

# The NewsFuse

The NY Hall of Science Amateur Radio Club Newsletter

## May 2003

### Next meeting Tuesday May 13<sup>th</sup> 8pm

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#### Club News:

Correction! Bernie Bretton AB2GG is NOT planning a trip to the Dayton Hamvention this spring. The Timonium hamfest (see article) took care of Bernie's hamfest budget this year.

#### Chairman's Report:

Stephen Greenbaum WB2KDG  
e-mail: [WB2KDG@arrl.net](mailto:WB2KDG@arrl.net)  
phone: 718.898.5599 (Evenings Please)

I thank those who signed up to work the hamfest on June 1. Eleven people have volunteered so far. If you would like to help out, e-mail me or give me a call. As time progresses, we will be giving out timed assignments. Lunch will be awarded for those who sign up. As usual we will have a club table for those who would have something to sell. Please have it marked clearly with a price, specs and if it is in working order. I have hamfest flyers for those that would like to give them out at upcoming events. Only those that help out will be getting free admittance to the hamfest.

The logging program that we use at field day is called CT by K1EA. It's a great program we have used for many years and is easy to use. It is even greater this year as is now FREE. We will be setting the program up on our 3 club laptops. If you would like to try it out beforehand download it at their address at: [www.K1EA.com](http://www.K1EA.com)

73 to all Steve Greenbaum WB2KDG

#### President's Corner:

Tom Golero KC2CBA  
e-mail: [tomflushing3@aol.com](mailto:tomflushing3@aol.com)  
phone: 718.886.3175 (Evenings Please)

I hope everyone had a happy and enjoyable time over the Passover/Easter holidays. This month I would like to give special thanks to Ernie Paul KC2WD. Ernie is responsible each month for purchasing, setting up and putting away the refreshments at our general meetings and he does an excellent job at it! It would be nice if

someone would volunteer to be Ernie's back up in the event he is unable to attend a meeting.

At present the club membership stands at 73 members in good standing. The membership consists of 21 extras, 6 advanced, 14 generals, 29 technician class licence holders and 2 unlicensed members. Additionally 20 club members have a door access codes to open the station.

During the last few weeks, especially on the weekends the station has been under staffed. Members are encouraged as well as obligated by their membership to staff the station. The museum is aware of when and how often we open the station and we are considered a working exhibit. All of you should have a roster by now and you will notice that the last column of the roster lists all the members at present who can open the station. If you plan to make a trip to the museum please contact a member who has access to see if he or she will be there to open the door. Also our weekly nets are also a good source to find out who is going to be at the station. If you have not received a roster please contact Steve WB2KDG for one.

Now that the weather is getting warmer, it's time to climb up to the roof to check our installations. On Saturday the 17<sup>th</sup> of May, I need a few volunteers to help me check the roof and to take down our field day supplies from the repeater room. Also anyone who is interested in field day should come down on the same Saturday and help with our field day planning. Plan to arrive by 10:00 am if you are interested.

If any members are going to be selling items at the club table at the June Hamfest, it would a nice idea to give club members first crack at what you are selling. You can do this by bringing what you have to sell to the May meeting or by making an announcement during our Wednesday night nets.

I hope to see all of you at our May meeting.

73's Tom Golero KC2CBA

## Timonium Hamfest club trip:



At 5:30 am, on the morning of Saturday March 29<sup>th</sup>, six HOSARC members embarked on a road trip to the Greater Baltimore Hamfest and Computerfest (The events official name, although most hams refer to it as the Timonium Hamfest). The annual hamfest takes place at the Maryland State Fairgrounds in Timonium Maryland and is the largest hamfest on the East coast.

The drive to the Maryland State Fairgrounds from the Hall of Science is about 200 miles, 3 hours 23 minutes driving time according to mapquest. We traveled in 2 cars Tom Golero KC2CBA, Harvey Fermaglich N2EOI, Bernie Breton AB2GG, and Ted Bicking KC2HEV in Bernie's mini-van (stocked with snacks) and John Neugebauer N2STX, and Bob Aluska W2RFA in Bob's SUV. Hamming-it-up on 2 meter simplex between the two cars made the drive go much faster. We arrived in Timonium at about 9am with light rain falling.

The hamfest takes place in 3 large buildings and one outdoor tailgating area. The first thing you see after passing through the entrance gate are rows and rows of tailgaters selling RF connectors, used HF rigs, gel cell batteries, RF test equipment, tubes, surplus radio gear from the Salt Lake Olympics (probably purchased by the pound), computers, monitors, computer carcass's, laptop bags, and much much more... The organizers claim 600 hundred tailgaters but it looked to be no more than about 300 (the rain probably scared away the other 300). The tailgating area is surrounded by the 3 buildings. One is reserved for the big manufacturers and larger ham vendors, the other 2 (including the "Cow Palace") contained many more smaller vendors.

