ANTIQUE WIRELESS ASSOCIATION, INC.
HOLCOMB, NEW YORK 14469

OFFICERS

PRESIDENT
Charles Breland

VICE-PRESIDENT
Kenneth Gardner

CORRESPONDING SECRETARY
Bruce Kelley

RECORDING SECRETARY
Dick Raney

TREASURER
Lincoln Cundall

ASSISTANT TREASURER
Walter Seely

BOARD MEMBERS

Henry Ragan Joe Murray
Al Cram Dick Raney
Harry Lott Walter Seely
Harold Smith C. Dengler
Geo. Patterson Larry Friggs
Cliff Daykin Bruce Holson
Lauren Peckham

ADVISORY BOARD

Bob Morris
Bob Morris
Bob Morris
Lou Moore
El Beddington
Thorn Mayes
Warren Green
Frank Wingard
Joe Pavek

W2ZZ
W2MM
W2UM
W2RE
W2BM
W2AX
W2GZ
W2IR
W2ORB

HONORARY MEMBERS

Marion Armstrong Geo. Cranmer
Lloyd Empson Henry Kowck
Clarence Weeks Elliot Silverth

HOULK AWARD Bob Morris (Chairman)
Bill Gould Thorn Mayes

ATTORNEY
Sherwood Snyder W2FPU

PHOTOGRAPHER
Al Cram W2BM

AMATEUR STATION: W2AN

News Journal
OLD TIMERS BULLETIN

EDITOR: Bruce Kelley
MAKE-UP EDITOR: Larry Trigg
CONTRIBUTING EDITORS:
Larry Trigg
Lauren Peckham
Ken Corden

PRINTER: Don Bay

The OLD TIMERS BULLETIN is published approximately four times a year at Holcomb, N.Y. by and for members of the Antique Wireless Association, Inc., a non-profit historical society chartered by the State of New York.

This publication does not accept paid advertising nor is it liable in any way to any buying or selling transaction entered into by its readers as a result of its contents. The Old Timers Bulletin is available only to past members of the Antique Wireless Association membership fee and its issuance is subject to change as to frequency, content and time from time to time.

Copyright © 1977 Antique Wireless Ass'ns, Inc.

NEWS and general CORRESPONDENCE, write Secretary: BRUCE KELLEY

( Send B.A.B.E. for reply.)

MAIN ST., HOLCOMB, N.Y. 14469

Membership DUES and ADDRESS CHANGE, write Treasurer: LINCOLN CUNDALL

69 BOULEVARD PARKWAY, ROCHESTER, N.Y. 14612

AWA NETS

PHONE (SSB)

Sunday --- 12 noon 3909 Kc.
Tuesday --- 8 P.M. 3866 Kc.
Monday -- Wednesday -- Friday 9:30 A.M. 3866 Kc.
Tuesday -- 2 to 3 P.M. 14270 Kc.

CW (Code)
3554 Kc.

First Wednesday of each month 8 P.M.
Daily --- 4 P.M.

Note: Frequencies are subject to plus/minus 3 kc. to avoid QRM and are E.S.T. or E.D.S.T.

DUES: PAYABLE TO TREASURER

Lincoln Cundall
69 Boulevard Parkway
Rochester, N.Y. 14612

FIRST CLASS MAILING: 1 year- $ 6.50
(Special Handling) 2 years-$12.00

THIRD CLASS MAILING: 1 year- $ 5.00

LETTER TO A.W.A. at HOLCOMB ??
Send S.A.S.E. for prompt reply.

"SAGA" RESPONSE

From members has been excellent. Your name and address has been sent to the publisher who will notify you in the near future of mailing date and price.

It has been rumored the price would be between $40 to $50 which is frequently the case for highly specialized technical books of this type.

If response from other organizations, libraries and schools is as good as AWA, don't be surprised to see a figure around $25.

In all probability there will be but one edition with little likelihood of a further printing. Remember what happened to "Tinfoil To Stereo".....

GROTE REBER MADE HONORARY MEMBER

It is with pleasure the Board announces the name of Grote Reber as an AWA Honoray Member. Grote is recognized as the world's greatest living pioneer radio astronomer. He has been a guest speaker at several AWA gatherings including an AWA Conference at the Ford Science Museum. A reprint of the I.R.E. article relating to his early work in radio astronomy (1930's) appeared in the Old Timers Bulletin (7-1-5). Mr. Reber is currently doing research for the C.S.I.R.O. in Hobart, Tasmania (Australia).
FROM HEADQUARTERS

Notes from the President's Desk

This issue of the Bulletin commemorating the founding twenty-five years ago of the Antique Wireless Association brings to mind the wonderful contribution which Bruce Kelley, George Batterson and Linc Cundall made to the annals of radio history by the formation of our Association. Their interest, foresight and devotion have stimulated others and have produced a record of radio history through the publication of the Bulletin, the traveling slide-tape shows, conferences, and the outstanding Museum at East Bloomfield. We all owe them a debt of gratitude for their services during the past twenty-five years.

At the Board of Directors meeting in November favorable reports were made by Lauren Peckham about the Tube Committee, Ken Gardner on the Advisory Committee and Net Activities, Hank Blodgett on the Novice Classes, and by Al Crum on the Museum Photographs. Your treasurers, Linc Cundall and Dex Deeley, reported a sound financial condition for our Association activities and the Museum. The Museum Fund is now at $17,488. This is an increase over one year ago, but we need a fund of at least $30,000 to provide interest income to meet the annual expenses of the Museum. A contribution on your part at this time, either original or additional, will keep the Fund growing and help ensure the future of our outstanding Museum.

After considerable discussion the Board voted to hold next year’s Annual Conference at Dearborn, Michigan. The dates will be October 7 & 8. Friday’s meetings will be at the Dearborn Inn and Saturday’s will be at Greenfield Village. A block of rooms has been reserved at the Dearborn Inn so you may send in your reservation, indicating you are a member of A.W.A.

The publication of an Annual Historical Journal by A.W.A. is being considered. Several people will be needed to perform editorial, publication, circulation, and planning functions. If you are interested in assisting on this potential project, please write me at once.

At the meeting in Canandaigua of the Advisory Committee to the President I appointed Fred Hammond, VE3HC, as an additional member. Fred’s assistance will be of real value.

During the past year our Association has received much favorable publicity. This gives us confidence that we can continue to carry out the purposes of our organization during the next twenty-five years. We are all members of an association of which we can be justifiably proud.

Charles Brelsford

A Light That Shone Over Theater’s Stars Becomes a Star, Too

The above headline appeared in a recent issue of the Wall Street Journal. It tells of a light bulb above the stage door vestibule in the old Palace Theater (Ft. Worth, Texas) that was installed in 1908 and has been shining ever since -- 68 years or 595,000 hours!! It is rated at 13 candlepower and has never been turned off other than one or two local power failures. They don’t make them that way anymore... (W3AW)

Your BULLETIN arriving LATE? Try 1st Class Mailing and Special Handling. See p. 2
A.W.A. CELEBRATES 25th ANNIVERSARY

The World's Oldest and Largest Organization Dedicated to
Preserving and Documenting the History of Radio.

A Brief History

MEMBERSHIP

This year AWA will be 25 years old. Starting with 10 active members, it has grown to international status with nearly 2000 members making it the oldest and largest radio organization devoted to historical documentation and preservation. Membership rolls lists many public museums as well as members in England, France, Netherlands, Belgium, Germany, Norway, Sweden, Greece, Panama, Puerto Rico, Hawaii, Philippines, Japan, Australia and New Zealand.

OLD TIMERS BULLETIN

AWA has never made a concerted effort to increase membership. By 1960, however, there were members in 20 states and Canada necessitating more effective communication than an occasional newsletter. Thus, the "Old Timers Bulletin" was born.

MUSEUM

The present AWA Museum followed somewhat the same pattern. From a single collection, it grew to about 25,000 items requiring a larger and more adequate display area. The result is our new Museum, which opened in 1974 and became one of the better known museums devoted solely to electronic communication.

DOCUMENTATION

In this brief history of AWA one must not overlook the Association’s documentation of historical persons and events. As an example, members using professional equipment were fortunate to record on 16 mm. movie film and magnetic tape the operation of several high power transatlantic commercial stations of a by-gone era. This was done in the 1950’s. The AWA Tape Library has recordings of Marconi, Armstrong, De Forest, Sarroff, Gernsback and other radio "greats." A current project is a slide/tape show on the founding of the A.R.R.L. starring Clarence Tuska.

TWO NEW BOARD MEMBERS

elected at Nov. 7 Annual Meeting

The Board welcomes two very qualified members to assist them in A.W.A. operation:

Floyd Bennett who is the owner of a small Tool and Die shop in Kirkville, N.Y. He is a long time active A.W.A. member and has shown great interest in historical radio. Floyd has been host to an AWA "Meet" at which time members had an opportunity to see one of the largest and finest radio collections in the state.

Gerard Hall, recently retired as engineer at Television Station WOKR. He has been in the radio field for over 50 years having started as an amateur in the 1920’s. He has been associated with several broadcast and television stations including WHAM. His amateur call is K2ZZ.

NEW ADVISORY BOARD MEMBER

President Breastsford recently appointed Fred Hammond, VE3HC of Guelph, Ontario, Canada as a member of the AWA Advisory Board. Fred has been seen several times on A.W.A. Conference Programs and is a well known tube collector and historian. VE3HC is also well known for his amateur radio activities in Canada where he has appeared on Convention and Banquet programs telling about historical radio.

WESTERN NEW YORK RADIO MANUFACTURERS TO BE FEATURED IN MUSEUM

A new display for the current year in the AWA Museum will be equipment made by local manufacturers. Prominent, of course, will be Stromberg-Carlson made in Rochester. The bulk of the exhibit, however, will be provided by Ken Conrad with receivers made in Buffalo such as Federal, King and Branston. One of the Branston sets is a superhet using 199 tubes--a beauty! Ken tells us King Radio Co. originally made sewing machines and later radios (1925). The company was finally absorbed by Colonial.

PHONOGRAPH "BUFFS"

The Jan. ’77 issue of HIGH FIDELITY magazine is a must. Series of excellent articles on phonograph development plus dozens of sharp photographs. (Joe Garcia)
It is not often one finds an old cartoon pertaining to radio and when one does it is fun to try and tear it apart. The first thing to catch our eye was the schematic (on the floor) for a two tube set -- but the finished product has FIVE tubes! The storage battery is ok -- but the battery (?) immediately behind it looks suspiciously like another (?) -- what -- no 'B's'? --- and the loop antenna sure could use a few more turns spaced a little closer together......

YAAH! YAAH! KEEP YOUR SHIRT ON! HOW CAN I HELP IT, IF IT'S CRACKING SO MUCH?

I WANTA HEAR!

THOSE THINGS'LL NEVER WORK RIGHT.

HEY! LISTEN! HEAR IT? JAZZ MUSIC!

IT'S REAL FAINT, BUT I HEAR IT! WHUH...WHY, IT'S THE BAND AT THE DANCE HALL, DOWNTOWN!

SUCH A CRAZY THING! AND YOU'VE GOT SUCH A NICE PLAYER PIANO! REGULAR HUMBUG!

(We cannot acknowledge the origin of this cartoon since information was not attached -- but I am sure you agree it is a good one. Editor.)

ATWATER KENT

A-K buffs will find the series written by Ralph Williams in "Radio Age" on the history of Atwater-Kent of great value. Ralph identifies all early breadboards and goes into considerable depth (and research) in their development and characteristics. We understand the series may eventually be in book form.

COLLECTORS

will find the best bargain for old time ads in a 2 page newsletter titled "Hoarding 20's" typed by Floyd Paul. Why is it the "best"? -- For the simple reason it cost nothing other than a 50¢! The 4th issue had 15 ads with majority in California. Want a copy? Send 50¢ to: Floyd Paul, 1545 Raymond, Glendale, California 91201

EDISON REPLICA LAMP

PRICE INCREASE

Several members (including AWA Museum) were lucky to obtain a replica Edison Lamp noted in Dec. '76 OTB for $7, before the material and shipping costs went up. Even at the new price it is a "buy" since earlier replicas have sold for much more.

Linc Cuddell purchased one at a flea market in 1972 for $18 and others have paid as much as $25 for some of the earlier wood base replicas.

With current inflationary trend, don't be surprise if in time new replicas hit $25. Before ordering, we strongly suggest you write G.E. for their latest quote (See OTB 17-3-13).

NATIONAL HISTORICAL RADIO CONFERENCE

Ford Museum, Dearborn, Mich. October 7-8-9, 1977
One of the highlights of every AWA Conference is the auction of old gear and the 1976 Auction was no exception. Well over $7,000 exchanged hands in little over three hours of hard work by Joe Pavek and crew. Pre-registration of equipment and participants made a fast moving operation with few errors or holdups. Now for the action.

The equipment is brought to the auctioneer by the work crew in no particular order. However, for members who would like to relate like pieces, I will summarize some of the results in groups. We will start with tubes.

The "oldies" seem to have the drawing power-. UV-201 in original un-opened box sold for $10 and a UV-201A for $8. Then a group of eleven (good but used) 01-As went for $52. This was all quite surprising since one could do as well if not better out in the parking lot flea market. A used WB-104-D with good filament-- $10 and a WB-102-D in original un-opened box $7. Not bad. Four Kellogg 401's and one 403 for $30 with condition unknown.

We were taken back somewhat when a Schickering Type S-700 (tit-top) hit $21. This seemed a little high considering a rare Ahmed "S" tube sold for only $15. What we consider an average "buy" was a new pair of JAN 860 tubes for $21. So much for tubes -- nothing too exciting.

Let us take a look at the telegraph line (no pun intended). An original Martin Vibroplex with cord- $25. (average going price), A Bunnell sidewise in excellent condition- $30. (they are hard to find!), Western-Union mainline sounder for $15. (a fair buy, I have seen them sell for $25.), W-U key and Bunnell sounder- $27.50, a bargain. And lastly, a 15 disc Omigraph in better than average condition- $80. This may seem high but it is seldom an Omigraph appears on the market. I find it difficult to determine the age of an Omigraph since little change was made through the years. It could have been 50 years old or maybe even 70...

I know you're waiting for sale of receivers. Here goes. An AK Mod. 39 six tube battery set (condition unknown) for $18. Later a similar model (AK-33) went for $35 but this one appeared in excellent condition. (The set is one of the later AK battery sets- the single dial- using 201-As with 171-A output). A Freed-Eisemann NR-77 with drum speaker for $75 and an Erla battery set with tubes- $50. These prices are somewhere in the ball park.
How about this one: Victoreen superhet in good condition—$95. 7...and a Canadian Radiola III-A for $65 followed by a regular III-A in excellent condition with tubes for $105. A Radiola III with tubes plus Balanced Amplifier without tubes and one bad AFT for $125. Apparently someone wanted the companion Balanced Amplifier since a lone Radiola III with (2) good WD-11's sold for $52. Continuing with Radiolas—A V in good working condition—$145 (!) and one with poor appearance but good AFT's for only $65. It shows it pays to clean up a set.

RADIOLA III—

Two Crosleys, both in excellent condition: Mod. 51 for $55 and a 52 for $50. A Freeman Masterpiece in fair condition sold for $32. (All collectors should have a Masterpiece since it is one of the first TRF sets.)

Now for some of the "goodies". How about a Westinghouse RA-DA in excellent condition for $470... This seems rather stiff to us particularly since a Canadian RA-DA also in fair condition sold for only $125. Next on the list was a neat appearing W.B. 7-A Amplifier with (3) good 216-A tubes for $70............. It would appear top brand manufacturers rule the roost for a Kennedy Mod. 281 with a set of Baldwin phones brought a high bid of $250 and I am sure it was not the "Baldies" that did the trick.

Now for some early AC models: A Philco Mod. 324 in good working order—$60., Majestic table Mod. 461 (circa 1933) in excellent condition—$47., Radiola 18 AC receiver in working order but badly needing a cleaning job for only $20 whereas one which had been cleaned inside drew $40. There was something for everyone -- a little Silvertone AM set hit the limit at $3.

Let us look at some amateur receivers: National 1-10 VHF super-regen with coils & power supply—$50. (a fair price but in time will be worth much more.) SW-3 with coils in good condition—$75. (I have recently seen them sell for $90.) Hallicrafter S-35 in operating condition for $15. (This set in a few years will be worth $30 or $40.)

Silver-Marshall "Round-The-World-Four"

Now for a classic: A Silver-Marshall "Round-The-World-Four" with coils—$95. This was a buy for my money. And lastly, hold your hats, a Grebe CR-18 SW receiver with coils and instruction book for $340! This set, for some reason, has become a real collector’s item within the past year. It was one of the last Grebe battery sets and a low production item making it scarce. In comparison, the "WM "Round-The-World-Four" and the Pilot "Wasp" were made only a couple years after the "18" and are electrically and mechanically far superior sets for the money. By the way, coils for the CR-18 are more difficult to find than the set......

Grebe CR-18 Low Wave Receiver

Pre-WWII receiving equipment: loose-coupler type receiver with original parts assembled on board—$175., Reproduction of a Navy loose-coupler (original hardware) —$75., Sears 2 slide tuner in orig. box—$67., Signal loose-coupler in excellent condition—$90 and another loose-coupler receiver for $135. It is difficult to describe each of these sets but I think you get the message: anything pre-vacuum tube era is at a premium.

Navy Type Receiving Transformer

Two slide tuner

(Cont. on next page)
Let me give you some other examples: a working Ruhmkorff spark coil (vibrator type) sold for $75. A kick-back preventor (placed in line of amateur spark transmitter) went for $37 (!) and the familiar 200-65 airplane spark coil transmitter picked up a high bid of $113.30 (remember when American Sales were selling them surplus for $5.??)

**SPARK TRANSMITTERS**

- 75 Watt, Portable, Made for U.S. Army Airplanes. Government Cost $55.00 each
- Our Price $5.00 Each
- AMERICAN SALES AGENCY
- 36 Park Row
- New York City

**Components:** An A-K Mod. L horn with open coil (i) sold for $32.50, a good Sterling "B" eliminator went for $10 and a good collapsible loop antenna hit $55. Brandes headphones only made $3.50 (usually $5 is a minimum). The familiar G.R. Wavemeter (excellent condition) drew $40. (There are a lot of these around). This one hurts... a 10 inch early Electrode transmitting antenna insulator got a bid of only $2. Murdock enameled variable condenser - $22. (About average price if in good condition).

**Meter buffs:** may be interested in these two items: G.E. Prec. Voltmeter (circa 1915) with double scale sold for $20, and a Weston (circa 1900) double scale wattmeter worked its way up to $65. This is surprising since we didn't think there was that much interest in meters. And lastly, an early RCA Mod. 77-A microphone went for a high bid of $130.

**Software:** there were some fairly good buys here. John Mill's "Radio Communication" (pub. in 1917) $25. "History of Radio to 1926" by Gleason Archer (an excellent book and hard to find) $39. 26 issues of "Shortwave Craft" magazine (1930-36) $26 and 21 issues of "Radio News" (1932-33) $25 which averages out to around $1 per copy. Not bad. How about this one: a large beautiful felt Westinghouse advertising banner in good condition - $80. (Early radio banners and signs are at a premium.)

Had enough? I hope this summary will give you some idea what equipment is selling for-- but remember, each situation is different: you may have an exceptionally high bid on a certain piece because someone REALLY wants it and has the money. On the other hand, the right bidders may not have been around at time of sale. In this category is the rare 10" Electrode insulator which sold for only $2.

**Final remarks:** The Association is grateful to all participants, particularly to sellers (with only one exception) who donated 10% of their sale to the Museum Maintenance Fund. This is important. As an example: our museum is a public building and requires high liability insurance plus the usual fire and theft coverage. This item alone costs the Association nearly $700 annually. See you at the 1977 Auction! 73... B.K.

---

**AFT SALE!**

Members who attended the recent Conference had an opportunity to purchase new high grade audio frequency transformers for replacement in the Radiola III and other early receivers. The demand was so great that Fred Hammond has generously donated another lot to the Association with proceeds going to the Museum Maintenance Fund. In addition, there will be available an exact reproduction of the Radiola III Instruction Booklet (with heavy cover) giving full details on the set including circuit and operating instructions. The TRANSFORMER and BOOKLET are now available for only $5 postpaid ($5 you pick up). Limit 1 per member. Make check out to: A.W.A. MUSEUM FUND and mail to Floyd Bennett who has volunteered to handle sale: FLOYD BENNETT, 7736 KIRKVILLE RD., KIRKVILLE, NEW YORK 13062.

---

**REMINDEER**

**TWO BIG EVENTS**

Joint THRS/AMTA MEET at Auburn, Ind. Aug. 16
AWA Eastern MEET at AWA Museum on May 14.
COMING EVENTS

ANTIQUE WIRELESS ASSOCIATION

Joint I.H.R.S.-A.W.A. Meet
Auburn-Cord-Duesenberg Museum
Auburn, Indiana, April 16

A.W.A. SPRING MEET (East)
AWA Museum and Locust Lodge
East Bloomfield, N.Y., May 14

NEW YORK STATE APRIL CONVENTION
Monroe Co. Fairgrounds, Rochester, N.Y., May 21-22 (Exhibit)

A.R.R.L. NATIONAL CONVENTION
Toronto, Ontario, Canada
June 3-4 (Program and Exhibit)

NATIONAL HISTORICAL RADIO CONFERENCE
Ford Science Museum, Dearborn, Michigan, Oct. 7-8-9

FALL A.W.A. MEET
Date and location to be announced.

ANNUAL BUSINESS MEETING
Sunday, Nov. 6

What more could you ask?
--but a joint MEETING between
A.W.A. and the INDIANA HISTORICAL RADIO SOCIETY!!

Date: Saturday, April 16th
Time: Registration 8:00 A.M.
       Banquet: 6:30 P.M.

Where: The Fabulous AUBURN-CORD-DUSENBERG Museum at Auburn, Indiana located in the north-east corner of the state near Michigan and Ohio (Rte. 69 and 8).

PROGRAM HIGHLIGHTS
--AUCTION OF OLD RECEIVERS, etc.
--EQUIPMENT CONTEST and AWARDS
--VACUUM TUBE SEMINAR
--A.W.A. HISTORICAL RADIO SHOW
--TOUR THRU THE FAMOUS MUSEUM
--FLEA MARKET of old sets & parts
--plus much more.....

---Unlimited Registration---
Advance reservations necessary for evening banquet. For more information and Registration card, write I.H.R.S. Secretary:
Walt Sanders, 15 Todd Place
Terre Haute, Indiana 47803

DON'T MISS THIS BIG EVENT!

