William G. Housekeeper holding one of his first water-cooled tubes. See page 16 for story.
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A.W.A. JOURNAL
“The Old Timers Bulletin”
Editor: Bruce Kelley
Asst. Editor: Dick Ransley

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OLD TIMERS BULLETIN

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COMING EVENTS

ANTIQUE WIRELESS ASSOCIATION

Sept. 12 Gaithersburg Hamfest
Gaithersburg, Maryland
Sept. 28, 29, 30, Oct. 1, 2 National
AWA Conference, Canandaigua, N.Y.
Oct. 16-17 Sun Coast Convention
Clearwater, Florida
Oct. 31 AWA Museum closes
Nov. 7 Annual Business Meeting
Nov. 13, 14 Annual VRPS/ AWA Con-
vention, Dallas, Texas
Nov. 20 Annual Worker's Xmas
Party, Ionia, N.Y.

OTB LATE?
AWA cannot guarantee Third
Class mail delivery. Further,
if you move, 3rd class mail
will not be forwarded. If you
have these problems, may we
suggest you have your Bulle-
tins sent First Class.

In Memoriam
The amateur fraternity has lost
two pioneers:

Eunice Thompson, WIMPP, pioneer
broadcaster and employee of sev-
eral early radio companies includ-
ing Amrad. O.O.T.C. members
remember her devotion and work
with the club.

Clark Rodman, W1SZ, former Man-
aging Editor of QST. As adminis-
trator and technical writer, the call
1SZ brings back many memories to
the old time radio amateur.

Writing AWA Headquarters? Please
enclose SASE for prompt reply.....

Change In Address?
Mail information to the Treasurer
who handles current mailing list.
(NO T he Secretary)
L. A. CUNDALL, W2LC
69 BOULEVARD PARKWAY
ROCHESTER, NY 14612
COLLECTOR CLUB

Members in Australia are urged to join a new historical/collectors club recently formed called "Historical Radio Society of Australia". Founded in April of this year, they have already printed two Newsletters and are scheduled meetings. We believe membership is currently restricted to members within the country. For more information, write: Ray Kelly
49 Sharon Rd., Springvale 3172
Victoria, Australia

WORLD'S LARGEST CATALOG of new and used antique radio tubes and parts just released. Although mostly British, there are numerous American items. Due to weight of catalog, mailing cost varies to different countries. Write for cost: Vintage Wireless Co.
64, Broad St., Staple Hill, Bristol,
BS16 5NL, Great Britain

ON GUARD!

Members are advised to carefully screen payment for material sold. If material is paid by check in a flea market, insist on proper identification and address. Deliberate issuance of a check without funds is a criminal offense.

Starting this year, all AWA flea market participants must be AWA members and register in advance before allowed on the grounds. A check sheet will verify membership. Members are warned not to make a transaction with anyone unless they have a registration badge (both buyer and seller).

In addition, be careful of "deals" by mail. Fraud by mail can be a Federal offense. What is it all about?

Seems there has been some questionable activity of late and it is felt members should be warned.....

COMPONENTS AVAILABLE

AWA was recently given a large quantity of high impedance headphones in original boxes. They are available at a greatly reduced price at the Historical Society's Gift Shop, AWA Museum. The earphones are idea for battery and crystal set receivers. Other items available at the shop at reduced prices include large coils of wire for loosely-couplers, rf coils, etc. plus an assortment of new and used radio books.

ANNUAL AWA BUSINESS MEETING
Sheraton Motel, Canandaigua, N.Y., 2 PM
Sunday, Nov. 7. Members participation

AWA NETS (EST/EDST)
PHONE (SSB) – 3866 kc. Tuesday 8 p.m.
Mon. - Wed. - Fri. at 9:30 p.m.
Sunday – 7242 kc. at 12 Noon
Tuesday – 14274 kc. at 5:30 p.m.

CW – 3584 kc. daily at 4 p.m.
First Wed. each month at 8 p.m.

SILENT KEYS
D. F. Morris, B. Kendig (WA2YCK)
Robert Hopkins, Jim Beaver (W3AHZ)
E. W. Freeman (K0MOA)
Announcing:

MARYLAND

HUGE HAMFEST
Sponsored by the Foundation for Amateur Radio
Gaithersburg Fairgrounds, Gaithersburg, Md.
SUNDAY, SEPT. 12

This event has one of the largest flea markets in the East. All items are amateur related. Be sure and visit the AWA booth where JOHN NAGLE, K4KJ will have a fine display of early receivers and other artifacts.

FLORIDA

SUN COAST AMATEUR RADIO CONVENTION
October 16-17, 1982
Sand Key Sheraton, Clearwater, Fla.

