofit. Contact W8KBF if you'd like to see the museum.

Equipment on hand is from US, England, Canada, New Zealand, Australia, etc -- we have a nice set of "clandestine" outfits dating WW2-2000. WWII presented a great change in the shortest period of time (concerning) communications/data handling history. A combined effort of Allied powers across the total of (6) six years (1939-45) went from large bulbous, (not very reliable) com to reasonably compact, (still heavy), channelized FM. Early (ENIAC) computer gear capable of predicting fire tables for heavy guns and radar followed. Also, for the first time, early computing gear had helped to solve an almost impossible to break German ENIGMA code. This period was the (including today) time of the greatest electronic flux ever known to mankind. [Continued next month]
KA0TPZ Ω

Busting that DX pileup, QRP style!

By Dan, N8IE

Working the QRP-l Fox hunts, and some of the other QRP sprints/contests has helped bring my skills at busting DX pileups way up. So far this year I have come real close to working 100 countries running QRP. Now this will not get me into the DX Hall-of-Fame, but I have learned a lot and each year my numbers go up.

I will share with you what I have learned in hopes it will help you as well. This is by no means the "Definitive" guide to chasing DX or busting pileups, it's just what works for me. Also note that there is no real secret to busting pileups or catching DX, a lot of it is propagation, and blind luck, but there are things you can control to help you out.

First thing you must learn when chasing DX, let alone a pileup is patience.
I cannot stress this enough, remember that you are in there with thousands of others shooting for just one person. And for everyone you can hear, there is at least one you don't hear. All this is directed at one person, and he/she is doing all the hard work.

Don't be afraid of the "Big Guns" you hear in there.
Just because you hear another station calling the DX station and his signal is strong, that does not mean he will drown out your signal at the Dx stations end. I know this sounds silly, but one can be intimidated by loud signals calling the same time as you are. Propagation is a funny thing, I have (as I'm sure most of you have) received very good signal reports running QRP, even better than what was given to someone running legal limit through a large beam.

Learn the habits of the DX station.
By this I mean study him for 10 minutes or so, find out where he's working the most stations at, and learn his exchange. You'll find that a lot of DX stations will work up from their transmitting frequency from as little as 50hz to as much as 3Khz. Listen at 10-20 exchanges and note where he works the majority of the stations. Remember that the "pack" will tend to congregate very near each other, (within a 50hz-1Khz spread) and the DX station will most likely listen to the "stray" signals that are just above or below the pack. Once you have noted where most of the contacts are made, park yourself there and don't move, hopping around a few kHz each time you call will not get you anywhere, see rule 1 above. ☺

Timing is everything.
Tail ending (calling right after another station) can work, but not so much with DX pileups. The trick here is to look at the pattern the DX station uses. Very often he will send at the end of a contact "tu qrz", then the pack starts sending. Be patient here, count to 3 or 4 before sending, this will separate you just a bit from the din making you more noticeable. From time to time the DX station will send at the end of a contact, "tu qsl via xx1xx xx1xx de aa1aa qrz" this will throw the pack into a slight moment of confusion because they are not really paying attention to him and start calling while he is still transmitting. This opens up a small window of opportunity to sneak in and get heard.

Don't be pushy.
Sending your call over and over will cause two things that do not work in your favor, 1: you could miss his exchange with another station, and throw off your timing. 2: if he does hear you sending over and over, he just might ignore you. Remember the DX station has the hardest job here in pulling out one signal from thousands, if he is looking for a particular call area and your "QRMing" his effort, you won't get called. I have found that sending my call twice is usually good enough.

Be courteous at all times.
Don't be a frequency cop, if the DX station is calling "up" and someone calls on his frequency, don't get in there and send "up lid up". Your just adding to the mess and QRMing someone else's receive.
Also when the DX station calls "W3?" and your W4, don't call him, let him work who he's after and get back to business. Doing this decreases the QRM and keeps things orderly, not to mention keeps the DX station happy. I have heard several DX stations go QRT because of an unruly crowd.

