



The VHF Transmitter



Keystone VHF Club, Inc. W3HZU Founded 1955 – York, PA

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Feb 2001 CALENDAR

*Edited by Bob Gundlach, N3NBT
n3nbt@aol.com*

- Jan. 27 No Code Tech. class-first session-contact Ray at 717-292-3529**
- Feb. 1 Keystone ARC meeting- CYBER Center
- Feb. 2 Special Event-Groundhog Day, K3HWJ
- Feb. 3 No Code Tech. session 2**
- Feb. 3-4 Contest-N. American Sprint, Phone
- Feb. 3-4 Contest-FVBO Winter QRP Field Day
- Feb. 3-4 10-10 Winter Phone QSO Party
- Feb. 6 Hilltoppers ARC Meeting
- Feb. 8 Keystone E-Board Meeting
- Feb. 10 VE Exam Shrewsbury, PA 717-235-0273
- Feb. 10 No Code Tech. session 3**
- Feb.10-11 Special Event-Orlando HamCation-K4H
- Feb.10-12 Contest-School Club Roundup
- Feb. 12 Lincoln's Birthday
- Feb. 13 York ARC Meeting
- Feb. 14 Valentine's Day
- Feb. 17 No Code Tech. session 4**
- Feb. 17-18 Contest-ARRL International DX, CW
- Feb. 19 Presidents Day
- Feb. 22 Washington's Birthday
- Feb. 24 No Code Tech final session**
- Feb. 24 VE Exam Port Deposit, MD 410-378-2771
- Feb. 24-25 Contest-CQ WW 160M SSB
- Feb. 28 Ash Wednesday

CLUB PROJECTS

By Dick Goodman, WA3USG

wa3usg@compuserve.com

Okay guy's & gal's ... we need some club projects!! We've gotten lax in the last couple of years. We used to do tech sessions up at the club on the Thursday after the e-board meeting. We built stuff and experimented ... some things worked and some things just smoked! But we sure had a lot of fun.

The last few years have been busy for everyone. I believe a lot of members were also just plain burnt out. Come on ! We still have a great club. For you new members, it's a great time to make your ideas known what would you like to do? For us older guy's ... YAHOO !!! Let's get started on our second childhood!!

Here's a few Ideas that I've come up with ... you all add to them:

- ? An evening 10 meter SSB net
- ? Let's do Slow Scan TV on 2 meters or 70 CM (all ya need is a computer & FM rig)
- ? How about an Astronomy net? (We used to have one).
- ? A Star party at the Club Site ... several members have telescopes. (What's a Star party??)
- ? How about a RTTY net ... how about a RTTY repeater?
- ? How about a tech session on LF operations & techniques? (see below)

Lowfers & Medfers - These are acronyms for **LOW** Frequency **E**xperimental **R**adio and **MED**ium Frequency **E**xperimental **R**adio. These are individuals who enjoy the challenge of seeing how far they can get a signal to propagate on frequencies from about 135 KHz to a little over 1 MHz. At these low frequencies, antennas we can afford to buy or build are very inefficient. The amount of power radiated is only a small fraction of a watt. Yet LOWFER beacons are being heard for thousands of miles. I should rather say they are being "seen" for thousands of miles. Computers are making their entry into this part of the hobby too. A computer with a simple soundcard program can "hear" and display signals far to weak to be heard by ear. See Bob's (K3DJC) article elsewhere in this issue.

- ? How about a Dxpediton to look for LF signals from across the pond? A state park or some one's place out in the country would probably be a great place for this. We take a few receivers, a couple of laptop computers to run Spectrum Analysis software, lot's of snacks, and some appropriate beverages.
- ? Hell let's just go spend the night somewhere & have fun! (eg: Pinchot park)
- ? **Let's start having Saturday Morning Breakfasts again regularly!!** I would suggest the Dover Family Restaurant ... that's where we started out years ago! (Just a suggestion)
- ? **Let's get more club members on ATV!**
- ? How about a tech session showing members how to set up their computers for RTTY, PSK31, Hellschriber, SSTV, etc?
- ? Let's try & create life from common household chemicals.
- ? How about a show & tell on microwave operations?
- ? **Let's go snow tubing!**

Let's get some of the plain, unabashed, spontaneous fun back in Amateur Radio again! This has been on my mind for quite some time. We've got a great club, fantastic facilities, and a lot of potential. I think that Saturday morning breakfasts are a great place to start! And not a real early breakfast ... 8 AM would be great. A nice central location would be in Dover. For the guy's who have busy Saturday's... you could be done by 9 AM. For the rest, it can be a leisurely morning over a cup of coffee, followed by whatever the group wants to do. It's the way ham clubs are supposed to work and it's a sure fire way to get people together to do things!