Special AWA Program at 1:30 PM -- "AMATEUR RADIO MUSEUMS"
John Smith (W4ACG) will be in charge.

NEW YORK

NATIONAL HISTORICAL RADIO CONFERENCE
SHERATON INN. CANANDAIGUA, N.Y.
Wednesday through Sunday Sept. 29, 30, Oct. 1, 2, 3
"The World's Largest Historical Radio Gathering."

Large indoor and outdoor flea markets (restricted to members with old gear). Historical talks, tube seminar, early gear contests, amateur radio meetings, old gear auction (Museum Fund), women's program, etc. For more information, see JUNE OTB or write: Dex Deeley, 8 Briar Circle, Rochester, N.Y. 14618

TEXAS

Nov. 12-14, Holiday Inn-Dallas Southwest
Special reduced rates at Inn. Easy access to Freeway and Dallas airports.
3 FULL DAYS of activities: Contests, seminars/talks, swapfest and large auction PLUS Annual Banquet with awards and prizes.
SPECIAL program for the LADIES!

VINTAGE RADIO & PHONOGRAPH SOCIETY and the ANTIQUE WIRELESS ASSOCIATION presents the 1982 SOUTHWEST REGIONAL CONVENTION
This gathering could well be the largest collector/historical meet held in the Southwest. Advance program with all information will be sent to members. Additional information may be obtained by writing: V. R. P. S., Box 5345, Irving, Texas 75062 or by telephoning Basil Abbott: (214)-690-4702.
Several years ago Walter Smartt brought to the Canandaigua meet a pair of most unusual tubes: a miniature AC triode and a mercury rectifier. They puzzled everyone until Wilson Norwood recognized them as having been used in a tiny cathedral sold by a Newark department store in the early 30s.

Wilson serviced radios at the time, and soon after they came out, was asked to fix these sets; the tubes were only available from the one store (Hahne's) and he recalls going there and obtaining a supply.

I found a descriptive article in RADIO magazine, July 1932, that seemed to apply to this cathedral, and with some idea of the correct date, Wilson went through microfilm of the Newark newspapers and found the first ad for the set, on August 9, 1932.

The tubes are triodes like the 27, and take 2.5 volts at about 2 amps. Basing is: pin 1 cathode, 2 plate, 3 grid, 4 & 5 heater; the rectifier base omits pins 2 and 4. The set had six tubes: 2 rf, detector, 2 audio, and a rectifier. It measured 10" high by 6½" square, contained a clock, and apparently used a rochelle-salt piezoelectric speaker driver (which probably explains why none have survived).

Jerry Tyne, and the Newark Public Library, supplied a few assorted references:

(1) in 1929, the Schultz Manufacturing Company was at 548 S. 11th Street and made special machinery (Newark City Directory).

(2) Vacuum Products Company of Weekawken merged with Schultz to form Radio Products Company (Saga, p. 360, under Phonotron).

(3) In 1931 the Radio Products Company is listed in the N. J. Industrial Directory, at 548-556 S. 11th Street, Frank Schultz, president. It made neon and vacuum tubes and employed 18 males and 4 females.

(4) No listing occurs in the 1934 Industrial Directory.

(5) Nothing is known of the tube engineer, J. V. Capicotto.

Needless to say, if anyone owns one of these radios, we would love to hear about it. I know they're rare because I asked Nate Alexander and even he doesn't have one!

A poor reproduction of the 7 x 7 x 11" radio as illustrated in the September issue of "Radio News". The set sold for $17.50 with others at $12.50 and $27.50. The set is also described in July '32 issue of "Radio".
A recent survey of several SW-3 owners found many had receivers that had been converted into a pre-selector. In fact, a check of AWA inventory indicated 2 out of 3 had been converted. How come?

The National SW-3 was a popular amateur set in the early 30's but lost favor with the introduction of the super-het. Many early supers did not have a stage of tuned RF and were not sensitive particularly on 10 and 20 meters. The SW-3 as a pre-selector was the answer.

Thousands of these 3-tube receivers were re-wired as a result of articles published in QST and other magazines. Shown is the basic SW-3 circuit and a conversion from page 35, March 1935 QST. Note the change in coil winding. Some SW-3's were found with minimum change—the audio stage had been disconnected and the regenerative detector capacity coupled to the super-het.
Telegraph Stamps were issued by a number of telegraph companies primarily for use in free franking privileges issued to various railroad, newspaper and express company officials when their concerns were large users of its telegraph lines. The stamps were usually issued in "books" of various quantities much like postage stamp books are issued today by the U. S. Post Office.

