

The Jersey Broadcaster

NEWSLETTER OF THE NEW JERSEY ANTIQUE RADIO CLUB

April 2023

Volume 29 Issue 4



The *Jersey Broadcaster* is distributed to members of the New Jersey Antique Radio Club via email as a PDF file. Back issues of many of our newsletters are available on the club's website:

www.njarc.org/broadcaster/

Meeting Notice

Our April meeting will be held on Friday, April 14 at Princeton University in Bowen Hall. Bob Tevis will make a presentation about SPERDVAC – The Society to Preserve and Encourage Radio Drama, Variety, and Comedy. This will be followed by a video of one of his live radio show plays.

For our non-local members and anyone who is unable to make the meeting in person, it will also be livestreamed on Youtube at <http://www.youtube.com/@njarc>.

Meeting Review

At our March meeting we were treated to an in-depth look at the life of RCA's famous chairman David Sarnoff before he became famous in that role. Alex Magoun's "The Early Life of David Sarnoff" contained photos, historical data and anecdotes that wove a surprisingly rich tapestry depicting Sarnoff from his humble beginnings to his status as the legendary industry leader we all think we know.

A recording of the presentation is available on our YouTube channel: <http://www.youtube.com/@njarc>.

Upcoming Radio Events

Check the calendar on our website for the latest information about upcoming events. Some key dates are:

April 14: NJARC meeting, Princeton University
April 21-22: International Marconi Day, at the RTM
May 5-7: Early Television Convention
May 11-13: Kutztown Radio Show
May 19: NJARC meeting, InfoAge
May 27: BARA Hamfest, Westwood NJ
June 9: NJARC meeting, Princeton University
June 23-25: NJARC/ARRL Field Day, InfoAge
July 14: NJARC meeting, Princeton
July 16: Sussex Hamfest
July 22: NJARC Summer Swapmeet/Hamfest, InfoAge

NJARC Member Benefits

Remember, the club offers PDF copies of many SAMS Photofacts, access to Riders service information and member prices on capacitors, resistors, vacuum tubes and other repair parts. Our Repair Clinics are an opportunity to obtain assistance from club experts with any tough repair challenges you may be struggling with. And our twice-weekly Zoom social meetings continue to be popular. See the website for more information on all the great club member benefits.

From the President's Workbench

Greetings Fellow Enthusiasts.

There was a lot of talk at our Winter Repair Clinic on February 4th about using and building "Dim-Bulb" Testers, also called current limiters. I have built a few AC autotransformers, commonly known as "variacs" incorporating AC volt and ampere meters, but I never thought to make a Dim Bulb Tester. So after that repair clinic, I challenged myself to build one with spare parts from my junk box.



Now, it's not as difficult a task as you might think for me to find spare parts since my basement is 80% junk box! I found that I had immediately at hand an 8"x 4.5"x 2.5" Bud box, indicator lamp, 15 amp. vintage bakelite outlet, two double pole single throw toggle switches, a six-foot long, three-wire computer power cord, fuse holder with 1.5 amp fuse, miscellaneous scrap wire and a 1930's era porcelain Edison base recessed socket for the test lamp/bulb.

After seeing several YouTube videos on making a Dim Bulb tester, I decided that I wanted to build a "Deluxe" model with an AC voltmeter. Unfortunately, the meters I had were too deep for the box. So I relented and went to "China" for a shallow digital meter. After several deliveries of disappointing junk through eBay, I found what I needed from MPJA.com in West Palm Beach FL, thanks to club member Leo Assur. The digital meter was already state-side and arrived in 5 days, but yes, was "Made in China". I won't bore you with all the build details, drilling, holesawing, wiring etc. Total build time was 12 hours. I'm pleased with the results especially since the digital AC voltmeter is "piggie-back" to an AC ampere meter. The photos tell the rest of the story!

(Continued on page 3.)

Easter Greetings from my collection

by Marsha Simkin

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 \$25 per year and meetings are held on the second Friday of each month either at InfoAge or at Princeton University. Neither the editor nor NJARC is liable for any other use of the contents of this publication other than for information.

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Easter postcards printed by Albrecht & Meister (Amag) Berlin, Germany.



Translates from Lithuanian as "Hello Baby, Happy Easter." It has a decorative deckle edge and has a lengthy message but was never mailed.

