



**Kutztown Meet may 13!**

# OSCILLATOR

*The Official Newsletter of the DVHRC*

*Vol. 8. No. 5, May, 2000*

## NEXT MEETING

The next DVHRC meeting will be held at 7:30 PM, May 9 at the Telford Community Center.

The program will be an open discussion on The All-American Five radio led by Ted Sowirka. This will be an opportunity for club members to share their thoughts on the history, technology, and care and feeding of these most popular of all tube radios.

Of course, we'll have our usual auction. Bring your stuff.

## OSCILLATOR CUTOFF

**The June issue of the Oscillator will be the last one mailed to those with a "99" code on their mailing label. Please pay your dues now!**

## APRIL MEETING NOTES

by Dave Snellman

The DVHRC held its regular meeting on Tuesday, April 11<sup>th</sup>. Not too much to report on the business end of the meeting. It's springtime, and that means radio meets are in season. Some upcoming events to note include the second annual Kutztown Radio meet on May 13<sup>th</sup>. It will be held at Renninger's Antique and Farmer Market on Noble Street in Kutztown. The New Jersey Antique Radio Club will hold its Spring meet at the Hightstown Country Club on May 20<sup>th</sup>.

We had an interesting "show and tell" item. Pete Grave brought in a table radio made by Ansley. Normally listed as a New Jersey manufacturer, this set was labeled: Ansley, Doylestown, PA.

The evening's technical presentation was presented by Bill Overbeck and Lewie Newhard. The topic was a comparison of Zenith's late model Trans-Oceanic's, the American-made Royal 7000 series and the Taiwan-made R-7000. With some help from Mike Tannenbaum and a few others, circuit designs and serviceability were discussed. A number of sets were set up and a comparison of how they sound was attempted. There wasn't any clear winner as a number of variables were present. Was the audio distortion caused by the power source (fresh batteries vs. AC line?) As the dial calibration is not that great on these sets, tuning the same stations was even a chore.

Both sets are roughly the same size. They both provide LW, AM, FM, SW, and VHF (though limited on the Royal 7000 series) coverage in a multi-band receiver that operates on nine "D" cells or AC power. The control layout and color schemes make these sets easily distinguishable and their circuitry is VERY different.

The American-made sets were sold as the "Royal 7000." It's characterized by the black and chrome case with blue accents. Specifically, the Royal 7000Y (1969,) the Royal 7000Y-1(1971,) and the Royal D7000Y (1973.) Introduced in 1969, this series lasted till around 1978. Cost of these sets ran in the range of \$279.00 to \$349.00. They were 18-transistor radios. The chassis employs traditional hand soldered point-to-point wiring. A large metal chassis is still present. Chassis numbers are as follows: 18ZT40Z3 (early) 18ZT40Z (crystal-controlled weather band,) and 500MDR70 (with tunable weather band.) A "BFO" or beat-frequency-oscillator was

### COMING EVENTS

6-7 May	Trenton Computer Fest
7 May	Hamfest, Wrightstown, Pa/
9 May	DVHRC Meeting, Telford, Pa.
12 May	NJARC Meeting, Freehold, NJ
13 May	Kutztown Radio Meet
20 May	NJARC Meet, Heightstown, NJ
9 June	NJARC Meeting, Freehold, NJ
10 June	Hamfest, Bloomsburg, Pa.
13 June	DVHRC Meeting, Telford, Pa.
17 June	Hamfest, Dunellen, NJ
18 June	Hamfest, Frederick, MD
30 June	Radio Auction, Stewartsville, NJ

## **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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**COPY DEADLINE:** The 20th of each month.

*(Continued from page 1)*

added for tuning in CW and SSB signals.

The Taiwan-made R7000, with its distinctive orange accents on its black and chrome case make it easy to identify. It did away with the heavy metal chassis and the point-to-point wiring. Instead, integrated circuits and modular circuit boards were employed. This makes these radios much more difficult to service, even though it is modular in construction. (All you have to do is compare the thickness of the service manuals!) As replacement modules are no longer available, one has to attempt to service the module itself – no easy task! Two chassis models were available. The earlier one, the 2WKR70 had a tuning drive belt that is problematic. It also makes tuning more difficult due to backlash. The later one, the 2WMR70 did away with this tuning belt. In the R7000, you'll find three separate modular tuners. Some of the boards in some R7000's appear to be made by Motorola.

So which one should the collector look for? Why, any one of the models listed, of course. Collectors will find themselves paying at least \$150 for one of these beauties. The better the set's cosmetics, the higher the price. Considering the serviceability issue, check out any potential purchase before shelling out big bucks for one. Try the set on all bands. A good looking, functioning Trans-Oceanic is joy to any collector.

