TOPEKA, KANSAS now has a fine amateur museum at the home of Bob Stapleford. A recent illustrated newspaper article featured Bob's 126 set museum which has many of the sets displayed in glass cabinets. Prominent in the foreground was a nice assortment of Federal receivers. Seems these sets are now becoming more choice than AK's.

NEW ENGLAND WIRELESS MUSEUM was one of several attractions at a large STEAM MEET held this past summer at East Greenwich, R.I. In addition to steam, there were rare hot air and gas engines in operation. The gathering is a reminder of several early AWA "meets" which were scheduled to coincide with the New York Steam Engine "Pageant of Steam" at Canandaigua.

CQ Books Bill's TV Color Pix

Congrats to Bill Devitt, W2DD for his pioneering in slow scan COLOR TV. Transmitting color is a little tricky for the average amateur. In Bill's case, however, he mixes his vocation with his avocation (he's in Photographic Technology at Eastman Kodak) and cut comes a technical article for "CQ" magazine. Bill also took the picture of AWA Museum in current CQ.

PIONEER RADIO ASTRONOMER and AWA Member has returned to the Radio Observatory at Hobart, Tasmania for another interesting assignment. Speaking of radio astronomy -- a recent AP news article tells where scientists at Cal Tech and Greenbank believe they have detected objects (?) traveling several times the SPEED OF LIGHT. This finding may upset Einstein's provocative theory that nothing, anywhere, can travel faster than 186,000 miles per second.

Three such objects have been discovered blowing apart in the universe with one in a galaxy 3.5 billion trillion miles away!

FIN STEWART (Australia) reports he hit the jackpot when he acquired all the light bulbs from Sidney's oldest theater just before it was demolished (The Theater Royal). He ended up with 348 lamps of which 104 were different types having been installed between 1902 and 1955!!

Notes from the President's Desk

One of the fine things about A.W.A. is people. Last month I had the privilege of visiting with "Robin" Weston, a member in Surrey, England. He has now retired from his scientific photographic business. Robin had a famous collection of valves (tubes) which is now in the hands of the British Science Museum.

I regretted missing the Conference in Washington, but I understand that under the guiding hand of Ken Gardner, Bruce Kelley and Ed Redington the meeting was very successful. I did return just in time to join the 72 others at Holcomb on Oct. 21 for the excellent fall "meet". Lauren Peckham, Chairman of our Museum Committee, will have a report for our Annual Meeting in November. Recent progress indicates real possibilities of a good arrangement which will augment museum facilities before long.

CHARLES BRELSFORD, President

AN AMERICAN INVENTOR

The Association's newest film show covering the life of Maj. Armstrong has met great approval. Already various organizations have requested presentations with the latest showing at New York State University at Genesee.

The complex projection and sound equipment very definitely limits each engagement: it takes 30 to 45 minutes to cart in the heavy equipment and set it up. To answer several queries: Yes, it will be shown again at a future AWA "meet".

Programming For Everyone

LYNN ANDERSON (Harvard, Ill.) is a Creve "buff" who is up to his neck in radio... he broadcasts over several stations in Northern Illinois including WRNN (Elgin), WROK (Rockford), WTVS (Crystal Lake), LWO Cable TV and regularly-scheduled guest on WLS-TV. Lynn regularly broadcasts a program titled "Antique Hot Line"... It is an enjoyable pastime and covers a multitude of subjects but personal interest is directed toward old time radio...
FROM HEADQUARTERS

ACTIVITIES

Members want more "meets" in addition to the Conference. Three were scheduled in 1972 with one cancellation.

The Spring Gathering at Breesport was an outstanding success. In addition to the usual dinner/business meeting with visit to nearby amateur museum, there is always some form of entertainment. The latter is never a problem with Lauren Peckham since he has built-in entertainment with his huge theater pipe organ. The April affair was no exception since he had a brilliant pianist accompany the organist. A day to remember.

The fall "meet" at Holcomb was scheduled to avoid the Conference and the Annual Meeting. Cold weather kept most indoors. A good dinner at the old inn (Holloway House) followed by an early fake electrical machine show provided lots of laughs.

The committee has definite plans for three meetings in 1973 in addition to the Conference. See next QST for dates.

Legal Matters

Under no circumstances will A.W.A. acknowledge donations of any kind for I.R.S. deductions without prior approval from the Board. Such donations MUST go through the Treasurer and properly recorded. Donations for the Academy Museum Restoration Fund should be earmarked as such and the checks made out to: TOWN OF EAST BLOOMFIELD HISTORICAL SOCIETY, INC. (not to A.W.A.)

OLD TIME RECEIVER CONTEST

We've mislaid the names of the winners of the recent Conference Receiver Contest. Would the winners please send me the following info: class entry, name of winning set and their award.

Bruce Kelley, Secretary
AWA Old Time Transmitter Contest

DATES: Wed., Feb. 14, 6:00 P.M.
to Thur., Feb. 15, 6:00 A.M.
Thur., Feb. 22, 6:00 P.M.
to Fri., Feb. 23, 6:00 A.M.

FREQUENCIES: 3575 to 3595 Kc. and
7040 and 14084 Kc.
(Stay off W1AW on 3581 and 14080 Kc.)

OBJECTIVE: Work the greatest number
of A.W.A. members. When calling use:
"AWA AWA AWA de W2AN AWA, etc."

On contact exchange year of trans-
mitter being used. Example:
"TX 1936" if you are using a 1936
transmitter.

SCORES: Each station worked with
a transmitter with components 1939 or
before counts 2 POINTS. All others
1940 or later count 1 POINT.

Stations using transmitters before
1940 should multiply total score by 1.5
Stations using transmitters AND re-
ceivers 1939 or before multiply score
by 2.5

RULES: A station will be scored once
only on each band.
Cross band contacts will not count.
Non-member contacts will not count.

LOGS: Send logs to either W2DON or
W6AG.

AWARD: John Drake is donating a pre-
WIII Hallicrafter Phone/CW to the
winner.

SUNDAY SSB NET: Please make all trans-
missions SHORT since many have to QRT
early for dinner....

600 METERS in Spain -- Art Goodnow,
W1DM, while spending a short vaca-
tion in Spain had an opportunity to
hear how our stations sound on the
other side. His log lists: WSL, WOC,
WGC, WPA, WDE as well as VON, NMR,
PJC, TVG and 9YL.

AWA NEWS are beginning to pick up aft-
er the summer QRN days. The Sunday
Noon SSB 3900 net was attended by 19
members on Oct. 1 as an example. The
Tuesday 8:00 PM Net has averaged 8 to
10 members all summer. CW men must
travel more (or fish more) during the
summer because the First Wednesday,
8:00 PM 3584 Net suffered but on Oct-
ber 4th W2ARX, W6PNY, W8EIP, K4QF,
W8GY, W8BRM, W3LAK and W2EGBN
checked in. KENT was NC because W2AY
was in New England.

W6RF, Bill, informed us that Tate
Thetrau, W6PXY, had just joined the
Silent Keys. Tate, whose wife died
only a few weeks before will be missed
by all. It was quite a blow to Bill
because Tate was supposed to visit
him within the week.

IT WAS GOOD to hear Pete, W6PNY, on
CW and we hope he will be faithful
to the tone nets. We referred Gross,
W8BRM, to the bottom of page 113 of
the October issue of QST for a laugh!

LANE, W9AG, like so many of us, com-
plains that the days aren't long en-
ough so he could talk to more friends
in person at Conferences like the re-
cent Washington "meet". At Washing-
ton we did manage to get former contest-
ants on their feet for introductions
and a hand of applause.

160 METERS are being groomed and by
now proved out. Next issue for the
results!

ANOTHER Old Timer, W4RL, has a 1931
rig on 80 and 160 and expects to com-
pete in both contests.

WHILE the sun-spot cycle is to our
advantage we can expect more long haul
contacts this year. Keep an ear out
for W7JY and W6AG. Up in Canada,
V862A, Roy Usher; St., Albert, Alberta
will be on with a replica of his old
1932 rig.

AGAIN -- 40 and 20 will be included
in the CW CONTEST but watch out for
W1AW on 14084. The 20 meter spot has
been set at 14084 to avoid QRM. Need
a 3520 Xtal polished to 3521 KC. ??
Call W2EGBN.
FRIDAY:

The A.W.A. Conference got off to a good start by providing the first East Coast gathering for the Society of Wireless Pioneers followed by the O.O.T.C. Meet. Both were successful with attendance from all over the country. Warren Green, W7JY from Seattle, Washington may have traveled the greatest. There appears to be common membership in AWA/CO/WSWP with AWA President Brelsford a member of all three and other officers and directors in either one or the other.

The Smithsonian not only provided excellent meeting facilities but setup a small exhibit of Maj. Armstrong's early equipment including his first regenerative receiver seen so often in pictures.

SATURDAY:

Programming went off according to schedule with one exception: at first Lou Moreau had considerable difficulty giving her slide talk on telegraph key development because lack of light prevented her from seeing her notes. Lou was a good sport about it all and came through with flying colors after the electrician found an extension cord.

