The Jersey Broadcaster

NEWSLETTER OF THE NEW JERSEY ANTIQUE RADIO CLUB

November 2002 Volume 8 Issue 11

MEETING/ ACTIVITY NOTES

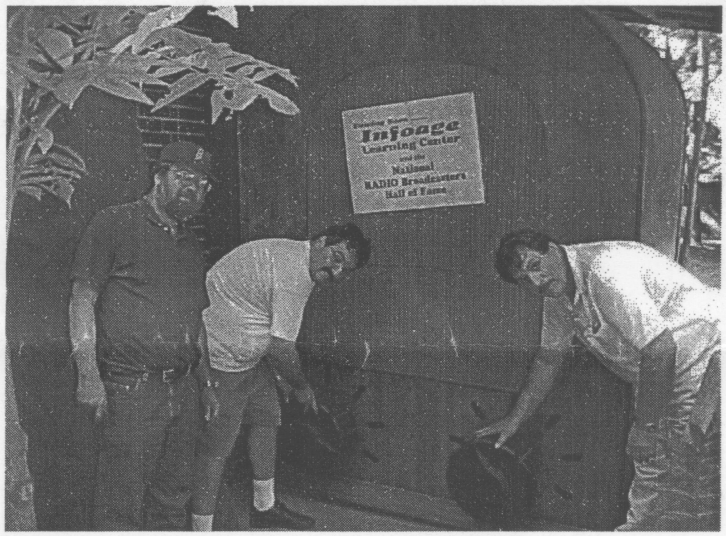
MEETING NOTICE

The next meeting of the NJARC will take place on Friday, November 8th at the American Legion Hall, 17 Emerson St. in East Brunswick NJ. Contact either Phil Vourtsis or Marv Beeferman for directions. We'll be holding the judging for our homebrew radio contest and expect some stiff competition. We'll also provide an update on our adventures dismantling a 1940 vintage ham station and upcoming events for December. Another mini-auction is also scheduled and we're always prepared to take reservations for the December 7th swapmeet.

Reported by Marv Beeferman

As a change of pace, the October NJARC meeting was held "under the trees" at InfoAge in the form of a combined picnic, swapmeet and auction. It turned out to be a very pleasant day and attendees got a chance to see, although in rough form, the cottage that will be used as a temporary home for the Broadcasters Hall of Fame. NJARC member and alarm system designer Bob Pilcher was also on hand to determine the security needs of the cottage and to propose a system that could be installed with the help of the club.

Some nice items turned up in the auction including an omnigraph (which found a home in the John Dilks collection), a National 1-10, a McMurdo Silver 800 HF receiver and power supply, a pair of pre-1920 capacitors in wooden frames and lots of parts. Al Klase set up a table where members could experiment with various homebrew crystal sets and antenna combinations and get a feel for the surprising power of these sets. Rob Flory displayed some items that he recently obtained from his grandfather, Les Flory, who worked for RCA starting in 1930. One was a lab demo solid-state portable radio (vintage 1952) using developmental SX-160 transistors. Rob was planning to hold a discussion group later in the month on some of the other historical items that his grandfather worked with including an experimental iconoscope mosaic, the first solid-state TV camera (1955), a barrier grid storage tube used to store radar images and a reading aid for the blind which turned printed letters into sounds. Sadly, Les Flory passed away unexpectedly and the club's condolences go out to Rob.



Al Klase explains the fine points of radio tuning to John Ruccolo and Gary D'Amico at our InfoAge picnic.

On October 29th, club members gathered at the former home of silent key Robert Gold (W9DHL/WA2IIB) to dismantle and document his vintage late 30s station. Mr. Gold had quite an interesting and exciting life, serving as a coast watcher during the war secretly monitoring Japanese ship movements and later working for RCA and introducing color television to the Far East. John Dilks has gathered quite a bit of documentation on Mr. Gold's life (including the prints of his station) which he hopes to use as a basis for future *QST* and *Broadcaster* articles. Some of the estate will be auctioned at future club meetings and some will remain in trust with the club awaiting future disposition.