The evening's auction included all the usual stuff. There were records, a variac, a small Sony TV, and a quite a few "box lots."

That's it for this month. See you at next month's meeting – May 9<sup>th</sup>.

## **1930's Production Techniques**

by Ludwell Sibley.

Do you remember the buzz a few years ago about how Volvo got normal production quality and better quality by having teams of 5 or 6 assemblers put cars together, working at their own pace and devising their own methods? Here's the Depression version:

Radio Prices Are Up, but in a Brooklyn plant, where a European correspondent got a job just to see how it works over here, assemblers are paid 25, 27, or 35 cents per chassis depending upon its complexity. The first day this lad put together 2 sets, the second day three, and after two weeks he could knock out 5 or 6 per day. To make any money at all, it seems that four men agree among themselves, and without the

foreman's knowledge, to work together. In teams of this sort they can put together 35 to 38 sets per day. Figure it out for yourself! *From "Electronics," March 1935, p. 95*

# Wired Wireless

By Ludwell Sibley

*From: "Telephony," Dec. 26, 1925, p. 15:*

The relation of radio to telephone work during the year has become more definitely defined. In states west of the Mississippi river, including Kansas, Oklahoma, Texas, Missouri, Iowa and Nebraska, telephone companies are renting circuits extending from the telephone exchange, or some other point, to subscriber's residences over which radio programs are transmitted.

Loudspeakers are purchased by subscribers and installed in their homes in connection with a simple cutout switch so that the loudspeaker may be cut in or out of service at any time. At the telephone exchange, or in some cases, at some other location, owing to interference produced by the exchange operation or other conditions, a receiving set of some standard make is installed. This is connected to the lines rented by the subscribers through a power amplifier.

The receiving set is usually operated from about 10 o'clock in the morning until 11 or 12 o'clock at night and programs from various broadcasting stations sent out over the telephone lines. No charge is made for this service, but a charge varying from \$1 to \$2.50 is made for the use of the telephone circuits.

This "speaker" service, or "feature" service, as it is called by some companies, provides a means for telephone companies to increase their revenues through the use of spare or idle plant.

Whether this type of service will be the ultimate link between radio and wire telephony remains to be seen.

There appears to be a trend toward a demand for quality in radio reception as well as in radio programs. The long distance telephone lines now link up every evening with a chain of broadcasting stations extending from the Atlantic Coast to the Mississippi river, and on special occasions to the Pacific coast. Persons thousands of miles away from the original broadcasting station are, therefore, enabled to enjoy the programs with but little interference.

One of the large power companies for more than a year, has been experimenting in the East with the Squier "wired wireless" and is now convinced that broadcasting over power wires with the receiving sets connected to the electric light sockets in residences is a commercial proposition. It is therefore getting ready to supply such service in some of the cities in the territories in which it operates.

It would appear that telephone wires and the operating organization of telephone companies are better adapted for this kind of service. The next year or so may see a decided development along this line as telephone manufacturers believe such a radio scheme practical for telephone companies.

## Lud's Notes:

The telephone industry did a lot of head scratching as to its future role when radio "broke out." The existing manufacturers all "got into radio" to one degree or another. Western Electric pretty much captured the market for studio gear and transmitters, and apparently would have liked to make consumer radios except for the GE-Westinghouse-RCA lock on the market. (In Canada, Northern Electric had no such limitation, and made broadcast radios for generations.) Automatic Electric did little other than offering headsets. Kellogg made a line of coils, capacitors, and headsets, and sponsored the original McCullough AC tube. Chicago Telephone Supply (CTS) got into radio parts and later abandoned the telephone business. American Electric offered headsets and the "Burns" line of horn speakers, named for their chief engineer. Federal (the former Century Telephone Construction Co.) added a line of radios and radio parts. It finally gave up the telephone field entirely, "betting the company" on radio and going bankrupt. Even Julius Andrae, maker of magneto phones in Milwaukee, became a radio distributor and produced a catalog that has been reprinted in modern times.

As for the phone companies themselves, the "radio" future was less clear. However, the idea of renting a one-channel loudspeaker service seems less odd when one remembers that many small-town telephone subscribers in rural areas had no electric service, that lugging "A" batteries into town for charging was clumsy at best, that a radio cost a big slug of money all at once, and that "Radio" was pretty much a technical mystery.

