The Jersey Broadcaster

NEWSLETTER OF THE NEW JERSEY ANTIQUE RADIO CLUB

August 2008 Volume 14 Issue 8

MEETING/ ACTIVITY NOTES

Reported by Marv Beeferman

MEETING NOTICE

The next meeting of the NJARC will take place on Friday, August 8th, at 7:30 PM at the David Sarnoff Library in Princeton, NJ; visit us at http://www.njarc.org for directions. This month, we're asking our members to participate in an old equipment contest. Categories are: 1) Crystal sets 2) Battery sets 3) AC radios, before 1930 4) AC radios, after 1930 5) Transistor radios 6) Communication sets 7) Novelty sets 8) Documentation and ephemera (books, magazines, manuals, photos, etc.) 9) Advertising, and 10) Record players and recording devices (including microphones). Members may enter no more than two categories and awards will be presented at the September meeting. See www.njarc.org for further details.

THE ON-LINE BROADCASTER

The New Jersey Broadcaster is now on-line. To date, 93 of your fellow NJARC members have subscribed, saving the club over $1600 a year. Interested? Send your e-mail address to:

mbeeferman@cs.com

Be sure to include your full name.

With the rolls trimmed of those who did not pay their dues, our total member count came to 197 for 2008, a gain of about 20 over last year. Let's hope this trend continues and we can boast a membership of over 200 for 2009. Of these, 93 are receiving their *Broadcaster* on-line, saving the club a significant amount of money and your editor some major envelope stuffing. It would be great to get this number above 100. In a club like ours, there's got to be at least 7 more members out there with some kind of Internet link.

Ray Chase did a great job at the July meeting bringing our members up-to-date on the latest progress at InfoAge. Hopefully, many of you got an eyewitness account of our progress at the Summer swapmeet during the museum tour, and hopefully some of you were inspired enough to participate in this great endeavor.

Hedy Kiesler earned her first international film fame at age nineteen when she took a nude swim and romp through the woods in *EKSTASE* (1933). Read the rest of the story in this month's *Broadcaster*.

With regard to the swapmeet at InfoAge, it turned out to be a wonderful day with many satisfied customers. In the words of John Ruccolo: "I thought this was an EXCELLENT meet, especially for its relatively small size. For me, it was like a mini-Kutztown. I hope our InfoAge meets continue to grow." Thanks John, and thanks to Ray and Edith Chase, our new president Richard Lee, Sal Brisindi and Steve Goulart for making everything run so smoothly.

An interesting story regarding the meet was related by Ray Chase: "A couple were wandering around taking pictures and videos. Eventually, one of the members brought them to me to help answer some questions about the site. It turned out the husband and wife (Christian and Ute Brüning), with a 12 year old son, were vacationing from Germany. They had been to the South, Shenandoah and Las Vegas in past years and decided to visit more North this year."

"They had reservations for several shows in Atlantic City but hated it, cancelled out and drifted up to long Beach Island. Searching around for things to do, they found out about the swapmeet on the Internet. As usual, for Germans, their English was very good. Christian, being a radio collector, was having a ball. (However, the son spent most of the time in the car.)"

"I took them through the museum and hotel and they said it was the best part of their trip. They kept saying they had to get moving, but they could not seem to yank themselves away. Then, the walk-around auction started and Christian was fascinated. He bought an RCA 100A speaker at a very reasonable price but noted that shipping and duties and questions on valuation were always problems with shipping stuff home."

"Christian said that Germany recently closed their main radio museum in Berlin and most of the stuff has gone into private collections; most radio museums in Germany are now private collections. Glad we could entertain a fellow collector from Europe."

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.

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ANOTHER SPIN FOR VINYL?

Edited by Marv Beeferman

The following is based on an Associated Press release on CNN.com/US (June 10, 2008)...Ed

At the Fred Meyer retail chain, an employee intending to order a special CD-DVD edition of R.E.M.'s latest release "Accelerate" inadvertently entered the "LP" code instead. Soon, boxes of the big, vinyl discs showed up at several stores. Some stores sent the records back, but a handful put them on the shelves and 20 LPs sold the first day. The company realized that the error might not have been so bad after all.

