WW1 GERMAN STATION AT APIA, SAMOA

War is declared. The Germans have several high power stations around the world to enable them to communicate with their home-base stations (such as POZ) as well as Naval vessels and their predatory U-boats. One of their more remote stations is located on the Pacific island of Samoa. New Zealand troops suddenly move in and occupy the station before the Germans can dismantle or destroy it. This rare picture was taken at the time of occupation. Note the large quench gap spark transmitters and the sophisticated receiving equipment. In the early days of the war (1914-16), the Imperial communication system was in some ways superior to that of the American and British. John Stokes of Auckland, New Zealand obtained this unusual picture from the Alexander Turnbull Library, Wellington, New Zealand. Can anyone provide the call letters of this pre-WWI station?
Change In Address?
Mail information to the Treasurer who handles current mailing list.
(NOT the Secretary)
L.A. CUNDALL, W2LC
69 BOULEVARD PKWY
ROCHESTER, N.Y. 14612

AWA NETS
PHONE (SSB)--3866 kc. Tuesday 8 PM
Mon. - Wed. - Fri. at 9:30 AM
Sunday -- 3903 kc. at 9:30 AM
Tuesday-- 14270 kc. at 5:30 PM
CW -- 3584 kc. daily at 4 PM
First Wed. each month at 8 PM
4. Association News
5. "Close-up"
7. The 1979 Annual Conference
8-27. The 1978 Auctions
10. The S-M "Round-The-World-4"
12. History of R. F. L. (Young)
13. The Letter "S" (Reber)
14. A Historical Detector (Tyne)
16. Restoring Old Equipment
18-20. Spring AWA "Meets"
21. The Harkness Reflex (Lyons)
22. Rejuvenating Old Tubes (Lindauer)
23. "Is Crosby Next?" (Allen)
24. N. Y. Smallest Station (W3DUG)
26. 160 Meter Crystal Set (W3ZT)
28-30. Old Tyne Ads
34. Trip on the "Princess" (WAlsPM)
35. Communication News
36. Museum Activities

What’s Coming Next!

in the "Old Timer’s Bulletin"

History of James Miller Company
The Super-heterodyne at W.E.E.
Standard Frequency Stat. JXM.
Collecting Early Batteries
History of Ray-Fan Radio
Early crystal set development
The Lyndodine DX Crystal set
N.B.C. Network Chimes
The Doughnut "Five" TRF receiver
History of Clapp-Eastern Co.
Restoring early CAL receiver
plus much, much more.....

A.W.A. EDUCATIONAL CLASSES

This will be the third year the Association has sponsored amateur theory and code classes. Working with the Canandaigua radio club, the instructors have turned out 30 licensed radio amateurs many of whom have passed F.C.C. examinations for their general and technician grade.

Much credit for this endeavor goes to Educational Chairman Henry Blodgett, W2UTH/FRL. Original classes were held in the Museum and were to be terminated with cold weather. He volunteered to have the group at his home during the winter months and they have been meeting there ever since. W2UTH also heads AWA’s VHF activities and plans to up-date the AWA slide/tape show "The World Above 50 Mc."

COMING EVENTS

ANTIQUE WIRELESS ASSOCIATION

SOUTH-EAST --- April 7
Charlotteville, N.C.
INDIANA (IHR/ AWA) --- Apr. 21
Auburn, Ind.
CALIFORNIA (CHRS/ AWA) --- May 5
Foothill Museum, Los Gatos
NEW YORK (Regional Spring Meet)
East Bloomfield, N.Y. May 12
N. Y. STATE ARRL Convention (Exhibit)
Rochester, N.Y. May 26
NEW YORK (Regional Summer Meet)
Breesport, N.Y. --- July 14
NEW ENGLAND -- N.E. Wireless Mus.
East Greenwich, R.I. Aug. 11
NATIONAL CONFERENCE -- Sept. 28-29
Canandaigua, N.Y.
ANNUAL BUSINESS MEETING
Canandaigua, N.Y. Nov. 4

NEW MEMBERS

--who are or have been associated with communication or electronics.

Stanley LaPage, W2EZM, Philco, RCA
John Drew (Westerly, R.I.) Templefone Radio, Naval Sound Lab., etc.
John Ruckelhaus (ex-2GF) Radio manufacturer and de vel. engineer
Jerrold Swank W8HXR, ex-8ADD, Stations KYW and WHIO
Milton Garb KB5AS/WC5CAA Communication officer LA CD Agency
Michel Dupertuis HB9ARU Suchy, Switzerland
Steven d’Adolph Raytheon Corp.
Ronald Sallabedra WA6LVG, ex-HL9KK
RCA American Commun. & KNOB
Alan Komenski AC2K Dept. of Safety Communications
Raymond-Charles Herzger (Bruxelles, Belgium) Pres. of Electronic Co.
William Brownback W3RQ Broadcast Engineer WIBG
Guido Santacana KP4FAR (Porto Rico)
Radio Technician
James Kuhn N1JK Electrical Engineer
L.S. Colebank KØDKW R.R. telegrapher
Geo. WIXE ACE Co., Stations WMEX, WSAR, WOKW
Whippany Vintage Radio Club (members of Bell Laboratories)
The Annual Shelby (N.C.) Hamfest is one of the most popular in the Southeast. The most recent one was well attended as usual, but the old timers who were there came away with something to talk about. In fact, the typical QSO over the Shelby Two-Meter Repeater asked, "Did you see the old radios on display at the Antique Wireless Association Booth?"

They were talking about a large size exhibit of old sets and magazines of the 1920's organized by Bob Lozier Jr., AWA member of Monroe, N.C. A large AWA banner was the center of the display and the AWA and ARRL Booth adjoined.

Over a dozen old sets and speakers were polished and lined up to catch the eye of the old timers who had forgotten about them, but best of all was the interest shown by the young-squirts.

Bob had taped music from old radio shows playing and at times operated CW over the speakers by means of an antique Instructograph. The usual line from visitors was, "My grandfather had one just like that one!"
[Report by George Haymers, WA4NEO]

A.W.A. AT N.E. CONVENTION (left)

Another group who did an outstanding job (and had fun doing it) were (l. to r.) John Wolkonwicz, Alan Douglas and John Clapper (W1FMK) at the New England ARRL Convention. The fellows had an extensive display of early gear and attracted thousands of visitors.

John Smith (W4ACG) reports another successful AWA exhibit and program (by Rex Matlack) at the Clearwater Convention. Unfortunately, there are no pictures of this annual event which always brings together a large contingent of AWA members in Florida.
FROM HEADQUARTERS

Close-Up

BROWNING-DRAKE

Several of these sets were seen at the Conference flea market according to Bill Laverty. The B-D was usually available in kit form with the essentials being the coils and condensers. A popular version used 201A's with a single 199 in the stage although I have seen a later model using all AC tubes. Most collectors agree that this 4-tube set of the late-mid 20's is a "must" for an all-around collection. Glenn Browning was an AWA member until his death in November, 1974.

"CQ" COVER AGAIN

Alan, K2EEK has done it again... another beautiful historical cover on "CQ" magazine (January issue). This time it is of an early Morse register. A brief description is given of its operation but no mention was given as to the power source to pull the paper tape. A close examination will show a drum wound with a heavy cord or string. The end of the cord went down through a hole in the operating table and was fastened to a heavy weight. Like a grandfather's clock, the weight would slowly unwind the cord on the drum which actuated the tape puller mechanism.

TUCKERTON METER

Every attempt is made to acknowledge historical equipment donated to the AWA Museum. Somehow we overlooked a rare meter given by Dan Flomerfelt, W2BFV, former RCA manager of the one time Tuckerton station. It is indeed a rare instrument -- a combination volt-ammeter in a large wooden case. Made in Germany, it was brought to America and used before WWI. The original longwave station (with its huge umbrella type antenna) first used a Goldschmidt alternator and a Poulsen arc for a transmitter. Following the war and until it was dismantled in the 50's, two 200 KW Alexander alternators were the RF source.

TUDOR REES

The collector's friend and antique radio supplier has changed the name of his business to: The Vintage Wireless Co. For many years Tudor was also a source of antique car radios but apparently this part of his business wasn't profitable. He now concentrates 100% on vintage radio receivers parts and tubes.

LYONDOYNE DX CRYSTAL SET

Mention of this super DX crystal set in 19-2-9 OTB brought a surprise letter from AWA member Mike Tuggle who says he had a model at the 1976 Conference. He worked with Terry Lyon in its development and has promised to write a short description for the OTB. This is fine since several

(Continued on next page)
Two Philadelphia Educators Believed First to Send Electro-Magnetic Signals

Records on File in Franklin Institute Prove That Profs. Thomson and Houston, of Old Central High School, Actually Transmitted Signals in 1876, Twelve Years Before Hertz Announced His Discovery

The above headlines appeared in a Philadelphia newspaper many years ago establishing another 'first'. Diagram and pictures indicate they used a large spark coil connected to a radiator. A form of Hertz resonator receiver indicated RF. One wonders why these two pioneers have been neglected? Thomson and Houston later formed a company of the same name which merged in 1892 with Edison General Electric Co. and became General Electric.  (F. Krantz)

(Cont. from previous page)

members wanted to know more about it. To date they have logged 323 broadcast stations in 31 states with HJED in Columbia, South America as their best DX! His antenna is 85 feet long and about 50 feet high. It is strictly a crystal set -- NO transistors or batteries. . . .

SKULL-DUGGERY IN FLEA MARKET

For the first time complaints were received about un-ethical operation in the Conference flea market. In addition to a few non-members who moved in (and naturally did not register) setup and peddled their wares and then quietly disappeared, there were several cases of deliberate substitution. The most blatant one called to our attention was the sale of supposedly new 199 tubes in original cartons. Somewhere there was a switch--we didn't quite get all the details--but when the purchaser arrived home and opened the tube boxes he was dismayed to find use tubes...some of which showed little emission. To rub salt in the wound...some of the "new" 199's were wrapped in Type 30 spec sheets! The flea market is one of the Conference's greatest attractions--let's keep it clean. If you're selling equipment with replica parts--say so. If an AFT has an open winding...be fair and tell the purchaser.

N.Y.C.

Helen and I were in New York a couple months ago...a little Xmas shopping, taking in a few Broadway shows...and most important to me...to receive the 1978 Memorial Award from the Radio Club of America. The city hasn't changed much...prices seemed a little higher and surprising, sex exploitation in the Times Square didn't appear as flagrant as my last visit. In addition to the several musical comedies and plays (including one with my wife's favorite actor Henry Fonda) we spent an evening at the Metropolitan Opera enjoying "Aida". I was quite fascinated with the acoustics of this huge 5 tiered theater---every word, every note could be heard throughout the house without a single microphone or loudspeaker. I tried to compare this with a hard-rock musical group with their 300 watts of audio in a small nightclub!

I missed visiting the Museum of Broadcasting which is just around the corner of 5th Avenue on 53rd. I was in the area about 11 A.M. and was told by a doorman the hours were 12 noon to 5 P.M. -- no exceptions. It is a fascinating place for the oldtime radio and TV program buff, William Paley (CBS) and others have contributed greatly making it one of the world's largest program repositories (See OTB 18-1-36).

RADIO CLUB OF AMERICA

It had been several years since I had attended a Radio Club meeting...the last being in 1966 when they met at the old Seventh Regiment Armory. This time it was at the new Sheraton on 7th Avenue. The Radio Club of America is the oldest radio organization of its kind having been founded in 1909. They were a staunch supporter of Maj. Arm-

(Cont. on p.7)
After much discussion, the Board voted to have the 1979 AWA Conference at Canandaigua. Word has been received that the Sheraton plans to expand (see news clipping) but it is doubtful construction will be completed in time for our Sept. 29 date.