Many of the more rural companies adopted a "line call" procedure: at noon on each Monday, say, the operator would ring all the 10 to 20 parties on each of its farm lines, then would patch them all into an audio distribution amplifier. Someone at the exchange would then read local news, merchants' sale announcements, etc. to perhaps 200 subscribers at once. "Telephony" magazine even ran articles on how to make the amplifier. This practice lasted into the early '30s.

The reference to radio reception being impaired when the radio is in the central office relates to the vibrating "pole-changer" generators used in early manual telephone switchboards. These worked fine until radios became popular, when it was discovered that, every time the operator rang a subscriber over an open-wire line, the pole changer ruined radio reception. Eventually simple filters were found to solve the problem, but it took a while.

The power-line-carrier idea was the province of Wired Radio, Inc., the power-company subsidiary. It made lengthy field trials in Cleveland and on Long Island, sending two or three channels of programming in the 40- kHz range

*(Continued on page 4)*

over power lines. Simple receivers (including crystal tuners) were rented to the users. Transmitting equipment at the power house was apparently built by Western Electric (or, more likely, modified from their existing Type E power-line carrier system.) Eventually the multi-channel nature of regular broadcasting, plus Old Man Depression, killed the idea in the U. S. However, headphones engraved "Wired Radio, Inc." are known among headset collectors, a collector once showed me one of the tuners at Rochester, and I have the nameplate from a Wired Radio, Inc. line-filter panel that had been built as a Bell Labs model-shop project.

# Capehart Reminiscences

By Alton A. Dubois, Jr.

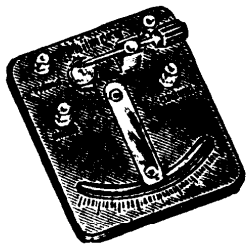
The ad in the February 2000 *Oscillator* for the Capehart radio-phono entertainment system brought back very distant memories.

When I was a senior in high school (1938-39), I worked for an engineer, after school, building radios and audio equipment at 10 cents an hour. He taught me many things, including the process of periodic maintenance of the Capehart record-turnover machine. This machine was a complicated unit, and required fine adjustment to keep it operating properly. There were quite a few cam adjustments and slides that had to be just right or the machine would chew up records. Because of this, we carried a group of records that were of no value for test purposes. Therefore, if the machine chipped one side of a record, an adjustment to a cam or a clearance was needed. If it broke chips on both sides, another adjustment was needed. We went through quite a few records before it operated safely for the album record groups.

To do these adjustments, we used feeler gages and a variety of wrenches. Each cam or slide needed just the right amount of lubrication, or in some places, none at all. We used Vaseline thinned out with alcohol and carbon tet, which is now banned.

In 1945, after a tour in the U.S. Army, I got a job in a small radio shop, in Scarsdale, NY, as a bench and outside man. One day a local man came in and asked the boss if he could take on a Capehart. The boss knew the complications of the Capehart and refused him. I volunteered to do it, but the boss did not want the responsibility on his company. However, he gave me the O.K. to do it on my own time with no responsibility to him. The customer was elated because he could not get anyone before. So, for about two years, I had a every-six-month adjustment job which added considerably to my basic income. The man moved away after that to new employment. He was a stock broker and could afford a Capehart at that time.

## Philmore Crystal Sets "Little Wonder Set"

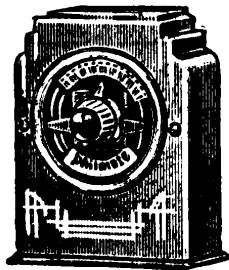


**D9006—  
YOUR PRICE.... 59¢**  
Compact in size but big in results. Receives broadcasts within 25 miles from station. Open type, super-sensitive crystal detector permits finest adjustments to be made. Slider is provided for station selection. Attractive bakelite case.

## The "De Luxe"

**C9001—  
YOUR PRICE..... \$1.95**

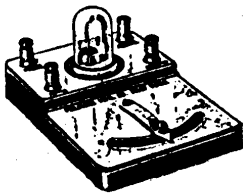
Looks like a midget receiver. All one has to do is to hook up the aerial and the ground and headphones and tune in. Two pairs of headphones can be used. Housed in beautiful bakelite case. Crystal detector is set to most sensitive spot and permanently sealed. Tuning dial is operated by knob for station selection. **Complete less headphones and aerial.**



## The "Supertone"

**C16407—  
YOUR PRICE..... 69¢**

A well constructed crystal set. Gives loud and clear reception. Has glass enclosed fixed crystal detector. Bakelite case. Range about 25 miles.