The November meeting will find us back at the American Legion Hall in East Brunswick where Al Klase will conduct judging for the home-brew radio contest. An active antenna and long wire will be made available for testing your entry for a 1-station capability. Bring your entry immediately to the display table and do not identify it with your name so judging can be as fair as possible. A little write-up of the set and its interesting aspects, including a schematic, would be appreciated to help the judges in their evaluation.

Ensure you make reservations for our December 7th swapmeet as early as possible if you want to avoid schlepping a table; we only have 30 available and they're going fast. In December, we will be holding our 10th anniversary/holiday party at the Sarnoff Library; we'll update you with all

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 $15 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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the information in the November *Broadcaster*. Finally, all the best to NJARC webmaster Dave Sica who is on the mend from a recent illness...we hope to see him at the November meeting.

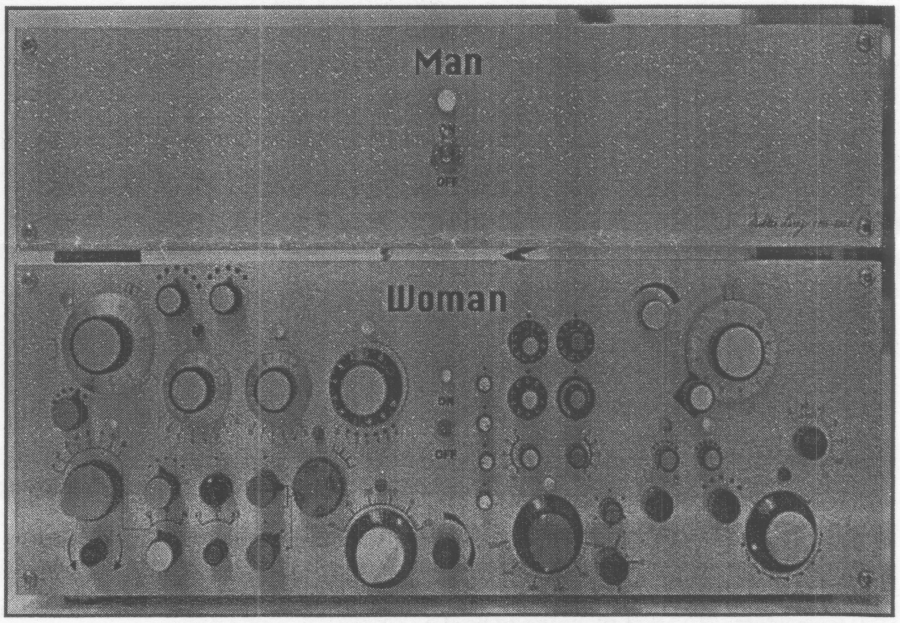
BITS AND PIECES

A short note in the August 2002 issue of Radio Age offers a good example of what I like to call "collector crossover." On April 13th, an RCA Radiatron doll was auctioned at the Skinner Science and Technology Auction in Bolton, Massachusetts for $3,173 plus a 17.5 percent buyers premium for a total of $3728. You might recall that an article in the March 2002 *Broadcaster* traced the doll's design to famed illustrative artist Maxfield Parrish. The advertising piece was produced in Joseph Kallus's Cameo Doll Company, Kallus obtaining original fame for his design of the doll version of the popular "Kewpie." The doll, although rare, usually brings about $1,000 at auction so this price is a little unusual. But, as you can see, when a "radio" item sometimes crosses that line into other areas of interest (in this case, composition wood dolls), competition can be a catalyst for some surprising bidding.

From the November 2002 issue of *Antique Radio Classified* comes this note from Jeff Ross of Flemington, New Jersey. It seems a perfect choice for those members looking for a workable but inexpensive AM broadcast transmitter without going through the trouble of building one:

"Called "Radio DJ," it's made by Wild Planet Toys and sold as a child's toy for around $20 by Walmart.com and Amazon.com. It is an AM transmitter, operating at 1610 kHz, and features a high level input with gain control, integral cassette deck, microphone with adjustable gain, and even four sound effects! Power is from four AA batteries mounted in a compartment beneath the unit.

