



Vol. 3 No. 3, April 1995

Editor: Ludwell Sibley

PRESIDENT'S MONTHLY REPORT

Mike Koste

"Great time . . ." "We should've done this a long time ago . . ." "Let's do it again . . ." When you hear comments like those and crunch a few numbers, it's evident that last month's Membership Night was time well spent. Consider the following:

As of this writing, 85 of 128 members are in good standing. Fifty-two members and guests attended. Eight new collectors joined the organization. We witnessed the most spellbound audience ever for a tech talk. Special guest PAUL BOHLANDER, W3VVS, gave a slide presentation of his radio collection that was top-shelf all the way. (Thanks, Paul!)

In addition, a couple of noteworthy items: our largest inventory ever bid on a rare Atwater Kent tomb-

Now that winter is behind us, membership is up to 66%, it's time to concentrate on a summer swapmeet. Grave has secured Tyro Grange

June 25. Our only planned topic of discussion at the April 11 meeting will be plans for the event. Bring your comments and input to the table and help us meet or exceed the success of last November's flea market.

A number of you have expressed concern with the monthly auctions . . . specifically that they're running far too late into the evening. It's next to impossible to guess how much inventory there'll be from month to month, making time management difficult. But here're a couple of suggestions. If you know in advance you'll be bringing in a large quantity of items, let one of the officers know in advance . . . that way, we can forego tech talk and show-&-tell that month, and promote a major auction in the *Oscillator*. Second, if we should witness packed auction tables without prior knowledge, perhaps it might be wise to have the auction first, and deal with business and tech talk afterward. There're a number of members who travel great distances to Souderton, and we don't want to lose them, simply because it's 11 PM before they can hit the road for home.

In closing, some thank-yous to the folks who helped make membership Night memorable . . . TONY & SYLVIA MOLETIERRE for the beverages and continually keeping a roof over the head of the DVHRC . . . TINA & THE

GANG at the Hillside Tavern for the festive spread . . . PETE GRAVE and ALEX VOROS who performed the impossible task of moving that massive array of auction items . . . and to our beloved Veep BILL ("Any Toshiba?") OVERBECK for making all the arrangements.

Looking forward to seeing one and all on April 11 . . .

NEW CLUB FORMING

DVHRC member BOB MASTERSON, a familiar face at DVHRC events and NJARC meets, is sending out feelers to start a similar organization in the Southern New York - Northern New Jersey area. If you'd like more info, contact Bob at (914) 353-3151. Watch for progress reports in the *Oscillator*.



worthy auction milestones in er, and a record \$300 winning stone radio.

the treasury is healthy and membership is ahead and focus our attention on a summer swapmeet. I'm happy to report that Pete Hall in Buckingham for Sunday,

UPCOMING MEETINGS

Tuesday, April 11 and May 9, 7:30 PM,
at North Penn Amusements, 113 Main
St. (PA Rte. 113), Souderton.

JOINING THE CLUB

Just send \$10 to DVHRC, Box 41031,
Philadelphia, PA 19127-0031.

ADS & SUCH

Please send ads, articles, etc., to Ludwell Sibley, 44 E. Main St., Flemington, NJ 08822-1224, (908) 782-4894.

ON THE HORIZON

- April 29** PARS swapmeet. Contact: Bonnie Novak, (412) 481-1563.
- May 6** AWA Spring meet, Bloomfield, NY. Contact: Lauren Peckham, (607) 739-5443.
- May 7** Warminster A. R. C. Hamfest, Middletown Grange Fair Grounds, Penns Park Rd., Wrightstown, 7 AM, indoors/outdoors. Contact: George Brechman, N3HBT, (215) 443-5656
- May 12-13** IHRS Spring meet, Ramada Inn, Kokomo, IN. Programs and banquet on Friday; large auction Saturday. Contact: Herman Gross, 317-459-8308.
- May 13** AWA Schooley's Mountain, NJ meet. Contact: Lauren Peckham, (607) 739-5443.
- May 20** Cherryville Hamfest, Warren Co. (NJ) Farmers Fairgrounds, Exit 3 off I-78, just east of Easton-Phillipsburg, 8 AM. Contact: Keith Burt, KF5FK, (908) 788-4080 before 10 PM
- June 10-11** MAARC RADIOACTIVITY, Timonium MD. Contact: Ed Lyon, (301) 293-1773.
- June 17** Raritan Valley R. C. Hamfest, Columbia Park, Dunellen, NJ, 8 AM
Contact: John, (908) 722-9045/Bob, (908) 846-2056 pre - 8:30 PM
- June 21-15** 3rd Annual Symposium on Telecommunications History, Wilmington, DE
Contact: Russell Pizer, fax (516) 422-2324
- June 25** ***DVHRC Swapmeet, Buckingham***. Contact: Dave Abramson, (610) 827-9757.
- July 7-9** MARC EXTRAVAGANZA '95, Lansing, MI. Contact: Jim Clark, 517-349-2249.
- July 15** NJARC meet & auction, Hightstown. Contact: Tony/Kathleen Flanagan, (908) 462-6638.
- August 12** NFWA Amherst Museum meet & estate auction, near Buffalo. Details in future issues.

