

### The Jersey Broadcaster

NEWSLETTER OF THE NEW JERSEY ANTIQUE RADIO CLUB

June 2009

Volume 15 Issue 6





MEETING/ ACTIVITY NOTES

Reported by Marv Beeferman

#### THE ON-LINE BROADCASTER

The New Jersey Broadcaster is now online. To date, 97 of your fellow NJARC members have subscribed, saving the club over \$1900 a year. Interested? Send your e-mail address to:

mbeeferman@cs.com Be sure to include your <u>full name</u>.

Last month was really our last meeting at the David Sarnoff Library. NJARC President Richard Lee thanked our gracious host, Dr. Alex Magoun, for many years of providing such a historic and comfortable location for our meetings and repair clinics. During this time, Alex has also supported the club with his comprehensive (and sometimes scary) knowledge of the history of RCA and its many contributions to American electronics technology. We always looked forward to that unique gizmo or gadget that Alex would retrieve from the dark corners of the RCA catacombs to supplement the month's meeting theme or describe at one of our show-and-tell sessions.

As a modest token of the club's appreciation, Alex was presented with an RCA R-70 cathedral radio. The radio is still in its restoration stages, but we hope to have it up and running before Alex settles down with his new bride. Then, he and his family can watch his collection slowly grow by leaps and bounds.

As noted, our next meeting will be at Princeton's Bowen Hall which is only 10 minutes away from the David Sarnoff Library. Detailed directions are provided in this month's *Broadcaster* and on the club's web site. Attending the June meeting is a great way to show your support for the club's future as we show off what expects to be a great, new meeting location.



#### **MEETING NOTICE**

#### **NEW MEETING LOCATION!**

Our first meeting at Princeton's Bowen Hall (70 Prospect Avenue) will take place on Friday, June 12th, at 7:30 PM. Directions to Bowen Hall are included in this month's *Broadcaster* or may be found at the club's website (http://www.njarc.org). Technical Coordinator Al Klase will have the honor of filling our new surroundings with "radio waves" with a presentation he has titled "Development of the Superheterodyne Short-Wave Communications Receiver - the Pre-War Years." We'll also be holding a brief "memorial service" for NTSC television, as June 12th is the last day for full-power analog NTSC broadcasting in the United States.



David Sarnoff Library Executive Director Alex Magoun admires a goingaway present from the club.

At the May meeting, the club was treated to a comprehensive history of the development of the cell phone and cellular networks. Harry Klancer explained that originally, mobile phones were permanently installed in vehicles, but later versions such as the so-called transportables or "bag phones" were equipped with a cigarette lighter plug to be used as either mobile or portable two-way radios. For me, the most interesting aspect of the talk was how Harry developed the idea that a cell phone is really a computer, performing numerous functions to maintain contact with the user and route a call in the most efficient manner. Harry's background in the industry made him a prime candidate to add clarity to the discussions and questions that followed his talk.

Member Ray Chase reminds us that Saturday, June 20, is the annual Antique and Classic Car Show at InfoAge. This is a fun event for the entire family and is one of the major InfoAge events of the year. The show is managed by Nels Warren but he needs help for a myriad of tasks including parking, ticket taking, guided tours, manning the museums, policing the area and so on. If you can help in any way, even for a few hours, please contact Nels at Nels.Warren@us.army.mil.

With regard to future club events, hold open July 25th for the NJARC Summer Swapmeet - an outdoor tailgater in the cool shade of the leafy trees on the Info-Age campus.



Harry Klancer describes some early mobile phone equipment.

#### THE JERSEY BROADCASTER is

the newsletter of the New Jersey Antique Radio Club (NJARC) which is dedicated to preserving the history and enhancing the knowledge of radio and related disciplines. Dues are \$20 per year and meetings are held the second Friday of each month.

The Editor or NJARC is not liable for any other use of the contents of this publication.

