The Jersey Broadcaster

NEWSLETTER OF THE NEW JERSEY ANTIQUE RADIO CLUB

Winter 1996 Volume 2 Issue 11

MEETING/ ACTIVITY NOTES

Reported by Marsha Simkin and Marv Beeferman

November's meeting opened with a discussion of the topics discussed at the Executive Board meeting held on the first of the month:

- The membership approved March 1 (with an alternate date of March 15) for our next swapmeet. Plans are for an **indoor** event at the Hightstown Country Club and no auction. It was also agreed that NJARC would provide free coffee and reasonably priced treats (donuts, bagels, etc.) based on an honor system. A limited Old Equipment Contest is also planned.
- The membership approved supplemental funding (at the editor's discretion) for the *Jersey Broadcaster* should an occasional expanded format push copying and postage costs over the normal limit.
- The Constitution and By-Laws update is progressing with the ultimate aim of better defining the fundamental concepts which govern the club and to meet the requirements for obtaining federal and state non-profit status.

John Dilks reported that the club home page on the WWW (http://www.globalent.net/oldradio) has been visited over 1700 times. John is doing a wonderful job with the web site and all members joined President Jim Whartenby with enthusiastic support for his efforts. It is updated every 5 to 7 days and is extremely well done and it has become a source for new members. John gave out reprints of his Atwater Kent Time Capsule article and provided copies of the web pages to members without Internet access. John is planning to include a chapter on radio history from a book written in 1922 by Hogan who worked for Fessenden. If you send John a photo (John needs to scan the photo himself because of size considerations), a write-up about your collection or about a specific item in your collection, he will try to include it.

Former Vice President Mike Hammer has volunteered to chair a selection committee for a potential museum site. Although this effort will involve careful consideration and will require full support of the membership before any major decisions are made, it does represent a good start for positioning NJARC should any opportunities present themselves.

The club is considering requesting floor space from the Church for a locking metal cabinet to store supplies such as our coffee pot, sound system and other meeting-related items.

Tom Provost, our technical program coordinator, addressed the club in regard to the direction and topics for future presentations. Tom is considering a questionnaire to obtain individual input. He also reminded members that reasonable reimbursement is available for expenses (copying costs, transparencies, etc.) associated with program presentation.

Hugh Davey suggested setting up a phone chain for informing members of meeting changes, cancellations, etc. Everyone thought that this was a good idea especially with winter weather just around the corner. For members with computers, the NJARC web site offers another format for information.

Congratulations to Lud Sibley on the publication of his new book, "Tube Lore." Reviews have been very favorable. A guest came to our meeting all the way from California to get Lud to sign his copy.

MEETING NOTICE

Please join us on Friday, December 13, when the NJARC will hold its annual holiday meeting at 7:30 PM at the Grace Lutheran Church, corner of Route 33 and Main Street in Freehold...refreshments will be provided. If you would care to contribute a sample of your favorite holiday sweet (cookies, candy, etc.), it would be a welcome addition. An interesting radio/phonograph/audio-related item whose story might be informally shared would also be appreciated.

REJUVENATING YOUR HEADPHONES

By Tom Provost and Gary D'Amico

This article is based on a presentation given at the November meeting...Ed

The first step in rejuvenating any headphone is to evaluate its condition. Start with a continuity check...most high impedance headphones are about 1000 ohms per phone. Since the phones are connected in series, the resistance measured from wire to wire of the phone cord should be around 2000 ohms. If your phones don't have continuity, check for corroded joints, a bad cord or an open

THE JERSEY BROADCASTER, published a minimum of ten times each year, 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 with special emphasis on contributions made by the state of New Jersey. Dues are $15 per year and meetings are held the second Friday of each month at the Grace Lutheran Church, corner of Route 33 and Main Street in Freehold N.J.

Submissions are welcome in typewritten or diskette (5-1/4" or 3-1/2") form with formats in ASCII, WordPerfect, Word, etc. Photos in high contrast black and white are appreciated but color photos are acceptable. The Editor or NJARC is not liable for any buying and selling transactions or for any other use of the contents of this publication.

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winding. If the cord is bad, you can fabricate a replacement from modern materials or obtain an authentic replacement from one of the sources listed at the end of the article.

Check the strength of the magnets by taking the metal diaphragm and holding it over one of the poles and attempting to lift it up and away from the magnet. A strong attraction is a sign of a healthy magnet. Although strength is relative, a ballpark test of a passable magnet is to suspend the metal diaphragm edgewise from the magnet's pole; if it can hold up the diaphragm, its probably good enough to use. At the same time, it's a good idea to check the diaphragms for flatness; replacement diaphragms are again available from the sources listed at the end of this article.

If your magnets displayed weak characteristics, it's time to re-magnetize. Two methods are available: a) rubbing the magnets with another strong magnet, or b) using a homemade electromagnet. In both cases, the first step is to use a magnetic compass in order to identify the magnetic orientation of the earphone so that its magnetic identity is retained and enhanced. Using the compass (see Figure 1 on next page), find the pole that attracts the North indicating pointer (the arrow end is actually the South pole of the compass needle). Then, mark the phone with a pencil indicating the North poles of the earphone (like poles repel) and use a permanent marker to identify the North poles of the magnets themselves.

The first re-magnetizing process, using permanent magnets, does not require disassembly of the headphones. If not already done, remove the cover and diaphragm from each phone and identify and mark the poles. Then, identify and mark the poles of two strong magnets with a permanent marker. Radio Shack sells ceramic magnets (P/N 64-1877) for 99 cents each which are fine for the job. Orient the magnets side-by-side (see Figure 2) so that you have a North and a South facing down. Think of them together as a horseshoe magnet. Place the North and South of the ceramic magnet against the **opposite** polarity of the phone pole piece. Slide the ceramic magnet pair across the earphone 10 or more times in the manner shown.