--- SPRING MEET ---
SATURDAY, MAY 14

3 P.M. A.W.A. MUSEUM
(East Bloomfield, N.Y.)
Sale of limited amount of surplus material.

4 P.M. LOCUST LODGE (Ionia, N.Y.)
(3 miles NW of Museum on Rte. 64)
Program: "Old Days in Buffalo"
Illustrated show on early radio companies in Buffalo (Branson, King, Colonial and Sylvania)
TOM ROSIKA, W2GIR, Engineering Staff GTE-Sylvania.

5:30 P.M. Delicious SMORGASBORD
(All you can eat for $6.50)

Entertainment: Slide Show of past Conferences and "Meets" with old time music of the '20s.
Make reservations for dinner before May 10 with Lincoln Cundall, 69 Boulevard Fkwy., Rochester, N.Y. 14612 or Tele. 716-683-0856

BACK ISSUES

Historical reference and good reading....

The following OLD TIMERS BULLETINS remain in stock. Make out to A.W.A. and mail to Assistant Treasurer:
DEEPER DEELEY
8 Brier Circle
Rochester, N.Y. 14618

15--2 16--2 15--2
13--3 15--3 17--2
14--4 15--4 17--3
15--1 16--2

$1. each

10--4 12--3 17--1
11--3 13--1 17--4
12--1 16--4

$2. each

Limited stock --1 per member
2--3 13--2
9--1 13--4
9--3 14--2
11--1 14--3
12--4 16--1

$3. each

Reprints for reference only
Vol. 1 #2 Vol. 1 #3
40¢ each

See page 39 for Back Issues not listed at left.
If you have ever received Morse or Continental code, you must read the following poem. It was sent to AWA by Bill Orr, W6SAI and was copied from a 1935 "KN" magazine. Incidentally, a "Plug" is the name for a landline telegrapher.

THE CHARGE OF THE LIGHTNING SENDER

Up from his chair the other day,
A Plug arose in some dismay,
To answer a call from a distant town,
On a wire difficult to hold down.
The office was warm, the hour was late
As that sender started at rapid rate,
And soon he was going like the wind
With the Plug about fifteen words behind.
And faster and faster the dashes rolled,
And the dots like a torrent uncontrolled,
'Till through that office seemed to pour
Some sixty words a minute or more:
And there in the dim and waning light—
Driving his pen with all his might—
With lips compressed, to his desk inclined,
Sat the Plug, twenty words behind.
Then swift from his pen the hot words flowed
Like chicken tracks in a muddy road;
And as he thought of his terrible need,
He scratched away at his utmost speed;
And soon on his face came a pleasant smile,
For he had caught on to that sender's style;
And as dots and dashes came to his mind,
He soon was not more than ten words behind.
Onward, still onward, at steady pace,
The Plug surely was winning the race.
And when a long "special" neared its end,
He knew full well that the sender could send.
Sometimes ahead, sometimes in the rear,
At last every word to him came clear.
And when they got through, bear this in mind,
the SENDER was fifteen words behind...

FAMOUS UX-210 TUBE

The first popular transmitting tube used by most early amateurs was the 5 watt UV-202 (1921-1925) which was replaced by the famous UX-210. Bill Orr, W6SAI tells about these well known tubes and similar RCA triodes that followed (801,809,812) in the December, 1976 issue of "CQ" magazine.

Bill verifies the unstable operating characteristics of the 202 and tells of the new 210 with its thoriated tungsten filament which was a vast improvement. He also tells us that 210's made after 1927 with oxide filament were excellent for audio work but poor for Class "C" rf use. W6SAI points out that UV-202's are collector items. Our last Tube Valuation listing (2 yrs. ago) showed a used 202 selling for $12. I am sure the price is now close to $18.

An exceptionally well written and illustrated article. Want a copy? Send $1. to: "CQ" magazine, 14 Vanderventer Ave., Port Washington, N.Y. 11050 (Be sure and specify December, 1976 issue.)
THE CREATIVE ORDEAL

The Story of the Raytheon Co.
by Otto J. Scott

(Published in the 1974 New York Athenaeum)

Author Scott states that ARAD must have had the formulae for success because upon its foundations and failures was built the giant RAYTHEON, servant and leader of industry and government.

As you read, you perceive that the formula was: people, brains, science, brains, products, brains, financial support, brains, world affairs and BRAINS...

The founder, Harold Powers, disappeared. His colleagues, Dr. Bush and Dr. Charles Smith of MIT (the "G" tube) and Al Spencer, a lab employee (the Spencer thermostat), were joined by Lawrence K. Marshall, an astute business man who provided science with business support and obtained financial support, whereupon things began to happen.

More people (brains) were added and the chapters titled "the Twenties", the "Forties", etc. thru "the Seventies" unfold the fascinating story about people and events that shaped Raytheon.

You will read of the "B-14" tube, vacuum tubes, magnetrons, radar, atomic bombs, missiles, transistors, tracking devices, rocketry, computers; there is hardly a science not touched by Raytheon. But, more importantly, you will read of the Raytheon people whose lives have been intertwined in world affairs and affected history.

You will be fascinated by this story because your own field may have been touched somewhere in these chapters...

--Ken Gardner, W2ON

BROADCAST STATION WHAM

AWA roster shows well over 200 members who are or have been employed at broadcast/TV stations. It is only natural the greatest number for one station should be in the AWA Headquarters area of Rochester, N.Y. Pioneer station WHAM is well ahead of all others with the following 11 members:

Vice-President Ken Gardner W2ON,
Dir. Jerry Hall W2ZB, Al Roaman W2ZUX
Fred Ambrose-K2KTH, Art Kelley-K2RDB
Bill DeMott-W2DD, Eddie Dunn-WE9C
Geo. Driscoll-W2OAH, Elmer Grabb-W2DCD
Walt Malone-W2PZR, Joe Seiler-W2EB

AWA Members who worked at WHAM are:
Ray Jobes-W2TM and Perry Esten- W6PN

-- have we missed anyone? 館

HISTORY OF ENGINEERING AND SCIENCE IN THE BELL SYSTEM

"The early years -- 1875 - 1925"
PREPARED BY MEMBERS OF THE TECHNICAL STAFF, BELL TELEPHONE LABORATORIES with M.D. Pagen, Editor; 1975; Library of Congress Card No. 75-31493; over 1000 pages. Available from Bell Laboratories, Room 1A-224, Whippany Rd., Whippany, New Jersey 07981. Price: $15.00

"A remarkable treatise devoted to the original Bell invention, early corporate history, station apparatus, wire plant, advent of radio, switching and signaling systems, non-voice communications, materials, components, quality assurance and research. Replete with 28 pages of references and over 500 drawings and photos (!), this text is a collector's galore of historically correct information. Opens the way for wire enthusiasts to collect and precisely identify telephone system artifacts." (Len Silvern)

(End note: Liedow Sibley and others have written glowing reports on this book...it looks like a good one.)
THE NOVICE COLLECTOR AND HIS FIRST AC SET

All-electric receivers made between 1928 and WWII are now the "in thing" with many collectors. This is particularly true with one just starting who finds locating early battery models fairly difficult.

These AC sets are usually housed in attractive wooden cabinets unlike anything made today. A little cleaning and the application of a favorite furniture polish and you have a conversation piece -- but how about the set itself?

It is difficult to resist the impulse to plug the cord in the wall socket and snap the power switch -- but don't! The set may have been inactive for 45 years and anything could happen. Here is the procedure I follow:

1. Be sure all contacts are clean by working each tube up and down in its socket. It is surprising how dirt and corrosion can accumulate on socket contacts. If the set has such refinements, movement of plug-in coils or a bandswitch may help. Lastly, remove the rectifier tube from its socket, usually a 280 in older sets.

2. Now, plug in the cord and turn on the power switch. Try to determine if the power transformer high voltage winding has a short. The best way to recognize this with minimum test equipment (and no fuse) is to listen for transformer hum or watch the lights for a slight drop in line voltage. If either occurs, turn off the set immediately. To confirm your suspicion, check high voltage each side of center tap with a high range AC voltmeter by placing one probe on the rectifier plate connection (small prong) and the other probe to ground. Check voltage momentarily -- then try same on the other plate connection. If there is a wide discrepancy between the two voltage you're in trouble -- they should be about the same. Little can be done in repairing such a transformer and the odds of finding a replacement are not good, particularly an early one with multi-filament windings for 226's, 227's, 171's and 280 rectifier.

If, however, everything appears normal, check to see if all tubes light. Most collectors have a fairly good access to AC tubes. Keep in mind it is not necessary to replace a defunct tube with exactly the same number. As an example: RCA UY-224, 224, 24A and trade numbers such as SX-224, 524 are all interchangeable.

3. Now for the big moment. Re-insert the rectifier tube and again turn on the power switch. Look closely at the rectifier plates. If they begin to show a reddish color or a very distinct

CROSLEY MODEL 609-610 AC.

Typical early set using 3 different filament voltages and hi impedance output (71-A). Note double section electrolytic filter condenser. We might point out the full high voltage is on the speaker-- so don't have one hand on the chassis as you plug it in.
blue appears between the filament and plate, turn off the set immediately. There is a short!

When this occurs, the short is usually a filter capacitor. Old wet electrolytic (particularly Mershons) condensers are notorious for shorting out. You will find it difficult to check individual capacitors for a short without first disconnecting one lead from the circuit.

Once found, the collector who is a perfectionist will remove the guts from the original metal housing and insert a new smaller replacement thus retaining original component appearance. Remember it is wise to use replacements rated at least 50% greater than the actual voltage in the circuit. In a 200 volt circuit, use a capacitor with 300 volt rating, etc.

By now, hopefully the set is working providing the by-pass condensers and resistors pass the test. A word of advice -- don't try to adjust padding condensers. The odds are the set was aligned when it was discarded 40 odd years earlier. You can try "peaking" a TRF set but not a super-het unless you have a signal generator and the know-how.

A tip on loudspeakers: Very early AC sets generally used the same speaker as their contemporary battery models: the familiar high impedance magnetic. However, by 1930 a new type was in general use: the electro-dynamic. This type speaker can be easily recognized by its large field coil and additional connections. In rare incidents, a separate power supply was mounted on the speaker chassis to excite the coil.

The most accepted (and practical) method was to obtain the necessary excitation by using the field coil as a filter choke in the high voltage power supply. I bring this to your attention for a good reason. If your receiver uses an electro-dynamic speaker and the cone or voice coil is damaged, it is going to be difficult to repair or replace.

The solution is easy. With the speaker field coil in the circuit, measure the voltage across the coil. Remove the coil and replace with a conventional filter choke. It may be necessary to try several chokes starting with 30 Henries and work down to obtain the desired substitute. Be sure the choke can handle the current.

Of course the old speaker is replaced with a modern permanent dynamic speaker. It is all worth the trouble since unlike a battery receiver requiring "A", "B" and "C" power supplies, you now have a set that plays!

--- Carl Zeigler

What's Coming Next!

in Future AWA Bulletins

"Old Cortland Street" (Bob Hertzberg)
"History of Parker & Williamson Co." (Jack Williamson)
"History of Haldorson Co." (Geo. Hauske)
New series of Tube Quiz and Ans.
(Andy Tyne)
Development of W.E. Monitoring Receivers (Bob Morris)
"The Paragon Radio Telephone" (Ken Gardner)
"History of Day-Fan Radio Company" (Bill Biddle)
"Are All Collectors Good Guys?" (Bill Hinkle)
"How to make a Tesla Coil" (Thorn Hayes)
The recent OTB write-up on C. Francis Jenkins prompted me to look further into the history of early television. As we all know, early TV was developed around some form of mechanical scanning. In addition to Jenkins, there were Baird in England, Alexanderson at G.E., engineers at Bell Labs, and a host of others who all experimented with a revolving disc before Zworykin and Parnsworth perfected electronic scanning.

Some used a single rotating disc with a series of holes in a form of a spiral, while others used several discs or a drum to record and receive the image.

But how about the man after whom the rotating disc was named: Paul Nipkow?

A search through several books on early television revealed little about Nipkow. In fact, few even mentioned his name. A forgotten man.

Then I read a report written 44 years ago (Late 1932) by Wilhelm Schrage who found Nipkow living in Berlin, Germany. It was a most interesting reading. See if you don’t agree. -B.K.

SCHRAGE’S REPORT

Already for years the famous Nipkow, the ingenious inventor of the classical telesisor, has passed for one of the tragic figures in the ranks of the inventors who did not live to see their ideas realized. The only thing known of him was the German patent of January 6, 1884, Patent No. 30,105. So much the greater was my amazement, when one day, in looking through the fat Berlin directory, I suddenly saw before me the name of the great television inventor, "Paul Nipkow," with the occupation given as "head engineer, retired." Although the matter looked very improbable and it reads in black and white in all bibliographies that Nipkow was a Russian from St. Petersburg (now called Leningrad), I nevertheless set out. The house in old Pankow, in one of the most beautiful suburbs of Berlin, I soon found. There was the door plate with the name "Paul Nipkow," too. But although I am an old journalist and have done many difficult things, I really lacked the courage to ring the bell.

As a matter of fact, what would the people in there say, if I should ask them about the inventor of the telesisor? Was there perhaps a totally different Nipkow living here, one who simply by chance had the same name as the great Russian? A Nipkow who had never heard of television and would think I was making a fool of him? I knocked—and stood at the door, awaiting with conflicting emotions what would happen.

The door slowly opened a little. Behind the narrow slit stood an old grey haired woman. At the question: "Please excuse me, but does the inventor of television live here?" she took on an expression which the words "incredible" and "confused" are too weak to describe. I should have liked best to run away at once. Then came an-
swer an stammered "Yes," a "Yes" so prolonged that I was inclined to assume that I had taken the long trip from Berlin to Pankow in vain. Finally the old lady, after a long and thoughtfully pause, said, while gently closing the door, "Yes, I'll just go and ask."

Now I waited outside nervously, expecting at any moment a very "forceful" answer or even perhaps the impact against my head of a hard object capable of producing severe injuries.

But nothing of the kind happened. A smooth shaven man of about 35 opened the door and said,

"Please come in, my father will be right here."

I sat in a room which was adorned according to the good old Berlin custom with a plush sofa and countless knickknacks. Antique—but very pleasant and comfortable. After a while there came in a man apparently about 60, who, while extending his hand to me, "Yes, I am the inventor."

He told as freshly and gaily as a twenty year old, how, on Christmas eve, in the year 1883, with his stomach not too well filled, he was working at his favorite problem, the telesisor, considering everything this way and that, and how he suddenly came upon the long desired solution, at midnight or perhaps a little later.

"I jumped up," said he, "and danced around the room like one possessed, so that my landlady came into my room full of terror, fearing that something had happened to me. Actually something had happened to me, but something delightful, something which made the hitherto so gloomy Christmas a brilliant festival, the most beautiful Christmas festival I can remember. Suddenly my stomach no longer called for food, I was gay, rich, and happy."

Very interesting was his answer to the question of how he had occupied himself with the idea of constructing a telesisor. Nipkow laughed and said, repeatedly twirling his fine large mustache, like a sergeant's which was not at all grey.

"Well, that is not as peculiar as you think. At that time the newly introduced telephone was in the center of general interest, like the radio today, and I said to myself that the telephone is imperfect, if one cannot see the person with whom one is talking. And I calculated correctly then, about 50 years ago. Nowhere is there so much trickery and harm as in telephoning, just because the speakers cannot see each other."

"Please tell me, Herr Nipkow, you surely offered the apparatus to the Postal Department, or did you find some other possibility for using it?"

"Neither the one nor the other, I was so poor that I had to let my patent lapse after a year, I did not even have the money to continue my study, to say nothing of the money for making experiments. You see, originally I wanted to become a teacher, but when my father died, there was nothing else for me to do, after performing my military service, than to work for the still existing Signalbau Company, where I remained for 32 years, at the end as head engineer."

"Are you still occupied with television today, and have you been so in the mean time?"

"It is only in the last few years that I have fetched out again my old hobbyhorse, which I understood very well how to ride, as you can see from my old patent. I have also applied for two very good new patents. One concerns a new synchronizing arrangement and the other a so-called 'picture mill'."

"Please, Herr Nipkow, what do you think of the present televiser models?"

"Well, as a simple man I cannot say that so simply. You know, what the
others have produced with the disc television—according to my basic patent—will not set the world on fire. After all, it is mostly only my old design, perfected according to the present status of technology. In America, I have read somewhere lately, an American named Jenkins has invented a drum televsor. At any rate that is something new. There is at least a new idea in it, though Heaven only knows whether it will prove practical. If I am not mistaken, however, the Braun tube, the long glass tube with the deflected cathode ray, has the most prospect for practical realization."

"Herr Nipkow, please tell me when and where you were actually born. In biographies there are some very comical data. You look so young, yet it is 50 years since you applied for your patent on the perforated disc televsor named after you."

"I was born on the 23rd of August, 1860, at Lauenburg in Pommerania, hence about 300 kilometers from Berlin. Oh yes, we Pommeranians last well, we are a hardy stock. Your assumption that I am Russian is therefore wrong. I am a native German and believe a good German, to boot."

"Herr Nipkow, before I leave, one more question: What did the scientists say about your televsor at that time?"

"I spoke at some meetings of engineers and met with enthusiastic approval. I was also permitted to publish an article about my invention in the 'Electrotechnische Zeitschrift'. That was all."

"Well, Herr Nipkow, perhaps you will have better luck with your other inventions!"

Little is known what happened to Paul Nipkow in Nazi Germany after Schrage's visit. Can any AWA member add to this report?

RCA Institutes Formed

RCA Institutes, Inc., has been formed as a subsidiary of the Radio Corporation of America, with Rudolph L. Duncan as president. Headquarters and main school will be at 256 Broadway, New York N.Y. The new company has acquired the Philadephia School of Wireless, and the Eastern Radio Institute of Boston. New schools will be started in Newark and Baltimore, and others are planned for principal cities. The resident schools will provide regular classes for instruction in commercial radio operating, servicing and radio mechanics. Each school will provide correspondence courses as well.

Chas. Freshman Returns

Through acquisition of the Colonial Radio Sales Co., Inc., of New York City, Charles Freshman returns to radio. Chas. Freshman Radio Stores, Inc., has been formed with Chas. Freshman as president. B. Abrams (president), Emerson Radio & Phonograph Co., and Sidney A. Joffe (formerly merchant manager of Colonial Radio Sales). Eleven stores are in the chain and headquarters are at 5 East 43rd Street, New York.

Lofitin Sells Patents to R. C. A.

Sale of a group of patents by the Lofitin-White Laboratory to the Radio Corporation of America has been announced by E. H. Lofitin. The sale includes the non-reactive plate circuit method of preventing oscillation and the constant coupling system published in technical papers some months ago. The sale does not include the direct-coupled audio amplifier which the Lofitin-White organization has developed.

DeForest vs. R. C. A.

Claim for triple damages against the Radio Corporation of America was filed by the DeForest Radio Company on September 11 in the United States District Court at Wilmington, Delaware, as a result of the suit fought and won by the DeForest company with regard to the violation of the Clayton Act by the Radio Corporation, according to a statement issued by J. W. Gurnsey, who claims that his company suffered serious financial losses as a result of the much-discussed Clause Nine.

General Motors Buys Day-Fan Electric Company

Entry of General Motors into the radio manufacturing field was announced late in September by Alfred P. Sloan, Jr., president of the corporation. General Motors has purchased the entire business of the Day-Fan Electric Company, of Dayton, Ohio, and receivers made by this company will now be known as a product of General Motors. There will be no change in the policy of the Day-Fan Company, according to Sloan's statement.

Previous to this announcement, David Sarnoff, executive vice-president of the Radio Corporation, put to rest the rumors that General Motors would take over the distribution of Radio-Victor products by stating that negotiations had been in progress between General Motors and R.C.A. only with regard to licensing the motor organization to manufacture receivers. Purchase of Day-Fan carries it an R. C. A. license.

Addition to Crosley Plant

The new eight-story addition to the Crosley plant at Cincinnati is nearing completion and at present three floors are already finished and in operation.
I have been employed by the Mallory Controls Company, a division of the P. R. Mallory & Company, Inc. for nearly 20 years. I am personally acquainted with three men who moved with the Yaxley Mfg. Co. when it was absorbed by the Mallory Company in 1932. These three men, when they retired, had a total of over 125 years of unbroken employment with both Yaxley and Mallory.

I received the following information from George Puermer, formerly the Chief Engineer of Mallory Controls Company, who started work as draftsman at the Yaxley Company when he was seventeen years old.

The Yaxley Manufacturing Company was founded by Ernest E. Yaxley in Chicago in 1916. (This date is easy for me to remember since it was the year in which I was born.) He was the guiding hand in the business until his death in 1928. The sales of all Yaxley products were handled by the Sparrow Sales Company of Chicago. It was common at that time for a manufacturer to let another company sell its products. Chicago Telephone Supply Company (now CTS Corp.) sold their products through Herbert H. Frost, Incorporated. Ray Sparrow later closed the sales company and became an executive vice-president of the P. R. Mallory & Company, Inc.

After Mr. Yaxley passed away in 1928 the company management decided to sell out. At this time Yaxley consisted of an Electromagnetic Division, and a Components Division. The Electromagnetic Division was sold to

**Yaxley Special Switches**

There are almost limitless possibilities for different spring arrangements with Yaxley switches. Write for prices on special switches, giving as much information as possible together with sketch of spring arrangement wanted and thickness of panel.

**Yaxley Mfg. Co.**
9 So. Clinton St.
Chicago

Frank Rowell and today is the Guardian Electrical Manufacturing Company.

The Components Division made telephone plugs, jacks, jack switches, wire wound resistors (both fixed and variable) short wave selector switches, dial light assemblies, and terminal boards. It was sold to the Mallory Company in November 1931 and was moved to Indianapolis in mid-February 1932.

In 1951 the remaining product lines, namely selector switches, jacks, plugs, and both fixed and variable wire wound resistors were moved to the Mallory Controls Company plant in Frankfort, Indiana. They are now in the process of phasing out the manufacture of jacks, plugs, and some types of switches. 1976 marks the 60th anniversary of the founding of the Yaxley Mfg. Co.
THE MUSEUM

W2AN ON THE AIR

A B&W transmitter (a generous gift from W2RIZ) and a National receiver will be in operation at the Museum this year using the club call W2AN. These two units are relatively new compared to the older equipment of the 20's and 30's that has been used in the past. This newer equipment is necessary since the Association has many "ham" visitors (as well as members) who enjoy 40 and 80 meters CW operation -- and who don't have the benefit of a lengthy lesson on how to operate the old gear! In addition, the station will be available to W2UTH's AWA Novice Class which has been meeting at the Museum.

