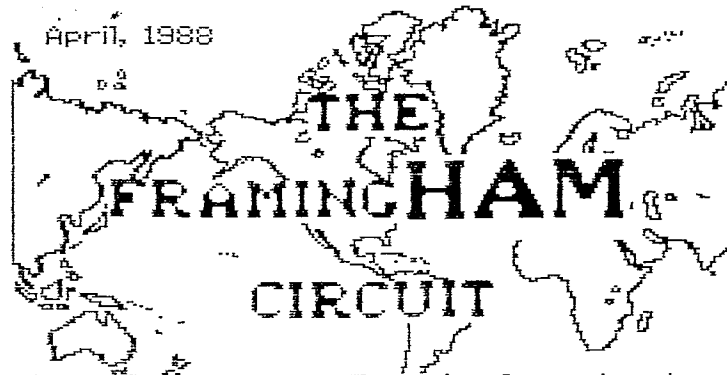


April, 1988



The Monthly Publication of W1FY, The Framingham Amateur Radio Association
F.A.R.A., P.O. Box 3005, Framingham, Ma., 01701 Vol. 55, No. 4

Meetings

The club meets on the 1st Thursday of the month at 7:30pm at the Danforth Museum near entrance on Lexington St., Framingham, Ma.

NEXT MEETING
APRIL 7, 1988

nomination of officers in FARA and I urge you to consider entering your name for one of those positions. It is very necessary for the vitality of this organization to have new faces and fresh ideas to lead FARA.

73's Burt, N1DDO
President

Guest Speaker? or Film? that is the question!

As of this printing it is not yet known if we will have a speaker who will talk on the topic of DX. If not we may have a movie. It will be a nice surprise whatever the case may be!

From the Podium!

The doldrums of winter are finally behind us and now we can start to enjoy the pleasure of the outdoors. What a great feeling having more daylight hours and warmer days. Now we can work on that antenna we promised ourselves on those cold wintry days.

With the arrival of SPRING we now focus our attention to the FLEA MARKET. (Sun. April 10, 1988). Lew Hyman, KI4ZE, needs your help! If you have not yet signed up to either help with setup or to work during the Flea Market please get in touch with Lew. Also Dick Marshall, WA1KUG, needs help administering the exams. So if there are any VE's out there please contact Dick. Lew has done a tremendous job over the years and with people like Dick Marshall and Jon Weiner and your support we can again make this a great success.

I received a QSL card from N6QMK, James Carry, 6442 Hillgrove Drive, San Diego, Ca. 92120, looking for a contact in the Worcester area to set up a schedule.

In closing I would like to remind you that soon there will be openings for

Many Thanks!

"The Framingham Amateur Radio Association would like to thank the estate of LEON TRITTER, KBIJB, (EX W1HK) for their kind donation of radio and electronics books. These books will be sold at our flea market club table with the proceeds going to the scholarship fund".

Thank you Dick, WA1HRU, for accepting this donation on behalf of the club and forwarding the information to the club editor for publication.

Product Review

UNIDEN/BEARCAT 100XLT SCANNER REVIEW
by Bob Parnass, AJ9S

The new 100XLT is manufactured in Taiwan, and looks nothing like the 100XL or the original Bearcat 100. Rather, it looks identical to the 200XLT that everyone's asking about - tall, thin, and entirely gray plastic. It is lighter than the Regency HX-1000 series, but not as rugged.

The differences between the 100XLT and the future 200XLT are in 800 MHz band coverage and number of channels (100 vs. 200). It's easy to envision UNIDEN adding a small 800 MHz converter board and an extra diode to make the 100XLT into a 200 XLT.

The "real" volume and squelch knobs on top are a welcome change from the side mounted, dust vulnerable knobs on the 70XLT.

The closely spaced keys on the

100XLT keyboard are made of soft rubber, and are well labeled. Marshmallow-like keys, combined with fat fingers, require extra care when entering frequencies. There is no "beep" tone to confirm key depressions, so you must watch the display to make sure you pushed the keys far enough.

Memory Organization

The 100XLT's strong point is the amount and organization of its memory. The 100 memory channels are divided into 10 channel banks.

Of course, 100XLT banks and channels may be selected or locked out. The banks are "hard partitioned," just like bearcats scanners of old. By this I mean, Bank 1 includes channels 1 - 10, Bank 2 channels 11 - 20, etc. Regency is using "soft partitioned" banks in their HX1500 and TS2 models, but the peculiar Regency system prevents channels from being locked out during a bank scan.

