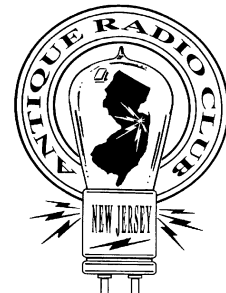


The Jersey Broadcaster

NEWSLETTER OF THE NEW JERSEY ANTIQUE RADIO CLUB

February 2007

Volume 13 Issue 2



MEETING/ ACTIVITY NOTES

Reported by Marv Beeferman

THE ON-LINE BROADCASTER

The New Jersey Broadcaster is now on line. To date, 78 of your fellow NJARC members have subscribed, saving the club some \$1,400 per year. Interested? Send your e-mail address to: mbeeferman@cs.com
Be sure to include your full name!

I always look forward to our show-and-tell sessions for their ability to show off the diversity of interests and restoration talents of our members; the January meeting did not disappoint:

- Steve Calandra described the work involved in restoring Rick Weingarten's Swiss "Disk-o-Matic" portable jukebox. In 1989 this model jukebox surfaced in an auction of Beatles memorabilia at Christie's and sold for 2,500 pounds. John Lennon had bought it in 1965 and filled it with 40 singles to take with him on tour. The buyer restored the jukebox and researched the discs catalogued in Lennon's spidery handwriting.

In 2004, *The South Bank Show* broadcast a documentary in which many of the record artists were asked to comment. You can find a compilation of the songs on the web and even purchase a CD of what are now known as the songs from "John Lennon's jukebox."

Steve came back later to tell us about the nostalgia associated with his Lafayette RK-835 reel-to-reel tape recorder.

- Jerry Dowgin talked about another restoration. As part of the project for his "Thermodyne" battery set, Jerry enlisted the carpentry talents of his brother-in-law to the point of cutting down the tree from



MEETING NOTICE

The next meeting of the NJARC will take place on Friday, February 9th at 7:30 PM at the David Sarnoff Library in Princeton, NJ. Contact President Phil Vourtsis (732-446-2427) or visit us at <http://www.njarc.org> for directions. The meeting topic has yet to be determined as of publication date, but Part II of the Ed Lawlor auction is also on the agenda. Full details are in this month's Broadcaster. We'll also continue to collect 2007 dues, so please have cash or a check at the ready (\$20 for single membership/\$25 for joint).

which a new walnut top would be fabricated.

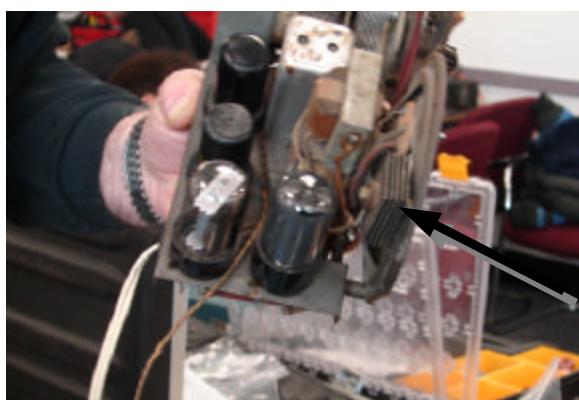
- Darren Hoffman changed the pace with the first portable CD player, a Technics model SLXP-7 that sold for \$300 in 1985. It was originally used in a TV station in Canton, Ohio and sold on e-Bay in 1999 for \$30. An associated advertising piece was later found in Red Bank.

sound from seeming shrill when heard at close range through earphones.

- Dave Sica is normally a fan of large, bulky vintage TVs. For a study in contrasts (and perhaps a respite from lugging this stuff around), Dave showed off a selection of radio-related Christmas tree ornaments with a common theme - his wife bought them for him. You would think that Dave would get the hint.

- Phil Vourtsis described an attempt by RCA in the late 50s to combine the popularity of the 45 and 33 rpm records in a combined 2-speed changer. This unit, which didn't have an automatic shutoff, still had its original 45 spindle which is almost impossible to find. Reason? The unit was only produced for about 1-1/2 years.

- Michael Littman uses an ARS regenerative radio kit and a Walt Heskes designed one-tube transmitter as part of his "History of Engineering" course. The original kit's 3S4 was replaced with an 01A to more closely resemble a 1913 e-generative receiver. Mike uses an ARBE battery eliminator for power.



