

Vol. 2 No. 1

January 20, 1998

**HAPPY BIRTHDAY!**

This issue of The Urban DX'er begins our second year of publication. Reviewing the last few issues I realize how far we've come! The newsletters success is due to the contributions of our readers. Here's hoping that 1998 affords us health happiness and some great scanning and short wave listening!

**VOA TOWERS GO DOWN WITH A CRASH**

BY DAVID THOMAS

*Enquirer Contributor*

**UNION TOWNSHIP** - Two men armed with hydraulic saws reduced the two biggest radio towers at Voice of America's Bethany Relay Station to piles of mangled metal Tuesday.

In what seemed like slow motion to hundreds of onlookers gathered on nearby streets, the first of two 300-foot radio towers tumbled over around 1 p.m. The second tower tipped a few minutes later.

A third, 250-foot tower will be demolished in a few weeks. All three will be cut up and sold for scrap.

"Everything went exactly how we said it would," said Steve Krummen, an engineer with Collins Electric. The towers were destroyed as part of plans to turn the 625-acre VOA site into ball fields, a county golf course and a regional Miami University campus. Local leaders have drooled over the site since the federal government closed it in 1995.

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***The Urban DX'er***

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However, many of those on hand lamented the passing of one of Butler County's most notable landmarks. Tom Rupp, a VOA engineer for 26 year who retired in 1993, drove from Centerville.

"Cool to watch; sad to see," Mr. Rupp said after the second tower crashed to the ground.

Ultimately, more than 1,000 structures will be removed. Just 40 towers, ranging from 90 to 150 feet high, are salvageable.

Established 1984

**VOA TOWER COMING DOWN !**

Most of the towers will be pulled from the ground with a small crane. However, the primary transmission towers brought down Tuesday were too big for heavy equipment.

Mr. Collins said his crews will finish clearing the towers by February. The VOA land is to be transferred from the federal government to the township, university and Butler County early next year.

Ham radio operator Joe Goforth has lived less than a mile from VOA for 20 years. "I used to talk to the engineers all the time," Mr. Goforth said. "Some (VOA broadcasts) used to interfere with my radios, but I guess I'm a little disappointed to see it go."

**VOA CLOSES BETHANY**

If you have ever traveled through Ohio on I-75 north of Cincinnati, you may have looked off to the east and seen the vast antenna farm of the VOA's Bethany Relay Station. Nestled amidst 14 rhombics of various sizes, was a majestic, 3-tower Sterba Curtain rising nearly 300 feet above the landscape. The Bethany station's antennas have always given hams in this part of the country a bit of pause when they started bragging about their Yagi or Quad; a full square mile of heavy-hitter wire antennas would make anything else pale in comparison.

The station closed a couple of years ago due to some political strings being pulled here or there, but at one time it was the most powerful shortwave station in the world with 200kW. Several stations were built that eclipsed it in time, but it was always a big gun.



VOA BETHANY

Last week the curtain towers came crashing down to make way for retail space, a golf course, a park and a university campus. Though the land will be much more valuable in this multi-faceted usage plan, I'm sorry to see the antennas go. I would always drive slowly past, just to admire the miles and miles of wire and wonder about those long gone propaganda transmissions.

<http://www.exit109.com/~jimh/voaohio.html>

### THE HISTORY OF THE NEW YORK CITY BOMB SQUAD

The New York City Police Department Bomb Squad is the oldest and largest civilian bomb squad in the United States. By the very nature of its work, like its counterparts in other cities, it is also one of the most specialized and unique professional police units in the country.

Throughout its long history, as discussed in this bulletin, the New York City Bomb Squad has not only grown considerably in size and expertise, but has experienced a number of structural and organizational changes as well. Each of these changes, however, has accurately reflected the shifting criminal and cultural circumstances of the times.

The roots of the New York City Bomb Squad were formed in April, 1903, under the leadership of Lt. Guiseppe Petrosino. This unit, first known as the Italian Squad, was composed of five officers. It was formed in response to a wave of extortionist bombing directed against the merchants of the Italian community, predominantly living on the lower Eastside of Manhattan, who had refused to accede to the extortionists demands. Responsibility for these incidents was attributed to an alleged secret society known as the Black hand. Observers of this period are divided over the existence of the Black Hand, some of whom contend that these acts of extortion were isolated crimes committed by individuals rather than a syndicate organized for a common criminal purpose. The Italian community, however, had long been convinced of its existence, and in time had come to consider Petrosino's Italian Squad as their only protection. Progress was slow at first, but gradually the Italian Squad had begun making

inroads into identifying those responsible.

Unfortunately, on March 12, 1909 Lt. Petrosino was shot to death while in Sicily exchanging information with the Italian authorities. Although the nature of the Bomb Squad would be unaffected for a time, the death of Lt. Petrosino had precipitated other developments for the New York Police Department as a whole. One, it was agreed that information exchange programs with overseas police would be broadened; two, as a result of the success of the Italian Squad, efforts would now be made to recruit other ethnic minorities into the Police Department to work within their respective communities.

Toward the end of the decade there had been a significant decrease in extortion activities. In contrast, however, the bombing incidents of the decade to follow were of a distinctly political nature as extremists of all persuasions had begun utilizing explosives as means of advancing their causes. By the latter half of the decade the public had become increasingly alarmed as newspapers carried almost daily accounts of sabotage and subversive activities. In one such famous incident called the Black Tom Explosion of 1916, nearly two million pounds of munitions had exploded on a strip of land off the Hudson River in nearby New Jersey. Although a follow-up investigation would later conclude it was an accident, the incident at the time did little to arrest public fear.

