



The VHF Transmitter



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

VOL 47 No 1

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Jan 2001 CALENDAR

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

- Jan. 1 Happy New Year
- Jan. 1 Contest-ARRL Straight Key Night
- Jan. 2 Hilltoppers ARC meeting
- Jan. 4 Keystone ARC meeting-CYBER Center
- Jan. 6 Kids Day
- Jan. 6-7 ARRL Rtty Round Up
- Jan. 9 York ARC meeting-Red Cross
- Jan. 10 Auction Fest, Phila., PA
610-631-3401-#4
- Jan. 11 Keystone E-Board meeting
- Jan. 12 VE Exam, York, PA-717-292-3529
- Jan. 13-14 North American QSO Party-CW
- Jan. 15 Martin Luther King Jr. Day
- Jan. 18 Keystone Newsletter article
deadline
- Jan. 20-21 North American SSB QSO Party
- Jan. 20-22 ARRL January VHF
Sweepstakes
- Jan. 26-28 CQ 160 meter CW Contest
- Jan. 27 VE Exam, Reading, PA
610-678-8976
- Jan. 28 VE Exam, Hagerstown, MD
301-824-5132
- Jan. 28 Hamfest, Odenton, MD
410-766-9414

2 METER REPEATER STATUS

By Dick Goodman, WA3USG

wa3usg@compuserve.com

During the last several weeks, I've heard many people having trouble accessing our repeater on 146.97 MHz. In the last issue of the "VHF Transmitter" I discussed what some of the problems could have been manifested by. Whatever is causing this spurious interference is a mystery. I'm sure that many of you who rely on the repeater are frustrated, but believe me, you are no more baffled than our technical committee is. Even the techie guru's that we have contacted outside the club are at a loss on this one.

The problem started almost 2 years ago when we took a major lightning strike at the club. After the Tim, AA3BJ and the Tech Committee repaired the damage, the repeater receive site at the club never quite had the sensitivity it used to. We indirectly compensated for this by using remote receive sites. One site is located at the QTH of Greg Hagens, KE3CW, in Dover, the other at a location south of York. These two sites did the lions share of receiving your signal for repeating by the transmitter & antenna at the club site. With these remote receivers, the receiver at the club very seldom was needed.

A little over a year ago, Greg lost his entire residence to a fire. In addition to this, his tower and equipment shed (where the remote receive site is located) took a direct lightning strike. Greg is in the process of rebuilding his home PLUS he owns and runs his own business. Getting this receive site back on the air MUST take a back seat to getting his home rebuilt ... a hobby is nice but a family is much more important. The lightning strike at the club also damaged equipment that relayed the signal from both Greg's & the south York receive site. Bottom line ... our only functional receive site at this time is at the club. And this is in the primary footprint of our unknown interference.

Unfortunately, the weather has not been our friend lately. Resolving this problem is going to take a good deal of tower work. I'm sure that the wind chill at the 170 foot level on the big tower is well below zero. The problem is most likely a junction of where two or more metals meet. When the lightning struck, these junctions can flash over causing corrosion, you now have a Semiconductor, which can act as a diode. This in turn can "detect" the output of the repeater on 146.97 MHz and re-radiate it on a wide band of frequencies around the repeater output. Some of this RF energy is obviously being re-radiated on 146.37 MHz ... the repeater input frequency. Thus the output of the repeater is indirectly getting back into the input. Strong signals will override this interference ... marginal ones will not. When the wind blows, the interference gets worse. This is probably because the junction which is causing this mess is flexing & moving. This causes intermittent RF noise which aggravates the situation even more. So how is a

problem like this resolved? The tower will have to be climbed (but not in sub freezing, windy weather). All metal junctions will have to be looked at. How do you look at a junction where one tower leg fits inside another? Almost a rhetorical question ... but I believe that you can begin to see the level of difficulty in resolving this problem. Getting the remote receive sites back up will help enormously.