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## ANOTHER BATTLE FOR HISTORIC PRESERVATION

#### Edited by Mary Beeferman

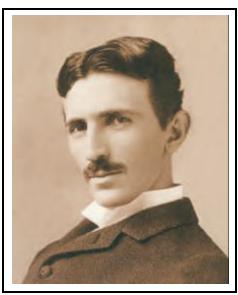
A "Battle to Preserve a Visionary's Bold Failure," by William J. Broad, appeared in the May 5th, 2009 Science Times section of the New York Times. The article describes the fight to preserve Nikola Tesla's "Wardenclyffe" laboratory in Shoreham, Long Island. In it, you'll find words such as remediation, National Register of Historic Places, science museum and education center, etc., which should sound very familiar to those who fought for Info-Age. Although the history of this site is well known to radio historians, collectors and Tesla enthusiasts, renewed interest in its future and similarity to the birth of InfoAge, calls for an update. The following article is a condensed version (with permission) of the major points of the original. Thanks to member Jerry Dowgin for preserving the copy that was used and bringing it to my attention...Ed.

"The building's dark interior was littered with beer cans and broken bottles. Flashlights revealed no trace of the original equipment, except for a surprise on the second floor. There in the darkness loomed four enormous tanks, each the size of a small car. Their sides were made of thick metal and their seams heavily riveted, like those of an old destroyer or battle ship. The Agfa consultant leading the tour called them giant batteries...Tesla authorities appear to know little of the big tanks, making them potential clues to the inventor's original plans."

Nikola Tesla's life was once described as a "cautionary tale." The inventor couldn't commercialize anything and could barely fund his own research. Wardenclyffe epitomized that kind of visionary impracticality.

Tesla conceived his colossal project

at the age of 44 while living in New York City. An impeccably dressed bon vivant of Serbian birth, he was widely celebrated for his inventions of motors and power distribution systems that used the alternating current which beat out direct current (and Thomas Edison) to electrify the world. His patents made him a rich man, at least for a while. He lived at the Waldorf-Astoria and loved to hobnob with the famous at Delmonico's and the Players Club.



Around 1900, as Tesla planned what would become Wardenclyffe, inventors around the world were racing for what was considered the next best thing - wireless communication. His own plan was to turn alternating current into electromagnetic waves that flashed from antennas to distant receivers, essentially what radio transmission is. The scale of his vision was huge, however, eclipsing that of any rival. Investor's, given Tesla's electrical achievements, paid heed. The biggest was J. Pierpont Morgan, a top financier. He sank \$150,000 (today, more than \$3 million) into Tesla's global wireless venture.

Work on the prototype tower began in mid-1901 on the North Shore of Long Island at a site Tesla named after a patron and the nearby cliffs. "The proposed plant at Wardenclyffe," the *New York Times* reported, "will be the first of a number that the electrician proposes to establish in this and other countries." But a shock wave hit Dec. 12, 1901. That day, Marconi succeeded in sending radio signals across the Atlantic, crushing Tesla's hopes for pioneering glory.

Still, Wardenclyffe grew, with guards under strict orders to keep visitors away. The wooden tower rose 187 feet over a wide shaft that descended 120 feet to deeply anchor the antenna. Villagers told the New York Times that the ground beneath the tower was "honeycombed with subterranean passages." The nearby laboratory of red brick, with arched windows and a tall chimney, held tools, generators, a machine shop, transformers, glass-blowing equipment, a library and an office.



But J. Pierpont Morgan was disenchanted; he refused Tesla's request for more money. Desperate, the inventor pulled out what he considered was his ace. The towers would transmit not only information around the globe, he wrote the financier in July 1903, but also electric power. "I should not feel disposed," Morgan replied coolly, "to make any further advances." Tesla had seriously misjudged his wealthy patron, a man deeply committed to the profit motive. A Tesla biographer noted "the prospect of beaming electricity to penniless Zulus or Pygmies must have left the financier less than enthusiastic."

