NJ STATEWIDE TALK GROUP FOR MICU & REMCS

If you have been subscribing to any of the scanner E mail lists than you have undoubtedly seen mention of a state wide talk group used by MICU units in New Jersey. For quite a while I chalked this off to hearsay but it now appears to have some truth. The EMS community does not have a statewide trunked system, but both MICU and REMCS (out of Newark) are using a group on the NJSP type 2 system.

The main group is 6b1 (Motorola Hex) or **27408** for Trunktrackers. Things are constantly changing! The state also has plans for statewide fire and police intersystems on the trunked system. I foresee all agencies having radios on the NJSP system within the next few years.

For those new to trunk tracking, be aware that the NJSP has a hybrid system, operating in both type 1 and type 2. On the Uniden trunk tracking receivers type 1 systems have ID's like 000-3 or 400-1. Type 2 systems use 5 digit ID's like 27408. First generation scanners can only track half the system at any given time. Newer receivers line Uniden's 780XLT will be able to scan multiple systems at one time. There is also a lot of talk about New Jersey converting their system over to an all Type 2 system.

HOW DO YOU PROGRAM YOUR SCANNER?

I recently saw a posting from someone asking advice on how to logically program your scanner. I'm sure that everyone has their own logic, so I thought it would be interesting to share your method. Paraphrasing from the original posting I'll present his approach and I would be interesting hearing from other readers. Send us your comments to us and "cc" Larry who originally submitted these questions nydxa@hotmail.com

1. How is your scanner/s set up?
I use 2 scanners regularly. A pro 2035 with 10 banks that I have set up with one department for banks 1 - 4.

Bank 1 police, bank 2 fire, bank 3 medical bank 4 utilities (electric,gas,water companies)

Banks 8-10 for the frequencies of the towns surrounding my area, including DPW, schools and local frequencies. The remaining banks I use to program in various frequencies found in books and the web in search of active frequencies.

The second scanner I use is a Pro 91 that I program depending on where I am working that day, or with the most active department for a major incident. i.e. the Fire Dept for a large fire, so that I can use the other scanner to monitor the other agencies, and surrounding towns.

2. How do you keep track of your frequencies?
Do you use a spreadsheet application (Excel), have you created your own database, or is there another program available that you use?

I currently us Excel myself to keep track of the frequencies that I have programmed into my scanners (also marking which frequencies are active), however I am in the process of creating an MS Access database that will allow me to better manage the information that I gather, as well as match it up with the codes that the various agencies use in my area.
Thank you
Larry Morin larrymorin@home.com
Scanning in New Jersey

780XLT FAQ's
http://strongsignals.net/bc780xlt/bc780faq.html
Before purchasing my 780XLT I had several questions related to pre-sale advertisements. Rich Wells did an excellent job creating an FAQ (Frequently Asked Questions) list on his web site listed above. I highly recommend visiting the site and reading the entire list which is constantly growing. As for my concerns, here's the issues I needed further clarification on.

Q:How does it (780XLT) differ from previous TrunkTrackers?

A:The original TrunkTracker, the BC235XLT, could track a single, analog, Motorola trunked radio system in the 800 MHz range. This allowed listeners to successfully listen to large and busy trunked radio systems which was nearly impossible to do using a conventional scanner. For each bank, 5 Scan Lists supported 10 trunk IDs each which allowed the user to pick and choose what they listened to on a TRS.

The BC245XLT TrunkTracker II was another giant leap in technological capabilities. It could track both Motorola and GE/Ericsson (EDACS) systems and it could do so not only on 800 MHz but on VHF, 400, 500 and 900 MHz bands as well! As if that were not enough, it allowed the user to listen to multiple conventional and trunked systems at the same time! Other new advances included the SmartScanner feature, Autolight, cloning and computer interface and control. The BC245XLT also doubled the number of Scan Lists per bank to 10 allowing up to 100 trunking IDs to be programmed to direct listening.

While the BC245XLT could monitor both Motorola and EDACS, the BC780XLT can do this as well as being able to handle LTR (E.F. Johnson) systems! Support for EDACS system has also been augmented by the selection of 4800 or 9600 configurations. A new Control Channel feature allows the user to program only the control channel frequency and then the BC780XLT is able to automatically determine the other frequencies to tune and thereby trunktrack. If a TRS user presses the emergency call button on their radio, the BC780XLT will issue a special alert to notify the listener of this unique situation.