Even stronger magnets may be produced by using a gel cell battery and electromagnet. Identify the poles of the earphone and mark them as described previously. Then, wind about 20 turns of #18 insulated wire in a shape such that the phone (without its cover and diaphragm) can be placed inside the winding. Using your compass, momentarily (just a "tap") connect the winding to the gel cell battery and observe the magnetic polarity of the electromagnet. Mark the leads and the winding showing both electrical and magnetic polarity so you can reproduce them. Now, with the phone cover and diaphragm removed, place the phone inside the winding with the poles of the electromagnet and the phone matching (Figure 3). Connect the winding to the cell, observing original polarity, and then tap...tap...tap. Try this about six times. Again, check earphone polarity; it should remain the same as originally marked but with magnetic strength (use diaphragm check) greatly improved.

Sources:
Modern Radio Labs
PO Box 14902
Minneapolis, Mn. 55414-0902

Playthings of the Past
9511 Sunrise Blvd. #J23
Cleveland, Ohio 44133

Some phones may be poor candidates for improvement either because they were not very powerful to start with or the magnet material has deteriorated such that it can't be brought back to its original strength. The Tim Allen method might be in order here...perhaps in the form of a SUPER-POWER capacitor discharge system? This is exactly what D.K. Owens suggests in his article "Restoring Weak Magnets" in the August 1922 issue of The Old Timer's Bulletin." Look for it in a future edition...Ed

Western Electric Type 1002 2000 Ohms. $15.

FIGURE 1

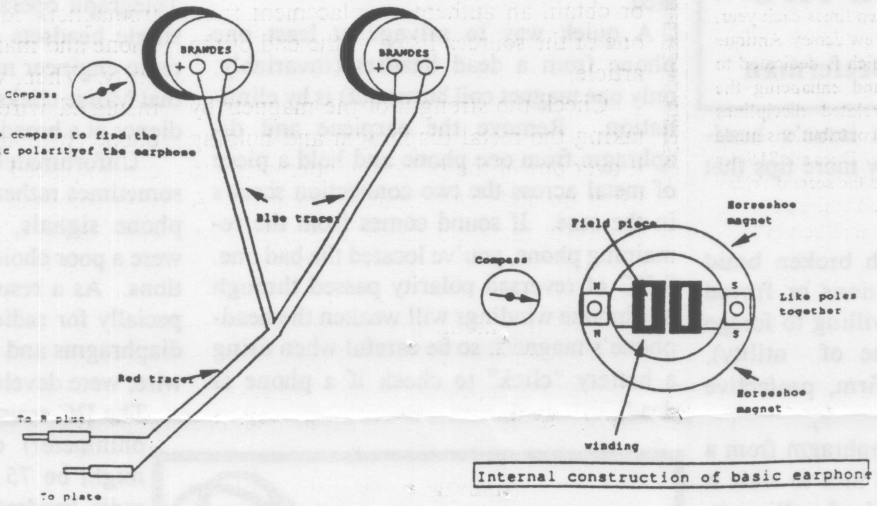


FIGURE 2

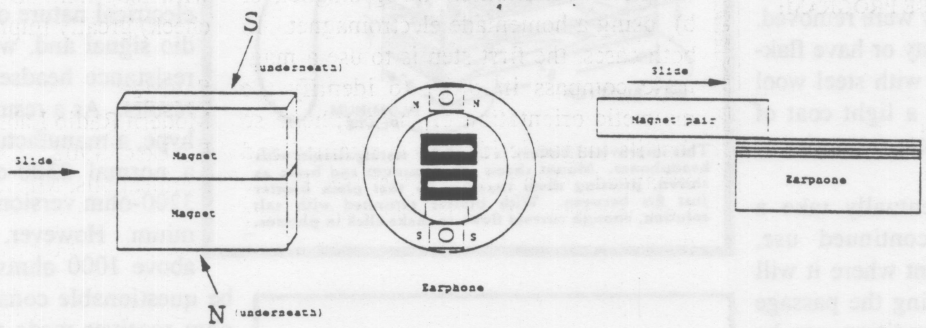
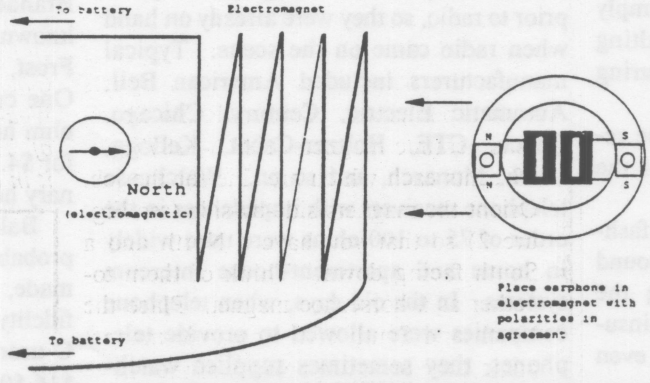


FIGURE 3

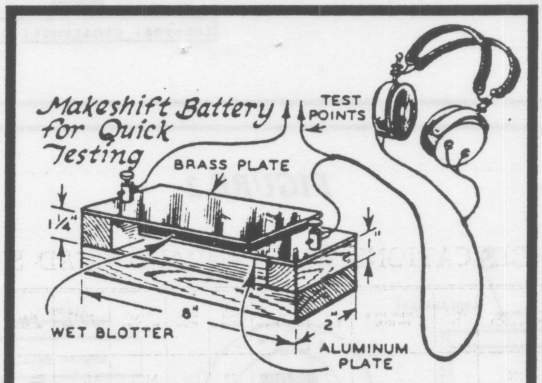


MORE "PHONE-TIPS"

