



The VHF Transmitter



Keystone VHF Club, Inc.

W3HZU

Founded 1955 – York, PA

VOL 60 No 10

CIRCULATION 150

December, 2015

The Keystone VHF Club Holiday Party

January 16, 2016 - Snow Date January 30th



Location: Victory Athletic Club 471 S. Ogontz Street York, PA 17403

Cash bar opens at 5 PM
Dinner at 6:00 PM



Menu: Turkey and Ham, Mashed Potatoes, Corn, salad, dinner rolls. Coffee, water, soda **Price: \$20.00 per person**

Registration is due NLT Dec 31, 2015.

Advise if you can attend both dates, or only 1 date (advise which one).

Reservation must be guaranteed with a payment. If you reserve, you MUST pay. There are NO refunds after the deadline if you cannot attend, with one exception. If you can only attend the Jan 16 date, but we reschedule, you MIGHT get your refund if matching number can only attend the Jan 30th date.

To register, e-mail your number attending to Sandy Goodman.

Checks may be made out to "The Keystone VHF Club".

You may pay at the Keystone meeting, at the party, or mail a check to:

Sandra Goodman
199 Maple Lane
Mechanicsburg, PA. 17055

Email: sgoodman1@verizon.net

Club Projects Update

With the holidays coming, things have been busy but we haven't forgotten the club projects. We had two (2) meetings with our new members. The first which took place on Wednesday, November 18, was attended by 20 club members. Everyone introduced themselves and we went around and found out what everyone was interested in.

Since a few folks could not make Wednesday evenings due to schedule conflicts, we had another meeting on Tuesday December 1st. While we only had 6 attend, it was an interesting session. We further discussed club projects.

One new project that we demonstrated was an SDR receiver that can be built for about \$70. This covers the entire HF band and all of VHF/UHF all the way up to 1.7 GHz. It includes all of the operational modes (SSB/CW/AM/SSTV/Digital) and uses your computer. If you have a laptop, you will have a portable receiver with this capability. For the price, this receiver is amazing!

While our first club project will be a soldering class which will end with the building of a "Slim Jim" for 2 meters, we will also discuss the receiver project. Antennas are going to be a big topic for our projects!

We are going to try and do 2 sessions a month up at the club for our new members. One will be on a weekday evening, the other on a Saturday or Sunday. Hopefully you will be able to attend one (or both) of them. We have several experienced members who have offered to help hold these.

We will be coming out with an e-mail in the next week asking for what would be your best times to attend and what projects would you be interested in. Your response will determine what we do.

If you're Building the "Slim Jim" Antenna

By Dick Goodman, WA3USG

I have found that the dimensions given for the roll up Slim Jim antenna were slightly off. I have fabricated three of them and found that the SWR was a bit higher that I wanted to see ... sometimes slightly over a 2 to 1 near the band edges. There are two ways that you can resolve this issue. The first is by moving the feed point closer to the bottom of the antenna. The most efficient however is to simply change the dimension of where the gap starts from 19 inches to 19.6 inches. I have made this change to the figure on the last page of the newsletter. The gap is still 1 inch in width but it now starts at 19.6 inches up from where the two conductors are soldered together at the bottom of the antenna. Depending on the characteristics of the particular run of 450 ohm ladder line that you're using, this dimension may have to be changed a fraction of an inch for the best match.

Are you interested in building a "Go Kit"?

If you are interested in operating out in the field, at our public service events, or becoming involved in EmComm, a "Go Kit" is a handy thing to have. A Go Kit can consist simply of an H.T. with an extra battery and an external antenna ... or it can be considerably more sophisticated with greatly expanded communications capabilities.



Club member **Cameron Bailey, KT3A** has put together the most complete GoKit that I have ever seen. It covers every band all the way from 160 meters through 70 cm and includes capabilities to run all modes (SSB/AM/FM for voice, CW, all of the digital data modes, and Slow Scan Television). It has inputs for an external microphone and, CW keyers. It also has outputs for the use of headphones when conditions necessitate it.

It includes a switching power supply so the station may be run on commercial power if it is available or by using Anderson Powerpoles, an external source of 12 volts DC may be utilized. Looking at the rear of the unit on the next page, it can be seen that there is an antenna tuner, places to plug in additional equipment operating on either 120 VAC or 12 VDC and even USB connectors to charge cell phones and other multimedia devices.

The result of Cam's efforts is a box that will yield world wide communications capabilities anywhere independent of commercial power.

Continued on page 2

NEXT TWO MEETINGS

Thursday, January 7th at the York County EOC
Located on Davies Drive

Schedule of Keystone VHF Club Sponsored VE Testing for 2015

Laurel VE Group Testing sponsored by the Keystone VHF Club are held the second Saturday of the odd months. All tests are at 10 AM, pre-registration is appreciated except at the Hamfest. Contact, Ralph Brandt at ralph.brandt@comcast.net or phone 717-792-1017.

Locations are York EMA Office at 120 Davies Road, York, or Keystone VHF Club on Deining Road, York, near the Rocky Ridge Park

Testing dates: 2016 Schedule will be in the January 2016 newsletter

Keystone VHF Club sponsored testing by the Laurel V.E. Group. These sessions are held in the Training Room at the York County EOC, 120 Davies Rd., York, PA. Testing starts at 10:00 AM. Preregistration is appreciated. *Contact Ralph Brandt at: Ralph.brandt@comcast.net or phone 717-792-1017 to register.*

VE exams will be sponsored by Southern Pennsylvania Communications Group (SPCG). These sessions are held at the Shrewsbury Borough Building, 35 Railroad Ave., Shrewsbury, PA. Testing starts at 9:30 AM. *The point of contact for these sessions is Nate, WN3I at wn3i@comcast.net.*

Dec 12, 2015 (last one this year)

Local area nets:

Capitol Area Traffic Net starts **Monday at 8 PM** on the South Mountain Radio Amateurs (SMRA) repeater on 146.46 (67.0 tone), 1 MHz offset.

The Combined Club ARES/RACES Net meets **Monday at 8:30 PM** on the Keystone 146.97 Repeater (Tone: 123 Hz).