NEW MEMBERS

A hearty welcome to the latest antique-radio enthusiasts to join us:

Paul Campbell, Yardley, PA

Alton DuBois, Queensbury, NY

Allan Hefgott, Broomall, PA

Jack Spears, Springfield, PA

Hank Mohr, Allentown, PA

Eugene Reynolds, Havertown, PA

Bernie Seinberg, Meadowbrook, PA

(Belated greetings to) Vernon Cooper, Yonkers, NY

By the way, copies of the newly updated DVHRC membership list will be available for distribution at the April meeting.

ABRAMSON GETS "GOOD PRESS"

DVHRC's main TV collector, Dave Abramson, has gotten great media coverage of his activities. The *Philadelphia Inquirer* for Feb. 11 carried a teaser photo in its first section, and a lead story and two big photos in the Suburban/Metro section. There's coverage of his '39 RCA TRK-120 mirror-in-the-lid set, '49 Pilot 3" receiver, '49 Philco TV-radio-phono combo, and '57 Predicta; plus 25 or so primitive Andreas and Fadas and Crosleys, etc. - all the result of 13 years of collecting. Then WPVI Channel 6 came out and did an interview, replete with shots of vintage kinescoped programming on the oldie receivers. The result was a tightly edited 3-minute segment aired on the morning of March 6, followed-up on the evening news.

Then came an unexpected public reaction: letters and phone calls offering early receivers. The offerers ranged from elderly folks seeking a home for what had been their first TV, to some slightly unbalanced correspondents, to the occasional individual wanting to sell an uninteresting set for an overblown price. Dave showed the writer a folder stuffed with notes and letters.

In a failed publicity stunt, Lee de Forest once had a letter mailed to him, addressed to the "Father of Radio, Hollywood, California." The letter was returned. But one offer, mailed to "David Abramson, TV Collector, West Chester, PA" came right through with correct street address written in - even though Dave lives in Chester Springs!

The yield to date - a Predicta, a prewar kit set, a couple of badly needed early color picture tubes, etc. - has been gratifying. Some of it required inching a vintage set out of a crowded basement, but donors have even driven up to deliver their contributions.

Newspaper articles about radio collectors are more or less a staple item these days. It's nice to see TV collectors plugged the same way.

READER COMMENTS

Eagle-eyed reader Alan Douglas points out that, in last month's feature on oldie radio callsigns, "WBX" is a mistype for Boston's WBZ. There was also a false assumption in making up the list of early ship callsigns: not all were steamers! For example, the I. D. Fletcher (KFI) was a schooner-rigged sailing vessel and the Sunlite (KPK) was a motor vessel.

"UN"CLASSIFIEDS, April 1995 Edition

Mike Koste

FOR SALE: Old Zenith radio in large wooden cabinet. A couple dozen lightbulb looking things and two big speakers inside. Very heavy. Only legible portion of the label reads "STR T SPH R." (Is that the model number?) Appears to be in very good condition. Haul it away for \$5 or will trade for Nazi memorabilia. Call Hock Toong, (215) 55-1433.

FOR SALE: Unusual (prototype?) refrigerator-freezer manufactured by Hallicrafters. Hammertone grey finish. Mint condition, complete with accessory speaker, power supply and factory-installed ice maker. \$175 + 3240 lbs. UPS. P. Grave, Ottsville, PA. (Unit does not have shortwave.)

ATTENTION: Is \$49.95 too much to spend to protect your valuable radios from dust, road tar, gnats and mosquito damage? Now available, the revolutionary Maidenjapanform Radio Bra. Fits Emerson Mae Wests, Crosley clock radios, and other high-style '50s sets. One size fits all. For info, write: Victoria S. Ecret, Pla-Techs Industries, 36-D Cupsize Ave., Hollywood, CA 94040.