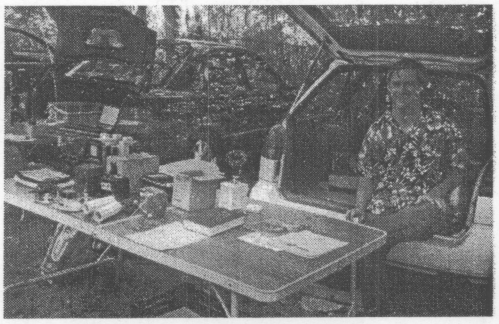
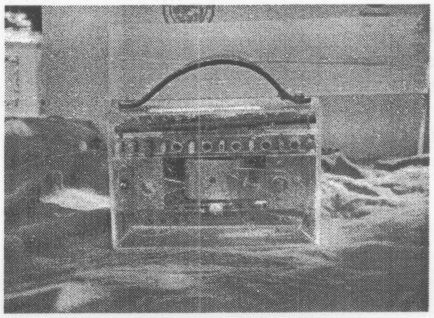
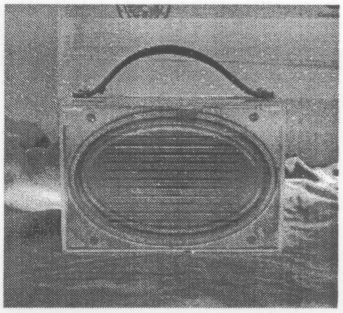
Audio quality is absolutely phenomenal, and it puts out such a potent signal that one unit can easily cover an entire house using the included antenna wire. When it is on, bright red LEDs illuminate an On Air sign which is fun to look at in a darkened room. For those who enjoy listening to their favorite music or old radio show tapes through their old radios, this device is just too good a deal to pass by."



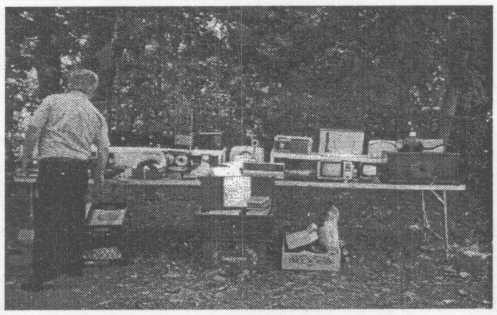
LIFE EXPLAINED

(Courtesy of Phil Vourtsis - I'm not dumb enough to take credit for this one!)

INFOAGE PICNIC

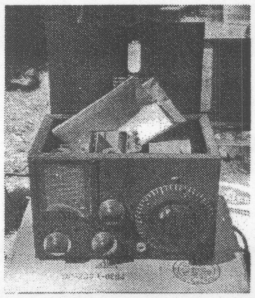
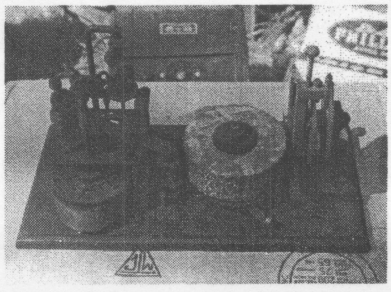
Rob Flory displays a lab demo solid-state portable radio (vintage 1952) which used developmental SX-160 transistors. The radio belonged to his grandfather Les Flory who started with RCA in 1930.




Pete Graves does the auction honors.

Al Klase provided the technical amusement.