South Mountain Radio Amateurs (SMRA) Net on **Monday at 9 PM** on the 145.43 (Tone: 67 Hz) repeater located in Mt. Holly Springs. *After the normal FM net, a group moves off to 144.210 MHz, operates SSB*

The Keystone VHF Club Digital Net on **Tuesday at 8 PM** on the York 146.97 Repeater.

The Keystone 75 meter net on **Tuesday at 9 PM** has been cancelled for now. We will try running an Elmer Net on the 97 machine at this time.

A local FM Simplex Net runs **Thursday at 8:30 PM** on 146.55 MHz.

South Central PA 10 Meter Net **Friday at 8 PM** 28.495 MHz USB

**** Listed below are some local 10 meter nets ****

Ham Shack Talk Net - Monday at 9 PM: 28.335 MHz.

Delaware Lehigh Valley ARC Net - Sunday 4:00 PM: 28.430 MHz

Do Drop In net - Sunday 8:30 PM: 28.450 MHz

Penn- Mar Club net - Friday. 8:30 PM: 28.495 MHz.

10 Meter Ragchew Net - Every evening starting 7:30PM: 28.600 Mhz

Go-Kit ... Continued from Page 1

Easy access to all power and antenna connections make this unit easy to set up and get on the air quickly. An excellent example of our communications capabilities!



Scheduled Club P.S. Events for 2016

- * **December 24 (still 2015) - Glen Rock Carolers**
POC: Stan Walters, AB3EM abacuspc@comcast.net
- * **April 10, 2016 - Buckridge Burn Hike Pine Grove**
POC: Dick Goodman, WA3USG wa3usg@verizon.net
- * **Date TBA, 2016 - Peach Bottom Nuclear Power Drill**
POC: Sandy Goodman, N3ECF slgoodman1@verizon.net
- * **April 17 2016 - Ironmasters Challenge Hike**
POC: Dick Goodman, WA3USG wa3usg@verizon.net
- * **April 17, 2016 - York MS Walk**
POC: Sandy Goodman, N3ECF slgoodman1@verizon.net
- * **May 1, 2016 - March of Dimes March for Babies**
POC: Jack Dellinger, KC3JD jkdelli@aol.com
- * **Date TBA - The York Marathon**
POC: Jack Dellinger, KC3JD jdelli@aol.com
- * **Aug 13, 2016 - Red Lion Street Fair**
POC: Jack Dellinger, KC3JD jdelli@aol.com
- * **Aug 6-7, 2016 - MS Bike Tour Gettysburg**
POC: Sandy Goodman, N3ECF slgoodman1@verizon.net
- * **Sept 3, 2016 - Kings Gap Time Trials**
POC: (Micah Neff, KB3TGY tortmentor@aol.com
- * **Sept 10, 2016 - KTA Superhike**
POC: Ken Wiggins, N2DYK n2dyk1940@yahoo.com
- * **Sept 18, 2016 - Three Creek Century Bike Tour**
POC: Dick Goodman, WA3USG wa3usa@verizon.net
- * **Oct 30, 2016 - Michaux Team Challenge**
POC: Dan McGlothlin kb3mun@mcglothlin.us
- * **Dec 24-25, 2016 - Glen Rock Carolers**
POC: Stan Walters, AB3EM abacuspc@comcast.net

Our public events support is one of the more important (and fun) thing that we do. We need member support for all of the items listed above. You **do not** have to have a lot of experience to work at these.

How about operations in the field? This gets you outside, out in the woods, and maybe up on top of a mountain. You can drive to most of these places, or if you feel adventuresome, you can hike it. We support four (4) hiking events. These are competitive events and these hikes are not "a walk in the woods"! One of the hikes, the Ironmasters Challenge, is over 31 miles in length and it is very possible for the participants to become lost, exhausted, or injured. Along the hiking trails are several check points that we man. Each hiker has a BIB number attached to them. We check each hiker in and out of the check points. For example, if someone makes it to check point 1 but doesn't report into check point 2, we suspect that they are lost and take action to find them. We have a net control station to coordinate things but at each check point we have communicators. We operate on 2 meters, sometimes using a repeater, sometimes simplex.

Communications for the Ironmasters Challenge is done by simplex. Some check points are on the top of mountains, others are located in ravines and valleys. This year I am hoping that our Slim Jim antennas will play an important role in ensuring maximum coverage between the stations at all the check points. A Slim Jim hung high in a tree supported by a line thrown over a branch will should work very well.



At each checkpoint we also have communicators with HT's who can hike out and search for folks who may be missing. In the past we have found lost or exhausted hikers. We have also provided help to participants who were injured, some with broken bones. As I mentioned before, this isn't a simple stroll, it is a serious event running 31 miles. We have about 400 - 500 participants and quite a few don't make it! **Let me tell you ... it's an adventure!**

If you don't get out and hike, you can drive to these sites and operate from your car or a lawn chair. Things can get a little hairy when large groups of hikers come through as you have to record their time in and hiker number. Keep in mind that you will not be alone, we usually have 3 communicators at each checkpoint and at least 1 will be experienced.

We provide all of the communications at these events. **We are not backup communications, we are the only communications!** Cell phones don't work out there! Get out in the field! Operations in the field is one of the most exciting aspects of Amateur Radio. You will have fun.

W3UU - Harrisburg Radio Amateurs' Club - WinterFest

Saturday JANUARY 23rd 2016
(Snow date 30th)





WINTERFEST
"A Harrisburg Pa. Hamfest"
Cooper Student Union, South Hall
1 HACC Drive
Harrisburg, PA 17110
N 40.29623 W 76.88805 (parking lot)
(HACC Campus - Follow Signs)
8:00 am to Noon
TALK-IN 146.76 (PL 100 hz)

This will be our last time at this location. Check www.W3UU.org for next year's location

- ◆ Admission, \$3.00 per person.
- ◆ First table free. Additional tables \$3.00 each!
- ◆ Food and drinks available
- ◆ DXCC/WAS/VUCC QSL Card checking on site
- ◆ Please, be courteous to your fellow hams by using reasonable table space. If you can use ½ table, please do so. (based on demand)

No reserved table space
Unloading can be done at the main doors, and then move vehicle to the parking area



General Admission: 8:00 AM
Web Site: www.w3uu.org

For further information or questions contact:
Tim Lehman
717-982-8550
kb3oza@arrl.net

How many of you are familiar with the V/M (or similar) button on your HT? This is important. While most of you have the repeaters programmed into your HT's memory, what would happen if someone asked you to move to a frequency that you didn't have stored? The V/M button allows you to select the "VFO" function of your HT or radio. In that mode, you may manually enter the desired operating frequency with the HT's key pad or by using the key pad on your mobile rigs microphone. You also have to be in the VFO mode to set in repeater offsets, the tone mode, and the tone frequency.