At our January repair clinic, Phil Vourtsis discovered a unique use for a selenium rectifier; securing a speaker to its chassis.

Darren noted that the player does not skip, even though it lacks shocks and delay electronics. This model also introduced random access to the portable player, allowing up to 15 selections on a disk to be programmed in advance and played in any order. The battery provided three hours of playing time and a high filter switch was provided to keep the

sound from seeming shrill when heard at close range through earphones.

- Sarnoff Library Director Alex Magoun found three unknown units, seemingly related, with NBC logos in the Sarnoff Center basement. He offered them as a challenge to the club to provide identification - we're still working on it.

- Harry Klancer needed a new power source for his 1951, 67.5V battery-operated RCA B-411 portable. Instead of

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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using the seven 9V quick fix, Harry found a converter at <http://www.portabletubes.co.uk/sitefiles/ausbatt.htm>. The radio case is made from a beautiful swirled plastic called "Santay" which was popular in the 40s but died out in the early 50s. Since its 1R5, 1T4, 1S5 and 3S4 tubes have quick-heating filaments, the radio comes to life almost immediately, just like a transistor set that it is sometimes mistaken for.

- Ray Chase described a 33 MHz, S-band magnetron that was used for X-ray therapy. With a rating of 2 megawatts peak driven by a 40,000 volt/100 amp anode, this tube wasn't your father's 01A. New, the tube listed for \$37,000 but can be found on the surplus market for about \$2,000.

- Marty Drift loves the name "Heathkit." One of the high points of his collection is a rare Remote Linear Master Oscillator (LMO) which he obtained as a "pre-proof" set from a laid-off Heathkit worker. These kits were given to employees to build so the kinks could be worked out prior to full production. This LMO is extremely rare, being the remote version of the local LMO's found in such units as the Heathkit SB-101 SSB/CW transceiver.

- Mike Christiansen displayed a large RCA air-cooled transmitting tube and Ray Chase was able to fill in a few of its details. Later research by Ray disclosed that the tube is an 892 triode - 22" tall and weighing about 40 lbs. with a massive copper-finned radiator. It was brought out in the late 30s to replace water-cooled transmitting tubes in high power AM

12,500 volts @ 2.0 amps and a two-section filament requiring 11 volts @ 60 amps per section. Thanks to the resources of "Tube Collector" editor Ludwell Sibley, the tube sold for \$410 in 1939 or \$4433 in today's dollars.

Ray asked Mike if he wanted to sell the tube, but Mike declined. However, a member suggested that we display it in our museum and Mike cordially accepted. Thanks Mike for your generosity and the addition of another nice display item for InfoAge.

- Mike Gottfried shares Marty Drift's passion with Heathkit in the form of what is affectionately known as the "Benton Harbor Lunchbox." These transceiver kits were available for 2, 6 and 10 meters AM. Mike showed off his "Sixer," one of the most popular six meter rigs of the 1960s with an attractive price of \$45. The Sixer featured a 5-watt crystal controlled AM/CW transmitter and a regenerative receiver. The receiver was sensitive enough, but you could only hear one signal at a time.

- Mel Nusbaum showed us how he updated his AK model 82 cabinet found on e-Bay with a very colorful light show.

Our January repair clinic at the Sarnoff Library seemed more relaxed than usual. A GE 85, GE T105-A, Grundig Majestic, Philco 60 and an unknown all-American '6' all left in working condition. A Telefunken Jubilate, Gloritone 26, Crosley 127, Freshman Masterpiece and Zenith H725Z1 were found to need future work. Thanks to members John Ruccolo, John Tyminsky, Phil Vourtsis, Marty Friedman, Walt Heskes (& son), Richard Lee, Harry Klancer, Gary D'Amico, Al Klase, Ray Chase, Michael Littman and yours truly for their support.

Our Spring swapmeet has been scheduled for April 14th at the Parsippany PAL. Vice President Richard Lee has stepped up to the plate and again taken the lead for organizing the event. Full details will be available in the March *Broadcaster*.