MUSEUM PHOTOGRAPHS

40 beautiful Kodachrome slides of the AWA Radio Museum with script are available for only $21 postpaid (U.S.).

Two sets of 8 color prints each in special folders of Museum at $5. per set postpaid. ($10 for both sets.)

Enlargements available on enquiry. Order from:

Al Crum
15 Costar St.
Rochester, N.Y. 14608

New Equipment

in A.W.A. MUSEUM

RECEIVERS: W2IIE
TRANSMITTERS: W2RIZ
BOOKS: W2RIZ, Morgan McMahon
MISC.: W2UTH, W3CPM, W2IIE, George Greene and Paul Feldman

NEW RADIO MAGAZINE

It is not often one has an opportunity to witness the publication of a new magazine. Such a magazine is HAM RADIO HORIZON designed primarily for the new radio amateur and novice. The first issue (March '77) looks great. Interested? Write: Ham Radio Horizons
Greenville, N.H. 03048

A.W.A. MUSEUM RENDEZVOUS FOR SCHOOL CHILDREN

Pictured is one of the several bus loads of school children that visited the Association's Museum last fall. Field trips of this type are usually planned during the week and by appointment. Classes range from 5th graders to college students. You, as AWA members, support these field trips through your contributions.

(Photo W2BwK)
RESTORING OLD EQUIPMENT

How did you SOLVE a problem when restoring an old receiver? Drop us a note telling how you did it.

‘better than new’

Unusual restoration job by Bob McFarlane, W4BKS of Winston-Salem, North Carolina.

Bob always wanted a "John Firth Model 230A receiver but all he had was a cabinet, an un-wound variometer, a few knobs, binding post strip, schematic, and a picture plus a modern machine shop full of power tools and a great desire!"

200 hours later and he has the set pictured above. Assuming his time (excluding material and machine shop investment) is worth only $1 per hour, the set is worth $600. Something like this, however, cannot be evaluated in dollars and cents. The REAL value is accepting a challenge and producing results one can be proud of.

As an example, it took Bob six hours to engrave the panel. Can any other AWA member claim a restoration with such excellent results?

The coil form was made from .020" insulating paper and epoxy. Bob wound the AFT's and printed the new labels with original wording "Coto-Coil Co."

Practically all of these parts had to be made including molding the rheostats and sockets and making var. condenser.
OLD TYME HAM ADS

OLD TYME ADS are FRES3 to members who are interested in collecting and restoring historical equipment as an amateur. They are not to be abused.

RULES FOR ADS:
1. Material must be over 25 years old and related to radio or electricity.
2. Ad MUST be written on separate sheet of paper -- not part of letter. For acknowledgement-- send S.A.S.E.
3. Give full address, Zip number and call letters (if any).
4. AWA will not print repetitious ads or ones indicating regular sale for profit.
5. The Association is NOT responsible for any transaction.
6. AWA retains the right to reduce size of ad if OVER 7 lines including address.
7. Only ONE ad per member per issue.
8. All ads must be received 6 weeks prior to mailing date. (See deadline dates on this page.)
9. Mail to: Antique Wireless Assn., Main St, Holcomb, N.Y. 14469

WANTED: Flat coil for AK10 w/o tap switch, Crosley 50 cabinet. Have AK10B parts for swap. Also early W.E. transistors @ $2 ea., W. Harder, 911 Northrup W., Lansing, MI. 48910

WANTED: Early broadcast microphones for permanent display in lobby. Harry Martin, PO Box 415, New Palestine, Ind. 46163

NEED desperately up to 6 WD-11’s. Will pay top price with good filaments. Doug Kahle, W7RA, Box 3368, Sunriver, Oregon 97701

FOR SALE: Philco Cathedral Mod. 89, RCA Cathedral Mod. 74-8, Fried-Biseman Mod. 40, Philco Rad., Phonos Mod. 46-1201, Arbordale Mod. 45. Write: Howard Grantoff, 21465 Lottsonville Rd., Silver Spring, Md. 20910


WANTED: "Archers History of Radio to 1926" by or trade. H.B. Davis, 1201 E. Riverside Dr., Indialantic, Florida 32903

LOOKING FOR: Info on early Federal receiver, factory or kit. Have reprints of Federal Catalog, manuals, schematics, etc. SASE for details. Want: Early Federal's in any condition. Dick Schenberger, 1975 Hertel Ave., Buffalo, N.Y. 14214

WARNING TO COLLECTORS!
Do NOT send money OR gear to strangers --- particularly if the sale is over $200 and they are seeking rare commercial equipment such as Marconi and De Forest. Check sale first with known collectors. AWA membership can be confirmed by writing to Treasurer. (Note: unfortunately, non-members have access to AWA Bulletin.)


WANT: Baseplate for AK-35, base for AK Type M horn, binding posts & socket brkt. for Tuska 224, AK horns Mod. G, L, sets Mod. 19, 21, 24 & Cathedrals (AC), Crosley 50. Dave Crocker, Tavern Path, Plymouth, Mass. 02360

WANT: Riders orig. unabridge Vol. 1, 2, 3, 4 & 5. Trade 10 volume Hawkins Electrical Guide (1915), Elco Mod. 221 VTVM, Thungar bulbs, A&B battery (mech. rect.), medical shocker, etc. T. Wickstrom, 5290 Hidden Bay Ct., Lake Elmo, Minn. 55012

SWAP: Radiola special one tube regen in working order for Radiola Concert crystal set in good condition. S.N. Blake, K1CPW, 186 Summer St., Andover, Mass. 01810

SELL: set of Aero coils in original box, never used, 17-30 meters with mounting block-$10.00 Cliff Daykin, W2AE, 19 Oxford Place, Geneva, N.Y. 14456

WANT: Radio chassis RC-427 (panel has ten pushbuttons), 4w supply 75-83.12 spkr. RL-70F-5, as used in RCA TRK-120, TRK-12, etc., Carleton Sauer, 256 West 85th St., New York, N.Y. 10024 (212-873-2954 collect)

PRINTER DEADLINE FOR OH "ADS:
March issue: Jan. 15 June issue: Apr. 15
Sept. issue: July 15 Dec. issue: Oct. 15
Our printer MUST have OHB on these dates. Mail service varies, so mail your ad at LEAST one week before...

SELL: 300 old tubes in orig. cartons, SASE for list, $5. each per tube. Have AK Mod. 108 breadboard with tubes, works. One Mod. 108 breadboard w/tubes, works. Trade for old Scott Philharmonic or will sell. Rev. G.J. Thomson, 11031 Ridgeland, Chicago Ridge, Ill. 60415

WANT: any Kellogg parts, especially varicouplers and Aerolita Sr. or Jr. box. D. Spence, 9700 South Cass Ave., Argonne, Ill. 60439
FOR SALE: rare magazines titled THE AERIAL pub. by British Marconi Co. for employees between 1920-21. Write for info. Also 1920 thru 1929 QSTs with w/o covers. Very reasonable. State your wants. All money to AWA MUSEUM FUND. Dexter Deeley, 8 Briar Circle, Rochester, N.Y. 14618

FOR SALE: Send SASE for list of tubes, parts, books, Riders and SAMS. Darrell Parrack, 540 Woodland, Mob Crell, MO. 65270

TRADE: Want Halldorson battery radio and Admiral Tuner-Detector unit. Have Galliradian 10, Radiodyne WC-17 & 2C345 detector unit to trade. Geo. Haukse, 1922 E. Indiana Street, Westview, Ill. 60187


WANT: Crosley Mod. 51 or 52, Fenton Wood, WNSVXU, 3122 Ann Arbor, Sugar Land, Texas 77478

WANT: Magnavox loudspeaker of 1920-1923. Please state condition and price. Paul Klipsch, P.O. Box 688, Hope, Ark. 71801

WANTED: Three (3) dials for Atwater-Kent 5 tube Mod. 20 & one dial for Type TA AK. A.W. Wall, 1046 South Hewes Ave., Terminal Island, Calif. 90731

WANT: 2 or 3 tube radio with tubes. Crossley Pup complete. All set in wood cabinet. Pls state condx & price inc shipping. Pet Philippi, 15906 Gainsborough Rd., Potomac, Me. 20634

FOR SALE: AK 108 all orig. in beautiful condx. best offer. Can send color photo. Stromberg-Carlson spkr, mod. # not known, 15" cone on tripod base. Gordon Condon, Box 314, Brookville, Maine 04617

FOR SALE: Vintage radio parts. Ford spk, coll, RME-5 receiver, RME VHF converter, radio books, etc. SASE for list. Richard Cohen, 1511 Bayshore Blvd., Tampa, Florida 33606


WANTED: RCA TV-TRK series, scanning disc TV hardware & related literature. Bill Russell, 646 1/2 Fulton Ave., Van Nusa, Calif. 91011


WANTED: Nicelitercran from receivers the 300's. Also catalogs. Will trade QST's & CQ's or whatever? Nicholas Vangoff, 21369 Audette, Dearborn, Michigan 48124.

SELL: Several pages of equip./mags/books. SASE for list. Want: Anything wireless. Rick Ammon, Box 104, Mt. Carmel, Ill. 62863

WANTED: for Throla 57 (doughnut coil 5) a dial pointer. Also a chrome Scott. Larry Flegle, 4015 E. 5th Ave., Hialeah, Florida 33013

WANT Wm. B. Duck catalogs #12, 13 & 14 and any other radio catalogs. Also AK broadboard items & brass binding posts. Buy or trade. Glen Angle, W3AJM, Clear Lake, South Dakota 57226

WANTED: speaker to go with a 1925 Pada. Jack Smith, 700 SW 16 Pl, Gainesville, Florida 32601


WANTED: Horn drivers for Magnavox music master, AK, Thordora. Service data for RCA 18T, 18F, 155. What is at lower right on Splitdorf NV200A front panel? Merrill Bancroft, 169 South Row Rd., Townsend, Mass. 01669


SELL/TRADE 6 adept battery radios, 6 early AF sets. Want old 1-2-3 tube & crystal sets. $22 for list. Aaron Solomon, WEC, 8 Crickton Park Road, Dartmouth, Nova Scotia, Canada, B3A 2N8 902-466-5188

SELLING some of my collection, 3 lists available @ $1 ca (refundable). Radios, publications & misc. (spkrs, tubes, etc.) of interest to new & intermediate collectors. SASE @ 25¢ stamps. W2GHF, Box 161 West Hurley, N.Y. 12491


TRADE: Mercury Super-10. Looking for Marconiphone I with amplifier or A-K broadboard. Bernard Payne, 116 Pallasay S.W., Calgary, Alberta, Canada T2V 3Y6


TRADE/DEAL: Rider L-V abjr. XXIII-XXII (11 books) for original I thru VI. By Radiola RA chassis, Jewell 15B, 15C, Weston H, J, I, instrument catalogs. C. Orval Parker, S.R. Box 13, Pocono Summit, Penna. 18346

HELP: i need 4 prong socket and rheostat for Kennedy 110. Jack Allison, 160 South Country Dr., East Patchogue, N.Y. 11772

WANTED: QSL & UX9Y's, please quote price & condition. For sale: 5-1928 QST's with good covers $2.50 ea. Also 1-100TH's in orig. cartons - make offer. P.A. Paul, 1545 Raymond, Glendale, Calif. 91201

WANTED: Literature on pre-1935 vacuum tubes such as ads, brochures, manuals, magazine articles, etc. Write indicating condition & price. Sterling Jensen, 16300 Shamhart Dr., Granada Hills, Calif. 91344

WANTED: Wireless Age after 1915, QST prior to 1921, bottom cover plate to AK-35. Fred Ritter, 930 First Place, Longwood, Florida 32750

FOR SALE: Large number of early AC sets including Cathedrals. Want catalogs, test sets or meters made by Jewell Electrical Instru. Co., Chicago. Dexter Deely, 8 Briar Circle, Rochester, N.Y. 14618. Tel. 716-361-9633

TRADING: Tuna 300, 3 tube Regen for Zenith 9 tube table model, 1936, Model 9A30. Don Knotts, 3158 N.E. Azalea, Hillsboro, Oregon 97123

SELL: Varioimeters: AC Dayton 4", Kurz-Kash 4", Gilfillan 5", & DeForest Honeycomb coil @ $25 ea. Magnavox R-3 hom $50, Radiola 24 @ $75, old books, 2000 old AC tubes, 2627, etc. Annie Schwartz, W6FQG, 4728 Dunman Avenue, Woodland Hills, Calif. 91346


SALE: Early crystal sets, radios & radio collectibles. SASE for list. Bart Noyes, 4 Pinewood Dr., Stratthen, N.H. 03885

SELL: 61 issues of radio magazines. Supplements from New York news papers from years 1923 to 1928. Large SASE for further info. Herman Pasthe, 10 Jackson St., Skatesburg, N.Y. 10774

WANT: Factory made crystal sets & loose-couplers, DeForest loop antenna, Clapp Eastham HR panel mount tube socket & nickel plated Neutroumow tube cover. Bob Lessard, 4307 N.E. 5th St., Minneapolis, Minn. 55421

WANTED: Information, brochures and literature on Mehdnoyne receivers. Andy Johnston, 221 W. Lincoln St., Thacka, N.Y. 14850

WANT: World's Record sets, Scotts with copper shielding, McMinn Silver Masterpiece 1, LI, IVY, detector for DeForest D-12, parts for Kennedy 110-3 neutroumow covers. Have sets to swap. J.G. Baler, 2438 So. Howell Ave., Milwaukee, Wisc. 53207

SELL: Offset press repros of orig. Instru. booklet that came with Grebe CR7. $4. postpaid (Money-back-guarantee) Write: R.V. Klusewitz, 325 N. 2nd St., Reading, Penna. 15601


WANT: Tuner, legs and off-switch for Radiola 33. Alan Lendaro, 25 Fenton Rd. Danbury Conn. 06810 (Tel 203-746-9164)

WANT: Any glass enclosed set, Colonial Globe, Hart, Scott, factory xtal sets. Send SASE for list of items for trade. Richard Cane, 3931 N.W. 21st St., Sunrise, Florida 33322

WANT: Will pay for pictures & schematic for Wireless Improvement US Navy 1/2 KW panel radio set 05606 to help restoration. Also need CB233 MC set, 1KW 500 Hz for above. August Linke, 303 Wisconsin Ave. Oceanside, Calif. 92054

SELL: Silvertone All-Wave "Wonder-Radio" Mod. 15663 (see 1937-38 Sears cata. p. 558 #57 P#663). Also want Hallieafter S38c in very good condition. Gerald Lackey, 4 Sunrise Ln., Kirksville, No. 63501

WANT: 1925 Greene Portable Concert Selector, 3 tube, also other Greene models. Designed by Lloyd Greene (W1ACF), 1st Editor of Boston Globe. Write: Lloyd Greene, Jr., The Millstream, Chelmsford, Ma. 01824

SELL: 1934 Scott All-Wave 15 chassis and speaker, less pw supply. Will trade for old battery set. J. Walschitz, WD2QF, 229 Saires Ln., Pleasantville, N.Y. 10570


WANT: Crosley book condenser, AK vario- meter & coupled circuit tuner for breadboard & AK parts. Lee Kemp, WDFD, Box 15, Frederick, Md. 21701 (301)662-3452


WANTED: Commercial rotary gap for demonstration spark set. Also oscillation transformer. Sell/ trade Motorola 7 TV. Paul Crum, 6272 N. Cicero Ave., Chicago, Ill. 60646

WANT: AK20 audios, Kellogg brown bakelite vario-coupler, vario-meter and #502 diamond loading coil. David Spence, 3700 S. Cass Avenue, Argonne, Ill. 60439
FOR SALE: Photocopy of entire Adams-Morgan 1913 catalog with early radio equipment, generators, trains, model boats, planes, etc., plus call letters for commercial station. 130 pages reduced to 70. $25 per set. Wardell Smith, 292 E. 65 Glenwood Rd., Upper Montclair, N.J. 07043


FOR SALE: hard to get wire. No. 22 DCC, No. 24 DCC, 50 strand. Sold in 1 lb. spoons. #22 (600 ft.) $10.00, #24 (715 ft.) $10, Litz (310 ft.) $15. Send check and SASE (also SASE for sample). Larry Wright, 1200 W. Lake Ave., Apt. 101-C, Glenview, Ill., 60025 Ph. 312-729-9551

S IN C: Nearly complete set of QTHs (55 issues 1960-1976) in excel cond except one a reprint & 9 punched for 3 hole binder. $130. No single sales. Arthur Peterson, 9006 W. Shorewood Dr., #507, Mercer Island, Wash. 98040

SELL: Kennedy 281 $175, Crosby 51 $60, 1 tube homemade for parts incl. (2) CR radio variometers & UV-199 tube $18. Want battery sets? Send SASE. Harry Williams, Pleasant Hill, Mo. 64080 (WHYN) Ph. 816-987-5715

WANT: W.E. loop antenna in good condition. Also sockets for WE 215A peanut tubes, any make, any model of socket OK. Rodney Schrock, 402 Lincoln St., Somerset, Penna. 15501

HELP: who’s got parts for Tusa 225, Federal 59? Such as dials, knobs, tap switches, etc. Also need Crosby 50, 50A and Tymyrak, AK spkers GR, RR, AK sets, 19, 20 deluxe (24) & 32, Dave Crockler, Tavern Path, Plymouth, Mass. 02360

WANT: buy/swap Morse tele. keys. Also want to purchase parts of (WE) 5CR-757 VHF/D/F/P stat. made by Bendix, Switch Phn, PN-6, Fuse Panels PN-5 & PN-15 & clock 7A-67 8 day mech. Corsair No. 8, W7GAQ/6 John Elwood, PO Box 1234, Lancaster, Calif. 93534

WANTED: Instruction manual (or copy) and schematic for Hickok Mod. 10 Sig. Gen., Tube chart for Readrite Model 431 tube tester; any info or liter. On following receivers: 1925 Eljay, 1925 Elkas 5-S-B. BII Wyasplack, 27 Sunny Waters Plk., Norwich, Conn. 06360


WANT/SWAP/PAY complete radios or parts and cabinets for Philco Models 20, 70, 71, 90 & 91. R. Robinson, 720 Cider Road, Timonium, Maryland 21093

WANT: Lamphood for Radiola 17, "Official" Acme Super schematic, Air-king #3 SW plug-in coil, tall knob for Crosley Pap, repro OK; Swap six 20L-As for identical 240s. Cash or trade. Charles Day, 30 Sagamore Dr., S. Dartmouth, Mass. 02748


WANT: Nat. Type 23 tube shields used in SW-5 & PB7. Also Nat. 5800 or 5807 pwr. Unit, Clarence Filley, W7KE, 1109 South 2nd St., Hamilton, Montana 59840


WANT: unit w/o case, Crosley tuning knob, AFTs for Federal 65, Crosley, DA Unit, Radio Service Labs & breadboard parts, send info & prices to: Carl Weizel, 305 Delvidere Avenue, Washington, N.J. 07882

WANT: Grebe RORD & Radiola V base. Sell: Authentically repro Grebe Instructions for Operating, 64 p., covers most models @ $3.95 ppd. Dan Patterson, 1220 Neigs Street, Augusta, Georgia 30904

SELL/TRADE Riders #4 thru 9 @ $50 for all. Also 1933 RCA Service Notes, new 6A7 tubes in orig. box $10. Kellogg 402 & Ardon AC 373 tubes. SASE for other items. B.T. Montgomery, 1092 Willowbranch Ave., Jacksonville, Florida 32205

HELP: Radiola 26, need dimen & manuf. type # batteries which mount in case, also Radiola 18 dial-lite cover & 2 knobs. J. Schlosser, 233 N. Market St., Gallion, Ohio 44633 (414-466-9517)

NEED: Marlock 43 pl. var. cond., will buy or trade my surplus antique parts. Wilson Norwood, Caldwell, N.J. 07006

SELL: 6 tube hb UX201A set, AK-40, CST index 27,28, etc. telegraph relays, loose coupled xtal set. RME converter, 5X3, 26, 27, 45, 71, etc. sockets, etc. Jack Nelson, 915 Sherman St., Schenectady, N.Y. (3)

WANT: Cabinets for Radiola III & Mod. 24, cash or trade. Have Crosley 51 for trade. Ross Smith, 1133 Strong Ave., Elkhart, Ind. 46524

(See page 17 for LATE, LATE ADS)
To satisfy numerous requests, I have attempted to list significant items and events which have appeared in the OTB. There is some cross-indexing and on occasions the same listing may appear twice under different dates. I am also sure some items may have been overlooked.

The FIRST number indicates the VOLUME, the SECOND--the ISSUE and the LAST number the PAGE.

Hence, 17-4-10 indicates the item is in this Bulletin and on page 10.

I hope you will find this MASTER INDEX of value.

