



Great deal on books at the meeting!

OSCILLATOR

DELAWARE VALLEY HISTORIC RADIO

*The Official Newsletter of the DVHRC
1999*

Vol. 7. No. 4, April

Fisher Doctor has the Right Prescription



It's Y2K compliant, and the outcome of a Fisher HiFi overhaul/modification is something you can enjoy everyday. 50's and 60's vacuum-tune audio gear from McIntosh, Fisher, Scott, Marantz, Heath, Dynaco, Eico, Harmon Kardon, Altec, Quad and many others was not easy on your wallet, but the quality is still evident.

Al Pugliese, The Fisher Doctor, d.b.a. Fisher Radio Company, was our March presenter. More members showed up than for our holiday meeting. Why? Music quality from this old gear is sweet and easy on the ear. A full cap replacement according with Al's suggestions is like building a kit stereo: You have that sense of accomplishment, and friends and family will be surprised by the forty-five-year-old component's sound quality. A special DVHRC thank you goes out to Al and his lovely wife for a spellbinding presentation. I should have taped it!

The Fisher Doctor has modification/repair kits for your Fisher gear, or he will do the job for you. Contact him at 718-948-7489. - *Bill*

Our Next Meeting

Don't be an April fool. Catch our presentation this month, there will be something for everyone, I promise. Don't say I didn't tell you! Also, BRING SHOW AND TELL ITEMS. - *Bill*

As usual the meeting is 7:30 PM at the Telford Community Center. Auction will follow.

COMING EVENTS

Apr. 9	NJARC Meeting, Freehold, NJ
Apr. 12	DVHRC Meeting, Telford
Apr. 24-25	Krantz Auction (see back page)
Apr. 24	Cherryville Hamfest, Harmony, NJ
Apr. 25	Hamfest, New Castle, DE
May 2	Warminster Hamfest, Wrightstown PA
May 11	DVHRC Meeting, Telford
May 14	NJARC Meeting, Freehold, NJ
May 15	Central PA Meet (info inside)

THE OSCILLATOR

Newsletter of the
Delaware Valley Historic Radio Club
P.O. Box 847
Havertown, Pa. 19083

The *Oscillator* is published monthly by members of the non-profit DVHRC. Its purpose is to provide a forum to educate, inform, entertain, and communicate with collectors and preservers of vintage radio technology.

We welcome and solicit information relating to radio history or collecting. Submissions should be carefully researched, typed and accompanied with clear photographs or diagrams. Material on-disc (3-1/2" DOS/Win95) is particularly welcome.

Unless copyrighted by the author, material in this publication is available for attributed reproduction for nonprofit purposes. (For convenience, the editor can supply copy on-disc.)

Personal views, opinions and technical advice offered in this newsletter do not necessarily reflect those of the members, officers or Board of Directors of the DVHRC, nor is the organization responsible for any buying or selling transaction incurred.

To join: DVHRC dues are \$15 per year. The membership year runs January-through-December. Please mail to the club PO box above.

Meetings are held the second Tuesday of the month at 7:30 PM

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President	Bill Overbeck	(610) 789-8199
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OSCILLATOR EDITOR

Al Klase

OSCILLATOR CONTRIBUTORS

John Dilks, K2TQN	Alan Douglas
Alton DuBois, Jr	Mike Koste
Bob Thomas, W3NE	Ludwell Sibley
Dave Snellman	Ted Sowirka

DVHRC TECHNICAL COMMITTEE

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Pete Grave Dave Abramson

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Charlie Class
WEB PAGE

<http://pw2.netcom.com/~firstake/dvhrc.htm>

Webmaster: Brian Erwin 610-566-8858

MEMBERSHIPS

Mike Koste

OSCILLATOR ARTICLES & MEMBER ADS

Mail to the editor at 22 Cherryville-Stanton Rd., Flemington, NJ
08822

(908) 782-4829

Fax: (908) 783-8361

E-mail: skywaves@bw.webex.net

COPY DEADLINE: The 20th of each month.