The company is now testing vinyl sales at 60 of its stores in Oregon, Washington and Alaska and, based on the response so far, it plans to roll out vinyl in July in all its stores that sell music. Other retailers are giving vinyl "another spin" too. Best Buy is testing sales at some stores and Amazon.com, which has sold vinyl for the last 13 years, has created a special vinyl-only section.

According to the Recording Industry Association of America, manufacturer's shipments of LPs jumped more than 36 percent from 2006 to 2007 to more than 1.3 million. Some best sellers so far have been the Beatle's "Abbey Road" and releases from groups like White Stripes, Foo Fighters, Metallica and Pink Floyd. On Amazon.com, one of the best-selling LPs is Madonna's latest album, "Hard Candy".

The response has not just been nostalgic; customers feel that they "like" vinyl and that it "has a better sound." It seems that the resurgence of vinyl centers again on a long-standing debate over analog versus digital sound. Digital recordings capture samples of sound and place them very close together as a complete package that sounds, to many people, nearly identical to continuous sound. Analog recordings on most LPs are continuous, which produces a truer sound. (Paradoxically, some new LP releases are being recorded and mixed digitally but delivered analog.) Some purists also argue that the compression required to allow loudness in some digital formats weaken the quality as well.

But to many audiophiles (*including a few NJARC members*), its not just about the sound. They also want the format's overall experience - the sensory experience of putting the needle on the record, the feeling of side A and side B and the joy of lingering over the liner notes. (*In a way, it's sort of the difference between reading something on the internet and getting the newsprint from the New York Times all over your fingertips...Ed)*

Some individuals look at a wall of CDs and try to justify it. Finally, it dawns on them; the things they like - the artwork, the liner notes, the sound quality - are things they like better on vinyl, including the pops, clicks and even some of the scratches. They like the fact that it's imperfect and, in many ways, similar to the imperfections of live music.

The interest seems to be catching on. Turntable sales are picking up and the few remaining record pressers say business is booming. Vinyl record sales could reach 1.6 million in 2008. Many major artists such as Elvis Costello, the Raconteurs and others are issuing LPs and encouraging fans to check out their albums on vinyl. Some artists now package both vinyl and digital versions of their music together, including offers for free digital downloads along with the record.

In some cases, many fans never left the medium. There has been a fairly good supply of vinyl from independent labels for many years. As far as a resurgence goes, the major labels are just pressing more now. But major retailers aren't competing head to head with the regular clientele of independent sellers - nostalgic baby boomers, independent label fans and DJs. You probably won't see any vinyl reggae, funk, punk or industrial music on the shelves of Best Buy.

SWAPMEET AT INFOAGE

This Trutest "25 Watt Jr." CW transmitter with its "famous Les-tet harmonic oscillator" was offered by Bruce Mager of *Waves*.

Al Klase's "mini" crystal set seminar was very popular. This DeForest BC-14A receiver, after some TLC by Al, was a relatively good performer.









"I dare you to stick that on your head!" **"The wicked witch of South Jersey."**

PHILCO FOLLOW-UP

By Aaron Hunter

The June Broadcaster carried an article by Aaron Hunter on his restoration of a Philco Model 80 Colonial clock radio. The radio was left with its cabinet unfinished, with a promise to debut the completed project at a future data. Here's Aaron's follow-up...Ed.

Since the stick-on veneer had come loose from the front panel (remember, this cabinet started life to accommodate the three shafts of a Philco 551), I had to glue in a piece of veneer and try to make it look like the front of a Model 80. Using different shades of toned lacquer, I was able to get an effect that went well with the rest of the cabinet. As the first article pointed out, the two-shaft Model 80 had two strips of wood in the panel where the three-shaft 551 version did not. Since I am not a cabinet maker, I did not try to recreate the missing strips of wood...no one but a true purest would notice.