If you are not familiar with how the V/M button functions, I suggest that you look at your radio's manual. Especially if you ever operate out in the field, you may be requested to go to some off beat simplex frequency that you don't have in a memory. It's a lot easier figuring it out at home than out in the field under higher stress conditions.

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Amateur Radio Parity Act Passes Senate Committee, Gains Cosponsors

Submitted by Cameron Bailey, KT3A

QST de W1AW
ARRL Bulletin 33 ARLB033
From ARRL Headquarters
Newington CT November 19, 2015
To all radio amateurs

The Amateur Radio Parity Act S. 1685 has been endorsed by the US Senate Committee on Commerce, Science, and Transportation. In the voice vote on November 18, two Senators - Bill Nelson (D-FL) and Brian Schatz (D-HI) - asked to be recorded as voting "no." The Committee held an executive session to consider the various legislative measures and nominations.

"Our work is not finished on the Senate side of Capitol Hill, although this is a huge step forward," said ARRL President Kay Craigie, N3KN. She urged ARRL members to continue to write, call and e-mail their Senators about S. 1685 to build up its support for the future. "We know that members' response to the call for a communications blast last week made all the difference for some Senators on the committee."

S. 1685 picked up another Senate cosponsor on November 18, when Sen Jerry Moran (R-KS), who sits on the Commerce Committee, has signed aboard the bill. "ARRL members in Kansas should contact his office to say thanks," President Craigie said. "Having an additional cosponsor who's on the Committee is especially good news."

On hand to observe the Committee mark-up session were ARRL Hudson Division Director Mike Lisenco, N2YBB, ARRL CEO David Sumner, K1ZZ, and ARRL General Counsel Chris Imlay, W3KD.

President Craigie encouraged ARRL members in Florida and Hawaii to keep contacting Senators Schatz and Nelson, urging them to change their minds about the legislation. "Don't be harsh or angry," she advised. "Keep it factual and courteous, and don't give up."

On November 5, US Sen Al Franken (D-MN) signed on as the second cosponsor of S. 1685. That legislation and its US House twin, H.R. 1301, call on the FCC to extend the limited federal pre-emption of PRB-1 to cover private land-use restrictions such as deed covenants, conditions, and restrictions (CC&Rs). If the legislation becomes law, radio amateurs living in antenna-restricted communities would have the opportunity to negotiate with homeowners associations to install an antenna that reasonably accommodates Amateur Radio communication.

H.R. 1301 has 114 cosponsors as of November 18. President Craigie said ARRL members should continue to urge their Representatives to cosponsor H.R. 1301 and to thank those who already have signed on.

The Amateur Radio Parity Act of 2015 page on the ARRL website has more information on how you can become involved. The Amateur Radio Parity Act of 2015 can be found on the web at, <http://www.arrl.org/amateur-radio-parity-act>

This important. As we get new amateurs into the club, some of them may already live in developments where ham antennas are forbidden. All we ask is that we get the same consideration as TV antennas and Satellite dishes. Again looking for reasonable consideration.

Please share with others in the club in your newsletter.

73, Cam, KT3A

Project ideas, Do It Yourself

By Jon Geissinger, KC3APA

I've been thinking about project ideas for the club, most of them along the lines of test equipment, some along the lines of actual transceivers. Antennas are my first love in Amateur radio! Antennas are what makes it work! A \$10,000 radio is a useless piece of silicon junk without a good antenna; conversely, a \$10 radio can SOUND like a \$10,000 radio with a good antenna!

You can have a good antenna analyzer for less than \$100 if you have some time and moxy to build one. Granted, a \$10,000 VNA is the cats you know what! But for something you might use 3 or 4 times a year, do you have the money for a top of the line VNA? AND, do you need the accuracy and resolution of that high end device? Early hams did it by hook and crook; then came things like grid dip meters (useful for a multitude of applications, I have a JW Millen solid state meter, works GREAT, but sweeping is out unless you have allot of time and patience).

Along antenna analyzers, there are many designs out there that are both stand alone (has it's own display) as well as PC connected, or both! (they can be used in other applications as well) They can sweep the antenna, feed line, etc... and tell you all kinds of things. You can connect that hand wound balun to it and check it's response curves. A good antenna analyzer can be built for less than \$50 using Arduino controller (micro computer) and a DDS (digital signal generator), a few other components and you are in business. No PC Boards, no surface mounted components, no wild calculations. You CAN go to that complexity, but to get a piece of functional test equipment that will give you more information than you need for your antenna, it is not necessary. The grid dip meter, some graph paper and allot of patience/time and you can do the same exact thing.

Did you know you can build a spectrum analyzer from the TV tuner out of that old VCR you haven't taken to recycling yet?? Did you know that that old broadcast band TV antenna is a GREAT basis for some really good Yagi antennas? Speaking if he DDS mentioned before, combine that with a freq counter (both available on Amazon for less than \$15 each) and a decent op-amp (for buffering and higher power) and you have a good signal generator?? Again, no PC Board required, a piece of perf board and you are in business. You can multi-purpose the antenna analyzer to do all that! Even more bang for the buck on that seldom used piece of test equipment.

Space limited on your antenna, but still want some gain? Look up trapped antennas that fit in the attic! Need to wind the traps? Go to Lowes/Home depot and get some PVC pipe. The hard part is getting magnet wire (Amazon) now that Radio Shack closed most of their retail stores. Want to fine tune the traps and the overall antenna? Your previously built antenna analyzer is there for you! Or borrow a grid dip meter. They are getting hard to find at hamfest and CAN be built yourself! You can also borrow the club antenna analyzer!