Bruce Kelley
Editor

EARLY COMMERCIAL WIRELESS

Otter Cliffs (WED) (W2ZI) 1-1-3
United Fruit (See Trop. Wire.) 1-4-3
Passing of "UU" 1-4-4
Monument at Battery Park 2-1-1
"Remember When --?" (WOB) 2-1-3
Early N.Y.C. Stations (W3DC) 2-3-6
Killbourne & Clark Co. 2-1-7
First Fire Radiophone 2-4-9
Wavelength Letter Code 3-1-2
3-3-7
Marconi Notes 3-1-3
NAA Rotary Cap at Dearborn 3-1-4
Jack Irwin and Dirigible 3-1-9
Wireless on the Great Lakes 3-2-4
Clark Wireless 3-3-2
First Wireless in U.S.A 3-3-4, 3-4-5
CQD -- SOS 3-4-5
Yacht "ELECTRA" 3-4-5
1910 Marconi equipment 4-1-1
De Forest and Federal Tele. 4-1-6
First Police Radio 4-1-8
List of Shore Stations 4-1-10
4-2-2, 4-2-7

United Wireless Tele. (W6GH) 4-2-1
U.S.S. Denver in 1904 4-2-1
South Wellfleet 4-2-8, 4-4-7, 4-2-9
5-4-14, 9-2-14
DeForest Station at Key West 4-3-5
South Wellfleet Model 4-4-7
Contemporary Quench Spark Set 5-1-6
DeForest Station at Babylon 5-4-6
Wireless in Pacific (Johnstone) 6-1-9
Reception with Magnetic Det. 6-2-7
Sable Island 6-3-4
Trans-Atlantic Facsimile' 6-3-6
Visit to KPH (W2ZI) 6-4-2
U.W.T. vs. Clark Wireless 6-4-17
Converted spark transmitter 6-4-20
Early Wireless in Germany 7-2-4
End of Brooklyn Navy Yard 7-2-5
Radiotelephone WWI 7-2-6
Marconi Station at Buffalo 7-3-11
Movie of Brant Rock 7-4-1
List of Longwave Stations 7-4-10
"In the days of spark" 7-4-20
German WWI Wireless (Espen.) 7-4-21
Receiver used on Carpathia 7-4-23
Titanic 8-2-14
Listening for ship DX 8-3-12
Early commercial at Seattle 8-3-13
Early German Ship gear 8-3-17, 9-1-17
German military in 1904 8-4-13
Receiving 600 meter stations 9-1-3
1922 List of High Power Stat. 9-1-12
Early VLF at Annapolis 9-1-16
Last Voyage of Queen Mary 9-2-11
1905 SOS 9-3-11
List of 1920 Press stations 9-4-21
RCA at Riverhead 10-1-8
Early Commercial W2FQ (W2B3N) 10-1-18
"My First Job" (Esphewed) 10-2-6
Early Alaskan Stations (W7HD) 10-2-6
First Co-ex Line (WGY)(W2XK) 10-2-8
Radio Compass Stations WNI 10-3-18
Blushing Brides-KPH (K6FZ) 10-3-22
QED ? Snohomis 10-4-2
Ship call letters 11-1-6
Titanic WGY 11-1-7
First Rotary gaps 11-2-3
Ships with odd names 11-2-9
Inter, Radio Tele. Co. 11-3-24
United Wireless Tele Co. 11-4-11
H.M.S. Queen Elizabeth 12-1-18
Early license 12-1-19
V.W.O.A. Award 12-1-22
[EARLY COMMERCIAL WIRELESS]
MacMillan Expedition 12-2-7
Certificate of Skill 12-3-17
Old Time VLF stations 12-3-19
Marconi Operator in North 12-4-4
Rocky Point/Riverhead 12-4-20
Airplane Radiophone WWI 13-2-8
Ship stations of the past 13-2-19
1939 Tests QSL card 13-2-23
McCarty Wireless Co. 13-3-16 13-4-23
Tropical Radio Co. 13-3-28
Tikker Wheel as detector 13-4-18
British Ship Traffic 14-1-27
Early Wireless in Alaska 14-1-24
Chart of Gehrings Wireless Co. 14-1-27
New Atlantic Cable 14-2-20
Identifying Navy equipment 14-3-8
Intesat Satellite 1-3-13
Shipboard wireless 1-3-16
NOA Institute 1-3-28,14-4-21,15-2-26
Sayville/WSL 14-4-8, 17-1-28, 17-3-20
Highest wave at sea 14-4-21
Greatest loss at sea 14-4-21
Titanic Menu 14-4-21
Replica of an arc station 15-1-22
Exhibit (station) at WCC 15-2-5
OM/XYL commercial operators 15-3-24
Dodge Radio Institute (Valpo.) 15-3-26
193-4-16
Early Marconi station 15-3-27
Last Spark Station 15-4-19
The Letter "S" 16-4-20, 17-3-9
Tiefic "movie" 16-1-5
Early Navy receiver 16-1-19
Commercial spark station layout 16-1-24
Visit to WCC 16-2-5
Photo of TTT Station KPS 16-2-5
Trip to NOA Riverhead 16-2-20
Marlais 16-3-7
21,000 mile circuit 16-4-10
Visit to WFD Tampa 17-1-6
Oceanic cable ship 17-1-23
Radio installation on US Olympic 17-2-14
Marine radio operation today 17-3-20
Marconi Sewing Machine 17-4-42

[BROADCASTING]
Lower Power Broadcast DX 8-2-18
Old Time Tuning Contest AWA 8-3-12
Early BC in Baltimore 8-4-1, 9-1-14
How to tune BC receiver 8-4-15
Early Canadian Broadcasting 9-1-13
Early BC phone records 9-1-17
William Halligan 4-3-6, 9-3-4
Radio Themes 9-3-10
Present day BC DX 10-1-8
Early station list 11-1-15
Early programs 11-1-16
Early Canadian Broadcasting 11-1-17
Early BC transmitter at A.W.A. 11-2-10
Union College station WHUC 11-3-10
Origin of "Red" Network 11-3-14
NAB/FCC on AM 11-4-28
First Broadcast Station ? 12-1-19
"The Bkeeper" 12-3-28
Cluquot Club Program 12-4-10
B.B.C. postage stamps 12-4-14
Station WBAP 13-2-5
Broadcasting in Tennessee 13-2-5
Early broadcasting in England 13-4-18
C.E. and broadcast equipment 13-4-26
Television Networks 14-3-13
Cincinnati broadcast stat. 14-3-19
Broadcasting at sea 14-3-21
Greatest radio towers 15-1-13
KDKA's first wavelength 15-1-21
Powerful WWAP-TRV stat. 15-1-27
WS3 back to Chicago 15-2-7
V.O.A. at Bethesda, Ohio 15-2-11
Dempsey-Tunney Fight broadcast 15-4-26
A.W.A. at Stat. WAXL-TV/FM 15-6-17
American Broadcasting (book) 16-1-14
KBRW at Pnt. Barrow, Alaska 17-1-13
Solid-state BC station 17-1-13
Super-power AM stations 17-2-10
BC station call letters 17-4-17
History of NBC Chimes 17-4-11
Radio Engineers at WHAM 17-4-11

RADIO STATIONS
Old "UP" 1-1-4
NAA -- Arlington 2-1-2, 3-1-4, 3-3-13
3-3-5, 6-1-14, 6-4-13, 7-1-19, 7-2-15
Glace Bay GB 1-4-5
Brent Rock 2-1-2, 6-4-1, 7-3-6, 7-4-4
De Forest Station "PDD" 2-1-1
NBD 1-1-3, 6-1-10, 6-3-17, 7-2-13, 8-1-5
8-3-16
Old "EN" Boston (WLS) 2-2-1
Cutler NAA 2-2-3, 3-2-15, 3-1-1, 5-3-9, 6-1-1
WLS (Skyville) 3-2-7, 4-3-5
VGY 3-1-1, 5-1-7, 10-2-8
KFGH/XER (Brinkley) 3-1-9
Point Judith 3-2-4
9ZN (R.H.G. Matthews) 3-2-5
"PDD" New York Navy Yard 4-2-2
"K" Key West 4-3-5
WTAM Cleveland 4-3-5, 8-2-6
LCM (Stavenger, Norway) 4-3-9
CC/MCC/XCC 4-3-9, 4-4-7, 5-1-5, 5-3-9
6-3-8, 9-2-14, 10-3-11, 15-2-5, 16-1-20

25
(RADIO STATIONS)

KDKA 4-1-4, 5-2-2, 6-3-23, 10-2-9, 15-1-21
"FL" Paris 6-2-4, 6-4-13
VLF in Australia 6-2-7
HVJ Vatican 5-1-12
W2AN 5-1-1, 5-3-7, 5-4-3, 6-3-11, 6-4-7
WPDR 6-3-19
LBCG 6-4-11
KPH (San Francisco) 6-2-14
Marconi Station at Albany 6-4-12
Marconi/SA at Marion, Mass. 6-4-16
WHEC old time exhibit 6-4-19
VLF in Norway 7-2-1
WNP 7-2-5, 9-1-14
NPL report (N2NP) 7-2-16
WW new location 7-2-19
"SR" Buffalo 7-3-11
VLF at Newport, R.I. 8-2-20
KVI Alaska 8-3-13
GBTT Queen Mary 8-3-13, 8-9-12
WEAR Baltimore 8-4-1, 9-1-14
WHAM Rochester 17-4-11, 7-4-17, 10-2-8
East Coast VLF stat. closed 9-1-2
List of High Power stations 1922 9-1-12
NSS Annapolis 9-1-16, 9-1-18
Current VLF listing 9-1-16
Rocky Point 9-3-2, 10-1-8
WDM (Washington, D.C.) 9-2-10, 9-3-19
WWJ Detroit 9-3-25
Present day WCC receive stat. 10-1-9
WHA, Univ. of Wis. 10-1-4
WCA "SS Tonesta" 10-2-6
Early Alaskan Stations 10-2-8
MCY Titanic 10-3-11
Radio Compass Station 10-3-18
FCCG - 1st BC station 10-3-20
SAQO - Cazenovia, N.Y. 10-4-10
SC/MEC Sisconnett 10-4-18
SC - MEC at Sisconnett 11-1-5
Station KDKA 11-1-17, 11-4-25
XWA at Montreal 11-1-17
Polhllu Story 11-1-18
BC Station WTAG 11-3-15
OMDA VLF stations 11-3-20
South wellfleet (CC/MCC/WCC) 11-3-20
VLF stations 11-4-7
Detroit BC station WWJ 11-4-25
Ship GBTT 12-1-18
Police Radio WCK (Detroit) 12-2-8
GBBCT Anniversary station 12-4-15
RCA Rocky Point 12-4-20
GB at Glace Bay, N.S. 12-4-27
Tallest radio towers 13-1-10
WLN's 50th Anniversary 13-1-25
BC Station WEF 13-2-5 17-2-14
High Power Commercial 13-2-15
Current VLF stations 13-2-15
Call Letters with a past 13-2-19
First U.S. Station 13-2-22
Station W2GK Marconi Celm. 13-2-23
WLM-WMH controversy 13-3-23
TVI from commercial stations 13-3-29
Henry Ford's BC station 14-1-17
WW 50th Anniversary 14-2-20
Station. WGU-20 14-3-13, 16-2-19, 16-2-4
WSL Bayville 14-4-3, 16-4-30, 17-3-20
WW 50th Anniversary 14-4-24
Pescencl's Hatteras stat. 15-1-25
WABIP TV 15-1-27
WLS Chicago 15-2-7
Marconi Tower 15-3-27
WJZ, N.Y.C. 16-1-30
WCC Commercial at West Creek 16-2-5
KFS Commercial near San Fran. 16-2-5
RCA Riverhead stat. 16-2-20
WPB Commercial at Tampa 17-1-6
"SS Olympic" stat. 17-2-14

(RADIO EQUIPMENT)

REINHART receiver 1-4-2
ALEXANDERSON alternator 1-4-5
MARCOM 106 receiver 1-4-6
BRITISH Marconi Detector at AWA 1-4-1
RCA-3587A/0.0. T-5 transmitter 2-1-7
GS-2250B spark transmitter 2-1-7
HOMMADE spark trans. W6AX 2-2-2-7-2-6
MARCOMUIPLE Rumer 2-2-3, 4-1-1
MARCOM MAGNETIC Detector 4-1-4
MARCOM 10" spark coil 4-1-1
COHERER History (W2IA) 2-2-5
MEASURING spark transmitters 2-3-18
VIRICAL loose coupler 2-4-3
NESCO GN-239 receiver 2-4-8
MAGNETIC & ELECTROMAGNETIC detectors 2-4-11
OE/HE receivers 3-1-4
TELLFUNKEN crystal set 3-2-2
DE FOREST RESPONSIBER 3-2-15, 7-4-2
AUDION receiver (WGYDJ) 3-3-7
CYMONETER (K9MA) 3-4-7
DE FOREST "O" Radiophone 4-15
KENNEDY equipment 4-1-9, 8-4-15
THERMIN (see "People")
LEUTZ History (W4A) 4-1-11
NESCO SE-899 receiver 4-2-6
NAVY SE-95A 4-3-9
CRYSTAL detector history (W2IA) 4-3-11
CLARK receiver 4-4-7
AUDION receiver (Penard) 4-4-9
WIRELESS SPECIALTY detectors 4-4-10
SOR-67A/BC-13A receiver 5-1-3
HONEYCOT COILS 5-1-12, 5-3-10, 6-4-16, 9-4-2
STERNERS-SHUKENT tone generator 5-2-1
RADIOLA III and LIIA 5-2-8, 10-3-3
AMRAD quench gap (W4X) 5-3-8
DIVERSITY Hallicrafter receiver 5-4-6
DE FOREST AUDIOPHONE amplifier 5-4-9
MAGNETIC DETECTOR - homemade 5-4-10
7-3-4, 8-4-2
MARCOMI receiver (unusual) 5-4-12
DE FOREST 3 stage amplifier 6-1-2
BG-54 receiver 6-1-3
ELECTROLYTIC detector - Armstrong 6-1-4
LIQUID BAROMETER 6-1-7
ANCHOR GAP 6-1-7
PERIKON detector 6-1-8
WOLLASTON wire 6-1-8
IMPERFECT type detector 6-1-10, 6-2-10
ELECTROLYTIC interrupter 6-1-11
MARCONI-HAWAII gear (W2UK) 6-2-3
BOOK LISTING all receivers 6-2-4
AK MOD. 5A 6-3-1, 6-4-14, 7-2-8
AUDION receiver (Cap) 6-3-7
CONVERTED SPARK TRANS. to CW 6-4-20
QUENCH GAP trans, at ANA 6-3-12
POLICE transmitter WFPD (W2XK) 6-3-19
ALEXANDERSON TV projector 6-4-2
CROCKER-WHEELER MG set 6-4-2
SCR IDENTIFICATIONS 6-4-9
EARLY DELECTOR demonstration 7-1-1
RADIO TELESCOPE construction 7-1-4
Definition of RC and SCR 7-1-11, 7-2-16
SCOTT receiver history 6-4-17, 7-12-15
7-2-2, 8-3-4
MIGNON receiver 7-1-17, 8-4-17
CRYSTAL detectors 7-1-20
ROBART gaps (W2FK) 7-2-13
IP-76 History 7-2-13, 7-2-15
ATWATER-KENT receiver list 7-3-19
CARFATHA receiver 7-4-23
MARCONI Hi-SPEED recorder 7-4-1
DETECTOR experiment (W2QY) 7-4-1
ZENITH Mod. 17 8-1-3
EXPENSIVE ZENITH receivers 8-1-14
EARLY RCA receiver 8-1-20
ALEXANDERSON ALT. AT DAREBORN 9-2-14
DE FOREST CF-122A Control Unit 8-2-14
ACME Reflex receiver 8-2-20
W.S.A. Mod. 215 receiver (W2ZI) 8-3-6
LEE & NOHOTRIP reliability test 8-3-6
BROWNING-RAKE receiver 8-3-10
ALEXANDERSON Alt. now in use 8-3-16
SCOTT (Special) receiver 8-3-16
WILLARD "P" eliminator 8-4-12
KENNEDY Mod. 110 8-4-15
BOSTON Scale receiver 8-4-16
HALLSCRAFER receiver listing 8-4-17
DE FOREST RJ-4 and RJ 8-4-10, 9-4-12
SCR-65 & RC-15 airplane trans. 9-1-11
LEUTZ Transoceanic 9-1-20
GOLDEN LEITUZ 10-3-4
ST. JAMES super-het 9-2-3, 9-3-11
IP RECEIVER History (W2ZI) 9-2-13
DUMONT TV receiver 9-3-9
IP-99 SILICON detector 9-3-17
TELEFUNKEN equipment at AWA 9-3-20
GREBE Receiver listing 9-4-4
NATIONAL (usual) receiver 9-4-12
CRYSTAL detector 9-4-23
IP-500 and 501 receivers 9-4-24
SO-1 Cable 10-1-7
MARCONI Type 105 receiver 10-1-10
WESTINGHOUSE (early) receiver 10-1-12
HALLSCRAFER CR-3000 receiver 10-2-4
CHELSEA Mod. 102 receiver 10-2-10
HELMHOLTZ resonator (K2XW) 10-2-15
COLOR TV scanner (W2XW) 10-3-12
MIGNON R2-2 receiver 10-4-17
NECO CN-239 receiver 10-4-5
HEALTH COMPANY History 10-4-5
RHAMSTINE Needlephone 10-4-3
Homemade spark coil 11-1-5
Making a "B" battery 11-1-5
The Adams-Morgan Four receiver 11-1-6
U.W.T. Type "C" tuner 11-1-7
BC-14-A receiver 11-1-3, 12-4-15
National Receivers 11-2-7
RCA catacombs for super-hets 11-2-17
Early Clapp-Bastron 11-2-19
AR-1300 (RCA) receiver 11-2-24
W.B. Type 4-B receiver 11-3-1
Magnavox headphones 11-3-2
DeForest Type RJ-9 detector 11-3-20
Thorvver spark coil 11-4-7
DeForest equipment 11-4-10
W.E. cone speaker 11-4-25
Victoreen Universal "8" 11-4-26
WII spark transmitter 12-1-8
RCA super-het receiver 12-1-21
National SW-3 receiver 12-2-7
Radiola III receiver 12-2-20
Midwest Radio receivers 12-2-20
Stenode receiver 12-2-23
Hammarlund Comet "Pro" 12-3-25
Grebe Synchrophase 12-4-9
Crosley "Pop" 12-4-23
Jenkins Radiovisor 13-1-26
World's Fastest Receiver? 13-2-1
WII Aircraft equipment 13-2-9
Hallicrafter TV receivers 13-2-20
Crosley A.C. sets 13-2-22
Marconion CW-294 receiver 13-3-13
Freshman Masterpiece 13-3-14, 14-4-22
Circuit for "Skyrider" 13-3-25
Circuit for Crosley V 13-4-15
PhiloCathedral (Modern) 13-4-18
Pacific Wireless receiver 13-4-25
Circuits Grebe CR-9-13-14-18 14-1-28
Atwater-Kent release dates 14-1-30
Federal Crystal set 14-2-21
Aerola receiver 14-2-23
RCA equipment designations 14-3-17
Federal Mod. 59 & 61 receivers 14-4-11
Regenerative SW receivers 14-4-16
Radiola Mod. 29 14-4-18
Paragon Model RA-10 14-4-19
WII spark transmitter 14-4-26
"Baty" Emerson receiver 15-1-3
WII surplus equipment 15-1-6
National Thrill-Rox receiver 15-1-13
Japan-American receiver 15-1-17
RJ-9 Audion panel 15-1-20
Philo Cathedral 15-1-23
Gridleak Dip Pan 15-1-32
Homemade arc transmitter 15-2-25
RCA discontinues manufacturing 15-2-26
Radiola IX (AR-1395) 15-3-26
British Ethophone Grand 15-4-5
AWA Equipment designations 15-4-17
Grimes Inverse Duplex 15-4-13
Unusual variable inductance 15-4-28
RCA Mod. TRK-12 Television set 16-1-3
Radiola III transistorized 16-1-7
British WII Mark III receiver 16-1-12
WNP transmitter/receiver 16-1-23
RCA 100 & 103 speaker 16-2-10
E.I. Interstate receiver 16-2-20
Sycrad crystal set 16-3-6
(Continued on next page)
COLLECTING & RESTORING

Collecting broadcast receivers 16-3-22
List of collectors 16-3-32
Realtor receiver 16-4-17
National AGS classic receiver 16-4-25
Telegraphophone wire recorder 16-4-30
Deforest Unit panel set 16-4-31
Marte receiver 17-1-5
"1f" prefix 17-1-14
Canadian Radiola III 17-1-23
W.E. 7A amplifier 17-1-24, 17-3-18
Circuit of Loewe receiver 17-2-24
Zenith Trans-oceanic set 17-2-12
Kennedy portable receiver 17-2-23
Jenkins television 17-2-31
Rare W.S.A. Radiola 1381 17-3-9
W.E. horn speaker 17-3-17
Magnetovox horn speaker 17-3-16
Eight tube Supertone receiver 17-3-19
Ra-Di-Co motor-generator 17-3-24
John Firth receiver 17-4-19
Philco 3" TV 17-4-19

Making replicas (Trauffer) 9-4-41
Willard "B" eliminator 8-4-12
Rakelite panel substitute 8-4-16
Hallcracker Receiver List 8-4-17
Collecting pole insulators 9-1-7
9-4-21, 4-3-9
Origin name "Radiola" 9-1-16 9-3-19
Restoring Kennedy dials 9-1-16 10-3-5
Restoring Tips 9-1-19
Cleaning old panels 9-2-8
A-K breadboard available 9-2-13
Protection pads 9-2-15
Huge DuMont set 9-3-9
DeForest/Crosley Co. 9-3-13
Black finish on brass dials 9-3-14
10-3-5
Honeycomb coil reference 9-4-2
10-1-20
Solodyne/Cowper batteryless receiver

Acriola replacement dial 9-4-15
Collecting autographs 9-4-19
Wood panels and boards 9-4-24
Collecting TV receivers 10-1-24
CBS color TV at Smithsonian 10-2-10
Better packing to ship 10-2-10
Replacing belts on AK sets 10-2-16
Value of Radiola III 10-3-3
DeForest detector panel 11-1-9
Collecting signatures 11-2-6
Testing RCA catacombs 11-2-17
11-3-21, 12-3-23
Repairing audio transformers 11-2-23
Meshna -- part supplier 11-3-15
Pilot Super-Wasp 11-3-16
Pilot Wasp 11-4-28 12-1-23
DeForest RJ-9 panel 11-3-20
Book collecting 11-3-21
High prices for old gear 11-4-3
Circuit for Radiola IV 11-4-10
Circuit for Radiola III 11-2-21
Circuits for other sets -- See Index for "Radio Equipment"
Reproductions of old sets 11-4-27
Nelson receiver 12-1-4
British WWI spark transmitter 12-1-8
RJ-5 (DeForest) reproduction 12-1-11
Collecting telegrams 12-1-20
Fake tubes: 12-1-20
First RCA super-het 12-1-21
Marketplace "operators" 12-2-5
Panels for old receivers 12-2-18
Midwest Radio Co. receivers 12-2-21
Making a crystal detector 12-3-16
Ford Spark Coils (purchase) 12-3-17
Restoring SE-143-1420 12-4-3
Evaluating equipment 12-4-17
Restoring Aerola Sr. 12-4-19
Collecting "Crosley Pug" 12-4-23
Old Time "ads" 12-4-27
Names of receivers 13-1-20
Tips on restoring 13-1-25
Collecting radio novelties 13-1-28