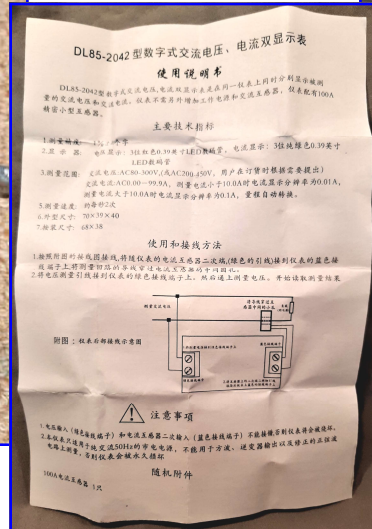


This one has a lengthy family message and was mailed on 4/6/1928 from Edinburgh, Scotland to Bille-ricay, Essex, east of London.

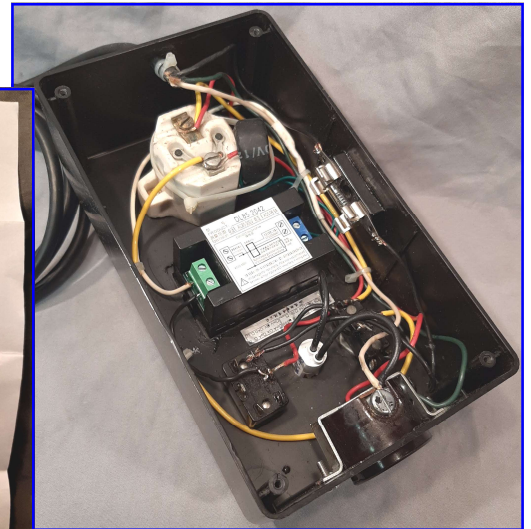
From the President's Workbench (Continued)



"Dim Bulb Tester" under construction



The enclosed meter hookup directions



All parts from my "junk box" basement except the meter.



Tester in "by-pass" mode



G.E model 422 6-tube series string radio is under test on startup. 121 VAC x 0.26 amperes = 31.46 watts lighting the 40 watt clear bulb briefly, then out as filaments come to operating temperature, proving there were no initial shorts in the radio.

Electrify That Battery 3-Dialer

By Ray Chase, Trustee and RTM Curator

While rooting around in the club tube cabinet in the museum repair shop, I found a rather large box crudely marked “blue tubes.”

Well, Arcturus tubes with blue glass bulbs are not that unusual but on examination, some of these tubes that were all in original Arcturus or Sonora tube cartons had strange type numbers. Some of the cartons were marked “AC Tubes” and specs on the carton listed a 15-volt 0.38 amp filament. Now, when was the last time you saw a radio that used 15-volt tubes?



Further examination of the tubes showed that they were 4- or 5-pin blue or clear globe shaped with tip tops, the same size as a regular globe 201A. A close look at their innards disclosed a sleeve cathode with an internal heater. A tube carton paper insert indicated that a four-pin tube would have the cathode element internally connected to one of the heater pins.

I then turned to my friend Robert Gillespie, the U.S. representative of Radiomuseum and a serious vacuum tube guru. Robert clarified the mystery right away. It seems that early on, many homes had toy train sets with 15-volt outputs to run the train layout. Why not make AC filament tubes to plug into your battery set so as to eliminate that big lead acid battery that the lady of the house refused to allow on her living room rug? It sounded like a good idea: pull out those 201As and 171s and hook up the train transformer. One of the tube carton inserts listed a whole set of 15-volt AC tubes: Nos: 26, 28, 30, 546, 46, 48, 40, 22, 80 and 50.

Some of these numbers bear little or no relationship to conventional tube numbers and this box only had a few of the types in it. For example, a conventional type 40 is a hi mu battery filament amplifier while Arcturus lists it as a four-pin power amplifier with cathode tied to a heater lead. The Radiomuseum site recognized some of these tube types and noted that they were marketed to be used with a toy transformer.

Obviously, this scheme was not too successful since it was unknown to many radio historians, and this is the first time I have seen tubes like these. Arcturus was located in Newark so these must have been accumulated new-old stock that did not sell. There were a few other interesting tubes in this box including some Arcturus NOS plain glass globe 45s that test as new but nothing to match the 15-volt blue glass Sonora and Arcturus tubes. I assume that most of the tubes in this cabinet came from when Gary D'Amico held the club tube stock.