The January meeting brought us close to a 50% **membership renewal**. You will be dropped from our roles if we don't hear from you by the end of March. Please send your \$20 check (\$25 for joint membership) to: Marsha Simkin, 33 Lakeland Drive, Barnegat NJ, 08005.



broadcast transmitters. (It is actually a water-cooled tube with a large copper radiator attached for high volume air cooling.)

The tube is rated 5 Kw telephony/10 Kw telegraphy with a max plate rating of

SHOW & TELL



Darin Hoffman



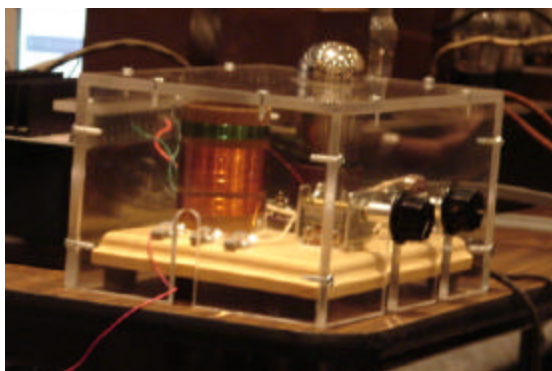
Phil Vourtsis



Alex Magoun



Mike Littman



Ray Chase's S-band Magnetron



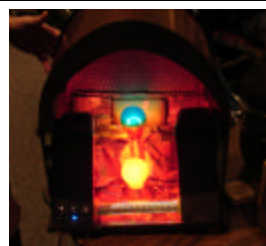
Walt Heskes



Marty Drift

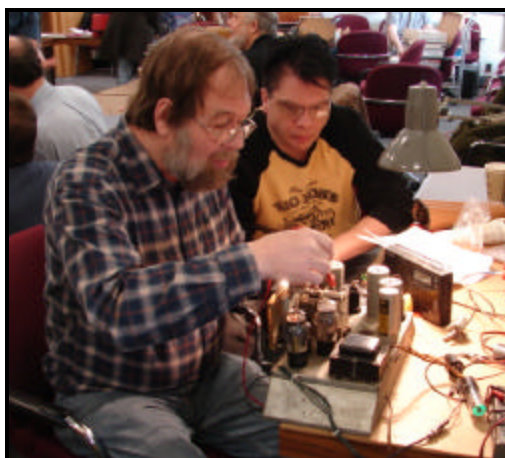


Harry Klancer



Left to Right:
Mike Gottfried
Mel Nusbaum

JANUARY REPAIR CLINIC



ED LAWLOR AUCTION PART II

By Richard Lee

You are in a dilemma. You must move your elderly aunt and uncle from their home in Carteret, New Jersey to an assisted living facility near you in northwest Connecticut. The problem is that the house is up for sale and it's full of Old Radios! So what do you do?

You do what Gail & Mark Garafalo did....You Google "A-n-t-i-q-u-e R-a-d-i-o" in N.J., and what comes up first? Yes, The New Jersey Antique Radio Club! A few calls to president Phil Vourtsis, membership director Marsha Simkin., and myself caused the "Radio Rescue" to commence.

Ed Lawlor, WB2DQV, was past president of the Carteret Amateur Radio Club. In the 70's, he was an active member of the Newark News Amateur Radio club. A retired chemist for FMC in Carteret and Princeton, Ed has a very "busy" mind. He was interested in anything electro-mechanical. Other interests were photography, trains, & stamp collecting, but he always returned to Radio. His extensive collection of battery sets, military and Ham gear attests to his enthusiasm for our hobby. The NJARC wants to thank Zoraida and Ed Lawlor for their generous auction offer, and wishes them well. We also want to thank Gail & Mark Garafalo for their thoughtful decision, in contacting our club.



For more pictures of the Lawlor auction items, go to the NJARC web page at <http://www.njarc.org>



NOTE: The condition described for the following items is strictly cosmetic. Consider antique electronic apparatus as non-functional.