New rules for the flea market operation will be in effect this year as a result of a couple unpleasant incidents. The Committee plans to have the Conference program and registration cards in the June OTB mailing.

Sheraton Proposals

The proposal calls for 100 35 feet. The proposed addition additional guest rooms, in a six-story addition to the current building. Those rooms would have a view of the lake.

The construction requires a height variance, since the city's one-story addition. The expansion would also include additional banquet rooms and kitchen space in a height variance, since the city's one-story addition attached to the building. The zoning ordinance does not allow the east side of the current building over 2½ stories, or building.

("Close-up" cont. from p.6)

strong efforts in the early days. It was here he revealed the regenerative circuit, the super-heterodyne and FM. Louis Hazeltine read his paper on the neutralyne and Paul Godley told about the famous trans-Atlantic tests.

The afternoon session consisted of six speakers including Leonard Kahn, telling about his proposed stereo in the AM broadcast band and Carlos Roberts, the FCC representative from Washington. The latter appeared to be a relatively young fellow with a big black bushy beard. Quick on the draw, he easily warded off controversial barbs on such matters as the FCC CB situation. Another well-informed speaker was William P. Nicol, retiring Director of Telecommunications from London, England. All told, it was an interesting symposium skillfully moderated by Stu Meyer of one time HammarlundRadio fame.

MORGAN MC MAHON

My companion at the meeting was your old friend Morgan Mc Mahon, N6VY of Vintage Radio ("Flick of the Switch", etc.) Morgan and his wife are still in the publishing business for the collector but on a much lesser scale since his work at TRW as engineer/scientist has become more demanding. He does find time however to get on the ham bands. W2EDE reports working him recently on 40 CW.

OLD FRIENDS

The reception before the club's banquet was a chance to meet several old friends: Frank Gunther of REL, Ken Richardson of DeForest Pioneers, Jack MacCullough of vacuum tube fame, Harry Dannals, President and Stan Zak Director of ARRL, Bill Eitel of Eimac Co. and my old friend Lew Clement, just to name a few... Lew came up from Florida to receive the Pioneer Award which he so justly deserved. He started tinkering with wireless in 1905 (?) and eventually became a Marconi wireless operator. From then on he did much research and held important positions with Fed. Tel & Tel., T. T., Fada, Crosley, W.E./Bell Labs and RCA. He is the recipient of numerous awards and honors. Truly, a great pioneer.

BILL EITEL

Bill Eitel (W6UF) told me a couple years ago about an antique semi automatic memory type code sending machine he had acquired. I asked him about it. It was all apart on his basement workbench. He has hopes of getting it

[Cont. on p.15]
The '78 Conference Auction superseded all previous events in both material and prices. Except for a short lunch-break, the volunteer auction committee worked continuously from 8:30 AM until 5:00 PM. The new ruling of limiting number of pieces a member can enter has eliminated the practice of having someone haul in a truckload (at the expense of others) and a minimum value (no more $2 and $3 items) has speeded up the overall action...

There appears to be one complaint...a fair percentage of the members interested in purchasing equipment could not see the object they were bidding on too well because they couldn't get a seat near the front. In turn, the auctioneer also had difficulty picking up the bids and numbers from the rear.

The vast majority of members in the first 10 rows were not participating...only watching. It would appear AWA may have to adopt the practice used by other groups and allow only those with auction "numbers" in the front with casual observers in the rear.

The highest price paid for a receiver was $500. -- a Signal crystal set receiver (mint) in the original packing box. Members tell me this set had been erroneously reported elsewhere as a "loose-coupler". This is unfortunate. It is a complete receiver consisting of a loose-coupler, crystal detector, condenser, etc.

In general, prices were somewhat in line although there were the usual surprises. Several large consoles in excellent condition had 'no takers'...one of the reasons being lack of transportation...members cars were already loaded with 'goodies'.....

Here is a cross-section of some of the material that was sold. "E" indicates Excellent, "VG" - Very Good, "G" - Good, "F" - Fair and (?) is unknown.

**RECEIVERS**

Signal crystal set receiver (mint) in orig. box-$500., Radiola II (G)-$75., Radiola III (G)-$40., with tubes-$70., Radiola III with bal. amp. but open aft-$90., DeForest 'Everyman' crystal set (E)-$150., Radiola V (G)-$195. Radiola 20 (G)-$55., same $65., Crosley 62 (G)-$65., Crosley Ace Type 5 (G)-$70 and $80., Crosley Tridyn (VG)-$60., Loose-coupler (G)-$30., Steinite crystal set (G)-$85., Grebe CR-12 with tubes (VG)-$400., Grebe Syn. (F)-$30., (G)-$55., Stewart-Warner '300'-$50., Federal 61 (E)-$475., Federal 57 w/phones (E)-$325., Federal '200'-(E)-$85., Federal Jr. (G)-$125., Radiola '16' (E)-$50., Crosley Pup w/tube (G)-$120., Freshman Masterpiece (F)-$30., same with built-in spkr (G)-$50., Acme Neut. (G)-$150. Magnavox 3-stage amp. (G)-$250., Dayfan '6' (E)-$37., Bosch Little '6' (F)-$12., Bosch. Mod. 29 (E)-$20.,

First wire recorder sold for $425.

WE 7-A amp. (no tubes) (F)-$30., same but (E)-$55., Kellogg w/40s(?)-$20., Michigan MRC-1 (G)-$95., Zenith 4R (restored)-$200., Airline 1-tuber (G)-$60., Miraco (?)-$120., West. RC (F)-$100., RA-DA w/tubes (G)-$85., Aeriola Sr. (G)-$250., Philco Mod. 60 (Cont. next page)
THE AUCTION

(F)-$60., Philco Mod. 89 cathd. (E)-$80., Philco car radio (G)-$20., Pilot TV Mod. 37 (G)-$185., same but needs pix tube- $105., Hallicrafter S-20 (G)-$30., Halli. S-38 (F)-$15., AK-10 bread-board (E)-$225., AK-20 (large) (G)-$40. 

AK-20 (small) (E)-$65., AK-43 w/spkr. (G)-$40., AK-35 (AC mod.)(G)-$30., AK-40 (VG)-$35., Kennedy Mod. 20 (VG)-$150., Kennedy 20 (E)-$140., AK Mod. 555 Super (G)-$65., Nesco Mod. CN-239 (parts missing)-$400., Replica Arlington coupler-$20., Replica Navy coupler-$35., etc......

Members in rear of room had difficulty seeing material for sale

METERS: Large Weston voltmeter $50. G.R. Professional wavemeter in large wooden box-$65., Amateur GR wavemeter in small wooden box-$20., Early Wheatstone bridge (G)-$65., Jewell tube tester (G)-$15., Jewell Mod. 199 set analyzer (G)-$27., Weston station ammeter (very large)(G)-$65., G. R. impedance bridge (mini)-$75.

MISC.: Pre-WW1 Telegraphhone wire recorder (very rare)-$425. National 1914 1" spark coil-$35., 15 dial Ommigraph (G)-$85., Homemade spark transformer-$50., 11 volumes of Rider manuals-$50., AK dealer's display screen (G)-$225., Riders 1 thru 6 (G)-$37., Baldwin Type "C" phones (G)-$15., Wm. B. Duck catalog #14 (E)-$33., E.1. #21 catalog (G)-$27., "Radio Manual" by Geo. Sterling-$15., DeForest honeycomb coil mount (E)-$20.


No bid. No sale. Several members expressed interest in console radios but had no way to transport home. Too bad...for there were some excellent "buys"... sets in mint condition selling for $5!

NO SALE (items that did not reach minimum bid): 1918 bound volumes of "Electrical Experimenter"-$100., same but 1917-$100., RCA 104 (G)-$15., AK-46 set-$15., RCA 812 superhet (G)-$45., Philco radio-phono console Mod. 42 - $5. (!) Zenith portable (E)-$5.

All information in General and Tube Auction reports was obtained from Auction Committee's Record Sheets. Participants and the Association benefited from the sales, the latter with a 10% cut toward AWA Museum maintenance. C. Z.
The Silver-Marshall "Round-the-World-Four" was a milestone in shortwave receiver design over 50 years ago (1928). It was one of the first SW sets to use a screen-grid tube and to be fully shielded (almost). It used the then new UX-222 SG tube as a stage of untuned rf ahead of the regen detector. This gave smooth operation and prevented radiation. It was a rugged set built in a heavy aluminum box and was available in kit form. One wonders with all the nice shielding why the plug-in coil was on the top of the set. Why couldn't it have been recessed somehow in the cabinet?

The S-M "Four" was shortlived. It was eclipsed only a year or two later by the Pilot Super-Wasp and then the ever popular National SW-3, both using tuned RF.

**LIST OF PARTS**

1. S-M 317 or Ameco 00014 tuning condenser, C1
2. S-M 3168 or Ameco 00035 tickler condenser, C2
3. One each: S-M 131-T, 131-U, 131-V, and 131-W coils, L2
4. S-M 812 5-prong socket
5. S-M 277 R.F. chokes, L1, L4
7. S-M 818 hook-up wire (25 feet)
8. S-M 734 aluminum shielding cabinet with terminal strip
9. S-M 255 first stage A.F. transformer, T1
10. S-M 256 second stage A.F. transformer, T2
11. S-M 311 tube sockets
12. Yaxley 20-ohm midget rheostat, R4
13. Yaxley 500 switch attachment, SW
14. Yaxley insulated tip jacks
15. Na-Ald 481NS spring socket for detector
16. Polyphase 00015 condenser, C5
17. Polyphase 002 condenser, C6
18. Polyphase 0095 condenser, C4
19. Polyphase grid leak mount
20. Polyphase 5 megohm grid leak, R3
21. Durham 50,000 ohm resistor, R5
22. Sprague 1/2 mf condenser, C3
23. Carter H-10, 10-ohm resistors, R1, R2
24. Carter H-12, 2-ohm resistor, R6
25. Binding posts consisting of 8/32 screw, nut, and insulated top
26. National type B vernier dial
Radio historians and collectors easily recognize the name RFL and in all probability one of its early staff members, Stuart Ballantine. Through the courtesy of Jack Janieke, K2JFJ, we have this brief summary of the company’s activities written by John Young. I might add RFL is one of the very few radio organizations that had managed to retain its identity after a period of 57 years...Editor.

RFL was formed in 1922 as Radio Frequency Laboratories, Inc. by Richard W. Seabury, Dr. Edward Weston, and C. P. Townsend as a research and engineering group devoted to the study of electrical communications problems. Work included investigation of dielectrics at high and low frequencies, rectifying properties of crystals, characteristics of vacuum tubes, studies of amplifying and repeater action at RF, IF and audio frequencies and development of Ballantine's amplifier circuits. In 1924, licenses to manufacture and sell broadcast receivers using the RFL balanced bridge circuits were issued to most manufacturers of home radios. Over one million receivers of RFL design were sold in 1928-29.

In 1928 RFL constructed an airport in Rockaway Valley, New Jersey and built a laboratory and hangar to manufacture aircraft radio equipment. The first commercial radio beacon receiver, together with pilot-operated, two-way radio for the Army and Navy were developed. In 1929 James H. Doolittle made the first blind airplane flight and instrument landing using RFL radio. RFL aircraft radio was used by Admiral Richard E. Byrd on his first flight over the South Pole. Activity in the aviation field became so intense and specialized that a separate organization, Aircraft Radio Corporation, was formed devoted exclusively to airborne communications and test equipment.