List of early A-K receivers 7-3-18
Substitute PBT for tubes 7-4-15
Making bus bar wire 7-4-15
Stromberg - Carlson receiver 7-4-19
Restoring Mershon condenser 7-4-15
BC receiver list in RADIO NEWS 7-4-23
Collecting RCA receivers 8-1-20
Crosley receivers 7-4-21
Results of 1967 receiver contest 8-3-5
Results of 1968 contest 10-3-2
Part supplier in California 8-3-20
Replacing Mershon condensers 13-2-2
Collecting books 13-2-7
Collecting television sets 13-2-20
1,000,000 Atwater-Kent 13-2-29, 13-3-30
Collector's cartoon 13-3-17
Coherer components 13-3-29
Collecting Dime novels 13-4-8
Help: White Metal 13-4-17 14-1-19
Bus bar/spaghetti 13-4-17
Dial drive replacement 13-4-17
"F" battery replacement 13-4-17
Modern crystal detector 13-4-25
Meccano crystal sets 14-1-7
Collecting radio mementos 14-1-17
Building Weagnet receiver 14-1-20
Circuit Adams-Morgan RA-10 14-2-2
Radiola III 14-2-9
Identifying Navy equipment 14-3-8
Rejuvenating tubes 14-3-20
Repairing hole in panel 14-3-23
Repairing celluloid 14-3-24
Huge crystal set 14-4-9
Identifying Federal receivers 14-4-11
Circuit for RCA Mod. 25 14-4-18
227 tube in circuits 14-4-19
Re-winding transformers 14-4-19
Paragon RA-10 problems 14-4-19
Collecting grid-Leaks 14-4-19
Collecting radio/comm. stamps 14-4-26
Circuit for Sodion detector 15-1-9
Solid-state AK breadboard 15-1-10
Circuit for National Thrill-Box 15-1-13
Use of tube adapters 15-1-15
UX-210 tube replacement 15-1-15
NJ-9 Audion panel replica 15-1-20
Finish for panel 15-1-23
Removing transformer tap 15-1-23
Replacing Mershon condenser 15-1-23
Circuit for Reinartz tuner 15-1-32
16-4-34
Collectors in France 15-2-3, 17-1-35
Restoring telegraph equipment 15-2-5
"Souvenir" radios 15-2-11
British receivers 15-2-24, 16-1-22
Solving pot metal prob. 15-2-28, 16-2-27
Fill for dial letters 15-2-28
Tube socket padding 15-2-28
Diagrams available 15-2-28
Philmore crystal det. cover 15-3-12
EH rectifier problems 15-3-12
Reparing telegraph relay 15-3-12
Collecting microphones 15-3-17, 15-4-18
Restoring hornspeaker 15-4-14
Making spaghetti tubing 15-4-14
Repairing audio trans. 15-4-30
Parts from Burstein-Applebee 15-4-31
Solid-state tube replacement 16-1-6
Value of antique radio/equip. 16-1-11
Circuit of British Mark 16-1-12
Collecting keys 16-1-15
Engraving panels 16-1-22
Plastic dust covers 16-1-22
Collecting old meters 16-1-28
Patent date guide 16-2-11
Making spark gap 16-2-19
Value of old tubes 16-2-22
Collecting software (books, etc) 16-2-22
Solid-state 201-A 16-2-22
Magazine pub. dates: 16-2-24, 17-1-33
Crystal set circuit 16-2-27
Bus-bar wiring 16-2-27
Metal plate engraving 16-2-27
Making plastic knobs 16-3-14, 16-4-32
Making 1910 receiver 16-3-15
Receiver Review: 1920 to 1930 16-3-16
Hum in Radiola Mod. 32 16-3-21
Magnavox decal 16-3-21
Circuit for Majestic "F" elim. 16-3-32
Ultra sonic cleaning 16-4-6
Filaments in series 16-4-19
Radiola III replacement 16-4-28
List of Museums 16-4-28
Authentic "F" batteries 16-4-32
Cleaning cabinets 16-4-32
Markings (numbers) on tubes 16-4-32
Collecting electronic gear 17-1-5
Method to display tubes 17-1-5
Identifying metal tubes 17-1-21
Collecting Rider Manuals 17-1-28
Equip. restoration catalog 17-1-32
Croall book condenser 17-1-35
Glass discs for meters 17-2-24
British collecting catalog 17-2-24
Huge broadcast set collection 17-2-26
Plating radio parts 17-2-27
Early horn speaker development 17-3-14
"Collector's Muse" 17-3-26
Pickle bottle rectifier 17-3-28
Phone cords available 17-3-28
Schematics available 17-3-28
Restoring Pirth receiver 17-4-19
Prices of equipment at Auction 17-4-6
Pilot 3" TV tube 17-4-45
Plywood problem 17-4-45
Sale of AFT's 17-4-6
Finish on AC sets 17-4-46

TUBE COLLECTING

Oscillation (de Forest) 1-4-3
EH rectifier 2-1-3
VT-1 information 2-2-2
Welsh tube (diode) 2-3-2
RECTOBULBS (vacuum tube rect. ) 3-3-2
TUNGAR (fullwave type) 3-3-2
200 and 201's for collecting 4-1-7
DE FOREST tubes - collecting 4-1-7
C.D. FABCOCK and the Audion 3-3-6
100 KW. tube from WLI 4-2-1
SAGA of Vacuum Tube (Tynhe) 4-3-3, 10-3-19
FLEETING valve at A.W.A. 4-3-12, 4-3-1
LIGHT BULB collecting (Iycone) 4-4-18, 5-2-10
HISTORICAL tubes (Machlett) 5-1-5
EATON Collection 5-1-9, 5-2-5, 9-3-2
KENCHEN/PLIOTOWN 5-1-12
DE FOREST material at AWA (Tynhe) 5-2-4
EARLY vacuum tubes (Watson) 5-4-12
DE FOREST and THODE (Chipman) 6-1-2
MAKING REPLICA'S (WELIS) 6-1-4
LIST of tube manufacturers 6-1-19

(Cont. on next page)
[TUBE COLLECTING]

TYNE collection 6-2-1, 6-3-16
DE FOREST AUDION review 6-3-4
DATES of manufacture 6-3-7
AUDION operation 6-4-3, 7-4-23
NEW ZEALAND collection 6-4-12
DE FOREST AUDION 4-1-4, 4-2-2, 4-2-7
SURPLUS TUBE sales in 1930's 7-3-13, 7-4-23, 8-4-20
WZAO tube collector 7-4-6
BOOTSLE tube (interesting) 7-4-14
FLICKERING Audion 7-4-23
PRICES up on 201A’s 8-1-10
TUBES antiquated 8-1-10
EH RECTIFIER replacement 8-1-19
AUSTRALIAN Valves (Stewart) 8-2-13
LOEWE Multi tube 8-2-18, 8-3-6
ROA tube List for beginners 8-3-19
HUTH tube 8-4-7
THOMPSON Tube Collection 8-4-13
ODD BRITISH tubes 9-1-2
UV-UX-UX socket designation 9-1-4
ARCURIUS tubes 9-1-6, 9-3-3, 9-1-22
COLLECTING 201A’s 10-2-15
COLLECTIONS in Elmira, N.Y. 9-1-9
PIONEER manufacturer in Penna. 9-1-9
TV tubes at Smithsonian 9-1-15
MT. VERNON bulb and tube museum 9-2-2

204 without base 9-3-5
QRS tubes 9-4-2
FIRST use of word Vacuum tube 9-4-7
DEVELOPMENT at Westinghouse 9-4-13
10-1-10

COLLECTORS Schrader and Stewart 10-1-6
FIRST Electron tube 10-1-8
NEARATON (British) 10-1-13
HISTORY ARCTURUS (Stokes) 10-1-22
ELMAN MYERS 10-2-12
JAN tubes (Military) 10-2-15
BOOTSLE tube manufacturers 10-3-17
MYER’S tube 10-3-21
IDENTIFYING 201 tubes 10-4-4
VT-1 and 2 11-1-14
Finger Tube 11-1-14
Wunderlich Tube 11-2-16
VT-2/CW-931 tube 11-2-19
UX-200-A tube 11-3-11
Deciphering Phillips Tubes 11-4-22
Fake tubes 12-1-20
Fake Audion 12-2-8
Tyne opens Dutch Museum 13-3-18
Portable Tube Exhibit 13-1-23
Williams White Papers 13-2-5
New Tubes 13-2-15
European tube Collector 13-2-17
Tube Tree showing development 13-2-18
The Tube Collector Column (Tyne) 13-3-11 (VT-1, Westageant, 203-A tubes)
14-1-16 (Wunderlich, DeForest Audion) 14-2
Early Tube Specifications 14-3-13
100 KW. tube from NSS at AWA 13-3-24
RCA tube No. 221 13-3-24

Deforest tubes to collect 13-4-19
WD-11 and 12 replacement 13-4-19
W.B. Letter Designations 14-1-18
Aerotron tubes 14-2-22
Welsh and French tubes 14-2-15
3 billion tube 14-3-17
Emerson multi-value 14-3-18, 15-1-7
How to Rejuvenate tubes 14-3-20
Save 227 tubes 14-4-19
The Quadrant tube 14-4-23
Early tube specific. 14-4-23
Long life tube 14-4-27
Erato and GR tubes 15-1-14
QRS red-top tubes 15-1-15
Rare UV-212 tube 15-1-15
Tube adapters 15-1-15
UX-210 replacement tube 15-1-15
History of British Valve Co. 15-1-26
W.E. Identification List 15-2-10, 16-4-33
UV-196 rectifier 15-2-17, 16-2-11
Deforest "II" tube 15-3-19
Speed "Triple-Twin" 15-4-12
Source of tubes 15-4-31
Brother collection 16-1-14, 16-3-7
Apco Twin tube 16-1-18
Tube clinic 16-1-18
Amrad "S" tube 16-1-20
Lisbon-Reis tube 16-1-25
Identifying Telefunken tubes 16-2-11
Value of tubes 16-2-22
Vacuum Tube Committee 16-2-26, 16-3-19
17-3-30
Manufacturing W.E. tubes 16-2-31
McCullough/Kellogg tubes 16-3-15
Early pentode tubes 16-3-26
Tapes on tube pioneers 16-4-4
Development of All-Metal tube 16-4-12
Development of All-Metal tube 17-1-15
Ident. of DeForest Audion k6-4-18
Filaments in series 16-4-19
Type 30 tube for Radiola III 16-4-19
RCA Harrison plant closes 16-4-24
Schrader TV tubes at AWA Museum 16-4-30
Paint tube markings 16-4-32
Method to display tubes 17-1-5, 17-3-23
Zahl tube 17-1-9
Tube sales 1960-1975 17-1-23
W.E. tubes and 7-A amplifier 17-1-24
Loewe tube 17-1-24
National-Union tubes 17-1-24
How to build Flame Audion 17-1-29
Rare UV-201 tube 17-2-11
RCA/Cunningham relation 17-2-11
Spanten Type 486 tube 17-3-23
Tube types 29 & 69 17-3-23
Wunderlich tube/circuit 17-3-23
RCA Harrison Tube plant sale 17-3-30
Making WD-11 tubes 17-4-14
Phillips Receiving Lamp 17-4-14
Evolution of UX-210 tube 17-4-10

IMPORTANT !!
A reminder that Vol. 3, No. 1 is printed as Vol. 2, No. 5
EARLY AMATEUR RADIO

The Old Man (W1IE) 1-4-43
Spark DX (W6SB) 2-1-2 3-1-2
Amateur Radio in N.Y.C. -W6BG 2-3-5
They Always Come Back (W5CA) 3-1-1
DX requirements in 1907 2-3-18
Ted Ostman's Rotary (2OM) 3-3-5
Early Canadian Amateur 3OG 4-2-2
Early Xmr now operating-W6ACU 4-2-8
W6X/B/3 QSL card 4-4-6
Petition for spark transmitter 4-4-6
199 Xmr. in operation-W2IK 5-5-7
6-6-15
210 Xmr. operating at W9GFS 5-3-3
160 meter station at W1BA 5-4-11
First Licensed Amateur 6-1-1 6-2-11
Replica Mundock station-W5VA 6-1-18
W2AN's transmitters 6-4-7
K5IKO's old time transmitter 6-4-8
French SAB 6-4-10
Monument at LBOG 6-6-13
Early xmr used by 3CDQ 6-6-18
First ARRL Convention 7-1-2
Amateur cartoons by GUX 7-1-10
Radio Club at M.I.T. 7-1-9
Neutralizing RF amp. in 1920 7-1-20
First W.A.C. certificate 7-2-5
MacMillan Expeditions 7-2-5
80 Meter A.W.A. CW Net - W2AN 7-2-7
Making Rotary gaps 7-2-13, 7-3-12
Early spark station 7-4-9
Early Amateur Station in R.I. 8-2-4
Amateur Radio History in Great Britain 9-3-13
First QSL card 9-4-6
First QSL card in Canada 9-3-10
Radio SABG at Geneva, N.Y. 10-1-1
Radio SAQO at Cazenovia 10-1-1
1927 ARRL Convention at KDKA 10-2-9
Delayed Amateur signals 10-3-16
Amateur prefixes in 1927 10-3-24
1928 Amateur Transmitter on air 11-1-1
First Amateur Phone 11-1-8
Spark Station at W4AA 11-2-1
Rare QSL card 11-2-16
Station 9ZN at Elgwater Beach Hotel 11-3-23
Amateur Spark QRM 11-4-23
Amateur Station 8TE 12-2-6
Schenectady Museum - W2IR 12-2-20
Amateur Station W2ZX 12-3-26
Transatlantic Tests lBCO 12-3-26
50th Anniversary QSO 12-4-16
Spark DX 12-4-17
Building a spark transmitter 12-4-24
UV-202 transmitter 13-2-2
Odd amateur call letters 13-3-9
W6SBN's 210 TNT transmitter 14-1-19
1925 Transmitter at WDM 14-2-6
50th Aniv. Listing 14-3-27, 16-1-26
Transatlantic Anniversary 14-4-5
Amateurs use Morse code 14-4-13
Early single sideband 15-1-3
WNP and Don Mix LTH 15-1-12
Classic amateur receivers 15-1-14
UX-210 with 10Y replacement 15-1-15
Building TNT transmitter 15-1-24
Reinartz receiver 15-1-32
TNT xmr at W3ERI 15-2-23
Results of 1974 OT Contest 15-2-23
1500 meter activity 15-2-24
SW-3 receiver 15-3-7
Use of "HI" tube 15-3-19
Hartley circuit 15-3-21
Transmitters at Conference 15-4-17
3 tube crystal control xmr. 15-4-29
Amateur operation in Philippine 16-1-14
McMillan Expedition 16-1-23
Results of OT Contest 16-1-27, 17-1-25
Station at Shxmsonian 16-1-29
How to make a spark gap 16-2-19
1928 receiver at WDM 16-3-22
TNT and Hartley xmrts 16-4-11
Reinartz tuner 16-4-32
First QST 17-2-19
Spark coil ICW xmr. 17-2-20, 17-3-10
NN3EI at Smithsonian 17-2-29
OT xmrts at W7JY & W8AF 17-3-11
Use of motor-generator 17-3-24
Pickle bottle rectifier 17-3-28

TELEGRAPH & KEYS

Key collection at W2ZI 1-2
Morse to Wireless (W3WRE) 1-1-6
Morse Telegraph Club 2-2-4, 5-2-2, 5-4-13, 7-1-3
Telegraph & Telephone Bulletin 4-1-6
Continental vs. Morse (W3WRE) 2-3-3
M.T.C. at Albany 3-2-3, 5-2-2
Evolution of the Bug (W3WRE) 3-2-3
Bunnell Catalog 3-3-8
Telegraph & Telephone 4-1-6
Primary cells 4-2-3
W-U equipment at A.W.A. Museum 4-3-4
Telegraph recording by W4RJX 4-3-10
Morse Code 4-4-5
Gene Autry member M.T.C. 5-2-5
Western Union 5-4-15
National Telegraph Museum 5-4-12 6-4-4
Stock Ticker at A.W.A. 6-2-3
Morse copy on modern receiver 6-2-11
Messie oil break key 6-3-18
Darfield - Code Champion 7-1-8
Postage stamp for telegraphers 7-1-9
Lineman's pocket set 7-2-7
Hrhit automatic key 8-1-10
S.P.B. Morse Birthday Dinner 9-1-18
6000 mile Atlantic cable 8-2-15
High Speed Morse demonstration 9-2-11, 9-3-7, 9-3-9
Morse Key collection 9-2-15
Western Union Museum 9-3-13, 10-1-21
S.P.B. Morse's home 9-4-9
W-U repeats 1569 wire 10-1-23
Telegraph History in Rad. Eng. 10-3-11
Bunnell Stock Ticker 11-1-3
Phillips Code 11-1-14

(cont. on next page)
(TELEGRAPH & KEYS)
Unusual Cmigraph 11-1-17
Railroad Telegrapher 11-3-13
Morse Circuit 11-4-9
First Train Telegram 12-1-15
Collecting Telegrams 12-1-20
Speedwell Village (Alfred Vail) 12-3-20
AT & T Cable 12-4-20
Origin of Morse Code 13-3-14 14-1-5
M.T.C. Collapses 13-3-15
Historical Design of Key 13-3-18
Code Speed Standard 14-1-24
Australian Telegraph Line 14-1-31
Morse Telegraph Club Meet 14-1-4
Code Speed 13-3-31
Last Message in Canada 13-3-31
Key from USS Haraden 13-4-2
Autokey key 14-4-7
Morse copy on SW receiver 14-4-13
Telegrapher's cartoon 15-1-30
Telegraph parts available 15-2-5
History of Vibroplex key 15-2-13
Repairing relays/sounders 15-3-12
Western-Union Singing Telegrams 15-3-18
Collecting keys 16-1-15
Atlantic Cable 16-1-16
Western Union Museum in Seattle 16-1-29
Trans-atlantic cable 16-4-28, 17-3-12
Phillips Code book available 16-4-29
Toledo M.T.C. 17-2-5, 17-3-26
Thimble Power 17-3-12
Large book on the telegraph 17-3-21
"Charge of Lightning Sender" 17-4-10

RADIO COMPANIES
Hammond Research Company 2-1-2
Kilbourne & Clark 2-1-7, 9-1-3
General Radio 2-2-3
Collins Radio 2-2-3
History of National Electric Supply Company (Duvall) 2-4-5
A.C. Gilbert Co. (NY&EB) 3-1-12
Federal Telegraph 3-2-1
Clark Wireless (Great Lakes) 3-2-4
History of Zenith 3-2-5, 3-1-14
History of Loutz 4-1-11, 3-4-5, 9-1-20
History of Grebe Co. (NSJNV) 3-4-9
4-2-5
Clapp-Emsham
History of Hallicrafter 4-3-6, 8-4-16
Wireless Speciality Apparatus
Company 4-4-9
Federal Tel. & Tel. (Buffalo) 5-1-10
National Company 5-2-12
Amrad Employees Celebrite 5-3-5
Howard Radio Company 6-1-3, 6-2-6
Kostler Radio Company 6-1-9 10-3-23
Mignion Company 6-4-9
Early German Wireless 7-2-4
History of Atwater Kent 7-3-15, 9-1-19
Croswell Corp. 7-4-14, 7-4-24, 8-3-5
10-2-18
General Electric 7-4-14
History of Stromberg Carlson 7-4-16
Tropical Radio Co. 1-4-4, 8-1-19, 9-1-1
Emerson Radio Co. 8-2-20
Browning Drake 8-3-10
RCA 9-1-1, 9-2-14
Coto-Coil Co. 9-1-6, 9-4-2, 10-1-20
Bell Labs 9-1-7
Baldivis/Utah 9-2-7
History of Wm. B. Duck Co. 9-2-4
History Jewell Instrument Co. 9-2-14
Westinghouse 9-3-3, 9-4-18
Murdoch 9-3-19
History of Hammamut Co. 9-3-22
QRS Company 9-4-2
Amrad Company 9-5-3
Radio Companies in Wall St. 10-2-9
Freed-Eisen 10-3-3, 10-3-7
History of Heath Co. 10-4-6
History of Kolster Radio Co. 11-1-20
History of Murdoch Co. 11-2-4
Gilfillan Co. 11-2-9
Allied Radio Corp. 11-2-10, 11-3-23
Radio-Craft Co. 11-2-17
Story of Remler 11-2-20
History of Graybar 11-2-20
History of Pilott Radio Co. 11-3-16
Inter. Radio Tele. Co. 11-3-24
History of United Wireless 11-4-11
Grebe-Hazeltine Patent 11-4-26
Brunswick Radio 11-4-26
DeForest Radio 11-4-28
History of Doron Bros. 12-1-17
Wm. B. Duck Company 12-2-5
History of Midwest Radio 12-2-15
Magnavox Radio 12-2-21
Weston Instrument 12-3-11 16-4-29
Wireless Speciality Apparatus 12-3-1
History of Elmac 12-3-20
Holzer-Cabot 12-3-25
Hallicrafter Radio 12-4-20
History of CTS/Frost Co. 12-4-22
History of Carond Radio Co. 13-1-2
History of Marcon Co. 13-1-11, 13-4-2
History of Philo Radio Corp. 13-2-20
History of Motorola 13-2-23
Continental Electronics 14-1-26
Amalgamated Wireless Australasia 14-1-1
Grebe Radio 14-1-28
History Gehring Wireless Co. 14-1-27
Patent holding companies 14-3-16
RCA equipment designation 14-3-17
Collins Radio Co. 14-4-21
Hist. British Valve Companies 15-1-27
History of Vibroplex Co. 15-2-18
History of Radio Receiver Co. 15-3-8
Quasar Corp. is formed 15-3-18
History of Hazeltine Corp. 15-3-23
History of Atlantic Cable 16-1-17
Bell Labs 50th Anniversary 16-1-32
Pilot Radio Corp. sold 16-1-32
Croswell Corp. 16-2-23, 16-4-28
17-3-20
Western Electric Tube Plant 16-2-31
History of Shure Microphone 16-3-24
Wall St. & radio stock in 1929 16-3-28
Hallicrafter Company 16-4-7