March Meeting Notes

Dave Snellman reporting

Tuesday, March 9th, at the Telford Community Center, the DVHRC hosted its March meeting. We had about 40 members in attendance, including some new ones. We'd like to welcome Chris Hicks of Clinton Corners, NY; Steve Donchez of Bethlehem, PA; Pete Williamson of Philadelphia, PA and Joe Candidi of Clifton Heights, PA to our club.

With the winter meet behind us, Bill Overbeck praised all those who helped make the third annual "SuperWinterMeet" possible. It was reported that after all the dust settled the club added about \$1500 to the treasury.

The first item at the meeting there was a discount book sale. Many of the current popular titles that collectors seek were available at discounted prices. Look for this sale to continue next month. Some of the popular titles included in the sale are: Zenith Transistor Radios by Norm Smith, Radios By Hallicrafters by Chuck Dachis, Communications Receivers, 4th edition by Raymond S. Moore, Shortwave Receiver – Past and Present by Fred Osterman, as well as many others. Sales were very brisk. If any of these titles intrigue you, be sure to be at our next meeting.

As promised in prior newsletters, the evening's technical presentation was something extra special. We had a guest speaker – Al Pugliese, a.k.a. "The Fisher Doctor" made a very interesting presentation to all those in attendance. Al is the president of the "Fisher Radio Corporation." They specialize in the restoration of vintage Fisher tube-type audio gear. Quoting from the excellent handout Al provided, "We restore and IMPROVE ALL vacuum tube Fisher gear (1937-1967.)" Al's presentation took us through the various series – by model number- of components offered by the original Fisher Radio Corporation. We learned that tube testing, capacitor changing, and adjustment of the FM de-emphasis circuit are only a part of the restoration process. These units are returned to "showroom new" status. For more details on what Al Pugliese, the Fisher Doctor, can do for your vintage Fisher gear (as well as some other tube audio gear) contact him at 718-948-7489. His e-mail address is FisherDoc@aol.com. You can write to him at 27 Daleham Street, Staten Island, NY 10308. A big DVHRC thanks to the Fisher Doctor for his presentation.

After the presentation and the regular break for snacks, the monthly auction got off to a slow start. (I guess too many people were interested in picking Al's brain and gobbling up snacks.) Well, we did have an auction. It included something for everyone. Clock radios, an unbuilt Heathkit HI-FI kit, a Philco cathedral, Some Riders TV volumes, a Hallicrafters S-38, some reel-to-reel tapes, some test equipment, the usual "box of stuff," and in keeping with the evening's theme – a Fisher 250.

We'll be back at the Telford Center again for the April meeting. All those attending the April meeting will receive a NOS 1L6 tube! (April Fool!) See you there.

NJARC BCB DX CONTEST

Local boy makes good!

Our own Abe Deihl won the hotly contested "D" category in this year's NJARC BCB DX Contest. Abe had a total score, for his ten most distant stations, of 10,115 miles. He managed to snag XEQ in Mexico City, a distance of 2055 miles, on his Philco 42-390 using the internal loop.

The contest was held February 19th through 28th. A total of thirteen logs were submitted by seven contestants. A great time was had by all. The committee is hoping for increased participation next year.