Following W W 1, a wave of anarchist bombing culminating in the Wall St. Bombing of September 16, 1920 would occupy the entire investigative efforts of the Bomb Squad. On that day, known as Bloody Thursday, a horse drawn wagon filled with explosives detonated between the J.P. Morgan Building and the U.S. Assay Office at Broad and Wall Streets killing 39 and injuring 300. A subsequent investigation revealed that the incident had been perpetrated by a Bolshevik fringe group calling themselves the American Anarchist Fighters. This period of political unrest gradually subsided only to be followed almost immediately by the turbulent Age of Prohibition. During most of the next two decades the Bomb Squad would focus its attention on various rival syndicates, for whom the bomb was a common instrument of terror. It was sometime during the mid-1930s that the Bomb Squad had merged with the Forgery Squad, a union which lasted until 1940—a year which was to mark a distinct turning point for the Bomb Squad, entirely as the result of a single incident.

On July 4, 1940, an employee at the British Pavilion of the New York Worlds Fair discovered a package which was subsequently determined to be a bomb. Detectives assigned to the British Pavilion removed the device from the building and carried it to the perimeter of the fairgrounds, near the Polish Pavilion. Two members of the Bomb Squad, Detectives Joseph Lynch and Ferdinand Socha, arrived on the scene and began to

examine the package. Within seconds, the package detonated, instantly killing Lynch and Socha while injuring four others.

There would be several developments as a consequence of this tragedy. First, the Bomb Squad was detached from the Forgery Squad and organized as a separate unit of the police force. Secondly, the art of bomb disposal would now be approached in a more professional manner. For example, time would now be devoted to research and development; additional public funds would be earmarked for the purchase of safety equipment. In addition, new recruits would now have to undergo a ninety day training period. Exercises included constructing and dismantling several types of explosive devices and military ordnance, learning the uses of various types of safety equipment, as well as receiving instruction on the techniques of bomb investigation. The New York City Bomb Squad, as it is now constituted, was formalized.

Beginning in 1941 and continuing until 1957, the Bomb Squad was to be plagued by a lone bomber who hid or exploded an estimated 47 devices throughout the City. Most of these devices had been targeted for installations of Consolidated Edison Power Company. The perpetrator of these incidents, popularly known as the Mad Bomber, claimed he had planted these devices because he had been swindled out of his just pension by the utility company. It was this pattern of utility-related targets that ha~ eventually resulted in his arrest. The bombings came to a halt when George Peter Metesky was apprehended at his Waterbury, Connecticut home in September, 1957.

It was the period beginning in the late 1960s and continuing until the present, however, that New York City and the nation in general, would experience an astonishing increase in major explosive incidents. Most of these incidents, like those of the period following WW I, would be political in nature, as a host of well organized, militant, revolutionary groups had begun to use the bomb as means of realizing their radical political goals. There had been countless incidents to which the Bomb Squad responded during this turbulent period where the potential for death, injury, and personal property damage was significant. One of the most noted incidents of this period was the attempted bombings by the Black September Group in March, 1973. On the evening of March 6, 1973, three explosive/incendiary devices had been discovered in the trucks of three parked vehicles, all stolen. Two of the vehicles had been parked in close proximity of Israeli banks in Midtown Manhattan, while a third was parked near the terminal of Israeli El Al Airlines at Kennedy International Airport. Fortunately, each of these devices had been recovered and rendered safe by members of the New York City Bomb Squad. There were, however, two aspects of this case which were particularly notable. First, the two vehicles parked in Midtown) Manhattan, had been towed without incident to a Westside impound lot. Had either of these devices detonated in place or en

route, a number of casualties was certain to have resulted. Secondly, each of these devices had been equipped with E cells, which had been utilized as switches. This had been the first time any Bomb Squad had confronted this unusual component.

In another set of famous incidents in October) 1974, in which five banks had been bombed simultaneously by the FALN, the Bomb Squad responded immediately to the situation and proceeded to coordinate all five post-blast scene investigations simultaneously.

The Bomb Squad has been involved in the investigation of several other notorious bombing incidents of this period, such as the bombing of Fraunces Tavern in January, 1975, and the bombing of La Guardia Airport in December, 1975, where it worked for five days without interruption.

The New York City Bomb Squad has enjoyed a tremendous success in the utilization of its Explosive Detection Canines, which have always performed admirably even under the most adverse conditions. For example, during the summers of 1974, 1975, and 1986, the Explosive Detection Canines were used to search the Statue of Liberty, where temperatures inside had reached an unbearable 111 degrees . In another instance earlier in the decade, an Explosive Detection Canine uncovered a package in the cockpit of an airplane which turned Out to be a live device.

