



XARC

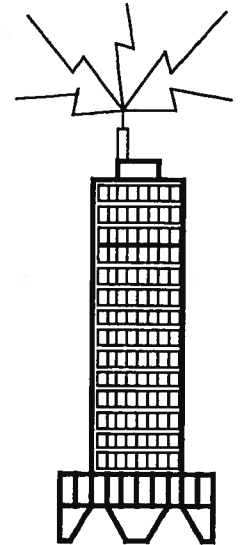
Monthly Newsletter

The Voice of the Xerox Amateur Radio Club

Mike Ishler	KE2LU	President
Dave Sweet	N2BHL	Vice President
Pete Fournia	WA2BPQ	Secretary
Rick LaDonna	N2IJI	Treasurer
John Wright	KE2MK	Trustee

Xerox
Amateur
Radio Club

KE2MK/R
224.26/444.825
145.29



February 15, 1992

Next Club Meeting

February 20th, 1730 hrs

Program for Next Meeting:

PACKET RADIO

Barry Rickett, N2EZS

Barry will be showing us how to use the new club packet station. If you've been interested in trying out packet but haven't had the money and/or the time, then here's a great way to start. The VHF contest awards will be given in March.

New Tickets

Congratulations to Dan Chen, N2PKE and Warren Boudrie, N2PDT on receiving Technician Plus licenses. Its ironic that Warren, who's been on many Product Delivery Teams (or PDT's) during his career with Xerox, would get PDT as a suffix! Also congratulations to Julie Gate, KB2OET, and Staci Shick, KB2OES on receiving Novice licenses through our course. Julie is eligible for XARC membership because her mom is a Xerox employee. Please pass along any

license upgrade information to Bob Karz, K2OID for inclusion in the newsletter.

Thanks to Newsletter Contributors

As you look this newsletter over, I think you'll agree that its the best one ever. That's because of the large number of quality articles, information, and suggestions that have been submitted by the members. If you've contributed to this issue, thank you very much. If you have a ham radio related topic you think would be of interest to the members, send it along to me (electronically if possible) and I'll be sure it makes it to the next issue. Thanks to you, we have a really great publication, and I have what has to be one of the easiest jobs in the club. Keep it up.

Bob Karz, K2OID

1992 January VHF Sweepstakes

Well, 1992 Sweepstakes weekend has come and gone, and once again the Xerox Amateur Radio Club has gone all

out to meet the competition. As you all know, we won the coveted Rochester Cup last year, intercepting the efforts of the formidable Rochester DX Association to retire the current cup by winning it three years in a row. This year we knew the competition would be stiff but we also knew that we have the kind of club which could make sure we wouldn't be beaten easily. Even though our membership has grown to an unprecedented 60 to 70 people, we still involved the vast majority of the club members in the contest.

The club station, operating out of building 337 under the infamous call of N2IJI, was well staffed this year with capable leaders, operators and loggers and outscored its previous best by a large margin. Everyone who was part of the club operation had a good time and helped to make a good showing of the station. Many who worked the club station also worked the contest from home to generate additional logs and more points for the club.

The individual efforts by the members of XARC this year were nothing short of INCREDIBLE! We had multi ops, we had top quality base stations and we had our share of roving stations. Russ, W2DYY, was active on four bands all mode and equipment failure was all that kept him from being on five bands all mode. Fred, WO2P, and Judy, N2KXS, were certainly heard and worked by anyone in western New York who knows what CQ Sweepstakes means. Gene, KE2T, used the contest to break in some new 432 gear. John, KE2MK, Jim, KB2HVL, and of course Pete, WA2BPQ had combined scores of almost 68,000 points. 'So what', you say? They did this with mobile and hand held equipment on only three bands! That's more than the entire club scored last year on five bands!

Top honors this year go to Fred, WO(ooooooooooooo)2P for his finishing score of 34,902. This score not only netted him the overall high score award, but also the most improved award from last years personal score of 2160. Congratulations Fred! Other honors are; Pete, WA2BPQ for most q's with a total of 520 (Who says there's no such thing as a free lunch?), most 2 meter Q's at 311 and most 440 Q's at 129. Super job Pete. Barry, N2EZX had most 6 meter Q's with 62 and Judy, N2KXS had most 222 Q's with 85. Fred, WO2P also had most grids worked with 63.

Looking at the statistics for the club show that we had 3 stations scoring over 30,000 points, 5 more stations that scored over a 10,000 points and another 12 stations that scored more than 1,000 points. Gross total points for the club is in excess of 1/4 million and we accumulated more than 6,000 contacts. We had 48 logs submitted and a club participation level of 86.76%.