As expected, Perry Ferrell handled the Collector's Panel quite smoothly and threw in several tough questions to be sure there wouldn't be a tie. He almost lost: final scores were all within a point or two of one another with the Indiana contingent (Rose Smith / Serge Krauss) the winners. Much credit should be given Joe Marsey for designing and building the electronic scoring machine. It will be used again at a future conference.

Luncheon: bad. We anticipated 130 and 187 showed up. Result: long waiting line. Even the best plans can sometimes go astray.

Hal Dinger covering N.R.L. and Kenny Gardner with OT xmt operation kept the schedule tight as they turned it over to old pro Wayne Nelson who in turn introduced pioneer Levis Clement. The casual interview that followed makes another milestone in A.W.A. history as Clement recalled greats moments and events of the past.

The afternoon program was brought to an end with "An American Inventor, the life of Maj. Armstrong". It was somewhat emotional for some and drew much applause. The show represented several years of accumulating recordings and pictures including unusual slides of New York taken by Bob Cobaugh, W2NX.

The receiver contest brought out some gems that even non-collectors admired and which in turn made the judge's decisions more difficult.

The evening program moved along very
smoothly under the direction of Toastmaster Ed Redington except he almost lost an award winner: Secretary Kelley was in the process of setting up equipment for after dinner entertainment when he was notified he had won a prize.

Donning his coat, he returned to the banquet hall to receive 2nd prize ribbon for an early WWI receiver only to find he had been awarded the Houck Award along with Ed Raser!

The evening was climaxed with an actual demonstration of Maj. Armstrong's 1920 super-het which fed a WE 7-A amplifier and speaker. Original loop antenna and wet "A" batteries authenticated the installation handled by Bob Morris and described by Harry Houck.

SUNDAY:

The collectors had their gathering the following morning when much equipment exchanged hands. It was felt not advisable to have an auction due to local ordinances.

Much credit for the success of the Conference goes to Mr. Harry Houck who not only provided the Houck Awards but also a book with reproductions of Armstrong's IRE papers. In addition, Harry was instrumental in bringing the superhet (mentioned above) to the meet...
BEWILDERED?

The names of the Houck Award recipients are guarded secrets until the final announcement. None was more surprised (and bewildered) than Bruce Kelley seen here receiving the plaque from Dr. George Brittain of the Smithsonian Institution. FCC Head Prose Walker (left) shares in the surprise announcement.

Winners of the VALUATION PANEL: Ross Smith and Serge Krauss with Perry Ferrell
WANTED: WD-11 tubes, cabinet for De-Forrest D-7A and crystal detector for Federal Junior. Sell crystal radio. Harry Williams, WØINI, Pleasant Hill, Missouri 64080

WANTED: Any or all coils for SW-3 and nameplate on inside lid for AK-30. David Knepper, W3BJZ, Box 43, Sidman, Penna. 15955

WANTED: Cabinet for Zenith Stratosphere Mod. 1000Z in any condition or photo of same. Also info on restoring this set or exchange correspondence. Don Knotts, 3158 N.E. Azalea, Hillsboro, Oregon, 97123

BOOKS FOR SALE: Henty-Principles of Radio (1914) $3.00, Wilson & Hornung-Practical Radio Communication (1935) $3.00, Terman- radio Engineers Hand- book (1943) $3.00, Biltor & Engineers-The Handbook (1941) $4.00, Timbire-Basic Elect. For Communication (1945) $4.00, Stirling-The Radio Manual (1938) $4.00 All postpaid. Lou Hardy, W2QO, 522 Shirley Ave., Franklin Lakes, N.J. 07417

WANTED: Good WD-11 tubes, loop antenna and 226 Federal AFT. Also would like to buy W.E. 7-A amplifier. Keith McManus, 2901 Camp St., Natchez, Miss., 39120

WANTED: Radiola 24 cabinet and loop antenna, Ross Smith, 1133 Strong, Elkhart, Indiana 46514

WANTED: to buy or trade for Wm. B. Duck Catalog No. 12 and 13 for No. 14 and 15. Also want DeForest Unit Panels. Glen Angle, K7TAM, Clear Lake, South Dakota 57226

UPCOMING NEWS: For my classic 1931 car a radio of that vintage which had one push button tuning device -- may have been a Philco or Chas. Bridges, Box 338, Fort Colborne, Ontario, Canada

TRADE: Old phonograph records copyright 1911 vintage for historical information on radio development, old sets or parts. Henry Davis, 1201 Riverside Drive, Indianlantic, Fla. 32901


FOR SALE: Landline instruments—W-J 150 ohm relay (W.E. Co.), W-U 36 ohm relay (Bunnell), W-J 400 ohm coil changer transmitter 4-a, W-U Combination Wheatstone Relay (NYRS), W-J Polar relay 170B, Martin Autoplex Key (United Elect. Co.) George Starry, 612 Latrobe, Penna., 15650


FOR SALE: IRE PROCEEDINGS 1923-63 complete except one issue in '23 and '24. Includes Yearbooks, Indexes, etc. 1923 thru 1952 in IRE binders. Excellent condition. Will be sold to best offer. Paul Andrews, 212 Parsons Drive, Syracuse, N.Y. 13219

TRADE: DeForest wavemeter (in glass), Aeriola SR with WD-11, Paragon Two, WeCo JX crystal set and others. Want wireless catalogs pre-1919 including McIntosh, W.S.A., E.I., etc. Dave Barrett, 112 Hawthorne Rd., West Roxbury, Mass. 02132

FOLLOWUP: Will the party who bought my "Ballantine" book on wireless with signatures of friends please write me. I gave you the wrong book. Please write and I'll send you another identical. Also need Antenna Loading Coil or a two amp. for DP-501. Jack Allison, 160 S. Country Rd., & Patchogue, NY, 11772

WANTED: Fleming valve, spherical auditors and other early tubes and wireless gear. Will pick up. Jerry Vanicek 3313 So. Lowe Ave., Chicago, Ill. 60616

SELL or TRADE: AK Mod. 30 and 42.
D.J. Launer, K2RJE, RFD 3, Fremont, Nebraska 68025

SWAP: Murdock items: Osc. trans. 424; 2 new variometers, 1939 Buzzersphones; EEL-A, Clapp Bastham Gap, W.S.A. high volt. cond and other items. Want DeForest T-300 det., loose-coupler, any Grebe CR's, crystal sets, Crosley "Pup" and Radiola 28 catacomb. Will add cash on some trades. James Cirner, 13366 Pastel Lane, Mountain View, Calif. 94040

FINAL DATE for "ads" in next
OTB is JANUARY 26, 1973

MAKE OFFER: Tobe-Deutschmann Stock certificate with original stock papers and original envelope and stamps. Also have BC-346 with 100 kc. xtal in good condition. Cliff Daykin, WAFE, 19 Oxford Pl., Geneva, N.Y. 14456

BUY, Crocker-Wheeler 24/1500 volt, 450 watt dynamotor made during WWI. Write Grote-Reber, Research Corporation, 405 Lexington Ave, New York, N.Y. 10017

FOR SALE: new in boxes - Sonora RA-1 tubes - made by Arcturus No. 28, 15 volt AC carbon filament, blue with 4 prongs, $5.00 each. Have large quantity. Bob Lane, 2603 Independence Avenue, Kansas City, Mo. 64124

SELL: Old parts from Kilbourne & Clark of Seattle. Also some old BC and SW sets. Dime for list. Bill Baker, W7NYY, Troutdale, Oregon, 97060

LOST SPACE -- must sell: Hammerlund, Crosley, Radiola and other early 1920 to 30 receivers. Write for list:
K.R. Johnson, R-1, Manning, S.C. 29102

WANTED: 3 var. cond. 15 plate or about .0003 mfd. All must be same model with "A" shafts...or one Hammerlund if it matches the one I have. Ted Woolner, WALBP, 30 Cedar Rd., Shrewsbury, Mass. 01545

O. HUGH BRAESE, Fresno, Calif., 88 yrs. "Dean" of the nation's former railway labor leaders, President of the Morse Telegraph Club and pioneer telegrapher. He started in 1902 as a telegrapher at Elmore, Minn. working 12 hours a day and 7 days a week. He was the guiding hand behind the M.T.C.

H. J. NAPZGER (W8BE), Columbus, Ohio Former Technical Supervisor WEWS-TV

"DATE" THEBREU, W8FPX
Detroit, Michigan, October 1
Recipient of the "1970 A.W.A. Amateur Historian Award" and benefactor. He collected and restored numerous pieces of rare historical radio equipment which he selflessly gave to various Michigan museums. His fine collection of keys have been villed to the ARRL Museum.

RICHARD JOHNSTONE (Oct. 9), Iarkspur, Calif. "RJ" K6FZ, Chief Operator of Marconi Co. and RCA, Grand Ol' Yst, KPH, Charter Member and past President of S.O.W.P. Instrumental in making several historical tapes on early spark signals.

LOUIS RIZOLI (WLAAI) Salem, Mass., Oct. 16 Pioneer collector and Charter Member A.W.A. Lou was the Dean of New England collectors and specialized in rare commercial equipment.

FRANK SMITH, W5VA, ex-5BU, 3VL, Corpus Christi, Texas. Owner/Manager KRLS-TV. Well known collector and past O.O.T.C. Officer.