Can You Hear Me in the Back? (Part 2)

By Bill Zukowski, N2YEG

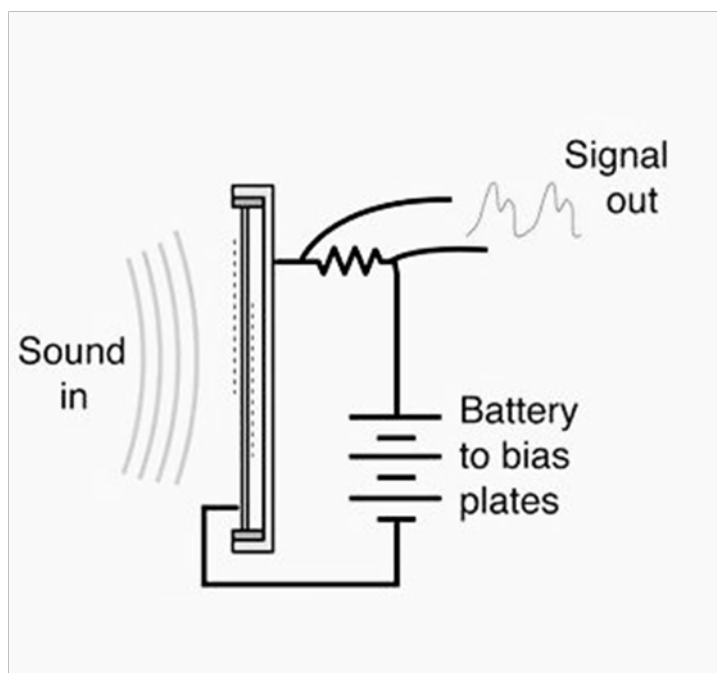
Editor's note: "Can You Hear Me in the Back" is a multi-part article covering the history of microphones by NJARC's microphone guru, Bill Zukowski. In Part 1, Bill discussed carbon microphones. In this second part, he takes a look at condenser microphones.

CONDENSER MICROPHONES

History: The idea of a condenser transmitter had been around since the early days of telephone technology, but its high impedance and low output had made it impractical for early use. The 1915 development of the vacuum tube amplifier solved the impedance and output problems, and in 1917, E. C. Wente of Bell Labs developed the first modern condenser microphone.

A capacitor has two plates with a voltage between them. In the **condenser microphone**, one of these plates is made of very light material and acts as the diaphragm. The diaphragm vibrates when struck by sound waves, changing the distance between the two plates and therefore changing the capacitance. Specifically, when the plates are closer together, capacitance increases and a charge current occurs. When the plates are further apart, capacitance decreases and a discharge current occurs.

A voltage is required across the capacitor for this to work. This voltage is supplied either by a battery in the microphone or by external phantom power.



Advantages: Best overall frequency response makes this the microphone of choice for many recording applications. Output of condenser mics is much higher than for dynamic mics

Disadvantages: Expensive. May pop and crack when close mic'd. Requires a battery or external power supply to bias the plates.

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Can You Hear Me in the Back?

(Continued)