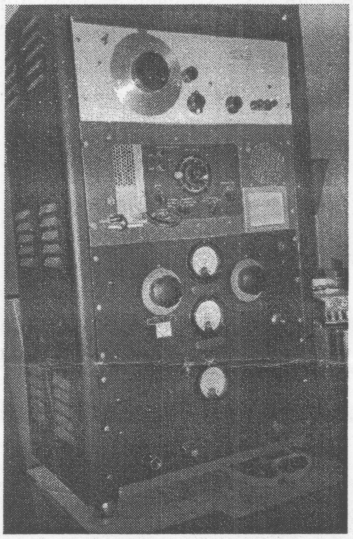
Whadyya think this will go for? Some pre-auction second guessing.

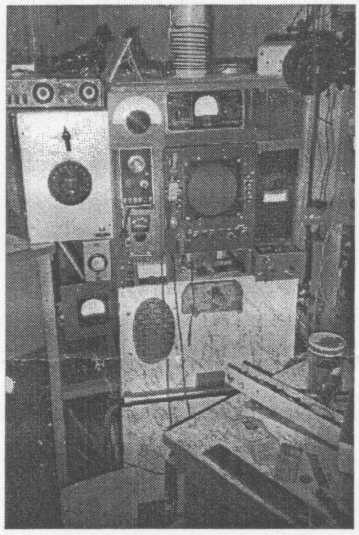



Auction offerings

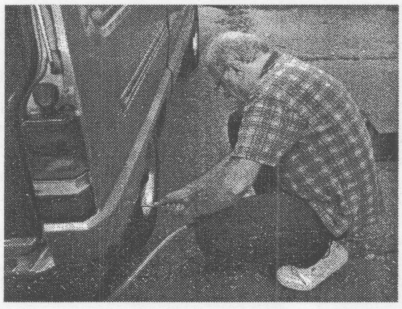
Part of the Long Island contingent.

PRESERVING THE PAST
W9DHL STILL ON THE AIR

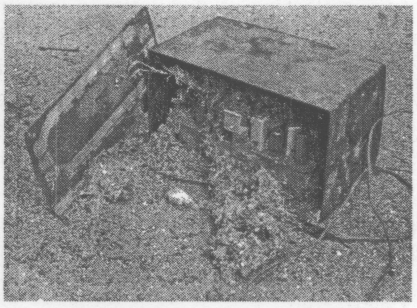




An enthusiastic helper.



Carrying a load like this requires a little air.



A house for a mouse.

Safe and secure.

THE TUBE IS DEAD

LONG LIVE THE TUBE

Edited by Marv Beeferman

The following piece is edited from a Mark Wolverton article that appeared in the Fall 2002 issue of "Invention & Technology"...Ed.

Even while the vacuum tube was still the undisputed king of the electronics world, in the 1950s and early 1960s, engineers were diligently experimenting and learning how to build solid-state circuits with the recently invented transistor. As the sixties dissolved into the seventies, transistors and integrated circuits pushed tubes aside in all sorts of consumer electronics, from stereo systems to radios to television sets, until by 1980 you would be hard pressed to find a tube in any device in your home - except for the single, huge picture tube in the TV. Yet the vacuum tube remains on the scene, stubbornly hanging on almost a century after its invention. Is this mere nostalgia? Perhaps, or at least in part. But nostalgia or not, there are still some jobs for which the obsolete vacuum tube is the better choice.

Tube technology probably reached its highest level of sophistication during the 1950s. Television sets were beginning to invade the American home, and every one was built with tubes. The golden age of hi-fi started around 1953, with elegantly designed tube amplifiers powering elaborate music systems that were almost as flashy as the automobiles of the period. Even computers continued to be designed and built with tubes. Meanwhile, Shockley, Bardeen, and Brattain won the Nobel Prize for their transistor in 1956.

By the 1960s, transistor devices were beginning to proliferate. Although most people liked the portability of transistor radios and record players, many were dissatisfied with the new technology, particularly audiophiles, who insisted that transistor hi-fi amplifiers sounded awful compared with tube models. Originally they were right; design deficiencies of the first transistor amplifiers included poor reliability, harsh and distorted sound, and in some cases an unfortunate tendency to burn out if pushed too hard.