In conclusion:
Busting DX pileups whether your running QRP or QRO takes time, practice and patience. From the start make yourself comfortable, and be ready to stay there for a while. Rushing into a pileup and expecting to get him right off the bat will make for a very frustrating evening.
If you find yourself getting angry and upset, kill the power button and go watch TV, or better yet go kiss the YL. ☺

72, oo es good Dxing
Dan, N8IE Ω

Correction to the Basic Stamp Project

For those of you who read the Bacon Bits issues that contained my article, (two parts) concerning using a Basic Stamp to interface a digital approach to the analogs control on the TenTec receiver board, it seems I may have confused some folks regarding the Basic Stamp chip and the PIC chip.

The PIC chip and the Basic Stamp are two totally different chips and totally different operating languages. To help resolve the confusion, do the following:
Go to this web site, http://www.parallaxinc.com/

When you go to the web site, click "Getting Started" located on the left side of the web page. This should get you going in the right direction...sorry if I have confused you.

Start with the Basic Stamp and then move up to the PIC chip as you get some experience under your belt.

Again, sorry if I have confused or lead anyone astray!

Dah-Dit-Dah,
72's/73's es oo's, Mike...WB8ICN Ω

RADIO CENTURY

By Arnold CW Timm

One hundred years rushed on by,
its technology there in tow;
Tesla? "alternating current" guy,
lit our lights -- you know!
Armstrong 'sembled receiving means,
as a boy of 12 and death;
RCA --- not a hill of beans,
until they took his breath!
Edison incondesant lamp,
burned brightly in repute;
stolen property -- patent stamp,
Tesla 'quations proof !
When Edwin modulated freqs,
and Deforest tubes took off;
we entertained ourselves for weeks,
in the corporate combat loft!
Wireless let us fight a war,
it alerted troops and planes;
ships at sea were saved an ore,
with electric powered mains!

KA0TPZ
wdx0awt@juno.com

Website Spotlight

Samuel F. B. Morse (1791-1872) the father of today's Morse Code is the focus of this months Website Spotlight.

We'll look at a few sites for history, telegraph keys, general information, and software for one of Amateur Radio's long enduring, and most enjoyable (for me anyway) modes!

Mikael Persson has a neat page the convert's text to Morse code:
http://www.ing.hb.se/users/data/da9726/homepage/morse.htm

Tekla Inc. provides a cool Morse Code Practice page at:
http://www.teklasoft.com/java/applets/morse/sfiles.htm

Chuck Adams, K7QO has a wonderful Online Code Course on his website.
http://www.qsl.net/k7qo/

KO6YQ's Introduction to Morse Code can be found at:
http://www.kluft.com/~ikluft/ham/morse-intro.html

The ARRL has another resource page along with a brief history of Morse at:
http://www.arrl.org/ead/learncw/

Russ Kleinman, has put together a great page on telegraph keys:
http://www.zianet.com/sparks/

Tom, W1TP has a must see webpage called TELEGRAPH & SCIENTIFIC INSTRUMENT MUSEUMS:
http://www.chss.montclair.edu/~pererat/telegraph.html

Looking for Morse software, then go to AC6V's Morse Links at:
http://www.ac6v.com/pagez.html

Neal McEwen's, K5RW "The Telegraph Office" is THE place for the collector and historian alike.
http://fohnix.metronet.com/~nmcewen/ref.html

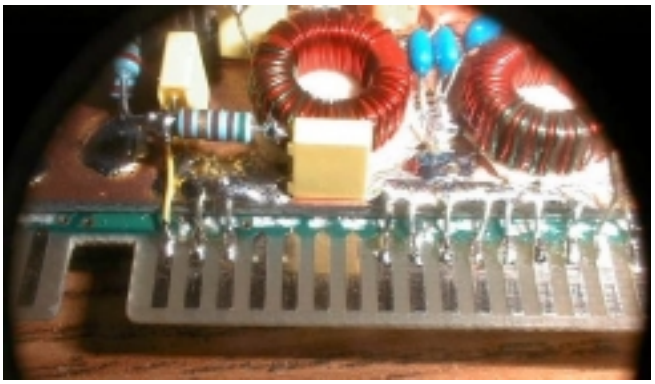
72, oo
Dan, N8IE Ω

The miniPIG the multiPIG and the "UGLY"