There are many ways to go about making an old wood cabinet look presentable. Since most of the original finish was intact, I thought I would try my hand at rejuvenating it after taking care of the veneer repair on top. The original finish on the top looked more like maple than mahogany, so the brown lacquer I used on the veneer repair was too dark. But it looked better than too light, so I let it go at that. The next owner can use lacquer thinner to remove the color and try again if they like.

After cleaning the cabinet with a good soap and water, I sprayed it with a light brown lacquer to cover any scratches. Then I rubbed it with 0000 steel wool and cleaned it with a tack rag. This was fol-

The original finish on the top looked more like maple than mahogany...

lowed by spraying the complete cabinet with clear lacquer. Going over the cabinet again with steel wool, it was ready for reassembly and wax. I highly recommend "Bret's" four video series on antique radio restoration in the club library; they offer many useful tips for both the beginner and experienced cabinet refinisher.

Using spray adhesive, I reapplied the original grill cloth. It was in excellent condition.

The next step was to make up an extension cord for the clock and radio to plug into. The original was missing, but several years ago, I tore down a cabin next door and found an old cloth extension cord. The receptacle was used along with new wire and an old plug from my collection of "stuff". I soldered the twisted ends of wire to keep them from fraying under the screws when tightening and I made a paper insulator for the plug from a Bounty paper tube. The plug and a good section of wire from the old extension cord was used on the clock and the new extension cord was mounted inside the cabinet.

A set of four small rubber feet were mounted underneath, something the manufacturer did not use. I pre-drilled the holes so the wood would not split when nailed in place. Now the clock, speaker and chassis could be reinstalled.

Originally, there was a piece of plywood across the back at the top of the cabinet to give support to the speaker mounting. Of course it was missing, so using a scrap piece of plywood, cutting it to size and applying stain, support could again be given to the speaker. I suspect it also helps as a sound baffle.

After applying paste wax and rubbing it down, the radio was ready for display and use...well, almost.

The final step would be to adjust the trimmers, at least the antenna trimmer, but since no antenna was connected, the adjustment would be futile. The radio still pulls in stations with no antenna, especially Radio Disney with transmitting antennas about 1 mile away. With no AVC, the radio blasts with the volume almost all the way down. Now, the clock is running and the radio works, but it is barely visible on its perch.

On to the next unfinished project, an antique stationary engine.

INFOAGE'S "WALL OF HONOR"

By Marv Beeferman

At a time when Obama's sore hip and McCain's Band-Aid make headline news, it's a breath of fresh air to learn about and meet a few people who really made a difference. Although their names and accomplishments have faded from consciousness some years ago, it is a credit to InfoAge to bring these individuals or their families back into the spotlight, even if it is just for an evening.

On Saturday, June 21st, a group of NJARC members attended the annual Wall of Honor reception in the Marconi Hotel dining room. The Wall of Honor permanently recognizes the efforts of those pioneers whose major contributions to electronic research were performed at Camp Evans, the site of the present-day InfoAge Science/Learning Center and the NJARC Museum of Radio Technology. The 2008 inductees were Harold Jaffe, Dr. Rudy Buser and William Fishbein.

Harold Jaffe was among the first Americans to track Sputnik. He was critically involved in the successful development and fielding of more Army electronic warfare equipment and systems than any other single individual including GUARDRAIL, QUICK FIX, TLQ-15 and AN/TRD-4, 10, 15 and 26. During dozens of periods of volunteer service in Southeast Asia, he fielded much of the quick reaction equipment used during the Vietnam conflict. He made significant contributions to the final solution of HF direction finding on aircraft, a thing that textbooks said couldn't be done because of the disparity between wavelength dimensions and aircraft size. Harold Jaffe was highly respected for his innovative technical competence, leadership, courage and dedication to our country.

Family members accepting for Harold Jaffe.