CAT	NAME	RADIO	ANTENNA	TOTAL	BEST DX
A	Al Klase	Skywaves Xtal Set	60' flat-top	5846	530 R. Vision Cristiana 1309 mi.
B	Tom Provost	Ambassador Regen Kit (2T)	Multi-dipole	7105	530 R. Vision Cristiana 1309 mi.
B	Marv Beeferman	Walker Flexi Unit (1T)	50' wire	6055	1220 XEB Mexico City 2055 mi.
C	George Shields	Pheonix Ultra Superhet (1924)	75' wire	6964	530 R. Vision Cristiana 1309 mi.
C	George Shields	Federal Type 61 (1924)	75' wire	6808	530 R. Vision Cristiana 1309 mi.
C	Gary D'Amico	Stewart-Warner 625 (6 T)	80M Dipole	6453	570 Radio Reloj, Cuba 1271mi.
D	Abe Deihl	Philco 42-390 (1942)	Internal Loop	10115	940 XEQ Mexico City 2055 mi.
D	Tom Provost	Philco 38-620 (1938)	Homebrew Loop	9666	530 R. Vision Cristiana 1309 mi.
D	Gary D'Amico	Philco 610 (5T)	Loop	8914	570 Radio Reloj, Cuba 1271mi.
D	Frank Feczko	Zenith 6G801 (1948-49)	Wave Magnet	6840	870 WWL New Orleans 1128 mi.
D	Abe Deihl	Sentinel Model 248W	Internal Loop	5128	870 WWL New Orleans 1128 mi.
E	Al Klase	Navy RAX (6T + PS)	DU-1 Loop (2T)	11316	530 R. Vision Cristiana 1309 mi.
E	Frank Feczko	Hallicrafters SX-28	Long wire	5318	1040 WHO DesMoines 1014 mi.

Some Personal Reflections about Disc Recording

By Ted Sowirka.

As a pre-teen growing up during the depression, I was lucky to have an older brother to look up to and follow around. He was always involved with interesting goings on. His forays into model airplanes, bicycles, electricity, motorcycles, radio, automobiles, model gas engines, real airplanes, television, electronics, etc., attracted me like a magnet: does a nail.

During 1941, we replaced our old Philco console Model 620 with a new Philco console Model 41-605. The new set had pushbuttons, a tilt-front housing a 78-rpm changer with a Beam-O-Light pickup and disc-recording cutting arm. With this set we could make our own disk recordings on paper or metal-based blanks.

The microphone supplied with the set was a die-cast housing the size of a wind-up alarm clock. Inside was a four-inch PM speaker, and on the side was an on-off switch. We used up the sample pack of discs that came with the set, and ran out to RESCO for replacements.

To make a recording, the disc was placed on the turntable and positioned so that a spring-loaded pin on the turntable near the label area popped into one of the holes in the disc. This prevented the record blank from slipping when the cutting head was lowered onto the acetate coating, and the needle started to cut a groove. The needle cut a "V" groove producing a fine thread-like acetate string which wanted to stick to the record surface because of the generated static

electricity. To prevent the cutting from interfering with the cutter, we used a camel-hair brush to push the cuttings aside.

With this machine, we recorded excerpts from many of the programs on the radio at that time. The small discs gave us a recording time of about two and a half minutes per side. I thought the Philco did a good job, but my brother wanted something better.

A friend of his, who worked at RCA in Camden, had built a recording-playback system that was portable and had a General Industries phono motor with speed control. The cutting arm was also GI. The microphone was a dynamic made by Astatic. The speaker was a 10-inch PM dynamic in a housing that sounded great. He bought the package, and now our results were semi-pro.

Experiments with the new system brought out the fact that, when recording, the speed control on the motor had to be pushed up to compensate for the extra load caused by the cutting head. For accuracy, a stroboscopic disc illuminated by a neon lamp had to be on the turntable. During playback, readjustment was required as the cutting head was gone. We never realized that the Philco had this problem. Playback of the Philco-made recordings had a definite pitch change. We decided to only make recordings on the GI turntable and to playback on another turntable.

Another problem showed up when we were able to get some 10-inch discs. The speed changed from the outer

groove to the inner groove was drastic. The range of speed control wouldn't cover it. Since I was in high school at the time, I calculated the size required for a new motor pulley, and made one in the machine shop. For best results with this setup, the strobe and speed changes were required.

During 1944, I asked my high school principal for permission to record portions of the commencement exercises. My brother allowed me to take his equipment to the school and set it up on stage. I was able to purchase a few 10 and 8-inch glass based professional discs that were rejects from RESCO. The war took all the first-quality product. Most of the paper-based records we made back then have turned to dust. Some of the metal records are still playable. The high-

school glass-based records were perfect when I came across them recently. My 55th year reunion was coming up, and since I had never attended any of the reunions, I decide I would make this one. I transcribed the 78 rpm discs to cassette tape. Copies of the cassette tape were made a distributed to the students that I had recorded 55 years ago. One of them, a voice student, who had sung The Lords Prayer opening the commencements, said her grandchildren were amazed to hear what their grandmother sounded like when she was their age.