It was then that Tesla, reeling financially and emotionally, fired up the tower for the first and last time. He eventually sold Wardenclyffe to satisfy \$20,000 (today about \$400,000) in bills at the Waldorf. In 1917, the new owners had the giant tower blown up and sold for scrap.

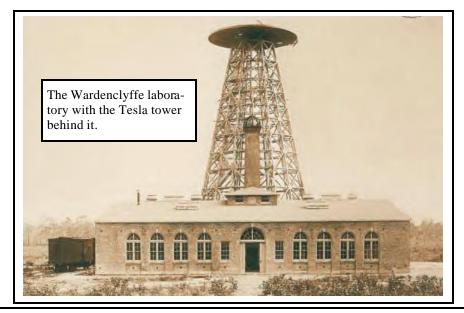
Tesla's exact plan for the site remains a mystery, even as scientists agree on the impracticality of his overall vision. The

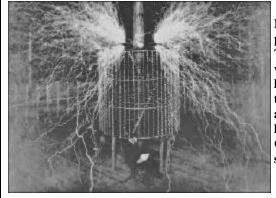
tower could have succeeded in broadcasting information, but not power; although considered a genius in many ways, Tesla did not appreciate dissipation. You can't start putting a lot of power into an antenna and expect the energy to travel long distances without great diminution.

Wardenclyffe passed through many hands, ending with Agfa, which is based in Ridgefield Park, N.J. The imaging giant used it from 1969 to 1992, and then shuttered the property. Silver and cadmium, a serious poison, had contaminated the site, and the company says it spent some \$5 million on studies and remediation. The cleanup ended in September, and the 15.69-acre site was put up for sale (fully cleared and level, if desired) in late February for \$1,650,00.

Today, a science group on Long kland wants to turn the 16-acre site into a Tesla museum and education center, and hopes to get the land donated to that end. They say that saving a symbol of Tesla's accomplishments would help restore the visionary to his rightful place as an architect of the modern age. The ruins of Wardenclyffe include the tower's foundation and the laboratory, designed by Tesla's friend Stanford White, the celebrated architect. But the Agfa Corporation says it must sell the property to raise money in hard economic times. The company's position is very clear: no donation of the site for a museum and no action that would rule out the building's destruction.

Tesla enthusiasts and supporters still see some signs of hope. Recently, the New York State commissioner of historic preservation, on behalf of Governor Paterson, backed Wardenclyffe's preservation and listing in the National Register of Historic Places. Ms. Alcorn of the Tesla Science Center, who has sought to stir interest in Wardenclyffe for more than a decade, seemed confident that a solution would be worked out. Suffolk County might buy the site, she said, or a campaign might raise the funds for its purchase, restoration and conversion into a science museum and education center. She said the community was strongly backing the preservation idea.





Nikola Tesla in a popular multiple exposure photo in 1899, as a Tesla coil discharged millions of volts. He is seated inside a circular framework 51 feet in diameter, which supported the primary and secondary conductors of the largest Tesla coil ever built, at his Colorado Springs experimental station.

#### **Directions to Bowen Hall**

70 Prospect Avenue Princeton, NJ 08540-5211

#### West & Northwest

I-80, I-78, and I-287 all lead to US Rt. 206. Take 206 south until it becomes Bayard Lane in Princeton. Turn Left onto Nassau Street (NJ 27) and continue past the University's main gate. Make a right onto Washington Road (Rt. 571), right after Firestone Library. At the first traffic light, make a left onto Prospect Ave.

#### Northeast

I-95 becomes the New Jersey Turnpike; then exit the highway in New Brunswick (Exit 9). Follow NJ 18 North until you see the exit for US 1 South on the right. Take US 1 South for about 16 miles and make a right onto Washington Road (Rt. 571).

#### Southwest

I-95 North and I-295 North also lead to US 1. Go North on US 1 for a few miles until Rt. 571. Make a jughandle left turn to head towards Princeton on Washington Road (Rt. 571).