~~A bank size of 10 channels seems just about right. Bigger bank sizes, a disturbing trend, means less flexibility in choosing what to scan and what to ignore.~~

Historically, programmable scanners had banks of 8 or 10 channels. Two years ago, UNIDEN introduced the 800XLT, with 2 banks of 20 channels. Then Radio Shack introduced its PRO-2004 with 10 banks of 30 channels. Large channel banks do have their place, particularly when scanning 800 MHz trunked systems, and the sparsely populated 225-400 MHz military air band.

Banks aside, having 100 channels means no longer having to settle for 10 or 16 most favored frequencies when away from home. Now you can bring it all with you - program up to 10 channels for cordless telephone listening, 10 for metropolitan police, 10 for county sheriff and fire, 20 for listening to Uncle Sam, 10 for ham frequencies, 10 for business, 10 for aircraft, and 20 left over for trial-and-error searching! The 100XLT scans at 15 channels/second, about twice as fast as Radio Shack's top of the line PRO-32.

When the 100XLT is powered on it always comes up scanning with the priority

off.

The LCD display panel contains all the usual indicators, and can be back lit for 15 seconds with a green light when the proper button is pressed. The LCD contrast is mediocre, making it difficult to read the display at various angles.

Innovations

The 100XLT feature set includes new surprises. The first channel of each active bank is a priority channel, making 10 priority channels in all. There appears to be 10 levels of priority. For example, channel 1 priority takes precedence over priority channel 11, which takes precedence over priority channel 21, etc. Then the priority is switched on, the 100XLT samples all the unlocked priority channels (in active banks) every 2 seconds.

The priority sampling does appear to "chop up" signals a little more than on older models that sample only a single priority channel. ~~When the power is turned off, then on again, the priority key must be pressed manually.~~

Let's see, did I program in that new K-Mart frequency, 154.6 MHz somewhere? Just type 154.6, ENTER when positioned to a channel you don't care about, and the LCD will display "CH 29", for instance, if you already have 154.6 MHz in channel 29.

Stated a different way, if one tries to type a frequency into the 100XLT that has already been programmed in another memory channel, the display will flash in which channel it has been programmed. One can override by depressing ENTER again, and the frequency will be stored in the current channel.

This is a great feature, especially in a scanner with no such memory.

There is a single button to search all VHF NOAA weather channels, a feature becoming commonplace among newer UNIDEN scanners.

Battery Pack Mislabeled

The 100XLT comes with a BP-205 7.2V battery pack which slides onto the bottom of the radio. There is a charging jack,

marked 12 VDC, and a red charging LED on the back of the pack. The pack is not supposed to be opened, but the curious need only remove 2 screws. Inside, are the charging components (regulator circuit), and 6 AA size Sanyo cells wrapped in yellow heat shrunk plastic.

Opening the battery pack reveals an interesting contradiction. The label on the outside of the pack claims 600 mA capacity, but the Sanyo batteries inside are marked 550 mA.

When you buy the 100XLT, the 16 hour wall charger adaptor is supplied, and is marked 12 VDC 500 mA. There appears no way to fast charge the supplied NiCd pack, and the manual cautions against leaving the supplied charger plugged in for long periods of time.

A PS-001 mobile power cord is available for \$4.00 from UNIDEN, as is a spare antenna.

The owner's guide says to expect "up to 5 hours of dependable use" between charges. Now 5 hours isn't enough for many scanner buffs, but perhaps UNIDEN's idea is to stimulate demand for extra BP-205 slide-on battery packs (\$30). My 100XLT was used for about 7 to 8 hours before the battery indicator began to flash. The radio began its power down cycle shortly thereafter.

Memory Backup: A Potential Problem?

Having 100 memory channels is great, especially when thoughtfully partitioned into 10 banks. It takes time to program a scanner with so many channels, so you wouldn't want to do this often.

According to the owner's instructions, the 100XLT's memory is only backed up for 30 minutes by a capacitor. UNIDEN advertisements put this figure at 1 hour - no accounting for the contradiction.

Take the scanner outside for an afternoon of fun. When the BATTERY warning blinks, do you only have 30 minutes to find an AC outlet? The manual claims the scanner will shut itself down automatically if the warning has been flashing for 10 minutes, but it's not clear how "dead" the NiCd is by then.

Are memory contents lost that easily? To experiment, I used the 100XLT until the warning flashed and the set powered itself down. Instead of recharging the battery, I spent the next day turning the 100XLT on and using it for a few seconds until it shut itself off. About 24 hours after the first sign of a battery dying, the memory contents were still intact.

It is important to note that I left the battery back connected at all times, so any amount of residual voltage would be available to the memory backup circuit.

The next test was more grueling. I disconnected the battery completely from the radio to see how long the memory would last. The 100XLT passed the test with flying colors: after 16 hours, the memory was still intact.