(Cont. on next page)
BOOK REVIEWS

Fire at Sea 1-4-7
Nymp and the Lamp 2-1-7
SOS at Midnight 2-2-3
A Backroom Boy 2-2-4
Greenwood's Book 2-3-1
Prodigal Genius--Tesla 2-3-3
Thomas Edison 2-3-16, 4-2-3
Juvenile Radio Books (W9FPS) 2-4-2
Old book market 3-1-9
Man of HiFidelity 3-1-7, 7-4-6
8-3-15, 9-4-11, 10-1-8
Strange Ordeal of Norman 3-1-9
My Father, Marconi, 3-2-4, 7-4-23, 7-3-12
Menlo Park Reminiscences 3-2-14
Book collecting (W2IA) 3-3-6
1913 Government Call book 3-3-8
Radiospander (Juvenile Fiction) 3-3-8
Pictorial History of Radio 3-4-7
Old Fall River Line 3-4-7
Electric Waves (Hertz) 4-1-6
Recommended books 4-2-8
Outlook for TV by O. Dunlap 4-3-5
West Coast Directory 4-4-7
Calling Cq 4-4-8
History of U.S. Signal Corp 5-1-6
The Marconi Scandal 5-1-9
San Francisco Waterfront & Wireless 6-1-9
Early History of Radio Guidance 6-1-9
Horseless Carriage Days 6-1-9
Early Elect. Communication 6-1-9
History of U.S. Navy Communication 6-3-8
Michael Paraday (biography) 6-3-8
Tom Swift and other books 6-3-8
David Sarnoff 7-1-18
Semaphore to Satellite 7-1-18
200 Meters and Down 7-1-18
Tower in Babel 7-3-12, 7-4-7
Mahlon Loomis 8-1-4
Titanic and Californian 8-2-14
World at their Fingertips 8-3-13,9-1-13
Contact at Sea (W6PNN) 8-3-15
Pioneer Tales (Dickov) 8-3-20
Electronics in the West 8-4-10,
9-1-13, 9-2-13
Invention of Radio (Russian) 8-4-10
The Electric Word (1928) 8-4-10
VLP Radio Engineering 8-4-10
Looking Ahead (Sarnoff) 9-1-13
From Spark to Space (Canada) 9-3-10
The Golden Web (Barnow) 9-4-11
Early Tesla book 9-4-22
Bits of Wireless (W8JDU) 10-1-17
Foil to Stereo 2-1-7, 10-2-16
Electrostatics 10-2-17
Marconi at South Wellfleet 10-3-11
The Maiden Voyage (Titanic) 10-3-11
QSO? Shoanomus 10-4-2
Contact at Sea 11-1-12 13-1-26
Bits of Wireless History 11-1-12
Horseless Carriage Days 11-2-15
Genius in Family 11-2-15
Fessenden 11-3-11
The Marconi Company 11-3-11
Thomas Edison 11-4-24
Service Guide 11-4-24
75 Years in Exciting World 12-2-7
Those Inventive Americans 12-2-7
Radio books reprinted 12-2-17
Greenwood's Book (Radio Vintage) 12-3-27, 12-4-18, 13-3-28
Radio Development 13-2-5
WAVF Station Development 13-2-5
Shipwreck (Morro Castle Disaster) 13-3-26
American Shipwrecks 13-3-26
Big Broadcast 13-3-27
Semaphore to Satellite 13-3-27
Collecting Dime Novels 13-4-8
Pirates Ruled the Waves 13-4-16
War with CBS 13-4-16
Electronic Bibliography 14-1-24
New Vintage Radio 14-2-16
McMahon 1921-1932 Guide 14-3-19
Gernsback 1927 Encyclopedia 14-4-20
Alexander Bell 15-1-14
Book of Diagrams 15-2-26
Arno Press books 15-3-10
Mahlon Loomis 15-3-25
Nikola Tesla 15-3-25
Brit. Wireless Tele. 15-3-25
Modern book reviews 15-4-31
American broadcasting 16-1-14
Radio in the Philippines 16-1-14
Flick of the Switch 16-1-30
Transistor Manual 16-2-20, 16-4-29
Lloyd's of London 16-2-28
Radio Astronomy 16-2-28
Era was a Tramp 16-3-25
Berengaria Exchange 16-3-25
Broadcast Industry 16-3-25
Phillips Code book 16-4-29
Confidential Call book 17-1-31
Service Manual 17-1-31
Canadian Radio History 17-1-31
Syntony and Spark 17-1-31
Publisher's Outlet 17-1-32
SOS TO THE RESCUE 17-2-5
Tyns Vacuum Tube Saga 17-2-13,17-3-22
British Crystal Sets 17-2-24
Crosley History 17-3-20
Arno Press-Tele./Radio 17-3-21
Creative Ordeal -Raytheon 17-4-11
MAGAZINE REVIEWS

Radio Craft, March, 1938 (Special) 1-2
Radio Electronics, Apr., 1953 1-2
"73" New Magazine 1-4-3
Kilbourne & Clark 2-1-7
Wireless World (Special) 2-3-15
Regeneration litigation 3-1-3
Dr. Brinkley 3-1-9
Wireless in Dirigibles 3-1-9
George Sterling (SGT) 3-1-9
Wire & Communication mag. 3-2-3, 6-1-15
Evolution of Bug ("73" mag.) 3-2-3
Early BC Broadcasting 3-2-4
Evolution of Broadcasting 3-3-3
De Forest at Federal Tel. 4-1-6
RCA 3-4-4
Telegraph and Telephone 4-1-6
I.R.E. Anniversary 4-1-8
Sarnoff 4-2-8
Regeneration Patent IEEE 4-3-10
Gold-Award SOS (73 mag.) 5-2-5
Radio News not complete 5-4-4
Early Vacuum Tubes (Elec. Wld) 5-4-12
Echoes from Otter Cliffs 6-1-10
50 Years of A.R.R.L. 6-2-6
"Electronics" 35th Anniv. 6-2-10
Cortland St. ("CQ", Oct., '65) 6-3-3
Neutilus SOS ("73", Sept., '65) 6-3-8
Early Days of Broadcasting 6-4-13
History of Early Radio mag. 7-2-18
Days of Spark (Pop. Elect.) 7-4-20
Guide to VHF 8-1-4
Eisen-Fabulous Drone ("73") 8-1-4
Spectrum Below 550 kc. 8-1-4
Early Periodicals-Geo. Clark 8-1-2
Ship DX (Pop. Elect. Sept. 65) 8-3-12
100 Years of Radio 8-3-16
Electronics Digest series 8-3-15
Pseudonym used by authors 9-1-7
De Forest Sketch 9-1-13
List of Gemsback publications 9-1-14
Radio Ancestors (Marriott, IEEE) 9-2-14
Swan Island BC (Elec. Ill.) 9-3-10
First Electron Tube 10-1-8
Broadcast DX 10-1-8
Transistor Anniversary 9-1-16
W9XK TV at Smithsonian 9-3-16
De Forest neutralization system 9-3-19
U.S. Patent Office 9-3-21
Frequency nomenclature 9-3-21
Signals from Mars (1937) 9-4-1
Collecting autographs (W2NX) 9-4-19
Early movies covering radio 10-1-20
Apollo 11 10-2-9
1929 Wall St. Crash 10-2-19
DX today with crystal set 10-3-23
E.L.F. at 7 cycles 10-3-14
N A G A antennas by Collins Radio 10-3-16
World’s largest audio system 10-3-16
History of Modern Electrics 11-1-7
Original CQ magazine 11-2-17
Notice -- Radio Engineering 11-2-21
Graphic Antiquarian 11-3-11

Television history 11-3-20
Broadcasting Review 11-4-24
Wireless in the 1920’s 12-1-22
Great Men in Electronics 12-1-22
Airway Radio 12-1-22
Induction coil 12-2-7
Juvenile book author author 12-2-7
Collecting (Playboy magazine) 12-3-27
Wireless World Anniversary 12-3-27
Heinrich Ruhmkorff 12-4-20
Radio Astronomy 13-1-28
Deease of Electronics World 13-1-28
Magazine for collectors? 13-2-5
Electronics Digest 13-2-15
Electronics Illustrated 13-3-12, 14-1-25
History of feedback 13-3-26
Wireless World 50th Broadcast 13-4-16
U.S. Signal Corp History (Myers) 13-4-16
Horn Speaker magazine 13-4-23
Wireless in Alaska 14-1-24
First Broadcast Stereo 14-1-24
Code Speed Standards 14-1-24
Gemstone’s Ralph 12-6C 14-4-20
Classic Amateur receivers 15-1-14
VHF "Whistlers" 15-1-14
Braun and the cathode ray tube 15-1-14
"Radio Yesterday" 15-1-14
Australian pioneers 15-4-25
Marconi Anniversary 15-4-25
Burnstein-Applebee catalog 15-4-31
MacMillan Expedition 16-2-28
"Hot Carbon" 16-4-28
Transatlantic cables 16-4-28
Edward Weston 16-4-28
Thomson & Houston 16-4-28
Amateur "Golden Years" 17-1-32
50 Years of Television 17-1-32
W.S.L. Tesla/Marine Radio 17-3-20
McMurdo Silver 17-3-20
Brassponders’ Gossip 17-2-5
Original QST magazine? 17-2-19
New Items in 1969 17-4-16
N.B.C. Chimes (Review) 17-4-11
History of Bell System 17-4-11
History of UK-210 tube 17-4-10
History of Joseph Henry 17-4-10

RADIO ORGANIZATIONS

RADIO CLUB OF AMERICA 1-1-1, 1-4-3
OLD OLD TIMERS CLUB 2-3-3, 4-3-11
M.A.R.O. 3-4-3, 5-4-11, 6-4-20, 7-4-20, 9-3-11
10-2-5, 10-3-6,
QUARTER CENTURY WIRELESS ASSN. 3-1-4
3-3-1, 3-4-4, 4-1-2, 5-1-12, 5-2-2
5-3-3, 5-4-4, 7-3-6
I.R.E. Exhibit 2-2-4
I.R.E./I.E.E.E. 50th Anniversary 3-2-1, 4-1-8
I.R.E./A.L.E.E. Merger 3-4-4
VETERAN WIRELESS OPERATOR ASSN. 2-1-1
4-2-1, 4-4-4, 5-3-4, 8-3-11
Wireless Institute 6-1-3, 6-1-7
Morse Telegraph Club (See Telegraph)

(Cont. on next page)
MUSEUMS

W2ZI Museum 1-1-3, 1-2-4, 1-4-2
Princeton Tube Collection 1-2-1
Michigan Historical Museum 1-3-2
Wayne Nelson Museum 2-1-1, 6-1-10
Earl Englund Museum 5-1-7
FRANKLIN INSTITUTE 1-4-3, 5-3-12
FORD MUSEUM (Dearborn) 1-1-4, 1-4-7
8-1-7, 8-1-16, 8-2-14, 8-2-16
Ralph Barnett's Museum 6-2-5, 9-1-9
Great Lakes Marine Museum 2-4-4
SEATTLE CITY MUSEUM 3-1-3, 3-2-4
8-3-13, 10-1-12
Museums to visit --- 3-1-8
BRITISH SCIENCE MUSEUM 3-4-5
New England Wireless Museum 4-4-1
4-3-4, 5-4-12, 7-2-19
MUNICH TECHNICAL MUSEUM 4-2-9, 8-3-20
ELECTRONICS MUSEUM (Schenectady) 4-3-4, 5-1-1, 6-2-7, 7-4-14
FOOTHILL/PERRIN MUSEUM 4-3-1, 7-4-14
10-3-8
A.R.R.L. MUSEUM 4-1-1, 4-3-3, 7-1-17
9-3-12
Gray Museum of Wireless 5-3-8, 6-3-15
14-3-25, 17-1-5, 8-1-10, 10-1-17
DETOUR HISTORICAL MUSEUM 5-4-6
National Telegraph Museum 5-4-12
6-4-4
De Forest Museum 6-1-1, 6-3-20, 7-3-10
McNicol Collection 6-1-4
WESTERN RESERVE MUSEUM 6-2-1
ARIZONA MUSEUM 6-2-3
Floyd Lyon's Museum 6-2-11, 6-4-10
A.W.A. Museum 1-2-2, 1-4-1, 6-3-9
7-1-17, 7-2-2, 7-2-8, 8-2-3
Marcy Magazine Collection 7-1-17
SMITHSONIAN 7-1-18, 7-2-12, 9-1-19
9-2-11, 9-3-16, 10-2-10
AUCKLAND N.Z. MUSEUM 6-4-12
COREUS CHLESTI MUSEUM 7-4-5
John Stokie's Collection 8-1-5
Pavon Museum 8-2-2, 10-1-10
Nichol's Museum 8-4-9
Thompson Tube Museum 8-4-13
NETHERLANDS MUSEUM 9-1-7
Pearl Museum 9-1-9, 9-4-12
WILLIAM PERN MUSEUM 9-2-1
Mt. Vernon Bolt Museum 9-2-2, 9-4-21
U.S. NAVAL MUSEUM 9-2-8, 9-4-24
Moreau Key Museum 9-2-15
WESTERN UNION MUSEUM 9-3-18, 10-1-21
Atlee Museum 9-4-10
KURDNI LIBRARY MUSEUM 9-4-20
NATIONAL MUSEUM OF CANADA 10-1-11
WRIGHT-PATTERSON APB MUSEUM 10-2-3, 10-3-16
Museum Listing in IEEE Spectrum 10-2-15
KENT MUSEUM 10-3-9
Pacific States Electrical Mu. 10-4-18
ROYAL CANADIAN SIGNAL MUSEUM 10-4-19
Museum Listing 11-1-5
Ferrowatt Electrical Museum 11-1-13
12-3-23
Mt. Vernon Bull Museum 11-3-5
Pothill Museum 11-3-11, 13-1-20
13-1-24, 14-1-2
Smithsonian 11-3-20, 12-1-11, 12-4-7
Ford Science Museum 11-3-20, 12-2-8
Lyons Museum 12-1-5
MUCHOW MUSEUM 12-2-3
Dutch Museum 12-3-18
Bell Telephone Museum 12-3-28, 12-4-3
MUSICAL MUSEUM 13-1-7
MUSEUM OF POCONOS 13-2-3, 13-3-15
Museums Problems 13-2-16
New England Wireless Museum 13-3-30
Jack Gray's Museum 14-1-2
Taylor Museum (Indiana) 14-3-15
Norwegian Museum 14-3-24
French Cable Museum 14-4-20
British Science Museum 14-4-26
Telephone Museum 14-4-26
SEATTLE TELEPHONE MUSEUM 15-1-22
Marconi Exhibit at Chicago 15-2-17
Signal Corp Museum 15-2-17, 16-2-4
Photos of new A.W.A. Museum 15-4-3, 16-2-6
Canal Zone Museum 15-4-11
A.W.A. ACTIVITIES

A.W.A. in QST 1-1-6 10-4
A.W.A. at T.R.E. Meet 1-1-2
General activities 1-3-1
A.W.A. film shows 2-2-8, 5-4-10
A.W.A. at G.E. OT Nite 2-3-4
Fall Meet 1961 2-4-1
A.W.A. at New York State Con. 2-4-11
A.W.A. at Michigan OT Nite 3-1-1
3-2-14, 5-2-1
Andover get-together (1962) 3-2-1
Lewis McCoy & Dr. Staud at AWA 3-3-1
Nelson Rockefeller at A.W.A. 3-3-1
1962 Annual Business Meeting 3-4-3
Dearborn Meet (1963) 4-2-1, 4-3-2
FIRST A.W.A. Conference 4-2-1, 4-3-1
Marconi gear at A.W.A. museum 4-1-1
A.W.A. Station WAN: 4-3-11
4-3-5, 4-4-1, 5-1-1, 5-3-7, 5-3-10
6-1-7, 7-2-7, 7-4-4, 10-14
A.W.A. at Atlantic Convention 4-4-1
Annual Meeting (1963) 4-4-1
Coast Guard Transmitter at AWA 5-1-4
A.W.A. at W.N.Y. Hamfest 5-1-1
2ND ANNUAL CONFERENCE (1964) 5-3-1
A.W.A. at National ARRL Con. 5-3-3
1965 Annual Business Meeting 5-4-1
Winter visitors to museum 5-4-3
A.W.A. on Television 5-4-11
Trip to Washington 6-1-12
Spring Meet at KZAXE 6-2-2
A.W.A. at Syracuse OT Nite 6-3-1
1965 Summer Meet 6-3-1
1965 Annual Business Meeting 6-3-3
10th Anniversary of A.W.A. 6-3-9
3RD ANNUAL CONFERENCE (1965) 6-3-14
A.W.A. Officers 7-1-2
Program for 1966 Conference 7-2-9
1966 A.R.R.L. Convention (Boston) 7-1-14
Demonstration of spark trans. 7-2-8
Report on 1966 National Conv. 7-3-1
Crystals available for AWA nets 7-3-10
Goldsmith & Heising at A.W.A. 7-4-1
1966 Annual Business Meeting 7-4-5
A.W.A. at World's Fair 7-4-7, OTB in Library of Congress 7-4-14
Rare manuscripts of G. Tyne 7-4-15
A.W.A. at New England Conv. 8-1-18
1967 ANNUAL CONFERENCE 8-2-9, 8-3-2
Smithsonian visits A.W.A. 8-2-3
William Pay, Guest of Honor 8-3-11
1967 Annual Business Meeting 8-3-16
Summer Meeting 1968 9-2-1
A.W.A. acquires legal counsel 9-2-7
Camera-radio given A.W.A. 9-3-5
Telefunken gear at Museum 9-3-20
1968 Annual Business Meeting 9-4-1
Pictures of museum's new wing 10-1-2
A.W.A. provides TV material 10-1-21
1969 ANNUAL CONFERENCE 10-2-11, 10-3-2
1969 Annual Business Meeting 10-3-3
Old Timers Bulletin Staff 10-4-7
WFAP receives A.W.A. Award 11-2-2
A.W.A. at W.N.Y. Hamfest 11-2-8
A.W.A. to Award to Jack Gray 11-2-9
Program for 1970 Conference 11-2-11
1970 Conference Review 11-3-6
A.W.A. Robbery 11-3-10
1970 Annual Meeting Report 11-4-14
Wilson Memorial 11-4-21, 13-4-24
1971 OT XMTN Tests 12-1-2
A.W.A. in I.B.E.W. 12-1-6
A.W.A. on television 12-1-15
Visitors at AWA exhibit 12-2-1
1971 Conference Program 12-2-9
1971 Conference Review 12-3-3
Net Operation 12-3-11
A.W.A. at Syracuse University 12-3-24
Houck Award 12-4-16, 13-3-16
A.W.A. Museum 12-4-21
Member's letterheads 12-4-28
Results 1972 OT XMTN Contest 13-1-8
1972 Annual Meeting Report 13-4-2
A.W.A. in CQ magazine 13-4-24
1973 Spring Meet 14-1-3
Results of 1973 OT XMTN Contest 14-1-22
A.W.A. Museum Fund 14-2-4
1973 W.N.Y. Hamfest 14-2-3
1973 Houck Award Winners 14-3-1
1974 * * * * 15-3-4
1975 * * * * * 16-3-7
1976 * * * * * 16-3-26
Pickerill slide show 14-3-12
1973 Conference Review 14-3-4
Museum Fund 14-3-27, 14-4-10, 15-1-4
1973 Annual Meeting 14-4-2
Museum Irene 14-4-3
Polar Adventure 14-4-8, 15-19, 17-2-26
Tuska Library 14-4-11
AWA Museum Layout 15-1-4
Armstrong Hall 15-2-3
Foothill College gathering 15-2-4
AWA/IHES Meet at Purdue 15-2-5, 16-2-29
Work on new Museum 15-2-6
1974 Conference Program 15-2-13
AWA receives HRL equipment 15-3-3
Armstrong painting 15-3-3
1974 Conference Review 15-3-4
Material from England 15-3-5
New AWA Museum 15-3-3, 16-2-6, 16-3-3
Notes from President 15-4-2, 17-1-4
1974 Equip. Contest Winners 15-4-1
A.W.A. Equipment Inventory 15-4-7
AWA Logo 15-4-19, 16-3-2, 17-1-26
1974 Annual Meeting 15-4-22
(Cont. on next page)
(A.W.A. ACTIVITIES)

Bob Ryan collection 16-1, 4, 16-1, 21
AWA at WXXI 16-1, 17, 16-2, 3
Regional Meets 16-2, 10, 17-1, 3
17-2, 4
1975 Conference Program 16-2-15
California Foothill College 16-2-19
New dues announced 16-3-2
1975 Conference Review 16-3, 4, 16-4, 5
ARRL Convention Report 16-3, 6
Southern AWA Meet 16-3, 9
1975 Annual Board Meeting 16-4, 3
AWA in TransRadio magazine 16-4, 29
Schneider tube collection 16-4, 30
AWA Novice classes 1/1-1, 17-3, 2
High bid on tube sale 17-1, 8
AWA exhibit to Smithsonian 17-2-3
Early Bell telephone on loan 17-2-3
"Want Ad" edition 17-2, 4
1976 Conference Program 17-2, 14
W2AN 1923 station at Museum 17-2-25
AWA booth at New York Hamfest 17-2-26
Judging equip. at Conference 17-2, 29
History of AWA-25th Anniversary 17-4, 4
Original 1952 AWA Museum
Students visit AWA Museum 17-4, 18
New Board Members 17-4, 1
Hueck Award Listing 17-4, 46
W2AN on air 17-4-14
Tuckerton/Sayville g.s.l cards 5-4-2
Early call books 5-4-4
Radio postage stamps 5-4-12, 6-4, 12, 7-1, 9, 8-1, 4
National Radio Institute 5-4, 14
Old Time Phonograph records 5-4, 16
S.S.B. History 6-1-2 7-4, 4
Wollaston wire 6-1-8, 6-2, 5
Litz wire 6-1-9
Neutralization claims 6-2-10
Galena used by Tesla 6-4-16
Early Facsimile 6-3, 6
Pioneer recordings at Univ. Mich. 6-4, 9
Origin of Ohm's Law 6-4, 16
Jenkin's Television 7-1, 2
Minerals for crystal detectors 7-1-20
First Mobile 7-2-3, 8-1-1
Definition of capacity (W/D/M) 7-2-18
Distress Call Frequencies 7-4, 4
List of VIF stations 7-4, 10, 8-1-3
Maj. Armstrong postage station 8-1-4
Receiving Aeronautical stations 8-1-7, 9-3-16