Dr. Rudy Buser brought the Night Vision Electronic Sensor Directorate to the forefront of research and development in the Department of Defense. He leaves a legacy of innovative equipment that turned night into day for our Armed Forces and culminating in the images broadcast on TV during Desert Storm. Dr. Buser was highly respected for advocating that the technical underpinnings of everything that was done was fully understood and that government engineers and scientists build prototypes of the "stuff" they were asking industry to build. Dr. Buser showed an exceptional commitment to the development and fielding of advanced sensors that allowed our armed forces to dominate the 21st century battlefield.

Family members accepting for Dr. Rudy Buser.

During his career, **William Fishbein** developed technology and equipment for radar and Identification Friend or Foe (IFF) systems. Some of his major accomplishments include the AN/TPQ-36 and 37 "Firefinder" radars for locating hostile artillery; the lightweight, battery operated AN/PPS-15 radar for detecting moving personnel and vehicles and the AN/PPS-5, the first ground surveillance radar to use clutter filtering and a "B-scope" display to detect moving targets. Mr. Fishbein also created models defining the Doppler spectra of radar reflections from vegetation, birds and insects, designed adaptive antennas for IFF and designed radar for detecting moving ground targets from lightweight, remotely piloted aircraft. Mr. Fishbein has received numerous awards including the prestigious IEEE Pioneer Award, holds thirteen patents and has chaired sessions at many radar conferences.

Mr. Fishbein accepts his award.

FREQUENCY HOPPING

Edited by Marv Beeferman

The American composer George Antheil (born in Trenton, New Jersey) is best known for a piece he wrote in Paris in his mid-20s, "Ballet Mécanique." The music was supposed to be performed by 16 synchronized player pianos, but Antheil could never figure out how to get the pianos to play in sync until years later. The Austrian-born actress Hedy Lamarr is best known as a voluptuous screen goddess of the late-1930s and '40s. But in the annals of science, Antheil and Lamarr, who became friends in Hollywood in 1940, are remembered as the improbable inventors of a system for the radio control of airborne torpedoes that they called frequency-hopping. By rapidly switching a radio transmission among a large number of frequency channels, the idea offered a way, they theorized, to direct torpedoes that could resist jamming attempts by the Nazis. A receiver hopping between frequencies in sync with the transmitter can pick up the message, while an eavesdropper will hear only random blips. An attempt to jam such a signal will knock out only bits of it, leaving enough untouched to do no harm at all. They actually received a patent in 1942, though there was no interest among the American military until the 1960s.

This June, I was very lucky to enjoy the story of these unlikely scientific collaborators in an imaginative, two-character multimedia play, "Frequency Hopping," at the 100-seat 3LD Art & Technology Center in Lower Manhattan. The play offered a fantasy depiction of Lamarr's and Antheil's relationship. When we meet Lamarr, she is separated from her second (of what would be six) husbands. She has met Antheil at a party and has invited him to her house, ostensibly to talk about the potential of hormones to increase the size of her breasts. But soon the talk turns to Lamar's scientific ideas. She recalls the early days of her first marriage in 1933. Her partly Jewish husband, who operated a German armaments firm, took her to dinners with Nazi officials (including Hitler and Mussolini) where the conversation often centered on

the search for guided missile technology. Lamarr not only developed a hatred of what they stood for , but a vast knowledge of their advanced weaponry.

The play captures the fanciful way Lamar and Antheil fashioned their invention, staging mock battles with toy airplanes and ashtrays as they conceptualize the theory. Antheil brings to the table what he knew about synchronizing machines. Though romantic sparks are kindled between them, the implication is that nothing unpropitious happened. This is a friendship of surprisingly lonely people drawn to each other through intellectual, artistic and patriotic interests.