Unfortunately, with such a dramatic increase in bombing incidents during this time, it was inevitable that the Bomb Squad would incur additional casualties. On December 3, 1973, Police Officer Vincent David Connelly was killed in an automobile accident while rushing to the scene of an explosion. This would not be the last incident where members of the Bomb Squad were to be seriously injured or killed. On September 11, 1976, Police Officer Brian 3. Murray was killed, Sergeant Terance McTigue was seriously injured, Police Officer Henry Dworkin, Bomb Squad and Deputy Inspector Fritz Behre, Commanding Officer Scientific Research Division, were injured while attempting to render safe an Improvised Explosive Device which had been left in Grand Central Terminal by Croatia Terrorists. Then again on March 17, 1981, Detectives Kenneth DuDonis and James OConnor were injured by an incendiary device. At a later date, two males were arrested in connection with this case. Along with this arrest, one of the suspects vehicles was examined in a garage by Explosive Detection Canine Hi Hat and was found to contain fireworks in the trunk. Hi Hat was subpoenaed to court and passed the test given by the defense attorney (an explosive plant was placed in a desk drawer). The injuries to members of the Bomb Squad did not end in 1981. On New Years Eve night, 1982, five Improvised Explosive Devices were placed throughout the city by the FALN. While attempting to render safe one of these devices, Detective Richard Pastorella and

Detective Anthony Senft were permanently disabled from injuries sustained when the device detonated.

Another terrorist group called the United Freedom Front (U.F.F.) was active in the New York City Metropolitan area from December, 1982 thru September, 1984. They claimed responsibility for 10 incidents involving explosives during this period. Members of this group were subsequently arrested, tried, and convicted for these crimes.

From 1985 through 1986, four Improvised Explosive Devices were placed inside abortion clinics in the New York City area. The first two Improvised Explosive Devices exploded, injuring two civilians and causing extensive property damage. The third and fourth, containing three sticks and fifteen sticks of dynamite, respectively, were located and rendered safe by members of the 13 Bomb Squad. A combined effort of the Bomb Squad and Agents of the Bureau of Alcohol, Tobacco and Firearms, was begun to find the person responsible. Between the evidence recovered and investigation by Agents of the Bureau of Alcohol, Tobacco and Firearms, the identity of the bomber was found to be Dennis Malvasi. The culmination of many interview hours, resulted in the recovery of 78 sticks of dynamite by the members of the Bomb Squad which was intended to be used by the bomber in future devices.

From the 1960s, through the late 1980s, a long list of domestic and International Terrorist Groups, Organized Crime, and many individuals have made and placed Improvised Explosive Devices in the New York City area for many reasons: religious, political, revenge and profit. All of these Improvised Explosive Devices have either been rendered safe, or if they exploded, have been investigated by the Bomb Squad. Listed are yearly averages of jobs the Bomb Squad has been called upon to respond to during the mid 1980s: 1600 anonymous calls, 300 suspicious packages, 16 Improvised Explosive Devices which exploded, 18 Improvised Explosive Devices which were recovered and rendered safe, 500 security searches and 90 calls for removal of dangerous chemicals. A total of 7,000 calls which also include threats and confidential investigations.

The Bomb Squad maintains Response Vehicles at the 6th Precinct. The bomb-Carriers and Total Containment Vessels (T.C.V.) are at various locations throughout the city and are maintained for the Bomb Squad by the Emergency Service Unit. Each Response Vehicle is equipped with a variety of the latest equipment in bomb technology, to be utilized by Bomb Technicians when they respond to a location 0 a suspected Improvised Explosive Device (IED). The Bomb Squad also maintains a Demolition Range at Rodmans Neck, in the Bronx, where much of its ongoing efforts in research and development are conducted, as well as the continued training and maintenance of the Explosive Detection Canine Program.

Prior to development of the Hazardous Devices School at the Redstone Arsenal, Huntsville, Alabama, the New York City Police Department Bomb Squad was voluntarily involved in training Bomb Technicians from other police agencies.

Although the N.Y.P.D. Bomb Squad has undergone several organizational changes throughout its history, its duties as outlined below, have largely remained unchanged:

*Respond to The Scene, Render Safe, Dismantle, Handle, Transport And Dispose of Bombs, Explosives, Improvised Explosive Devices And Dangerous Chemicals; Arrange For The Proper Storage And Disposal of All Evidence Coming Into Possession of The Bomb Squad; Assist Outside Agencies in Security Details Involving Vips, Dignitaries And Heads of State Visiting New York City; Assist Precinct Detectives in Field Investigations; Respond to And Investigate All Crime Scenes Involving Explosions; Gather And Preserve Evidentiary Items Recovered at Post-blast Incidents; Provide Expert Testimony in Court Relating to Improvised Explosive Devices, Explosives, and Dangerous Chemicals.*

*Prepared 1-1989, NYPD Police Auxilary  
Submitted By "R"*

#### UPCOMING DX TEST

For anyone interested, here's a reminder of upcoming DX tests; if anyone has any additions or corrections, please contact me.

Saturday, January 30, 1998 - WVNS-670, Claremont, VA  
12:00-2:00 am EST. New Jersey State Police Radio Signals

#### NJSP 'SIGNAL' CODES

- 1 Emergency Standby
- 2 Holdup/Robbery
- 3 Murder
- 4 Agr Assult & Battery
- 5 B&E Larceny
- 6 Escape
- 7 Drunk or Disorderly
- 8 Domestic Dispute
- 9 Prowler/Susp Person
- 10 Burglar Alarm
- 11 M V Accident
- 12 Hit and Run Acc
- 13 Aid to Motorist
- 14 Drunken Driver
- 15 M V Lookup
- 16 NCIC Lookup
- 17 Suspicious Vehicle
- 18 Stolen Vehicle
- 19 Set Up Road Block
- 20 Change Location
- 21 Radio Test

- 22 Out of Service
- 23 Back in Service
- 24 Continuing Investigation
- 25 Detail Completed
- 26 Meet Person/Patrol
- 27 TROOPER NEEDS HELP
- 28 Location
- 29 Telephone Call
- 30 Return to Station
- 31 Emergency at Station
- 32 Escort
- 33 Attempt to Locate
- 34 Bomb Threat
- 35 Explosion
- 36 Reported Sniper
- 37 Discontinue Post