# RADIO AUCTION

Friday, June 30, 2000

Dennis Auction Center, Hwy 57W Stewartsville, NJ --  
6:00 pm

Preview: Thurs, 4-8 pm & Fri. after 12

Large selection of consoles, table radios, Ham gear, wood  
cased GR lab equipment, parts and tubes. Some battery  
sets. Radios include Atwater Kent, Fada, Philco, Westing-  
house Columnair, Fairbanks-Morse, Zenith, Arvin, Stewart  
Warner, GE, RCA and others

Additional consignments welcome.

(908) 859-3424 for info

[www.dennisauction.com](http://www.dennisauction.com)

10% buyers premium applies

**WANTED:** Information, circuit diagram, and pur-  
pose of the following set. 30-50 MC FM monitor  
Kinight model KG-220 by Allied Radio, Chicago.  
Service number: 8343111-610003-6N  
Alton A. Dubois, Jr., 67 Peggy Ann Rd., Queensbury,  
NY 12804

**WANTED:** AM-FM-PHONO-AUX selector switch  
for a Sherwood Model S-7650CP stereo receiver.  
Fred Saul, 610-481-5034 (days)

**FOR SALE:** Military WWII RAK-7, CND 46155  
low freq. 6 band 15khz to 600khz receiver with match-  
ing CND 20131 power supply and cable, all in "like  
new" condition; made by Andrea. \$100.00  
Ray Chase, 1350 Marlborough Ave., Plainfield, NJ  
07060 (908) 757-9741 e-mail: [enrpnr@erols.com](mailto:enrpnr@erols.com).

**FREE STUFF:** Following items are FREE but you  
must pick up at my residence.

**Dumont model 303 5" Scope,** 20" x 12" x 15.5" -  
May have manual for it. Good condition, haven't  
turned it on in years.

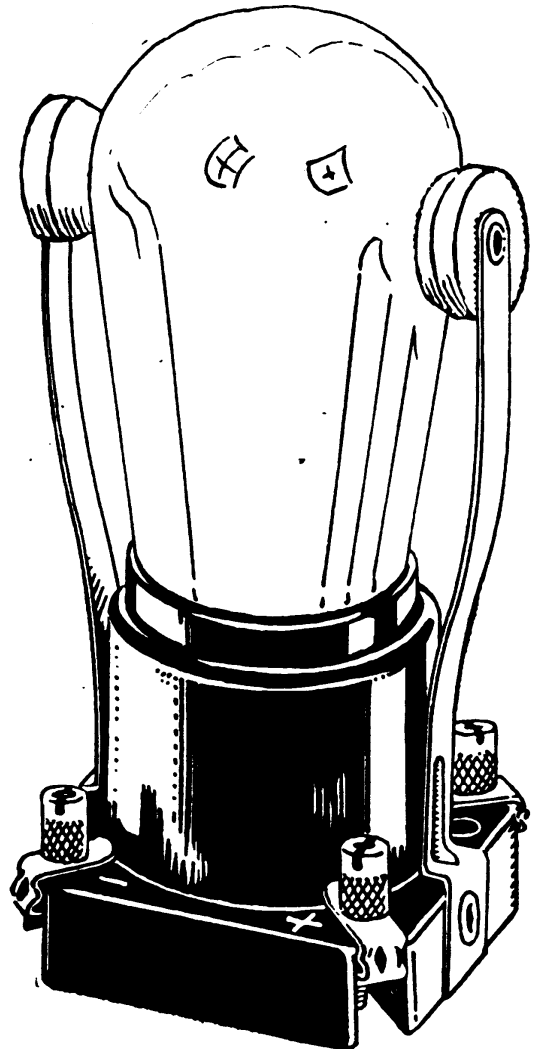
**AN/SGC-1 Teletype Terminal Unit** made by Remler  
Co.. Rack size, no cabinet, fair condition, has been  
Ham modified to change freq. shift, Navy style blue  
paint, 7 x 19 x 15, about 40#.

**Pulse Generator, Colonial Radio Mod. 700-A.** This  
is a sophisticated unit, probably made in the 30's or  
40's, fair to good condition, if you don't like it as it is,  
probably lots of good parts. 14 x 19 x 15, about 40#.

**Pulse Generator,** American Electronics Lab Inc.  
Model 138. This is another large unit, believe it is  
fairly high power, later design than above, 50's or 60's,  
14 x 19 x 15, fair condition.

All above could be scrounged for many good tubes  
and parts. If they don't go, I will have to put them out  
on the curb.

Ray Chase, 1350 Marlborough Ave., Plainfield, NJ  
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