WANTED: Sorvicta Radios! Can't get enough of 'em. Seeking all models and colors, mint to basket case. Generous rewards to all replies. Write: Lee Sorvicta, "The Sorvicta Collector," Chicago, IL 60609.

FOR SALE: Spring Cleaning SPECIAL Warehouse full of vintage radio tubes. (Literally thousands!) Have brass bases, 4 and 5 pin, octals, loktals, rectals, many others. Unboxed and untested. Most missing type numbers due to leaky roof. You haul. \$2000 or best offer. Mrs. Sippy (601) 555-3071.

FOR TRADE: Will swap collectible novelty NFL football helmet radios for testimony of a credible witness. O. Simpson, Brentwood, CA.

PERSONAL: To the guy at Rochester who "borrowed" my M.I.B. Regency TR1 to show a friend: The Transistor Boys' Club knows who you are. Sleep well.

MESSAGE: Cabinet restoration made simple with Miracle Polymer Patch'n Putty. Not only fills unsightly cracks, splits, nicks and scratches, but can also be molded to fabricate that hard to find knob, escutcheon, molding or trim. Works on wood, bakelite, Formica, catalin, glass, brass, rayon, or ceramic tile. One product does it all! For a video demonstration by mail, send \$139.95 (refundable with order) to Chip Veneer, c/o Miracle Marketing, 2540 Bondo Dr., Riphoff, MI 48226.

CLUB NOTICE: Transistor collectors! Join Friends of TLC (Three Legged Creatures). Monthly meetings, bingo, bake sale, biannual swapmeet, newsletter. Send \$5 and photos of your collection to TLC, c/o M. Bunis, Greenpeace, NH.

FOR TRADE: Radios that look like clocks for clocks that look like radios. Ray Dundant (609) 555-2827.

NOTICE: Wish to communicate with others suffering ill effects of "Lubcz Effect," caused by prolonged use of the tongue to check 9-volt batteries. All calls confidential. Contact Ray O'Vack, 114 Drycellia Ct., Lansdale, PA 19446; (215) 555-8765.

CLUB NOTICE: New club forming! Become a member of the B.O.A.R.D. (Brotherhood of Antique Radio Dudes). Write: Lou Scuppler, Chairman of the B.O.A.R.D., 526 Curdsan Way, Smyrna, DE 18404.

FOR SALE: M.I.B. Regency TR1. \$1250 or best offer. Serious inquiries only. Max Scarz, (610) 555-9192.

SERVICES: I'll paint any radio any color for only \$179.95. Check your local White Pages under "Sheib, Earl."

FOR SALE: Turn your mulch pile into a powerful, environmentally friendly radio receiver. For diagram and parts list send \$2 to Nature's Way Electronics, Compost Office Box PU, Gullible, NJ 08893.

FOR SALE: Radio Collection complete with house. Home features combination kitchen - bathroom - bedroom - living room - dining room and 22 radio rooms. Listed at \$350K. House included at no extra charge. Call Lew Scruce Century 21, (215) 555-3613.

FOR SALE: Big round mirrored speaker cabinet which may have once housed a radio. Could be converted into a swell bar. Best offer to Ms. Annie Wreczyck, PO Box 4-F, Atholl, MA 01732.

CONDOLENCES: To family and friends of longtime collector and flea marketeer Max Scarz, who suddenly succumbed to Lubczanski Effect following the AWA Rochester Meet. He will be missed.

WANT ADS (The real ones)

Free exposure for your desired or unwanted stuff! Unless requested otherwise, we'll run each ad for two months, and will send ads to the *NJARC News* for double coverage.

FOR SALE: Magnavox stereo console, large wood cabinet, AM-FM-phono, working, \$45; **WANTED:** STK040 or ECG1325 audio module. Don Rector, (215) 699-8050 weekday eves. after 7 PM.

WANTED: Zenith and Emerson transistor radios, especially Zenith 500s and Emerson 888s. John Kern, 2320 Rosedale Rd., Quakertown, PA 18951, (215) 538-2128.

FOR SALE: Crosley 629M. Mrs. Mitchell, (215) 752-0134.

WANTED: Victor 7-3 owner to exchange information with such as: loudspeaker mounting, proper connectors for ground, antenna, etc. Aaron Hunter, 23 Lenape Trail, Southampton, NJ 08088, (609) 267-3065.