Edited by Marv Beeferman

Continuing with this issue's headphone theme, here's a few more tips that might prove helpful:

- If you're plagued with broken braid wire at phonetip connections or frayed earphone wire (and are willing to forego authenticity in the name of utility), shrink tubing offers a firm, protective coating.
- When removing the diaphragm from a phone, it's always a good idea to slide it from the magnets instead of pulling it. Pulling the thin diaphragm off is likely to bend it.
- When removing headphone caps, note the orientation of any spacer gaskets found inside so that they may be replaced in the same order that they were removed.
- Diaphragms that are rusty or have flaking paint may be cleaned with steel wool on a flat surface. Apply a light coat of paint or a thin coating of car wax prior to reinstallation.
- A diaphragm will eventually take a "set," especially after continued use, sometimes reaching a point where it will touch the pole pieces during the passage of loud signals. This condition can be corrected by reversing the diaphragm (should be done about once a year to keep the headphone in top condition). Scratching a small mark on the outside edge of one side of the diaphragm prior to removal will aid in reversal during the reassembly process.
- Weak sounding phones may be simply the result of improper phasing resulting from not observing proper polarity during cord replacement.
- "Crackling" phones are usually the result of a poor solder connection at the phone tips.
- Emergency phone cord tips can be fashioned by winding bare No. 22 wire around the stranded wire and continuing the winding around a part of the outside insulation. Roll tightly and apply a thin, even coat of solder.
- Excessive current (greater than 6 or 7 mA) will endanger coil windings, particularly the inside turns which are not exposed to air and cannot dissipate the heat generated.
- A quick way to salvage at least one phone from a dead headset (invariably, only one magnet coil burns out) is by elimination. Remove the earpiece and diaphragm from one phone and hold a piece of metal across the two connection screws in the case. If sound comes from the remaining phone, you've located the bad one.
- DC of reversed polarity passed through headphone windings will weaken the headphone's magnets, so be careful when using a battery "click" to check if a phone is dead.



This improvised battery is ideal for testing circuits with headphones. Mount sheets of aluminum and brass as shown, pressing them together so that plain blotter just fits between. With blotter saturated with salt solution, enough current flows to make click in phones.

HEADPHONES

Edited by Marv Beeferman

Headphones (or "receivers") were being used for telephone and telegraph reception prior to radio, so they were already on hand when radio came on the scene. Typical manufacturers included American Bell, Automatic Electric, Century, Chicago, Couch, CTE, Holtzer-Cabot, Kellogg, Leich, Monarch, and so on. Watchcase telephone receivers with impedances in the order of 75 to 100 ohms were used widely in home and apartment-house intercom systems. In the old days, when telephone companies were allowed to provide telephones, they sometimes supplied watchcase types as second receivers on candlestick telephones. This let the user apply both ears on a long-distance call or have a stenographer record the conversation. Telegraph operators used low-resistance single headsets as "silent sounders." A radio engineer might wear the sounder so that Morse clicks wouldn't disturb the audience at a broadcast remote pickup point.

Unfortunately, radio signals were sometimes rather weak, weaker than telephone signals, and telephone headsets were a poor choice for DX'ing distant stations. As a result, headsets designed especially for radio reception, with thinner diaphragms and more turns of a finer coil wire, were developed.

The DC resistance (measured with an ohmmeter) of a telephone headset might be 75 to 100 ohms whereas a radio headset runs between 1000 and 3000 ohms. Impedance is resistance to alternating current which is typically five to ten times the DC resistance; the higher the impedance, the better the phones are in matching the electrical nature of the transmitted radio signal and, within limits, a high-resistance headset gives much better results. As a result, as part of its sales hype, a manufacturer might offer both a normal 2200-ohm headset and a 3200-ohm version at a 30% price premium. However, values of resistance above 1000 ohms per receiver might be questionable considering that a 1000 ohm receiver made with super-fine (44-gauge) wire requires 200 feet of wire per winding.

Many companies made radio headphones. Westinghouse, being one of the first, held an early dominant position in the industry. Other early manufacturers were Murdock, Holtzer-Cabot, Mesco, Brandes and Baldwin. Some of the better known names of the 1920's were Kellogg, Frost, Kennedy, Federal and Red Head. One company, Murdock, made a 2000-ohm headset as early as 1913, and sold it for $4.50. By 1925, the price of an ordinary headphone was down to $2.95.

Baldwin (known as "Baldies") were probably one of the finest headphones made, although early versions had poor fidelity for speech and music. The Type C used a fiber diaphragm and sold for $16.50 in 1910. In 1922, the Type C was advertised as an "amplifying" headset and was probably the most famous radio

receiver, being made differently than any other headset on the market. It used a special mica diaphragm which was actuated by a very thin and light armature and super-sensitive to the slightest variation of current; signals could be heard that were inaudible in the standard headset. It was so good that it was used by many US government departments and foreign countries. Actually, the Type C was not a headset in the traditional sense...it was more like an early magnetic speaker and was used in early horn-type loudspeakers where earphones were simply attached to the end of the horn.

The above article was edited from "Headphones" by Richard Arnold which appeared in the Sept. 1988 edition of Antique Radio Classified and "The Ultimate List of Headsets" by Ludwell Sibley appearing in the February 1992 issue of the Old Timer's Bulletin.