ODD CALL LETTERS

Bob Hertzberg (W2UJJ) tells of how he was in charge of the radio setup at a boy's camp located in the country near Wallkill, N.Y. The time was in the early 20's when Bob was 17 years old.

When applying for the license in person he jauntily replied to the radio inspector's question as to location by saying "It was up in cow country!"

When the ticket finally arrived it bore the call letters 2COW!

----and of course all old timers will remember when the R.I. caught up with Irving Vermilya (WIZE) and gave him the call IHA...
WITH THE COLLECTORS

Lauren A. Peckham
Ormiston Road
Breesport, N. Y. 14816

ERV RASMUSSEN (Redwood City, Calif.) adds the following to his collection: AK Board 3245, 1917 Moorhead detector unit, and a Fleming valve.

FRED PENARD (Norwood, Mass.) acquired an Amrad tuner, "Martian Big 4" crystal set, cabinet Audion set made by J. F. Arnold and an Aerolco Sr.

LINC CUNDALL (Rochester, N. Y.) found an Aerolco Sr. and a rare Radiophone "3" tube set made by Radio-Craft.

SEGER KRAUSS (Elkhart, Ind.) found a rare DeForest DT-700.

BOR O'NEIL (Ithaca, N. Y.) still finds a few goodies such as a Federal Jr. crystal set and a Radiola II portable.

KEN CONRAD (Akron, N. Y.) now has a National PE-7, Crosley Tridyn, Clapp-Bastian Redak one tube set, Tuba 225 and a Radiola III with Balanced Amp.

J. G. WINTON (Cheboygave, Tenn.) located a DeForest D-10 but needs tubes and transformers for restoration of the set.

GEORGE STARRY (Iatrobe, Pa.) picked up a Fada One-Sixty and an odd four tube set with no name. George would like to put the set in operation but finds the going rough without schematic.

RICHARD HANSLY (Sodus, N. Y.) just found a very rare Federal Jr. Amplifier. This is a 2 tube job that matches the Federal Jr. crystal set.

DEX DEELEY (Rochester, N. Y.) added an AK-10 found in an antique shop at a very reasonable price. On the way home from the Washington "meet", Dex picked up a nice Radiola II.

GAYLORD EWING (Breesport, N. Y.) located a Westminster RC while in Washington. The set has a lot of missing parts but Gay hopes to find what he needs from a fellow collector.

BILL OBB, W6SAI is having lotsa fun building up his 1934 ham station. So far he has a SW-3, PB-7XA (with preselector!), McMurdo Silver 5G, RME-69 and a Hallicraftker Sky Challenger on the way. How about a foto Bill? Of the several xtrns, he prices the 32B Collins the highest and may soon have a Collins 20A.

ALAN DOUGLAS (Pocasset, Mass.) congratulates on a very unique idea--he is sending out a scrap book containing photos and info on his tube and radio collection. The book is then sent along to another collector as Alan includes postage and the address of the next person in line. Priced in the scrapbook are rare tubes; plus a Paragon RA-10 with DA-2, home made set with glass panel, Tuba Superdyne and others.

BRUCE KELLEY (Holcomb, N. Y.) doesn't buy old sets too often but he couldn't overlook a Pilot Wasp that Cundall found in a junk shop for $5. The three tube Wasp is a rare set mainly because not too many were made and most early models were scrapped for the easy to get at parts.

FIN STEWART (Paulsboro, New Jersey) still finding rare tubes down under and reports picking up a Philips A-306 (similar to our UV-195), a ETH-B6 with UV base etc., plus an oddball RCA 201.

PLEASE NOTE: Deadline for the next column is early JANUARY!

CHRIS PETSKIKOPOULOS (Athens, Greece) found a rare French transmitter/receiver this past summer. The spark transmitter and crystal set receiver have a common tuning circuit with a changeover switch. The name plate bears the name DUCREPOS. In all probability it was made in 1915 or 1916.

BILL LAVERLY (Egg Harbor, N. J.) tells of difficulty in getting rid of old big consoles when he moved recently. He sold a couple for $2 and $5 and took the axe to the others including a Victor, AK Desk Set, Brandes, etc. in order to make the moving deadline.

LAUREN PECKHAM (Breesport, N. Y.) placed a DeForest Interpanel set, a WW valve amplifier made in France and some early tubes on the shelves in his amateur museum.

FRANK KRANTZ (Stratford, N. J.) found lots of early tubes including a DeForest spherical Audion and DeForest Oscillation. Early receivers added include a Pilot 3" TV set, Western Electric SCR-67, National Electric CN-112, plus early test equipment and books.
QUE.: Is it true that the material is valuable in VT-1 prong contacts?

ANS.: VT-1s, as supplied to the Signal Corps during WWI had tips on the prong. The material of these tips was a low grade gold alloy designated by Western Electric as "#1 Contact Metal". According to "Blan, the Radio Man", the salvage value of these tips was 50 cents per set of 4. Many war surplus dealers removed these tips before offering the tubes for sale.

QUE.: I have two almost identical Weageant Valves except one has the external grid in the glass and the other it is missing. Does this mean that some came with a sliding removable type and in this case is missing?

ANS.: The Weageant Valve was never made commercially but there was a commercial form which used a control electrode which clipped onto the tube, somewhat like a fuse clip, in the area in which the filament-anode assembly was located. This clip was not part of the valve, but a part of the amplifier assembly. Earlier samples of the Weageant Valve had a control electrode which consisted of a band of silver not in the glass but fired onto the outer surfaces of the glass tube in the area opposite the filament-anode assembly.

QUE.: I have a VT-1 which has "203-A" stamped in the base fill. What does it mean?

ANS.: "203-A" was the Western Electric code designation for the type of tube which was later assigned the designation "VT-1" by the U.S. Signal Corp.

QUE.: It is true that the filament voltage was not given for some early tubes and only the recommended filament current?

ANS.: Yes, although in many cases a range of filament voltage was given. Since the composition, diameter and resistivity of filament wires often varied from lot to lot, it was preferable to specify current than voltage to insure necessary emission.

QUE.: Why do some VT-1s have a black fill base and others brown?

ANS.: Earlier VT-1s and other W.E. tubes were filled with a commercial red wax known as "Zinzsner's Regular Insulating Wax" which was a mixture of red iron oxide and shellac gums. The color varied from lot to lot, sometimes being almost brown. Trouble was experienced in getting an adequate supply of this material. Western found it necessary to develop a substitute which was black in color and known as "#18 Compound". It was most satisfactory since it had a higher melting point than the Zinzsner product.

**AWA NETS**

PHONE: 3897 Kc. (3902 Kc.)

Every Sunday -- 12 noon
Every Tuesday -- 8 P.M.

CW: 3584 Kc.
First Wednesday each month
8 P.M.

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**WESTERN ELECTRIC**

**VT-2 Tubes**

Filament 7.5 volts at 1.75 amps.
Plate at 750 volts. Excellent for 5-watt transmitter. $3.50

**R.C.A. UX-213**

Rectifying Tube. Filament at 5 volts. Full wave rectification. $95c

**AMERICAN SALES COMPANY**
New York City

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**SPECIALS IN TUBES**

**Genuine R.C.A. UX-216B**
Half-wave rectifier. 7.5 volt filament, plate voltage rated at 550 v. In original cartons.$2.35

**KENOTRON TB-1**
Half-wave rectifying tube. 8 to 10 volt filament, 550 volts rated for plate. Standard Base. Made by General Electric...50c

**Genuine R.C.A. UX-200**
Detector tubes. Bakelite base (can be used as forms for home-wound short wave coils). 6 volt filament at 1 amp. Will give you better reception in detector socket. $1.50.

**WESTERN ELECTRIC**

**VT-1 Tubes**
Filament from 3 to 6 volts. Plate voltage is 50. For UV socket...75c
IN THE NEWS

ANOTHER MAGAZINE FOLDS

It is with sadness we note the termination of "Electronics Illustrated" next month. A Fawcett publication, it started in 1958 and had a circulation of 300,000. Some of its features will continue in "Mechanix", another Fawcett publication founded in 1928. Its able Editor, Bob Freed, has left the company and is now with Bell Labs.

Reason for collapse: increase in imported components and less interest in "handicraft magic".

This magazine has been following the same difficult path as one time "Popular Electronics" edited by Perry Ferrell which succumbed a year or two ago.

Seems solid state, ICs and printed circuits doesn't have the fascination as old time tube circuitry on a metal chassis (or breadboard!) and the younger generation has little interest in building. We're entering the age of automation and appliance operators...

On the same subject...we heard thru the underground that the editorial policy of ELECTRONICS DIGEST is about to change...we hope not for it is one of the few magazines that carried elementary circuit for beginners as well as excellent historical material.

50TH ANNIVERSARY STAMPS

sent to A.W.A. by John Foulger of Suffolk, England.

EDWIN HOWARD ARMSTRONG

There are many parts of Armstrong's life that are not too well known. This may be an example.

I had the good fortune of knowing a Dr. Frank E. Miller, distinguished surgeon and throat specialist in New York City. From him I learned that Armstrong, while an under-graduate at Columbia University, assisted the doctor in some of his inventions relative to speech such as the Cupsidal Diaphragm Speaker (Patent #1,229,137). Others Armstrong may have been concerned with include: Musical Tone Producer (Pat. No. 1,137,288) and the Tone Producer (#1,782,542).