**New Jersey State Police Disposition Codes**

- 1 Report Written
- 2 Warning Written
- 3 Summons Issued
- 4 Summons and Warning Issued
- 5 No Enforcement
- 6 Assist
- 7 Computer Entry
- 8 TOT Local Police
- 9 Gone On Arrival
- 10 Unfounded
- 11 Arrest Warrant
- 13 Arrest Criminal
- 14 Arrest DWI
- 15 Administrative Entry
- 16 Arrest DWI & Criminal
- 17 MV Aid Service
- 18 MV Aid Own Service
- 19 MV Aid Abandoned

**New Jersey State Police Roadway Abbreviations**

- SNO** From the South headed Northbound on the Outer Roadway
- SNI** From the South headed Northbound on the Inner Roadway
- NSO** From the North headed Southbound on the Outer Roadway
- NSI** From the North headed Southbound on the Inner Roadway
- SNL** From the South headed Northbound on Local Lanes
- SNX** From the South headed Northbound on Express Lanes
- NSL** From the North headed Southbound on Local Lanes
- NSX** From the North headed Southbound on Express Lanes
- SNE** From the South headed Northbound on Eastern Spur
- SNW** From the South headed Northbound on Western

- Spur
- NSE** From the North headed Southbound on Eastern Spur
- NSW** From the North headed Southbound on Western Spur
- HBE** On Hudson Bay Extension
- TS** Ramps from the Tolls to Southbound Lanes
- TN** Ramps from the Tolls to Northbound Lanes
- ST** Southbound Roadway Ramp to the Tolls
- NT** Northbound Roadway Ramp to the Tolls

**Commanding Officer Unit Identifiers**

- H-1 Superintendent
- A-1 Troop A Commander
- B-1 Troop B Commander
- C-1 Troop C Commander

**New Jersey State Police Unit Identifiers**

- 60 to 101 AC Expressway Troop Cars
- 102 to 799 Various Marked Troop Cars
- 800 to 899 N.J. Turnpike Troop D Cars and Troop Cars
- 1000 Series Unmarked Units, Investigators, Detectives
- 2000 Series Supervisors
- 3000 Series Division of Gaming Enforcement
- 4000 Series Executive Protection Bureau
- 6000 Series Narcotics Investigators
- 8200 Series Marine Bureau Vessels
- CJ Series Criminal Justice Units

**DISNEY UPDATE !**

There are 2 Motorola trunked systems used by Disney. Reedy Creek Improvement District is used by PD, FD & security. The other system is for various operations including security. I've compiled the following info from several different sources, however I haven't personally confirmed it. Hope to do that when I visit Orlando in Feb. Anyone have any additional info?

System: Reedy Creek Improvement District  
 County: Orange  
 Type: II  
 Use: Walt Disney World Security, Fire & EMS

852.2375, 852.3625, 852.7375, 853.4625, 853.7125,  
 854.3375, 856.2625, 857.2625, 857.7375, 858.2625,  
 858.4625

**OPERATIONS**

|                   |                      |       |
|-------------------|----------------------|-------|
| Banquet           | Banquet Operations   | 19840 |
| BusTransportation |                      | 28346 |
| BusTransportation |                      | 29184 |
| Custodial         | Custodial Operations | 28928 |
| Custodial         | Custodial Operations | 17638 |
| Custodial         | Custodial Operations | 28998 |
| EMS Medic         | (Dispatch)/453.825   | 57339 |
| FIRE/EMS          | Dispatch             | 57360 |



|          |                            |       |
|----------|----------------------------|-------|
| EMS      | Medic (Dispatch TAC-1)     | 57392 |
| FIRE/EMS | TAC-2                      | 57424 |
| EMS      | MED-1                      | 57456 |
| EMS      | MED-2                      | 57488 |
| Float    | Floats                     | 20608 |
| House    | Housekeeping               | 31872 |
| House    | Housekeeping               | 27864 |
| House    | Housekeeping               | 17603 |
| House    | Housekeeping               | 46080 |
| House    | Housekeeping               | 27829 |
| Parking  | Parking Control            | 44577 |
| Patrol   | Lake Patrol                | 26933 |
| Plumbing | Plumbers                   | 41472 |
| Security | Security Operations (Echo) | 35994 |
| Security | Security Operations (Echo) | 33847 |
| Security | Security Operations (Echo) | 34037 |
| Security | (Showcase, Epcot)          | 33828 |
| Security | Security Operations        | 35328 |
| Security | Security Operations        | 23701 |
| Security | Security Operations        | 33338 |
| Sound    | Sound Department           | 21120 |

**WDW - Operations Trunked System**

851.3125, 851.5625, 851.8875, 852.1875, 853.4875,  
 855.1875, 855.6875, 855.7875, 855.8125, 855.8875  
 856.7875, 856.8125, 856.9125, 857.7875, 857.8125  
 858.7875, 858.8125, 859.7875, 859.8125

Unknown freqs, may be part of the trunked system or conventional only:

852.4125, 852.5625, 852.8125, 852.9625, 855.0375  
 855.9875, 857.1625, 857.1875, 858.0375, 860.7875

**AM /FM SEARCH ENGINE**

<http://www.airwaves.com/amdb.html>

Locate and identify AM (MW 540-1710Khz) broadcast radio stations in the United States and Canada. This search engine uses the FCC Database which is freely available on the web at <http://www.fcc.gov> . This site takes no responsibility for the accuracy of this information. This information originates with the FCC, not us. This search facility is provided as a public service to broadcasters, radio hobbyists and other interested parties, free of charge and for entertainment purposes only.