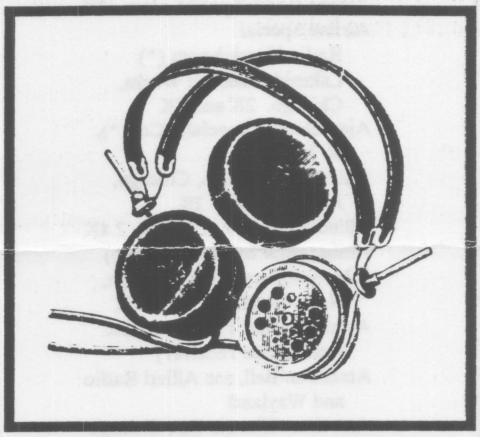
HEADPHONE COLLECTING

Compiled by Ludwell Sibley

Headphone collecting can be a rewarding and inexpensive adjunct to radio collecting. And don't be surprised by the extent of manufacturers and models to choose from. To get started, here's a list of numerous examples offered by some established collectors. The list includes both telephone and radio receivers; items marked with an asterisk are known to have been advertised but have not been reported by collectors to be in their possession. Can you add an asterisk to the list?

Most collectors report success in storing their headphones in zip-lock plastic bags. This organizes the headbands and cords to prevent sagging.

The attached list was compiled by Ludwell Sibley and included as part of an article titled "The Ultimate List of Headsets" which appeared in the February 1992 edition (Vol. 32, No. 4) of The Old Timer's Bulletin...Ed