- 1a. Heathkit RF sig. gen. RF-1, OK
- 1b. Heathkit RF sig. gen. RF-1, OK
- 2a. Riders Vol. II, RCA cover, OK
- 2b. Riders Vol. II, RCA cover, OK
3. Heathkit regulated power supply, variable, PS-3, OK
4. Craftsman AM-FM tuner, w/tubes, model 800, GOOD
5. Precise Power Lab variable voltage supply, model 711, OK
6. Heathkit VTVM, IM-28, GOOD
7. Heathkit communications receiver, SB-303, VERY GOOD
8. Heathkit multi-band receiver, GR-78, mixed knobs, FAIR
9. Du mont electronic switch and square wave generator, 185-F1, FAIR
10. Heathkit audio analyzer, IM-22, OK
11. Heathkit general purpose 3" scope, 10-21, mixed knobs, OK
12. National communication receiver HRO 50T, with coil packs, VERY GOOD
13. Military receiver, R-390A, 110 V, includes rack, speaker and dolly, GOOD
14. Battery receiver, 3dial, Kolster 6D, mixed knobs, no tubes, GOOD
15. Battery receiver kit, 3-dial, Freshman Masterpiece?, no tubes, OK
16. Battery receiver, 3-dial, Stewart Warner (metal & wood), no tubes, GOOD
17. Battery receiver, AK 35, repainted metal, no tubes, POOR
18. Battery receiver, 3dial, Eagle Radio Co. (Newark, NJ), with tubes, GOOD
19. Military transceiver? RT-18/ARC-1, ROUGH
20. Resistance measurement, Leeds & Northrop, ROUGH
21. National variable capacitors, box, GOOD
22. National HRO, 5TA1 HF, most tubes, some coil packs, GOOD
23. National HRO, 5TA1 HF, most tubes, some coil packs, FAIR
24. Receiver, Graybar 310, 110V, with tubes, "mouse house," ROUGH
25. Battery receiver, Thermiodyne, 4-gang rack & pinion, with tubes, GOOD
26. Accurate Inst. Co. sig. gen. & tracer, model 153, GOOD

27. Assorted military command sets & radiodynamotor, ROUGH
28. Heathkit "Oscilloscope Applications," in bok, EF-2, OK
29. Lafayette amplifier, 1A-69, with tubes, GOOD
30. Military Signal Corps BC-AS-299 w/2 W.E. coil packs & 3 others, OK
31. Microphone, Japanese, Argonne AR-57, GOOD
32. Leeds & Northrop optic test instrument, GOOD
33. Manual, AK, copy, large black binder
34. Receiver, RCA 54B3, no tubes, OK
35. Battery set, Crosley, bakelite, B-579-A, crack, OK
36. Heathkit photo-electric beam relay kit, GD-1021
37. Heathkit, coaxial switch kit, HD-1234
38. Signal generator, FM-AM, Triplett 3433, OK
39. Emerson "coat pocket" receiver, tube, OK
40. Panel meters, assorted, box
41. Home-brew transmitter? RCA tube (3E29)
42. Radio-related books, assorted, box
43. Radio-related binders, assorted, box
44. Radio-related "stuff", box
45. Hammerlund Super-Pro series 210, home-brew power supply, missing some tubes/knobs, some paperwork, OK

ZENITH 600 SERIES TRANSOCEANIC BATTERY PACK

By Mark Bizuga

When I obtained a Zenith Transoceanic B600 receiver, I wanted to create a battery pack that looked like the original and was made so that it would be easy to change the substitute batteries. The original battery was a Zenith Z985 with an Eveready #752 (NEDA 400) being a direct replacement. It was a two-section A/B battery, meaning one section was used for the 9V filament string (A), and the other section was used for the 90V+ plate voltage (B).

One method of obtaining these voltages is to use ten, 9V "transistor" batteries for the B section and six 1.5V "D" batteries for the A section. In the following sections, I'll describe how I accomplished

this.

You may end up varying some or all of my methods; nothing here is cast in stone. I believe the key contribution I made to this project and similar ones is the construction of the battery connector from common items. This connector is particularly difficult, if not impossible to find. I was never able to locate one.

Danger, High Voltage!

Do not attempt this project if you do not have any experience with high voltage. Once the batteries in this project are all strung together, they produce a combined voltage close to 100 volts. This may cause serious injury.

I have tried to write clear instructions and have reviewed them carefully. However, I do not guarantee proper operation nor do I claim any responsibility of damage to person or property. Proceed at your own risk!

Battery Artwork:

You don't need to adorn your battery pack with a label, as I have done to give it that retro look. I obtained the battery label artwork from <http://mysite.wanadoo-members.co.uk/roberts-radios/batteries/batteriesframe.htm>. Choose the #752 (NEDA 400) link near the bottom of the list on the left side. Other artwork is available from <http://www.ppinyot.com./transoceanic/battery.htm> in a pdf file.