Miller had many noted opera stars as patients. He was particularly aware of vocal injury and developed techniques to quickly restore voices if they had colds and surgery in some incidents for impaired voices.

Walt Rogers, W1DFS

What's New

ANTIQUE WIRELESS ASSOCIATION

Receivers: W2ENG, W3BOZ, W3DUG and Percy Illingsworth

Tubes: W2LV, K2YCO, W3DUG and Floyd Lyons

Written: K4PI, W2UAD

Miscellaneous: W2ARX, W3DUG, W3BOZ and Floyd Lyons

Several nice and somewhat unusual items from members are now on display in the Association's Museum. Floyd Lyons sent several tuning units including a rare Sorousic "Tunit" and a Kilbourne & Clark variometer. Ray (W3BOZ) dropped off a beautiful Tuska Superdyne mounted in a cabinet that looks new. For size, Max, W3DUG, is the winner with a huge water-cooled tube (F-862-A) removed from pioneer Navy Station NSS at Annapolis. Two men were required to handle it safely (see photo elsewhere in OBB). In addition, Max found (7) a two foot length of lead-in from the same station (NSS) which weighs over 2½ lbs. per foot and made up of Litzendraht wire -- 2500 strands.

Also through the efforts of Max, A.W.A. is proud to exhibit the huge transmitting key removed from the U.S.S. HARADEN at the Philadelphia Navy Yard many years ago. It was made by G.E. under contract with US Navy in 1947. Unfortunately, the owner did not give us his name...it is a beauty!
BEAUTIFUL MARCONI CM - 294
bought by Joe Horvath, W6OPB at a
Market Street antique store in San
Francisco. Goes to show you never
know where you may find a rare one.

NEW MEMBERS
who are or have been in the
communication field............

HENRY DAVIS, K4IM (W3NTL, W5BAZ, W7IBV,
Civil Serv. Inst. Maint. F.A.B.
WILLIAM HARDER, KBQPR, Michigan State
University Cyclotron Elec. Eng.
PAUL ANDREWS (Syracuse, N.Y.) Marine
operator, NBE, etc.
JOHN DE BARDELEBEN, W4TE, (5P1, 3CN)
Marine operator, Broadcast, FCC.
EDWIN CLARK, W2NA (7W2, 2MX) KWSC, etc.
PHILLIP NESBITT, W3CQ (W9BFE, WBBW)
Owner & Dir. Eng. W9FS & W9EV
AUBREY SHEPPERD (WHUN) Radio Super-
visor - Communications.

PROSE WALKER, W4BV (W3M, 3MX, 4CX, 8AIE, etc.) Chief Amateur and
Citizen Division F.C.C.

DOUGLAS SHARP (K3QXL) Station WAMS,
Wilmington, Delaware

JOHN SCHRETZMAYER (ex-2GJ) WFBH,
WBNY, CHIC, AT&T, etc.
DAN COOPER, W3BRE/K3WOK, RCA and
Cooper-Clement Associates

DAVID SCHUNT, New York City, AT&T
(Microwave)

HOWARD LEAKE, W6AXX/W4RRA (W2PUN)
General Dynamics, ITT, Jennings

ARNOLD SCHWARTZ, W6PJC, Merchant
Marine Radio Officer

J.A. HUTCHESON, K3ZH (9AOK, 1BK)
Westinghouse Elec. Corp.

G.W. Ahrens, W5PHM, Ship operator
1927 to 1941, RCA 1941 to 1972

JAMES FRED (Cutler, Ind.) Mallory
Controls, Inc.

50TH ANNIVERSARY
QSO LISTING

WITH (2TS) and W8CP (9CP)
Dec. 10, 1921-1971

W2AFB (9AFE) and W2YL (8JH)
Apr. 8, 1922-1972

W2AX (8AX) and WITH (2TS)
April 1922-1972

61st Anniversary
W6IM (XRI) and W6BRI (FRK)
Dec. 1910 - Dec. 1971

56th Anniversary
W8QY (8ADI) and W2DOK (8ABA)
1916 - 1972

W8TE (8TE) and W8KP (8AFE)
1916 - 1972

W4ZM (8AGM) and W2YL (8AIK)
1915 - 1972

W2VW (8AV) and W72M (8AJ)
1921 - 1972

W72I (2ZI) and W2LV (2QZ)
1922 - 1972

W2LV (2QZ) and W8CI (8CI)
1922 - 1972

W2PG (RD) and W2AG (YS)
1909 - 1959

K3PT/K3PI (3PI) and W3PN (3PN)
1914 - 1964

Send all Anniversary Listings
to: Ken Gardner, W2BGN
1/2 Oakdale Ave., S.
New Hartford, N.Y. 13413

MAINTENANCE PROBLEMS

Members seeking tube ratings find it
difficult to find specs on early post-
war WWI types. Following is inform-
ation on some of the more common tubes:

<table>
<thead>
<tr>
<th>Type</th>
<th>Filla. volt.</th>
<th>Amp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>215-A &quot;N&quot;</td>
<td>1.1</td>
<td>.25</td>
</tr>
<tr>
<td>VT-1 &quot;J&quot;</td>
<td>2.5</td>
<td>.9</td>
</tr>
<tr>
<td>VT-2 &quot;E&quot;</td>
<td>7.0</td>
<td>1.35</td>
</tr>
<tr>
<td>RAC (Meyers)</td>
<td>3.3</td>
<td>.8</td>
</tr>
<tr>
<td>French tube</td>
<td>4.0</td>
<td>.8</td>
</tr>
<tr>
<td>Moorhead 3B-144</td>
<td>5.2</td>
<td>.8</td>
</tr>
<tr>
<td>G.E. 890 &quot;G&quot;</td>
<td>2.3</td>
<td>.7</td>
</tr>
</tbody>
</table>

TREND -- National SW-3's are going up
in price. A recent ad in a popular
radio magazine noted one for sale at:
"Best offer over $75.00".....
Morse, in the arrangement of his conventional telegraphic alphabet, took as a unit of space or length the shortest available length of line, technically termed a dot. His alphabet was then made up of signs, forty-five in number, formed from three elements: the dot, the space and the dash, arranged in various combinations, representing the following relative values:

The dot ........................................ One unit
The space or break between the elements of a letter ........................................ One unit
The space employed in the “Spaced Letters” ........................................ Two units
The space separating the letters of a word ........................................ Three units
The space separating words ........................................ Six units
The short dash ........................................ Three units
The long dash ........................................ Six units

Prof. S. F. B. Morse, in considering the mechanical means at command for producing at a distance any permanent mark, perceived that by means of the electromagnet, the motion of a lever, up and down, could be easily and surely commanded; and if a pencil at one extremity of it were made to strike upon a piece of paper, a dot would be made whenever the magnet was charged and quickly discharged. This action, however, without a further device, would be unavailing to produce variety, since the lever motion is limited to the simple movement of up and down. Hence the idea of moving the paper at a regular rate beneath the pencil. Thus a dot could be made on the moving ribbon of paper, which, passing onward, the paper was ready to receive (after an interval more or less extended) another dot, or series of dots. Thus, the ability to produce dots in groups at pleasure was demonstrated, and, consequently, groups of dots expressive of various numerals were devised. In pursuing the experiments with the numerals whose elements were a simple dot and space, it was perceived that, by means of the moving paper, not merely a dot could be produced at pleasure, but if the magnet was kept charged while the paper was in movement, the pencil produced a line long in proportion to the time in which the magnet was charged. This fact introduced a third element for combination, to produce variety in the groups, indicating letters, as well as numerals, to wit: the line or dash; so that dots, spaces and lines in any variety of combination were at command for forming a code of signs. Hence originated what is now universally recognized as the Morse code.

In the arrangement of the alphabet it was desired that no letter should occupy more than five dots, or nine units in length; and none of them, with the single exception of the letter J, exceeds that number. Another principle was specially observed, that of the letters occurring most frequently in the English language, were therefore composed of the fewest and shortest elements. The letter E is thus represented by a single dot, the I and T within the space of two dots or three units, and so on. The numerals were comprised within the value of six dots, or eleven units, to distinguish them more readily from the letters.

Upon the introduction of the Morse system into Germany many years ago, an important arrangement of the alphabet was devised, called the Continental or International Alphabet, and this has been adopted and become universal on all submarine cables as well as land lines, in all parts of the world where the Morse apparatus is used, except in America. It is founded on the Morse, and the only letters that differ from the Morse are c, f, j, l, o, p, q, r, x, y, z; the additional letters peculiar to foreign languages are å (â), ö (œ), ï (œ), eh, e.

The figures are all different, except the figure 4. All these letters and figures are made by dots and lines, the same as the Morse, and only differ in their relative position.

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**THIS MONTH'S BROADCAST RECEIVER**

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A Freshman Masterpiece is a "must" for the serious broadcast receiver collector. It was one of the first popular TRF sets and is considered a classic in its field. Other circuits will appear in future BULLETINS.
Rex Matlock's "Museum of the Poconos" at Reeders, Penna. The museum is an
addition built on the end of the house specifically for the purpose. A very
neat layout. Visitors will have to wait until next spring to see the equip-
ment since Rex and Emily winter in Florida.