FOR SALE: Fender amplifier, Model 85, with reverb tank, 65 watts RMS, with orig. dust cover, 12" speaker, all orig, like new, \$200; Guild 484 "spice chest" radio, good cond., \$90; Minox spy camera with brown leather case, inst. book, Wetlar Model 3S, S/N 135-265, exc. cond., \$75; Sony ICR-3 AM transistor radio, uses two AA batts., in skin pack, never opened, \$12; Dana 5900 digital multimeter, 17" W x 14" D x 3-1/2" H, cosmetically exc., repairable, \$25; H-P 332A distortion analyzer, clean & working; meter sticks, \$75; H-P 1217B 5-mV dual-trace oscilloscope, clean & working, 17" W x 11-1/2" D x 5" H, \$50; Philips PM-3232 0-10 MHz dual-trace scope, missing handle, good wkg. cond., poor cosmetically, \$50; Universal Instrument Co. 501 tube tester, wood case, w/ complete instructions, \$15; Motorola 56X1 5-tube table radio, S/N 0032794, exc. cond., \$30; RCA 6BX6 radio, S/N U-119355, exc. cond., \$30. Prices firm & fair. Alvin Sydnor, 806 Meetinghouse Rd., Boothwyn, PA 19061, (610) 485-5916.

WANTED: "JRC" (Johnsonburg Radio Corp.) tubes (duds OK) and boxes. Ludwell Sibley, (908) 782-4894.

FOR SALE: Sonora M5464 (?), mid-'40s, with orig. literature. Ed Torres, 741-1962.

WANTED: Tubes, new-old-stock (NOS) or used-tested-good (UTG) - 80, NOS (must test strong); 83, NOS; 6BQ5/EL84, NOS; 6L6GC, NOS & UTG, by Amperex, GE, Philips, RCA, Sylvania; 6SJ7GT, NOS & UTG; 6V6GTA, NOS & UTG, by Amperex, GE, Mullard, RCA, Sylvania, Tung-Sol; 12AX7, NOS & UTG, by Amperex, Mullard, Philips, RCA, Sylvania, Telefunken, Tung-Sol; 12AY7, NOS & UTG; 20EZ7; 5693, NOS & UTG, "Special Red" by RCA; 6386, NOS; 6973; 7581A, NOS, by GE or RCA; EL37, NOS, by Mullard; KT66, NOS, by M-O Valve. Precision Electronics Model PE-15 hi-fi amp. and hi-fi amps by Schulmerich. Need transformers for guitar amp.: power (300-0-300 V, 5 V 2 or 3 A, 6 V 3 A) and output for 6V6s. Joe Rubbo, 127 S. Cedar Hollow Rd., Paoli, PA 19301, (610) 644-7359; tape (610) 644-2572.

FOR SALE: Farnsworth AC-71 console, RCA Victor 811K motor-tuned console, 1951 Zenith H7232 in VG cond., Philco 41-255 multiband table set. Taylor Blanchard, 48 Theresa St., Trenton, NJ 08618, (609) 882-2293, or taylor.b@genie.geis.com.

FOOD & DRINK: a good place to join fellow collectors for dinner before meetings is the Hillside Tavern, half a block uphill from the meeting site.

PERHAM MUSEUM SHOWING LIFE

Ludwell Sibley

The Perham Foundation museum in California - the one "kicked off campus" by Foothill College several years ago - now has firm plans to build a permanent facility. The idea is to replicate two historic but vanished buildings in downtown San Jose: a Victorian-era Odd Fellows hall and the business-college building where Charles Herrold built his 1909 arc broadcast station SJN. The location is the city's Kelley Park, which is an existing "miniature" of the town at the turn of the century. The structures will house public displays of the museum's rather fine collection of radioana, and the Foundation's archive holdings, which include the personal papers of Lee de Forest.

The museum has been "in exile" for five or six years, with the material exposed to loss. The new project, requiring a \$3 million fundraising effort, should fix that and provide permanence. The architects' work is well advanced, and a professional museum designer will be used to handle the interior layout. The Foundation expects to break ground as early as May. On completion, this should restore an electronics museum to Silicon Valley, which [editorial] deserves one rather richly.