SPECIFICATIONS OF STANDARD HEAD SETS

Company	City	Dollars, Last Price	Resistance Ohms (DC)	Sold To	Impedance f=1000	No. Poles	Turns Per Pole	Size Wire	Kind Wire	Matl of Cups	Matl of Cases	Matl of Dia.	Audibility Rating of Manufacturer	Length of Cord Feet	Clearance of Diaphragm (Inches)	Weight Complete Oz.	Trade Name
Radio Receptor Co.	New York City	....	2200		.....	2	3,700	39	PE	MC	AL	Pe	.....	5	....	14.0	RR
Everett Electric Co.	New York City	$8.50	3000	J-D	.....	2	5,000	40	CE	Ba	AL	Pe	.....	5	....	14.0	E
Everett Electric Corp.	New York City	8.50	3000	J-D	.....	2	5,000	40	CE	Ba	AL	Pe	.....	5	....	....	E-2
Newman-Stearn Co.	Cleveland, Ohio	6.50	3000		.....	2	2,750	42	CE	M	AL	St	.....	5	....	15.5	RED HEAD
Dictograph Products Corp.	New York City	8.00	3000		.....	2	4,500	44	CE	HR	AL	Pe	.....	5	....	12.0	R1
C. Brandes, Inc.	New York City	14.00	2200		25,000x	2	....	40	CE	HR	AL	....	.....	6	....	11.0	NAVY
C. Brandes, Inc.	New York City	8.00	2000	J	20,000x	2	....	40	CE	HR	AL	....	.....	6	....	15.0	SUPERIOR
Aicemo Mfg. Co.	Newark, N. J.	....	2000		.....	2	6,500	44	CE	C	C	Pe	.....	5	....	....	3000
American Elec. Co.	Chicago, Ill.	10.00	2500	J-D	.....	2	....	42	PE	R	BR	Fe	.....	6	....	....	ARMY & NAVY
American Elec. Co.	Chicago, Ill.	12.00	3200	J-D	.....	2	....	42	PE	R	BR	Fe	.....	6	....	....	ARMY & NAVY
American Elec. Co.	Chicago, Ill.	8.00	2200	J-D	.....	2	....	42	PE	AL	AL	Fe	.....	6	....	....	SWEDISH-AMER
American Elec. Co.	Chicago, Ill.	6.00	2000	J-D	.....	2	....	40	PE	AL	AL	Fe	.....	5	....	....	VICTOR
American Elec. Co.	Chicago, Ill.	5.00	2000	J-D	.....	2	....	40	PE	R	BR	Fe	.....	5	....	....	KEYSTONE
Telephone Bookholder Co.	Dansville, N. Y.	7.00	2200		.....	2	4,000	40	CE	HR	AL	ST-tp	.....	6	....	12.0	THB
Eugene T. Turney Lab's.	Newark, N. J.	6.50	3000	J-D	.....	2	5,000	40	CE	E-AL	AL	Si ST	.....	5	....	8.0	NONE
Teleradio Eng'rg Corp.	New York City	9.00	3000		.....	2	....	44	CE	MC	AL	Pe	.....	6	....	....	TELERADIO
Teleradio Eng'rg Corp.	New York City	7.50	2200		.....	2	....	40	CE	MC	AL	Pe	.....	6	....	....	TELERADIO
Teleradio Eng'rg Corp.	New York City	6.50	2000		.....	2	....	40	CE	MC	AL	Pe	.....	6	....	....	TELERADIO
Connecticut Tel.& Elec. Co.	Meriden, Conn.	....	3000		.....	2	....	....	CE	MC	AL	....	.....	6	....	14.0	
Kilbourne & Clark Mfg. Co.	Seattle, Wash.	5.00	2000		.....	2	3,150	40	CE	MC	AL	Pe	.....	6	....	13.0	P2
Kilbourne & Clark Mfg. Co.	Seattle, Wash.	6.25	3000		.....	2	4,700	40	CE	MC	AL	Pe	.....	6	....	13.0	P3
S.A. Potter Tool & Mach. Co.	New York City	9.00	2200	....	.....	2	5,000	40	CE	R	AL	Pe	.....	5	....	12.0	PRECISION
S.A. Potter Tool & Mach. Co.	New York City	10.00	3000	....	.....	2	5,000	40	CE	R	AL	Pe	.....	5	....	12.0	ARISTOCRAT
Telrtor Corp.	New York City	9.00	2200	J-D	.....	2	5,000	40	CE	....	AL	Pe	.....	5	....	12.0	B.
Penn Headset Corp.	Phil'del'hia, Pa.	12.00	3000	J	.....	2	5,000	40	CE	HR	AL	St	.....	6	....	12.0	PENN.
Charles A. Branstrom, Inc.	Buffalo, N. Y.	8.00	2500		.....	2	....	40	CE	MP	AL	Pe	.....	6	....	12.0	R83
Charles A. Branstrom, Inc.	Buffalo, N. Y.	10.00	5000	J-D	.....	2	....	42	CE	MP	AL	Pe	.....	6	....	12.0	R85
Auth Electric Co.	New York City	6.00	....		.....	2	....	40	....	....	R-AL	....	.....	5	....	14.0	AUTH
Auth Electric Co.	New York City	8.00	....		.....	2	....	40	....	....	R-AL	....	.....	5	....	14.0	AUTH
Auth Electric Co.	New York City	10.00	....		.....	2	....	40	....	....	R-AL	....	.....	5	....	12.0	AUTH
Monarch Tphone Mfg. Co.	Fort Dodge, Ia.	7.50	2000	J-D	.....	2	....	....	....	C	C	....	.....	6	....	....	2A
Monarch Tphone Mfg. Co.	Fort Dodge, Ia.	8.00	2000	J-D	.....	2	....	....	....	Ba	Ba	....	.....	6	....	....	1A
Monarch Tphone Mfg. Co.	Fort Dodge, Ia.	10.00	2500	J-D	.....	2	....	....	....	Ba	Ba	....	.....	6	....	....	1B
Monarch Tphone Mfg. Co.	Fort Dodge, Ia.	12.00	3000	J-D	.....	2	....	....	....	Ba	Ba	....	.....	6	....	....	1C
Nathaniel Baldwin, Inc.	Salt Lake City,	16.00	4800	J-D	.....	4	1,400†	38	CE	Ba	Ba	Mica	.....	6	....	18.0	C
Nathaniel Baldwin, Inc.	Salt Lake City,	16.00	4800	J-D	.....	4	1,400†	38	CE	Ba	Ba	Mica	.....	6	....	18.0	E
Nathaniel Baldwin, Inc.	Salt Lake City,	16.00	4800	J-D	.....	4	1,400†	38	CE	Ba	Ba	Mica	.....	6	....	14.0	F
Nathaniel Baldwin, Inc.	Salt Lake City,	16.00	4800	J-D	.....	4	1,400†	38	CE	Ba	Ba	Mica	.....	6	....	18.0	G
United Radio Corp.	Rochester, N.Y.	6.00	2000		.....	2	3,900	40	CE	C	AL	....	.....	5	....	13.0	PEERLESS
United Radio Corp.	Rochester, N.Y.	8.00	3000		.....	2	5,200	40	CE	C	AL	....	.....	5	....	13.0	PEERLESS
Globe Phone Co.	Reading, Mass.	6.50	2200	J-D	.....	2	3,700	40	CE	AL	AL	Pe	.....	5	.006	11.0	GLOBE JR.
Globe Phone Co.	Reading, Mass.	8.00	2200	J-D	.....	2	4,000	40	CE	HR	BR	Pe	.....	5	.006	15.0	GLOBE STANDARD
Elwood Elec. Co.	B'geport, Conn.	5.50	2000	J-D	.....	2	3,875	40	CE	C	BR	....	.....	5	.012	15.5	202
Elwood Elec. Co.	B'geport, Conn.	6.50	3000	J-D	.....	2	4,050	40	CE	C	BR	....	.....	5	.012	16.0	203
Radio Supply Co.	Hornell, N. Y.	7.50	2500	J-D	.....	2	....	40	CE	Ba	AL	Pe	.....	6	....	12.0	CLARION
Herbert & Huseges*	New York City	14.50	6000	....	20,000*	2	3,800	....	....	HR	BR	ST	.....	....	....	....	N & K
Roller Smith	New York City	6.50	3000	....	.....	2	....	40	CE	MC	AL	Pe	.....	5	....	....	UNIVERSAL
Stanley & Patterson	New York City	8.00	2200	J-D	.....	2	4,500	40	CE	Ba	AL	Pe	.....	5	....	16.0	DEVEAU 843
Stanley & Patterson	New York City	10.50	3200	J-D	.....	2	4,200	42	CE	Ba	AL	Pe	.....	5	....	16.0	DEVEAU 844
Federal Tel. & Tel.	Buffalo, N. Y.	8.00	2200		18,000	2	3,450	40	CE	HR	AL	Pe	.....	6	.015	14.0	53-W
Federal Tel. & Tel.	Buffalo, N. Y.	10.50	3200		22,000	2	4,000	42	CE	HR	AL	Pe	.....	6	.015	14.0	52-W
Herbert H. Frost.	Chicago, Ill.	5.00	2000		.....	2	3,700	40	CE	MC	MC	Pe	.....	5	....	13.0	FROST-PONES
Herbert H. Frost.	Chicago, Ill.	6.00	3000		.....	2	5,000	40	CE	MC	MC	Pe	.....	5	....	13.0	FROST-PONES
Electric Products Co.	Cleveland, O.	6.50	3000	J-D	.....	2	2,750	42	CE	M	AL	Tp	.....	5	....	13.5	WOTTON
Eisemann Magneto Corp.	Brooklyn, N. Y.	8.00	2200		.....	2	....	40	CE	MC	AL	ST	.....	6	....	....	
Superior Prod. Mfg. Corp.	Irvington, N. J.	....	2200		.....	4	5,000	40	CE	C	AL	....	.....	6	.012	12.0	
Wm. J. Murdock	Chelsea, Mass.	5.50	3000	J-D	.....	2	....	....	CE	MC	....	Pe	.....	5	....	....	MURDOCK 56
Wm. J. Murdock	Chelsea, Mass.	5.00	2000	J-D	.....	2	....	....	CE	MC	....	Pe	.....	5	....	....	MURDOCK 56
Electric Products Co.	Cleveland, O.	6.50	3000	J-D	.....	2	2,750	42	CE	M	AL	Tp	.....	5	....	13.5	
Connecticut Instrument Co.	Meriden, Conn.	8.00	2800		27,000	2	6,000	40	CE	CON	AL	Spcl	.....	5	....	14.5	CIC
Trustone Radio Mfg. Co.	Chicago, Ill.	5.00	3000		.....	2	5,000	40	CE	MC	MC	Fe	..	5	....	....	RUBTONE
Electrical Industries	New York City	8.00	2000		20,000	2	4,800	40	CE	HR	BR	Si	.....	6	.012	12.0	ULTRA
Electrical Industries	New York City	14.00	3000	J	30,000	2	5,700	42	SS	HR	BR	Si	.....	6	.011	14.0	MARCONI