#### **Southwest on Turnpike**

If you are on the NJ Turnpike heading North, take exit 8 and proceed left onto NJ 33. Follow signs to Rt. 571 and Princeton and proceed 12 miles up Washington Road (Rt. 571).

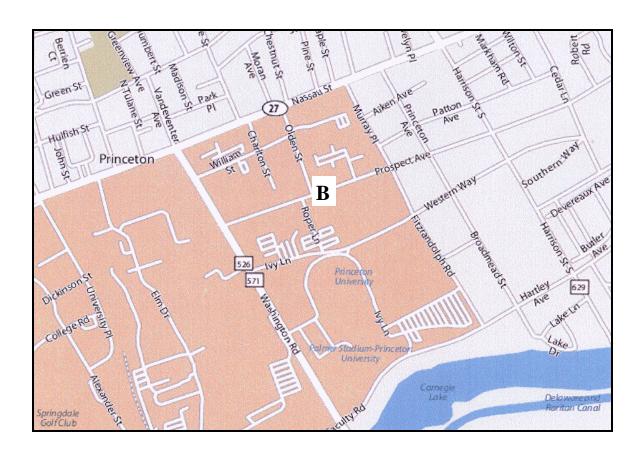
#### Now that you are on Washington Rd...

You will pass through a stretch of fields, and then go over Lake Carnegie. Rt. 571 is now Washington Road. Follow Washington Road up a hill and through 1 stoplight. At the 2nd light (Prospect Ave) make a right onto Prospect.

#### On Prospect Ave...

Now you need to look on the left for a giant purple building behind black iron gates in a long brick wall. This is Bowen Hall.

**NOTE:** Parking is available in the large open lot behind Bowen Hall or in the 4-story parking garage next to the building.



#### TUBE REJUVENATION

By Brian Belanger (Mid-Atlantic Antique Radio Club)

This article was first published in the July 1985 MAARC Newsletter and again in the August 1996 Radio Age. Because the NJARC has gained quite a few new members during the past years, and because this information is something every radio collector needs to know, it bears repeating here (with permission) - Editor

Did you know that some early tubes that test weak can be restored to proper operation? The process, called tube rejuvenation or reactivation, will not succeed in every case, but it works often enough to be worth being aware of. But first, a little history.

The earliest tubes generally had tungsten filaments, a carryover from light bulb technology. Tungsten filaments were rugged, but required high filament current in order to reach the high temperature necessary for copious electron emission. For example, UV 200 and UV 201 tubes required approximately 1 ampere at 5 volts.

In 1920, the Harrison, NJ, works of General Electric, later an RCA plant, in-advertently made a batch of UV 201 tubes using tungsten filament wire containing

thorium. This accident turned out to be fortuitous, because, when tested, some of the tubes produced as good emission as the pure tungsten filament tubes, but at a lower temperature and with considerably less current. Additional experimentation showed that by optimizing the thorium concentration, excellent performance could be achieved.

GE began marketing UV 201A and UV 199 tubes that employed thoriated tungsten filaments. This improved filament became somewhat standard until oxide-coated cathodes were developed. The UV 201A had the same electrical characteristics as the UV 201 except that the filament required only about 1/4 amp.

Thoriated tungsten filaments perform well until the layer of thorium-rich material near the surface is depleted. By heating the filament to a higher temperature, it is possible to cause thorium from inside the material to diffuse to the surface, which restores the electron emission. This process can usually be repeated several times. Eventually, the high temperature will cause the filament to burn out or the thorium diffusion to become ineffective, and a point of diminishing returns is reached.

The two-step process involves the application of a relatively high voltage called the "flashing voltage" for a few seconds, followed by a lower voltage called the "aging voltage" applied for half an hour. Various service books of the 1920s contain slightly different recommendations concerning the proper voltages and times. Gernsback's 1930 Official Radio Service Manual says thoriated tungsten tubes can sometimes

be rejuvenated by burning them from 1/2 to 1-1/2 hours with the normal filament voltage applied, but the plate voltage removed.