**FIRESIDE CHAT  
 ON THE TRUNK TRACKER SCANNERS**

*By Bill Cheek*

I'm not one to get all aroused and hot to trot over every little breaking fad and fashion, and I do think "trunktracking" is something of a fad right now.

I just don't see 800 MHz trunked systems lasting forever. The spectrum isn't all that wide for one; the number of channels available to a fleet isn't over-whelming; and the

computer hardware and software required to maintain a trunked system is extremely costly, both in up-front costs as well as in long term maintenance. 800 MHz trunking is just too fraught with problems and costs to be a long lived entity.

Not only that, but if and when vendors like Motorola, GE, and Ericsson ever change their software, what good are those high-falutin' TrunkTrackers?

So, I'm not all that hot on TrunkTrackers, especially of Uniden origin, and particularly the first versions to hit the market. I hear that GRE-Japan has a trunktracking scanner in the works, so until there are choices, I'll remain aloof and skeptical.

***Analysis of the PRO-90 & BC-235XLT***

I said I wasn't hot to trot over the TrunkTrackers, and I'm not. However, as scanners, the PRO-90 and BC-235XLT are pretty hot stuff when you get right down to it.

Referring to the Block Diagram I see where these scanners use five BandPass Filters in the RF front end. Not bad, considering the PRO-43, PRO-64, and PRO-2041 only have four. The PRO-2004/5/6 and the PRO-2035/2042 have seven BandPass Filters, though. Let's compare them:

***BANDPASS FILTERS***

| <b>PRO-2004/5/6<br/>PRO-2035/2042</b> | <b>PRO-90<br/>BC-235XLT</b> |
|---------------------------------------|-----------------------------|
| 25-40 Mhz                             | 29-54 MHz                   |
| 40-68 Mhz                             | 108-137 MHz                 |
| 68-108 Mhz                            | 137-174 MHz                 |
| 108-174 Mhz                           | 406-512 MHz                 |
| 174-280 Mhz                           | 806-956 MHz                 |
| 280-520 MHz                           |                             |
| 760-300 MHz                           |                             |

Bandpass filters (BPF) are special front-end filter blocks composed of capacitors, coils, resistors, and diodes, the purpose of which is to admit a band of frequencies and reject all others. As an example for the PRO-90 above, if the scanner is tuned to 50.000 MHz, then a strong signal on 109 MHz should not cause appreciable interference since the active BPF should reject anything below 29 MHz and above 54 MHz.

When a scanner changes frequencies, the CPU makes sure the correct BPF is switched in at all times. By the way, this switching sequence and checking is one of the limitations of speed in a scanner. Switching takes time! It also takes time for switching diodes to "settle".

But you get the idea for bandpass filters now. They are

desirable, and the more, the better. Cheap scanners don't have any and instead use a different front end for each band of reception. Good scanners have four to seven BPF's.

### ***AGC in the PRO-90 & BC-235XLT***

Virtually all scanners use Automatic Gain Control (AGC) somewhere in their circuits, but only the better scanners use AGC in their front ends. AGC in the front end helps reduce or eliminate strong signal overload, desense, and intermod caused by strong signals. The PRO-90 and BC-235 use AGC in their front ends, a decided strong point. Cheaper scanners use AGC only in the Intermediate Frequency (IF) sections of the receiver.

### ***Double-Balanced Mixers in the PRO-90 & BC-235XLT?***

The best scanners use "double balanced mixers" (DBM), at least for the 1st mixer, and ideally for the 2nd mixer as well. It doesn't appear that the PRO-90 and BC-235XLT go so far as to use DBM's at all, but not many scanners do. (The PRO-2004/5/6 and PRO-2035/2042 do!)

### ***Computer Interfacability for the PRO-90 & BC-235XLT?***

I hear Uniden's base TrunkTracker, the BC-895XLT is computer interfaceable, but there's nothing evident of that nature for the PRO-90 and the BC-235XLT. Shame. Of all the scanners that need a computer connection, one would think the TrunkTrackers would. Of course, to date, only the PRO-64, PRO-2041, and BC-895XLT are computer connectable by factory design (speaking of the mainstream scanners, that is.) Still, there is an interesting aspect of the PRO-90 and the BC-235XLT that could be exploited by an industrious third party for computer connection. The Block Diagram and schematic diagrams indicate the use of a discrete (external) uPD7225 LCD Display Driver chip!

Well, this chip is one of the claims to fame of the PRO-2004, PRO-2005, and the PRO-2006 and why the CE-232 Scanner/Computer Interface is such hot stuff. 99.9% of all scanners have the LCD Display driver on-board (inside) the CPU where it and its data \*cannot\* be accessed. An external location of the uPD7225 chip means \*access\* to the data that flows from CPU to the LCD Display. The following six display signals are thus available for sampling and use in an interface:

### ***Reset - C/D-Serial Data - Chip Select -Busy -Serial Clock***

Not that the \*availability\* of these signals means anything, because the BC-2500XLT also used the uPD7225 Display Driver chip, and nothing ever came of it. But I do have to submit that the uPD7225 made life easy for the CE-232 Interface and its awesome Data

Acquisition mode for the PRO-2004/5/6 scanner series.