Need an antenna tuner? Want the best? What to build it yourself?? eBay! Look for roller inductors and air variable capacitors. Don't need the best? Get a high voltage switch and wind a tapped inductor (the basis for the infamous Johnson Transmatch, I have one!). Need silver coated wire? Amazon in the Craft section!

Need an SWR meter? The field strength meter built by the club some time ago can be the basis for that! You have the meter movement, you have a diode. You need a directional coupler and a few more components and you are in business. The directional coupler is fairly easy. No complex calculations, surface mounted devices, fancy coil winding, no toroids or transformers. You do not loose the field strength meter functionality with the SWR meter build. Did you know that the old CB SWR meter is just fine for HF?? Think about it. 28Mhz (11 meter) used for CB is where in our bands? If you want precise wattage measurements, then you need a calibrated dummy load to make that happen (to calibrate the SWR meter), but basic SWR, you are there! It also works fine for VHF and UHF, but it is NOT calibrated. You do NOT need separate meters! Only if you want calibrated power

measurements. Basic SWR functionality works fine.

I can talk about this all day!

I can also talk about the purest angle/aspect as well, having worked in a Navy Calibration lab; but this is not rocket science!

You do not need a PHd in Electronics Engineering (not even a Associates!). Think outside the box!

My hats off to those who can afford that \$10,000 rig, the LMR-800 feedline (or hard line for that matter!) going to the 100 foot Rohn tower with the remote automatic tuner with the 50 foot beam on top! But that is not MY idea of Amateur Radio. That smacks of commercial radio OR someone with WAY too much money and time! MY idea of Amateur Radio is making something out of nothing! Legal, safe, cheap. Some of the best rigs on the air out there are clothing hangers and duct tape! They are working the world. In our consumer debt ridden, get it now society we have led allot of amateurs going down the expensive hobby path (not that DIY people are any less prone to spend that allowance! They just get more). Test equipment is not out of your reach, you don't have to cut the Christmas budget in half to have the basics.

Amateur radio is a lot more than 2M repeaters, and we all have our specific niche that we get into; it's a very cool hobby with ALLOT of diversity today! We could go to FRS/GMRS if we are into rag chewing on local repeaters hobby (advanced CB radio?), but I don't believe that you took that test for that type of experience! The repeaters is sort of a side benefit (for me)!

Just a rant/share for thought. If you are interested, we can expand on this within the club; I'm game. I'd propose a sub-group inside this group? Maybe something on the SMRA site? I have my own internet server and I can add more hard drive space to?

Jon posted this article on the South Mountain Radio Amateurs (SMRA) Yahoo Groups last month. I thought that it was extremely applicable to any Radio club with an influx of new members. It is a very ambitious article but I don't see why any one of our new (and even older) members would not benefit from this. [Thanks Jon!](#)

The Keystone VHF Club - Is it for you?

By Dick Goodman, WA3USG

There have been ham radio clubs in this area ever since the 1940's. Most of these organizations were for the purpose of fostering interest in communications on HF. After World War II, commercial equipment started becoming widely available for the HF bands. Companies like Hallicrafters, Hammarlund, Swan, Drake, Heathkit, and E.F. Johnson produced reasonably priced radios that the average ham could afford. There were a lot of people on the air using these rigs and the traditional ham radio club got them all together.

Back in the early 1950's, there were several members of these clubs who were interested in a thing called "VHF". These were frequencies above 50 MHz and back in that era, there was virtually no commercial equipment available. If you wanted to get on VHF, you had to build your own radio.

Several people from the York Amateur Radio Club got together and formed the Keystone VHF Club back in 1955. The purpose was to stimulate interest in VHF communications technology. Since all of this equipment had to be built from scratch, the KVHFC was by nature a very technically orientated organization. Many of the members were technicians from local companies like Bendix, Amphenol, and others that no longer exist.

Since it is much more critical for your antenna to be geographically high with VHF than with HF, a VHF operators had to be located in a high location. The fledgling KVHFC club members got together in 1955 and between them all, raised \$500 to purchase the land that the club is now on.

Continued on Page 6

That First Ham Radio Contact & What a New Ham Should Know

Submitted by Jack Dellinger, KC3JD

Before I took my Test I had little knowledge about ham radio and I didn't even realize how little I knew until I started studying for my technician's license. I didn't let that stop me, and if you are interested in getting your ham radio technician license don't let it stop you. Getting your ham radio license is not as hard as you think."

It really is true, you can get started for about \$70 (with a simple VHF/UHF hand held radio) . It can be intimidating and confusing getting on the air for the first time, and if we want to be able to use our ham radios in a disaster situation we need to jump in the water and get started.

First Contact: After you get Your HAM License

Getting your technician's license is just the first step, then you have to apply everything you learned, get on the air and figure out how and why everything works.

Ham Radio Repeaters:

A repeater receives a weak or low-level amateur radio signal and re transmits it at a higher level or higher power, so that the signal can cover longer distances without degradation. Many repeaters are located on hilltops or on tall buildings as the higher location increases their coverage area. Ham repeaters are generally in the VHF/UHF bands.

The inexpensive HT's you can buy for under \$100 will all operate on these bands/repeaters. Most new Ham's find that the best way to get started to make contacts with other Ham's is on their local Ham Radio repeaters. Usually Ham club's buy, maintain and support the repeater's. You usually are welcome to use local repeaters. Listen for the Ham's using the repeater, learn the lingo they use. When you are ready, make that call.

That First Contact:

It can be very intimidating when you first get your signal out. You don't want to sound like the new kid on the block (even though you are) and then come to find out that you are making it a bigger deal than it is.

It's also good to just listen and see what the seasoned Hams are doing. Learn the lingo before you go on and say something dumb like "breaker breaker one nine."

The best way to learn how to swim is just to dive in . For your first contact just said "This is (your Ham callsign) monitoring, doing a signal check, can I get a confirmation?" Usually the person who comes back will understand that you are new and will welcome you to ham radio."

Help from other Hams:

Most Hams are willing to help you get started and help you learn the practical things you need to know in order to; buy equipment, make contacts and enjoy the hobby. Many Hams will actually come and look at your setup and show you what was right/wrong. Sometimes it takes someone who can see your setup and be hands on with helping.