Philatelists for many years have officially recognized and listed "Telegraph Stamps" as collectibles, even though they were never used in any postal service. This doubtless came about because in the early days of telegraph service in this country there were strong efforts in some quarters to induce the US Postal Service to acquire the various telegraph companies and to administer and operate them.

Incidentally the name "Postal Telegraph Service" was a psychological effort to ease the way towards achieving this objective. While such efforts were unsuccessful in the U. S., the telegraph and telephone services in the majority of other countries are, and always have been operated by one entity which embraces the postal service. (Hence the identity "PTT" — posts, telegraphs and telephones).

The telegraph not only revolutionized railroad train dispatching, but many of the U. S. telegraph companies enjoyed contracts to utilize the railroad rights-of-way for erecting their pole lines. Some Telegraph Stamps clearly reveal this, such as the Baltimore and Ohio Telegraph Company which was incorporated in several states, and which connected with other lines, such as the Connecticut River Telegraph Company — see (a) below.

One of the earliest companies to issue such stamps was the California State Telegraph Company in 1870. It operated lines between a number of California cities including one from San Francisco to Marysville via San Jose and Stockton.

The Pacific Mutual Telegraph Company operated between St. Louis and Kansas City in 1884. One of its 20 cent frank stamps is shown below — (b). In 1910 the organization was acquired by the Postal Telegraph Company.

The Commercial Union Company in 1887 had operating lines from Albany through Troy and Berlin to Adams, Massachusetts. One of its 25¢ franks stamps "good for 20 words" is shown in (c) below.

Some of the Postal Telegraph Company stamps were printed with the initials of a rail-

road, such as C. G. W. and I. C., and while most franks stamps specified the amount of value expressed in cents or in the number of words, the type shown as (d) below merely says it is "good for one telegram".

In 1942 Postal issued a frank stamp, pink in

[Continued on next page]
color, to all its employees in the Armed Forces. It is depicted in (e) below. Western Union issued a wide variety of frank stamps for many years—(f) and (g). Some of the early Wireless Telegraph companies also issued frank stamps—see (h) below.

A World Telecommunications Conference was held in Atlantic City, New Jersey in 1947. A frank stamp for use by attendees on messages destined to overseas points was issued cooperatively by All American Cables, Commercial Cables, Globe Wireless, Mackay Radio, RCA Communications and Western Union. See (i) below.

TWO MEN NAMED YAGI
by Yardley Beers, WJPJF

In the CQ CW DX Contest of 1981 I was delighted to work JH1WXIX because I knew from something I had read he was one of the greatest DXers of all time, perhaps best known for his activity in the 1930’s as J2GX. I sent him a QSL saying I remembered him as J2GX, and I got right back enclosing an autobiography, which had been contained in News Sheet 358, June 1979, of the First Class C.W. Operators' Club (FOC).

Amateurs in Japan are now very numerous. Some U.S. amateurs view them mainly as a means of getting a lot of quick contacts in contests. Others, mainly interested in working rare new countries, may regard them as a nuisance for generating QRM and competition. It may be hard to remember that each Japanese amateur is a human being with talents and failings, and with ambitions. And among this swarm there are individuals who have contributed more to technology and history than some of those who "strut and fret his idle hour upon" a barren rock in the ocean handing out "Five Nine" reports.

In the 1930’s the situation was very different: Japanese contacts were rare, and it was hard to make WAC (and to become what was called a "Wacker"). In a statistical summary of the WAC certificates given in the previous year, QST stated that only a very large number of the applicants (up to 80%, September 1934 QST, p. 47) submitted QSL cards from J2GX for Asia. Properly they might have been called "The Wacker Maker".