EASY EQUIPMENT LABELS

Bob Thomas, W3QZO

Nothing irritates me more than a piece of homemade equipment or other gear whose appearance has been ruined with Dymo tape labels splattered all over. Press-on lettering is one alternative, but it is an arduous time-consuming task, especially if the characters have to be applied individually, and the lettering must be protected with a clear protective spray coat which is difficult to apply uniformly. A neat and easier alternative is available to anyone with access to a computer with a letter-quality printer.

Having decided upon the text of the required labels, one selects the appropriate typeface and letter spacing for the printer, and individual designations are typed out and printed with about a 3/4" space between lines. Combine as many words as possible into a single title, for example, "OFF - POWER - ON." Both horizontal and vertical combinations can be made to suit the panel layout. If rotary switches are involved, make a single rectangular layout with a designation for each position. I used this technique for making a single label for a 33-position PL-tone rotary selector switch - try that with plastic tape!

VIKING-II CRYSTALS

POS	80 M	40 M
1	3560	7120
2	3580	7160
3	3597.5	7195
4	3645	7290
5	3655	---
6	3837	---
7	3870	---
8	3880	---
9	3885	---
10	3997	---

When the layout is complete, make a printout and, if necessary, make required layout changes. When satisfied with the appearance, make more than one printout, because you will probably ruin some in the subsequent process. Select a paper color that harmonizes with the panel. In some instances, there may be an advantage to changing the size of the lettering by enlarging or reducing the printout with a copy machine. I have made tiny labels only 1/8" high for use on small "project boxes" with this method.

Obtain a roll of 2" clear packaging tape. Cut the tape slightly shorter than the width of your paper, then press the tape over the lettering, smoothing out any bubbles or other contact irregularities. Edges of the tape should extend well beyond the text. Trim individual words or word groups with a sharp paper cutter or razor blade and straightedge.

Attach finished labels with a thin layer of Wilhold R/C-56 glue, obtainable at model shops. This glue cures slowly enough to permit precise positioning of the label. Remove excess glue with a damp cloth. Allow the glue to cure 24 hours, then lightly burnish the clear tape to seal its edges.

This technique is also useful for making custom name plates, brief operating instructions, terminal-strip designations, tube-location diagrams, and calibration charts. Addition of the labels results in a most presentable panel with durable, stylish lettering.

RESTORATION TIPS

Ross Smith

News Letter - Indiana Historical Radio Society Northern Members, Nov.-Dec. 1994

Story of a late-model Freed-Eisemann: At our Greenfield meet, I spotted an unusual small portable radio, model number missing, that I had never seen before. It was a five-tube AC-DC superhet using three 6-volt tubes plus a 25Z5 rectifier and a 43 power output tube. It was housed in an artificial-leather-covered wood cabinet with a handle on top and a hinged cover over the front of the cabinet. It had a very attractive dial with a pointer knob and a fancy grille for a five-inch speaker. The price was right, so I brought it home and placed it on my bench for restoration.

The radio must have been either a last model before the factory closed in bankruptcy during the early 1930s, or someone acquired the Freed-Eisemann name after the company closed. As I circulated the radio with the question, comments were that it looked like a name-brand model made by someone like Warwick or Wells-Gardner in Chicago. Can anyone shed more light on this mystery? I would appreciate hearing more about it.

After re-capping (replacing all fixed capacitors) and alignment (IFs are 262 kHz) the set played with good sensitivity but with very poor tone quality and low output. This condition is usually a sign of a leaking feed-through capacitor between the first audio stage and the power-output grid, but I had already replaced this capacitor. A leaking capacitor will place a positive charge on the output-tube grid and upset the normal negative bias, causing distortion and low output. Rechecking all other circuits brought no improvement, so it became obvious that the speaker itself might be the problem. Sure enough, connecting a PM speaker to the voice-coil side of the output transformer rendered a normal output signal with good tone quality. The next question was "why was the speaker defective?" Speakers from this era are normally electrodynamic, with a wirewound field coil to supply the required magnetic force.

There are two designs for this field coil. One is designed to be used as a filter choke for the AC power supply filtering, in conjunction with the electrolytic capacitors, for smoothing the half-wave pulses from the rectifier. If the coil opens in this case, the B+ voltage will be cut to zero and the set will be dead.