But the transition to solid state was inexorable. By the time the digital revolution brought microprocessors into everything from stereo systems and TV tuners to refrigerators and oven timers, tubes were considered a dead technology and were no longer taught to a new generation of designers. As the twentieth century drew to a close, vacuum tubes were first banished to the back of engineering textbooks and then taken out of the books altogether, consigned to the trash heap of technological history.

Despite its obsolescence in modern engineering, however, for some people the vacuum tube performs magic far beyond anything made possible by digital microelectronics. For one group, it never went away. For another, it is a focus of intense controversy and almost cultlike devotion. And aside from these enthusiasts, tubes still find employment in some unusual but vital applications.

By far the biggest market for tubes, one that has remained robust throughout the rise of solid-state and digital electronics, is for guitar amplifiers. Legions of electric-guitar players refuse to use anything but tube-based amplifiers, because tubes impart certain sound and distortion effects that transistors can't easily mimic. The screaming wail of a Jimi Hendrix lead, the soulful warmth of an Eric Clapton solo, and the thunder of a Pete Townshend power cord all result from the intimate interplay of the guitarist, his instrument, and the unique distortion provided by a vacuum-tube amplifier.

As transistors replaced tubes in other electronic equipment, guitar-amp manufacturers began to follow suit, but rock musicians stubbornly refused to get with the program. Solid-state amps might be lighter, require less maintenance, and take more abuse, but they just didn't sound the same. Players complained that the transistors sounded "too clean" or "too bright" at normal volumes and "harsh" and "irritating" at higher volumes. Tube amps were "warmer" and "gutsier" and sounded better at high distortion levels.

The musicians had a valid point. The addition of an overtone an octave up is the sort of harmonic distortion that vacuum-tube circuits produce, while transistors tend to produce odd-numbered harmonics, because of basic differences in the way they amplify a signal. Although transistors can make even-numbered overtones, it takes many, many transistors to do what one tube can do. So vacuum-tube guitar amplifiers never went the way of tube TVs or radios.

When the aim isn't the creation of music but its reproduction, however, matters are much more contentious. The distortion qualities so prized by musicians, who create new sounds, are a defect for audiophiles, who seek to reproduce an ideal of aural perfection. A tubes-versus-transistors debate has raged within audio circles ever since the first transistor stereo amplifier came on the market 40 years ago. It can be nearly religious in its intensity. And it's not just because tubes glow in the dark or look cool, although that's probably part of the equation.

For the most part, the debate is a curious mix of the objective and subjective. Almost nobody would seriously argue that tube systems and transistor audio systems are exactly the same; there are obvious physical differences in what they do and how they do it. The question is just how much those differences matter and to what degree they affect the sound produced. Terms such as *warm* and *cold* or *brittle* and *flat* are hardly scientific and are impossible to define precisely, yet they have definite meaning to many people, although that meaning can vary widely from individual to individual.

Unfortunately, the lack of definitive answers - or, perhaps , the reluctance of some to accept particular answers - makes the high-end audio field a fertile ground for rumors, misperceptions, obsessive behavior and a lucrative tube market. There are individuals who are willing to spend $50,000 or $60,000 on a two-channel stereo system and then $10,000 to $20,000 a year upgrading cables and other accessories.

The vacuum tube business today is probably one of the world's great unknown industries. Some American makers remain, but many of the top manufacturers now are in the former Soviet block, in such countries as Russia, the Czech Republic, the Soviet Republic, and Serbia, as well as elsewhere in Europe and in China, with a market well over $100 million. Tube makers generally re-create tried-and-true past designs, sometimes with modest

modifications and improvements.

Aside from their continued use in music and audio, vacuum tubes are still the weapon of choice for certain applications. One is very common: the microwave oven, which uses the magnetron to generate the gigahertz-range frequencies needed to cook TV dinners. Tubes are also still useful in industrial and communications equipment. Tubes do very well as high-frequency, high-power amplifiers and can be more cost-effective and more reliable than semiconductors. Although they may hardly seem space-age, traditional vacuum tubes hum away in many communications satellites, working in tandem with the latest microelectronics to handle high-powered microwave transmissions. Back on earth, large, high-wattage radio and television stations rely on huge, metal-jacketed, water-cooled vacuum tubes to power their transmitters at levels transistors could never withstand.