ICOM had a large booth with all of their ham gear on display and plenty of representatives to answer all questions. Other events included an hourly raffle with various door prizes, Seminars, VE sessions, QSL Card Checking, and the QLF Contest (send CW with your left foot). None of us won a door prize, but we did pick up a few bargains on test equipment, radio accessories, antennas, and yes even some computer network gear.

Exhausted and hungry, at about 4pm (after many laps around the hamfest), we all decided to head North. We stopped at an all-you-can-eat buffet called the Golden Corral for dinner (highly recommended by Stephen Greenbaum WB2KDG). On the trip home we made several contacts on 2 meter simplex. One of the contacts was with Louis Mester W1CH on his way back to Rumford RI. We all had great fun learning and talking about Louis's two other hobbies, pigeon racing and bee keeping. I didn't know anything about pigeon racing (all I could imagine was a flock of pigeons racing around pylons!) After 7+ hours of total driving and a full day at the hamfest, we finally arrived back at the Hall of Science at 10:30pm.

Overall it was a great road trip and a chance to spend the day (all day) with other HOSARC members. The hamfest itself was worth the trip with lot's of tempting items to buy, but the trip down and back was just as much fun! We are planning on making this an annual HOSARC event, so plan ahead. The dates for next years Timonium hamfest are March 27<sup>th</sup>-28<sup>th</sup> 2004.

The hamfest details are online at [www.gbhc.org](http://www.gbhc.org)

Ted Bicking KC2HEV

DX at the shack:



This months pick for dx at the shack is a contact with ZL7C- Chatham Island DXpedition Station. The contact was made on October 23, 2002 at 19:14 UTC on 28Mhz SSB.

The Chatham Islands are part of New Zealand and they lie 530 miles east of the South Island. Chatham Island is the largest of the islands and it is an extinct volcano with a population of around 700 and is home to the rare Chatham Island Black Robin of which less than 50 remain in the world. It is also the first place to get the sun each day. For more information on ZL7C please visit [www.qsl.net/zl7c/](http://www.qsl.net/zl7c/)

By Tom Golero KC2CBA

Meet the members: Tom Tumino N2YTF



When I was in high school, I didn't even know what ham radio was. Fortunately I formed a friendship with Fred Grambs, N2QHF, who first introduced me to scanning and CB, then later told me about ham radio. He started me off by lending me his back of the set CB antenna that I hooked up to my first CB. I met some nice folks on CB and they helped me put up an outside ground plane vertical with a 102" stainless whip radiator and an electric conduit box with four lengths of pipe as a groundplane. My first contact with my outside antenna was north of North Dakota in Canada on just CB SSB at the standard wattage. I was hooked on DX immediately.

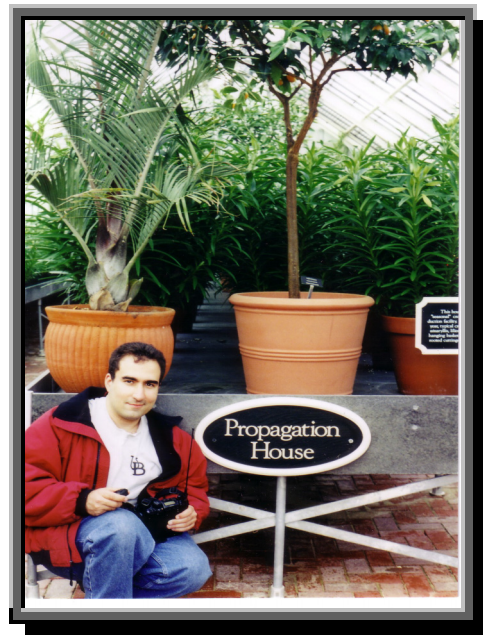
I didn't sit for my first ham exam until college. I took my first exam in North Tonawanda (near the University at Buffalo, UB), and I still remember where I was walking as I opened the letter containing my first ham ticket (near Jib Lanes in Queens). Later I became the president of the UB amateur radio club and set up an excellent autopatch system from my dorm room. Being located on the tenth floor (for dx of course), my dorm room 5w autopatch had a 20+ mile range over the largely open areas surrounding the University and was a real thrill to operate. Over time my interest in ham radio and electronics grew and I became the technical director of my University's carrier current/internet radio station and after college upgraded and got myself ham HF privileges.

I'm interested in all aspects of ham radio and have operated an ARRL UHF/VHF contest from the top of the Twin Towers, and have operated from the highest point in the US east of the Mississippi, Mt. Mitchell N.C, and the highest point on Long Island (near the Walt

Whitman Mall, if you are interested in going, or experimenting with RF paths to the highpoint, let me know). I'm a genuine ham radio junkie and always take my ham gear along to any tall building or high point I may visit and always have my ham gear with me on trips. I love portable operation from unusual locations. On a trip to Sweden I met some hams on the air and they invited me to operate from their club overnight during a contest (SK0UX). Their station is located on top of a secluded mountaintop which was formerly a military radio test site and has been featured in several American ham magazines for its incredible antenna farm and setup. It was a real treat to be on the receiving side of a constant pile up.