Patent litigation became so involved and costly that RFL in 1931 abandoned its research activities in radio broadcasting and sold all its patents to RCA, taking a license to make radio equipment for aircraft. During World War II, RFL made electrical testing instrumentation for the Weston Electrical Instrument Corporation, Eclipse-Pioneer Division of Bendix and was a prime contractor to the Navy Department.

Engineering, production and machine shop facilities were greatly expanded in the period 1947 through 1955. RFL extended its role as a prime contractor to a number of government agencies, in both the areas of development and production. Precision measurement instrumentation, specialized quartz crystal audio frequency shift teletype terminals were designed and manufactured.

RFL ad showing variotransformer in a reflex circuit. Copy from 1924 issue of "Radio Broadcast" magazine.

With bakelite base or split metal collar for panel mount. Complete, ready to use, price $9.60

Model 5 BALLANTINE VARIOTRANSFORMER

After 1955 RFL concentrated its efforts in cultivating its commercial market, both domestic and overseas. RFL's Communication Division is now one of the leading suppliers of telemetry, supervisory, carrier (FDM and TDM), control and data transmission (cont. on next page)
The reception of the letter "S" by Marconi at Signal Hill in 1901 still brings skepticism... did he really receive the first signals across the Atlantic?

Last year an article in a British journal by a leading engineer explored another lead: the signals were NOT received on longwave as radiated from the British Poldhu station but were actually picked up on a much shorter wavelength... even in the short-wave region. The theory is based on the fact the transmitter radiated an extremely broad signal covering almost the entire spectrum... and the receiver used by Marconi was not tuned to a specific wavelength... meaning the signals could have been below 100 meters (?)

A recent letter from pioneer radio astronomer Grote Reber, who is currently making observations in Tasmania (Australia), throws further light on the subject. Let me quote his letter:

"Occasionally I meet doubters who think Marconi made a mistake on Dec. 12, 1901 and didn't really hear Poldhu. The reason given is that his primitive equipment would be ineffective today. Judging the past by today is a risky business.

"I have been recently examining a long series of sunspot numbers in relation to my own observations of hectometer (hundred meter) cosmic static. Carrying this information back to Marconi's time discloses his well known luck stayed with him. Solar activity was very low.

"No spots were seen at all during the months of April and December 1901 or February and April 1902. Accordingly, solar flares, prominences, were also absent. The solar wind was at low ebb. This would mean very low D region absorption and good daytime transmission.

"This situation didn't occur again until February 1912 and May and June 1913. Since then there have been no months at all where the average sunspot number went to zero. Occasionally there have been spotless days... now even these have disappeared.

"I should have been doing low frequency radio astronomy along with Marconi."

Grote Reber, Bothwell, Tasmania

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VLF-ELF RECEIVERS:

Harold Leyer's listing of long-wave receivers (in the Dec. OTB) is certainly a challenge to the collector... even if one were to collect only two or three sets he would have a good start. Many of the models were of course available as WWII surplus. To correct a misunderstanding- under the heading 'Features' he notes circuitry. TRF denotes a regen receiver and does not necessarily indicate a stage of tuned RF unless so stated. Obviously, some of the early sets did not have a stage of RF such as the IP-501 and Kennedy 110.

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(RFL cont. from previous page)

equipment. Its Instrumentation Division is the largest single supplier of permanent magnet processing and measurement instruments in the world. The Thermocontrol Division of RFL was formed in 1965 with its efforts directed toward supplying individual thermal control and measurement instruments as well as extensive thermocontrol systems geared for industrial use.

In 1967 the company name was changed from Radio Frequency Laboratories, Inc. to RFL Industries, Inc. to better reflect the Company's diversification. Brandon Colls, located in Brandon, Vermont was formed for the purpose of manufacturing coils and transformers used in communication filter applications.

RFL products are available worldwide through more than 50 sales and service agents, in addition to a wholly owned subsidiary, RFL Electronics, Ltd., Bristol, England and an affiliated manufacturer, Uni-Tel Ltd., Scarborough, Canada all served by RFL International, Inc. RFL staffs a full-time customer service department to handle requirements both within the Boonton facility and in the field, throughout the world.
Pictured above is a DeForest Type PN detector. It was purchased from MESCO in December, 1914 by a consulting engineer named Broadhurst acting for the American Marconi Co. to form a basis of the Marconi vs. DeForest patent suit in which alleged that the De Forest Audion was an infringement on the Fleming valve. Another consulting engineer, Frank Waterman, testified in the suit.

I obtained this piece of equipment with Audion from Frank Waterman's daughter, Miss Francis Waterman of Summit, N. J. She and her father lived in a 3-story house for many years. After her father's death, she didn't want the large house and put it up for sale.

Her father had a small laboratory on the top floor which neither she or her father had been in for years. There was a considerable amount of equipment in it.

I was asked to look at it and tell Miss Waterman what to do with it. I suggested several methods of disposal and asked her if I could have the PN Detector. She gave it to me. This was in the early 50's. My reason for believing this PN detector was used in the (Continued on next page.)
back together and in operation. Bill said that there was just a chance he might donate it to the AWA Museum. W6UF is a member of a small group of CW operators who rag-chew at 80 to 90 WPM (yes, 80 to 90 WPM).... He was there to receive the Sarnoff Citation. I was there to receive the Batchelor Memorial Award. Ralph Batchler was an ardent radio historian for both the Radio Club of America and AWA and at the time of his death was in line for the coveted Houck Award. Author of many books and holder of patents, he had been with the Grebe Co. and was Director of Engineering for the A.D. Cardwell Corp. (see OTB 9-4-4).

PIXES OF N.Y.C.

In between all this activity I managed to sneak out and take a few color pictures in the rain of the Times Square area. The best time for pictures is at twilight (around 4 PM) in a heavy rain! I first did this in 1939 with spectacular results -- a blend of natural light from above with a myriad of dancing lights from passing cabs bouncing off the pavement. This time I used Ektachrome 200 (ASA) in an old German SLR Exakta. Don't be afraid to shoot wide open. It is seldom you over-expose unless you're using 400. I have even been successful with slower speed Kodachrome... so much for NYC.

TESLA COIL.

Visitors to the Museum this year will have a special treat... maybe. Director Bruce Rolleston has been working on a large Tesla coil for demonstration pur-

poses. On the first trial he turned on the rotary spark gap and then the high voltage switch -- WHAM! CRASH! A 3 foot spark jumped to a nearby fixture, lights went brilliant and then everything went dead... The high voltage condenser shorted. He plans to replace the condenser with one of higher rating and try again.

SE-143 RECEIVER

Charlie Hinkle, K4TS found an old book used at the Philadelphia U.S. Navy Yard dated January, 1918... and of all places, at a local flea market! Inside the cover were some old faded blueprints (folded up) for a SE-143 receiver. It just so happens Charlie has a SE-143 which he is trying to restore. How lucky can you get...

WHIMHURST MACHINE

Did you see Everett Berry's beautiful Whimhurst machine on display in the Conference Contest Room? It was a beauty and gained much attention. Richard Cane writes from Florida that he too has a similar machine made by the Central Scientific Supply Company for school demonstration purposes. Apparently they have been a stock item since the turn of the century. They fall somewhat in the same collecting field as early electro-medical coils. The Whimhurst machine was conceived in 1753 and practical models made by William Nicholson in 1788.

COLLECTING OVERSEAS

A note from A.R. Nolte tells of his moving to Wales (Great Britain). To date he has found only one old two

HISTORICAL DETECTOR

(Cont. from previous page)

patent suit are:
1. This was the only piece of Audion equipment in the Waterman Lab.
2. The only bulb which it contained had a paper sticker marked "F. N. W. " and "N. A. #3". When Broadhurst bought the PN detector in 1914 he also bought two Audion bulbs. When the bulbs were offered as evidence during the suit, they were designated #3 and #4.

There is one thing which mitigates against my belief. Broadhurst's sketch of connections showed there were two designation plates on the detector. One, which corresponds with his sketch is still attached to the top. The other was a similar plate which read "Serial No. 46". This is not there now. Possibly it was a decal which has over the years dried out and fallen off.

The PN detector is a gift to the AWA Museum.

Gerald F. J. Tyne, Mar. 15, 1978
RESTORING OLD EQUIPMENT

TIGHT SET SCREWS

Ever have a tight set screw in a knob or dial? I have found the best way to loosen one is to use a soldering gun or iron with a very small tip...place the tip on the screw for several minutes and it will come free. Be very careful not to touch the side of the knob hole if it is plastic. Once the screw is removed, clean with steel brush and give it a touch of light oil.

[Al Jochem, Quincy, Ill.]

WEEKEND AT CANANDAIGUA

A new A.W.A. show

Dr. Harry Norry, VE3GCR of London, Ontario, working with Al, WEBWk, took five [5] 36 exposure rolls of Kodachrome at the recent Conference...and they all came out great! So good in fact, the Committee has decided to make a slide/tape commentary of the event which will be shown at various AWA Meets.

Doc starts with a few shots of the Museum -- and then to the big flea market in the Sheraton parking lot. Here one will see the collectors in their glory. Then inside to some of the meetings, a visit to Ralph Williams where his group are staging the old equipment contest and finally to sit in on the big auction with live tape playback.

Women's activities are covered and lastly the big finale-- the Annual Banquet. See OTB Meeting schedules for showings. Thanks, Harry, for a fine job.

Other "Meets" to attend in near future:

N.F.W.A. -- Apr.7 at Old Amherst Colony Museum, East Amherst, N.Y.
A.R.C.A. -- June 21,22, 23 at Elgin, Ill.

Non-members welcome at all events.

AC CORD RESISTOR REPLACEMENT

Members who are restoring an AC/DC set of the 30's may run into the problem of finding the 110-volt cord (which frequently served as a dropping resistor) has an open circuit.

It is almost impossible to repair such a cord. One has the choice of a new cord (if you can find one) or placing the dropping resistor in the set.

Bill Fox, WB6NMP tells how he solved the problem in the California Historical Radio Society's Journal (Vol. 3, No. 3). Bill found he could purchase a 35 watt metalized case resistor (Type HG-25) manufactured by Dale Electronics, Inc. (1300-28th Ave., Columbus, Neb. 63601) which are available in a wide range of resistance (usually 100 to 200 ohms for AC/DC sets). They can be easily mounted on the metal chassis which incidentally also acts as a heat-sink. He suggests you first try your local electronic distributor since they may carry Dale line of products.

ONE CHANCE IN A MILLION

Do you remember reading in the September OTB (19-2-5) about a homemade receiver that was secretly made in a W W2 Japanese prison camp --- and did any AWA member know of its present whereabouts?


A followup letter from the Museum's Historical Officer tell us it is a 2-valve set and was made by a Signal Corp Officer (and presumably once-time man) while he was a prisoner working on the notorious Burma-Siam Railway.

(Tks D.E. Wiggins, W5CWG)
FLEA MARKET

The "Swap Meet" will be held in the large parking lot close to the Museum. There will be an additional fee of $2.00 to all sellers who participate. This fee will be collected at the Entrance of the parking lot.

OLD EQUIPMENT CONTEST

We urge you to bring your choice items for this contest. By so doing, you will surely add to the pleasure of those in attendance and, who knows, you may return home the proud possessor of an award or two...

CONTEST CLASSIFICATIONS

Class 1  Crystal receivers
Class 2  Regenerative receivers
Class 3  T.R.F. receivers
Class 4  Superheterodynes
Class 5  Wireless gear
Class 6  Tube transmitters
Class 7  A.C. table model sets
Class 8  Homemade gear

The judges will also select all entries in the above classes for the most unique and the best set in the contest. Entries must be submitted for registration at the Museum no later than 10 AM.