Great Audio

The audio output is rated at 480 milliwatts, but who believes manufacturers' specifications any more? The good news is that the 100XLT sounds great! There is plenty of undistorted audio available from the front speaker, making a Radio Shack PRO-32 sound like a whisper.

Inside Construction

The internal construction of the 100XLT is clean, but thoughts of home repair vanish as soon as one opens the 100XLT case. Tiny surface mount components abound. You won't find these parts at Radio Shack, and you wouldn't want to solder them in anyway.

The 2 main circuit boards are surrounded by an internal metal frame, and a few small circuit boards are mounted vertically on the main audio/RF board.

I did see what appeared to be "jumper" diodes, but resisted the temptation to cut them. Maybe one expands memory capacity to 200 channels?

Judging from my filtering and local oscillator crystal inside my 100XLT, the first IF is 10.85 MHz, and the second IF is 450 MHz.

How Does It Work?

UHF sensitivity is very good, and sensitivity in the AM aircraft band appears adequate. Using an outside antenna, the 100XLT is sometimes bothered by the obnoxious 300 watt paging transmitter nearby, but so is my 800XLT on an indoor whip. Expecting a portable scanner to behave well on an outside antenna may be asking too much.

Most every superheterodyne receiver has birdies, those places on the dial where the receiver "hears itself." The 100XLT owner's guide does not list birdies, but I counted 30 throughout the entire frequency range:

31.2, 39.59, 40.7, 41.6, 51.1, 52.0, 122.075, 123.075, 124.8, 129.4, 134.375, 141.665, 143.775, 144.77, 145.6, 146.5, 158.16, 165.48, 166.4, 166.475, 167.3, 424.8125, 425.1125, 434.3125, 434.325, 456.025, 470.65, 482.575, 488.8375, and 504.272 MHz.

Many of the birdies are weak, and disappear when when the heliflex antenna is replaced with an outdoor antenna.

Images of stations in the UHF range were noted 21.7 MHz higher than their assigned frequencies.

What You Get

The case has openings in all the right places, so one can charge the battery without removing the radio from the case. There is a belt loop sewn on the back, but a user must unfasten his/her belt to thread it through the loop, a decided inconvenience.

The 100XLT also comes with a wall charger/AC adapter, an earphone, and what appears to be a VHF high band heliflex antenna. The antenna is blessed with a BNC connector.

UNIDEN scanners no longer come with an owner's manual, but with a fold out sheet instead. The instructions aren't great, but will tell you most of what you need to know. Of course, you don't get a schematic, but you order it for \$1.1

Who To Call

There are UNIDEN/Bearcat telephone numbers 100XLT owners may find useful: Product Information: (800) 722-6637, Repair: (317) 842-2483. Parts: (317) 842-1036.

Be persistent. The product information line can ring a dozen times before someone answers, and the other phone numbers are often busy.

Summing up

The UNIDEN 100XLT works well. It scans fast, sounds good, and excels in the amount and organization of its memory channels. the multiple priority, frequency finding, and slide-on battery pack features also set this scanner ahead of the others.

The more I use the 100XLT, the more I like it.

1. UNIDEN, Parts Department, P.O. Box 50822, Indianapolis, IN 46250.

(Copyright INFO-HAMS Digest)
Submitted by Peter Simpson, K1AXY

Minutes of March Meeting Submitted by Marc Stern, N1BLH

The March meeting of the Framingham Amateur Radio Assn. opened at 7:35 p.m. with member introductions. President, Burt Shaffer, N1DDO, was in the chair and welcomed everyone to the meeting.

The first order of business was club reports. The reports included:

- Dick Marshall's, W1KUG, treasurer's report.
- Ed Weiss', W1NXC, education committee report. Ed reported the class was quiet with many of the original Novice students waiting for the April exam to upgrade. The number of Tech-General candidates who have taken the class is much smaller than the original Novice

class.

-- Lew Nyman's, K1AZE, flea market report. Lew reported that the flea market was scheduled for April 10 and reminded everyone about the exams. He also mentioned that Dick was looking for volunteer examiners for the exam session. He noted that there is one more meeting before the flea market and that we would be able to finalize the setup times at the April meeting. Lew didn't know when we would be able to get into either of the halls at the flea market site, but said he would know shortly after the meeting and that he would report on it in April. It would also be put into the next newsletter. Lew also explained the signup sheet and signup times. He also noted the "early bird" special wrinkle where early buyers are admitted for an extra fee and that it would necessitate a new shift of people at the front door. Lew also introduced the new assistant flea market chairman, Dick Landau, WLIBN. The flea market signup sheet was then passed around. There was an extensive discussion of the "early bird" special. There was also a general discussion of local flea markets in general.