I don't mean to imply that the CE-232 Interface can work in 2-way mode with the Trunk-Tracker scanners, (see ahead), but it is certainly possible for someone to decode the data on the above six signal lines and then use it with an interface similar to the CE-232. No one did it for the BC-2500XLT, and I'd guess they're not likely to for the PRO-90 and BC-235XLT either. But I mention it in case you know someone who has a proclivity for that sort of thing. Short of a logic analyzer, it's pretty hard to read and decode the kind of data that flows from a scanner's CPU to the Display. It can, however, be done with a device (serial data interceptor/decoder) we published in the World Scanner Report a few years ago in V1N10 and V2N1 (back issues always available). Once the display data code is known, it's possible to design an interface to read, process and display that data on a PC.

At first glance, it appears more than feasible that the CE-232 Interface can be made to work on the BC-235XLT and PRO-90 for Auto Programming and Remote Keyboard Control. (1-way mode)

If someone, (preferably a CE-232 owner), will lend me their PRO-90 or BC-235XLT, I'll be glad to make this determination and publish the results. Contact me by e-mail if you're willing.

### ***What The Hell Is That Epoxy Blob?***

The Service manual has a notation on the Logic/CPU board, "Epoxy Blob". I haven't seen this blob with my own eyes, but the service manual indicates there is a wad of epoxy covering the row of resistors including R208, R209, R210, R211, R212, R213, and R223.

Say what? Why the hell would a group of resistors be covered with epoxy? A quick look at the schematic diagram reveals that these seven are switched pull-up/down resistors for the CPU functions of VHF-Lo, VHF-Hi, Aero, UHF, 800 MHz, VCO, and LE.

Oddly, this general area of the CPU used to be where we did cellular modifications prior to 1994, but I don't see a connection with those seven functions and any possible cellular hacks.

Strangely, there is a permanent pull-up resistor, R214, that is not epoxied, but which goes to \*unnamed functions\* at Pins 62, 64, and 72 of the CPU.

In a word, that blob of epoxy appears to be hiding something, but it's in the wrong place! This is definitely a mystery to be explored by the curious. Even though the resistors are covered with epoxy, the pins of the CPU are exposed, as are the traces, so the epoxy really accomplishes nothing to deter the determined hacker.

**Mysteries in the PRO-90 & BC-235XLT**

Why the epoxy blob over the seven innocuous resistors? What is Uniden hiding here? Is it a decoy?

For whatever it is worth, R214 permanently pulls high CPU pins 62, 64, and 72. What would happen if one or more of these pins were pulled low?

Likewise, CPU pins 51, 52, 57, 59, and 65 are tied low to ground. Of these, only Pins 57 and 65 are labeled "GND". So what would happen if one or more of Pins 51, 52, and 59 were pulled high?

**CONCLUSION**

TrunkTracker or not, and Uniden or not, the PRO-90 and BC-235XLT appear to be darned decent scanners from a technological point of view. One wonders about computer connectability and about the mysteries associated with the blob of epoxy, as well as the undefined high and low connections to unlabeled CPU functions.

**RADIO FREE BERKELEY**

*Free Your Ears and Your Mind Will Follow*  
By David Pescovitz

*(During one of the nets someone mentioned Radio Free Berkeley. Bob Sanford sent this to me to share with all of you.)*

In a musty live-and-work space in downtown Berkeley, Calif., beyond the spill of technical manuals and trade

journals littering the floor, a few steps from the jury-rigged computer terminal and black kite emblazoned with the Jolly Roger, lies a door. Stephen Dunifer pushes his gray shoulder-length hair out of his eyes and unlocks it, revealing a swamp of electronic circuits, metal-working machines and long, thin rods the can only be one thing. Antennas.



Stephen Dunifer

Stephen Dunifer is a pirate. He's not stealing gold or silver, but something much more ethereal and valuable: airwaves. Since April 1993 Dunifer and a group of around 40 volunteers have been broadcasting Free Radio Berkeley, a 40-watt pirate radio station (Dunifer prefers to call it an "unlicensed micro power radio station") with a range of approximately 12 miles. Tune in to 104.1 on your FM dial and you might hear anything from leftist political

commentary to punk rock to hip-hop to poetry.



"It's time to take back the public commons -- by any means necessary," says Dunifer. "In this case through microradio."

Radio Free Berkeley

A pirate radio station is defined as any unlicensed broadcast at less than 100 watts (the minimum requirement to apply for a Federal Communications Commission, or FCC, license). And though they're illegal, there are plenty of them around -- particularly in the Bay area. Stations with names like the Anime Music Network, Steal This Radio, Radio King Kong and African Liberation Radio waft unpredictably through the ether, unleashing on unsuspecting eardrums the voices of everyone from amateur comedians to right-wing reactionaries. Just listen.

Don't like what you hear? Do it yourself. For a few hundred dollars Dunifer can hook you up with your own transmitter. In the last few years Dunifer has sold more than 300 radio broadcasting kits, sent transmitters to Guatemala, El Salvador and Chiapas, and even hidden transmitters inside karaoke boxes during the Haiti coup. Just add a microphone, audio mixer and CD player, and you're on the air for less than \$1,000.