=HOW TO GET THERE=

Foothill College is located just west of Highway 280, in Los Altos Hills, the first city south of Palo Alto. The Museum is located at the north end of the campus.

If you drive south on 280, turn off to the right on El Monte Rd. and you will immediately see the entrance to the campus. The Museum is identified by the dome of the observatory.

We anticipate a record attendance at this Western Regional Meeting. Please return your registration promptly and be sure to let us know if you intend to lunch at the coffee shop. This will enable the College to make adequate arrangements for your convenience.
SOUTHEAST REGIONAL CONFERENCE

Hear ye all radio historians and collectors...... a BIG EVENT !

Following the fine tradition established by Lew Elias, the group will operate out of Charlotte this year and provide another great "Meet". The location will be the:

COLISEUM - HOLIDAY INN
2701 E. Independence Blvd.
Charlotte, N.C. 28205
(Tele. 704-377-6581)

PROGRAM

Friday Afternoon: Registration and get-together for early arrivals

Friday Evening: Hospitality Room open from 7 to 11 PM

Saturday Morning:
8:00-11:00 Registration
8:30-11:00 Flea market
10:00-11:00 Register gear for contest
11:00-11:30 Contest Judging

Noon Lunch....on your own.

Saturday afternoon:
1:00-1:30 Spark transmitter demonstration by Cdr. Ed Redington, W4ZM
1:30-2:00 "Radio Receiving Inductances 1922-25" by Dr. Marshall Helms of East Carolina University
2:15-3:00 "Early Vacuum Tubes" Identification and value. Lauren Peckham, AWA Tube Chairman
3:15-4:00 "Television 1930" by Robert Lozier. Lecture and demonstration of scanning disc television.
4:15-5:00 "What Do You Know?" Quiz panel with audience participation.

Saturday Evening:
6:00-7:00 Social Hour
7:00-8:00 Banquet (Buffet style)
8:00-8:30 Announcements, presentation of Awards and Prizes.
Lew Elias, W4DBT MC
8:30-9:00 Silent movie showing radio manufacturing in the late 1920's.

Note: All activities are in the Motel under one roof. Tables will be set up in the meeting room for the flea market and used later for the contest entries. Equipment will remain on display until 4 P.M.

CONTEST CATEGORIES

A. Broadcast receivers:
   1. Battery era (pre-1928)
   2. Early AC era (pre-1930)
   3. 1930's era
   4. Homebrews

B. Television receivers:

C. Homebrew ham transmitters and receivers. (1920-30 vintage)

D. Military & commercial gear (pre-1930)

E. Reproducers

F. Vacuum tubes

G. Literature and advertising

LADIES PROGRAM

Sign up at the Registration Desk for trips to the Metrolina antique market (largest in the Carolinas), the Mint Museum of Art and History, Hezikiah Alexander House and Eastland Mall. (Free transportation 9:00 AM to 2:30 PM).

THE TAB

REGISTRATION (each person) $3.00
Saturday night BANQUET 7.00

Tot. per person --------- $10.00
(including tax, tip, etc.)

For more details, registration card, etc., write Chairman: Robert Lozier
318 E. Houston St.
Monroe, N.C. 28110
(or tel. after 7 PM-- 704-283-2638)

MOTEL INFORMATION

Special AWA room rates:
Single---$20.00
Double---$25.70

Make reservations direct with Motel as soon as possible. Charlotte can be easily reached by plane and an easy driving distance for East Coast members....SEE Y'ALL APRIL 7
INDIANA HISTORICAL RADIO SOCIETY and the ANTIQUE WIRELESS ASSOCIATION

REGIONAL SPRING MEET

SATURDAY, APRIL 20
AUBURN-CORD-DUESENBERG MUSEUM
Auburn, Indiana

PROGRAM

Friday, April 20
6:00 PM -- Early registration and Museum Displays.
7:30 PM -- "Old Time Movie"

Saturday, April 21
9:00 AM -- Outdoor Swap Meet (south parking lot near loading dock).
10:00 AM -- Register equipment for afternoon auction.
   -- Register items for the Old equipment contest.
   (Note: both must be registered by 12 noon.)
   -- General Registration

10:45 AM -- Auction of donated items for the IHRS Museum Fund. (Bring your surplus parts and equipment, a chance to move them along for a good cause.

1:00 PM -- Auction of personal equipment. A 10% donation is asked for the IHRS Museum Fund.

4:00 PM -- "PHILO FARNSWORTH" Television pioneer. A slide/talk presentation by Steve Hofer of Eastern Illinois University

4:00 PM CONTEST Judging, Ed Taylor Chairman

4:45 PM -- Restoration Clinic SHOW and TELL. Bring your story or equipment to show how you handled a restoration job. AWARD for best example. Ronald Scranton, Chair

7:00 PM -- BANQUET and SPECIAL ENTERTAINMENT
   by the Johnny Appleseed Dulcimer Club of Ft. Wayne, Indiana.

OLD EQUIPMENT CLASSIFICATIONS
CLASS I Military Radio Gear
   a. -- Circa WW1
   b. -- Circa WW2
CLASS II AC Cathedral Type Sets
CLASS III Crystal Sets
   a. -- Homemade
   b. -- Commercial made with orig. selling price under $5.00
   c. -- Commercial made with orig. selling price over $5.00
CLASS IV Speakers
   a. -- Horn
   b. -- Cone
CLASS V Radio Advertising
CLASS VI Any receiver using four or less tubes.
   Ed Taylor, Contest Chairman

PRE-REGISTRATION: Banquet reservations with full payment must be received by APRIL 13, 1979.

BANQUET ticket and ADMISSION to Museum -- $10.00 each
Adult ADMISSION at door ---- $2.00
Student or child admission at the Museum door ---- $1.00 each

MAIL your REGISTRATION and CHECK (payable to, H. R. S.) to:
   FRANK HEATHCOTE
   1235 N. 3rd Street
   Logansport, Ind. 46947

Please make your own MOTEL reservations...

L & K Motel, State Rd. 8 West, Auburn, Ind. 46706 (Tele. 219-925-1316)
Starlite Motel, State Rd. 8 West, Auburn Ind. 46706 (Tele 219-925-0500)

PLAN TO COME AND HAVE A GREAT TIME WITH US!!

Delbert Barrett,
General Chairman
NEW YORK

Spring Meet

SATURDAY, MAY 12
East Bloomfield, N.Y.

AMERICAN LEGION HALL
(About 1 mile east of Museum on Rte. 5)

ADVANCE Registration and
Luncheon------$5.50
Luncheon with Registration at
Gate----------$6.50
Registration at Gate------$1.00
(Note: Limited seating capacity)
Send check BEFORE May 6 to:
Dex Deeley, 8 Briar Circle,
Rochester, N.Y. 14618

SCHEDULE:
11:30 AM Check in gear for mini-auction
12 Noon BUFFET LUNCHEON with Awards
1:00 PM "OLD TIME MUSIC BOXES
and ORGAN GRINDERS"
An entertaining half hour of demo-
stration and stories about these
early musical instruments with
Lauren Peckham.
1:30 PM MINI-AUCTION
(Bruce Roloson, Auctioneer)
3:00 PM A.W.A. Museum Open

Great Moments!

Just about the time your editor was ready to deliver this copy to the print-
er, a call came through the local 2m.
FM repeater, "W2ICE from W2UTH, I
have some old tubes for you. I'll drop
them off." Half an hour later Henry
pulled in the driveway and dropped off
two cardboard cartons. They had been
given to him by Chuck Bliley (son of
Bliley crystal fame) who picked them
up from Charles Dunlap at Harris RF
Communication. Each in turn had been
warned -- don't drop them, they may
be valuable.

An understatement. Opening the boxes
I found an assortment of pre-WWII tubes,
three (3) Fleming valves, three (3) Weagent valves, several very
early odd looking tubes supposedly de-
veloped by Capt. Round in England and
a French tube. In addition there were
a number of De Forest tubes: a tubular
audion with DF stamped on the plate,
a "S" tube, DL-9, DL-14 and others.

Positive identification will be made
with Jerry Tyne sometime in the fut-
ure. These rare tubes were given to
the Association by the widow of Orrin
Dunlap Jr., pioneer historian, author,
editor and executive. More on this
later.

37, B.K.
List of parts:
L1 & L2 -- Freshman-type coils
T1 & T2 -- Acme A-2 aud. trans.
C1 & C2 -- Signal 23-plate (.0005 mfd.)
R1 -- 20 ohm rheostat (Howard)
V1 -- UX-200A
V2 -- UX-112A
Diode -- Fixed crystal detector or Germanium diode.

Comments: Reflex circuits were popular in the mid-20's as a means to increase power (?) with less tubes. Harkness was a well known designer so I decided to try his circuit. Initially I tried 201-A's and obtained average performance. I then tried a 112-A in the output stage and noted improvement. A final switch to a 200-A in the first stage gave noticeable improvement in selectivity and appeared to increase the volume. I found over oscillation could be avoided by spacing the components physically. (See above)

The original circuit had a small diode tube in place of the crystal detector or diode. This was expensive and required an additional "A" supply. I placed a germanium diode in a grid-leak envelope which can be seen behind the center variable condenser. I find the set works well using a 25 foot antenna and a W.E. 518-W loudspeaker.

---Floyd Lyons, San Francisco
by Louis Lindauer, 3 Beacon Hill Rd., Port Washington, N.Y. 11050

Most tubes used in vintage sets can be rejuvenated by simple processes and brought back to virtually new emission standards provided there are no internal shorts and their filaments are intact and can be made to emit sufficient electrons.

The methods used depends on the particular material employed in the manufacture of the filament for the specific tube type to be rejuvenated (thoriated tungsten, pure tungsten or coated oxide). The December issue (1973) of the OTB carried an excellent article by Lane S. Upton on the theory behind rejuvenation and the methods he devised for each filament material, along with a list of tube types using these materials.

I have used Lane's methods with a high degree of success with parallel experiences. I have processed over 25 tubes and succeeded with about 20. The balance either did not improve sufficiently or lost their filaments due to the high voltages employed in rejuvenation.

I recently came across a method for thoriated tungsten tubes such as 01A, 99, 120 endorsed by the U.S. Bureau of Standards in 1925 which differs from Lane's procedure only in the voltages used.

A smaller batch of tubes was processed with this approach, producing similar success, including the rejuvenation of one of the tubes which had not responded to Lane's method. I do not imply that this method is superior to Lane's, since a repeat treatment of his procedure might have also saved the tube.

This author is now using both methods and keeping records of the results. The data is not too meaningful on a small sample since success depends to some extent on the condition of the thorium in the tube filament before starting the rejuvenation by either method. (I am also running out of "bad tubes.") I welcome data from other collectors as I am sure would Lane, on their experiences with either or both methods.

The goal of the process is to boil off impurities which have "poisoned" the thorium that is carried in the crystal structure of the tungsten filament.

Sources of the poison are usually the residual gasses in the tube and impurities in the internal parts interacting with the filament over the years of idle storage. New thorium, which is the actual source of electrons, will then migrate to the filament surface from within the tungsten.

The rejuvenation process is essentially the operation of the filament for a brief interval at a specified HIGH voltage (called "Flashing"), followed by a LOWER voltage for a longer time (called "Aging").

<table>
<thead>
<tr>
<th>FLASHING</th>
<th>Fil. voltage</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>99</td>
<td>10.0</td>
<td>30 sec.</td>
</tr>
<tr>
<td>01-A</td>
<td>15.0</td>
<td>1 min.</td>
</tr>
<tr>
<td>120</td>
<td>10.0</td>
<td>1 min.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AGING</th>
<th>Voltage</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>99</td>
<td>4.5</td>
<td>10 min.</td>
</tr>
<tr>
<td>01-A</td>
<td>7.5</td>
<td>10 min.</td>
</tr>
<tr>
<td>120</td>
<td>4.5</td>
<td>10 min.</td>
</tr>
</tbody>
</table>

In carrying out this schedule, it is absolutely essential to use an accurate voltmeter and be precise about the timing. NO grid or plate voltages are used and either alternating or direct current may be used for heating the filaments.