-- Dick's additional volunteer examiner report. Dick reported that there were a couple of new volunteer examiners. He also praised the volunteer examiner crew.

-- Dick Landau's, WLIBN, banquet committee report. Dick circulated a signup sheet for the banquet. He also noted the pricing which was \$16 per person for a club member and guest and \$19 for nonmembers. He mentioned that we need 70 people as a minimum. It starts at 7 p.m. and there is dancing in another part of the facility. The date was March 26. He also noted that he would try to deal with any special dietary needs with the restaurant. The banquet is at the Indian Meadows Town

and Country Club, just about a mile west of route 495. The meeting then took a short break as Dick collected some money.

-- In other news, Dick also mentioned the annual Boy Scout pancake breakfast at the Plymouth Church in Framingham Centre. It is for Troop 12, which Dick's son (KALNYP) was active with as a boy.

Further discussion centered on nominations for next year's slate of officers. As Burt noted, every job on the board should be considered open next year. He also noted that if a member was interested in serving on the board, the member should contact the nominating which consists of Julie Hoffer, W1DL; John MacLeod, WA1GL; and Jon Weiner, K1VVC.

In other business, the club is investigating actively helping Handi-Hams or a similar organization.

The meeting adjourned about 8:30 p.m. when we heard an interesting talk on marine electronics and radio. The talk was given by Dick, WLIBN, an avid boatsman.

For Sale

40' Tower - Hinged Base
Built in ladder

TA 36 - 6 Element Beam
Rotor - Coax
Control Box

You Dismantle!

Enzo, WA1PYF
Home Phone: 872-6817

Propagation was generally good, the lower flux levels affecting 28 mhz mainly. New active areas appeared in both Northern and Southern portions of the sun on the 28th, after several days in which nothing of significance could be seen. There may be more on the way, and we recommend listening to WWV bulletins at 18 minutes after each hour for the latest available solar flux information.

A major geomagnetic disturbance degraded most high latitude communication February 21 through 24. The magnetic field has been nearly quiet since, but another disturbance is likely about March 3 to 4. Higher solar flux levels expected this week will increase the usefulness of 24 and 28 mhz, especially in the higher latitudes.

For more information on specific communications paths we recommend use of the propagation charts in QST for February pages 80 and 81. note that these are predicated on a solar flux of 125. For lower flux values use the bottom line for the paths you are interested in.

American sunspot numbers for February 18 through 24 were between 10 and 43 with a mean of 22.6. ar

EXAM Schedules

-< New England Exam Sessions >-

New England Amateur Radio Volunteer Exam Sessions

Date	Test Site	Contact
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Apr 6 7PM	Agawam High School Agawam MA	Jeannette Platanitis 413-786-1463 101 Highland St. Feeding Hills MA 01030
Apr 10	CARRA Club House 6 Stanwood St. Gloucester, MA 01905	Al Hamilton, AG1F 54 Hathaway Ave. Beverly, MA 01915
Apr 10 12Noon	Framingham Civic League 214 Concord St. Framingham MA 01701	Richard Mashall 617-877-0563 37 Lyman Rd. Framingham MA 01701
Apr 10 12Noon	Berkshire Comm. Coll. South County Campus Gt. Barrington MA	Milt George 413-442-4174 35 Ripple Pittsfield MA 01201
Apr 15 7PM	Holyoke Comm College 303 Homestead Ave Holyoke MA 01040	Lawrence D Savoy 413-783-7786 51 Pinehill Rd Springfield MA 01118
Apr 17 9AM	Southington Natl. Guard Southington Ct 06489	Vincenzo Calandra 203-628-6933 44 Matthews St. Southington Ct 06489

HR PROPAGATION FORECAST BULLETIN NR 7
FROM ARRL HEADQUARTERS
NEWINGTON CT
FEBRUARY 15, 1988
TO ALL RADIO AMATEURS BT

The solar flux peak for cycle 22 to date was 127, reached on January 16. Four weeks later, February 13, the flux peaked again but at only 106. Over the past weekend, what is probably the largest single sunspot of cycle 22 came around the east limb of the sun, but it looks more like a fried egg than an active solar region. There may be more following it, but when our last look was made Sunday afternoon the flux was moving lower, not higher.

On a more optimistic note, conditions have been improving recently on the high DX frequencies. 10 meter beacons in South Africa, South America, Australia and New Zealand have been heard well nearly everyday. A surprise, ZD8MB, on Ascension Island was heard Saturday and Sunday. Look for him on 28.293 mhz, late in the day. This is a new beacon for the writer. Business on the 12 meter band is picking up almost daily and 21 mhz is prime DX territory again and getting better. All three bands are good for moderately equipped stations much of the time.