The military has always been a chief user of vacuum tubes, even after transistors took over in other areas. One reason is that they can withstand severe overloads without being damaged. High-power radars therefore use tube circuits, as do the electrical "pulse weapons" currently under development. The long-lived B-52 bomber and other military aircraft, American and otherwise, still employ tubes in some of their avionics, partly because of one quality that was especially appreciated during the Cold War, their virtual invulnerability to ionizing radiation and to the electromagnetic pulse that accompanies a nuclear detonation.

Sometimes the military has even gone back to tubes after abandoning them. In Desert Storm, the solid-state receivers picked up unwanted rf interference and noise from transmitters and other equipment. The military was required to go back to 1950s vacuum-tube receivers in certain applications because they were less susceptible to these problems.

The most sophisticated use of the vacuum tube yet may come in a marriage of Lee de Forest's triode and the latest microelectronics. As reported in the *Broadcaster*, in 1999, a prototype nanotriode has been developed at Cambridge University. The nanotriode is a microscopic vacuum tube less than 100 millionths of a millimeter across, composed of layers of metals and insulators surrounding a minute cavity. Tiny pillars acting as a cathode inside the cavity emit electrons by a field emission effect to another part of the cavity that serves as an anode. A separate layer of metal functions as the control grid. The nanotriode offers all the best qualities of a vacuum tube, including its ability to handle high frequencies and its resistance to heat and radiation.

Vacuum tube technology is a classic electronic technology that may not be going away as quickly as thought in the 1960s when transistors began to proliferate. The stubborn longevity of tubes demonstrates that sometimes we may be a little too quick to discard the old in favor of the new. Once in a while even the obsolescent can have a few surprises and tricks in store.

KEEP BOTH HANDS ON THE WHEEL

By Marv Beeferman

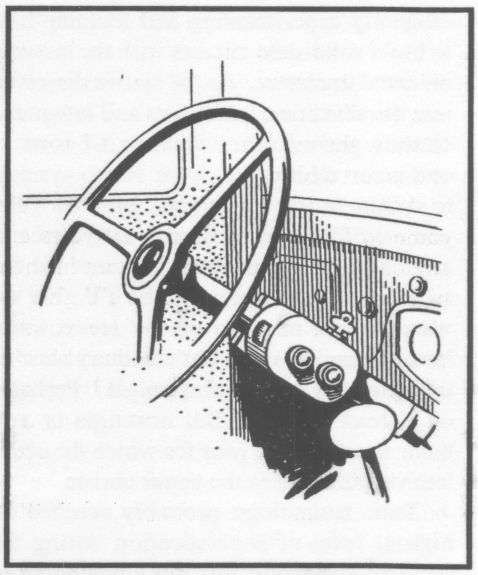
Upcoming legislation in New Jersey may soon address an all-too common occurrence that brings the blood of many of us to the boiling point - watching someone trying to negotiate the highway at 65 mph with a cell phone glued to the ear. When they were first introduced and for obvious reasons, car radios became an easy target for similar attacks. By starting at the municipal level, this opposition bore a close resemblance to the initial direction of cell phone legislation of today. But, aided by a very supportive public and strong business lobby consisting of both the radio and automobile industries, the Radio Manufacturers Association argued successfully that the tuning of the radio in the automobile by the driver while that vehicle was in motion was no more distracting than turning on the windshield wiper.

The following comment from *Radio Retailing* of July, 1937, generally sums up both the industry's and public's position:

"Car radio has had to run the gauntlet of reformers of the type who originally wanted automobiles preceded by men carrying red lanterns. A dozen times lawmakers have been asked to shudder when they envisioned a driver dialing in a station while tearing along at 45 miles an hour. Understanding fully as politicians how easily it is to addle the average human being's wits, it is no wonder that they viewed early automobile radio askance.