EXAMPLES OF CONDENSER MICROPHONES



Neumann M 150 Tube, \$6,400



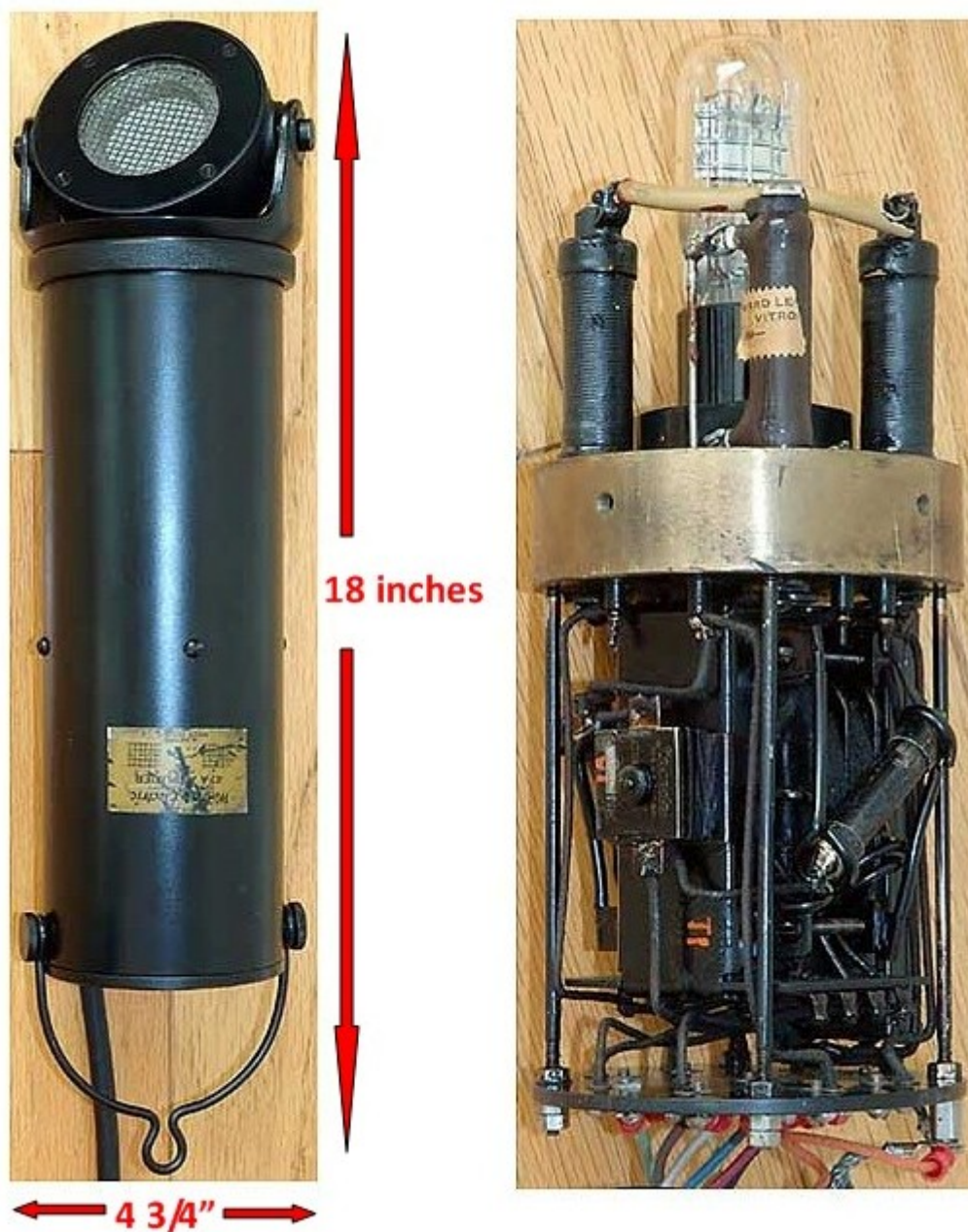
Rode NT1-A, \$300

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Can You Hear Me in the Back?

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EXAMPLES OF CONDENSER MICROPHONES



Western Electric Model 394, ca. 1928
atop 47-A amplifier
12 pounds.

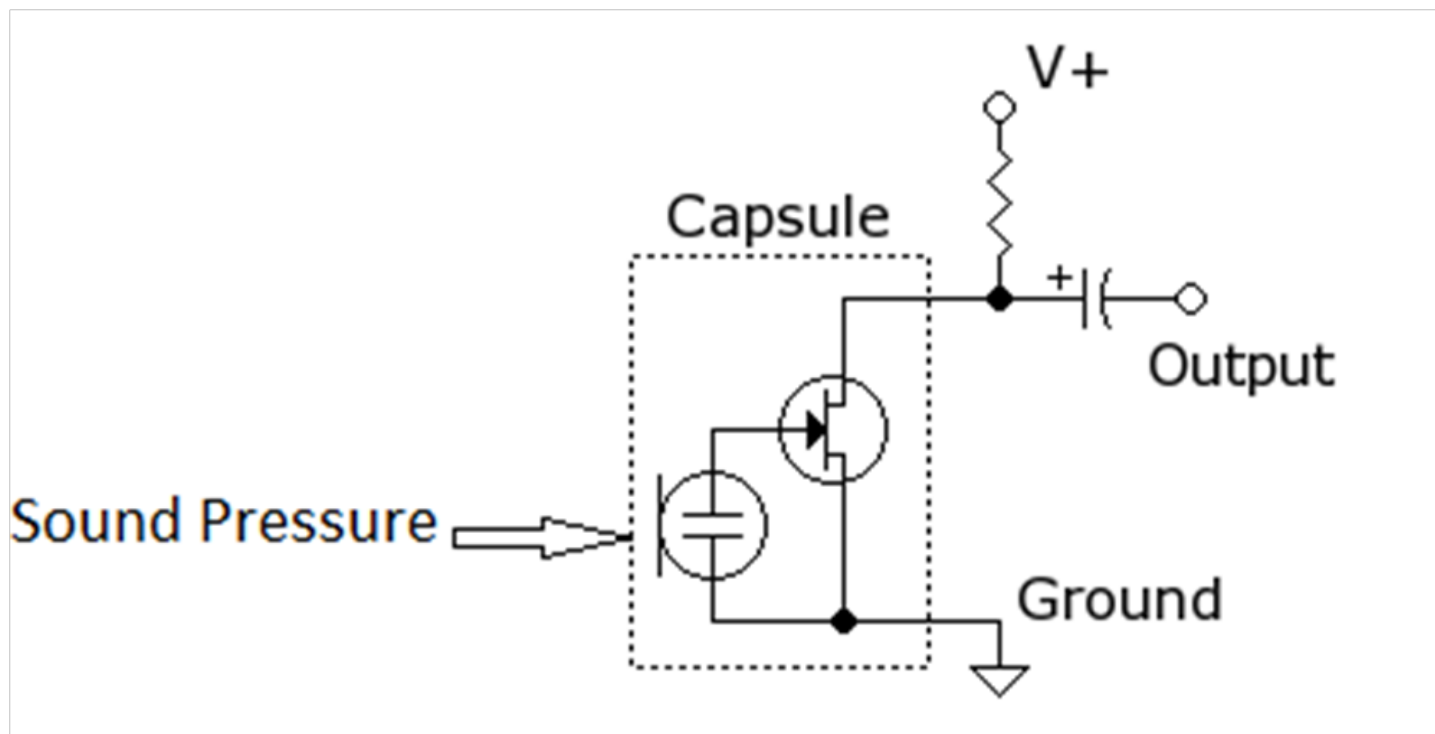
Can You Hear Me in the Back?