Repeater - continued on page 2

The Keystone VHF Club offers a hearty welcome to the following new members:

- ? *Michael Leas, KB3DNY*
- ? *Stephen Steffan, WB3EFA*
- ? *Art Chadburn, K3JRO*
- ? *Donna Chadburn, N3BEU*
- ? *Carlton Trotman, W3BRX*
- ? *Peter Carli*

NEXT MEETING
January 4th
at the Cyber Center



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

Greetings:

I hope everyone had a great Christmas and 2001 will be good to all of us and we will all enjoy good health!!!

As your new President I want to take this opportunity to THANK ERNIE for a job well done, and to all the officers and committees that gave so much of their time and talent.

I am looking forward to the challenges we are facing for the year 2001. There are many things to be done and I hope all the members will come forward to help us get them completed, along with any new projects!!!

It's that old cliché "The president is only as good as his/her membership" I am counting on all of you to be active part of this GREAT organization!!!!

If I ask you to serve on a committee, or help with a project please say "yes". If you have any criticism good or bad let me hear it, I will try to resolve the bad and be thrilled with the good!!!

Keep warm and well.

de Ruthanna

Repeater - Continued from page 1

The remote receive sites are far away from the field of interference from the club. Yes ... it's kind of like treating the symptom rather than the disease but we want to first get reliable coverage again. We can then work on the interference problem at our leisure.

Sometimes I think that we take for granted just pushing that little button on our microphones and hearing the little be-doop. There are thousands of dollars and hundreds of man hour put into the repeater. Climbing the tower is dangerous, arduous, work ... especially in nasty weather. Please keep in mind that the Tech Committee and all of the other guy's & gal's who help maintain our equipment do it out of a labor of love.

So what can you do to help? First realize that until the weather moderates, no one is going to risk their life on a 170 foot tower. Second, know that your HT from inside the car, isn't going to make the repeater very well. Those of you who are used to running low power may want to think about setting your rig to it's maximum power. On windy days, the problem is going to get worse. It seems that with the cold weather, the problem has also increased. This could be caused by ice or by the tower contracting around the fault area.

Use the knowledge that you have obtained to get your license ... to understand what is happening and why. Then do everything that you can to maximize your signal strength into the repeater. External antennas, more power, and yes ... even realizing that for now we are not going to have our usual coverage. You may even want to try simplex operation if the person you want to chat with is close.

There is no way that the Tech Committee or anyone responsible for the operation and maintenance of our repeater should put their life at risk to resolve this problem over the Winter. It is difficult enough even when conditions are good.

My hat is off to Tim, AA3BJ and everyone who are trying to resolve this issue. You will prevail!

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

Hello,
 No much new on the DX world, I managed to work Mio as 3W2YL from Ho Chi Minh City. Mio is a YL and I worked her on 15 & 20, I called Sterling NO3C and he worked her on 20 meters. I also called Chuck but by that time she faded, I'm not sure if Chuck listened later in the week or not.

Worked Vlad, JW0HR, a YL from Russia, RK9SWT from Orenburg, name Dima and another YL from Armenia Anna, EK6OTA. I worked her on 10 meters
 de Ruthanna

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?

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



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 Coronal Mass Ejection from the Sun had occurred. 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.

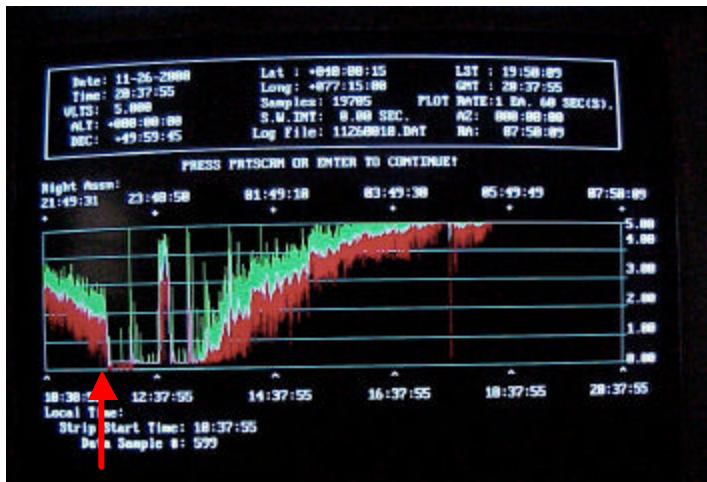
FIGURE (1)



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) on the next page 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.