It should be remembered that this method is ONLY suitable for tubes with thoriated filaments such as the types shown. It will not work with tubes such as WD11, WD12, 01, 00, (1 ampere filaments), etc. Lane's article covers procedures for these types in addition to his method for thoriated tungsten tubes.

Since vintage tubes have risen in cost and are harder than ever to get, these simple methods are well worth the time and small effort. If you fail with a particular tube, you are no worse off than before you started. If you succeed, you have another set in operation.
The Collector

IS CROSLEY NEXT?

Jack Gray aroused collector's interest in Grebe sets in the early 60's... then Ralph Williams here in Pennsylvania sold Atwater-Kent as THE set to have. The Schambergers up in New York made us realize the value of Federal receivers... and now there appears to be a growing interest in Crosley products. Maybe John Bruning and Elmer Shubert of Cincinnati started this trend.

Some compare early Crosley products with early Henry Ford cars: low cost and mass production. I now find collectors looking for early "ACE" and Harko sets and of course the later letter (VI, VII, XI, etc.) and the number (50, 51, 52, etc.) series. Then, how about the Mod. I crystal set or the "Pup" for a winner?

Collectors are also looking for Crosley components. I remember as far back as 1965 when a few Crosley buffs were searching for Crosley porcelain tube sockets and "book" condensers.

I never saw an early Crosley catalog until Lauren Peckham showed me a reprint printed by Vestal Press. It is excellent. Originally printed in 1923, it shows most all the real early Crosley products and components. (The Harko and letter series but not the number series.)

The catalog is well printed with a heavy cover and contents on glossy paper. Real good pictures. Bruce Kelley tells me the Museum Committee plans to stock them in the Museum store and they will be available at all AWA meets. Price: $4. per copy. If you can't pick one up, you may order direct. Send $4. plus $1.50 for handling and shipping to: Vestal Press, Box 97 320 North Jensen Rd., Vestal, N.Y. 13850

Does anyone have information on a later Crosley catalog? Maybe AWA would like to stock them in their store.

--Bob Allen

QUICK REFERENCE ON MOST RECENT ARTICLES

in other publications

"Kilbourne & Clark" by Bill Baker, W7IVY ARCA Gazette, Fall, 1978
"Comet Pro" receiver by Bill Orr, W6SAI Ham Radio Horizons, Dec., 1978
"McCullough-Kellogg Tubs" by W6AVG Journal C.H.S., Oct., 1978
"The French Cable Co." by Don deNeuf The Telegrapher, Vol.1, No. 3
"History of Loudspeaker" by T. James Call Letter Vol.4, #11, N. V. R. S.
"Maj. C. L. Richardson" (Canada pioneer) Cat's Whisker CVWA, Vol. 8, #3
"National SW-5" by John Nagle, K4KJ "CO" magazine Nov., 1978
"How to Build Edison Phonograph" Don Matteson, V. R. & Phono Soc. Vol.5, #9

"The AK-50" (a rare one), Ralph Williams ARCA Gazette, Vol. 6, #4
"How to Restore Shellac Finish" by Jim McGough, Newsletter #5, N. F. W. A.
"Development of Single Dial Tuning" by A. Harrison, Apr., 1979 "Technology & Culture" mag.
"How to Anodize Alum," (finish) by VE7DKP, Ham Radio mag. Jan., 1979

GIVE MEMBERSHIP Application enclosed with this Bulletin to a friend. A large membership will enable us to keep dues at $5.
NEW YORK'S SMALLEST STATION

Only Five Watts of Power Is Used

December, 1924

A.W.A. member Max Jacobson, W30LG, quit his job as ship operator in 1924. He and a fellow ham, Ed Wilbur, 2BNL, got the idea of having a broadcast station for a livelihood. Max had the commercial ticket and Ed the business acumen. Between them they built what may have been New York's smallest station. Max was the operator and Ed handled the business. In time they increased the power to 50 watts.

Max left this enterprising setup in 1925 and joined WJZ just prior to the formation of NBC. In his capacity as Supervisor of NBC Field Operations, he had many exciting adventures for the next 40 years starting with the Lindberg case and then the 1932 Olympic Games at Lake Placid.

The headlines and copy for this article were obtained from the Dec. 14, 1924 Sunday issue of the "New York Tribune".

"Good evening, everybody. This is Station WDBX broadcasting," and the smallest station in New York City is on the air.

This station was first opened in the early part of June of this year by the Dyckman Radio Shop. The transmitting apparatus was built entirely by an amateur, who is well known by the strong signals from his own station on amateur wave lengths. The designer and builder is none other than E. C. Wilbur, 2BNL, of this city. WDBX was the first station to use B batteries for supplying the high voltage to the plates of the transmitting tubes in this city, although others have since resorted to this method of supplying the plate potential.

The studio of this station is similar to that of a bigger station. Off in a corner are the piano and various other musical instruments to be used in broadcasting. The walls of the studio are covered with lath built in an arbor-like shape to prevent echoes which would make it difficult to transmit good quality. In the middle of the room is the control board, which contains the necessary switches and pilot lights. These enable the announcer to know just when the station is on the air.

The station is equipped with two double-button microphones similar to those used by the larger broadcasters. One is used for announcing, while the other is mounted on a stand and is supported by rubber strips, which prevent vibration. The latter is used to broadcast speeches, vocal selections and other sorts of musical entertainment. Although there are to be some minor improvements made on the studio, it is a rather pleasant, attractive room, and compares favorably with one of its big brothers.

"-despite its low power, the signals have been heard as far west as Chicago and to Parkersburg, West Virginia in the south."

Leaving the studio, we were shown to the operating room. To the amateur and technical men this would prove very interesting. As the various forms of entertainment come to the operating room by means of wires they first pass to an amplifier which consists of two steps of impedance coupled amplifica-
tion. From there the signals are amplified still more by a five-watt speech input amplifier. It is then modulated by a separate modulating tube. The modulator tube then feeds the five-watt oscillator with the sound vibrations which are to be broadcast. The music is then on the air. It may easily be seen from the above description that the Heising system of modulation is employed.

This little five-watt broadcasting station puts from one and one-half to two amperes in the radiating system. The oscillatory circuit is none other than the popular Hartley circuit, which is used so much by amateurs. The plate or space current is usually around 100 milliamperes and the tubes run cool at all times. Alternating current was used on the filaments until about three weeks ago, when a direct current filament supply was installed. Better results are now being obtained.

THE BATTERY SUPPLY

The batteries for supplying the plate voltage are stored away in a special room for this purpose. A bank of fourteen Willard storage batteries, each delivering forty-eight volts, give a plate voltage of 672 volts. By means of switches it is possible to switch in the desired number and also switch the individual battery on charge.

Again turning back to the operating room we see that it is equipped with all that is necessary to maintain the station's operation. A complete set of spare tubes is on hand at all times. The station is equipped with a wave-meter as well as a receiving set, the latter being tuned to 600 meters when the station is on the air for the purpose of listening for distress signals. A wave trap is used in connection with this set to make it possible to tune out the signals of WDBX in order to hear 600-meter commercial stations. There is no interference whatsoever.

The antenna for this station stands about forty feet high. It is of the four-wire inverted L type, and has proved very efficient. An ordinary ground is used for transmitting.

The announcer's voice one hears when listening to this station is that of Eugene Delmar. The station is operated by Max Jacobson, who is an old-time ship operator.

Despite the low power the signals of WDBX, the Dyckman Radio Shop, have been heard as far west as Chicago, as far south as Parkersburg, W. Va., and in all the New England states. As a matter of fact it is not an unusual occurrence to receive a telephone call from listeners in Connecticut and Massachusetts. At all these points the signals have been reported loud and clear.

"...and has been heard in all the New England states."

The station operates on a wave length of 233 meters, and may be heard on the air Monday, Tuesday and Saturday nights, when the regular program is broadcast. All those hearing this station are requested to write the director. It is expected that the station will increase power in the near future, the probable power being fifty-watts. So much for the smallest broadcasting station in New York City.

KEEN-KODE

The pix of the 1909 fully automatic Huitk keyer (OTB 15-2-10) brought a letter from Harry Nielson, W6KIP (Ft. Collins, Colo.) describing an unusual keyer in his collection: a KEEN-KODE manufactured by McQuinto Co. of Minneapolis in the 1920's. It is a spring wound mechanism with dashes made manually by the thumb. The dots are made automatically by pressing one of six keys on a typewriter style keyboard -- one to six dots depending on which key is pressed. A fascinating gadget. Anyone have information on this machine?
CRYSTAL SET RECEIVER ON THE 160 METER CW BAND

by Joel Kosoff, W3ZT

I have been experimenting with crystal detector receivers on 160 meters using an oscillator for heterodyne reception of CW signals. I have been able to make contacts all over the eastern part of the country without too much trouble. In the winter I have heard stations as far away as Colorado with my crystal set receiver.

The receiver consists of a high-Q parallel resonant circuit with a crystal detector connected between the top of the coil and a good pair of high-impedance headphones. I have found that a capacitor across the phones is not required because the distributed capacitance of the headphones is adequate.

Energy is coupled from the antenna with a tapped input coil loosely coupled to the resonance circuit. If loose coupling is not used, broadcast stations will cover up the weak amateur signals.

The local oscillator is loosely coupled to the detector by means of a two-turn link wound around the main coil. The low power oscillator signal beats with the incoming signal in the crystal detector to give an audio note which can be heard in the headphones.

This also provides selectivity because signals further away will give higher frequency beat notes. In addition, the sensitivity of the detector is increased by allowing it to operate in the linear portion of its characteristic curve rather than in the square law region.

I have used mineral detectors such as galena, pyrites and silicon as well as modern point contact detector diodes such as IN21 and IN23. The mineral detectors are not as sensitive as the diodes but work well.

Junction type diodes are not sensitive at all and should not be used. I have a switch that allows me to switch between the diode and a mineral detector which is mounted externally in a stand. This is a good way to compare sensitivity.

The most important element in using a simple receiver of this type is a good antenna. I use a regular 160 meter dipole about 50 feet up. A good pair of ears is also necessary!

One type of oscillator I have tried uses a tunnel diode which will oscillate when biased in the negative resistance region. This simple tuned oscillator works well with only 3 volts.

I am presently working on an oscillator that uses the mineral zincite in contact with a steel point at the proper bias. The principle is exactly the same as the tunnel diode except I read about it in the October, 1924 issue of "Radio News".
$2000 SALES IN 1½ HOURS UNDER SMOOTH GUIDANCE OF AUCTIONEER ROLSON

I cannot list the value of all tubes sold at the Conference since many of the sales were in bulk lots: 5 to 30 tubes per box. This was done to expedite and speed up the auction and to eliminate $1 and $2 sales. In general, the bids reflect current values although there were a few surprises. I wonder why the large UV-851 tube brought only $10? In fact, there were some excellent "buys" in the transmitting line...nothing too exciting however in the receiving tube sales.

Transmitting:

860...$10, 845...2 for $5., UV-202 w/ brass base...$15, WE 205-D in box...$12., New WE-216A...2 for $27., WE-205-D...2 for $12, WE-211E in orig. box...$10, WE-211D @ $5., WE-212D...$24., WE-262A...$5., $10. $5., G.E. mercury arc rectifier...$100., UV-851...$10., UX-852...$13., UV-204A...$15., 861 like new...$30., UX-210 in orig. cartons...$12, for 2, Amrad "S" tube...$27., GE TB-1 (new)...$20., Telefunken RS-690...$16., Tele, RV-25 (new) $14.