RARE DOCUMENTS

The Smithsonian Institution is interested in rare documents for their
research archives. They're particularly interested in written material by
early pioneers or rare documents pertaining to development or inventions.
If you have such material and wish to donate it -- write Elliot at the mu-
seum and briefly describe contents.

Elliot Silverstick, Division of
Electricity, Smithsonian Institution
Washington, D.C. 20560

CALL LETTERS WITH A PAST (last OTB)
brought back memories to Art Jacoby
(N3QY). He was the Marconi operator
on the "Santa Isabel" using the call
WHN in 1915 and 18. It was a wooden
vessel running between New York and
the west coast of South America. Art
had many adventures as operator of
WHN including sending a SOS after
running aground off the coast of Peru.
In this particular case the ship mana-
aged to free itself.

M. T. C. COLLAPSES

Word comes in that the MORS TELE-
GRAPE CLUB has collapsed. The event
was precipitated by the death of its
President noted elsewhere in the OTB.

Strange events occurred before the
East Coast members were aware some-
thing was wrong. Checks for dues were
not cashed and letters not answered
for a period of six months!!

The M.T.C., with headquarters in
California, is not a new organization
nor is it a small one. It had between
4000 to 5000 members with 64 local
chapters. It may be a lesson not to
spread out too thin and place all the
burden on one or two individuals.

A new club is in the offing. We
wish the new group luck for there is
great need for an organization of
this type to carry on the fine tradi-
tion of landline telegraphy.

INTERESTED in A.W.A. Museum?? If so,
write either Lauren Poekhan or Charles
Bretheron...
It is better to have more than not enough material for future BULLETINS
and that is where we stand today. There are 7 feature articles on file, all
kinds of interesting tidbits plus a large folder of pictures.

Editorial practice is to try and print something for everyone which is not
always easy. As a result of going to punched IBM cards for membership
listing and labels plus automatic folding of Bulletins -- work at headquar-
ters has been lessened enabling us to take in more members.

Current membership is around 800 of whom 400 are collectors of one type
or another. Several hundred are in the profession plus a vast majority
being a combination collector/historian and old time operator.

Letters indicate the need for material in this order:
1. Old time equipment collecting and restoration including Old Tyme Ads.
2. Historical articles on subjects normally NOT found in books.
3. Current historical events and places.
5. Book reviews.

Odd bits of information are always welcome particularly present status
of bygone stations, companies and early pioneers. What happened to them
and where are they today ??

Concerning photographs:
1. Must be black and white.
2. Must be sharp.
3. Must be unusual and timely.

The Editors cannot guarantee your material will be printed, they have
the right to re-edit and it is understood all articles are gratis.

IGNATIUS MC CARTY must have been a real Trishman with that name -- he
was also a pioneer in radio tele-
phony. He set up a wireless set in
1902 and successfully transmitted
voice signals in the San Francisco
area. Details are not available as
to equipment used but the youthful
inventor interested other parties
in his work and successfully organ-
ized the McCarty Wireless Telephone
Company and issued 200,000 shares.
What happened to this enterprising
pioneer ?

(Tom Temp Campbell, W6ELW)

BEAUTIFUL QSL

Bill Gould, K2NP, sent AWA the QSL he
received from G3JCT commemorating the
"75th Anniversary of Marconi's First
Wireless Signals Across Water" (1897-
1972). It was a colorful card and
envelope with one of the new British
postage stamps. Too bad we can't re-
produce color in OTB.

HOUCK AWARD

HISTORICAL PRESERVATION
ED RASER, W2ZI
HISTORICAL DOCUMENTATION
BRUCE KELLEY, W2ICE

Mr. Ed Raser is more than just a col-
llector. In a period of 40 years he has
built up one of the finest historical
archives in the country. Countless rare
books, photographs, catalogs and maga-
zines makes his orderly library a veri-
table storehouse of information that
cannot be matched. In addition, he has
preserved hundreds of priceless pieces
of wireless apparatus. His collection
is based on rarity and historical sig-
nificance.

Bruce Kelley has been documenting
radio history for nearly 25 years. His
film shows (slides and movies) range
from amateur W2ZI history to biography
(Armstrong Show). They have been pre-
sented to professional meetings, ama-
teur conventions and hamfests, edu-
cational groups and released through
A.R.R.L. Training Aids for club use.

OPPOSITE PAGE

Several years ago OTB printed a
cartoon showing the trials and
tribulations of a collector. It
roused much interest and quite a
few smiles. Fortunately, we have
a member (KICVP) who is our group with
a like talent -- or should I say
his wife has -- and this is her
reaction to her husband's hobby.

Marty Sagendorf's wife, Kit, is
also a collector -- of doll houses.
The score is far from even between
the two -- he has 50 old receivers
and she has only 10 doll houses...
but since doll houses are ten
times as scarce as old BC sets...
maybe her count should be 100 !!

How about that Marty ??
How to Convert a Battery Radio into a Hobby

hang around junk stores

develop a sick taste for weird things

accept aunt Atwaterkent's wedding present

find a radio in a blind alley

got another from santa claus

line them up and declare them a "HOBBIE"...
...no one will know better...
HISTORICAL OUTLINE OF KEY DESIGN
by Louise Ramsey Moreau,
WB6BBO/W3WRE

About the author:

There is no question but what Lou Moreau, WB3WRE/WB6BBO is the nation’s top key collector and authority.

W2ZH and W2ZI can give her compe-
tition in other areas but she reigns
supreme in her field. Not only does
she have the largest collection but
she is most knowledgeable. She is
the author of numerous articles and
favorite speaker at radio conventions
and hamfests in addition to being
YL Editor for QST magazine.

The transmitting key has two character-
istics that have been virtually over-
looked in the history of communica-
tions: it is the oldest, historically, of
any piece of equipment in use; and is
the only one that can be truthfully mar-
ked "Made in U.S.A." for the key is as
American in origin as the Fourth of July. From the earliest attempts at
communicating over distances all sorts
of devices have been used to send in-
formation, but there was no easily
operated transmitting instrument until
Alfred Vail accidentally discovered that
was necessary was a simple switch to
open and close the circuit much as a
key does a door. The exact date of the
discovery has not been recorded,
according to the Vail Diaries it was "a
few weeks" before the May 24, 1844
demonstration as Vail was testing the
lines, and was hastily made. This
crude instrument, a strip of spring
metal with brass bolts fastened through
the operating base as contacts, and
called a "Correspondent," was the
first key. Six months later Vail, who
had been working on an improved,
more easily operated key, put the new
design on the wire in November 1844.
Still called a "Correspondent" it was,
and here I quote Vail, "A lever acting
upon a fulcrum."

In the period 1844 to 1900, over 100 keys are listed in the U.S. Index of

Patents, there have been an equal number from the turn of the century to
the present, and countless more that were widely used but not patented. For
purpose of classification the history of key design can be divided into four
phases. Phase One marks the origin, and early attempts to refine the "Lever
Correspondent."

Originally the contacts were brass but
it was discovered that the metal was
too soft so about 1850, platinum was
substituted and later silver. In the be-
ginning these parts were referred to in
all technical descriptions as the "ham-
mer" and the "anvil" respectively, and
these designations were used uni-
versally until the early part of the 1860s when
the present word contact was adopted.

The earliest spring, a strip of spring
metal with a very light tension was
placed at the end of the anvil contact to
support the lever to avoid contact other
than when the key was depressed to
complete the circuit. Each part of the
key was individually mounted on the
operating surface, and the earliest
circuit closing switches were window
catches mounted on the table to the left
of the key assembly.

Operators found that the straight lever
was uncomfortable, and that the al-
most negligible tension of the support-
ing spring did not effectively raise the
lever when released. Also that the
direct mounting on the table allowed
dirt or dust to collect on the contacts.
The major change came in 1848 with
all parts assembled on a metal frame,
and a modification of the lever design
to curve down towards the surface of
the table for greater ease in operating.
The balance of the key was shifted so
that the weight fell to the rear of the
lever causing it to fall back automati-
cally when released. Thus the "Camel-
back Key," so-called because of the
Telegraph key. Early "camelback" style used on American lines 1848 to 1860 period.

high curve of the lever came into being. Although straight lever keys were still used by some operators, the Camel- back was the accepted design used on all lines until well after the Civil War, and the familiar curved lever, and flat knob became the "trademark" of the American key. Germany is the only other country to employ the curved lever style of key. Each company had its own designs produced by instrument makers and machinists. During the period 1848-1855 the most satisfactory keys were made by Charles Chubbuck, of New York; Thomas Hall, of Boston; Fleming and Potter Company of Philadelphia; and Chester Brothers of New York, for it was not until the 1860s that commercial instrument production began.

In 1850 the spring changed when William Avery, a technical assistant to Morse, introduced the coil spring and placed it at the rear of the lever. Within a short time it was moved under the center of the lever for better balance and thus eliminated the necessity of the heavy solid weight of metal at the rear. Although there was no provision for adjustment of tension, these keys were very effective, records of the time show that they were capable of speeds of 55 words per minute. All other lines adopted the center balance, but some used a bent wire type of spring.