Ham clubs:

Joining a local ham radio club can help get advice from people that live closer to you. Ham radio clubs give you the option of meeting people who are most willing to help you grow in the hobby.

Good Ham clubs will give you a sense of belonging in the hobby and you will find many new friends that you will keep for the rest of your life. Find the clubs in your area and attend a meeting or two. You will find out which club(s) are doing the things you are interested in and whether they seem to be the right fit for you.

Some clubs concentrate on VHF/UHF, some on HF long range communications and some on Emergency Communications. Some may participate in several of these parts of the hobby.

Please keep in mind that while a club will offer advice & expertise, they are not going to do everything for you. You need to meet the members, let them get to know you. Let them realize that you are

greatly interested in this hobby and want to learn. Do some reading and research yourself. Your level of enthusiasm in regards to answering your own questions can be infectious! You will be surprised in reference to how much effort the club members will put forth to help you when they know that you are serious about helping yourself.

Know when to ask questions. If you're at a club event or a work party, things may be happening that require everyone's attention. If you walk into a room where folks are trying to troubleshoot a repeater problem, perhaps it isn't the best time to ask for advice on antennas.

What can I do on the air?

Local Communications: Ham radio will be useful whether you are helping provide local communications, getting family members (If they have their license) back together or any other unforeseen situation that might arise. With the very real likelihood that cell phone communications being down using your ham radio for short range communications might be your best option.

Emergency Communications (EmComm): You may find that you want to help your community during a disaster by helping to provide communications. Most states/regions/counties have EmComm groups that are trained to provide communications during emergencies. Many local EmComm groups train by providing communications for events like charity walks, runs and bike rides. Participating in these events help you learn how to follow radio protocols , what equipment you need and a very real sense of helping.

Long Range Communications: You will quickly learn that to enjoy the communicating around the world part of Ham Radio, you will have to upgrade your license class (General and Extra).The more you get into ham radio you will see that there is almost a competition for how far you can get your signal out. While you can't do this with the Tech License you can use some internet based systems, one of which is Echolink.

Specialized Communications: Do you enjoy computers as much as ham radio? That's perfectly okay! You can connect your computer to your radio and do things that were in the realm of science fiction just a few years ago. You can send text messages and computer files. Using some of the advanced digital modes you can communicate even when the signal is so weak the receiving person can hear nothing from the speaker. You can send images and even full motion television. The best part is that all the software do do this has been written by other Hams and it is FREE!

Echolink is an internet based communications system so it probably won't be available in some sort of disaster event, but you can use it now to talk with other Ham's around the country/world which might help you learn more about ham radio by talking to people with the same mindset as you. For now 'Google' for a PDF called "Echolink for Dummies" that explains how it works if you want to give it a shot.

Most Important:

Get your license, meet other Ham's, listen to the conversations on the local repeaters, learn the lingo and MAKE THAT FIRST CONTACT. After that the fun really begins.

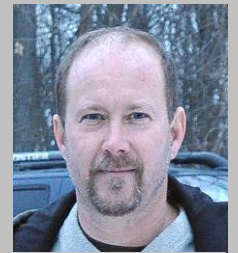
Trustee's Report



Tim, W3TWB



Dick, WA3USG



Jeff, KB3RCT

Well we are now in our "Winter Mode". We still need a work party to get some more wood splitting done but our wood storage shed is full and we are ready for Winter. By the way ... a **BIG THANK YOU** goes out to **Thierry Mathieu, KB3TPX** for all the work he has put into the club with the use of his tractor and log splitter. Thierry has spread the gravel in our pavilion, dug the foundation for our new EME system, removed the resultant mounds of soil after that, and over the years has helped us in too many ways to detail here.

The Keystone VHF Club ... continued from Page 1

In 1960, the first club house was placed on this property. I won't go into any more about this because the club history may be read on our website. The important things are the changes that have occurred since then.

Throughout the 1960's and well into the 70's the club was a hot bed of technical activity. Transmitters, receivers, amplifiers, antennas and all manner of peripheral equipment was designed, built, and utilized first on 6 meters, then 2 meters and finally up on the 70 cm band. Virtually everything was fabricated from scratch or surplus WW2 equipment modified. Some folks built their equipment at home and brought it up to the club to use. The geographic elevation of the property made it a real asset! In the late 1960's and early 70's some commercial radios became available. Gonset came out with the "Communicator" and Heathkit came out with their "Lunchbox series".



The Gonset Communicator (left) and the Heathkit Lunchbox radios (right) were heavy hitters on both 6 meters and 2 meters in the late 60's and early 70's. Each company made a model for both bands. The Gonset was on the pricy side, over \$200. About \$1200 in todays money!

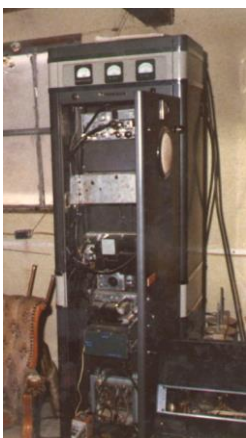
Almost all contacts were made with AM modulation or CW and the transmitters were crystal controlled. Both the Gonset and Heathkit had tunable receivers but by today's standards were broad. The guys would work each other across town. Sometimes there would be some DX on 6 meters but there was also a lot of television interference to folks watching channel 2. The club had a special "TVI committee" to try and resolve some of these problems.

The typical VHF mobile rig from the 1960's up to the early 1970's.

This one was a modified Gonset Communicator. In some cases dynamotors were required to derive the necessary voltages to power the rigs. This consisted of an electric motor powering a high voltage generator. You didn't dare run this for more than a few minutes with the engine off or your car wouldn't start! Back in those days, most radios still used vacuum tubes.



These were pioneering days with lots of building and experimentation going on. In 1975, the club put up its first 2 meter repeater. It was an old Motorola vacuum tube unit.