(E) Enameled; (C) Copper; (HR) Hard Rubber; (Fe) Iron, Sort or Ferrotype; (Si) Silicon; (ST) Steel; (B) Bakelite; (C) Composition; (M) Moulded; (J-D) Sold Through Jobbers or Dealers; (AL) Aluminum; (tp) Tin Plate; (†) Wound on 4 poles, total turns 5,600.; (X) Frequency 800.

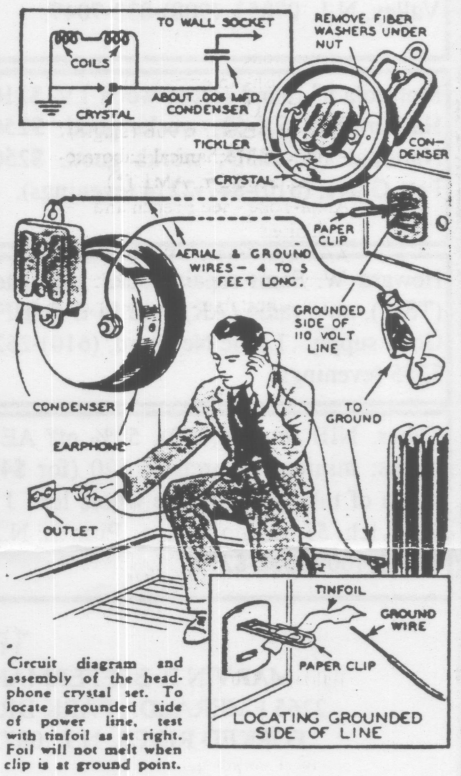
Acme Specialty Co., The Acme
Advance (*) Radio Manufacturing Co., Chicago
Aerial Service Corp., ASCOR (single)
Airline Radio Deluxe, bakelite
single 2K
double 3K
Airline Radio Special, alum. 2K
Airline Special
Radio Headphones (*)
Lakeside Electric Works, Chicago, 2K and 3K
Ajax Electric Specialty Co. (*), St. Louis
Allied Radio Corp., Chicago, American Bell 2K
Allied Radio Co., Lincoln, 2.4K
Ambassador Sales Co., NY (*)
J. H. Ambrose Co., Penn Yan, N. Y., JACO, P. U. T. 2K
American Bell Telephone Co. (watch-case receiver)
American Bell, see Allied Radio and Wayland
American Electric Co., Chicago
Army & Navy Type
Keystone (*)
Swedish-American (*)
Victor (*)
American Electric, 90B (single)
American Mechanical Laboratories, Brooklyn, AML (*)
Ampl-Tone - see French and United
Aristocrat (*) - see Dictograph
Army and Navy - see American
Atlas Adjustable - see Electric Products Co.
Atlas Multiple - see Electric Products Co.
Auth (Electrical Specialty Co., New York)
Auth
N. Y. 2.2K
2K, name on band only
Pat. 2K
Auth Elec. Co., N. Y., Roycraft Tested Headset 2.2K
Automatic Electric Co.
Automatic Elec. Co., Chicago, Automatic 1.5K
Baldwin, Salt Lake City, Type C
aluminum diaphragms (single and dual)
fiber diaphragms (two variations) 1.5K
mica diaphragms 1.5K
mica diaphragms (two sizes) 2K
Barawik T770 2K (*)
BASCO, Briggs and Stratton 3K
Bel-Canto (Bel-Canto Radio and Tel. Eqpt. Co, New York) (*)
Benwood-Linze
Ben Franklin - see A. P. Merchant Co.
Ben Wolfe Electronics Corp., Ambassador
Berkey Test-Fone
Berstan (*)
Berwick - see Triangle
Best Mfg. Co., Best (single)
Best Mfg. Co, Irvington, NJ,
Receiver ANB H-1 300 Ω
Bestone - see Hyman
Bethlehem Electrical Co., Newark, Splitdorf 3K
Big Three Radio Corp., NY (*)
Big Three - see Clearphone
Blue Streak 1.2K
Brandes
(small model with ball-socket headband connection)
(early model, "Superior" on wide nickeled band)(*)
Admiral Matched Tone 3K
Navy Type Matched Tone
Superior
Superior Matched Tone
Superior Matched Tone ("Brandes" boxed in engraved border)
(as above, aluminum caps)
Transatlantic (*)
C. Brandes, Inc., NRI
C. Brandes, Inc., N. Y.
(early model) 2K
Admiral 2K and 3K
Navy Type 3K
Superior (three variations) 2K
Superior (alum. caps) 2K
Branston (*) (C. D. Branston, Buffalo, NY)
Briggs & Stratton Co., Milwaukee, BASCO 3K
Brown Type D 4K (*)
S. G. Browne, Type F, London
Brush crystal, high-imp.
single and double
Clevite by Murdock (later)
Brunet et Cie., Type F, Paris
O. Brunet (French)
Bunnell
Cannon & Miller Co., Springwater, New York
Dixie Cannon Ball 1.5K
Cannon Ball 2K
Camco 2.2K
Camco Grand
Camco Cannon-Ball
C. F. Cannon, Springwater, N. Y., Cannon Ball Alnico #15 2K
C. F. Cannon
Alnico Magnetic #15, 1K single and 2K dual
Cannon Empire
Cannon Chief
Cannon Scout
Cannon Ball
Dixie (small and larger cases)
Junior
Master 2.4K
CGE, Canadian GE, Made in England 4K
Century Tel. Construction Co.
Telephone Type CX(CZ?)-159
Model SC (single)
F. B. Chambers & Co. (single)
Charles E. Chapin
Chicago Telephone Supply, DX Special 20K
Churry Mfg. Co., Detroit, Churry (*)
CIC - see Connecticut
Clarion - see Radio Supply Co.
Clearphone Radio Corp., Big Three
Clearphone Co., Stamford, Conn., Solid (Pat'd 6/1/1909)
Clear Phone, Clear Phone Co. (watch-case receiver)
Coherer Products (also see Racon)
Connecticut Instrument Co., Stamford, CT, CIC
Connecticut Tel. & Elec. Co., Meriden, Ct. (phones and watchcase receiver)
Connecticut
(single)
200 Ω
R-2-A
Consolidated Radio Products
Consolidated Radio Products Co.
R-2-A 2K
R-14 2K
HS-16-A, 150 Ω
Chas. Cory & Son, Inc., Coryphone
Chas. Cory & Son, NYC, Coryphone Radio 2K
Couch 4660 (watchcase)
(bakelite case)
S. H. Couch Co., Inc., 4660 (watchcase)(brass case)
S. H. Couch Co., Inc., Boston, Couch 3K
Crosley
Crosley, 2500 Ω
Crosley, Cincinnati 2K
C T E [Conn. Tel. & Elec. Co.]
P/O H-3/ARR-3 30 Ω
Davis (bakelite)(*)
Davis - see United
DECO
De Forest Radio Tel. & Tel. Co.
De Forest Radio Tel. & Tel. Co., Jersey City, De Forest 2K
Delta Electric Co., Marion, Ind.
Delta 4K
Gold Stripe (*)
Delta Electric Co.
Deluxe - see International
Dependable - see Trimm
Deveau - see Stanley & Patterson and Solid
Dfh.b - 44 (German?)
Dictograph, CDC-49016
Dictograph Products Corp., N. Y.
Aristocrat 3K (*)
Dictograph R-1 3K
Dictograph R-3 3K
Dietzen 2.2K (*)
Dietzen Navy Type 3K (*)