When I have free time and the weather is nice you can find me in Central Park on QRP HF with my homebuilt HF vertical. I also operate the UHF/VHF FM and SSB satellites portable and had some great fun working the birds and FM simplex from the Blue Ridge Parkway in Virginia last summer (see picture). The extreme height gave me an extremely strong signal into the birds. While attending the JD/MBA program at Fordham in Manhattan I would call CQ on 2m FM and SSB while walking to and from school crosstown and have worked stations 150 miles away just from the sidewalk with a telescoping antenna. My accepting YL has even walked with me while I operated with a 2m loop antenna mounted on a boom while walking back from school. If you are looking for a ham to experiment with to try out a new mode or band, please contact me. My latest explorations have been with meteor scatter and the new WSJT weak signal UHF/VHF modes. Soon I will be trying portable HF PSK31 and one day I would like to try 33cm (902-928) SSB and 2.4 gig HSMM with a like minded ham.

73 De Tom N2YTF



## Hands-on with QST's "Hands-on Radio"

By Bernie Bretton AB2GG

This is the third article in a series that I will be bringing to you as I continue following the articles in QST entitled "Hands-on Radio". The series is a whirlwind tour through basic electronic circuits. Naturally the emphasis is on electronics that are relevant to our hobby. The first few articles focused on transistors. As those of you who have been following my articles know, the articles have been a real learning experience. They left me somewhat prepared for the next phase in the series: The op amp.

I had always heard of op amps and had heard about how versatile they were. What makes them truly remarkable is that by adding only a few external components to an op-amp, a variety of interesting and useful circuits can be built. The first thing that an op-amp can do is amplify. By adding a few resistors to an op-amp, it is easy to create a simple amplifier. The math needed to figure out the gain on the amp is equally as simple. I will not present any formulas in this article but please take a look at the QST article; it's really easy stuff. Following the example in the article, I was able to predict what the output of my first op-amp experiment would be. Basically an amplified sine wave. Building the circuit was simple enough. Then I spent twice as long hooking up my test and measuring equipment to the circuit. First there was the signal generator, then the frequency counter, the power supply, the VOM, and finally the scope. After checking everything twice, I powered the circuit up and there it was... An amplified signal! I played around with various parameters to see how the circuit would behave: Varying the amplitude of the input wave or changing its frequency. I also experimented with different resistors. I came out feeling pretty good and confident that the next experiment "Using an op-amp as a mixer" would be a piece of cake. Man was I wrong!

The idea behind a mixer is that you apply two signals into the op-amp and the op-amp's output should be the sum of the two signals. Simple enough concept and only a few additional resistors are needed to build one. So, I assembled the circuit, hooked up even more measurement gear to it and powered it up. The result was not what I expected. I was applying a 1kHz sine wave on one input and a small DC current on the other input. According to the article, I expected to see the output wave shifted up as I increased the DC input. What I saw instead was a sine wave that was getting smaller and smaller as I increased the voltage. I worked on the circuit for over an hour but got nowhere. I went to bed feeling beat-up but not defeated.

Over the next couple of days, I spoke to several hams about the problem. In particular Ted KC2HEV and Bernie K2ZIR gave me important insight that allowed me to get the circuit working (thank heavens for elmers!!!)

- Ted pointed out that I have to supply positive and negative voltage into the op-amp. This is subtle but important.
- Bernie noted that if I applied too much voltage to the op-amp, it would saturate the device and it would not work properly.

Those two hints got me going. First, I got the correct voltage levels into the device. But still I was getting the strange output; my sine wave just kept getting smaller and smaller the more voltage I applied. Feeling defeated, I went to bed. Unable to sleep I was thinking about what Bernie told me. Maybe I was saturating the op-amp. Perhaps the flat line I was seeing was being caused by saturation. I jumped out of bed and went down to my shack. I changed the configuration of my experiment just a bit. I changed the setting on my oscilloscope so that I had a very tall sine wave on the display. This would allow me to see carefully what was being output by the op-amp. Then I started to slowly apply the mixing voltage. At first nothing... then something critical happened: The top of the sine wave started to flatten out. The more voltage I applied, the flatter it got. I recognized this from my earlier experiments as the sign of a saturated device. My op-amp was working! As I was applying a large voltage to the circuit, I was saturating it and it was doing exactly what a saturated device does. My circuit was working fine. I was simply not reading the results correctly! Finally I had a working circuit. I changed the DC input source to a second sine wave and observed some interesting results of the mixing process. I must admit that the QST article's suggestion of mixing a sine wave and a DC signal made it very confusing for me but in the end, I learned a lot! Next month is an article on using an op-amp in audio filters. Perhaps I'll build a CW audio filter and hook it up to one of the Rock-Mite kits that we've been building. Can't wait...

73! Bernie