Battery Box

The battery box needs to be 13-7/8" X 4" X 2-1/2" (see **Figure 4**). I made a box from 1/8" corrugated cardboard with the top and back panel as one piece and the top folded over as a hinge. There are probably other options available and I leave it up to the choice of the reader as to the construction of the box. My only advice is that it would be best to wait until the box is constructed and the battery artwork printed and glued to the outside before a hole is cut for the connector opening. This would make it easier for locating the hole properly.

Battery Connector

The connector housing is made from a 3/4" i.d. PVC pipe end cap cut to 11/16" length. To mount steel rivets for the pins,

I cut out a piece of a Radio Shack prototype board (part number 276-148 \$1.79), the same diameter as the PVC pipe. I used the sheaths from 1/8" x 1/2" steel pop rivets for the pins. They must be steel and not aluminum because you will need to solder them.

Drill four 1/8" holes in the proto-board in the same pattern as shown in **Figure 1**. You may cut the proto-board to a 1.25" diameter (as shown) or leave it square. Mark the same pattern on the back of the PVC end cap and drill four, 1/8" holes.

Push through and solder the rivet sheaths from the plated side of the proto-board. Mate the proto-board with the PVC end cap by pushing the soldered pins through the rear side of the end cap and secure with hot glue. See **Figure 3** for a view of the finished connector.

Hot glue the connector (note proper orientation of connector) behind the hole cut in the battery box.

"A" Battery Section

The three D-cell battery holders are available from Radio Shack (part number 370-386 \$1.79). For a good fit into the battery box, remove the two long side panels from one of the battery holders. I used a small hobby saw to accomplish this. Cut off the entire long side panels, including a portion of the top, bottom and base panels that are as wide as the side panels are thick.

Once one battery holder is modified, join all three holders together (using hot glue) along the long sides, with the modified holder as the middle section. See **Figure 5**. Wire the leads of the holders in series as shown in the diagram in **Figure 4**.

"B" Battery Section:

The ten 9V battery holder clips are from Radio Shack (part number 270-326, 2 per pack, \$0.99). The mounting frame is a 3-1/2" X 5" clear plastic box picture frame. You will also need ten 9V battery connectors (Radio Shack part number 270-324, 5 per pack, \$2.59).

I attached the 9V battery holder clips to the plastic box with rivets. You can use any method that works well. The 9V battery connectors can be attached to the bottom of the case with hot glue. They are mounted so that you can plug in the batteries upside-down.

Wire the leads of the connectors in series as shown in the diagram in **Figure 4**.

Finally, wire the battery connector with the end leads from each of the battery sections. Make sure to center and orient the connector properly, then hot glue the connector to the inside of the box. Make sure to check for proper voltages at the connector pins and your battery will be ready to power your Transoceanic.