The final analysis of the Rochester Cup shows RDXA winning a tie breaker over XARC. Congratulations to RDXA. Of the six competing categories, XARC took three and RDXA took three. The tie breaker was the total points times percent participation which was won by RDXA.

Knowing the kind of contest effort put forth by XARC, I can comment that RDXA must have worked very hard, and certainly earned the Cup. We gave it our best effort, and RDXA was up to the challenge. Both RDXA and XARC have proven that they are the kind of organization that any amateur can be proud to belong to. I would also comment that we are only two of the many very fine amateur organizations in the Rochester area today. As a ham, I feel very fortunate to live in a community where I believe amateur

radio enjoys a very dedicated and enthusiastic population of operators and organizations.

Anyone who would like to attend the Rochester VHF Group awards banquet should set April 4th aside as I believe this is the scheduled date for that event.

73's de N2EZS

Amateur Radio: Going to the Birds

John Facci - WK2N

My "other hobby" is amateur astronomy--I still own and use the 6" reflecting telescope I made as a teen. In fact, as some of you know, I annually conduct a star party around the Perseid meteor shower in August which draws a lot of interest. Moving to Rochester from the beautifully clear skies (and warm nights) of North Carolina was a bit of a disappointment from an observing standpoint. As a ham, however, the ham satellites provided a chance to turn my attention skyward again without having to worry about clouds.

I first became seriously interested in the satellite (or birds) at the Rochester Hamfest when I stumbled on the ARRL's Satellite Experimenter's Handbook. It soon became clear that accessing some of the satellites was relatively easy, using fairly simple homebrew antennas, low power and available equipment.

So, at Field Day '91 with only two days preparation, I attempted to make my first QSO via satellite. There was also the added bonus of possibly adding 100 points to the Field Day score. Although I didn't completely succeed, some of you have asked that I share what I learned.

The idea for FD was to QSO via one of the easy birds. What makes a satellite "easy?" One important factor is that these satellites are in low earth orbit--roughly 1000 miles high and so high power is not required. You don't have

to be a rocket scientist to figure out that these satellites are really zipping along -- at about 18,000 mph they are over the horizon for 20 minutes maximum which doesn't give you a lot of time to experiment. Also the uplink to the satellite and the downlink back to the earth station are in different amateur bands. So two antennas and two rigs are generally needed.

I selected a popular satellite that goes by the designation RS-10, a Russian satellite with an uplink on 2 meters and a downlink on 10 meters. This particular combination of bands is known as Mode A. Thanks to Barry, N2EZS, who loaned me his 2m all-mode, and to Ray WR2T, who loaned me his TS-440, I was in business for a Field Day satellite station as far as rigs.

The best antennas for Mode A are actually omnidirectional antennas with good gain in the vertical direction. I used a 10 meter inverted vee up 12 feet (3/8 lambda) and a 2m quarter wave vertical up at about 15 feet, both on the same mast. Both were highly portable and made the week before FD mostly with material from my junk box (costing about \$10 from Radio Scrap).

During the week before FD, I decided to listen for the RS-10 beacon downlink using my new 10 meter dipole and my old Swan (plenty of tubes to keep the shack warm and no phase noise). This required finding out when the satellite was above the local horizon. I did this using an Oscarlocator (basically a polar projection map with an overlay for RS-10) and several other pieces of information. You need the time and longitude of the first ascending node of the satellite for the day and the orbital period (about 90 minutes!). What's an ascending node you say? RS-10 and most other low earth orbit satellites have nearly circular orbits that cross the equator twice per orbit, once going north over the equator (ascending node) and once going south (you guessed it, the descending node). You

also need the offset in degrees of longitude between the ascending node of one orbit and the next. Plotting this information on the Oscarlocator tells you when and how long the satellite is over the local horizon.

Having done this simple calculation I flipped the rig onto 29.407 Mhz, added in a few kc (oops, khz) for Doppler shift and there it was, a steady tone right on schedule. A bit weak as it had just come over the horizon, but it was unmistakable. As the bird approached my station the beacon became perceptibly louder and lower in pitch. Retune to bring the pitch back up. Cruising along at a cool 18,000 mph causes a very noticeable Doppler shift of a few kc on the downlink. Switching to the beam (aimed in the right direction) caused the signal to drop out altogether. This was a good pass, the bird was "in view" for 10 minutes. Moving the frequency to 29.385 Mhz I was able to copy the CW telemetry data which includes the satellite ID.