NEXT MEETING
February 1st
at the Cyber Center

A sincere THANKS to
Ryan Foulk, KB3ETH for
the donation of a Icom
IC-2AT to the Club!!

The Keystone VHF Club offers a
hearty welcome to new member
Charles Shultz, KA3IUB



From the President
 By *Ruthanna Pearson, WB3CQN*
 wb3cqn@aol.com

We now have a new Ways & Means Chairperson, Barbara Green N3RMI... thanks to Barb and everyone who will serve on this great committee!! Our new membership Chairperson is Linda Warner KB3EBV, thank you Linda. The audit committee has been appointed, there will be a work party on Thursday the 17th... to late for this newsletter, please guys if you can help when the work party dates are announced **HEAD FOR THE HILL!!!!!!**

Everyone... if you have any good ideas for making money we need to do some fund raisers!!! It takes money for our utilities, to keep equipment in repairs and the grounds and club house in good shape. Don't forget to help out when we have contesting, you're all welcome and we always have lots of food and fellowship.

I want to thank everyone who has donated items & money to the club last year. Many do not know those of you who have been so generous, we hope this year to have a Thank You Column in the Newsletter!! Thanks again to all who helped in 2000!!

See you in February!!

Ruthanna



Ways & Means & VE & Public Education Committee Reports
 By *Ray Shaub, W3AXC*
 w3axc@juno.com

We will be starting a class for the "no code "Technician license. The class will begin at 8 AM on Saturday morning January 27 and run to about noon for 5 weeks. Tentatively the classes will be held at the York County School of Technology (Vo-Tech) . The textbook will be the ARRL "Now You Are Talking" 4th edition, available at the first class. If you know of anyone wanting to take this class please have them contact me at (717) 292-3529. This will be something different we have never held an accelerated class on Saturdays before. This should appeal to those that can't make an evening class. We will be holding a regularly scheduled VE testing session on March 6th at the Adams Electric Co-op that will fit into the schedule for testing at the end of the class.

73 Ray W3AXC



←
Who Remembers?



Would you believe that this is a working CW transmitter using no electronic parts?

The VHF Transmitter

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 199 Maple Lane
 Mechanicsburg, Pa.
 (same as above)

Have you paid your Dues ?

Your club membership dues for the year 2001 are still due and payable.

(Just in case that you forgot !)

Full Membership only \$20.00
Family Members still \$ 5.00
Full members under 18 \$10.00

Make checks payable to: Keystone VHF Club

See your treasurer at the next club meeting or for same day service send check directly to:

Sandy Barefoot
3040 Muirfield Dr.
Dover, PA. 17315



How's DX ?
By
Ruthanna Pearson
wb3cqn@aol.com

Starting the 13th to the 28th of Jan, Josep & his wife Nuria have been operating from the Comoros Island as D68BT & D68WL, QSL TO EA3BT. The Comoros Island is located near Mosambique & Madagascar. I worked VP8DCD, Rees on the Falkland Island on 1/10/01 worked all on 20meters: JT1BG BATOR in MONGOLIA 1/13/01. On the 14th Jan. I worked EK1700YL Anna & EK1700WA Baron in Armenia. I also worked A43MF, The following all have been active and worked on 20 meters, these all worked in the evening, so give a listen!!!

C21JH NAURU
 XW3QBR LAOS
 3B8GF MAURITIUS
 ZS6BNX AFRICA

I did manage to work both the D68 stations, one on 15M and the YL on 20 !!!

Ruthanna



The Great
Solar
Flare Of
26 Nov 2000

By Dick Goodman
 WA3USG

On November 24th, I read with great interest on the NASA Home Page, that a large Solar Flare and associated Coronal Mass Ejection had taken place. NASA forecasted that the particulate matter and associated electromagnetic energy from this event would strike the Earth's atmosphere in approximately 48 hours.

I've always wanted to document an event such as this. Solar flares are known to disrupt communications, cause power outages, and light up the sky with Aurora. I decided to run an experiment ... kind of a "Science Fair" project. I set my Kenwood R2000 receiver to the frequency of WWV in Boulder, Colorado (10 MHz). I sampled the AGC voltage from the receiver with a A/D converter and plotted the signal strength curve for 24 hours. Figure (1) shows a normal day in the life of a signal from Colorado to Mechanicsburg, Pa.