See "Solar Flare" on Page 4



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 atmosphere. 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 a 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! I mean not even any background noise!

Obviously nothing is happening or we would have had more to report in this newsletter

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
7 December, 2000
By Charlotte Markley, N3URR**

Meeting called to order at 19:15 by Ernie K3ELM. 37 members were present.

SECRETARY'S REPORT:

Charlotte N3URR, Motion made by Dave N3LZP to accept minutes as appeared in newsletter, Bill W3UQJ 2nd motion, members agreed.

TREASURER'S REPORT:

Sandi N3NCF, Balance in Certificate of Deposit \$2,111.60
Balance in First Capitol Account \$3,597.76
Balance in Merrill Lynch Account \$4,236.26
Total Cash and Bank Account \$9,945.62

Anyone mailing their dues to Treasurer please send self addressed stamped envelope so your membership card can be mailed to you.

TECHNICAL REPORT:

Tim AA3BJ, back on original 2 meter repeater. Have a back up repeater ready if needed. PL of 123 will be put on 440 repeater within the next month for both the input and output. The output of the 2 meter machine has CTCSS on, will eventually be put on 440.

NEWSLETTER REPORT:

Dick WA3USG, did first newsletter on his new printer.

WAYS & MEANS REPORT:

Ray W3AXC, Holiday Banquet at the Viking Club on Jan. 6, 2000.

VEC/EDUCATION REPORT:

Ray W3AXC, testing the 2nd week of odd number months. General classes will begin March to May, 8 weeks, Monday nights held at Adams Electric. Time 7 pm to 9 pm.

ATV REPORT:

Tim AA3BJ, parts are back for ATV.

RACES/ARES REPORT:

Jack N3BQB, Walk America held on Rail Trail on Sunday April 29, 2000. Members need to fill out Ares data sheet, data base has been lost and needs to be replaced.

OLD BUSINESS:

2nd reading for Peter Carli KA3QXE, Michael Leas KB3DNY, Stephen Steffan WB3EFA, Donna Chadburn N3BEU, Art Chadburn K3JRO, Carlton Trotman W3BRX. All approved for membership.

NEW BUSINESS:

1st reading for Charles Shultz KA3IUB.

Nominations for club officers as follows:

- President-----Ruthanna Pearson WB3CQN
- Vice President-----Ernie Mellinger K3ELM
- 2nd Vice President---Brad Kline N3JDQ
- Secretary-----Charlotte Markley N3URR
- Asst. Secretary----DonnaLee Hoover N3VPJ
- Treasurer-----Sandi Barefoot N3NCF
- Trustee-----Bob Gundlach N3NBT

No additional nominations from floor. Dottie N3LZT made motion that Nominations be closed, Bob K3DJC 2nd motion, members agreed. Secretary Charlotte N3URR, voted for club, election stands closed.

Ray W3AXC reports that starting Jan.1,2000 price to take Amateur Radio test will be \$10.00.

50/50 drawing won by Charlie Byer, \$15.50

Good of Order

Final Announcements

Meeting Adjourned at 19:55

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

Meeting called to order at 19:15 by Ernie K3ELM. 5 club officers were present.

SECRETARY'S REPORT:

Charlotte N3URR, minutes read and approved.

TRUSTEE'S REPORT:

Bob N3NBT, Received response from a few people from the "Did You Know" mailings. Another mailing list of "Did You Know" will be sent out to the 17403 area. Our tenant, Lancom is now out of lease. Bob N3LSN, more fill dirt put on club site also odds and ends jobs are being done.

OLD BUSINESS:

Discussed progress on transfer of club license change to Tim AA3BJ. Also change telephone listing name. Ruthanna WB3CQN will talk to Tim AA3BJ about license and Sandy N3NCF about telephone change. Bob N3LSN and Bob N3NBT will check on price for new coffee pot for Club house.

NEW BUSINESS:

Audit team to be put together in Jan.

Need new Ways & Means Committee Person to head up committee.

Meeting Adjourned 20:00

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INTENTIONALLY
LEFT
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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**