The tuning range is continuous within the specified 25-512 and 806-1300 MHz bands. Memory banks remain at 10 while total memory channels is up to 500. Selectable tuning steps and receive modes (AM, FM & WFM) allow the user to tune just about any desired VHF/UHF signal. There are 10 search bands which can be linked together and auto-store programs frequency activity into memory upon activation. Service Search automatically scans thousands of pre-programmed frequencies for any one of the 10 specified agencies.

Both the large LCD display and keypads are backlit with a selectable dimmer. The LCD supports two lines of programmable text with up to 16 characters per line for help in identifying memory banks,

memory channels, search bands and trunking IDs. A mute key allows the audio to be silenced on command. The new Screen Mask feature filters the display so that only the most important pieces of information are seen making the LCD much easier to read in mobile environments. The Beep Alert feature allows any memory channel to be so tagged so that any activity on that channel's frequency results in a series of alert beeps to get the user's attention. A reverse frequency feature allows for the instant reception of a repeater's input or output frequency based on the currently tuned frequency.

The addition of a rotary control allows the displayed frequency to be tuned as desired as well as aiding in the navigation of memory channels, tone codes and lockout lists. An extensive menu system allows for the control of the scanner and the setting of numerous options such as the backlight dimmer, key beep, data skip, alpha-tag entry, programmable delay, CTCSS/DCS tones (squelch or search), attenuator, tuning step, receive mode, record control and more. A SAME weather decoder allows for the entry of up to 15 FIPS codes so that severe weather broadcasts are only heard for the user's geographic area. The Smart Scanner feature is still supported which allows users to dial into a Uniden server which will then automatically program their scanner based on the specified geographic location.

Q:What's I-Call?
 A:I-Call is a feature of Motorola and EDACS systems which allows users to talk to each other and not be heard by any other user on the system. Such calls use special trunking IDs outside of the "normal" numbering sequence. The BC780XLT can decode these calls thereby allowing them to be monitored in either search or scan mode.

Q:What is control channel only monitoring?
 A:This is a feature which can only be used on Motorola systems. With this feature, it is possible to track a trunked system by only programming the control channels. There is no need to program all of the system channel frequencies which normally includes a few control channel frequencies and a lot of voice channel frequencies.

While it is a great aid for monitoring new systems, it is not a fire-and-forget type feature. To successfully track a system, you also need to know something of the frequencies involved since programming involves the selection of one of four possible

frequency schemes. If the wrong frequency scheme is selected when using control channel only mode, the radio will track conversations on other systems or miss them entirely. For more details, see page 57 of the BC780XLT Operating Guide.

Q:What is LCN?

A: An acronym for Logical Channel Number. Unlike Motorola systems which do not care about the physical order in which frequencies are programmed into the scanner, EDACS systems do require a specific ordering. If this order is not followed, the scanner will not be able to effectively track transmissions on the system.

How are you to know the ordering? If you're lucky, you'll be able to find a book or web page authored by someone who has already figured it out for you!

If your are on your own, some have speculated that you can monitor the system while in conventional mode to determine the proper frequency order. Try to manually track a single conversation and note the order in which frequencies are used.

Some EDACS systems require "blank" channels in this ordering scheme. This requires that the blank channels in the ordering become "empty" or non-programmed channels when you program the BC780XLT. And it appears that the only way you can figure out if "blank" channels are needed is by perseverance in noting how well the radio tracks all conversations.

Q:What is Patch Tracking?

A:This is a feature for EDACS systems which allows multiple trunking IDs which have been combined under one Patch trunking ID to be monitored. When a Patch ID is created for temporary use of a special nature, it usually takes the place of one or more normal trunking Ids. These normal IDs cease to exist so no traffic is heard on them. Using the Patch Tracking feature allows you to once again hear the activity on this new, temporary ID.

Q:Are there errors in the Operating Guide?

A: #1 - Page 37/38 - The three steps at the bottom of page 37, labeled 4, 5 & 6, should be labeled 6, 7, & 8. The step at the top of page 38, labeled 7, should be labeled 9.

NOTE: I think that step 6 at the bottom of page 37 should really read "Enter a frequency for the trunked

system using the keypad and then press E."

#2 - Page 68 - The Enter Lock as described on this page is incorrect. Enabling this feature does NOT disable the keypad. Enabling this feature prevents use of the E key thus disabling the programming of frequencies or trunking IDs into memory. It does NOT keep the E key from controlling REMOTE mode.