A general rule of thumb for rejuvenation is to flash the filament at about three times normal voltage for about 10-20 seconds, followed by about 30 minutes at 25 percent above normal voltage. In both cases, the plate voltage is to be removed. The easiest way to do this is just to plug the tube into a tube tester and set the filament voltage for the value specified in the table for the time stated.

A note of caution: In the 1920s and 30s, most homes had a line voltage close to 110 volts AC, but today line voltages are typically 120-125 volts. The turns ratios on early tube testers were designed for 110-volt input, and many models did not have a filament voltage adjusting knob. In this case, the filament voltage that you actually apply to the tube being rejuvenated with an old tube tester could be 10-15 percent higher than you assume it to be. This could cause tubes to test better than they really are. It could also increase the chances of filament burnout when the flashing voltage is applied, and with old tubes becoming more expensive each year, that is a real concern.

If you have one, you might plug your tube tester into a Variac and adjust the voltage, or at least measure the actual voltage at the filament terminals of the tube tester and set the switch accordingly.

Remember, this method works only with the thoriated tungsten filament tubes as listed in the table. If you try it with a UV 201, WD-11, or UX-112, it will **not** work.

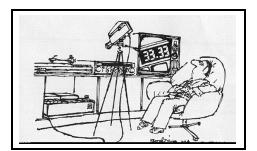
Tube Type	Normal Filament Voltage	Flashing Voltage (VDC)	Flashing Time (Sec.)	Aging Voltage (VDC)	Aging Time (Min.)
UX 200A	5	15 - 16	10 - 15	7 - 7.5	30
UX 201A CX 301A	5	15 - 16	10 - 15	7 - 7.5	30
UX 240 CX 340	5	15 - 16	10 - 15	7 - 7.5	30
UX 171 CX 371	5	15 - 16	10 - 15	7 - 7.5	30
UX 199 CX 299	3 - 3.3	10.3 - 12	10 - 15	3.3 - 4	30
UX 120 CX 220	3 - 3.3	10.3 - 12	10 - 15	3.3 - 4	30
UX 210	7.5	No flash	No flash	9	30

Recommended Voltages and Times for Tube Rejuvenation

### THE CARTOONS OF CHARLES RODRIGUES

#### By Marv Beeferman

You have to be somewhat older to be familiar with the cartoons of Charles Rodrigues. His long affiliation with the magazine Stereo Review (now called Sound & Vision) began with its first issue in February, 1958 (when it was called Hi-Fi and Music Review, later HiFi Review and then HiFi/Stereo Review, until 1968 when the name settled to Stereo Review). His cartoons for that magazine were geared for audiophiles, and the humor would often (but not always) depend on the reader's knowledge of audio equipment.



However, electronic hobbyists are more familiar with the similarly-themed Ham and CB radio-centric cartoons that appeared in *Electronics Illustrated* in the 60s and 70s. Some cartoons were specifically geared towards antique radio. But many enthusiasts are not familiar with darker side of Charles Rodrigues.

He was born on September 9th, 1926, was of Portuguese heritage and lived most of his life in rural Massachusetts. After his service with the Navy in WWII, he married and raised a family.

Although a devout Catholic who despised humor of a blasphemous or sexual nature, Rodrigues thought nothing of submitting cartoons that made humor out of the handicapped, epileptics and dwarfs as they tried to use the toilet or perform other everyday activities. The tone of his cartoons (if not the artistic style) was often similar in dark temperament to cartoonists like Charles Addams or his contemporary, Gahan Wilson. Quite the contrast to the tame and genteel cartoons that we, as radio and electronic enthusiasts, are more familiar with.