You're also breaking the law -- as Dunifer and other radio pirates well know. (In fact, some even use broadcasts to ridicule the authorities.) The FCC claims that unlicensed transmitting can interfere with commercial broadcasts, law enforcement calls and air travel communications. In 1993 they fined Dunifer \$20,000 and sought an injunction against further broadcasting. So Dunifer went mobile. Hoping to thwart the feds, who use radio triangulation to pinpoint the source of pirate signals, Dunifer broadcast out of his van while driving around the Berkeley hills. (A judge later denied the injunction against Free Radio Berkeley.) In the meantime Dunifer has established a small stationary studio just north of town, broadcasting constantly while he battles it out with the FCC in the courts. "This is a matter of free speech, so why should I hide something that's my constitutional right?" he says.

Why not avoid the legal hassle, and just go legit? According to 29-year-old pirate radio enthusiast Andrew Yoder, it's not that easy: Starting a licensed station can cost hundreds of thousands of dollars. So radio pirates pick an unused frequency and simply begin transmitting.



Yoder claims that there are thousands of pirate radio operators across the United States operating on AM, FM, and most commonly on the shortwave part of the broadcast spectrum. And new telecommunication technologies have given the movement a shot of adrenaline.

"The Net brings the pirates and the listeners closer together," says pirate broadcaster John Cruzan, whose Free Radio Network website provides message boards for enthusiasts. "The Web is also very encouraging because you can promote your show in chat rooms and find out right away if people can hear you. "

Free Radio Berkeley hosts a website <http://www.freeradio.org/> as well -- but Dunifer doesn't stop there. On weekends Dunifer broadcasts on 87.9 FM from a local flea market, using a small cart rigged with a transmitter and microphone. The name of this spinoff station? "Flea Radio Berkeley."

For Dunifer, Yoder, Cruzan and radio pirates and listeners around the world, the slogan of Free Radio Berkeley is their rallying cry: "*Let a thousand transmitters bloom.*"

### 11th Annual Winter SWL Festival

March 12-14, 1998

[http://www.trsc.com/fest\\_reg.html](http://www.trsc.com/fest_reg.html)

**Holiday Inn  
Sumneytown Pike  
Kulpsville, Pennsylvania**

Plan to attend your favorite forums Friday and Saturday. Enjoy meeting with your friends in the Hospitality Room. Bring radio-related items for the swap meet or to donate for the Silent Auction. Check out your friends' receivers, bring one of your own for others to try.

No frills: just shortwave, longwave, mediumwave, pirates and scanning. Once again you will enjoy the camaraderie of your hobby friends.

### G&G COMMUNICATIONS

<http://www.iinc.com/ggcomm/>

Do you have an old scanner that's in need of repair?  
Do you need crystals for an old scanner or pager?  
Are you looking for parts to repair that old scanner?  
Are you looking to buy an inexpensive used scanner?

If you answered yes to any of the above than you need to contact G&G Communications at 716-768-8151 or fax them at 716-768-7175.

### WWVB GETS POWER BOOST

(As reported last month)

WASHINGTON (AP) -- The tardy just lost one more

excuse for being late.

The automatic time signals from the government's atomic clock in Colorado have been given a power boost, making them easier to receive across the country, the National Institute of Standards and Technology announced Monday.

The extremely precise signals are used by broadcasters, navigators, scientists, power generating and transmitting companies, electronics manufacturers and others in need of extremely accurate timekeeping.

The signal can be used to automatically set the correct time in clocks, watches, VCRs, cars and electronic gear of all kinds equipped to receive the special signal. It is not audible and requires special receivers to decode.

The signal, broadcast by government transmitter WWVB, near Fort Collins, Colo., has operated at 10,000 watts for more than 30 years. It has now been boosted to 23,000 watts and plans call for an increase to between 40,000 and 50,000 watts, the agency said.

The power upgrade strengthens WWVB's signal over the continental United States, allowing use of less expensive receivers and antennas. Even radio-controlled wristwatches can now maintain accurate time, the agency said, and manufacturers of various appliances can consider installing miniature receiver-clocks in their products.

The current upgrade made use of spare radio transmitters and other components provided by the Navy.

### NEW BC895 CONTROL PROGRAM

<http://wp.com/108101/bctrunk.html>

Two more readers have contributed to the growing list on the BC895's data port. To conserve bandwidth, this information can be obtained through the web. The freeware DOS program is available there as well. Check back from time to time as the updates will always be there. Thanks to the many persons who have contributed to this list and for your support. I have no intentions of putting anybody out of business by giving this information or my freeware program away -- as has been suggested.

ALSO..

As some of you may have seen, we have released a shareware program titled PC895 (available at <http://www.ipxnet.com/home/enterdev/bc895.html>). I would just like to take this opportunity to thank everyone who has taken interest in our program. Just a few quick notes :

1) On Saturday, over 3,000 people logged into our site at once to try to download the software. We have moved

the software to a new server which can handle the high demand. There should not be anymore problems with downloads. If there are, please send E-Mail to enterdev@aol.com and we will fix the problem as quickly as possible.

2) We greatly appreciate the reports of bugs and glitches in the program. We encourage you to E-Mail us with such problems, so that we can correct them immediately and post a patch on the web site (patch01.exe is now available to correct the Open COM Port Error and the Run-time '8012' error that was generated). Even though we have extensively beta tested the program before its release, someone will manage to hit a snag, and we want to hear about. You e-mail will be returned in 24 to 28 hours maximum!!!!

We want PC 895 to be the best program there is, but we cannot accomplish this without out your help and feedback.

Thank you for your interest and support of PC 895.  
Adam Goldman  
Vice President - Technical Services  
EnterDev Software

**PIRATE LOGGINGS**

Readers may recall my "heads-up" for a possible broadcast by Radio Metallica. I listened, but did not hear anything. "R" sent me several loggings he made on 6.955 Mhz. I could have easily filled a page, but I believe I can make the point just as well. Listen to 6.955 khz AM / USB - This is a very active pirate frequency!