However, it is now unnecessary for the most jittery driver to take his eyes off the road a single second while twiddling with the radio dial. Push button tuning and automatic frequency control are available in this field to.

The shrewd trend is to fit the set to the customer's habits, cater to his mania for convenience. Today a young man can keep his arm around the girl of his choice and flick in stations as he gazes deep into her orbs - or without taking his eyes off the road, as you prefer. The radio manufacturers are just thinking of everything!"



Although not required by law, many automobile manufacturers did try to make operating a car radio as effortless as possible. For example, a highlight of Oldsmobile's 1938 Safety Instrument Unit and Safety Dash was an attractive drum-type radio remote control pod mounted almost at the driver's finger tips. One of the three options was an eight tube deluxe receiver having tone and sensitivity switches, in addition to the tuning and volume controls, all located in the remote control assembly. Another feature was an automatic speed volume control that increased the volume with car speed, the idea being to counter the road noise.

To get an idea of the local color of the car radio debate, here's an example from

Idaho's *Daily Capital News* from February 18, 1937. The article is headlined *Idaho Solon Who Wants to Divorce Radio and Moving Cars, Stirs Up Storm Center* and documents one of the first attempts at anti-auto radio measures to be introduced in a state legislature:

"A row over automobile radios comes to a rousing climax tomorrow with the nation's radio manufacturers arrayed against a baldish, bespectacled legislator, who wants to bring down the law on anybody who mixes wireless with motoring in Idaho.

It's all right, under the measure sponsored by Senator Ralph E. Whitten, to park - and then twist a dashboard dial. It would be felonious, no less, to have your radio and engine going at the same time.

Tonight, grumbling in hotel lobbies of Idaho's smart and picturesque capital, half a dozen representatives of various radio interests talked over plans for their arguments to show the measure would hurt business - and is just a bit silly....

Whitten, an electrical engineer who came to Idaho from Boston 20 years ago, stretched out in his underwear on his hotel bed and boomed defiantly: 'We'll give 'em all an opportunity to talk!' He vows he wasn't funning when he introduced his bill as a highway safety measure. 'I have heard radios blaring so loudly that signals from trains or other highway traffic could not be heard and they have been found to be important factors in many crossing crashes.'"

Although the majority of the public were pro-auto radio, there was still a small minority who agreed with the good legislator from Idahoe. From my files comes a 1937 letter from a Mr. R. M. Carleton of Chicago to *Consumer's Research*:

Friends of mine were involved in a rather serious motor accident, in which a car came out of a side street and struck them, despite the fact that witnesses testified that they had blown their horn to warn the other car.
In taking down testimony, the police noted that the other car had a radio operating.
In court, the other driver lost out on the claim that a radio was an unnecessary driving hazard.
Checking this, I find that some insurance companies will not allow claims if a radio is operating. It would seem that if evidence is lacking that the radio was or was not operating, it might be held that its presence in the car was prima facie evidence against the policy holder.
Driving is enough of a hazard so that motor owners should certainly avoid the use of any device which would tend to still further complicate the operation of a car. If insurance companies go so far as to include a clause exempting them from responsibility in cases where radios are installed, it should go a long way towards eliminating an annoying nuisance."

The three main arguments of the late 30s used against auto-radios seemed very similar to those we hear today against the use of cell phones: they divert the driver's attention from the road, prevent him from hearing warning signals and preoccupy him with tuning manipulation. Perhaps counterarguments presented by the industry, whether valid or not, were more convincing: they induce slower driving, they break the monotony of extended or night driving (preventing drowsiness and promoting attention, interest and alertness), they soothe motorists during extended traffic jams and they silence backseat driving. Assuming that most cell phones will eventually have a remote, voice actuated communication capability and auto-dial feature, the deciding factor may come down to the difference between paying attention to the theme song from *Titanic* or the eight items your wife wants you to pick up at Shop Rite on your way home.