By the way, RESCO was the Radio Electric Service Company a source of electronics parts back then.

The 6AJ5 Mystery

By Al Klase

I've always been mystified by the use of the rather obscure 6AJ5 remote-cutoff pentode in the first RF stage of the original military R-390 receiver. A remote-cutoff tube offers a better noise figure in the upper HF ranges near 30MHz, but lack of proper AGC action generally drove designers to remote-cutoff tubes like the familiar 6BA6. *Tube Lore* tells us that this tube is a "6AK5 optimized for 28-V plate supply," but here it is in a Collins engineering

masterpiece with 180 volts on it's anode. Clearly something's going on here, but the answer seemed to be lost to antiquity. As it turns out, the answer was a government secret until 1985.

The following is from the *Final Engineering Report on Radio Receivers R-389()/URR and R-390()/URR*, September 15, 1953 (Declassified May 8, 1985) (Copies available from Pete Grave.)

4.2.6.4 RF Stage

From the specifications, the three most important considerations in the design of the RF stages are noise contribution, gain, and strong signal handling capabilities.

Noise Contribution of RF Stages

Once the gain of the antenna coil has been fixed, the next method of raising the sensitivity of the receiver is to use a low noise first RF tube. All low noise pentodes, however, are sharp cut-off tubes, and application of full AGC to these tubes results in severe distortion above about .1 volt antenna input. A one volt signal 30% modulated at the antenna has a possible peak voltage of 11.5 at the grid of the first RF tube with the antenna coils used. The first RF tube must be able to handle this voltage without serious distortion, and in order to prevent the grid from going positive with such a voltage, at least 11.5 V of bias must be supplied to the tube. For most sharp cut-off tubes, this lies far beyond cut-off, but the 6AJ5, though nominally a sharp cut-off tube can be operated so that it has fairly satisfactory remote cut-off characteristics. This is primarily due to the fact that it was designed for 28 V plate and screen operation. Application of screen voltage to this tube through a large screen dropping resistor provides proper operation when used with a 180 V B+ supply. When AGC is applied to the control grid, the screen voltage rises, thus preventing an early cut-off and giving a much better remote characteristic than any other sharp cut-off tube tried.

As an example of its superiority, here is a comparison between it and the 6AK5:

Distortion at .7 V input (30% mod)

6AK5	16%
6AJ5	3%

Audio rise from 10 uv to .7 V (db)

6AK5	18.5 db
6AJ5	10.0 db

Despite the use of this tube, sensitivity at times rises above 3 uv, due to variations in tubes, ant coil gain, etc. It is proposed, therefore to raise allowable AM sensitivity to 3.3 uv below 14 mc and 4.4 uv above 14 mc. Allowable CW sensitivity is to be raised to 1.3 uv above 14 mc.

The cascode amplifier was also tried on breadboard models and seemed to offer some improvement over pentodes in regard to sensitivity, but again, their poor performance when AGC is applied disqualified them. They are often used in TV sets with AGC applied, but they will not handle signal levels of 12 V peak as required in this receiver.

DVHRC BOOK SALE

We have a good stock of books left from our Wintermeet. The special book sale will continue at the April meeting only. Please tell your friends, bring them to the meeting, or pickup books for them.

TITLE	AUTHOR	LIST	SALE
Zenith, Early Years	Cones & Bryant	\$30.00	\$22.00
Zenith Transistor Radios	Smith	\$30.00	\$22.00
Hallicrafters	Dachis	\$30.00	\$22.00
Philco	Ramirez	\$30.00	\$22.00
Plastic radios	Jupp & Pina	\$40.00	\$30.00
Bunis Transistor II	Bunis	\$17.00	\$12.00
Transistor Radios	Smith	\$30.00	\$22.00
Zenith Transoceanic	Cones & Bryant	\$25.00	\$19.00
Communications Receivers IV	Moore	\$20.00	\$15.00
Transmitters, Exciters, & Power Amps	Moore	\$22.00	\$18.00
Shortwave receivers Past & Present	Osterman	\$25.00	\$20.00

- No Shipping
- No Tax
- Generous Discount
- March Meeting Only

BUY SELL SWAP

WANTED: Gernsback's Official Radio Service Manuals: 5, 7, 8. **RCA Victor Service Data:** '47, '48, '49, '51.