Finally the station was assembled for FD. I calculated the times and duration of each pass of RS-10 for the duration. Some were only 5 minutes while the best was nearly directly overhead and lasted the maximum time--17 minutes. An overhead pass is actually quite rare. The best pass was Sunday at about 1 pm--1 hour before the end of FD.'

During one of the passes Saturday night I sent a few dits up on 2m and tuned around on 10 meters to locate my own downlink signal. I finally located it and the thrill was incredible. Unfortunately the Doppler shift, the change in frequency due to the satellites motion, was so severe that I was not able to get a QSO. My goal then became to contact the robot on the satellite which is capable of copying code from 10-30 wpm. If successful, the robot will answer sending something like WK2N de RS-10 RR NR# SK at about 15 wpm. While I was trying this someone else was too, confusing the

robot. Unfortunately, we were both unsuccessful. But it was fun!

Next month I'll talk about operating the satellites, the advantages of high earth orbit satellites and plans for FD '92.

KARZ's Corner

Random Thoughts on the VHF Contest

The '92 VHF contest is now history. It was close, even requiring a tie breaker to decide, but by now you know that the RDXA has the cup back. Nevertheless, I'm still immensely proud of the club and the job we did. Remember that the entire focus of the RDXA is contesting, and that we're the only club in the area (including the Kodak club, RARA, RRRR, and others) able to give them a run for their money. We'll look over the scoring and figure out how to "git em" next year. I can see a real rivalry brewing here, and I don't think we're ready to roll over and play dead quite yet. (Actually I have to admit that while I'm disappointed, I'm also enjoying the competition). Its remarkable, given the eight or so years the Rochester cup's been around, that no one has managed to retire it yet.

The VHF contest is a different kind of event. Perhaps its because most of the QSO's are local with people who you either know or will eventually meet or perhaps its because in the final analysis, we're all on the same side so to speak. That is, its the Rochester area hams against the Philadelphia based Mt. Airy Pack Rats. (For proof of the later, look at the results in QST.) In any case, I observed a lot of good operating and very little bad. Sure, there were the usual "quick to the switch" types, but I also saw a lot of patience while people stood by to allow me to snare a weak one or waited to work that new station. It seemed that everyone was able to

work virtually all they could hear. One indication of the good operating was all the listening that was clearly evident. For example, on more than one occasion, I would, seemingly out of the blue, hear my call during a lull in the action. It appears that many people were keeping lists of stations heard but not yet worked and would call when the frequency was clear. I even had people take the time to go off line with me to work out some temporary equipment problems, and while I was at the club station, a local on two meters SSB allowed us to break in on him to work a station in grid FN22 while he was trying to arrange a QSY with that station to another band.

Now that it's over and I've had time to reflect, I'd have to say that the combination of competition and courtesy is what makes the January VHF contest unique and so much fun. Count on me for next year. Let's see, that's only 344 more days - and counting.

73

Bob, K2OID

Letter From Shannon Wixsom, WV2J/C6A

From Georgetown, Great Exuma, The
Bahamas

22 Jan 1992
Elizabeth Harbor, Exuma

Dear Barry & XARC:

As usual, I enjoyed talking with you folks last night. I always get a kick out of wondering who I'll meet on the airways.

Enclosed are some photos. It's too bad the colors of the sea and sky didn't come out, but they never do.

In perusing my reciprocal ham license for conditions, I came across an odd and most amusing paragraph. Let me quote it:

"Gramophone records of the type intended for entertainment purposes may be used on the condition that only one such record is used during the course of any day, the same record being repeated as desired; any record so used shall not have a playing time exceeding 10 minutes when played at the correct speed."

Now that strikes me as a typically and uniquely Bahamian rule for ham operators. I have no idea where it came from. By the way, there is no FCC here. The telephone company BATELCO processes and administers ham licenses. They are only sent to the government for rubber stamp approval. This isn't so surprising, since the inter-island phone operates on microwave frequencies (there are towers, microwave dishes and repeaters at most settlements), so they have all the qualified technical personnel - who are most helpful and gracious when you phone for assistance - and still call you "madam" or "sir", as do most of the Bahamians.

I didn't realize until my mother came down how tan I have become, and this is in spite of gallons of sun screen splashed on liberally and daily. I'm very fair skinned and don't tan easily, but I've managed this time. My mother also says I'm a good correspondent with good handwriting and I think both are true. You're lucky it's not Ron who writes, he's very slapdash and you often have to guess at his meaning.