Unless noted otherwise, all tubes are USED with GOOD filaments.

Receiving:

Cardon C-484...$7., for 2, C-300...$9., C-301A in boxes...$7., for 2, DL-4 in orig. box...$17., DL-5...$16., DV-5 in orig. new...$16., Deforest D-01A in orig. can...$23., AP 2-in-1 tube in box...$25., WD-12's with open fila...$9., for 2, UV-201A in orig. box...$22., for 2, Marathon 608-E early AC tube...$8., UX-200 in orig. box...$6., 01A's in boxes...$35., for 3, Simpson blue (about 1923)...$16., VT-5 (WE-215A) orig. cart. and socket...$16., VT-1's in orig. cart. $29., for 3, Audiotron (leads gone & open fila...$15., Tungar bulbs (6a)...$12 for 2, Moorhead ER tabular (good fila.)...$85., same with open fila...$36., Spherical audion with open fila...$75., French tube...$52., Deforest VT-21 (open fila.)...$46., Raytheon "B"...$6., UX-120...$8., UV-196...$42., UV-876...$10., Electrad diode in box...$24., Brighton Trublu 01A...$16., Van Horne 5-VC...$23., Arcturus blue 51, 58, & 46...$25 for 3. WR-21 (unbiased) gold getter...$28.
OLD TYME Ham Ads

WANTED
--early Crosley, Harko and Ace receivers and parts. Will Jebsby, W4ROM, Box 96, Davenport, Neb. 68835
--early manufacturer/collector wants battery sets and ham equipment. Don Bush, WA2TPU, Box 303F, RD#1, Afton, N. Y. 13730
--approx. 3" spark wheel for gap, 1" spark coil, 6-8" helix, knobs and usual dad tubes, old mikes, keys, odd coils, etc., morning glory horn. Write: VK4SS, 55 Wynnst Way, West End, Brisbane, Q, 4101, Australia
--shop manual, schematics and/or photo copies of Supreme Signal Generator, Mod. 581. Write May Beel, Johnston, Neb. 69214
--stop cash for Thordarson ham transmitter, early Marconi rcrv & gear, det. & aud. amp. rhaps for Marconiphone III, prr. trans. for Victor RE-45. Write: H.K. Fredrickson, 302 Sturgeon Dr., Saskatoon, Sask., Canada SK 4E1
--Grandfather clock radios, prefer Philco 70, mint Fried-Eisenman Mod 14 spkr, Philco 90 & 51 clock radio, Seld/sav Hallcrafters SX 25 & matching spkr, Kolster 6-B-6 J, Crosley 51 & Ace. Ed Stige, 559 Civic Center, Richmond, Ga. 94010
--Orig pickup arm or later modified crystal cartridge for Garrard record-changer RC 3A on a 17" Philharmonic or would buy complete unit in any condition for camibalization. P. Best, Box 50, Bridgewater Corners, Vt. 05035
--National TX, transmitter, coils for AGS, FB-7, SW-3, SW-5. Coils & box for all model HRO-NM-40A rcrv. Pete Patton, W6EQG, 3471 Churchill St., St. Paul, Minn. 55112
--telegraph keys and sounders. Bunnell miniature key and sounder. Walt Jackson, 908 N.E. 11th GrandPrairie, Tex. 75052
--RCA Victor Service Notes for 1935. This is a red bound volume. Please quote condition & price postpaid. Ken Conrad, W21E, 5422 Crittenden Rd., Akron, N. Y. 14001
--will pay premium for wireless apparatus made before 1920. Herman Kramer, 1766 Fairview Shore Dr., Orlando, Fla. 32804
--old or complete cabinet for Grebe Synchromate, also old broadcast audio & recording equipment. Robert VanDyke, New York, N. Y. 10012
--literature or training manual covering army or military radios from WWI to 1930. Fenton Wood, WB5VXU, 3122 Ann Arbor, Sagar Land, Texas 77476
--RADO gaps & transformer, Radion 1V inside, Radion 2 loop, Music Master horn base & driver, Grebe & Banka sets, Moll Ballcroft, 169 South Row Rd., Townsend, Mass. 01469
--cabinet for Philco 20-B cathedral in any condition. Dial for Philco 3T-140, dial glass for Philco 45-120, (radio in the slot model) Don Den, ITIL College St., Saratoga, Fla. 33581 (313-906-2661)
--Have incomplete deForest P-300 (VR p. 83), Need panel (even a poor one) & all parts but the fan switches & condensers. Buy, swap or borrow to copy. Ideas welcome. Alan Douglas, Box 225, Posenet, Mass. 02559
--RA2/q power supply for BC-345 rcrv, Rainbow multi-plug (male) 7-wire mfd., by Jones used, 4-R Zamith, Leo Kemp, RFD #10, Box 15 Frederick, Maryland 21701
--Aeropla, no tube red, excellent cond., base for Lincoln radio Corp. antenna. RADA in good cond., pre-1890 & later pointed light bulbs. Trade/swap. George Potter, 235 Village Dr., Leesville, Texas 75607
--Radial 6V plate xmn. orig. & working, Would consider complete chassis with good xmn. Working base for Magnavox R3 or R4 horn spkr., shiny black, Factory service manuals. Bob Goodman, 7843 Ponce, Canoga Pk., Calif. 91304
--Radio Antenna Engineering by E. A. Laport, 1952 edition. James Reid, 358 E. Madison, Houston, Miss. 36895 (1006-9744)

WANTED
--Paragon DA2 det/amp. Will trade Clapp-Keastham HZ. Radak amp. board (no case, one open alt., or clock), companion to C-E EHR Radak det. Also mics. HZ parts (panel, tube ski, rife, etc.) Mike Tuggle, 909 Moore Mill Rd., Bel Air, Maryland 21014
--coils or junk chassis containing same for Kennedy 110. Cash or trade. Al Jochem, 2047 College Ave., Quincy, Ill. 62301
--AK mod. 20, small cabinet, clean & operating with or w/o horn skr. Leland Smith, W5KL, Rte. 3, Jasper, Ark. 72641
--pre-war TV sets, any condition, especially late 1930 RCA sets TTS, TRKS, TRK9, TRK10, TRK12, or TRK12D. Getting desperate. Write or call collect. David Long, K0D3, Woburn Falls, N.Y. 12590 (614-465-7004)
--Radiola 23 chassis, RA-DA alt & 2nd amp rheostat with inos. John Wasilewski, W2DQC, 229 Carles Lane, Pleasantville, N.Y. 10570
WANTED

- verification cards & letters; early qsl cards from SW & MW commercial & foreign broadcast sta.; - overseas & USA from 1923 to 1930. Any condition. L. B. Zimmerman, 6448 No. Harding Ave., Sockie, III. 50976

- AK horns mod. M&H, need parts for Mod. 35, also parts & info on SM "Round-the-World-1", AFT & info on Wurtitzer spec. Ron Lawrence, 2344 Western Hills Dr., Charlotte, N. C. 26206

- "back issues" of Pacific Radio magazine, Messner 5-inch TV set & National 5-10 meter transmitter, both circa late 1930's. John Nagle, 4KEJ, 2330 Lawyer Rd., Herndon, Virginia 22070.

- "Grode-5" (any condition) & ROKK amp., Scott All-wave 12 (plug-in coil type), and Wunderlich type. 42-50 MHz, FM gear. Al Germond, 211 Brenda Ln., Columbus, Mo. 65201

- parts for Radiojay IV-front door cover & ground wire, ban battery connector, grill cloth & inside horn with or w/o driver or complete cabinet with horn. Rose Smith, IL, 688 Strong, Elkhart, ind. 46514

- early AC radios especially any Marti & small cabinets, also early ceiling & table fans. Richard Cane, 831 N. W. 21st St., SanJose, Florida 33322


- "old electrical (not radio) machines" like induction coil shock devices, ozone generators, electric bells, violet-ray, Wented also spark gap discharger, old x-ray & liter. G. Lindam, 104 Dorch Rd., Cleveland, Ohio 44121. (216-392-7114 eve.)

- "chassis for Weber 2A receiver & Bluebird rev. C"ols. for De Forest 7-A, AF unit for AK5. Steve Lange, Box 33, Waldo, Wisconsin 53993

- "GST's before 1962. Other early radio material also desired." David Klimea, W4JVN, 5637 Heming Ave., Springfield, Va. 22151

- "old & new test equipment, radio books, factory service radio manuals, crystal radio parts, 1, 2, 3 tube ac/dc sets & parts. William Hemrick, Rte. 1, Box 93A, Terra Alta, West Virginia 26764

- "2 molded or metal horn speakers with defective units or just horns alone. Give price & describ." R. R. Montgomery, 100 Willowbrook Ave., Jacksonville, Fla. 32205

WANTED


- "old meters, test equipment—wood, metal, pocket, switch board, lab type before 1930, any condition. Meter catalog, repro ok. Write: L. W. Cartwright, 21688 Noonan Court, Cupertino, Calif. 95014 (Tel. 408-253-3674)

- "Radio Trouble-shooting Riders Manuals Vol.1, 2, 3, 4-19-22 & 23. Also plastic front dial face for 16-122 Philco Cathedral radio. Clarence Stearns, Box 976, Winfield, N. Dakota 58245"

- "1924 Super-Zenith X console with built-in horn and power supply, 1026 Zenith Deluxe 10 tube console in Colonial, English, Chinese, or Spanish cabinet. Would like to correspond with former AK employer" John West, Box 122, 1111 Harvard Rd., Worcester, Mass. 01606

- "Hickok 121 tube tester manual & socket adapter. National RCE rce manual, Wunderlich det. tubes, Ruder's vol. 1, 2, 3, 19, 22, 23, replica dial for Victor F3E, RE45 & most Scotts for sale. George Harris, 3212 36 St., Lubbock, Texas 79413

- "Paragon DA3, 150 units, rheostat & verniers for Greco CR-9, any AK board parts, AK parts brochures. Carl Weizbahn, 505 Belvedere Ave., Washington, N.J. 08732

- "G.R. #3586 xtal holder (see 1927 QST ads), Hammarlund MC-120B combination band set/band spread tuning cond. 100-200 pf, early Carwell wandmold zinc end plates (see Dec, '22 QST) Lou Vermom, 56189B, 47-9395 Willow Rd., Guelph, Ontario, Canada"

- "ARRL List of Member Stations & map, other early ARRL material wanted. Sell 'A Genius in the Family' by H. P. Maxim-1936 @ $3. Harper's Elec. Book for Boys @ $10. Wireless Tele., by Buecher & $10. KIRT, '76 Tumbleweed Lane, West Hartford, Conn. 06117"

FOR SALE and/or TRADE

- "-radio equipment of the 20's to 40's. Send SASE for list. Write: L. Dugger, Box 1260, Santa Ana, Calif. 92701"


- "GTX-125, 97 library bound (red). Make offer (complete set only) Mark Evans, 102 Westridge Dr., Tallahassee, Fla. 32304"

- "4000 tubes starting with #19. 1200 pair shapes present, some rare manufacturer, all previously tested. First re-test prior to shipping. Price: $500 to $3, 50 SASE for list & prices. A. Hicks, 2425 Blake St., San Bernardino, Calif. 92405"

- "swap Pilot Super-Wasp w/coll, WWI SE-065 wavemeter, Arlington house-cooler, Dock crystal det., early QSTs, etc. Want AK-12. Everett Berry, 2551 East Robert St., Lansing, Mich. 48910"

- "Crosley historian wishes to acquire following sets (R. T. A.) 90/50A, Harko, Crosley I (stal set), Mod. X, V-8, Pup in orig. box plus parts or incomplete sets. Dave Crocker, Traveler Pub, Plymouth, Mass. 02360"

- "Stromberg-Carlson 15" color TV, $45. (pickup only), approx 100 new tubes from 1930's thru 40's—$475. SASE for list. Al Jochem, 2047 College Ave., Quincy, Ill. 62301"

NOTICE: Deadline for the JUNE "OLD TIME" ADS is Apr. 15. Out-of-state mem-

members are advised to mail no later than APRil 10.