Initially the first club repeater was on a frequency of 146.94 MHz. It seemed that most repeaters were there. In late 1975 or 76, we started having interference from the Baltimore repeater, also on the same frequency so we moved to where we are today, 146.97 MHz. Back in those days, repeaters were MAGIC! They used FM rather than AM. Instead of talking 10 to 20 miles on your 2 meter radio, you could work 40 to 50 miles! The repeater had an autopatch system on it ... you could make phone calls from your HT! This is about 30 years before the first cell phones!! My old Heathkit HT was half the size of a shoebox and I can remember going into a restaurant and totally amazing the folks by calling someone

on the telephone with it. It should also be noted that the early 2 meter mobile rigs & HTs were crystal controlled. A crystal controlled radio was about \$200. A synthesized one (like all of today's) was about \$900!

I think that you could say the era from about 1975 to the early 80's was the era of the repeater for the club. It was our big project and as far as we were concerned, it was amazing!

By the year 1980, the club was still very technically orientated. Most of the members were building much of their equipment. Then something new entered the picture ... Amateur Television (ATV). This is when I joined the club.

Guys were modifying old Motorola T44 taxicab transmitters and RCA CMU15 wideband FM transmitters so they could transmit NTSC video (what our television broadcasts were back before 2007). At one point in time, the club had 15 - 20 members seeing each other on television! We built an ATV repeater (still in the repeater room). We were transmitting television from between York, Lancaster, Shippensburg, Chambersburg, Harrisburg, Mechanicsburg, and Baltimore. We had an ATV net on the 146.97 repeater every Tuesday night at 9 PM. We would run our audio on the 97 repeater and our video would be transmitted into the ATV repeater on 439.25 MHz. The ATV repeater would output this on 426.25 MHz where everyone would watch it. We would show each other videos, wave at each other, show each other our shacks, projects, and transmit images of "Ducks" ... ask Buzz, K3GWK what ducks are!



Tim Barefoot, W3TWB in his shack with the clubs ATV repeater that he built for us.

The era from about 1980 to the late 1990's could probably be said to be the time of Amateur Television for the club. We put a lot of resources, time, and money into it. We were going out mobile and running ATV out in the field. We used ATV at some of our public service events. Tim, W3TWB took a portable ATV transmitter up to Ski Roundtop and transmitted ATV from the slopes. We received ATV video from Amateur radio balloons from Findlay Ohio at an altitude of over 100,000 feet. We had guys flying aircraft and ultralights over the local area with ATV in them. Tim even installed a small ATV transmitter in an RC airplane which he promptly crashed (but we got some really cool video from it first). We were all nuts over ATV. Back before Tim married Sandy, he would be up at the club, in the dead of

Winter, 2 O'Clock in the morning with the snow flying. He would be up at the 80 foot level on our old windmill tower by himself talking to me up here in Mechanicsburg on 2 meters. He would be moving the ATV antenna by hand and I would be telling him "Yeah man ... that's a lot better ... lock it down. We would stay up all night ... we were nut cases but God it was fun!

In the late 90's, we put an ATV repeater high atop Conowago Mountain near Dover. As well as being able to send our video to each other we also had cameras outside the repeater shed and would watch the deer at night.



Top - Tims video from his shack in Dover as received in Mechanicsburg



Left - Video from the "Critter cam" located at the Conowago Mountain site.

Starting with the late 1990's, we really started losing a lot of our technical savvy guys due to their becoming Silent keys. Many of these were early Baby Boomers who were in technical positions in their careers before retirement. They were the technical back bone of the club and provided most of our expertise in the area of hard electronics. As we progressed well into the 21st century, we found that we had lost much of our

Continued on page 7

technical expertise. Due to the fact that we don't have the technical careers in the area anymore, we are not replacing the members who had this knowledge. What we do have however, is an influx of folks with experience in computers and Information Technology (I.T.).

Over the last 10 years, many new operating modes have been created. While we all still use FM to chat on our HT's and mobile rigs, when you tune through the HF bands, they sound vastly different than they did just a few years ago.

It used to be that Single Sideband, CW, and Radio Teletype (RTTY) were the dominant modes. Tune across a section of the 20 meter band today and you might find about 20 to 30 SSB QSO's going on but look a bit lower in the band and you might be surprised. Yes ... you may hear a couple of dozen CW contacts taking place but probably half of them are being accomplished with a computer. Tune up higher and you will run into a 3 KHz segment at 14.076 MHz where you will find a dozen or more JT65 and JT9 QSO's taking place. Tune up to 14.080 KHz and you will find a 3 KHz segment where you will find a dozen or more PSK31 contacts in progress. Tune up a bit higher and you will find literally dozens of Weak Signal Propagation (WSPR) beacons in operation. Add in a few Pactor contacts and a few of the other digital modes here & there and I think that you will find for the most part, digital is king. There are more data modes in operation than analog modes.

There is a plethora of commercial equipment available for all of the bands. It is not necessary to build your own like it once was. We no longer have the technical pool of people that we once did, therefore we do not have the collective technical expertise in basic electronics that we once did. Radios today are orders of magnitude more complex than they were 30 years ago and they perform proportionally better, this is something that an older club member may have problems with unless they are willing to keep up with the technology. There are also far more commercial & governmental radio services in existence today than there were 30 years ago, we had better have the knowledge not to interfere with them (that's the main reason we have a license).

Unless you came into this hobby with a genuine interest in electronics, the average new ham is certainly not as knowledgeable in basic electronics as someone who got their license 30 years ago. The question is, do we have to be? Very few people build their own radios anymore, and the commercial radios today, are far better in regards to frequency stability, accuracy, and reliability than anything most of us could fabricate. Many radios will not allow you to transmit out of the allocated band. You are allowed to modify the radio so that it will not have this limitation but you bear the responsibility of not straying out of the band. While the FCC tests are not as stringent as far as basic electronics is concerned, I have found that the rules & regulations are more complex than they ever were before.

The FCC tests of yesteryear were administered to ensure that you had the knowledge to safely build equipment that would not interfere with other services. Today, the tests ensure that you are aware that you must not interfere with other services. I don't believe that the new ham today would try to fabricate transmitting equipment without further knowledge.

More electronic components are available today than ever before. There is also more reference material than ever before. New exciting technologies abound! If the new Ham wants to try his or her hand at equipment design & fabrication, there has never been a better time!