ScanNow for AR8000

ScanNow is a computer scanner control program. "Yet another computer scanner control program?" - you ask. Yes, in some sense, - and no. ScanNow was written as a result of dissatisfaction with programs currently available on the market and full of unique features not found in other programs. It is also much smaller and cheaper than any other program with similar capabilities. You can run ScanNow in the background as it takes very little screen estate and doesn't consume much resources. Yet, it provides you with a standard set of capabilities you would expect from such a program (searching, scanning over selected frequencies, etc.) plus some more. Check out the full story at http://www.komkon.org/fms/ScanNow/

RUTHERFORD CHANGES

Rutherford F/A Squad Now designates its ambulances as BLS 56-1 BLS 56-2 BlS56-3 Thanks to Brian N2ITG for this note

VERONA - ESSEX COUNTY EDACS SYSTEM

From: NJ-scanman, "Barry"

With my trusty new BC-780XLT, I am finally able to track the Verona (Essex County) trunked system. This system is an EDACS narrowband system, which transmits at 4800 baud instead of the usual wideband 9600 EDACS. As far as I know, the BC-780XLT with Trunktracker III is the first scanner that can track this kind of system. EDACS narrowband is option 7 under TRUNK TYPE on the TRUNK DATA menu.

Frequencies, in logical channel number order: 470.3000, 471.7000, 471.1500, 471.2000, 471.7500. The control channel shifts about once an hour.

Talkgroups identified so far:

02-041 Police (main)

02-042 Police (use unknown)
02-060 Fire (dispatch); simulcast on old frequency: 33.78
02-062 Fire (response/fireground)
02-080 EMS (dispatch) [not confirmed yet]
02-082 EMS ("rescue dispatch" i.e., squad communicates with PD dispatcher)
02-083 EMS ("EMS ops" - squad members communicate with each other)
02-102 DPW (snow plows)
02-104 DPW ("B&G" - buildings and grounds?)

This is a small town, which doesn't really need a complex system like this, but they don't like ambulance chasers and putting this system in apparently helped.

Previously, the PD was on UHF, the FD on VHF lo, and EMS on VHF hi, so now they can all communicate with each other better, I guess.
Barry

BC780XLT MOD
No, not THAT one, but much more useful and perfectly legal!

Everyone wants the Discriminator Mod for decoding various tones and signals. Don't like the way the 780 searches thru PL tones? Connect a PL decoder to the discriminator. Want to decode digital signals? RTTY? Connect to the discriminator.

<Editors Note: The disassembly procedure described below is not necessary to gain access to the discriminator test point noted. After removing the four screws that hold the top cover, remove the cover and you will be looking at the back side of the board. The test point is clearly labeled labeled! Mounting the jack will require you to use the procedure below. I personally would wait a few weeks as this may void the warranty. Who knows what as yet undiscovered quirks may be disvovered!>

Here are the easy instructions!

1) Open the case by removing all 8 side case screws. Carefully unplug
the speaker from the main board.

2) Drill a 1/4th inch hole on the rear frame below the Tape Out jack.
Do not drill thru the inside case member.

3) Mount a RCA phone jack (like those at Radio Shack) in the newly
drilled hole.

4) Solder a 6 inch long small gauge wire to the center conductor of
the new jack.

5) Route this wire between the circuit board and the frame just
forward of the antenna connector.

6) Tack solder the far end of the wire to the circled solder pad on
the top side of the board marked "LND14 FM Det. Out"

7) Reassemble the radio. Don't forget to reattach the speaker connector.
(Doh!)

Now you can plug in your DC442, Data slicer, or other discriminator
using device.
N2NOV

IT'S A GOOD IDEA...
Now that we have our first taste of winter weather it's a good idea to shovel out any fire hydrants on or around your property. Rich Dean points out that it isn't just a good idea to clear the hydrant in front of their residence or business, it's now required by state law with certain exceptions.

INTERNATIONAL SPACE STATION
http://homepage.eircom.net/~bodyguard/ISS.htm

ISS is 'manned' by three Cosmonauts; Bill Shepherd, Yuri Gidzenko and Sergei Krikalev.

The cosmonauts are working on several projects at the moment, one being communications. There are amateur radios on-board, which the crew will use to communicate with Ham radio enthusiasts around the world, as well as their own colleagues in Russia. For owners of radio scanners, communications from the ISS can be picked up on a basic hand-held scanner every day, as it passes overhead on **143.625mhz** (NFM) . Conversations only last a couple of moments and are usually in Russian, before it goes down below the horizon out of range. Shuttle communications can also be heard during missions (if your lucky!!) on 259.700mhz NFM.