Rodrigues's cartoons appeared in magazines such as the *National Lampoon*, *Playboy*, *Look* and others His gag cartoons also ran regularly in *Cracked* magazine for many years. He also was a syndicated newspaper cartoonist, with

two long-running strips; 'Charlie' (described as being like a gloomier 'Ziggy') and 'Casey the Cop'.

Charles Rodrigues died at the age of 77 on June 14th, 2004, following a brief illness. When you look at his cartoons associated with antique radio, it is hard to believe that he wasn't a collector himself. It would be interesting to find out if this was the case, since the insight displayed certainly strikes a nerve.

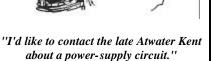


"Mind lifting your feet?"



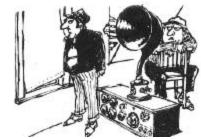
'Come on, folks-who'll make it 10 cents?''







"Yes, this is the party that advertised a 1922 radio for sale."



What if we never do hear from the museum -Who's gonna fence this piece of junk?"

## THE EVOLUTION OF A NEW JERSEY RADIO STATION

#### By Marv Beeferman

Some time ago, I received an original section of a program schedule for station WAAT from honorary NJARC member Ludwell Sibley. (Ludwell is presently the president of the Tube Collector's association and editor of the *Tube Collector*.) He told me he found it in some paper from a retired broadcast engineer and suggested it make some good *Broadcaster* "filler." Ludwell noted that "KEY STATION WOR" represented the air raid link and "#1" and "#2" the RF current in the two antennas. He also pointed to "J B GAM-BLING" scheduled for 7:30 AM which was probably captured via WOR.

After doing a little research, I recognized that the history of WAAT represented a little more than just "filler." The station changed hands numerous times, with just as many format changes, and its evolution was probably representative of most radio stations - a constant search to re-invent themselves to remain profitable.

The station's origins go back to 1922 when WAAT signed on 833 AM. It was later resurrected in 1926 on 1270 AM licensed to Jersey City. An early slogan for the station was "The Voice at the Gate of the Garden State." Original studios were in the Hotel Plaza at 91 Ship Ave. in Jersey City. Among the first programs was a nightly concert of dinner music direct from the hotel's dining room.

In 1927, WAAT opened a Manhattan studio and moved to 1220 AM. In 1928, the station moved again to 1070 AM as a daytime-only station. WAAT was one of the first stations in the metropolitan area to serve the black community, with the "Negro Achievement Hour" starting in 1929. In 1930, another frequency change occurred to 940 AM and in 1931, WAAT moved out of the Hotel Plaza and went to 50 Journal Square.

In 1940 and 1941, the station received permission to move from Jersey City to Newark., open a new transmitter in Kearney, double its power to 1000 watts, shift

### DAILY PROGRAM SCHEDULE

WAAT 970 Kc.

Phones: IOurnal Sq. 4-3500 MArket 3-0383 REctor 2-5878 Jersey City New Jersey

	KEY STATION WOR	APR	IL 9,1	942
A.M.			#1	#2
12:30 1:00 1:30 2:00 2:30 3:00 4:30 5:00 6:30 7:30 8:30 9:30 10:00 11:30 11:00 11:30	MXRXXMXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	TIME	55555555555555555555555555555555555555	54.7 55.7 54.7

frequency to 970 and stay on the air 24 hours a day.

WAAT was often chasing WNEW for the same audience. One of the more popular shows on WAAT was Dave Miller's "Hometown Frolics." Other announcers included Bob Cook, a singer and DJ who was one of the first African-American announcers in the New York area, and a couple of DJ's who ended up later on at WNEW - Jerry Marshall and Bill "William B." Williams. The station's biggest attraction was Paul Brenner and "Respectfully Yours," a repackaging of WAAT's "5:30 Request Club" from the 1930s.

Announcer Don Larkin gained recognition in the 1950s with his country-andwestern show. Hal Tunis played the newest big band releases and Bob Brown hosted the morning show, later moving to afternoon drive time.