If building hardware does not appeal to you, there is software to be developed for new modes. Every year, software dives lower & lower into the noise floor to detect that weak signal, perhaps this could be your forte! You may be interested in emergency communications (EmComm) or assisting in public service work. There are too many reasons to enjoy Ham radio to be detailed here.

I purposely didn't mention the Internet in this article but Google "Amateur Radio" and you will undoubtedly find scores of additional subjects that will peak your interest.

The bottom line is that along with time, comes knowledge. You will find that it helps to hear of other people's trails & tribulations. That you are not the only one who has had that unsolvable major problem. You have probably heard the axiom that there is no such thing as a dumb question. Well that's wrong ... there are one hell of a lot of dumb questions, and I've asked them all ... we all have ... and you will too. With the club, you have someone to ask those questions to!

So does all of this give you any idea if this club is for you? Throughout its history, the Keystone VHF Club has changed to suit the interest of its members.

The clubs original old timers built EVERYTHING. A few of them thought that if you couldn't draw the schematic diagram of a retroencabulator from memory, you weren't a "real Ham". On the flip side, if you gave one of them your new Kenwood HT and asked them to program it, they would have a hell of a time!

Fast forward about 25 years, it's around 1980 and a lot of new members came aboard. Many of these were "techie" type folks and they had some different ideas on how to accomplish things. I came in with the last half of this group. I found that if you took your time, and thought a suggestion through a bit before you presented it, most of the older members were open to it. Some of us thought that the old timers had formed kind of a clique. I retrospect, this wasn't really the case. The guys who were doing most of the work running the club simply hung together. I really wanted to be part of that. I think that another name for that is comradery.

I had to take a bit of kidding ... I was the "new guy". Sometimes I thought that I was being ignored but that also wasn't the case. It takes a little while to become "absorbed" into a group. After a few months, I was giving the old guys just as much guff as they were giving me.

The "Reins of power" (if you can call it that) were passed down from the old timers to the new blood. A few folks bitched a little but then everyone stood back and realized that with all the members we have, there are bound to be differences in opinions. The people with hurt feelings got over it and we moved on!

Then another 20 years passed and we again had an infusion of new blood. These guys were not quite as "techie" and again, they had a set of new ideas! The thing is, pretty soon there was more of them than us! Our current President, Mike Stackpoole, N3VQH is in this group and we are greatly pleased that since turning the "Reins of Power" over to him and his "administration", things have gone quite well.

The one thing that I did learn from my 10 years as President of the club is not to let hurt feelings get in the way. It's quite easy to become upset when you think you're being ignored or your ideas are treated as inconsequential. Remember, that for the first year or so, you're the "new guy". Give yourself time to be "absorbed". Come to tech sessions, help out at work parties, watch what's going on. Some of our members have a few rough edges but believe me, if they kid you, chances are they like you. You will find that they will do absolutely anything for you once they feel that you are putting forward maximum effort to help yourself.

So now it's 2015 and over the last 3 years, we have had a record number of new members.

This is a busy club. We have many projects going on. We just finished a major upgrade to the club house, we are installing a 15 foot communications dish for moonbounce, and we are maintaining all of our existing equipment. We even have to do things like mow the lawn, rake leaves, and trim tree branches and bushes. Having a great club house and property is a blessing but it takes about half our resources to maintain it!

Sometimes new members get lost in the rush. We are trying to keep that from happening. We are planning special sessions for new members which will consist of projects, learning sessions, and other activities that the new members decide they want. We have about a dozen members who have expressed interest in running some of these. I know that some folks can make weekday evenings & some prefer week ends ... we are going to try and do both.

Hopefully by the end of this month we will have a schedule in place to start some of these things. Our first session will be a soldering class where we hope none of our members will end up soldering their fingers together (HI!). We will combine that with building a "Slim Jim" antenna for 2 meters. You will be impressed with how well they work! Some other sessions ideas are:

QRP Rig

Simple SDR receiver that covers from 100 KHz to 1.7 Ghz (for \$70)

Field strength meter for all bands

Tape Measure beam for 2 meters & 440

Dipole antenna for HF

Black Window vertical for HF in the field



**Keystone VHF Club
General Meeting Minutes of
November 5, 2015**
By *Sandy Goodman, N3ECF* – Secretary

The General Club Meeting held at York County Emergency Management Center was called to order by Pres. Mike, N3VQH, at 19:05. There were 33 members present and 3 applicants for membership.

TECHNICAL HAPPENINGS:

Mike, N3VQH, asked 2 questions from the license tests: 1) How does JT65 improve EME communications?, and 2) What is the approximate maximum separation measured along the surface of the Earth between two stations communicating by Moon bounce?

SECRETARY REPORT: Sandy, N3ECF. The call sign for Eric Smyder had to be corrected from the emailed minutes to KB3CNH. It will be correct in the version published with the newsletter. Brad, NO3T, moved to accept the October minutes as corrected, seconded by Rich, KR3EE. Motion carried.

TREASURER REPORT: Dan, KB3JSV, reported for October: Income: \$1,035.43; Expenses: \$398.76; Balances: Club CD \$7,642.36; Checking Acct \$2,866.03; Trustee Acct \$693.98; Total \$11,202.37. Dan advised that the electric is down about \$80. Joe, KB3TCM, moved to accept the report. Craig, WA2HEW, seconded the motion. Motion carried.

COMMITTEE REPORTS:

TRUSTEE REPORT – The woodshed is full, but there is still more wood that needs to be split. We did sell a truckload of wood.

TECHNICAL COMMITTEE REPORT -

An antenna work party is needed in the next few weeks. It should get done before the January contests.

An update was provided on the satellite project. Jack, KC3JD, moved to spend up to \$200 for the controller and actuator arm for the EME dish. Steve, KC3CPL, seconded the motion. Motion carried.

Tim's (W3TWB) airplane club has been using the club for ground school training and introduction to amateur radio. They gave a donation to the club.

EMCOMM/PUBLIC SERVICE NEWS – Sandy, N3ECF

Jack, KC3JD, made an NBEMS contact for the Great Shakeout drill. Jack, Dick, WA3USG, and Sandy, N3ECF, joined the Adams county team at an EMI training in Emmitsburg, PA. A result from the EMI training was a tasking to develop a procedure to scan and transmit a map picture. We have dates for 2 of next year's Public Service events: MS Bike Tour will be August 6 & 7, and the King's Gap Time Trial will be September 3.