Highest tower 8-2-8
Electronics Industries Show 8-2-20
Skywire 5 miles long 8-3-16
VLF listening in Australia 8-3-17
Mrs. Lee de Forest-anamour 8-4-12, 9-2-13
Victor phonograph's dog out 8-4-13
Solid state patent in 1926 8-4-14
Old movie stars on records 9-1-11
Very LF at Annapolis (Taylor) 9-1-16
Current VIF stations 9-1-16
Quaker Cats Box (and radio) 11-1-6
Original Hartley circuit 11-1-12
Cortlandt Street, N.Y.C. 11-4-10
Radio Postage stamps 11-4-22
Music exhibit at Smithsonian 12-1-11
1920 Home Cartoon 12-1-12
Origin of Television 12-1-23
Zenith lawsuit 12-1-23
Radio postage stamps in Canada 12-2-18
Ultimate in antenna 12-2-15
Microphone Award 12-4-13 14-1-2
1500 meter operation 13-1-3
Unit "Jars" as measurement 13-1-25
Alexander Bell as Inventor? 13-1-26
Places to visit-Washington, D.C. 13-2-24
British 50th Anniv. post stamps 13-3-12
Electronics Ind. Assn. 13-4-6
Origin of 60 cycles 13-4-7
N.R.R. 50th Anniversary 13-4-26
25th Anniversary transistor 13-4-26
RCA at Disneyland 13-4-26
U.S. Patent System 14-1-2
New Zealand Anniversary 14-1-4
New U.S. postage stamps 14-1-12
Valuation for I.R.S. 14-1-12
F.C.C. Transmitter Rules 14-1-26
Key Klix magazine 14-2-1

Electronic Stamps 14-2-2
Marconi Stock 14-2-10
Col. Green's Round Hill 14-2-10

(MISCELLANEOUS)

F.C.C. permit to operate spark 1-2-1
Famous patent litigations 1-4-8
Signals to Mars 1-4-7
Outer Space with Marconi 2-1-6
Negative feedback 6-2-10, 2-1-2
First Transatlantic photos 3-1-4
First Transatlantic signals 3-1-2
Cortlandt Street 3-2-3, 6-3-3
7-1-16, 10-1-9
Underground Antenna 3-2-14
Origin of word "Radio" 3-2-16, 8-1-18
First Radio Advertisement 3-3-2
Highest possible radio freq. 3-3-2
Marconi hotel 3-3-3
Victor phonograph 3-3-4
1902 FM Patent 3-3-8
First Radio School 3-4-4
Did de Forest invent Audion? 4-1-4
How did it sound (W/GPS)? 4-1-8
P.C.C. to License spark trans. 4-4-6
Hertz and spark gap 4-2-3
Radio Astronomy 4-2-4, 4-4-1
7-1-5, 8-3-3, 9-1-7, 9-3-10, 9-3-11
First printed circuit 4-2-6
Colby Radio school 4-4-3
9-4-3
Harvard Radio School 5-1-5, 5-3-9, 5-4-13
De Forest phonofilm 5-2-6
Triode trademark 5-2-7
Reference material available 5-2-3
Amrad employees meet 5-2-12, 5-3-5
Marconi/Mignon coils at A.W.A. 5-3-5
Early single side-band 5-3-9
Last receiver using 201-A's 5-3-12

(Cont. on next page)
RCA Institute closes 14-3-28, 15-2-26
Berliner Award 14-4-5
Australian Post. stamp 14-4-20
Mark Twain author 14-4-22
Early "Ham-ads" 14-6-26
Postage stamp display 14-6-26
National Hall of Fame 15-1-29
Tube Explanation 15-1-31
Illegal use of A-K name 15-1-32
RCA stops manufacturing 15-2-26
German Anniv. Postage stamps 15-3-17
End of Singing Telegram 15-3-18
Manufacturing statistics 15-3-20
Last spark transmitter 15-4-19
The Letter "9I" 15-4-20
Canadian radio postage stamps 15-4-25
The Dempsey-Tunney fight 15-4-26
Titanic movie 15-6-1-5
American Freedom Train 16-1-13, 16-4-19
Atlantic Cable problems 16-1-17
Novel "pen holders" 16-1-21
Ralph Heintz mag. tape 16-2-4
Thomas Edison phonograph record 16-2-4
Working at GE plant in 1925 16-2-10
Patent dates 16-2-11
Magazine pub. dates 16-2-21, 17-1-33
17-3-31
Marconi blueprints 16-2-27
Edison’s views on radio 16-2-30
1905/1925 Murgas Anniv. Test 16-3-3
Receiver development 1920-30 16-3-16
Radio Stock market at Crash 16-3-28
Radio 10th year growth 16-3-23
100th Anniversary of Telephone 16-4-23
Japanese products filed USA 16-6-26
Aggar/WLS recording 16-6-30
Carrier Pigeon messenger 17-1-30
Joseph Henry first wireless 17-1-30
Copyright use 17-2-5
QST Mystery 17-2-19
Jenkins Television 17-2-30
Marconi Factory at Roselle, Pk. 17-3-12
Edison Lamp available 17-3-13
Judging old equipment at Confer. 17-3-29
Bacher Award 17-4-12
News Clippings of 1929 17-4-16

PEOPLE

Hiram Percy Maxim 1-4-3
Elmer Fucher 4-3-8
B. "Zip" Jones 1-4-5, 2-1-2 7-1-6
Howard Pyle (WFOR) 2-2-1 6-2-10
Austin Lescarboura 2-2-4
Irv Vermilya (WIZE) 5-1-5 6-3-8
James Clark Maxwell 2-2-6
Nikola Tesla 2-3-3, 3-3-8, 4-1-6
6-2-7, 6-4-16, 8-1-8, 8-3-12, 9-2-18
9-3-5, 9-4-1, 9-4-16, 9-4-23, 10-3-12
Popoff 2-3-15, 8-1-9
Ted Duvall 2-4-12, 9-4-24
Clarence Tuska 5-3-4, 7-3-4
Roy Alcott (W5RU) 2-4-9
Bill Prichard (Magnavox) 2-4-10
Dave Middelton (W5CA) 3-1-8

Mahlon Loomis 3-1-10, 5-3-12, 8-2-14
Jack Irvin 3-1-9
Joseph Henry 3-1-11
Grote Reiter 7-1-5, 8-3-3 10-3-15
Marcini 3-2-3, 3-2-4, 3-2-16, 3-3-4
3-3-4, 3-4-5, 5-1-11, 6-1-9, 7-3-12
George Clark 3-3-9
R.H.C. Matthews (9ZN) 3-2-5, 8-2-16
Milton B. Sleeper 3-2-13
Walter Massie 3-2-13
Thomas Edison 2-3-16, 3-2-14
Prof. George Pierce 3-2-16
Mike Caveney (W5CQ) 3-3-1 4-2-2
5-3-2 7-4-23
Hugo Gernsback 3-3-2, 4-3-5, 5-1-10
7-3-4, 8-3-8, 9-1-14
De Forest 3-3-3, 5-1-9, 5-2-4, 5-2-6
6-1-1, 6-1-2, 6-3-20, 6-4-10, 7-2-3
7-2-5, 8-2-16, 8-4-12, 9-1-11, 9-1-13
9-4-1 16-2-21
Elmo Pickrell 3-3-5, 6-2-9, 8-2-19
Raymond Gvy (W4AZ) 3-4-1, 9-2-12, 9-3-1
Clarence Dengler (W2LZ) 4-1-9, 6-3-9
Hollis Baird 4-2-4, 10-2-12, 10-3-5
Sarnoff 4-2-8, 7-1-18, 7-3-9, 9-1-13
10-2-24
Austin Parkhurst 4-3-9, 5-11-11
Reginald Fessenden 4-3-9, 5-1-12, 6-4-1
Armstrong 4-3-10, 6-1-4, 7-3-9, 8-1-4
8-3-4, 8-3-9 16-4-16
Emice Thompson 4-4-2
William Dubilier 10-1-11, 10-2-15, 5-1-7
Heinrich Bertz 4-1-6, 5-3-9, 9-4-11
Stubbierfield 8-2-2, 5-3-9, 17-2-6
Ernest Magon 6-4-9
Col. Irvin Weir (W2POI) 5-3-10
Dwight Weston 5-3-12
Tom Appleby (W3NX) 5-3-5, 6-1-5
John Hayes Hammond 2-1-1, 6-1-7
S.R. Mullah 6-1-1, 9-4-11
Benjamin Messner 6-1-9
Gerald Tyne 6-2-2, 6-3-16, 7-3-5
Frank A.D. Andrea 6-2-6, 6-4-17
Leon Deloy (FSAB) 6-2-7, 6-4-10
Col. Green 6-3-17, 6-4-16, 7-2-1, 10-2-6
Art. Stockellburg (WLLS) 2-2-1, 6-4-17
Charles Jenkins 7-1-1, 17-2-30
Thomson 7-1-8, 7-2-13
Dr. Lawrence LePaige (W3QCV) 7-1-16
Geo. Sterling (WRAE) 7-2-1, 9-3-4, 9-3-13
R.H. Scott 7-1-12
Don Mix (WRTS) 7-2-5, 9-1-4, 10-1-1
L.A. Hazelbine 7-2-20
Frank Matejka (K5RS) 7-3-1
Paul Godley 7-3-2, 7-3-4 (See later list)
Dr. Northrup 7-4-20
Jack Bluns 7-4-20
Lawrence Cockaday 8-1-4
Glen Browning 8-1-4, 8-4-13
Jack Gray (W5DHY) 8-1-9, 8-3-5
Leon Theremin 8-1-11, 10-2-5, 10-3-3
Ken Richardson 8-3-1
Cndr. MacMillan 8-3-5, 9-1-14
Charles Peterson 8-4-3
Greenleaf Whittier Pickard 8-4-5

(NOtte: SEE ORITIARY COL. FOR SAME NAMES.)
Orrin Dunlap 9-1-17, 9-1-22, 10-2-11, 10-2-12
Dr. McCaa 9-1-15
Nathaniel Baldwin 9-1-17, 9-2-7, 9-1-13
Dr. William Coolidge 14-3-16, 9-2-12
Lloyd Espenschied 7-2-21, 9-3-1, 10-1-21, 10-2-8
Robert Marriott 9-2-2, 9-2-14
Roland Bourne (WIANA) 6-1-7, 6-4-10
7-3-14, 10-2-13, 10-4-22
George Garammer (WDP 9-2-10, 9-3-15
El Redington (W2Z 5-1-4, 9-3-15, 9-2-10
Samuel Robison (Manual) 9-4-3, 10-1-13
Michael Peradie 9-4-15
Rudolph Goldschmidt 9-4-15
Valdemar Poulsen 9-4-17
Fred Kolster 10-1-12
Frank Gunther (W2ALS) 10-1-13
Charles Herrold 10-1-14
Frank Geisell (KPH) 10-1-24
John V. Hogan 2-1-6, 10-2-1, 4-3-5
Herbert Hoover Jr. (W2ZH) 4-3-3, 10-2-4
Joseph Tychicer (sound movies) 10-2-4
Dr. Elman Myers 10-4-22 10-2-12
Ralph Hartley 10-3-23
A.P. Morgan 10-3-14
Dr. Peter Goldmark 10-3-12
Elman Meyers 11-1-5, 14-2-2
Maria DeForest 11-1-5
Lee DeForest 13-1-13, 14-1-26
Mike Caveney, W3CG 11-1-7
Graham McNamee 11-1-13
Nikola Tesla 11-2-3, 11-4-19, 12-4-18, 13-2-5
William Cotter 11-2-7
Raymond Guy 11-2-10
John Stone Stone 11-2-10 171-2-12
Paul Godley 11-2-12 16-1-4
J. Harris Rogers 11-2-16, 12-2-24
Stuart Ballantine 11-2-16
David Grimes 11-2-20
B.T. Cunningham/Ramler 11-2-20
E.F.W. Andersonson 11-2-22 14-3-12
R.A. Fessenden 11-2-22
Sir Oliver Lodge 11-2-22
G.W. Pickard 11-2-22, 13-3-29, 13-4-6
Dr. William Coolidge 11-3-2
Mark Bullock 11-3-8
Gerald Tynie 11-3-23
Colin B. Kennedy 11-4-8
Frank Conrad 11-4-21
Woodrow Wilson 11-4-21, 13-4-24
Thomas Edison 11-4-24, 11-4-25
Marconi 12-1-4
Rutherford 12-1-11
John Kraus 12-1-18
Clarence Tuska 14-1-3
James Clerk Maxwell 12-4-7
Hugo Gernsback 12-4-9
Clarence Dentreger 13-1-22
Milton Gross 13-1-23
Obituaries of Entertainers 13-1-23, 13-3-31
William White 13-2-5
Lewis Clement 13-2-8, 13-2-17
Edwin Armstrong 13-3-2, 13-3-12
Ignatius McCarty 13-3-16
David Sarnoff 13-3-27
Alfred Chirardt 14-2-4
Elmo Pickerill 14-3-2
Howard Hughes 14-3-19, 14-4-9
Mark Train 14-4-22
Roy Weagant 14-4-26
Ferdinand Braun 15-1-14
Roland Bourne 15-1-32
Dr. Fuller historical tape 15-2-28
William Brenchman 15-3-24, 16-3-7
Mahlon Lomax 15-3-25, 17-2-6
Ralph Heintz 16-2-4
Thomas Edison 16-2-4, 16-2-30
Powell Brosley 16-2-29, 17-3-20
Father Murgas 16-3-8
R.H.G. Matthews 16-4-16
Edward Weston (meters) 16-4-29
Ted Rogers (Canada) 16-4-28
Stuart Davis 16-3-7
Joseph Henry 17-1-30
Howard Lorenzen 17-2-12
C.F. Jenkins (television) 17-2-30
McMurdo Silver 17-3-20
Paul Nipkov 17-4-14
Ralph Batcher 17-4-42

Do you need back issues of OTB for historical reference? See notice elsewhere in this Bulletin listing original copies in stock.

The supply of many early Bulletins is exhausted. These are issues when membership was less than 400 and only a marginal surplus was printed.

Our printer has retained the off-set negatives for about half of these non-listed copies. This means he can provide these back OTB's if there is sufficient interest. Where the negatives are not available, a duplicating process can be used with slight loss in print quality.

Please send list of "wanted" OTB's to Dex Deely who will determine cost for new printing. If the demand is great enough, we may be able to keep cost to $1 per issue. Results of survey will be given in the June Bulletin.

Send list to: Dex Deely 8 Briar Circle Rochester, N.Y. 14618

(Continued on next page)
C.S. Franklin 5-4-10
Earl Williams 5-4-10
William Geerse 5-4-10
William White 6-1-7
William Terrill 6-1-7
James Clapp-W4AU 6-1-7

John Hammond Jr. 6-1-7
Austin Parkhurst 6-2-5
Dan McCoy-W5D5G 6-3-3
Cy Jenks-W5JJY 6-3-3
Allan Dumont 6-3-3
Art Stockelburg 6-4-17
Paul Watson 6-4-17

B.T. Zip Jones 7-1-16
Raymond Bark 7-1-16
Dr. Albert Hull 7-2-17
H.R. Hall-W9CP 7-2-17
Capt. Howe 7-3-19
Houston Barnett 7-3-19
Percy Collison 7-3-19

Lang Bourland 7-3-19
Roy Ranko-W2APN 7-4-5
Phil Gildersleeve 7-4-5
Ralph Barber-W2ZM 8-1-8
Walter Lennon 8-1-8
Gen. Paula 8-2-17
Gene Hander-W2LF 8-2-17
Ray Bevers, W3UXW 8-2-17

Joseph Mullen-K4JXR 8-2-17
Benjamin Abrams 8-2-17
D.L. Caldwell 8-3-6
Tom Willman-W2DIB 8-3-6
Hugo Gernsback 8-3-8
Fulton Cutting 8-4-12

Charles Ellsworth 8-4-12
Earl Thomas-W2MM 9-1-3
Alfred Goss 9-1-3
Paul Segal-A6RL 9-1-3
John Cain-W3MB 9-4-4
Harold Swart 9-4-4
Fred Parsons 9-4-4
Ralph Datcher 9-4-4

Leon Delory-P5AB 10-1-7
Herbert Hoover Jr. 10-2-4
Joseph Tycoconer 10-2-4
William Dubsler 10-2-15
Chas. G. Smith 10-3-7
Walt Weber-K2ES 10-3-7
Bill Cassett-W6CRM 10-3-7

Haraden Pratt 10-3-7
Will Andrews-W2ONE 10-4-23
R.D. Bangay 10-4-23
Horton Mosher 10-4-23
Henry Gawler 10-4-23
Floyd Clymer 10-4-23
Orin Dunlap 10-4-23

Harold Greenwood 12-3-23
Roland Bourne 12-4-21, 12-4-21
David Sarofey 12-4-19
Mike Canavan 12-4-21
Chet Ouellet 12-4-21
Gene Austin 12-4-21

Hugh Braese 13-3-9
H.J. Nafger 13-3-9
Tate Thetreau 13-3-9
Richard Johnston 13-3-9
Louis Rizoli 13-3-9
Frank Smith 13-3-9

Obituaries - Professional 13-3-31

Lester Benson 13-4-20
Peter Rossmann 13-4-20
Charles Peterson 13-4-20
Claire Warren 13-4-20
Walter Brown 13-4-20
Axel Jensen 13-4-20

Ray Rapp 13-4-20
Howard Pyle 13-4-20
Jimmy Wallington 13-4-20

Prof. Grover 14-1-13
Martin Codel 14-1-13
Fred Stein 14-1-13
Niles Tramwell 14-1-13

Stanley Brazill 14-1-13
Dr. Elman Myers 14-2-25

J.E. Smith of N.R.I. 14-3-19
Norman Wunderlich 14-3-19
Don Mix, W4TS 14-3-19
Paul Godley 14-3-26
Randy Runyon 14-3-26
<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harry Secor</td>
<td>1/3/26</td>
</tr>
<tr>
<td>A. Flesman (Lafayette)</td>
<td>1/3/26</td>
</tr>
<tr>
<td>Addison Eldeman</td>
<td>1/3/26</td>
</tr>
<tr>
<td>Allan Powley (WMAL)</td>
<td>1/3/26</td>
</tr>
<tr>
<td>Jonathan Eldridge</td>
<td>1/4/27</td>
</tr>
<tr>
<td>Bob Herter, W2AB</td>
<td>1/4/27</td>
</tr>
<tr>
<td>Bert Martin, K2LEB</td>
<td>1/4/27</td>
</tr>
<tr>
<td>Watson-Watt</td>
<td>1/4/27</td>
</tr>
<tr>
<td>Lizette Sarnoff</td>
<td>1/4/27</td>
</tr>
<tr>
<td>Russ Barker</td>
<td>1/5/27</td>
</tr>
<tr>
<td>Charles Kolster</td>
<td>1/5/27</td>
</tr>
<tr>
<td>Alfred Goldsmith</td>
<td>1/5/27</td>
</tr>
<tr>
<td>Murray Crosby</td>
<td>1/5/27</td>
</tr>
<tr>
<td>Ed Cullings</td>
<td>1/5/27</td>
</tr>
<tr>
<td>Ken Chase, W2MA</td>
<td>1/5/27</td>
</tr>
<tr>
<td>Glen Brownlee</td>
<td>1/13-3/27, 1/14/27</td>
</tr>
<tr>
<td>Walt Rogers, WELW</td>
<td>1/13-3/27, 1/14/27</td>
</tr>
<tr>
<td>Jack Jeffers, W2WS</td>
<td>1/13-3/27, 1/14/27</td>
</tr>
<tr>
<td>Don Cooper, K3WOK</td>
<td>1/13-3/27, 1/14/27</td>
</tr>
<tr>
<td>Milton Cross</td>
<td>1/13-3/27, 1/14/27</td>
</tr>
<tr>
<td>Walter Cady</td>
<td>1/13-3/27, 1/14/27</td>
</tr>
<tr>
<td>Aleksand Mints</td>
<td>1/13-3/27, 1/14/27</td>
</tr>
<tr>
<td>Dr. William Coolidge</td>
<td>2/1-3/32</td>
</tr>
<tr>
<td>Moreau Jansky</td>
<td>2/1-3/32</td>
</tr>
<tr>
<td>E.Z. Lampion</td>
<td>2/1-3/32</td>
</tr>
<tr>
<td>Andy Rutherford, W2TQV</td>
<td>2/1-3/32</td>
</tr>
<tr>
<td>Harold Dinger, W3KH</td>
<td>2/1-3/32</td>
</tr>
<tr>
<td>Tom Phelan, W3BVE</td>
<td>2/1-3/32</td>
</tr>
<tr>
<td>Harold Cagle, K4CR</td>
<td>2/1-3/32</td>
</tr>
<tr>
<td>Dr. E.F.W. Alexander</td>
<td>2/1-3/32</td>
</tr>
<tr>
<td>H. M. Scott</td>
<td>2/1-3/32</td>
</tr>
<tr>
<td>Karl Hassel (Zenith)</td>
<td>2/1-3/32</td>
</tr>
<tr>
<td>Philip Kayatt</td>
<td>2/1-3/32</td>
</tr>
<tr>
<td>Ted B. Duvall, ex-2DQ</td>
<td>2/1-3/32</td>
</tr>
<tr>
<td>George Gurney (VBI)</td>
<td>2/1-3/32</td>
</tr>
<tr>
<td>Frank A.zee, K4-LP</td>
<td>2/1-3/32</td>
</tr>
<tr>
<td>Thornton Fisher</td>
<td>2/1-3/32</td>
</tr>
<tr>
<td>Vincent Lopez</td>
<td>2/1-3/31</td>
</tr>
<tr>
<td>Glenn Riggs (Grebe)</td>
<td>2/1-3/31</td>
</tr>
<tr>
<td>Connie Bowell</td>
<td>2/1-3/31</td>
</tr>
<tr>
<td>Geo. Bailey (W2KH)</td>
<td>2/1-3/31</td>
</tr>
<tr>
<td>Andy Shaffer, W3TE</td>
<td>2/1-3/43</td>
</tr>
<tr>
<td>Wilmer Barnov</td>
<td>3/1-3/31</td>
</tr>
<tr>
<td>Phillip Lord</td>
<td>3/1-3/31</td>
</tr>
<tr>
<td>Alfred Locum</td>
<td>3/1-3/31</td>
</tr>
<tr>
<td>H. Yagi (antenna fame)</td>
<td>3/1-4/4</td>
</tr>
<tr>
<td>Andrew King</td>
<td>3/1-4/4</td>
</tr>
<tr>
<td>Lawrence Jaffe</td>
<td>3/1-4/4</td>
</tr>
<tr>
<td>Gustav Hertz</td>
<td>3/1-4/4</td>
</tr>
<tr>
<td>George Storer</td>
<td>3/1-4/4</td>
</tr>
<tr>
<td>Phillip Mallory</td>
<td>3/1-4/4</td>
</tr>
<tr>
<td>John Scott Trottier</td>
<td>3/1-4/4</td>
</tr>
<tr>
<td>Corvin Henry, K6X</td>
<td>3/1-4/4</td>
</tr>
<tr>
<td>Charles Maas, W2RTC</td>
<td>3/1-4/4</td>
</tr>
<tr>
<td>George Starry</td>
<td>3/1-4/4</td>
</tr>
<tr>
<td>Esther Watson (tele.)</td>
<td>3/17-1/14</td>
</tr>
<tr>
<td>Clarence Pfeifer, W2FG</td>
<td>3/1-4/36</td>
</tr>
<tr>
<td>Russ Moore, W2GM</td>
<td>3/1-4/36</td>
</tr>
<tr>
<td>Willard Gross, W3BKM</td>
<td>3/1-4/36</td>
</tr>
<tr>
<td>Theodore Deutschmann</td>
<td>3/1-4/36</td>
</tr>
<tr>
<td>Alfred de la Croix</td>
<td>3/1-4/36</td>
</tr>
<tr>
<td>Otto Schafer</td>
<td>3/1-4/36</td>
</tr>
<tr>
<td>Benjamin Messner</td>
<td>3/1-4/36</td>
</tr>
<tr>
<td>Rube Bloom</td>
<td>3/1-4/36</td>
</tr>
<tr>
<td>Ernest Brelsford</td>
<td>3/1-4/36</td>
</tr>
<tr>
<td>Jack Birdett (Canadian)</td>
<td>3/17-3/32</td>
</tr>
<tr>
<td>Irving Smith, WBCG</td>
<td>3/17-3/32</td>
</tr>
<tr>
<td>Thomas Spencer</td>
<td>3/17-3/32</td>
</tr>
<tr>
<td>M.L. Grant (Philmore)</td>
<td>3/17-3/32</td>
</tr>
<tr>
<td>Harold Fris</td>
<td>3/17-3/32</td>
</tr>
<tr>
<td>Cyril Rennie</td>
<td>3/17-3/32</td>
</tr>
<tr>
<td>Louis Nadell</td>
<td>3/17-3/32</td>
</tr>
<tr>
<td>Beatrix Marconi (wife)</td>
<td>3/17-3/32</td>
</tr>
<tr>
<td>Brymer Roberts, W3CMB</td>
<td>3/17-3/32</td>
</tr>
<tr>
<td>George Neumann</td>
<td>3/17-3/32</td>
</tr>
<tr>
<td>E.M. Webster</td>
<td>3/17-3/32</td>
</tr>
<tr>
<td>Frank Hingley</td>
<td>3/17-4/7</td>
</tr>
<tr>
<td>Walter Mullany (W2EHR)</td>
<td>3/17-4/7</td>
</tr>
<tr>
<td>Francis Keiper, ex-2PA</td>
<td>3/17-4/7</td>
</tr>
<tr>
<td>William Derrick, W2ND</td>
<td>3/17-4/7</td>
</tr>
<tr>
<td>&quot;Bob&quot; Roberts (W1RJ)</td>
<td>3/17-4/7</td>
</tr>
</tbody>
</table>