(Continued)

ELECTRET CONDENSER MICROPHONES

History: Electret materials have been known since the 1920s and were proposed as condenser microphone elements several times, but they were considered impractical until the foil electret type was invented at Bell Laboratories in 1962.

An **electret microphone** is a type of electrostatic capacitor-based microphone, which eliminates the need for a polarizing power supply by using a permanently charged material. While electret types require no polarizing voltage, they normally contain an integrated preamplifier, which does require a small amount of power, usually provided by an internal battery.



Advantages: Inexpensive to manufacture. Small size – used in TV production, telephones, laptops, video cameras, portable recorders.

Disadvantages: High noise floor. Lower priced models usually have uneven frequency response

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Can You Hear Me in the Back?

(Continued)

EXAMPLES OF ELECTRET MICROPHONES



Electret capsule, under \$1



Shure WL185, \$100



Electro Voice CS15, \$600

(Continued in next issue)

Kutztown Radio Show XLVII

May 12-13, 2023

RENNINGERS
KUTZTOWN, PA**Kutztown Antique Radio
& Vintage Audio Show***Presented by Delaware Valley Historic Radio Club***May 12 & 13, 2023**

- Friday 8am-5pm, Saturday 8am-Noon
- Free Overnight Camping
- Friday Night Auction at 5:30
- Thurs Vendor Setup Only @ Noon (No Early Birds)

**Renningers Kutztown**
740 Noble St Kutztown, PA**Event is held under Pavillions (Rain or Shine)**

Contact Renningers for vendor spaces M-Th 570-385-0104, Fri & Sat 610-683-6848

www.renningers.com for more info**New Tektronix Product**

For the electronics technician on the go, Tektronix, Inc. of Beaverton Oregon has introduced a retro-look backpack not only reminiscent of a classic Tek oscilloscope but actually made from leftover scope parts recently discovered in a storage room at the factory.

These hard-shell backpacks are perfect for protecting your laptop computer or lunch during a bike ride, and are even roomy enough to transport a modern Tek scope in complete safety. In true Tek 'bulletproof' fashion, the backpack is sturdy enough to protect any contents even after a wipeout at up to 40 miles per hour.

The backpack are available in very limited quantities beginning on April 1, 2023. They can be ordered by emailing \$49.99 in small bills directly to not-real@tektronix.com.

**Bob Nikelsky Memorial Service Planned**

We are sad to report that Bob Nikelsky, a long-time member of the Club, passed away in January. His sisters, Judy Sprague and Joan Nikelsky, donated all his remaining antique radio equipment to the club. They are planning a memorial gathering at a restaurant in Hamilton, NJ on Sunday, April 30 at 5 pm. RSVP to jnikelsky@msn.com for details.