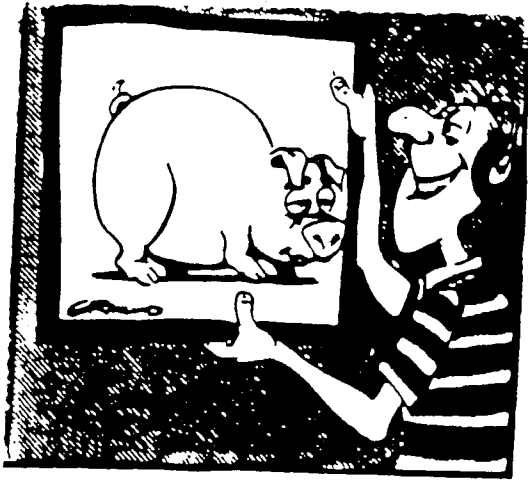
No large change in propagation is expected this week. If anything, conditions should improve. Geomagnetic activity was high frequently in the past two weeks, but the effect of this was noticeable mainly in the lack of propagation to Europe and on other high latitude paths. If the forecast week is like its counterpart in January, there should be improved high latitude DX. If there should be a sharp rise in the solar flux, geomagnetic disturbances will follow and propagation will be affected adversely on high latitude paths. Use of WWV propagation bulletins is advised, as their information is the newest available anywhere.

American sunspot numbers for February 4 through 10 were between 21 and 40 with a mean of 31.3. ar

HR PROPAGATION FORECAST BULLETIN NR 9
FROM ARRL HEADQUARTERS
NEWINGTON CT
FEBRUARY 29, 1988
TO ALL RADIO AMATEURS BT

Solar activity in February was not up to expectations. We have no data for the 29th as this is being written, but the February flux average will not be much above 105. January and February are the first months of cycle 22 to have flux averages above 100, but both months are far below their counterparts for the same periods of cycle 21.

The solar flux dropped below 100 for four days the past week.



FRAMINGHAM AMATEUR RADIO ASSOCIATION FLEA MARKET AND EXAMS

THE ORIGINAL, LARGEST, AND BEST ATTENDED
INDOOR ELECTRONIC FLEA MARKET IN THE NORTHEAST

TALK-IN 147.15

SPONSORED BY - THE FRAMINGHAM AMATEUR RADIO ASSOCIATION - TO SUPPORT
THE DR. CARLTON CROSBY MEMORIAL SCHOLARSHIP FUND.

SUNDAY, APRIL 10th, 1988. DOORS OPEN TO PUBLIC AT 10:00 AM

LOCATION: FRAMINGHAM CIVIC LEAGUE BUILDING, 214 Concord St. (Route
126), Framingham, MA.

~~From Route 128 go WEST on Route 9, From Route 495 go EAST on Route 9.
Take Route 126 SOUTH towards Downtown Framingham about 2 miles. After
the Traffic Signal near 'Dunkin Donuts', Civic League is 2nd and 3rd
buildings on right.~~

FLEA MARKET FEE: \$12.00 for a SIX-FOOT table paid in ADVANCE. (Includes
1 admission only!)

TABLE SETUP: FROM 8:30 AM - 10:00 AM SUNDAY MORNING.

ADMISSION: \$2.00 PER PERSON, CHILDREN UNDER 12 with ADULT admitted FREE.

9:00 AM EARLY-BIRD ADMISSION \$5.00 FIRST 100 PEOPLE

For Flea Market Information Call JON K1VVC at (617)-877-7166.

EXAMS FOR ALL AMATEUR CLASS LICENSES WILL BE GIVEN AT 12:00.
SEND COMPLETED FCC FORM 610 AND CHECK FOR \$4.55 PAYABLE TO
ARRL/VEC AND COPY OF CURRENT LICENSE TO DICK MARSHALL W1KUG,
37 LYMAN RD., FRAMINGHAM, MA 01701 NO LATER THAN APRIL 3, 1988.

FOR ADVANCE TABLE RESERVATIONS SEND CHECK TO:
FRAMINGHAM AMATEUR RADIO ASSOCIATION
37 LYMAN ROAD
FRAMINGHAM, MA 01701

Enclosed is a check or money order in the amount of \$..... to cover
a reservation for tables at the April 1988 FARA Flea Market.
(Checks payable to Framingham Amateur Radio Association.)

Name.....Call.....

Address.....

Telephone.....

SUNDAY APRIL 10, 1988