The second coil design is simply a higher-resistance winding for connecting directly across the B+ voltage supply. I spotted a small filter choke on this chassis that looked just like an output transformer, but it had only two wires coming from the coil. Tracing the two speaker-field connections, one went to the cathode of the rectifier tube and one went to the negative chassis ground. This was one of those "killer" sets with one side of the 117 VAC line connected to the metal chassis, not a good situation when metal shafts and metal screws in the bottom are connected to the metal chassis! *Always use an isolation transformer or make a neon-bulb test on the chassis to be sure you are not handling the "hot side" of the AC line while servicing!*

Back to the set restoration: the ground side of the speaker field was disconnected and the field was found to be open. The trouble was that the speaker was trying to operate without the 130-volt DC power to supply the required magnetic force from the field coil. A new 5" PM speaker from Radio Shack fit nicely into this set and a choke was not required because there was already one in the set. If it had been series-connected as a choke, a choke or power resistor would have been needed in addition to the new speaker.

WAR-IS-HELL DEPT.

Read this and weep, admirers of the Zenith Trans-Oceanic: here are the official Department of the Army instructions on how to destroy the set. This is taken from TM 11-877, Jan. 1954, covering Radio Receiver R-520/URR, the military version of the set.

DEMOLITION OF MATERIAL TO PREVENT ENEMY USE

104. General

The demolition procedures outlined in paragraph 105 will be used to prevent the enemy from using or salvaging this equipment. Demolition of the equipment will be accomplished only upon order of the commander.

105. Methods of Destruction

a. *Smash.* Smash the controls, tubes, switches, capacitors, and transformers; use sledges, axes, handaxes, pickaxes, hammers, crowbars, or heavy tools.

b. *Cut.* Cut internal and external wires and cables; use axes, handaxes, or machetes.

c. *Burn.* Burn cords, resistors, capacitors, wiring, and instruction books; use gasoline, kerosene, oil, flame throwers, or incendiary grenades.

d. *Bend.* Bend panels and chassis.

e. *Explode.* If explosives are necessary, use firearms, grenades, or TNT.

f. *Dispose.* Bury or scatter the destroyed parts in slit trenches, foxholes, or other holes, or throw them into streams.

g. *Destroy.* Destroy everything.

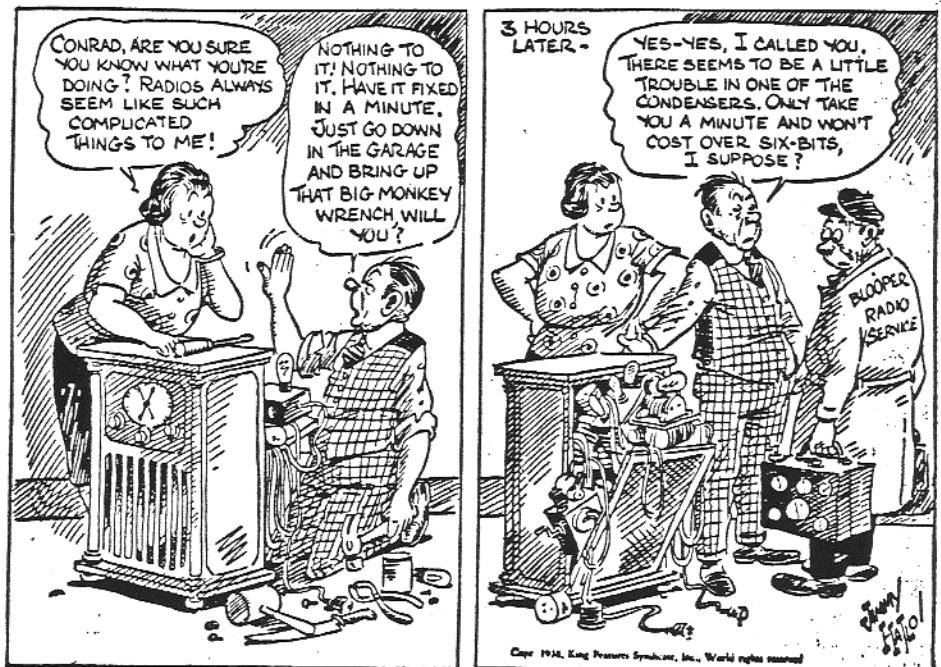
OLD NEWS

In line with a policy of allowing one hundred prominent citizens of Pennsylvania to use their initials on their automobile license plate [sic] instead of the customary numerals, A. Atwater Kent will use the two letters A K. (*Radio Industries*, Dec. 1929)