143.625 MHz Commercial Downlink from ISS
139.208 MHz Commercial Uplink from Ground Stations

Editors Note: As I was typing this (1/01/2001 3:10 p.m.) My R7100 came alive on 143.625. I had about 15 minutes of Q5 copy, averaging S3-7, of Russian dialog. I was talking with AA2LA on 2M who happens understand Russian. Shay's translation revealed that they were discussing daily work responsibilities. Toward the end of the pass Dave, WI2Q also copied the transmission from his location in Mt Arlington, NJ. OK, so what's ISS's address so I can get a QSL?

Other confirmed frequencies are:
121.500 and 243.000 (emergency)
130.165, 121.750, 259.700, 279.000 296.800

Amateur frequencies:145.550, 145.840
145.80 MHz will be used by the ISS for Downlink for "HAMS"

Keep in mind that whatever frequencies that you are monitoring from any spacecraft will be Doppler shifted. As the spacecraft moves toward you the shift will be up in frequency and when it is moving away from you the shift will be down in frequency.

Here are some other links that I believe that you might find useful:

E Groups also has a list for the ISS. You can subscribe to it at issmonitors@egroups.com

http://www.microsoft.com/windows/windowsmedia/en/default.asp

http://www.eoss.org/elementmanager/download.htm
This is a free Element Manager and Orbit Tracker

http://oig1.gsfc.nasa.gov/files/Grouptle.zip
Orbital Elements including ISS & Shuttle

http://oig1.gsfc.nasa.gov/files/Geosync2.zip
Orbital Elements of the Geosynchronous Satellites

Check out the full story at the URL above!
N2NOV

LISTENING POST

From time to time Charlie and I ask for photos of your equipment or yourself. Over the past two years I recall only about three photos. I personally enjoy seeing the equipment, the layout or the people we hear each week on the net. For this our first issue of 2001 I'd like to share two photos of my shack.

WA2SQQ's Listening Post

If you are one of the few who has visited than you know that space is at a premium. Two people in here is tight to say the least! My "shack" was once a closet measuring only 5' x 6'. While I could have had a larger area, I really like the fact that any piece of equipment is literally at arms reach. Pictured above is the narrow wall that contains most of my scanner related equipment. Seen here beginning on the lower shelf are two Motorola Maxtrac's 1 VHF / 1 UHF. Above on the next shelf an ICOM R7100 and the Uniden BC895 Trunk Tracker. Above the radios several of my hand held scanners sit beside the secondary monitor used with an old 486 PC used for monitoring "digital" modes. This is a great use for an otherwise useless slo-poke PC. A miniature keyboard sits on the wall mounted table and a second keyboard is mounted beneath on a sliding keyboard drawer. At the top of the pile you can see a relic of my distant past, a Lafayette 25 channel HB-444/25A CB transceiver circa 1966 - still working! Any free wall space is covered by various QSL cards, calendars, wall maps and countless photos. The shack contains three PC's, the 486 mentioned above, a P-II 266 running Windows NT, and at P III-450 (Win 98SE) overclocked running at

558 mhz. The Windows NT machine serves as a server from which other PC's can read and write data as well as share my Internet connection. My "main" machine is the P III-450 from which the newsletter is written, games played, and general PC work is done from. The two Pentium PC's share a 19" monitor not seen in the picture above. Both are fed from a UPS supply that can provide 20 minutes of emergency backup power in case of a power failure or power glitch. I can't count how many times this has saved me!

HF Monitoring Position

Picture #2 shows the SWL / amateur section of my shack. In the lower area you can see the PC's UPS supply, my Minolta slide scanner, and the new Uniden BC-780XLT. One shelf up is my primary HF station, the Yaesu FT-1000MP and Drake MN2700 antenna tuner along wth the Timewave DSP-599ZX DSP processor. The DSP-599ZX is connected to almost every radio in the shack and it's one of the most used pieces of equipment I have. Up to the next level you'll find my old Kenwood HF radio (TS-930) which now feeds a Microwave Modules Transverter for 2M SSB. Together with a Mirage 175W amplifier (not seen) it makes for a respectable signal during the VHF contests. My main 19" PC monitor can also be seen.

Tucked up on an upper shelf is my pride and joy receiver, a Hammarlund HQ-180AC that I purchase in 1966 from Arrow Electronics in Totawa. Back than, $495 was a lot of money and I really wasn't sure I wanted to part with money I saved for almost one year! Next to it you can see my Kiwa Loop. While this "corner" looks quite cramped, it actually works out nice for BCB DX'ing which more listening than tuning is done.

WA2SQQ's Hammarlund HQ-180AC

Topside I use a variety of antennas. On the house I use a Sigma Discone, a Diamond 550 dual bander, and the Channel Master all band scanner antenna. This is the same antenna Grove sells as their "Scantenna."