VE/ED REPORT -

No report. The next test will be on November 14.

CONTEST REPORT -

For PA QSO, we had 1100 contacts. Mike made 89 contacts for the CQ WW. ARRL November sweeps is Nov. 21-22.

NEWSLETTER/WEBSITE –

The Newsletter will be late. Dick was distracted with other things. The "new" website is under construction.

OLD BUSINESS:

No reports for the Holiday Party nor the Wizard Safari. For JOTA, we worked 27 contacts. Several of the scouts talked to the same contact.

Nominating Committee presented the Officer Slate for 2016:

- President – Mike Stackpoole, N3VQH
- 1st Vice President - Joe Imgrund, KB3TCM
- 2nd Vice President - Jack Dellinger, KC3JD
- Treasurer - Anne Zarlinga, KB3ZLJ
- Assistant Treasurer - Tim Snook, KB3WZX
- Secretary - Sandy Goodman, N3ECF

Assistant Secretary - Kathy Dellinger, KA3THC
Trustee (for 3 years) - Jeff Patterson, KB3RCT
There were no nominations from the floor. Brad, NO3T, moved to have the Secretary submit a vote for the slate of officer, seconded by Craig, WA1HEW. Motion Carried.

Second Reading was done for Eric Smyder, KC3CNH. He was then voted into membership. Diane and Jim LaNasa were formally reinstated into membership.

NEW BUSINESS:

First readings were done for Ryan Duke, KC3FSJ, Dave Gomez, AB3UY, and Ethen Saltzman, KC3EAX.

Mike talked about the ARRL National Parks on the Air, a 2016 contest to encourage operators to activate radio stations from any one of the parks, OR make contacts with those that are activated. You get only 1 credit for either activating a station or making a contact. Mike is looking for ideas where our club could work. Check into ARRL for details.

GOOD OF THE CLUB –

Jack, KC3JD, discussed the interference that the Shrewsbury repeater is getting from a station in Huntingdon (Western PA) which is on the same frequency and has the same PL.

Hanover is having a lot of static problems with the 147.33 MHZ repeater, where it is sometimes almost unusable. They think it's due to the antenna or coax. They have an estimate of \$9000 for professional climbers because it's on a broadcast station tower.

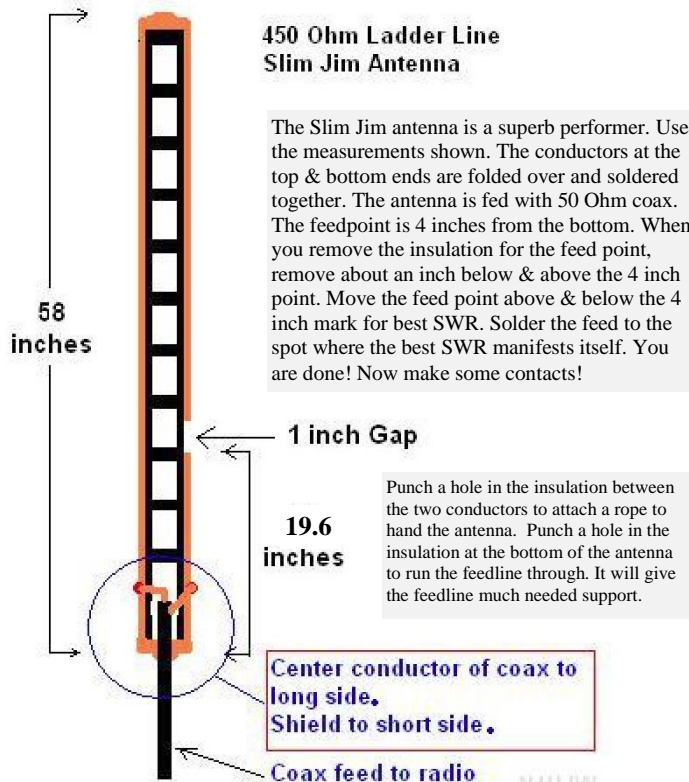
Ray, W3AXC, mentioned that the club is 60 years old. The first meeting was held in November 1955, initially in people's homes. Members had to be a licensed amateur active above 6 meters. They built their own equipment in those days.

We had a long discussion about the need for Elmers to assist the new operators. Leaders will work on organizing a meeting with new members to ask what topics they want to learn about, and asking for members to become Elmers. Watch for emails.

Ryan Duke, KC3FSJ, does engraving for amateur call signs. He can work on shirts and hats. He can also remove old engraving.

50-50 - Tom, KB3ETG, won \$22

If you don't already have a base antenna for 2 meters, I cannot stress enough how well the below antenna works! Build one for your house & another to take along out in the field.



KEYSTONE VHF CLUB OF YORK, PA



W3HZU



Membership Application

Name: _____ Phone: _____ - _____

Address: _____ Callsign: _____ Expires: _____

City: _____ State: _____ Zip: _____ Lic Class: _____

Occupation: _____ E-Mail: _____

Membership Desired

Full → Full Club Privileges
\$25.00 annually & one time \$5.00 Application fee

Family → Sponsoring members call: _____
Privileges same as Full membership
\$5.00 annually & a one time \$5.00 Application fee

Associate → Repeater Support
\$20.00 annually & a one time \$5.00 Application fee

Are you a member of:

ARRL Y-N

ARES Y-N

RACES Y-N

OCWA Y-N

Special Areas of Interest (circle all that apply)

AM Antenna building ATV Contesting CW Digital (Packet, RTTY, PSK-31, etc)
DX FM HF QRP Satellites SSB SSTV SWL Tower climbing LF DSP
UHF/Microwaves VHF Astronomy Photography Other: _____

Application & Dues Mailing Address:

Make checks payable to: *Keystone VHF Club Inc.* Mail to: *PO Box 20143*

York, Pa. 17402-0140

FOR CLUB USE ONLY

First Reading Date: _____ Second Reading Date: _____

Date voted IN-OUT: _____ Date Dues Collected: _____

Applicant Sponsored by: _____