- unused early knitting tubes: 203, 600, 852, etc. also 24A, 36, 38, 35, etc., also restoring hardware. Want components of old radio SASE for list. Ray Harland, N6AMO, 2902 Mary Lane, Escondido, Calif. 92025

- "trade set (3) interchangeable SW coils with tickler & plug-in mount strap, 3" dia. on celluloid for two Paragon AFTs. L. P. Rayner, 5512 N. 1st Place, Scottsdale, Arizona 85251

- "-various Rigders (#1 & #2; index for #1 thru 10, new tubes "EDM" types, other parts, etc. SASE for list. Need: AK19 lid tag, Crosby 51 lid label, ballast: Belmont # B-9M-15822 or equiv. Christian Funding, WB2WAO, 311 Harding Ave., Jamestown, N. Y. 14701"

- "radio books (1902-46), magazines, catalogs, voltimeters, etc. SASE or stamp for list. Charles Closson, 1290 Glenwood Ave., San Jose, Calif. 95125"
**FOR SALE and/or TRADE**

--- **Radiator 20 instruction book, 20 pages @ $3.00 each ppd. Wish to contact owner of National Thrift Shop offered at Canandaigua Confer,ondaring lot Sat., Sept. 30. Gordon Eklund, 6518 Gunpowder Lane, Prospect, Kentucky 40069**

--- **Aerolux St., Crosley 51, Freed-Eisenman NR-7. Send large SASE for 5-page list of parts, sets, etc. Ceci Wiener, W7944 1041 Main St. Dalton, Mass. 01226**

--- **Serv. man; Riedere 8-9-10-12, Sear Roebuck 1940-43, Montgomery Ward Vol. I 1928-42, Chev. radios, Crosley, etc. Want: Grebe radio jacks for CR-6, 9, 14 or RORK, Dack 84 cata, AK 3078 iron rf xfrdr. Clean Amp, KT7AM, Clear Lake, South Dakota 57220**

--- **battery & AC sets for the beginning collector, also hundreds of books & magazines, SASE for radio or publication list. John Duck 48 Allen Dr., Woodstock, N.Y. 12498**

--- **Circuits Radio Call Book Vol. VI, #2, May, 1923. Contains Canadian & US commuter, amateur stations, etc. SASE, Also have 1926 Federal Mod. E conus receiver @ $75. James Ross, Box 126, Mansville, Ont., Canada LOR IBO**

--- **future collector's item: Original typewriter used by editor of HAM RADIO mag. for orig. issues. Comes with several orig. editorial pages & autograph copy (SCM Mod. 200 electric). Sell or trade. D. Upham, Box 120, Hollis, N. H. 03049**

--- **RADA w/tubes, new appearance & works $275. 8-tube Mod. 49 Freed-Eisenman w/speaker (clean) $100.00, A568 Murdock condenser (p.4), Dack cata. 13) $75.00, 15-panel de Forest w/tubes, Make offer. Art Broth, 40W4 Sherman Ave. SW, Grand Rapids, Mich. 49505**

--- **BC-9A rare receiver & transmitter-sell or swap, also AK-21. Want Mickey Mouse, Snow White & other character sets. Bob Lane, 2301 Independence Ave., Kansas City, Mo. 64124**

--- **matched brown knobs for 1930 to 40 radios 3 for $1.50, 15/16" square brass rod for crystal sets or loose couplers @ 10 per inch, hand-made (new) sliders for 3/16" rod @ $1.50 each. Add 50¢ per order for shipping. Dale Hammer, 2206 Tampa Tr., Bellbrook, Ohio 45305**

--- **AC table radius of the 1930's in wooden cabinets. Sold on best offer basis. Send SASE for list. Albert Warren, Box278, Church St., Waverly, Penna. 16917**

--- **transmitter/receiver Mod. BC-9A Uses (3) VT1 tubes (not included), circa 1920. Very good condition, $95. Fenton Wood, 3122 Aan Arbor Ct., Sugar Land, Texas 77478**

--- **copy of RCA Bulletin #6R, 1922, RCA RF transformer models UV-716 & UV-176 for $1.00. Also Fact Sheet (copy) of "St. James IF vacuum transformer" for $1.00. Thomas Petro, 612 Penndale Ave., Reading, Penna. 19606**

--- **SASE for free list of 1920s and 30s receivers & reproducers. Want hinged box for Westinghouse 2-stage amplifier & audios, Art Harrison, 512 Dalton Frc., Columbia, Mo. 65201**

--- **E. L. Co. 11/27 spark coil, 1913 vintage complete restored for trade in deal for Grebe CR-5 complete. William Hurn, 329 Evergreen Dr., North Wales, Pa. 19454**

--- **Tape UX-20 tubes @ $3. each plus postage. Also have other older types. No list. State your needs. Leo Gibbs, W8BHT, 703 Brookfield Rd., Kettering, Ohio 45429**

--- **send SASE for list of over 100 radio items. No tubes, components or paper items. Send specific want in other areas. Charles Hindke, K4TS, Rte. 11, Box 3, 41 Ferry Rd., Fredericksburg, Va. 22440**

--- **trade/sell British Ericsson xtal set 0/1002, Radiola V complete, Radiola 1960 RF chassis w/xtal, Crosley 51, Cros 2-step audio amp., Radiola III & IIIA plus others. Send SASE. F. A. Paul, 1545 Raymond, Glendale, Calif. 91201**

--- **General Radio 368 tube reactivator (or of the mid 1920's), Contains prf supply, sockets, controls, metering for reaction & emission testing, Mint. A. Smith, Stonehouse, Lincoln, Mass. 01773 (617-259-9525)**

--- **trade Radioactive & AK-3505 with varimeter added (lot?). Want pre-1920 items. Dick Breswiler, 454 Diablo Dr., Pittsburgh, Pa. 15214**

--- **old receivers (homebuilt) or manufactured, transmit/receive tubes many in box. New 964 @ $3., telegraph sounders, Want Marvel crystal set-6" tube. SASE for list. Don Whittemore, W2CZU, 36 Master- ton Rd., Bronxville, N.Y. 10708**

--- **Riedy, RCA Serv. man, old tube testers, set analyzers, early transmitting tubes, bat. sets & spires, lacquer-stick & other restoration items. Large SASE for list. Charles Day, Box 255, South Dartmouth, Mass. 02748**

--- **trade AK-3502, 35, 40 not restored; AK50, 40, 45 restored; Henschel 5838C, S114; National NC103 for early Magnavox equip. Above may be seen at HUBS/AWA meet at Auburn, Geo. Capen, 906 N. Van Buren, Auburn, Ind. 47002**

--- **trade technical books (electronic) for books on old tubes/parts. Need circuit info. info on Philco mod. 80 H. Davis, 1209 N. Market St., Dayton, Tenn. 37321**

--- **trade AK-10C & Stromberg-Carlson Neut. IA for Hamilton Navy chronometer Mod. 21 or old Gurley surveyors transit. Jim Grant, 2855 Central Park Ave. Evanston, Ill 60201**

**A. W. A. LIBRARY AVAILABLE**

The Association has a large library of reference material: RCA, Riders, Supreme, A-K and other manuals; files on early equipment, stations, and people; one of the largest collections of early call books, magazines, photographs and other soft-wares items.

This material is available to members who can visit the Museum. For lack of manpower (handling) and security reasons, the material is not available by mail.

**SINGLE DIAL CONTROL**

Radio historians interested in early radio design will find an article in the Apr. '78 issue of "Technology & Culture" of interest.

Art Harrison has done much research on the development of single dial control and has compiled his findings. There were many who claimed the invention of the first... Maybe Art has the answer.
Wireless Telegraphy

CLARK SYSTEM

Complete Sets of Instruments Manufactured

We manufacture complete outfits ranging from $50 up, for Colleges, Students and Experimental Purposes.

Each set is neatly packed in canvas cases, convenient for carrying where out-door tests are desired.

All Instruments are tested between stations established at Detroit and Fighting Island, Canada, and are guaranteed.

We aim to place Wireless Telegraphy on a practical commercial basis and invite correspondence on all matters pertaining to this subject.

Thos. E. Clark Wireless Telegraph & Telephone Co.

Office, Factory and Laboratory, 67-69-71 MICHIGAN AVE., DETROIT, MICH., U. S. A.

The FIRST radio advertisement? It was found on page 98 of the June, 1903 issue of "American Electrician" magazine. Although wireless had been used commercially several years prior to this date, equipment was generally not available to the public. Can any AWA member produce an earlier ad?
THE GOLDEN YEARS OF RADIO
by the Staff of Ham Radio Publishing Group

Radio nostalgia -- stories of the early days of radio, amateur and otherwise, is growing increasingly popular. In fact, it has become something of a phenomenon, judging by the numbers of such articles appearing lately in amateur radio magazines.

Now the publisher of Ham Radio and Ham Radio Horizons has done the obvious and printed a collection of 12 of these stories. For those interested in the vintage radio era it makes fascinating reading. To anyone who experienced those days personally, it can be a sentimental trip down memory lane.


In "Broadcasting in the Good Old Days" Bob Baird, W7CSD, reminisces on early broadcast station operation, and John Nagle, K4KJ, in "Those Good Old' Radio Magazines," takes a sentimental look back through the pages of early amateur radio magazines. Finally, in "A Night to Remember," Orr retells Clair Foster's chilling tale of the Titanic disaster as it unfolds at the Fessenden receiving station in Brooklyn and draws a lesson from it for today's operators.

The 64-page collection, soft bound in 8 1/2 x 11" format, sells for $3.95 and is available from the Ham Radio Publishing Group, Greenville, N.H. 03038. It is well worth the price, particularly if you have not caught all or some of these articles previously.

(Reviewed by Frank Kohl, W4NM)

JOHN LOGIE BAIRD and TELEVISION
by Michael Hallett

This is the tragic story of one of the world's pioneer television inventors. I say tragic for it is seldom one reads a more moving biography where the hero encounters so many obstacles and dies so young. Baird is England's counterpart to our C. F. Jenkins -- both pioneered simultaneously in mechanical scanning type television. The book is well illustrated with diagrams and pictures of Baird's work. An interesting book and to the best of my knowledge, the only one written on the subject. Easy reading and not too technical. It is a British publication and available only in England. American money can be easily exchanged at any bank or one may send an International money. Price is $1.99 pounds sterling. Send to:

Tudor Rees
64 Broad St., Staple Hill
Bristol BS16 5NL
Great Britain

HAMMARLUND COMET SUPER-PRO
By Bill Orr, W6SAI

Collectors of classic receivers will find another excellent article by W6SAI in the December issue of "Ham Radio Horizons" -- this time covering the early Comet Pro. The original "pro" was released by Hammarlund in 1932 and was a milestone in shortwave receiver design -- it had everything the amateur (and shortwave listener) wanted: a super-het with crystal filter.

Bill tells about its development, circuitry and concludes by saying only 3500 were made. It is a rare one!
On Review

FESSENDE
by E. J. Quinby

Radio historians who are interested in early pioneers will find a series of articles covering the life of Reginald Fessenden in the "Proceedings of the Radio Club of America". The first of the series appeared in the October, 1978 issue.