The name of JH1WEX, ex-J2GX, is Taroh Yagi, but he did not have anything to do with the invention of the Yagi antenna, more properly called the Yagi-Uda antenna. It was invented by Yagi Shuji and Uda Shintaro at Tokyo University. The QSL card of J4TYAA, the ham club at the University, which has been active in recent contests, shows a picture of a bust of Dr. Yagi Shuji.
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<th>Pts.</th>
<th>TRANSMITTER</th>
<th>RECEIVER</th>
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</thead>
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<td>K4TS</td>
<td>1207</td>
<td>Meisner pp/7'20,100w.</td>
<td></td>
</tr>
<tr>
<td>W2LV</td>
<td>1877</td>
<td>eco/(3)6v/813,250w.</td>
<td>RME-59</td>
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<tr>
<td>K2LP</td>
<td>1022</td>
<td>eco/65/6AG/6L/807/830,160w.</td>
<td>HRO</td>
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<tr>
<td>W2HYN</td>
<td>1016</td>
<td>80-50x/210/211,300 watts.</td>
<td>HRO</td>
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<tr>
<td>W2LC</td>
<td>607</td>
<td>6AG7x/(3)800,140w.</td>
<td>HQL20X</td>
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<tr>
<td>W8VSX</td>
<td>740</td>
<td>80-20 meters-mod.</td>
<td>NC-101X</td>
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<tr>
<td>W4NM</td>
<td>692</td>
<td>59 eco/(2)6's,40w.</td>
<td>SX-24</td>
</tr>
<tr>
<td>W2AN</td>
<td>698</td>
<td>6L6/6L6/TZ40,40w.</td>
<td>HRO</td>
</tr>
<tr>
<td>W2BGN</td>
<td>615</td>
<td>205D eco/205D/21D</td>
<td>100w.</td>
</tr>
<tr>
<td>W3DB</td>
<td>605</td>
<td>211-C Hartley,70w.</td>
<td>German E-52B</td>
</tr>
<tr>
<td>W8AU</td>
<td>545</td>
<td>6V6/807/20 watts.</td>
<td>Sargent-10 (regen.) HRO</td>
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<tr>
<td>W8BFD</td>
<td>524</td>
<td>59xtal 9 watts</td>
<td>HRO</td>
</tr>
<tr>
<td>W4KP</td>
<td>516</td>
<td>47x/210 30 watts.</td>
<td>3x-9</td>
</tr>
<tr>
<td>N3AYU</td>
<td>469</td>
<td>210 Hartley 15-25w.</td>
<td>mod.</td>
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<td>W2VDI</td>
<td>455</td>
<td>47x/3085's 60w.</td>
<td>Fb/101X</td>
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<tr>
<td>K2WW</td>
<td>440</td>
<td>47x(2)46,25-30w.</td>
<td>Comet Pro</td>
</tr>
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<td>W3BY</td>
<td>434</td>
<td>5x2/53/Rk20//pp8/60's .</td>
<td>NC-101X</td>
</tr>
<tr>
<td>W3HWT</td>
<td>396</td>
<td>210mo/210a,40w.</td>
<td>Comet Pro</td>
</tr>
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<td>W3VVS</td>
<td>392</td>
<td>Meisner SS, 7 watts</td>
<td>HRO</td>
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<td>3-tube</td>
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<td>W3QA</td>
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<td>5x30 tri-tet-xtal,20w.</td>
<td>regen.</td>
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<td>W2PH</td>
<td>344</td>
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<td>HO-120X</td>
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<tr>
<td>W7KE</td>
<td>310</td>
<td>210m/40pa,30 watts.</td>
<td>SW-3</td>
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<tr>
<td>W5KL</td>
<td>310</td>
<td>245x/210pa,18watts.</td>
<td>SW-3</td>
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<tr>
<td>W2FW</td>
<td>288</td>
<td>210x/210pa,40w.</td>
<td>FBXA</td>
</tr>
<tr>
<td>W1WBL</td>
<td>282</td>
<td>40-80,807x/8.5 8515w.</td>
<td>Reinautz</td>
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<tr>
<td>Ve3AFW</td>
<td>272</td>
<td>500/4814pp,200w.</td>
<td>Mod.</td>
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<td>W3INW</td>
<td>276</td>
<td>10x watts</td>
<td>AGS/RHM</td>
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<td>A14P</td>
<td>252</td>
<td>Modern</td>
<td>NC-101X</td>
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<tr>
<td>W2AEF</td>
<td>236</td>
<td>210x/210pa,40w.</td>
<td>Sity Champ</td>
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<tr>
<td>N6JV</td>
<td>236</td>
<td>4208/70x/TZ40/</td>
<td>RME-69</td>
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<td>W2AUA</td>
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<td>W2IEG</td>
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<td>UVX/100 Tnt/6L6,15w.</td>
<td>FBXA</td>
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| W2GB     | 155 | Modern                         | Mod.     |
| KE2O     | 147 | Modern                         | Mod.     |
| Ve3M1JH  | 144 | Modern                         | Mod.     |
| W2XH     | 142 | Modern                         | Mod.     |
| W9DZG    | 141 | Modern                         | HRO      |
| W4DBT    | 124 | Modern                         | Mod.     |
| J3AAC    | 118 | Modern                         | Mod.     |
| Ve1OC    | 110 | Modern                         | RME-69   |
| N3T       | 106 | Modern                         | RU-12 TRF |
| W9JP     | 106 | 80/40m.: 210x/210             | HRO/Mod. |
| Ve4LX     | 104 | Modern                         | SS super |
| K2I C    | 102 | Modern                         | Mod.     |
| W6FSY    | 99  | Modern                         | Mod.     |
| W8SS     | 96  | Modern                         | Mod.     |
| K4M      | 92  | Modern                         | Mod.     |
| W8AQ/4   | 91  | Modern                         | Mod.     |
| W7FS     | 85  | Pr. 210's TNT,18w.             | Grebe Cr-18 |
| K2RY     | 84  | 245 Hartley,11 watts           | Mod.     |
| W2ARX    | 82  | 210 TNT,5 watts.              | Mod.     |
| W9GFS    | 80  | 171a/171Aa,5 watts.            | SW-3     |
| K4JO     | 77  | Modern                         | Mod.     |
| W6NNV    | 67  | Modern                         | SW3/Mod. |
| W4DMD    | 62  | Modern                         | Comet Pro |
| W9GJS    | 61  | Type '33 plus Mod.             | Mod.     |
| W2YCY    | 60  | Modern                         | Mod.     |
| W6CG     | 56  | Modern                         | Mod.     |
| W2ZZUX   | 52  | Modern                         | Mod.     |
| Wa3VLR   | 52  | Modern                         | Mod.     |
| W1FMK    | 48  | Modern                         | Mod.     |
| W9VJZ    | 48  | Modern                         | Mod.     |
| K3HF     | 46  | 6L6x. 10 watts.               | Mod.     |
| K2MP     | 44  | Modern                         | Mod.     |
| W4ALW    | 43  | Modern                         | Mod.     |
| W8YNA     | 42 | Modern                         | Mod.     |
| K2MP     | 36  | Utah #1x/0a/PA,20w.           | NC-101X  |
| W3RG     | 34  | Modern                         | Mod.     |
| W2QLI    | 33  | Modern                         | Mod.     |
| KB3IS     | 33 | Modern                         | Mod.     |
| Wa3TLR   | 28  | Modern                         | Mod.     |
| W20W      | 28 | Modern                         | Mod.     |
| W7VJ     | 26  | 50 tri-tet/pr.46's,18w.        | HRO      |
| W8ZEF     | 25 | Modern                         | Mod.     |
| W1MB      | 25 | 210 TNT,8 watts.              | SW-3     |
| W2DQC     | 24 | Modern                         | Mod.     |
| W1BPI     | 23 | Modern                         | Mod.     |
| W7LOG     | 22 | Modern                         | HRO      |
| K1B     | 21 | Modern                         | Mod.     |
| W3DUG     | 21 | Modern                         | HRO      |
| W8SG     | 17 | Modern                         | Mod.     |
| W7LX     | 15 | Modern                         | Mod.     |
| W8SLI     | 12 | Modern                         | 1.5 watt |
| W9H      | 12 | Modern                         | Mod.     |
| W7SEH     | 7  | Modern                         | Mod.     |
| K9ARE     | 6  | Modern                         | Mod.     |
| W6IRA     | 6  | Modern                         | Mod.     |
| W2RFY     | 3  | Modern                         | Mod.     |
| W2UTH/KH6 | 3  | Modern                         | Mod.     |
SUMMARY