In 1958, WAAT and its FM and TV

properties (WAAT-FM and WNET, Channel 13) were sold and its call was changed to WNTA. WNTA's music featured more down-tempo ballads in a format called "The Golden Sound." But this format turned lackluster and WNTA was sold to become WJRZ.

In 1965, WJRZ became the first station in the New York metropolitan area to play country music 24 hours a day. Also, the station presented 3 hours nightly of classic drama and variety shows from radio's "golden age" under the title "Theater of the Imagination."

WJRZ also abandoned its old WAAT transmitter in Kearney and moved its antenna to an improved location on the banks of the Hackensack River, boosting power to 5000 watts full-time.

The ABC Entertainment Network provided news on the half hour and WJRZ's

(Continued on page 8)

#### CONNECTIONS

Free exposure for buyers and sellers! Unless requested otherwise, each ad will run for two months in both the *Jersey Broadcaster* and the Delaware Valley *Oscillator*. All buying and selling transactions are the responsibility of the parties involved.

Are you aware that NJARC now has a resistor program which includes many commonly needed replacements? Contact Walt Heskes at any club meeting for details.

#### FOR SALE

Check out NJARC's capacitor program for those most commonly needed replace ments. Contact John Ruccolo at any club meeting or call him at home (609)-426-4568 to find out what's available. All proceeds go to the club.

# YOUR "FOR SALE" AD HERE!

(Send to mbeeferman@cs.com)

#### WANTED

# YOUR WANT AD HERE!

(Send to mbeeferman@cs.com)

**WANTED:** Radio repairmen and restorers. Run out of your own radios to work on? The club and Infoage have received a quantity of radio donations, some of which would look good in our museum. Others will be set aside for traveling displays, trading or resale as fundraisers. Many of these radios only need a good cleaning and polishing and a minor electrical checkout. Take one or two home with you and practice your skills...even if you just want to clean them up. Contact Ray Chase at our next meeting, at 908-757-9741 or at enrpnr@erols.com.

(WAAT continued)

own news staff did local reports at the top of the hour. In 1968, WJRZ added sports coverage, including full coverage of the New York Mets. From 1969 to 1972, the station was granted FCC experimental authority to use the Kahn AM stereo system, in effect making it the first station in New Jersey to broadcast in AM stereo.

As 1970 drew to a close, WJRZ evised its format, dropping country in favor of rock music. Another sale in 1971 esulted in a change in call to WWDJ. De-

troit DJ Bill Bailey, ex-WMCA "Good Guy" Dean Anthony and a nighttime host called "Bwana Johnny" were the "screamin' jocks from Hackensack."

By 1974, it was obvious that the station wasn't attracting a sufficient number of fans - most of whom went over to the FM band. On April 1, 1974, WWDJ played its last rock song and said goodbye.

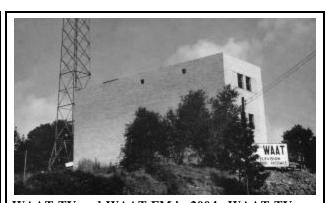
It returned with inspirational programming - "the new voice of inspiration for the metropolitan area." Since the change took place on April Fools Day,

some listeners thought the hymns and sermons were intended as a joke - but they weren't. WWDJ had become the first full-time commercial AM religious station in the New York area.

In 1994, WWDJ was sold to Salem Communications and became a sister station to WMCA. In 2008, 970 initially changed calls to WTTT and then to WNYM. The station has since dropped its long-running religious format and is now "conservative talk" as "970 the Apple."



In 1941, WAAT studios were moved to the Hotel Douglas (1), then to the Mosque Theatre (2). In 1965, as WJRZ, the studio was on Green street (3).



WAAT-TV and WAAT-FM in 2004. WAAT-TV was the first station in the country to operate on channel 13 and the first *high band* station in the New York Metropolitan area. WAAT-TV changed its call to WATV-TV. Financially challenged, its license was eventually reassigned to NYC and became WNET/13.