Any newsletter articles will be very cheerfully accepted by Dick Goodman, WA3USG at E-Mail: wa3usg@compuserve.com

FIGURE (1)



The top of this plot, labeled 5.00 on the right, equates to a signal strength of S9+10dB. The plot starts off at 7:11 AM with a very strong signal. As the day progresses, the "D" layer builds up and absorbs some of the signal. You can see that the signal is weakest from about 12 noon to 2 PM (when energy from the sun is strongest. When the Sun starts to go down, the "D" layer begins to dissipate and the signal strength rises.

Figure (2) below shows what happened on the day when all the material from this event struck the earth's atmosphere. The energy from a Coronal Mass Ejection affects the ionosphere much more than normal sunlight. In theory, this will cause a rapid build up of the "D" layer and will greatly attenuate signals on the HF bands. I wasn't precisely sure when the collision would occur so I started the plot early in the morning.



On the day of the forecasted impact, the signal strength of WWV was dropping faster than on a normal day. I thought that this was the result of the flare. At 11:37 AM (Red arrow), the signal suddenly dropped to zero. This was the effect of the particulate impact with the ionosphere. The radio went so dead that I thought there was something wrong with it. I started switching to different antennas and turning different controls on the receiver. This generated spikes that can be seen right after the red arrow. At about 12:40 PM, I heard the unmistakable sound of an Ionospheric pinger. This went on for almost 15 minutes and was extremely strong. This can be seen right after the time 12:37 on the plot. Finally at about 1:30 PM, the band started to recover and by 3:30 PM, everything was back to normal.

A couple of days after this event, I spoke to Dick Ballou, K3MQH. He told me that during this time period, an HF contest was going on. A world class contest station using stacked beams logged no contacts during a period of time that day. I am not surprised ... when the graph bottomed out, and after I realized there was nothing wrong with my receiver, I started tuning around with another receiver. The entire HF band was dead! Not even any background noise!



BOB'S TECH TALK

ELF
LF
HF
ATV
ANTENNAS
SSB
SECRET
STUFF !

By Bob Riese, K3DJC
riese-k3djc@juno.com

Slow CW is here and now you can see it in operation on 160 meters, Lyle, KOLR, a dedicated Lofer, has been promoting QRSS on LF this season and has started to transmit on 160 meters at a freq of 1999.9 MHz. The idea is to provide some propagation beacons and to promote QRSS in the Ham community. He started out at 1 Watt on the low edge of the band but the CW ops began to grumble and Lyle moved to the top end. His one watt signal was detectable by ear and could be seen in all parts of the US as well as Canada. After all, 1 watt on 160 is just a QRP signal.

The signal I was able to capture on one of the many Spectrum Analysis type programs was usually very loud, usually detectable by ear and always detectable by "Spectran". Lyle dropped his power 10 Db to 100 Mw and was joined by a Canadian, Mitch, VE3OT. Mitch's report on the transmitter is a snow cooled 6AQ5 tube with just enough power to lite a small pilot lamp to 1/3 brilliance. His signal at my location was a lot stronger and he was only 15 hertz lower in frequency than Lyle.

As you look at the picture of these 2 signals, remember that they are separated by only a few cycles and in fact there is enough room between them to have several more transmitters in operation. That is the idea with Slow CW. The bandwidth for a signal is very small and the computer programs allow the separation of these signals and make them viewable. How can I "see the signals" you ask? It's simple. Just go to the LOFER Home page and follow the many links to the point where you may download one of the sound card programs. The one I have been using is "Easy Gram".

This is a free program and isn't too big and will run on a simple computer. I find it works very well on my old P150 with just 32 meg O' memory. All you need to do is install the program and run a cable from the headphone Jack of your radio to the input portion of your sound card. A simple audio transformer should be connected between the radio and the sound card (this is a 2 dollar item from Radio Shack) and this will provide proper matching. This is the same idea you would use with PSK31. Easy Gram is very simple to use. I use most of the default settings but keep the averaging set low usually at 1 and the time scale set to 300 to 400 Milli seconds. I will set the peak frequency to my CW offset and then usually have the bandwidth at 50 cycles.