Multimedia aspects of the play were impressive, and I was surprised that even obvious English majors in the audience were seemingly taken with what they saw and heard in this tech-heavy production. The play inventively used video screens behind and in front of the actors (called an Eyeliner projection system) that turned transparent when not in use and which allowed the actors to interact with animated, fleeting projected images of scientific jargon, fighter planes, submarines,

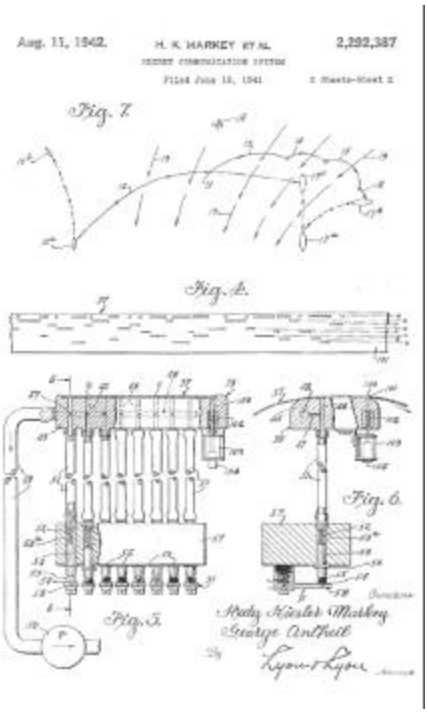
ships and torpedoes. Placed above and to each side of the stage was a 25-piece robotic orchestra consisting of eight Yamaha Disklavier pianos and electronic percussion instruments equipped with mechanical mallets. The orchestra magically played by itself thanks to the wizardry of the League of Electronic Musical Urban Robots (LEMUR), a Brooklyn-based group that builds robotic instruments. Because of them, we got to hear excerpts from Antheil's "Ballet Mécanique" score, both a musical and visual treat.

Now for the details... Antheil proposed that rapid changes in radio frequencies could be coordinated the way he had coordinated the sixteen synchronized player pianos in his "Ballet Mécanique." By the time the patent for a "Secret Communication System" was applied for on June 10, 1941, the invention used slotted paper rolls similar to player-piano rolls to synchronize the frequency changes in the transmitter and receiver. It even called for exactly 88 frequencies, the number of keys on a piano. To develop their idea to the point of being patentable, Lamarr and Antheil invoked the help of an electrical engineering professor from the California Institute of Technology to iron out the bugs. The patent specified that a high-altitude observation plane could steer the torpedo from above.

Putting the idea into practice was not so simple, especially when the existing system of wire control of torpedoes was working acceptably. One examiner doubted that the clockwork mechanism that moved the perforated tape could be accurate enough. Despite lobbying by both Lamarr and Antheil, the Navy turned its back on the invention, concluding that the mechanism would have to be too bulky to fit into a torpedo. Basically, Antheil felt that it came down to a culture clash; the thick-headed brass hats of the Navy were incapable of considering the idea that musical technology could play any part in a complicated piece of weaponry. But the invention had other problems including antenna length, underwater penetration of the transmitted signal, tracking the torpedo from the air and the requirement for a bulky and cumbersome transmitter.

Shunned by the Navy, Hedy Lamarr and George Antheil pursued their invention no further. But in 1957, the concept was taken up again by engineers at the Sylvania Electronic Systems Division in Buffalo, New York. Their arrangement, using electronics rather than piano rolls, ultimately became a basic tool for secure military communications. It was installed on ships sent to blockade Cuba in 1962, about three years after the Lamarr-Antheil patent had expired. Subsequent patents and developments in frequency changing, like the Milstar defense communications satellite system, have referred to the Lamarr-Antheil patent as the basis of the field. Today, the frequency-hopping idea serves as a basis for modern spread-spectrum communication technology (CDMA) used in devices ranging from cordless phones to WiFi network connections.

Lamarr and Antheil's experience offers a valuable lesson. It affirms that a device from an utterly unrelated technological concept, and the most unlikely people, can sometimes offer a new solution to an old and vexing problem. However, you can't expect military men to realize that right away.



A page of drawings from Lamarr and Antheil's 1942 Secret Communication System patent. Note the player-piano-like slotted paper in Fig. 4. "Markey" (at the top of the page in H. K. MARKEY ET AL) is the name of Hedy Lamarr's second of six husbands.

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.

The NJARC tube program offers clean, tested, boxed tubes at very reasonable prices with availability at any club meeting (no dealers, please...not for resale). Proceeds go to the club. Of course, donations of radio-type tubes in any condition are welcome. See Gary D'Amico at the next meeting.