By Diz, W8DIZ

PART 4 - multiPIG Band Modules

What make the multiPIG versatile are the band modules. I have designed 2 versions; the first used a terminal block to connect signal and power wires between the modules and the main transceiver; the second uses surplus PC 16 bit ISA sockets and connectors. Obviously, the second method is preferred when changing bands. I looked around the electronics catalogs for PC ISA sockets, but found their prices to be outrageous. One of the Flying Pigs (can't remember who) suggested using a propane torch to de-solder ISA sockets from an old PC motherboard. This worked very well. Took about 1 minute to remove each socket from the motherboard. The male connectors are constructed for the plug-in modules are constructed from old 16 bit cards, which are cut using a hacksaw. First I removed all the components near the edge connector and then cut the board all the way across about 1 inch up from the card edge connecting fingers. I then mounted a copper clad board 6" x 3" to the edge connector with two small bolts after drilling through both boards.



The transmit amp chain is relatively simple. The output from the SBL-1 transmit mixer is fed to a 4 dB attenuator pad and then to a 2-pole sharp bandpass filter, L1 & L2. The filtered signal is amplified by a buffer circuit using 2N3904 NPN's, Q1 & Q2. This amp employs negative feedback via R8 to give very stable performance. The output is controlled via the 500-ohm pot R11, to set the desired final output power.

The driver, Q4 is a 2N3866 VHF transistor using a tuned tank circuit with a low-Z output link to the final, a 2SC1969 transistor that can handle 10 watts output. The max I can get out of this circuit is about 8 watts on 160 meters, but I trim the output back to 5 watts with pot R11. The heat sink, from a 486 CPU cooler, is mounted on the back of the copper board, held together with a 6-32 nut and screw. The collector from the final is center-tapped/soldered to L10, a 10-turn FT37-43 ferrite toroid, and the output of the final is filtered by 2 double filter L11 and L12. L13 is used to set a ground level for PIN diode D3.

The pin diodes D1, D2 and D3 make up the tranceive antenna switch. Their resistance is about 5-10 ohms when forward biased with 5-10 milliamps and a very hi resistance without forward bias.

The RF amp uses a MRF911 VHF very low noise transistor. You could also sub a MRF901 which is a bit more common. Both the input and output are double tuned to reject any image frequencies.

This RF module design was used on 160, 40 and 20 meters. On 20, I only get about 4 watts output, but so what - good enough for QRP :-) I'll post the band critical parts with winding info and cap values later at http://home.cinci.rr.com/w8diz/multi Ω

Member Spotlight!

This month were spotlighting:
Mac Steinmeyer, AF4PS, FPqrp #-51

I'm Mac Steinmeyer, AF4PS, proud member #51 of the Flying Pigs International
QRP Club. I found the club through Mary NA6E, who sent me a note regarding the club after I expressed interest in a Homebrew 10-meter CW rig called the Mini-Pig. I have found the Flying Pigs to be the BEST QRP/Internet experience so far.

I'm relatively new to Ham Radio, getting my first license (Tech +) in 1996 and beating the deadline to become Extra Class in 1999. This coincided with my friend Brian's KB9BVN, renewed interest in Ham radio, and we found each other on QRP-L asking similar questions about the NorCal40a. My main interests are still CW, QRP, Fox Hunts, building stuff and learning from people like Diz, Dan, Rick, Ian and Mike.

I'm married to a very beautiful, smart, understanding and patient woman named Lori (sitting right here), who has very little interest in "wires and beeping," but is "glad I've made some friends." My two boys, Jordan (13) and Luke (6) are working on CW and help me build things. My greatest fear about Jordan, is that Brian, KB9BVN has his email address. That can't be good.

I work as the Senior Pastor of Keystone United Methodist Church - a very tolerant group people. I find the technical side of Ham radio to be a great escape from my daily work, but enjoy the people I've met most -- well, most of you.