Mike Tannenbaum, 215 540-8055, k2bn@agtannenbaum.com A.G. Tannenbaum, POB 386 Ambler PA 19002, Phone 215 540 8055 Fax 215 540 8327, Web URL www.agtannenbaum.com, e-mail k2bn@agtannenbaum.com.

FOR SALE: Old radios and 78 RPM records from an estate. Includes **Zenith #5614**, **Silvertone** radio/disk recorder, and **RCA ACR-175** communications receiver. Contact: George Rottina, 17A Lumberjack Cir., Horsham, Pa. 19044. Phone: 215-675-9055.

FOR SALE:: **7JP4 CRT**, good filament, screen looks OK, make offer. Alton Dubois, Jr., 67 Peggy Ann Road, Queensbury, NY 12804, Phone 518-792-3130

HELP: Would the person who sold Marc Ellis the Philco 70 cabinet please contact him at PO Box 1306, Evanston, Ill 600204-1306; ellis@interaccess.com; 847-869-5016.

WANTED: Howard Sams book "From CB to Ham Beginner" by J.A. Stanley. Richard C. Yingling, 2 S. Locke Ave., Yeagertown, Pa. 17099, (717) 242-1882

HELP WANTED: Need someone to repair a Philco 4654 Predicta TV. Ray Casper (609) 695-8312

WANTED: Emerson AU-190 chassis; FADA 659 dial glass; Chelsea ZR-4 audio transformer; Sentinel 400 Television; Plastic CRT cover (front) for 17" Philco Predicta; Pilot TV-37 tuning knob (wood). Frank Johnson, 530 Elford Rd., Fairless Hills, PA 19030-3624 (215) 943-8295

FOR SALE: Parted out Stromberg Carlson model 19-20 AC. Power transformer appears O.K. IF's are O.K. Electrodynamic speaker is electrically O.K., needs cone repair. Make offer. Alton Dubois, Jr., 67 Peggy Ann Road, Queensbury, NY 12804, Phone 518-792-3130

WANTED: Japanese tubes: UF134, UZ135, UF109A, UF111A, UY133A. Lewie Newhard (610) 262-3255

WANTED: Sales literature, service manuals, and equipment for theatre sound / broadcast use by RCA Photophone, Century Sound, Motiograph, Altec, Western Electric, etc. Theatre catalogs by Jay Emmanuel Publications, Philadelphia. Scott Stillwell, 2328 Cambridge Circle, Hatfield, PA 19440 (215) 393-1833 pager: (800) 717-9306

Childers & Smith Auction Proudly Presents:

The Colossal Estate of Frank Krantz

Absolute Public Auction No Additions, No Reservers to be Sold on Site

Session I: Saturday, April 24th Beginning at 10 a.m. - 5 p.m.

Session II: Sunday, April 25th Beginning at 10 a.m. - 5 p.m.

FEATURING:

Radios, Tubes, Telegraph, Early Books and Manuals, Cameras and Related Equipment, Documents, Advertising, Early Magazines and Ephemera, Early TV and Related Items, Telephone, Medical Quackery, Speakers, High Fidelity Amps and Tuners, Test Equipment, Meters, Crystals and Detectors, Microphones, Headsets, Horn Speakers, Tube Boxes, Novelty Items, Records, Small Electric Motors, Drivers, Thousands of Parts and so much more.