D-H & E Co., S-C No. 2-AK
DLR No. 2 S
DLR No. 5 - ITBA5
Durophone - see Warren
DX Special - see Chicago
Dymac - see Electrical Products
D/T/W (logo) w/vol. cont. 4K
Durophone - see Warren
Eastern (*) (Eastern Electric Co., Elizabeth, NJ)
Edgson Radio 3K
Eisemann
Electric Products Co.
Atlas Adjustable
Atlas Multiple
Electrical Apparatus Co., Detroit (*)
Electrical Products Mfg. Co., Providence, R. I., Dymac Type E 2.4K
Electro Importing Co. (single)
Electro Trading Co., N. Y.,
Berwick Supreme (single) 1.1K (also see Triangle)
Elwood (Elwood Electric Co., Newark)
Elwood, Bridgeport, Conn. single 1K and double 2K
Ericsson, Societe' des Telephones, Made in France 4K
Essex (*)
Everett
Everytone (*) - see Pacent
Excello (*) - see Rex
Featherweight Twin Tone
Featherweight Twin Tone, New
Federal Tel. & Tel. Co., Buffalo, N. Y., 52-W 3.2K
53-W 2.2K
Federal-Brandes, Inc., Newark, Brandes (also see Brandes)
John Firth & Co., NYC, Made in Germany (vol cont) 2K
John Firth & Co., Made in Germany ("SEIBT" stamp) single and dual)
C. M. French Mfg. Co., Ampl-Tone
Friedlander-Koppler Radio Service, N. Y., Weloilt (*)
Frost Fones (H. H. Frost, Chi.)
No. 161 2K
No. 162 2K
No. 163 3K
No. 171 3K
No. 172 3.2K
No. 174 2K
No. 175 3K
GEC (GECOPHONE) Reg. No. 691375 (BBC Stamp)
Gemphone - see Radiogem
Gem Earphone Co. (hearing aid)
General Radio Company, Limited, London, General Radio (BBC Stamp)
Globe Electric Co., Globe (single)
Globe, Globe Phone Mfg. Co., Reading, Mass. (alum., w/pic of globe) 2.2K
Globe, Reading, Mass. (plain)
Gold Seal - see Stanley and Patterson
Gold Stripe (*) - see Delta
Gold Tone (*) (Gold Tone Radio Co., New York)
Goldschmidt Corp., New York (importers), N & K (*)
Gundlach-Manhattan Optical Co., Rochester (*)
Hamburg Bros., Pittsburgh, Type E-25
Hamburg & Hamburg, Pennsylvania
Hart & Hegemann Mfg. Co., Hartford, H & H
Hartford Metal Products Co. (*)
Harvey-Wells, Southbridge, Mass. 75 Ω
Haynes-Griffin Radio Service (*) see Tested
Holley Mfg. Co., Holleyphone
Holtzer-Cabot
(no city) 2K
No. 4 National (*)
Boston/Chicago (small, early design) 3K
Boston 2K
Boston, No. 2 Universal 1.7K
Holtzer-Cabot Elec. Co., Telephone
Huball (*)
Hubmil TS-5 2K
Henry Hyman & Co., Bestone
H & H - see Hart
Illinois - see Wayland
International Radio Telephone Apparatus Co., New York, De Luxe (*)
Interocean Radio Corp., Jersey City, NJ (*)
IWB (*)
JACO - see Ambrose
Jolley Radio Co., New York (*)
Kellogg 64-C
Kellogg S. & S. [Switchboard & Supply] Co.
(plain)
Chicago, 64-B 2.4K
82-A 200 Ω
85-A (unit)
87-A (unit)
R-14 (U. S. Army) 2K
Colin B. Kennedy
Kennedy
Kennedy 3K
Keystone (*)
Kilbourne-Clark (*)
Kodel Radio Corp., Cincinnati, Quality (*)
Kreigsmarine
Lakeside Electric Works, Chi. Airline Special 2K and 3K
Lark (*) - see Leich
Leich Electric Co., Genoa, Ill., Lark (*)
Lincoln - see Allied
Litewate (*) - see Premier
Little Gem - see Triangle
Little Spitfire, Made in USA
Little Tattler - see Marinette and Tower