Ten years later, 1860, George M. Phelps, chief machinist of the Western Union Company Shops, perfected the camelback keys by redesigning and slimming the lever for perfect balance, placing the circuit closing switch on the frame, and adding adjustment to the spring to suit the individual operator's needs. All the Phelps instruments are die-stamped "W. U. Company - G. M. Phelps Maker" on the levers, and were made in the Western Union shops, but the Phelps designs were copied by most of the major companies.

Phase One, 1844 to 1881, is the period of transition from the simple circuit breaker, to the perfectly balanced camelbacks, the appearance of KOB sets with both key and sounder on a single base; also the "pocket key and sounder" or lineman's test set of the late 1850s. It is the appearance, in the 1860s, of L. G. Tillotson Company, the first formed for the exclusive production of telegraph instruments. Tillotson was followed by others; Western Electric, the Altoona Shops of the Pennsylvania Railroad, J. H. Bunnell, and Foote-Pierson companies.

Phase Two begins February 15, 1881, with a patent granted to Jesse H. Bunnell. One of the drawbacks of the camelbacks was Vail's "fulcrum" or trunnion, a steel rod let through the brass lever, the action of which often caused the soft red brass to wear and eventually slide off center so that it was necessary to replace it. The Phelps modifications had obviated the need for the camelbacks, and there were some attempts to introduce steel levers instead of brass as early as 1875. Bunnell introduced a light, one-piece lever with the trunnions cast as a part of it. He changed the frame to the open oval, making it portable by mounting the binding posts at the rear, which eliminated the necessity for the leg and semi-leg styles although their manufacture continued for more or less permanent installations.

Western Electric has been producing the lighter levers in their Lewis, and
Steiner keys. The Lewis key had the elaborate scalloped base but retained the old style trunnion, while the Steiner used a solid narrow frame with a piece of spring metal inserted in the center of the lever instead of the conventional coil spring. The Hamilton designs produced by L.G. Tillotson utilized a solid brass lever with a knife fitting trunnion mount. The Western Electric designs, while very attractive could not complete with the efficient steel lever of the Bunnell "Triumph" model, but the Tillotson "knife fitting" remained on the market. After the company sold its dies and patents to the Bunnell company, Bunnell produced this design as their "Victor" keys as late as 1918.

From the beginning of the profession, the vertical action of the hand key could, and often did cause "telegraphers paralysis." As a result, about 1899, the commercial variety of the so-called "side-swipers" that used a horizontal rather than a vertical action began to appear. Of all the inventions that were produced, only one had any commercial market, the Bunnell model called the "Double Speed" key. Another style that enjoyed a brief popularity was the "Twentieth Century Key" of Skirrow and Shirer, nicknamed the "Pump Handle Key." The word "sideswiper" is a generic term to designate any horizontal action hand key, and has never held a copyright.

It should be noted that the original "Correspondent" of May 1844, was not discontinued, it continued to appear in the strap keys used in railroad, and other signalling.

Phase Two is the growth of commercial production of telegraph equipment. Spies Electric; E.S. Greeley; Empire City ELECTRIC; Quear; Viaduct Manufacturing Company; Cooke; MESCO; as well as the expansion of Foote-Pierson; Western Electric, J.H. Bunnell; and many others. Here, in this phase we find the finest of the instruments designed for an industry based on skill and speed.

The second phase of key design runs parallel with phases three and four for the telegraph hand key of 1881 remains unmatched so that Phase Two may be dated from 1881 to the present.

Phase Three is a necessary, if temporary, change brought about by wireless telegraphy. To catalogue this phase the opening of the period may be set at 1896 when Marconi received his famous British patent. Of necessity the entire key design changed to heavier construction to meet the requirements of breaking large values of current. It was found that it was possible to break current up to thirty-five amperes with a hand manipulated key, and in excess of that through magnetically operated relay keys. The earliest types had platinum contacts but it was found possible to substitute silver by increasing the size of the contact surfaces. On the early models the contacts were air cooled by mounting them on brass "cooling fins." Other types had the contacts extending into a box of oil to reduce arcing to a minimum. Design reverted to the pre-1848 period with the key assembled without a frame on marble or slate bases. Some of the very early wireless keys were extremely large as the Walter Massie key of 1908. American manufacturers retained the curved lever, and the skirted knob was introduced to protect the operator during transmission. As Spark refined the key became smaller in size supporting smaller contacts. In World War I, the military requirements brought a new form to the key with contacts, and binding posts covered in the flameproof models for submarine, and aircraft
operation. The sideswipers were represented by the "Cootie Key" of Karlowa, 9XR, and the Bunnell model for radio work.

Phase Three is brief covering about 20 years. It is the era of Massie Wireless Telegraph Company; Tri-City Labs; United Wireless; American Marconi; Clapp-Eastham; REYCO; General Radio; E.I. Company; and Bunnell, in radio keys, while the telegraph instruments continued for wire work. Of the foreign keys, the most outstanding are Telfunken; Siemens-Halsig; Marconi Wireless Telegraph Company; Ducretet and Roger; and Slaby-Arco. It is also the era of the Amateur who made his own keys by soldering dimes on the frame of a telegraph key to operate his spark equipment.

Phase Three is characterized by power and the necessity of creating keys to handle that power. When spark ended there was need for the heavier keys and phases two and three merge as the telegraph instruments are brought into radio as well as wire operation.

The phase two and three merger is names: Signal Electric; L.S. Brach; Johnson; Military surplus of World War 2. It is "Go-Devil;" Electro-Bug; Equable; the Electric Specialty Company's form "Speed Bug;" Martin's "Piggy Back;" and the Martin-Bunnell "Flash Bugs." And it is the Mon-Key, and Eldico of the Electronics.

Phase Four is a part of the merging but is the era of speed. It starts with the telegraph, and runs concurrently with the spark period but is limited to wire operation until 1922, for, short of some experimental work on the part of some of the operators, the speed keys were not used in spark.

1902 saw the beginning of the semi-automatic keys when Horace Martin was granted a patent for his invention. The 1902 patent covered every form of sending dots automatically, and dashes manually and, because of the blanket specifications, it closed the door to all others with one exception. In 1904, the design we call the "Original" appeared and the name "Vibroplex" was granted a copyright. Martin continued to modify and improve this key. The Double Lever was introduced in 1911; the "X" Model in 1912; 1915 the smaller three-quarter size key; 1917 the "Upright" model; and, in 1923 the finest of them all "Vibroplex #6" now known as the "Lightening Bug." In 1913 R. L. Boulton was working with the Vibroplex Company adding improved features to the design with his inventions.

The only semi-automatic to by-pass the 1902 Martin patent was the so-called "Right Angle Bug" of the Mecograph Company of Cleveland, Ohio, in 1906 with the Coffe patents that were improved in 1908 by Bellows and Behner. Based on a pendulum action caused by release of spring tension on the vibrator, these keys were on the market until 1914, when the Vibroplex Company absorbed the patents. Other semi-automatics appeared briefly such as the Hulit and Duplex but were forced off the market through legal action of the Vibroplex Company.

The "Albright License" a popular name for the metal plate that was attached to the base of semi-automatics that met specifications but was not made by Vibroplex, was introduced by the Albright Company about the beginning of World War I. Its purchase, and attachment to the key permitted the use of non-Vibroplex keys, and was the only way that they could be used in industry.

After the expiration of the Martin patents the field opened and semi-auto-
matics were produced by many companies. The "Mac-Key," Signal Electric's "Semantic," which, in 1934 became the Johnson "Speedex" when that company bought the Signal dies and patents. The "Logan" key; the "Ultimate" or "73" key, a miniature bug based on the Mecograph right-angle design and cased in a dust cover. Martin's independently produced "Flash Bug," later the Martin-Bunnell "Flash Key." The Lylet, and Dow keys that adjusted the lever position horizontally, as well as vertically to suit the position of the hand when operating. Finally, the only one that was designed to make dashes as well as dots automatically, the "Melehann Valiant." There were only three or four hundred of these keys produced because they could not compete with the electronics that were beginning to appear.

From the beginning it has been the telegrapher himself who was the inventor as he created improvements in his instrument for personal comfort, and better operation. Four men stand out as milestones in the history of key design: Alfred Vail who not only gave communications the first key, but for his "lever acting upon a fulcrum," the basis of every kind of key since then; James H. Bunnell, with his light efficient, steel-lever hand key; Horace Martin, and his incomparable semi-automatics; and, in the electronic key field, Jim Ricks, W9TO, and his principle of "time-sequence keying."

There are hundreds of others but these men are the ones who built the "better mouse traps" that others copied.

Reference Bibliography
11. Western Union, Vibroplex, and MESCO Catalogues.
How Fast Do Radio Operators Send and Receive Code?

At the radio amateur’s convention, held in Chicago during the past summer, a code operator’s speed contest was held in which the title passed to Mr. Joseph W. Chaplin, radio operator for Press Wireless, Inc., New York, who copying at a speed of 57.3 words per minute, qualified for first place by making only 11 errors out of an allowable 14. The nearest contender, T. R. McElroy, formerly of the Western Union and Associated Press, qualified for second place by copying at a speed of 54.3 words per minute, with but 8 errors. At this speed Mr. Chaplin had but 5 errors.