- 12/24/97 2258UTC Voice of Anarchy - Chicago, IL**
- 12/24/97 0400UTC Voice of Christmas - Providence**
- 12/24/97 0400UTC "Take it Easy Radio"- Live visit from Santa**
- 12/24/97 0428UTC JRR "Jerry Rigged Radio" - Christmas Music R.I Address for QSL**

**AND FINALLY. .MDT REVISITED**

Several months ago I mentioned a program that was available on the Internet called MDT. Allegedly, it could decode the digital transmissions used with Motorola's MDT system using a simple interface that derived audio from your receivers discriminator output.. MDT(aka Mobile Data Terminals) are used in most police cars to allow officers to check motor vehicle and crime warrants from the police cruisers. Rod N2RVM and I tried several time and never really had any success. After reading an article in one of the news groups I decided to try a variation of the interface whereby an FET op-amp was used in place of the 741. MDT is a crude program that utilizes 75% of the screen to display information in Hex format. The actual text is displayed to the extreme right side in a quasi formatted display. Control characters that MDT uses to create its screen display are unfortunately sent with the text. Despite these limitations, it's obvious what you are looking at! To satisfy legal issues, I've intentionally edited the text, changing driver's license data to protect the identity of the individuals whose licenses were being queried.

```

00 1B 5B 30 6F 20 1B 5B 36 62 4D 45 53 53 41 47 45 20 ..[0o .[6bMESSAGE
46 52 4F 4D 20 33 36 30 32 28 4D 56 33 36 33 29 20 1B FROM 3602(MV363) .
5B 32 31 62 42 45 52 47 45 4E 20 43 4F 55 4E 54 59 20 [21bBERGEN COUNTY
1B 5B 31 34 62 30 31 2F 30 31 2F 39 38 20 20 20 4D .[14b01/01/98 M
20 32 30 3A 30 38 20 20 4D 45 53 53 41 47 45 20 53 45 20:08 MESSAGE SE
4E 54 20 54 4F 3A 20 4D 56 33 36 30 0D 20 0D 20 0D 32 NT TO: MV360. . .2

```

```

31 37 62 42 43 50 4F 2F 4D 44 54 20 4D 45 53 53 41 47 17bBCPO/MDT MESSAG
45 20 53 57 49 54 43 48 20 1B 5B 38 62 30 31 2F 30 31 E SWITCH .[8b01/01
31 37 32 31 20 20 20 20 20 32 30 3A 30 38 20 20 20 2E 1721 20:08 .
4C 49 53 2F 4E 4A 2E 0D 4C 49 43 2F 52 59 33 30 36 45 LIS/NJ..LIC/RV306E

```

0D 0D 2A 2A 2A 20 20 4E 45 57 20 4A 45 52 53 45 59 20  
 4D 4F 54 4F 52 20 56 45 48 49 43 4C 45 0D 49 4E 46 4F  
 52 4D 41 54 59 4F 4E 20 20 2A 2A 2A 0D 0D 4C 49 43 2F  
 52 59 33 30 36 45 20 20 20 4C 49 59 2F 30 37 39 38 0D  
 46 41 4C 43 4F 4E 49 2C 44 4F 52 43 41 53 0D 44 4F 42  
 2F 30 36 2D 32 33 2D 35 33 0D 35 33 36 20 4D 41 49 4E

..\*\*\* NEW JERSEY  
 MOTOR VEHICLE.INFO  
 RMATION \*\*\*..LIC/  
 RY306E TIY/0798.  
**FALCONI,DORCAS.DOB**  
**/06-23-54.536 MAIN**

4C 49 43 45 4E 53 45 20 52 45 53 50 4F 4E 53 45 20 1B  
 5B 31 36 62 42 43 50 4F 2F 4D 44 54 20 4D 45 53 53 41  
 47 45 20 53 57 49 54 43 48 20 1B 5B 39 62 30 31 2F 30  
 31 2F 39 38 20 20 20 20 4D 53 47 20 23 39 38 30 30 31  
 0D 44 4C 23 3A 20 4B 36 39 32 34 2D 34 30 37 36 36 2D  
 30 38 37 38 32 20 1B 5B 37 62 45 58 50 3A 30 38 33 31  
 39 39 0D 4A 4F 48 4E 20 46 20 4B 4F 5A 41 4B 49 45 57  
 38 0D 31 30 20 4E 45 53 54 4C 49 4E 47 57 4F 4F 44 20  
 44 52 20 1B 5B 31 31 62 50 54 53 3A 30 30 36 0D 4C 4F  
 4E 47 20 56 41 4C 4C 45 59 20 4E 4A 20 1B 5B 39 62 53

**LICENSE RESPONSE .**  
 [16bBCPO/MDT MESSA  
**GE SWITCH** .[9b01/0  
 1/98 MSG #97001  
**.DL#: K6954-40766-**  
**08682** .[7bEXP:0831  
 99.**JOHN F KOZAKIEW**  
 8.10 NESTLINGWOOD  
 DR .[11 PTS:006.LO  
 NG \*\*\*\*\* NJ .[9bS

*The Urban DX'er would like to thank the following individuals for their contributions this month!  
 "R", Don Hayes, Bob Sanford, Charlie Hargrove, Ryan Holly and Werner Funkenhauser.*