Participants at California A.W.A. Regional Meet. L. to r.: John Drake, Thorn Mayes, Bob and Nancy Merriam, Charles Brelsford and Curator of Foothill College Electronic Museum where meet was held.
The Great Marconi Sewing Machine Mystery
by Leonard Silvern, K6RXU

The Marconi Wireless Telegraph Company of America is normally associated with radio equipment and communications in the 1899-1919 period. Why, then, did American Marconi build sewing machines just before General Electric conveyed its Marconi stock to the newly formed Radio Corporation of America?

The record disclosed that Marconi Wireless was formed November 1899 with British financial backing. GE created RCA as a separate corporation in October 1919 through the efforts of the U.S. Navy and Owen D. Young. Then, the following month, GE conveyed its Marconi stock to RCA and Marconi became totally absorbed into that firm.

Now --- for the sewing machine mystery. The writer possesses four original linen vellum inked manufacturing drawings depicting the SEWING MACHINE DRIVE, on typical Marconi Wireless Corporation of America vellum, titled and dated as follows:

Assembly 30568 Sheet 1
19 Sept 1919
Belt Guard 30568 Sheet 2
18 Sept 1919
Pulley Arm 30568 Sheet 3
18 Sept 1919
Details 30568 Sheet 4
18 Sept 1919

These unusual drawings raise tantalizing questions. Why did Marconi enter the sewing machine business at a time when the radio business was booming? Was this a desperate, last ditch effort to salvage the firm financially --- an event unknown to the business world? The sewing machine was an old invention by 1919. It was first conceived by Weisenthal in 1755 and the lock-stitch incorporated by Howe in 1846. Did Marconi make a new and special contribution to the sewing machine field with these designs of 1919? Is it possible that this contribution may have escaped the view of historians?

Less than a month after these drawings were produced, GE formed RCA. Was there a connection between these events? In Ports O' Call (P. 35, Society of Wireless Pioneers), the U.S. Navy's Admiral Bullard is credited with persuading GE to form RCA. But yet unexplained is the Marconi move to build sewing machines during the same month that GE was in the process of creating RCA to take over. Can anyone shed light on this, the Great Marconi Sewing Machine Mystery?

Batcher Award

Morgan McMahon

Congratulations to AWA member Morgan McMahon as recipient of the Radio Club of America's coveted Batcher Award. This award is given each year to individuals who have contributed to historical radio. Ralph Batcher was an ardent AWA supporter and historian. He became a Silent Key in 1969. In addition to McMahon, Harold Beverage of Beverage antenna fame also received the Award. Below is partial reprint from RCA Proceeding telling of Morgan's work which most of us are familiar with:

In 1972, the McMahons published Vintage Radio, based on the late Harold Greenwood's 1961 Pictorial Album of Wireless and Radio. It covered transmitters and receivers from 1887 to 1929, with photographs not only of radios, but speakers and other components, and even a page of test instruments of the 1920's. Nostalgic illustrations and advertisements appeared among the photos of broadcast receivers and 200-kW transmitters, with the occasional short article recalling the old times. The book was such a success that a second edition had to be published.


In 1975 a completely new book, A Flick of The Switch, filled with photos of receivers of the 1930's to the 1950's, with a few articles on the period and short chapters on the radio amateur, collecting and kindred subjects, appeared.

PHILIPPINE HISTORICAL RADIO SOCIETY

A new historical group has been formed whose objective is the history of radio in the Philippines -- broadcast, commercial and amateur. AWA members who possess material or have an interest in the Philippines are advised to write to:

PHILIPPINE HISTORICAL RADIO SOCIETY
P.O. Box 972, Lafayette, Ind. 47902
Collector...this is your column telling of your activities. The deadline for the column is about the time you receive the OTS—so please write now: LAUREN FECHAM, ORMISTON RD., BREESEPORT, N.Y. 14816

FLOYD LYNNS (San Francisco, Calif.) also found the long trip to the Canandaigua Meet well worthwhile. His rare tube collection is now including a Goohean ZR tubular, Jenkins TV Lamp, DeForest Type H rectifier, and an early GE Type CA wire-photo tube. Other items include a Radiola Sr. and early light bulbs.

DAVE McKENZIE (Indianola, Iowa) is pleased with a Scott "World's Record Super" that he is restoring.

GAYLORD Ewing (Rochester, N.Y.) is still expanding his collection of recording equipment. Recent acquisitions include a prototype wire recorder made by the Brush Development Co. and a Presto disk recorder.

AL JOCHENM (Quincy, Ill.) attended a Hamfest in August, 1976 and bought what he thought was a box of ordinary octal tubes. One carton marked 1237 contained a tubular AudioTron with good filaments! Yes, he checked the other boxes carefully...Al also located a scarce Radiola VII.

DAVID PECKHAM (Breesport, N.Y.) opened a Christmas present and found a rare WE-32 tube which was made by the Moorrhead Co. for British government during WWII.

JAMES COLLINGS (Abilene, Texas) attended the Southwest Vintage Radio Society Convention and found a Radiola 20 and Grebe CR-8 with RORK amp. Back home he located a DeForest Interpanel Grebe CR-12 and Murad MA-13.

LEO GIBBS (Kettering, Ohio) had good luck at the Oct. 1976 AWA Meet where he acquired a DeForest Singer Oscillator tube.

ROSS SMITH (Elkhart, Ind.) found a rare AK 19, Crosley Bandbox, and a Sodion S-15 tube.

JOHN COUGH (Coral Zone) recently acquired several artifacts from the estate of the well known Panama radio amateur Col. Prescott, HPIA. In addition to old gear, John has his early log with 1926 entries showing traffic handled for the Prince of Wales.

ORVAL PARKER (Pocono Summit, Pa.) enjoys early meters and test equipment and has some dating back to 1900. Orval's son found a Crosley Pup in a trash can. It is now on the shelves at Pocono Summit!

CARR WISMER (Dalton, Massachusetts) sent a long list of goodies he recently acquired including AK 20, (large), Stewart-Warner 300, Crosley Tridyn, A.C. Dayton X. L. 5, and a 1913 quench spark gap.

BARNEY WOOGERS (Denver, Colo.) asked the Editor of this column to identify an early DeForest tube for him. I am sure Barney was pleased to learn he has a rare CF-159 used by the U.S. Navy WWI.

AL DOUGLAS (Flossom, Mass.) purchased a Radiola III-A with three good WD-ll's, Clapp-Backham 3 dialer and a Willemin crystal set for a total cost of $90.00. I doubt if he'll reveal the source....

LARRY FLEIGLE (Hialeah, Fla.) added a Newcombe-Hawley speaker, Thorol Mod. 57, Crosley 51, Mohawk 1-dialer, and a DeForest tube canister to his collection. He topped everything off with a 1954 Seeburg jukebox.

DON PATTERSON (Augusta, Ga.) did well in the Canandaigua Flea Market back in October. He found two David Grimes receivers and a spark set. His good fortune continued when he found an AK Mod. 10 on the way home...
THE PHILIPS RECEIVING LAMP

c. 1925

This is the first Dutch-made (Holland) amateur tube—fashioned in tubular manner as the Cunningham Audiotron and DeForest Type "T", although with smaller elements (and of different shapes).
The European candelabra end caps (bases) have slightly different thread than the U.S. candelabra counterpart.
The tungsten filament is rated at 4.0 volts and current between .125 and .25 amperes. The plate voltage is about 20 volts as a detector and slightly higher as an audio amplifier.
The two plates (tied) and the two grids (tied) are used with a center-mounted "Y" shape filament. This tube is quite rare. --- Floyd Lyons

AUTOGRAF "SAGA"
Members have written asking how they could have their book "Saga of the Vacuum Tube" autographed by author Gerald Tyne. Since the requests number in the dozens, Jerry tells us it would be impractical to do this by mail. He will, however, sign all books brought to AWA "Meets" which he attends.

VINTAGE CRYSTAL SETS 1822-1927

a British publication reviewed in last year's QST can now be obtained in USA by mailing $6. to:
John Barios IPC (America) Inc.
205 East 42nd Street
New York, N.Y. 10017
(Telephone 689 0700)
WATCH OUT FOR PLYWOOD
We just heard of an interesting case which should be a warning to members. Prof. Marshall tells of wiring an early receiver on a piece of plywood...but the set didn't work properly. After much investigation he found semi-shorts with some of the parts screwed to the board. Why?? --seems the cement between the layers of plywood was conductive!

TELEVISION
Having trouble finding a CRT for your Pilot 3" television set or some other early model? Don Patterson ran into this problem when he found a dead picture tube in his 3" Pilot (3KP4) and found it almost impossible to find a replacement. Don finally had the tube re-built by Allied Sales & Engineering where they did an excellent job. His set now operates as good as when new. The company carries a wide range of B&W picture tubes and will re-build odd-size tubes such as Don's 3KP4. The address is: Allied Sales & Engineering Pimento, Indiana 47366

EMERSON AC/DC table model receiver has presented a problem to Tony Constable of London, England. The set has two doors and is housed in a very attractive black, gold and red decorated cabinet about 10" long and 7" high. On the top center of the cabinet there are three $\frac{1}{4}$" dia. holes spaced 3" and 1" apart. What is the purpose of the three holes? Did something fit into them? Tony is restoring the set and doesn't know what to do with the holes....

PHILCO has another name!
It is difficult to keep track of current ownership -- but here is latest run-down on Philco. Originally it was the Philadelphia Storage Battery Co., then Philco Radio & Television Corp., next Philco Corp., next Philco-Ford Corp., then Aeromutronic Ford Corp. and most recent -- the Ford Aerospace & Communication Corp. (Thx W3IGU)

DAVEN RADIO
Frank Pagano recently passed the site of the old Daven Radio plant in Newark, N.J. The buildings have disappeared and a new college is in its place.

S.V.R.F.S. CONVENTION IN DALLAS
One of the largest group of collectors to congregate in the Southwest met last fall for the 1st Annual Convention of the Southwest Vintage Radio and Phonograph Society. Excellent programming plus display/contest of old equipment made it an interesting occasion for all who attended or whom many were A.W.A. members. (Cont. on next page)
The Collector

Assembly & Finishing

RESTORING FINISH ON A.C. SETS

Many of the Zenith receivers of the late '30s and '40s (and many other brands) had dial faces that were given a gold finish by spraying a transparent film on the silver or white metal base. A perfect match to this film can be found in glass stains available in craft shops. One note of caution: the water base stains don’t work...get the solvent based stains. Best results are obtained by applying the stain with an air brush or other small sprayer. The stains I have were made for Cunningham Art Products, Inc., 2156 Flintstone Dr., Tucker, Ga. 30084. (Bob Losier)

ANOTHER METAL POLISH

Floyd Lyon highly recommends a German product called "SIMICHROME" for copper, nickel, chrome, etc. It comes in ½ lb. cans and can be found in most motorcycle outlets.

THE GOOD OLD DAYS

Basil Van Der Eyde (Dorset, England) relives the past by listening on one of his early receivers to old time broadcasts sponsored by BBC. He points out it is most important to use earphones to get the real nostalgic feeling.....

HOUCK AWARD
ITS HISTORY

There are two Awards sponsored by Harry W. Howick given annually by the Antique Wireless Association. The first is the Award for Historical Documentation. This award is for historical material relating to radio communication, published or otherwise made available to others especially that which but for the efforts of the author would have been lost.

The second is for collection and preservation of published material or artifacts relating to or otherwise, illuminating the history of early radio. Consideration in making the Award is given to display or use made of the material to disseminate information on the history and development of communication.

ABOUT THE SPONSOR

Mr. Harry W. Howick served with Major E.H. Armstrong (then Captain) in Signal Corps Laboratory in Paris 1917-1919. It was there the super-heterodyne receiver was first conceived and developed. In 1922-23 Howick developed an improved model known as the Second-Harmonic super-heterodyne which was made and sold by RCA. From 1923 to 1931, Harry Howick was Chief Engineer of the Dubilier Corp. He served as consultant and later Vice-President and Divisional Manager of Measurements, Inc. He is Fellow and Life Member of I.E.E.E. as well as past President and currently Director of the Radio Club of America. We are honored to have Mr. Howick as an Honorary Member of the Antique Wireless Association.

RECIPIENTS OF HOUCK AWARDS

<table>
<thead>
<tr>
<th>Historical Documentation</th>
<th>Collection and Preservation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1971 Thorn Mayes</td>
<td>Edward Rasor</td>
</tr>
<tr>
<td>1972 Bruce Kelley</td>
<td>Bob &amp; Nancy Merriam</td>
</tr>
<tr>
<td>1973 Gerald Tyne</td>
<td>Warren Green</td>
</tr>
<tr>
<td>1974 Louise Moreau</td>
<td>Stuart Davis</td>
</tr>
<tr>
<td>1975 Wm. Bremser</td>
<td>Howard Schrader</td>
</tr>
<tr>
<td>1976 Howard Nelson</td>
<td>Wayne Nelson</td>
</tr>
</tbody>
</table>

HOUCK AWARDS FOR 1977

Members are reminded that it is again time to consider possible candidates for the 1977 Howick Awards. Nominations for these awards are urgently requested from A.W.A. members by the Awards Committee. There are two awards: one for preparation and publication of valuable historical material relating to radio communication and the second for collection, preservation and display of publications and artifacts showing history and development of radio. Nominations including reasons and factual supporting material should be sent not later than May 15, 1977 to Awards Chairman: Robert Morris, RD #1, 60 Sunset Lake Road, Sparta, New Jersey 07871

CALIFORNIA HISTORICAL RADIO SOCIETY

Headquartered in San Jose is another excellent organization founded in 1975. They publish a fine journal (articles & Want Ads) for collectors and sponsor several meets during the year. They are presently seeking a location for a permanent museum. We note several C.H.R.S. Officers are A.W.A. Members. Others who care to join (Annual dues $7.50 and $5. for Senior Citizens) should write:
Jim Cimer, 13367 Pastel Lane,
Mountain View, Calif. 94040

Change In Address?

Mail information to the Treasurer who handles current mailing list.
(NOT the Secretary)
L.A. CUNDALL, W2QY
69 BOULEVARD PKWY
ROCHESTER, N.Y. 14612

46
Do you know...?

---the F.C.C. issued past A.W.A.
President George Batteyson the amateur call letters W2GB and
most recently Treasurer Lincoln
Cundall the call W2EL.

The issuing of initials for
call letters is not new. Glanc-
ing through a Broadcast Station
Call List of the 1920's found
the following:
KFSN-Redadea Star News
KSAC-Kansas State Agriculture College
KEL- Salt Lake
KWA-H-Tenth Avenue Baptist Church
KUOM- Un. of Montana
KUSD-Univers. of South Dakota
KUT- Un. of Texas
KWPH-W.P. Henderson Co.
KJBC-J. Bruton & Son
KIDS-Letter Day Saints Church
KOAC-Oregon Agricultural College
KOCB- Omaha Central High School
KOCW- Oklahoma College for Women
WARC-Ansible Battery Co.
WAIM-A.H. Grebe Company
WATT-A. H. Waite Co.
WAIU-American Insurance Union
WAPI-Alabama Poly Institute
WARC-American Radio Tel. Corp.
WBEC-Eliss Electrical School
WHRB-Bell Radio Corp.
WHEB-Baltimore Radio Exchange
WCMR-Clark Univ. at Rochester
WCOW- W.C. Olsen
WCHT-Dartmouth College at Hanover
WDIR-Dolittle Radio Corp.

RECENT RADIO and ENTERTAINER

OBITUARIES

Richard Leibert, Chief Organist
At Music Hall 1932-71, Dies at 73

Singer Connee Boswell dies

Connee Boswell, 68, and crippled by
polio since childhood, was remembered
for renditions of "Stormalong," "Whispers
in the Dark," "Boulevard of Broken
Dreams," and "When the Saints
Go Marching In."

Frank J. Bingley
PHILCO TV PIONEER

Developed B&W and color TV for Philco.
Born in England where he pioneered with
John Baird with mechanical scanning TV.
Joined Philco in 1931 and worked with
Phil Farnsworth, David Grimes, Albert
Murray and others. Was Chief Engineer
of Philco's TV station W3XE, one of
the first experimental TV stations.

WHEC-Hickson Electric Company
WMSG-Madison Square Garden
WEBB-Bigwater Beach Hotel
WEBE-Edison Electric Illum. Co.
WEMC-Em. Missionary College
WFDF-F.D. Fallain
WFKB-F.K. Biedman
WJEC-Em. Bros. Store
WJHF-W.H. Boules
WHHP-H.P. Phelps Inc.
WGST-1A. School of Technology
WKBE-K & B Electric Co.
WJKV-Kodak Radio Corp.
WJMC-Lane Technical School
WMCA-Hotel McAlpin
WNBR-New Bedford Hotel
WNBC-New York City Musical station
WOWL-Carl Battery company
WPSC-Penn State College
WRAC-Radio Corp. of America
WRSC-Rec motor company
WHRM-Rosedale Hospital of Minneapolis
WWRX-Dix Beer & Fuller
WSAN-South Bend Tribune
WSMH-Shattuck Music House
WSOE-School of Engineering
WSUI-State Univ. of Iowa
WWSH-S.A. Streus Co.
WTIC-Travelers Insurance Company

Benjamin Gross is dead;
Engineer and Inventor, 83,
Headed Capehart Concern

In 1922 he changed over into the new
radio industry and from 1924 to 1938
served as eastern distributor for Strom-
berg-Carlson Radio and TV. In 1945 he
formed his own concern, Gross Distribu-
tors, and in 1956 acquired Capehart Corpo-
ration.

SILENT KEYS

FRANCIS KEIPER, ex-AFA, BALM
71 yrs., Honeoye, N.Y., Re-
tired Patent Attorney (former-
ly from Rochester.)

WALTER MULLANEY, W2EOE, ex-ZCEF,
Woodcliff Lake, N.J. Engineer
W6BS 1930-31, W1NG 1931-37, NBC
1937-1966

WILLIAM BERRICK, W2LW, ex-2AHU,
Pleasantville, N.J. Pioneer BC
Museum of the Antique Wireless Association, East Bloomfield, New York. It occupies about a third of the beautiful 139-year-old East Bloomfield Academy building, now restored and opened to the public in May, 1975. Thousands of pieces of old wireless equipment are on exhibit and many priceless books and records are on file. Scores of visitors, many from distant states and foreign countries, come to marvel at this collection every month during spring, summer and fall. AWA members take turns manning the Museum on weekly schedules. Special groups are accommodated by arrangement with the Secretary. When you’re in the East, don’t miss the chance to stop and enjoy the Museum, located in the heart of the fabulous Finger Lakes country.

HISTORICAL RADIO CIRCUITS

A - The coherer receiver perfected by Guglielmo Marconi was the first practical device to receive Hertzian waves.
B - The first wireless transmitter was an induction coil and a straight spark gap.
C - A single slide tuning coil with a galena detector was the most popular receiver before WWI.
D - The first vacuum tube receiver used a diode perfected by Ambrose Fleming.
E - Major Armstrong’s feedback circuit and Dr. De Forest’s triode tube resulted in one of the most popular receivers of all time.
F - The Hartley oscillator proved to be one of the most flexible circuits for a vacuum tube transmitter.

Center (A.W.A. Logo) - The resonating loop of wire with spark gap was the first device to detect Hertzian waves.

MUSEUM HOURS

<table>
<thead>
<tr>
<th>SUNDAY</th>
<th>2 to 5 P.M.</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEDNESDAY</td>
<td>7 to 9 P.M.</td>
</tr>
</tbody>
</table>

May through October

Open to groups by appointment.

Telephone (716) 657-3489

Museum Telephone:

(716) 657-6260