It is of interest to record that there was a series of contests held by Morse wire telegraphers from the year 1868 until 1915. There have been preserved detail records and data of all of these contests. In the Morse contests the laurels usually went to the operators who could transmit by hand key (later by Vibroplex) the largest number of words straight matter in five minutes, the readability and transmission being the criterion of accomplishment. In the radio contests the ability to copy from automatic transmission at high speed appears to be the objective. In view of modern methods of commercial traffic handling there is reason for this departure, but it is predicted in view of the defective code sending of many amateur and some commercial radio operators of the present time that future contests may include events based on accurate and rapid sending.

A cherished prize in the wire men’s contests was the famous Carnegie diamond medal, last won at San Francisco in 1915 by Thomas R. Brickhouse, a “broker” telegrapher, now in New York. It may be that Mr. Brickhouse will be willing to turn this trophy over to the radio speedsters to scrap for annually, as the beautiful trophy at last accounts reposits in a safety deposit box in New York.

Reviewing the contests held by radio operators it is disclosed that the first contest was held by operators of the United Wireless Telegraph Company, at Philadelphia, February 23, 1910. Radio contestants were Robert F. Miller and David J. Heilig, of the United Wireless Co. A dozen or more of the other contestants were operators employed by the Postal Telegraph-Cable Co., and the Western Union Telegraph Co. The American Morse code was used in radio at that time. Miller won the prize cup, and Harvey Williams, of the Western Union won the runner up cup.

On November 28, 1920, at a Pacific Radio Convention held in San Francisco, A. E. Gerhard won first place by copying (Continental code) from Wheatstone transmission, 49¼ words per minute for four minutes, with but five errors. Gerhard was then employed at R. C. A.’s station at Marshall, Calif.

On March 18, 1921, at the Pennsylvania Hotel, New York, B. G. Sutter, of the Times radio staff, New York, won first place by copying from automatic transmission 48 3/5 words per minute, with 2 errors. Second place was awarded N. Bernstein, of the Western Union, who copied the same number of words but made 3 errors.

On March 18, 1922, at the Pennsylvania Hotel, New York, Jose M. Seron, of R. C. A., won first by copying 49½ words per minute, with 2 errors. On May 6, the same year at the Boston Radio Show, T. R. McElroy, of the Boston Herald, wrested the championship from Mr. Seron by copying 51½ words per minute on a typewriter, copying for three minutes before making a mistake. Wheatstone transmission was employed. On May 24, the same year at a contest held in the 71st Regiment Armory, New York, Mr. McElroy won first prize by copying 56¼ words per minute. His opponent was B. G. Sutter and Joseph C. Smyth. At a Boston tournament, held in November, 1922, Mr. Smyth captured the honors by copying 55 words per minute, five errors. On this occasion Mr. McElroy, at the same copying speed, made 6 errors. At Chicago, on August 6, 1922, Mr. McElroy won the diamond medal by copying 52 1/5 words per minute, perfect copy. In an extra event at this contest Mr. McElroy copied 53 1/10 words per minute, perfect copy. His May 24, New York, record was 56 ¾ words per minute, four errors.

On March 7, 1924, at the Pennsylvania Hotel, New York, A. E. Gerhard of R. C. A., copied straight matter at a speed of 59 ½ words per minute. Just a year later Mr. Gerhard took first at an amateur show by copying 56 1/2 words per minute, no errors.

On March 11, 1926, Edward Adler, of R. C. A., at the Pennsylvania Hotel, New York, copied at the rate of 58 words per minute, 2 errors. R. C. McPherson, R. C. A., won second with 58 words, 4 errors. Mr. Adler was then twenty-three years of age.

At an R. C. A. contest held in January, 1928, R. C. McPherson copied 48 words per minute; A. C. Burnett, 60 words per minute slip reading, and R. C. McPherson 65 words per minute perforating tape.

In contests of this kind where the difference of a word or two per minute is likely to make championships change hands, it is important that the radio telegraphers adopt a standard set of words to serve as matter to be transmitted in all future contests, as in former years Morse telegraphers adopted the famous “Command of Gideon” text.

Reprint from RADIO ENGINEERING, January 1934

Controversy Between WLW and WMH Settled

OFFICIALS of the Department of Commerce are very much gratified at the settlement of the controversy which developed at Cincinnati when stations WLW and WMH went on the air simultaneously on the same wave length on different evenings. Commissioner Carson and Chief Radio Supervisor Terrell went to Cincinnati and succeeded in having the participants sign an agreement in regard to a division of time which, it is believed, will prevent future outbreaks.

“We are very much pleased at the settlement of what might have been a very unpleasant situation,” says Judge S. B. Davis, Acting Solicitor.

Others echoed his sentiment.
Max Jacobson, W3DUG (left) is presenting tube for A.W.A. Museum to Warren Green, W7JY (Center). Jack Kingman, W4JT, is holding a section of the 2500 strand leading. (Photo by W2EWK taken at Washington Conference)
THE SKYRIDER

This little receiver, made in the early 30's may not compare with the beautiful Scotts of the period but it definitely has a place in the amateur museum for several reasons.

First, it was one of Bill Halligan's first endeavors in spite of the fact it was pretty much Silver-Marshall construction. The set is not to be confused with later "Skyriders" (See "History of Hallicrafter Corp., CTB Vol. 4, #3") which were superhets.

Next: it uses a TRF/regenerative circuit with an unique feature -- bandswitching -- which was almost unknown at the time. (National and Hammarlund were still using plug-in coils).

The set came in two models: bandspread for the SWL and another covering the amateur bands.

New Member

A.W.A. membership is not confined to old timers -- one of the newest to join is 15 year old Jerry Cibilich, WAGQXB of San Jose, Calif. Jerry was a licensed amateur when he was only 12 years old. It is wonderful to have younger people interested in historical radio -- remember -- they are the ones to carry on after we're gone...

DON'T FORGET!

The 80 meter CW Contest in February. Prize Award. CT and modern saturated. See details elsewhere in Bulletin.....

RCA - 221

Rare tube in Peckham collection. Made for farm battery use, it has a 5.6 volt filament at .056 amps.
**Fire at Sea, Smoke Screens Ashore**

**SHIPWRECK**

The Strange Fate of the Morro Castle

By Gordon Thomas and Max Morgan Witts

Stein & Day. 287 pp. $7.95

The above book (SHIPWRECK) has just been released and should be available through most bookstores. It is of particular interest to AWA members for several reasons:

-- The radio operator was the guilty culprit who started the fire.
-- He was also a ham radio operator and his former call letters are now held by well known AWA member Bob Cobug, W2NX.
-- And lastly the transmitting key used on the Morro Castle is now part of Ed Raser's historical key collection!

A touch of irony is associated with the tale. The operator, George Rogers, became a hero and pulled $1000 a week telling of his experience as the man behind the key.

The law finally caught up with the culprit. In addition to the 134 lives lost in the Morro Castle disaster as a result of his arson, he was later charged with several murders (1953) and finally died in jail (1956).

Without a doubt, Rogers will go down in history as the all time greatest villain in radio operator history...

(Tnx Ted Duvall)

**HISTORY OF POSITIVE FEEDBACK**

by Prof. D. G. Tucker

The Radio and Electronic Engineer,

Vol. 42, No. 2, February, 1972

Students interested in the history of feedback or regeneration will find this article in a British magazine the most comprehensive ever written. The author took an impartial stand and carefully sifted through numerous sources for his information as noted by the Reference Listing.

His conclusions are rather startling: He gives neither Armstrong or DeForest credit for DISCOVERING the oscillating circuit!

We quote his conclusions:

a.) The self-oscillating audion was discovered in late 1911 by Fritz Lowenstein.

b.) The fact that feedback could produce oscillation in an audion was DISCOVERED by Van Etten (DeForest's Assistant) in August, 1912.

c.) The use of feedback was INVENTED early in 1913 by Armstrong, Reisz, Meissner and Franklin all within a month or two of one another.

Note the emphasis placed on "discover" and "invent".

**ENCYCLOPEDIA OF AMERICAN SHIPWRECKS**

This is a paperback which sells for $7.95 and tells about 13,000 shipwrecks...from revolutionary days to present. They include clipper ships, barges, tankers, freighters and passen-ager ships of many nations. They foundered, capsized, burned, collided or were scuttled in war... It took over eight years of meticu- culous search by Author Bruce Ber-man to put it together. It is pub-lished by MARINERS PRESS, INC., 755 Boylston St., Boston, Mass. 02116

(Copy from SWP Bulletin)

**COLLECTORS:** Lauren Peckham wants to hear from you...let's keep his new column with THE COLLECTORS going by sending him a list of your new sets.
Published by Viking Press

Who played the Lone Ranger? Who handled the sound effects for "Gangbusters?" This fact-filled and fascinating reference seems to have all the answers. The new volume has more information about casts, backstage talent, program themes, stars, theme songs, announcers, commercials, newscasters, soap operas, professional scenarios, you name it! --plus 150 rare photographs and a comprehensive index. Price: $12.95

"FROM SEMAPHORE TO SATELLITE", the famous book released a few years ago and selling for $9.95 is now available for half price ($4.50 postpaid) from Gilfer Assoc. This beautifully illustrated volume on the history of communication is well worth the price. It can be purchased for less by ordering direct from TU in Switzerland but available immediately from:

GILFER ASSOCIATES, INC.
P.O. Box 239  Park Ridge, N.J. 07656

ORIGIN OF OHM'S LAW
by David Heiserman

We missed reporting this exceptionally well written but brief article when first noticed in the May issue of "Popular Electronics" magazine until Art Brown called our attention to it again.