WANTED

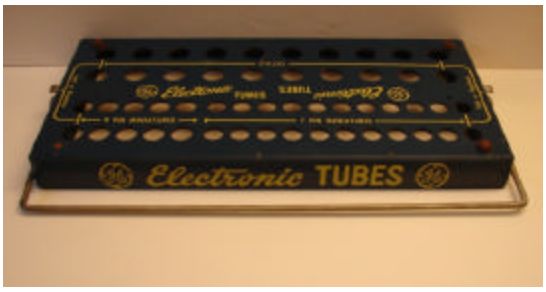
Output transformer for use with 45 push-pull circuit. Self-bias circuit, 5000-ohm center tap, 4 or 8 ohm output, about 12 watts. For use with 12 inch speaker voice coil in 1931 model 20-23 Majestic radio. Dick Hurff, 856-546-7192

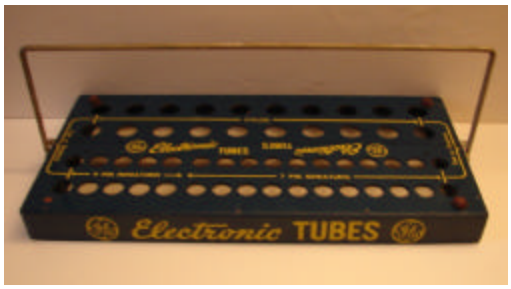
Need parts for Philco models 118 and 19/89. Cash for old chassis, IF and tuning parts. Will pick up at a reasonable distance. Robert Haworth, 112 Tilford Rd., Somerdale NJ 08083 856-783-4175

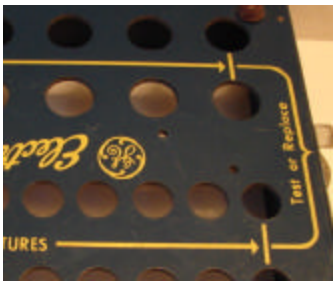
WANTED: Radio repairmen and restorers. Run out of your own radios to work on? The club and Infoage have received a quantity of radio donations, some of which would look good in our museum. Others will be set aside for traveling displays, trading or resale as fundraisers. Many of these radios only need 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 enrpnr@erols.com.

SO WHADAYA GOT?

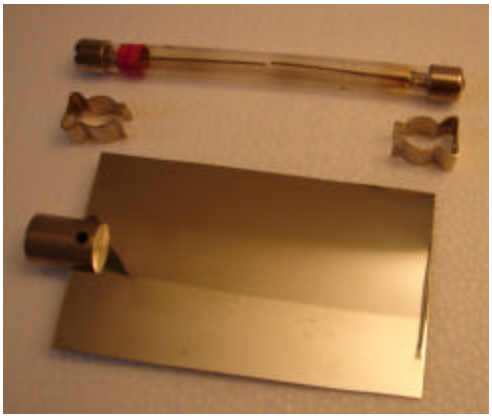
Have something that you just can't figure out? Send a photo to the *Broadcaster* (mbeeferman@cs.com) and let's see if our members can help. You can send your comments directly to me or post them on the NJARC Reflector; I'll publish them the following month. So whadaya got?







I purchased this item from *WAVES* at our InfoAge swapmeet. From the rubber bumpers at each corner and the collapsible handle, it appears that it might have fitted into a tube caddy. The holes are labeled for octals and 7 or 9-pin miniatures. At each corner are the words "Test or Replace." Perhaps this item segregated good tubes from potentially bad ones during the service call?



Sundt Engineering was totally absorbed by the Lttlefuse company which now makes a host of various industrial fuses. The words "oscilloscope kit" caught my eye on this one. The clips hold the "tube" in place but I'm not too sure about the purpose of the steel mi rror (or even if it was actually part of the kit). As far as I can speculate, "tattelite" and "Tells the tale" could suggest that this was a high voltage fuse that indicated when it was blown by ionizing like a neon bulb.