HEARING LOSS LINK DISCOVERED

FORKED RIVER, USA, Dec. 7 (AP) - After an extensive investigation, scientists have finally discovered a positive link to the high incidence of hearing loss in old-time radio enthusiasts. According to Dr. Les Errwax of the National Institute for Useless Research and Development (NURD), "In their search for pre-transistor miniaturization and novelty, early experimenters sometimes threw caution to the wind."

Crystal Set Built Into Headphone



Circuit diagram and assembly of the headphone crystal set. To locate grounded side of power line, test with tinfoil as at right. Foil will not melt when clip is at ground point.

TO BE CONTINUED...

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

All or part of 6 cartons of old radio & TV schematics, manuals, books, substitution guides, Sam's Photo Fax, test equipment, magazines, etc. 1930-1960's. Martin Fleisher, 12 Zellers Road, Box 123, Long Valley, N.J. 07853 (908)-832-7047.

Motorola 8" round-screen wood TV, $110. Hallicrafters SX-62, works good, $250. National NC-183D, works good, $250. Pete Grave, (610)-847-2214 (evenings).

Howard W. Sams repair books: transistor (TSM), auto radio (AR), and hi-fi (MHF). Good supply. Lewie Newhard, (610)-262-3255 (evenings).

Tubes, NIB (over 6,000), 50% off AES prices; minimum purchase $20 (for $40 worth of tubes) or buy the whole lot. J J Papovich, 53 Magnolia Ave., Pitman, N.J. 08071, (609)-582-8279.

Collection of the late John Kara (former club member) consisting of: AK 188, early battery set, hi-fi equipment, ham receivers, consoles, wooden and plastic tabletops, transistor radios, test equipment, crystal sets, between 2,000 to 3,000 radio and TV tubes, etc. Elsie Kara, Whiting N.J. (908)-849-4318.

Novelty Items - RCA, Victor, Edison, Splidorf and others. Send LSASE (55 cents postage). Sams Photofacts #500 up to 1000 - you pick up - 50 cents each. Over 300 books - send LSASE (55 cents postage) for list. J.J. Papovich, 53 Magnolia Ave., Pitman NJ, 08071. (609)-582-8279

WANTED

Radio chassis and speaker for Crosley grandfather clock, Model 59. Also information on the original finish of the cabinet. Ralph Fenimore, 396 Misty Vale Dr., Middletown, DE 19709. (302)-378-0185 12/96

Spark gear - have Pepsi bottle radio to trade for same. John Dilks, K2TQN, (609)-927-3873 (evenings).

Someone to repair a short in a 1938 Stromberg Carlson radio. Chassis and spkr. removed from cabinet; very clean. Ken Roginski, (908) HOpkins 2-4623.

27 down and three to go: Air Patrol (Breckinridge), To the Rescue, (Chappman) and Under the Sea (Duffield) will complete my *Radio Boys* collection. Dust jackets not required. Mike Koste, 57 Tennis Ave., Ambler, PA 19002. (215)-646-6488 12/96

Miniature tape recorders and related accessories. Also, vintage broadcast portables, especially wind-up types. Need manuals, brochures, photos, tape-recording books and magazines. Joseph A. Morinelli, 901 Fairfax Rd., Drexel Hill, PA 19026. (610)-715-1720 12/96

1. RCA Model A101 console radio in Mahoganey finish. This radio was made between 1950-1952. It has a "45" record player on top of the AM-FM radio (on right of cabinet) and a separate "78-33-1/3" player (No. 960284) which fits on the left of the cabinet. 2. An extra gray colored wooden pull-out drawer for No. 960284 record player for the A101. 3. An extra No. 960284 record player for the A101. 4. An extra "oval-shaped" gold-colored wheel with a black rubber rim which causes the tone arm to move off the record. This part fits on the RCA Model RP-190 "45" record player which is part of the A101. 5. A dial light cover for a Zenith Model 12H090 (1945). George May, 321 South Amherst St., Perryton, Texas 79070. 1-806-435-3194 12/96

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FORKED RIVER, N.J. 08731

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