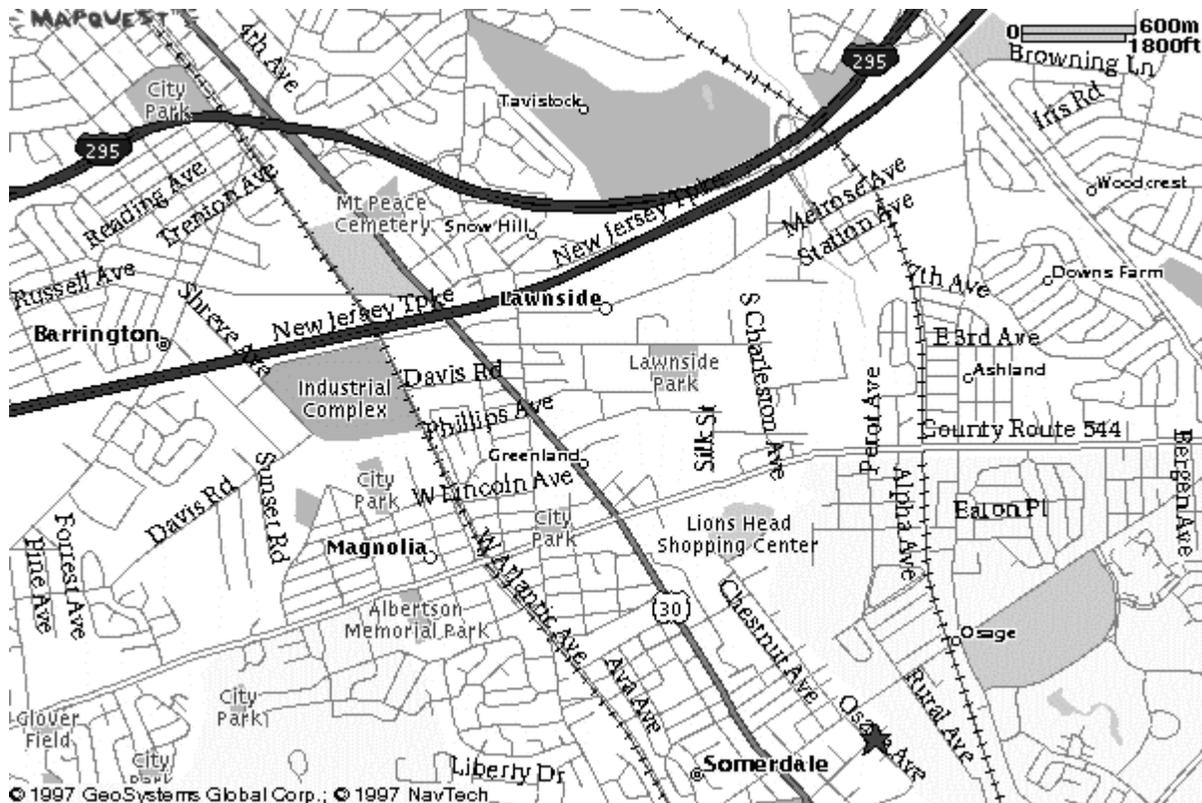
On Saturday, April 24, we will sell 400-500 catalogued items. These will be a cross section covering every category and in addition to these items, we will offer box lots uncatalogued and sold throughout the day. We will repeat the same process on Sunday, April 25. After selling for 2 days, we will assess the remaining inventory and schedule more auctions accordingly. We anticipate at least two additional sales.

Location: 100 Osage Avenue, Somerdale, New Jersey

Payment Terms: Cash or local check, out of state checks with prior approval unless known to Childers & Smith Auction Company. NOTE: 10% BUYERS PREMIUM. No Sales Tax. Absentee bids accepted with 25% deposit. At this time we are uncertain about phone bidding capabilities. The 2-day list should be available by April 3. Send check for \$6.50 made out to Harold Smith and mail to: Dennis Childers, P.O. Box 126, Arcola, PA 19420

Auctioneers Note: Sale Conducted RAIN OR SHINE. Outdoors under tent. Limited Space, so bring your own Chairs and Stools. Food Available.

More Information: For more information about this sale; future sales; consignments; call our office anytime at 610/269-1036. "Day of Sale" 609/783-0400.



Cross street at Route 30 is Somerdale Road.