A. Atwater Kent, president of the Atwater Kent Manufacturing Company, recently issued the following statement - "Varied rumors would seem afloat that I am contemplating a merger with one or another of several radio manufacturing concerns. Once and for all, I wish to state, that there is absolutely no basis whatsoever for these reports. I have conducted my own business for more than twenty-five years and I contemplate no change in my policy. I have a fine organization. I enjoy managing my factory and nothing has occurred that would lead me even to consider joining forces with any other company." (A story concerning the possible merging of Atwater Kent, Grigsby-Grunow, and Crosley appeared in the daily press on October 10th.) [*Radio Industries*, Nov. 1929]

They'll Do It Every Time

By Jimmy Hatlo



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WIRELESS IN EASTERN PENNSYLVANIA - FATHER MURGAS

Ludwell Sibley

Wilkes-Barre was home to a remarkable inventor of wireless telegraphy, the Rev. Joseph Murgas (pronounced "Muhr-gosh"). This individual, an immigrant Slovak parish priest born in 1864, patented a workable spark transmission system with a unique twist. In 1904, only five years after Marconi first demonstrated radio in North America, Murgas received U. S. patents 759,825 and 759,826, the first of 12 in this area.

The special feature of his design was the use of sparks occurring at two rates to represent the "dits" and "dahs" of the Morse code. The commercial systems of the time (chiefly American Marconi) used a single rate or tone. Their signals on the air sounded like buzzes or growls, noises that got lost easily in the presence of lightning static. Murgas' high-tone/low-tone arrangement apparently gave a significant improvement in ability to signal through static.

Murgas' equipment was conventional in other respects. His transmitter was a crude untuned (broadband) spark set using a vertical antenna. It used electrolytic spark interrupters as patented by others. His receiver was similarly unsophisticated. Its main design feature was a detector, unique but not necessarily "better," using an arrangement of carbon and steel contacts driven by clockwork and rotating against each other. This was a variation of the classic "imperfect contact" detector that was obsoleted in 1906 by the crystal detector.

Whatever the technology, Murgas developed all the elements of a usable wireless system in a laboratory behind Sacred Heart Catholic Church in Wilkes-Barre. He obtained funding to have a pair of 200-foot wooden towers built there, and on Adler Street in Scranton 20 miles away, using a transmitter power of, judging from photos, about 5 kW. (The initial link may have been one-way.) From the lengths of the antenna wires, transmission must have

been in today's AM broadcast band at roughly 1100 kHz. A successful public demonstration in late 1905 was written up in New York papers, and his radio signal was apparently heard in Brooklyn.

Much of Murgas' funds, and ownership of his early patents, came from the Universal Aether Telegraph Company of 925 Chestnut St. in Philadelphia. This company's stock prospectus stated an objective of providing domestic telegraph service by wireless. This would have been a big order in 1904, given the entrenched competitive positions of the Western Union and Postal Telegraph wireline companies. However, it might have succeeded, as the Federal Telegraph Company did in the West in the Teens, and both Mackay Radio and RCA did among New York, Chicago, and San Francisco in the Thirties.

I have my suspicions about the Universal Aether company: Philadelphia had been the site of 1901-1904 stock-promotion frauds by a "real estate and gold mine boomer, Dr. Gustav P. Gehring," and Universal may have been just a hustle exploiting the work of the priest to sell stock. Whatever the motive, the company apparently became inactive in the Panic of 1907, leaving Murgas to soldier on about the time that a major storm blew down the Scranton towers.

The priest continued development work and pat-

U. S. PATENTS OF JOSEPH MURGAS

Researched by David Kraeuter of Pittsburgh Antique Radio Society.