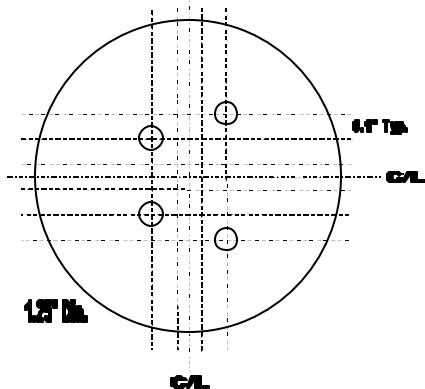


Figure 1: Connector drill pattern

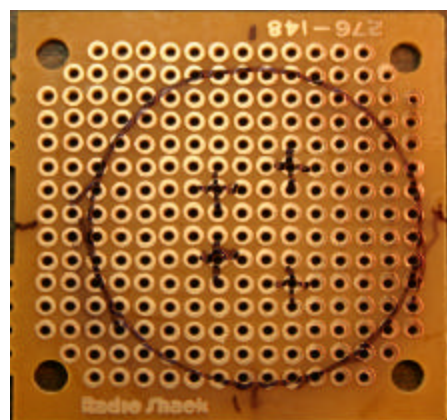


Figure 2: Protoboard



The completed project

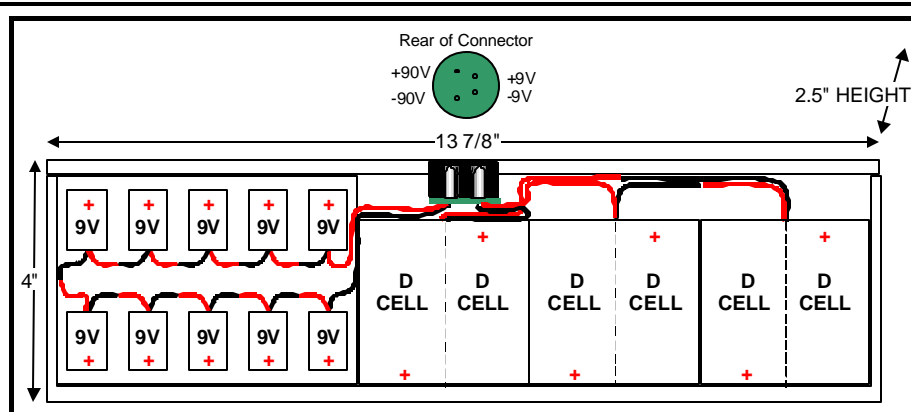


Figure 4: Battery locations and wiring



Figure 3: Finished connector



Figure 5: Completed battery box

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.

WHAT'S INSIDE A 9V BATTERY?

(and why you never see an "AAAA")

The following article was posted by EDN's technical editor Margery Conner on January 9, 2007...Ed

I came across a "Gizmodo" post with an eye-catching photo of a disemboweled 9V battery – apparently taken from the Axe Collector source post, "Why I Never Pay for "AAA" Batteries." Axe Collector has several photos of the innards of a 9V, which consists of six 1.5V cells that, if you squint, are about the same size as an AAA battery and, in a pinch, could be used in its place.

Well, this is like getting permission to do something vaguely illicit - you mean you can tear apart a 9V battery and not be sprayed by flesh-eating acid, wait, alkaline? (Immediate disclaimer - I used a Duracell battery. No idea what's inside of the others, but hey, alkaline is alkaline.)

So I disemboweled a handy 9V battery to see what I could see. It came apart quite neatly, the six 1.5V cells connected by bendy metal tabs, all in series, encased in a clear plastic wrapper.

How close are they to AAA batteries? As Axe Collector says, they're smaller,

FOR SALE

From non-member: Philco model 49-1601 radio phonograph w/original brochure. William/Florence Bair, 730 Yorktown Lane, Moorestown, NJ 08057. (856)-439-9071 Flo730@comcast.net

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

YOUR WANT AD HERE!

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.



As you can see from the photo, there's not much of a difference. But calculating out the volume, the AAA battery comes in at 0.21 cubic inches versus the AAAA's 0.11 cubic inches: almost double the volume, and thus the power, for a fractional increase in length and diameter. It's easy to see why the AAAA battery was replaced by the AAA.

Comments on the above article:

"If more designers of small devices knew what was really in a 9V, they'd use something else. There's really not much capacity available but these were handy when designing a 5V project. But I was dismayed when I bought a noise canceling aviation grade headset (I'm a private pilot) and found it was powered by a 9V! It ran through batteries like crazy."

"Indeed in the 80's these batteries were a pack of rectangular cells. I remember making a radio jammer with them, taking out half of the cells. This gave a 4.5V battery and half the space of the 9V pack left free to fit a 7413 IC with its output short-circuited to its inputs. The IC oscillated at around 30 MHz, tunable by squeezing the battery package a little bit. The 3rd harmonic jammed the radio of our janitor at school that time and he never suspected the battery next to his radio did this..."

"I've seen AAAA's in retail packaging at Menard's; 2fer about \$3; one of the few places that I found them."



and he reckons they're actually AAAA size. I measured them at a 0.303" diameter and 1.592" length. Trotting over to the virtual bookshelf and pulling down my copy of Wikipedia, it defines AAAA batteries as being 0.33" in diameter by 1.67" in length. Not an exact match, but pretty close. Let's say that these are AAAA batteries.

I measured a stray AAA battery that was lying about (no doubt quivering when it saw what happened to the hapless 9V battery). It came in at 0.400" in diameter by 1.67" in length.