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.

FOR SALE

Check out NJARC's capacitor program for those most commonly needed replacements. 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.

For trade only...repair clinics, savings on swapmeet tables, tubes and capacitors, 12 issues of this year's *Broadcaster*, mini-auctions, technical presentations, contests, parties, fellowship of sharing a common interest with friends...$15 check made out to NJARC. Marsha Simkin, 33 Lakeland Drive, Barnegat, NJ 08005

From non-member: Radiola 18 in an upright floor model Victrola cabinet, AR-744C. Nice cabinet with swinging doors, record player (electric) is above the radio but the turntable is missing. No reasonable offer refused. Mr. Kim Huron, Nutly, NJ. 973-697-8506.

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.

New index to AWA publications (*Old Timer's Bulletin,* AWA Review, misc.), 1960 through Aug. 1999. Formatted like the earlier version but with new "Author" section. Has 63 pages, 8-1/2" X 11" size. Gives 7000+ citations. $12 postpaid anywhere. Make check/MO payable to: Ludwell Sibley, 102 McDonough Rd., Gold Hill, OR 97525.

Philco console, circa 1940, needs minor repairs. $60 or will take best offer. Tom Musocchio, 609-448-0787.

Supplement 3 to Ludwell Sibley's *Tube Lore* is now available. At 24 pages, it replaces the 1997 8-page supplement. Included is an expanded index, new details on early Western Electric tubes, info on Western Electric tube sockets, fuller material (a page-plus) on Rogers tubes, pinouts for post-1948 Western Electric tubes (published for the first time ever!), the date code for RCA '50s-'70s receiving tubes and the 200 "most-often-needed" basing diagrams covering 1300+ tubes found in everything from an All-American 5 to a Trans-Oceanic. To order, mail your name and address, printed clearly, with six 34-cent stamps to:

Ludwell Sibley
102 McDonough Rd.
Gold Hill, OR 975-9626

WANTED

Nice old signal RF/AF sinal tracer in good condition. Lisa Starnes, (973)-410-0373 (evenings). lisa.starnes@att.net

*****

New Jersey Antique Radio Club
Antique Radio Indoor Swap Meet

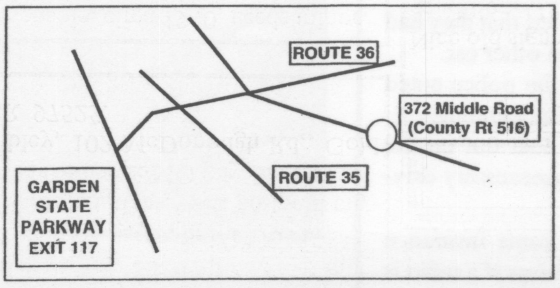
Saturday, December 7, 8:00 AM - 1:00 PM*
North Centerville Vol. Fire Co., Hazlet, N.J.

The NJARC presents its Winter swap meet at the spacious North Centerville Fire Co. banquet hall in Hazlet, N.J. The first 30 reservations receive an 8-foot table at no extra cost. A $2.00 buyer donation is suggested. *Vendor setup at 7:00 AM (no early admittance); the meet may extend beyond 1:00 PM.

DIRECTIONS: Garden State Parkway, North or South: Take exit 117 (towards Hazlet (Rt. 35)/Keyport/ Aberdeen). Merge onto Route 36 and continue for about 1 mile. Turn right on Middle Road (County Route 516) and continue for about 1.5 miles. The Fire Co. banquet hall is on the right.

RESERVATIONS: Marv Beeferman, 2265 Emeralda Park Drive, Forked River, NJ 08731 (609-693-9430). E-mail: mbeeferman@cs.com. Phil Vourtsis, 13 Cornell Place, Manalapan, NJ 07726. (732-446-2427). E-mail: pvourtsis@att.com.

RATES: NJARC members $15/space; non-members $20/space.



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