The author tells of Georg Simon Ohm's trials and tribulations (including a poorly timed announcement in 1825) in determining the relationship of volts, amperes and resistance. Recognition wasn't given until later years.

DAVID SARNOFF
Wm. H. Offenhauser, Jr.

Midsummer, 1972 issue of Radio Club of America

Most biographers tend to praise their subjects -- not so with Bill Offenhauser who summarizes Sarnoff's career in a short, subjective manner. The reviewer was particularly pleased the way he evaluated the Armstrong/Sarnoff conflict. Exceptionally well written.

TELEMA buffs who were unable to obtain Quimby's fine article on Nikola Tesla printed in the Radio Club Proceedings may now obtain same by purchasing the NOVEMBER issue of "73" magazine. Write: "73", Peterborough, N.H. 03458

The following back issues of the OLD TIMERS BULLETIN can be purchased at prices noted. Orders filled until supply exhausted. Issues other than noted NOT available. Orders will be filled in January (after Xmas mailing). Order direct from Secretary:

Bruce Kelley
Main Street
Holcomb, N.Y. 14469

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All three for $1.00

Note: Historian/collectors are finding back issues valuable reference. Unfortunately, few extra copies were printed in the early days of the OTC thus making them quite rare. We will endeavor to reprint certain issues on demand. The cost will be high because of limited quantity.

Vol. 1, #2 and #3 have been reprinted to present format and are being offered with a 4 page front cover brochure for those who wish to bind their copies in book form. It should be noted that these early copies were not illustrated -- hence the low cost. All 3 for $1.

RARE LETTER

Another letter with a rare signature has been added to the Association's growing file of historical manuscripts. The latest is an original letter dated Feb. 13, 1913 and signed by E.F.W. ALEXANDERSON commenting on statements made by John Hayes Hammond concerning McCandless and the manufacturing of Audions.
Publications

A surprise visitor and AWA member at the recent Conference was Morgan McMahon, author of VINTAGE RADIO. Morgan made the trip from California to meet fellow historians and discuss another revision of his book. If you recall, the book was originally written by Harold Greenwood, W6MBA. Both Greenwood and Floyd Clymer have since passed away.

Morgan feels the book needs further updating and some corrections made. He will offer prize to one finding the greatest number of errors. Corrections must be authenticated. Write:

Morgan McMahon
26451 Dunwood Rd., Rolling Hills, California 90274

TRT Now International

About the time you read this TROPICAL RADIO TELEGRAPH CO. may have a new name. Starting as a subsidiary of United Fruit (remember the banana boats?) in 1913, the company has expanded in communication from United States/Central America traffic into the international scene.

In recent years it extended its services to South American countries including Brazil, Columbia and Venezuela.

The F.C.C. has now authorized TRT to "acquire, to lease and operate necessary satellite circuitry for service to Europe". Hopefully, they will have services into 38 countries in Western and Eastern Europe. A far cry from the old Wireless Specialty Apparatus Days.

INFLATION

This ad appeared in a 1915 magazine and is an excellent example of inflation. DeForest RJ-4 detectors are currently selling for $150 to $200.
COMPONENTS FOR COHERER RECEIVER

Other than possibly a tuning coil, the above components constitute the essentials for an early Marconi type coherer receiver. Left to right: coherer/coherer, polarized relay, scanner and Morse "linker". These rare instruments were acquired earlier in the year by Tim Christen who has within a relatively short time amassed a very rare collection.

CRYSTAL DETECTOR INVENTOR

Greenleaf W. Pickard (M'12–F'15) was born on February 14, 1877, in Portland, Maine. He has been associated with radio since 1901, when he became engineer for the American Wireless Telegraph and Telephone Company. In 1902, he was made chief engineer for the Federal Wireless Telegraph and Telephone Company. Later, he joined the American Telephone and Telegraph Company, remaining until 1907, when he organized the Wireless Specialty Apparatus Company, which became the R.C.S. Victor Company of Massachusetts. From 1942 to 1945 Mr. Pickard was director of research for the American Jews Corporation. He is now associated with the firm of Pickard and Burns, consulting engineers.

Mr. Pickard received the I.R.E. Medal of Honor in 1926 for his "contributions as to crystal detectors, coil antennas, wave propagation and atmospheric disturbances." He also was the recipient of the Armstrong Medal of the Radio Club of America in 1940. He has served on numerous I.R.E. committees, including the Board of Editors, Constitution and Laws, Wavelength Regulation, and Wave Propagation, and was actively associated with the organization of the Boston Section, in 1914. Mr. Pickard was a member of both the Wireless Institute and the Society of Wireless Telegraph Engineers, when these two organizations fused into the present I.R.E. on May 13, 1912.

COMMERCIAL STATIONS

When most high power commercial stations were built 40 or 50 years ago the engineers gave little thought to BCI or TVI since most were located in a somewhat remote area. Times have changed.

Population explosion and resulting housing developments are now encircling many of the high power stations with resulting complaints. The latest called to our attention (by Jack Allison) is a situation on Long Island near World Communications, a subsidiary of International Telephone and Telegraph Corporation.

Although it would appear some of the interference comes from other sources, IT&T Engineers admit their high power transmitter do cause some. They are recommending high-pass filters and appear co-operative. It is doubtful, however, that they will reduce power or move location!

An interesting sidelight to this was a report several years ago that the high power Longwave Alexanderson alternators at Marion, Mass. were causing interference -- a real annoying mushy sound in nearby receivers. Nothing was done about it -- and the station finally closed down.

Mu-Rad
MA-15
The following is an excerpt from CBC’s Radio Canada International quarterly publication and sent to us by Ted Hannah, K3CL. Can anyone give us the date of last Morse tce in U.S.A.?

"The last message in Morse Code for official traffic use in Canada was made on May 30th, 1972 by Rene Chevalier, a Canadian Pacific Railways operator, from the small town of Batisson, 95 miles east of Montreal. Samuel Morse sent his first message on May 24th, 1844. Now, 123 years after, Morse telegraphy in Canada has become obsolete. The present broadband communication service which is transmitted over microwave network is capable of speeds up to 50,000 words per minute, compared to an average of 50 words a minute by a good commercial Morse operator."

**Change In Address?**

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

CONGRATULATIONS TO ED TILTON, W1HQD
QST VHF Editor on his retirement. Mention the name Tilton to any amateur and they immediately think in terms of VHF/UHF for he has pioneered and spent nearly a lifetime in this field writing, editing and constructing material for the higher frequencies. A recent letter from Ed indicated he may on retirement start collecting a few pieces of old gear -- VHF ??

**NOTICE**

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 in any buying or selling transaction entered into by its readers as a result of its contents. The Old Timers Bulletin is available only as part of the Antique Wireless Association membership fee and its issuance is subject to change as to frequency, content and size from time to time.
WILLIAM FAY
(Aug. 13, Rochester, N.Y., 73 yrs.)
Bill was well known in the broadcast field particularly in the Rochester area where he could have been called Mr. WHAM. He started in broadcasting in 1923 as an announcer and singer at pioneer WGY (Schenectady), then to Buffalo and finally to Rochester's WHAM where he retired as President of Stromberg-Carlson Broadcasting Corp. He was frequent guest speaker at AWA events and is seen in several AWA shows.

Charles Correll,
the Andy of Radio, Dies
Charles J. Correll, the Andy of "Amos 'n' Andy" radio show from 1928 to 1960 died in Chicago in September. He was 82 years old. His younger partner, Gosden, who played Amos, is still alive and is 67 years old. The two made radio history with their daily 15-minute broadcasts.

Richard Crooks,
Tenor at the Met, Dies
Members of the radio profession and old time radio listeners will instantly recognize the name Richard Crooks who died in California, Oct. 1 at the age of 72 years. He was featured for 14 years as the "Voice of Firestone" and was frequently called the "American John McCormack".

Al Goodman, Orchestra Leader
At Stage and Radio Shows, Dies
81 years, New York City
Conductor, composer and pianist and known to radio fans for his music on the Hit Parade and other popular radio broadcasts. Started with Al Jolson in show "Sinbad" (1915) followed by numerous hits such as the "Vanities", the "Scandals", "Rico Rita", "Strike Me Pink", "Eat and the Fiddle" before going into radio.

Gen. George Back
Dies; Headed Signal Corps
78 years, St. Petersburg, Fla., Oct. 3
Maj. Gen. I. Back was commissioned in the Signal Corp in 1917 and became a career officer for a period of 38 years. His duties ranged through two great wars -- from spark transmitters with crystal receivers to modern communication equipment. In later years he was associated with International Resistance Corporation (1968).
(Tnx K3CL, ex-K3CUI)

Andre Clavier Is Dead at 77;
A Pioneer in Microwave Radio
Hollywood, Florida
First to successfully demonstrate microwave by transmitting across the English Channel (1931). Long time engineer and officer with I.T. & T.
(Above copy from Joe Garcia)

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