Since some of you have asked what kind of boat you need for a trip like this, I'll write a few words about it. Ours is a Cal 43, a 43 foot sloop-rigged CCA design by William Lapworth, built in 1970. We have running backstays and an inner forstay in order to fly a storm staysail, a wise decision as it turns out. Our draft is 6.5 feet with a fin keel and spade rudder. The ideal draft for the Bahamas

would be no more than 4 or 5 feet, but we need the deep keel for rough weather in the open ocean. Since many people use the ICW (inter coastal waterways BGR) to Miami, then make the short hop to Bimini in quiet weather, the deep keel isn't necessary unless you do offshore passagemaking. Quite frankly, there are as many kinds of boats here as there are people living on them. Most of the power boats are trawler types. The sail boats range mostly from 35 to 45 feet, with a few smaller and a few larger. Any bigger than 45 feet, and the sails start to get too big for one person to handle, especially in a blow.

But the real limiting factor is the attitude of the people involved. You really have to do it and like it more than any alternative. You can't be overly attached to material goods (you don't get many). You have to know sailing and navigation, be confident of yourself and your boat, and if sailing offshore - be willing to encounter the physical and mental challenges of rough weather. It is my understanding that many trips like this end with the boat for sail in Florida, because one or both partners was unhappy, frightened, or just couldn't adjust.

But for those of us who were meant for it, the rewards as well as the risk are there for you daily.

73/88 Shannon WV2J/C6A

Repeater Update

The 220 Repeater is down for repairs as is the 440. We hope to have the 440 unit up in about a week. The problems with the 220 unit are being analyzed.

John, KE2MK, requests that everyone remember to identify when using the repeater, even for touch tone tests.

Club Library

The club now has a library which is used to maintain copies of equipment manuals and related articles of projects, radio mods and the like. Anything which may now or in the future be of interest to amateur radio is appropriate to include in the library. Anyone who has ever purchased a used piece of equipment without the manual and then tried to get a copy of the manual can appreciate the value of this library. I am soliciting all of you to make copies of any manuals or related articles you may have and mail them to me for inclusion in the library. I will occasionally publish an index of what is in the library and of course queries are welcome at any time.

Thanx Barry N2EZS

Equipment loans

As many of you know the XARC has recently increased its equipment inventory by leaps and bounds over what we had just a short time ago. I have been asked, as the chairman of the station committee, to publish a list of equipment which is available for short term loan to members of the club. When borrowing a piece of equipment, a note should be left in the club station with the item borrowed, the date borrowed, the anticipated return date, and the borrowers name and call.

The following is a list of equipment located at the station in building 337 which is available for lending per the above guidelines. All other items are not to be removed from the station for personal use.

Heathkit HW101 transceiver with speaker and power supply
 KDK 2 Meter FM transceiver
 12 volt power supply (blue box type)
 Bird wattmeter, 3 - 30 Mhz, up to 100W

Kenwood VHF/UHF watt/SWR meter,
 140 - 500 Mhz
 Headphones
 ARRL Handbook
 ARRL Antenna book
 US and Foreign area call books (1988
 issue)
 Software library disks, Amateur related,
 (5 1/4 and 3 1/2 DSDD disks)

July 12
 Aug 15
 Sept 19
 Sept 26
 Oct 3

Batavia
 Ithaca
 Buffalo
 Elmira
 Syracuse

Thanks to Jim Buch, KB2HVL for this
 information from K2KWK's Hilltop
 report. (Note: I also have a complete list
 of all Atlantic Division hamfests from
 Pete Fournia, WA2BPQ. Call me for
 details - Bob, K2OID 29530)

All of the equipment located at the
 station is, of course, there for the use of
 all our members at any time. I would
 strongly encourage you to use the
 station. The performance of the station
 is better than most would imagine.

Thanx Barry

Do you have QSL cards to send?

As a club we are entitled to combine
 ARRL members cards in one mailing.
 Just order your cards as always, include
 a current mailing label from QST and
 give them to one of the club officers.

Is your ARRL membership up for renewal?

If so remember to renew through the
 club. See Rick LaDonna(x29477) for
 details.

Hamfests/Auctions

Feb 22	Horseheads
March 28	Newark (Drumlins)
April 11	Auburn
April 24-26	Dayton
May 2	Owego
May 15-17	Rochester
June 6	Rome
June 7 ?	Lancaster
June 20	Cortland