Jay has taken a new approach in writing about this controversial figure. In addition, he shows some rare pictures including a pix of the famous Brant Rock tower on the ground. (It was toppled by the Navy in December, 1917). Unfortunately, the Proceedings are not available to non-members. Maybe you have a member-friend who will loan you his copy to read.

FRENCH CABLE COMPANY
"PQ"

Telegraph historians will find a well documented history of this unusual organization in the September, 1978 issue of the TELEGRAPHER (Stu Davis, Editor).

Written by historian Don deNeuf, it tells in detail the history of a foreign communication company which laid a cable to our country in 1869. It is unique in that "PQ" is the only company allowed to handle direct traffic between France and the U.S.A.

Starting with a mirror galvanometer (several of which can be seen in the AWA Museum) for copying, later siphon recorders and hot-wire magnifiers, today it uses (and leases) modern facilities and competes with such giants as ITT, RCA and WUI!

One of their original submarine cable stations has been converted into a museum at Orleans, Mass. which is open during the summer months. (See OTB 16-1-16)

ALLIED ELECTRONICS

1979 Engineering Manual and Purchasing Guide is a "must-have" book for anyone who uses and specifies electronic parts. It contains illustrations, dimensions (metric and inch measurements), technical data and specifications, full descriptive explanations and prices, including bulk pricing for large quantity buyers. The guide contains specifications on solid-state devices, IC's, chips, test equipment, wire, cable, microcomputer accessories, PC boards, tubes, readouts, light devices, resistors, pots and controls, capacitors, connectors, soldering equipment, hand tools, transformers, coils, power supplies and much more. Many of the items are cross-referenced and there is a product index as well as a manufacturers' index. 260 pages. Price: $1. Order from Allied Electronics, Department C-79, 401 East Eighth Avenue, Fort Worth, Texas 76112.

THE NATIONAL SW-5
by John Nagle, K4KJ

(October, 1978 "CQ" Magazine)

AWA member K4KJ has done much research in the development of this early shortwave receiver (1930). The article shows seven photographs of the set, circuit variations, coil information and of course, a brief history of its relation to its cousins: the SW-3 and SW-4. Excellent reference.

ANNUAL BUSINESS MEETING AND ELECTION

Highlights:

--Up-dated By-laws...
--Elected Lauren Peckham as Vice-President...
--Voted to have 1979 Annual Conference at Canandaigua...
--Announced Executive Committee consisting of officers to handle routine business between meetings.

R. Ransley, Secretary

HOUCK AWARD NOMINATIONS

The time has come again for members to select nominees for the HOUCK AWARDS. There are two Awards: One for Historical Documentation and the other for Historical Preservation. Give serious consideration as to your selection and send names to the Awards Committee:

Robert Morris, Chairman
Sunset Lake Road, RFD #1
Sparta, New Jersey 07871
What a vast difference in the operation of large vessels today compared with those of my younger days as a radio officer aboard some of them! We sailed out of Port Everglades recently for a Caribbean cruise on the new Cunard Princess (1978). (Incidently, her original construction was allegedly commenced by MGM as one of the five floating gambling casinos, but reportedly MGM backed down and Cunard picked up the construction and completed her into a cruise ship.)

One no longer hears bellowing voices through megaphones issuing instructions upon docking and disembarking. All hands now carry quiet efficient radio handy-talkies.

Gone is the old "bridge telegraph" to the engine room. All functions of speed and direction are carried out directly from the bridge through consoles with an array of buttons, small levers and telemetering indicators. The engines run continuously as do the propellers. The bridge controls the speed and direction of the vessel through the magic of variable-pitch-props.

Nobody "shoots the sun" anymore. (The first officer couldn't even remember where he'd stowed his sextant.) Several electronic navigation systems are available but the most popular is the "Satellite Navigator" which from information originating in a satellite in space reads out constantly on a screen the ship's exact latitude, longitude and provides the time of day to the second.

No longer do little tugs push and pull the big ship when docking and departing: the ship is equipped with a huge (nine feet in diameter) "bow thruster" below the waterline which is like a turbine. On command from the bridge, it sucks in water from one side of the ship and spews it out on the other, pushing the ship horizontally in one direction or the other.

The radio room is also automated. Very little Morse code work is performed. 99% of the ship's traffic, in and out, is handled by keyboard Telex with London via HF radio equipped with ARQ (automatic error correcting system).

"Copying the weather" is no longer necessary. The bridge is equipped with radio facsimile meteorological map equipment and it is updated on weather every few hours.

The radio officers are however, not only responsible for communication, but among their responsibilities is repair and maintenance of the ship's radar and electronic navigation systems. A new name -- "Electronics Officer" will eventually be designated for these jobs.

SILENT KEYS

HARLAN SMITH, WA2PWZ
Newark, New Jersey

SAM CORPE, W6LM
Wrightfield, California

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Communications news
BRIEF REVIEW OF RECENT EVENTS

F. C. C. AT WORK AGAIN
WASHINGTON — The Federal Communications Commission gave preliminary approval yesterday to a plan to establish up to 125 new AM radio stations by ending its long-standing policy of maintaining “clear channel” super stations at night.

The new policy, if given final approval, could end the predominance of those super giants as WABC, WNBC and WCBS in New York; WSM in Nashville, WHAM in Rochester and 29 other 50,000-watt clear-channel radio stations across the nation.

Familiar to insomniacs, truck drivers, and other late-night radio listeners for decades, the clear channel stations were fostered by the commission to provide service to many hamlets and communities that otherwise would have no broadcast service at night.

Such “white areas” at one time included communities where 20 million people lived, commission staff members said, but now only an estimated four million people are beyond the night-time reach of radio, television or cable signals.

The clear channel stations were created by scaling certain frequencies of all local competition, then allowing the stations to pump 50,000 watts of power into their signals. Since radio signals travel better at night, the clear channel stations could often be heard over thousands of miles. At least half the time these stations can be heard at a distance of 750 miles, the commission said.

Under the proposal advanced yesterday, the clear channel stations would have their broadcast area protected only within a certain radius — either within the 750-mile radius of their “sky wave” or possibly only within the 150-mile radius of their ground waves.

Thus, if new stations begin to fill in the service areas at some distance from the former super-stations, many localities may no longer pick up the familiar voices of WCCO — Minneapolis, WWL — New Orleans, KMOX — St. Louis, or WWVA — Wheeling, W. Va.

Compiling Edison’s papers
WASHINGTON — Rutgers University, the Smithsonian Institution and the New Jersey Historical Commission have launched a 20-year, $3 million project to compile and publish the papers of Thomas Alva Edison.

In a ceremony Friday at the Museum of History and Technology, the sponsors signed papers pledging “to make accessible the documentary and factual record” of Edison’s career.

The venture is expected to produce a 15 to 20 volume edition of Edison’s most important papers and a number of special “popular and pictorial” books about the impact of one of America’s greatest inventors.

Headquarters for the project will be at Rutgers in New Brunswick, N.J., but most of the work will be done at the Edison National Historic Site in West Orange, N.J., where much of his work was done.

Charles Tandy, Founded 6,000-Radio Shack Chain
FORT WORTH, Texas
Charles Tandy, 60, chairman of the Tandy Corp., which operates the 6,000-store Radio Shack chain, died Saturday of an apparent heart attack at his home.

A native of Brownsville in the Lower Rio Grande Valley, Mr. Tandy went into business at age 12 when he started helping his father, the late David L. Tandy, sell leather goods at Hinkle-Tandy Leather Co.

In the early 1960s, he consolidated his business interests into the Tandy Corp. and began acquiring stock of a Boston-based amateur radio supply chain store that was to become Radio Shack.

Death Stills The Voice of The Shadow
Bret Morrison, the Chicago-born actor who was the voice of “The Shadow” on radio in the 1940’s and was recently on the brink of a new career in revivals of old-time radio shows, is dead. He was 66 years old.

Pioneer, Lewis Crosley
Lewis Marion Crosley, half of the brilliant team that turned the world in to Cincinnati, died Monday at Providence Hospital, the former site of the Crosley family estate.

He and his brother, the late Powell Crosley Jr., founded the mammoth Crosley Corporation, for many years the world’s most powerful radio station, launched many show business’ famous; kept the Cincinnati Reds in Cincinnati, and endowed the Children’s Zoo and many other institutions.

Mr. Crosley was executive vice president and general manager of Crosley Corporation until it was sold in 1941. He retired at age 66 as executive vice president and general manager of Crosley Motors. He remained on the board of directors of the Eye Bank.

"They were a good team," his daughter said. "My uncle was the more flamboyant one, my father, the careful planner." Sons of a lawyer, the two brothers started American Auto Accessories Company in 1919. Radio was just in its infancy when they established the Crosley Company to manufacture radio receiving sets. With the Depression, people had little they could afford to do, and the inexpensive radio business boomed. Began into the mammoth Crosley Corporation which added broadcasting to manufacturing.

W1V with 500,000 watts made it the world’s most powerful station for many years. The Crosleys can take credit for “Moon River” and careers of stars Jane Froman, the Ink Spots, Red Skeleton, Rosemary Clooney, and many others.

In 1956, the Crosleys sold their interest in Crosley Corp. to Aviation Corp. of America, and the same year brought out a small car, the Crosley. They also manufactured stoves and refrigerators, including the Crosley Shredder, first electric refrigerator with a shelf on the door, invented by a woman, Mrs. McClure said.

AWA IN FORBES
Readers of Forbes magazine had a pleasant surprise when they saw a pix of the Museum and a brief description of AWA activities. Nice copy. (See Nov. 13, 1978 issue)
1879-1979 100TH ANNIVERSARY OF EDISON’S LIGHT BULB

AWA will, with other historical groups, observe the 100th Anniversary of the light bulb. Plans are being made to have a special exhibit of Edison artifacts in the AWA Museum.

Edison items include light bulbs, induction coil, stock ticker and dictaphone. Hopefully, Ralph Williams will include an "Edison Classification" in his Old Time Equipment at the 1979 Conference.

AWA ACQUIRES NAVAL GEAR

George Batterson working with Cdr. Ed Redington, recently brought a truck load of early naval equipment to the AWA Museum -- a gift to AWA from the Washington Navy Yard. Winter weather has prevented the Museum Committee from examining and cataloging the gear. A report on this later.

MUSEUM SCHEDULE

The Museum is scheduled to re-open Sunday, May 6 and will remain open to the public on Sundays and Wednesdays until October 28.

New Equipment in AWA Museum


TUBE IDENTIFICATION information available (basis for Bro. Pat’s Conference talk) 13 pages of valuable information with illustrations. Send large SASE with 41¢ postage to AWA Headquarters, Main St., Holcomb, NY, 14469

AVAILABLE:

Forty (40) Kodachrome slides of the AWA Electronic-Communication Museum with professional commentary on cassette tape. Excellent program for personal use. Describes and pictures all kinds of early radio equipment and stations. Only $21, postpaid.

Beautiful professional color prints of AWA Museum (3 1/2 x 5”) mounted in special gold embossed folder. Two different sets (“A” and “B”) at $5, ea. or both for $9, postpaid (available at cost). Make checks out to AWA and mail to: Al Crum, 16 Costar Street Rochester, N.Y. 14608

BACK ISSUES OF OTB:

See page 18, Dec. ’78 issue OTB

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Rochester, N.Y. 14618

TOWN MUSEUM STORE (in conjunction with AWA Museum) will open May 6. The following items will be available: variety of repro radio catalogs, new and used radio books, replacement audio transformers, crystal set parts and other items for the radio collector.