Roof Mounted Antennas

Adjacent to the garage my 48ft self supporting tower has atop it a Mosley TA-33 tri-band beam, a wide spaced Hy Gain 8 element 2M beam, and a UHF 8db omni-directional antenna at 60 ft above the ground. Side mounted is a 6db gain VHF omni directional antenna. Several wire antennas are also suspended from the tower. All antennas are fed with Belden 9913 with the exception of the 8 element 2M beam which is fed with ½" aluminum hardline. The performance of these antennas can easily be lost if inferior feed line were used.

WA2SQQ's Antenna Support
Structure

And finally, Satellite TV is covered with two different technologies. Here's a photo of by 10.5 ft C / Ku band dish which feeds a Panasonic PS-700EX receiver. Initially, all my programming came from this dish. With the recent price reductions offered by Dish Network, all premium programming is now received from an 18" dish mounted on the side of the house out of eye sight. I use the large C band dish for about 80 channels of "free" programming that includes Canadian programming. This summer I plan on adding a weather satellite (GOES) feed horn for WX sats on 1691 mhz.

C / Ku Band Sat Dish

So, how about sharing a picture of your shack with us? If you're not able to send the phot in electronic form, I can easily scan your photo and return it promptly. Drop me an E mail if I can assist you. Bob, WA2SQQ

BC-780XLT INITIAL REACTIONS

I've been playing with my 780 for about 5 days and my overall reaction is very favorable. I've connected it to several antennas, some offering a substantial amount of gain and not once have I had any problems with front end overload or intermod. While I'm sure that there will be many reviews written, I had a few "issues" that had to be resolved. I foresee many problems for the trunk tracking novice. Hopefully these few tips will save you some frustration.

VHF low band and high band frequencies are programmed in "FM" mode. I noticed that several frequencies suffered from low volume. Manually changing the mode to "NFM" perked the volume up and did not have any negative effect on performance.

Scanning speed seems to be effected (slowed down) if the squelch is left wide open while scanning with tone squelch. Disable tone squelch, adjust the squelch as you normally would, and reenable tone squelch.

I suggest programming all channels in alphabetical order using alpha tags. In doing so you can quickly rotate the VFO knob and locate virtually any channel as long as you recall the name it was programmed in as.

Audio volume is adequate, but the internal speaker seems inefficient. Using an external speaker certainly improves overall performance, but the design could use a bit more low frequency response. In time I may peek inside and see if the value of the audio coupling cap can be increased to add low frequency response.

One final feature... while monitoring the Port Authority system an alpha tag "Emergency" began flashing and the 780 started beeping. It turns out that Port Authority Police declared an emergency for an in bound aircraft that had smoke in the cockpit. So far I have not found any mention of this feature, but I have received E mail from two other people who have experienced the same thing.

This is a "keeper"! If you have the occasion to play

with one you will want one!

LAST MINUTE MENTIONS...

Just as I was finishing up this issue Dave WI2Q told me a bout an outrageous site run by NASA. Many of you may have used a program to track the real time position of amateur and weather satellites. I recall the sometimes tedious task of updating the keplarian elements. Advances on line technology appears to have given birth to the Java powered site that offers real time tracking and orbital projections on line. In order for this site to work you must enable Java in your web browser. When you first visit don't be fooled by what appears to be a very lean front end screen. Though not identified as active links, the horizontal bar at the top of the page links you to the various features the site offers.

For starters, go to http://liftoff.msfc.nasa.gov/temp/stationloc.html where you can see the real time position of the International space station. As it approaches, program in 143.625 and you may be lucky enough to hear the crew. Most conversations are in Russian.

Next, visit http://liftoff.msfc.nasa.gov/RealTime/JTrack/3D/JTrack3D.html where an image of the earth is displayed. After a few moments you'll see hundreds of confetti like dots representing the real time positions of hundreds of satellites. Using your mouse you can rotate the image in a 360 degree 3D environment. This provides an awesome representation of the halo of satellites that surrounds the earth. Using the "shift" + "Ctrl" keys along with your mouse button you can zoom in and out. Click on each spec and it will ID the satellite and show the orbit. JAVA must be enabled for this feature to work.

Take the time to explore this site it has much to offer!

CLOSING COMMENTS

This issue begins the 5th year of the Urban DX'er. It has evolved into an informative newsletter and part of its success goes to you the readers. This would not be possible without the content contributions we receive each month. Beginning the issue, distribution will take place at the beginning of each month rather than at the end as we have done for the past few years.