The nice feature of EZ is the ability to capture the picture at a preset time interval. So you want to take a picture of what your decoding every 10 minuets starting at 1630 hours and continuing till 2300 hours you can do that. Then as the information in the form of pictures began to collect you can review them while the program is in operation. The snaps will be saved to your Windows Desktop and can be easily removed when you are done. This is one of many super programs that are available for use and is a good one and easy to use.

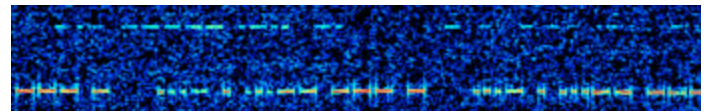
So what is it that you are looking at? Well in normal 15 WPM CW, the dot length is very short. With QRSS, the dot length is 3 Seconds for normal use and for very weak detection, 10 seconds. What this means is the QSO may take 1/2 hour to complete but this is under circumstances where you positively can not

hear the signal by ear! You need to have an Idea where your receiver CW off set is set to [pitch] and then tune to the frequency, say 1999.9 on your radio and set the Spectran program to match your CW offset frequency. This is usually 800 Cycles but in some receivers it can be set to anything and is a variable adjustment. I usually look at a standard frequency, say WWV. With the receiver set to exactly WWVs frequency, observe the display and note where the peak audio frequency is. This will define where the signal that you can't hear will be showing up.


When you tune to 1999.9, set the controls on EZ Gram to a frequency range of about 800 cycles and what you can't hear will show up on your computer. If it makes your head hurt to understand, it is easier than it sounds.

As you look at the picture of Lyle KOLR and VE3OT (shown below) **what you are seeing are signals that positively can't be heard from your radio but are there and in full view on your computer.**

So far the DX on 136 Khz for a ham transmitter is 5500 Kilometers using this method. With signals now on 160 meters any one with a radio and HF antenna can enjoy playing with signals that aren't there!!



Easy Gram screen dump of KOLR (upper trace) and VE3OT (lower trace) as received here in York, Pa. You can clearly see the CW characters formed in each trace.



Trustees Report
By Chuck Miller III,
N3KVE

Greetings Keystone Club members. The past couple of winter months have been very busy for me, unfortunately it had nothing to do with the club! I have changed jobs and am now settling in a little bit and hope to find more time for the club. From talking to my fellow trustees and my technical wizards, I find everything is in good shape or is in the process of being mended. We have had a couple of nice donations again this month, THANK YOU very much we do appreciate it. Remember to keep saving your items for our upcoming auctions at our next few events. **ANY IDEAS FOR NEW and EXITING FUND RAISERS????**

As we come out of the winter months keep tuned in for formal and informal work parties and bull sessions.

73 Chuck

Enjoy Breakfast Out ?
Join club members every
Saturday morning at 7 AM at
the ROUND-THE-CLOCK
DINER



**Keystone VHF Club
General meeting Minutes
of
4 January, 2001
By Charlotte Markley, N3URR**

Meeting called to order at 19:15 by Ruthanna WB3CQN. 39 members and 1 guest, Greg Potter KB3FWI were present.

SECRETARY'S REPORT:

Charlotte N3URR, Minutes read and approved.

TREASURER'S REPORT:

Sandi N3NCF, Balance in Certificate of Deposit \$2,111.60
Balance in First Capitol Account \$4,121.55
Balance in Merrill Lynch Account \$4,236.26
Total Cash and Bank Account \$10,469.41
Treasurer's report filed for Audit.

TECHNICAL REPORT:

Tim AA3BJ, Has all parts for ATV, will try to get up in near future.

WAYS & MEANS REPORT:

Ray W3AXC, 53 members signed up for banquet at Vikings.

VEC/EDUCATION REPORT:

Ray W3AXC, General classes start March 5th. At Adams Electric Co-Op.

RACES/ARES REPORT:

Jack N3BQB, MS Walk will be held on Rail Trail.

SPECIAL PRESENTATION:

Tim AA3BJ, talked about Packet system and Radio Link installed at water filter plant.

OLD BUSINESS:

2nd reading for Charles Shultz, KA3IUB, approved for full membership.
Tim AA3BJ will have club phone listed in his name.