Foxhunts are both a joy and frustration to me. I'm convinced they have helped build what operating skill I possess, but I have a long way to go there. I'm hoping The Cub and Truffle Hunts will help me hone the filter between the ears, but there isn't much material to work with there. I get a
lot of help from the local guys here in Tampa and the West Florida QRP club. I'm working to register this club as a PIG OFFILIATED ORGANIZATION, because almost all of us are members of both clubs.

You might hear me around the Pig, QRP and DX frequencies on the HF bands almost every evening. Aron N1ODL, Mike WB8ICN, Paul K4FB, and others get on AIM and spot DX for one another. This is a lot of fun. I frequently have six IM windows open and I'm astonished as I look at my log! Dan, N8IE and I are racing to get DXCC in this calendar year, but he cheats using outside antennas. I have experimented with various outside stealth wires and verticals, but usually fall back to the Infamous Attic Dipole. I had a G5RV up temporarily, and Diz and I used it to nab a fox during his visit, but the Hurricane took it away before the Deed Covenant Restriction Committee could.

I look forward to working each and every PIG member. Drop me a note for a sked, or if you need code practice -- if you can copy my fist and signal, you are good.

72 es oo Ω

A new FP Pin?

By Arnold, KA0TPZ

I don't know much circuitry here, but may be a symbol enough for a future lapel pin? I know the Michigan qrp club had a porcelain pin and the members coveted it with true mascot homage. That metal lapel pin we wore in the war, might be plastic to save bucks, and suppose the New Year might be salvaged by such image mastering? Hi

I tried to put a pig face on the thing, however it seemed washed out when I added the metal layer. Adobe v 2.0 lacking attributes I guess? The 3-D gimmick they now sport is absent here on this cheap machine, so I leave it up to you and the others. They might just be happy without any fancy wallpaper? I submit it as an extra added item. Hi

You can imagine a xcvr attached to the pin and we just "tap" it to communicate. like Gene Roddenberry's Star Trek, our "communicators" might harbor a memory keyer, which spat out preambles on command? Embedded Research kits might fit right well? The xcvr? Hi

72, oo
Arnold W Timm, KA0TPZ Ω

12 Days of Sweepstakes

By Arnold, KA0TPZ

On the _____ day of Sweepstakes,
my "checkbook" gave to me:

1. A dipole in a pine tree
2. Gels charging
3. Element beam
4. Cups O coffee
5. Fingers sore
6. Kids asleep
7. Continents worked!
8. Double " A "s
9. Pizza rolls
10. Stations jamming
11. Calls confirmed
12. Hour Nap!!

72, oo
Arnold W Timm, KA0TPZ Ω

NITE B4 BUYING

By Arnold CW Timm

Twas the night before "buying",
and all through the pen;
not a piglet was flying,
on fifteen and ten!

The bands were all silent,
pork chops & kraut;
poor prop compliant,
for Flying Pig belt!

Sows' ear were severed,
a silk purse they eyed;
the str8 key was levered,
antenna tight guyed!

A CQ came calling,
that whisper at dawn;
distance appalling,
yet caught with a yawn!

Flight of the wee one,
our piglet inverts;
" Joyest of Season ",
the Jolly Elf blurts!

wdx0awt @ juno.com

About the Flying Pigs QRP Club.

OUR MISSION:
1: Have Fun.
2: No rules.
3: Have a group of Friendly Hams who enjoy Amateur Radio, and sharing their skills with their fellow Hams.

CLUB EMAIL POLICY:
These are not rules, just common sense.
Club email is not moderated, as we are not a stuffy group. You can send off topic messages about most subjects, but please keep it clean and in good taste. We do like good-natured ribbing and joking with each other, but we will not tolerate flaming other members or spaming the group. We will remove offenders who abuse our open policy.

CLUB WEB PAGE:
The club web page is our forum for sharing projects, and information about us. You are encouraged to submit your ideas and projects to be added to the web page.

PROBLEM REPORTING:
If you are having problems with email, the web page, or a fellow club member, please report this to either Diz, W8DIZ at w8diz@cinci.rr.com Rick, WB6JBM at ripowell@mpna.com or Dan, N8IE at shephed@aol.com
We welcome all to join the Flying Pigs QRP Club, and we hope you have fun! Ω