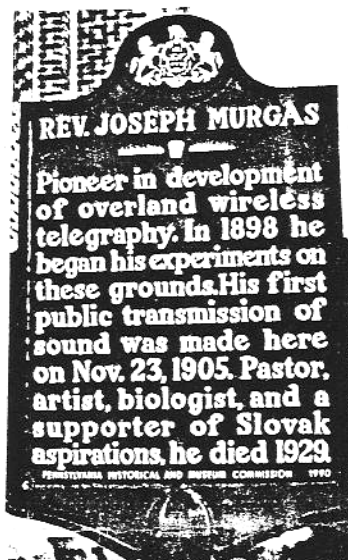
- Wireless-telegraph apparatus. 759,825; May 10, 1904.
- Communicating intelligence by wireless telegraphy. 759,826; May 10, 1904.
- Wave-meter. 848,675; April 2, 1907.
- Electric transformer. 848,676; April 2, 1907.
- Constructing antennae of wireless telegraphy. 860,051; July 16, 1907.
- Means for producing electromagnetic waves. 876,383; Jan. 14, 1908.
- Electric-arc lamp. 923,127; May 25, 1909 (L. O. Kozar, assignor of one-half to J. Murgas).
- Wireless telegraphy. 915,993; March 23, 1909.
- Wireless telegraphy. 917,103; April 6, 1909.
- Magnetic-wave [sic] detector. 917,104; April 6, 1909.
- Magnetic detector. 930,780; Aug. 10, 1909.
- Carbon-feeding mechanism for arc-lamps. 945,960; Jan. 11, 1910 (L. O. Kozar, assignor of one-third to J. Murgas).
- Apparatus for producing electric oscillations. 1,001,975; Aug. 29, 1911.
- Casting-reel. 1,024,739; April 30, 1912.
- Method of and apparatus for producing electric oscillations from alternating currents. 1,196,969; Sept. 5, 1916.

ent applications covering mainly equipment refinements. The advent of spark transmitters using 500-Hz primary power, and thus giving a crisp static-fighting tone of 1000 Hz on the air, largely obsoleted his two-tone system. When the U. S. entered WW I, the Wilkes-Barre towers had to be dismantled by order of the Navy Department, as did all other stations except military and commercial. Murgas' last patent was granted in 1916. He died in 1929.

I have obtained copies of most of Murgas' patents from the Patent Office. The two-tone concept was probably his greatest idea. Many of his proposals, like a magnetic detector roughly similar to the famous Marconi magnetic detector, were quickly obviated by such developments as the vacuum-tube detector. Others were imaginative but inconsequential, like an arrangement for making a ground connection by burying a long vertical pipe with an insulated wire inside. (Those familiar with transmission-line theory will recognize this arrangement as giving an open circuit, a short circuit, a capacitor, or an inductor, depending on the length of the pipe.) His patent 848,675 for a wavemeter can be described charitably as unworkable.

The Murgas case shows what may happen when an individual, working away from the centers of business and publicity, devises new ideas without the means to put them into practice. No matter how brilliantly inspired, this gives *invention* without *innovation*. Much of Murgas' independent work paralleled developments in the wireless field, without influencing it. I have never found a wireless history text that even mentions Murgas. If Zsa Zsa Gabor is "famous for being famous," Fr. Murgas is "famous for being obscure."

This has not prevented Slovak boosterism in Wilkes-Barre aimed at greater recognition of Murgas via a U. S. postage stamp or other means. Some of the promotion is pretty wild, hinting darkly (or claiming outright) that Guglielmo Marconi and Reginald Fessenden lifted Murgas' ideas and profited from them, that Marconi's equipment was unsuited to transmission over land, etc. A U. S. federal judge is claimed to have declared Murgas the "true inventor" of the tone system . . . but a copy of the judge's decision provided by radio historian



Historical marker at church in Wilkes-Barre. Photo: Bill Fizette.

Alan Douglas says nothing of the sort. Because Murgas, like "every" experimenter in his day, tried to transmit speech with spark apparatus, he is represented as having done so successfully. The Navy's wireless pioneer Lt. Cmdr. S. S. Robison apparently saw the 1905 demonstration; he is alleged to have termed it "most satisfactory" and viewed the Murgas system as "the best"; yet Robison's 1911 Manual of Wireless Telegraphy for the Use of Naval Electricians makes no mention of Murgas. In short, it's pretty hard to tell what Murgas really achieved because of the layers of myth and error that have grown up. After all, if Murgas' technology had been a real advance, Marconi's competitors like

United Wireless would presumably have licensed it for use.

Murgas received recognition here and there. An early postcard showing the Scranton station under construction turns up now and then in the paper-collectibles market. Stamp collectors have access to a 1939 Slovak Republic stamp showing his portrait and a pair of towers. A Liberty ship was reportedly named for Murgas in WW II. Two now-rare books on him were produced in the '50s.

A few hints of Murgas are visible today. There is a 1990 historical marker outside his church, an original cement tower footing, and a small replica of the towers. The amateur-radio club in Wilkes-Barre is named in his honor. Articles have appeared in *Popular Communications* (1985) and the *Old Timer's Bulletin* (1989).

This is a short summary of a complex topic. I would be happy to provide further details to anyone interested.

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