NEW BUSINESS:

1st reading for Greg Potter, KB3FWI for full membership.
Tim AA3BJ, made motion for Trustees to purchase coffee pot for club Site, purchase price up to \$40.00, Jack N3BQB 2nd motion, members agreed.
Audit team will be Tom Conrad and 3 trustees.
Ray W3AXC, asked permission to hold QCWA Picnic at club site on June 23, 2001. Sterling N03C made motion to give permission, Tim AA3BJ, 2nd motion, members agreed.
Dick WA3USG made motion to send donation of \$50.00 to Handi Hams. Tim AA3BJ 2nd motion, members agreed.
50/50 drawing won by Chip W3FJD. \$20.00 donated back to club.
Final announcements.

Motion made by Ernie K3ELM to adjourn meeting, Brad N3JDQ 2nd, members agreed.

Meeting adjourned at 19:50

**Keystone VHF Club
E-Board Minutes of 14 December, 2000
By Charlotte Markley, N3URR
Secretary**

Meeting called to order at 19:15 by Ruthanna WB3CQN. 9 officers and 3 committee persons were present.

SECRETARY'S REPORT:

Charlotte N3URR, Bob N3NBT made motion to accept minutes as read, and Dick WA3USG 2nd motion, members agreed.

TREASURER'S REPORT:

Profit from Christmas Banquet was \$72.74.
Sandi N3NCF will make list of donations, will be published in future Newsletters.

TRUSTEE'S REPORT:

Chuck N3KVE, unknown donor left several coffee pots outside club door. **Thank You, unknown donor.**

NEWSLETTER REPORT:

Dick WA3USG, cost of newsletters will be \$50.00.

WAYS & MEANS REPORT:

Barb N3RMI, has agreed to head committee.

CONTESTING REPORT:

Gene AD3E, Working on computer system at club. Has 3 Pentium 133 System computer, all will have Windows and Network cards, will use "Write log" program for contesting.

OLD BUSINESS:

Ruthanna WB3CQN, will call Tom WA3IKQ to set up date for audit. Need new Membership committee.
Dick WA3USG and Chuck N3KVE will be in charge of doing plaque for Pavilion with list of donations toward pavilion project. Need new membership chairman.

Good of Order

Final announcements

Meeting adjourned at 19:45

Funny, But Why?

- Why** does the sun lighten our hair, but darken our skin?
Why doesn't glue stick to the inside of the bottle?
- Why** don't you ever see the headline "Psychic Wins Lottery"?
- Why** is "abbreviated" such a long word?
- Why** is a boxing ring square?
- Why** is it called lipstick if you can still move your lips?
- Why** is it considered necessary to nail down the lid of a coffin?
- Why** is it that doctors call what they do "practice"?
- Why** is it that rain drops but snow falls?
- Why** is it that to stop Windows 95 you have to click on "Start"?
- Why** is it that when you're driving and looking for a street address, you turn down the volume on the radio?
- Why** is lemon juice made with artificial flavor and dishwashing liquid made with real lemons?
- Why** is the man who invests all your money called a broker?
- Why** is the third hand on the watch called a second hand?
- Why** is the time of day with the slowest traffic called rush hour?
- Why** is the word "dictionary" in the dictionary?
- Why** isn't there a special name for the tops of your feet?
- Why** isn't there a mouse flavored cat food?
You know that little indestructible black box that is used on airplanes?
- Why** can't they make the whole plane out of the same substance?
- Why** do you need a driver's license to buy liquor when you can't drink and drive?
- Why** are there no "B" size batteries?



The VHF Transmitter
C/O: Dick Goodman
199 Maple Lane
Mechanicsburg, PA.
17055

DATED MATERIAL



**CLUB
REPEATERS
FM
IN/OUT
29.580/29.680
52.97/53.97**

**146.370/146.970
TONE 123.0**

**442.275/447.275
ATV
426.25 IN
439.25 OUT
923.25 OUT**

**PACKET 145.090
PBBS W3HZU-1
KA-NODE W3HZU-7
W3HZU-8
(Digi, Alias YORK)**

**Keystone VHF Club, Inc. W3HZU
P.O. Box 7462
York, PA 17404-0462**

CLUB WEB SITE: <http://yourpage.blazenet.net/stack>

CLUB SPONSORED NETS

All Nets: 146.97 (-)

**MON 8:30PM York ARES/RACES Committee
MON 9PM York County 2-Meter Net
TUES 8PM ATV Net (146.970 for audio)
WED 9PM Quarter Century Wireless Assoc.
THUR 8PM York County YL Net**

**Club meetings are held on the 1st Thursday of each month
at the Cyber Center, York, PA**