11 OT transmitters ran over 100 watts
38 OT transmitters ran less than 100 watts
6 modern transmitters used a linear
57 modern transmitters used 200 watts or less

Best DX: W2AN - W2UTH/KH6

New Contestants (Welcome!)
W2AXX, W2ARX, N2BLO, W2DQC, KA2IIWJ, W2IXH, W2IVC, KA2KGM, K2MP, W2PHT, W2SN,
N3AYU, KB8SI, W3DAL, W6IRA, W7AN, W7FS, W7NA, W7SEH, W9GJS, W9VJZ, W9POC and
W901AH.

Number logs received: 98
Logs not received: 7
Number of new contestants: 27

Stations that did not send in log:
N2BLO, KA2IIWJ, W3BNO, W3DAL, W7AN,
W901AH and W9POC

Abbreviations for summary:
1 - crystal control, eec-electron coupled oscillator, ma-master oscillator, pa-
r-f power amplifier, pp-pushpull

Amazing But True

COMMENTS: We broke 1000!! ’We did it!!! That is the way K.B. Warner, QST Editor Emeritus, said it after the first trans-atlantic... Oh, Mr. Printer, how many exclamation marks do you have? Bring ’em all out! We DID IT!!!!

As a matter of fact, 4 stations scored over 1000 led by Charlie Hinkis, K4TS. Also, 10 others broke 500. Therefore, Mr. AWA Printer, Don Ray, WA2PKS, bring out the exclamation points.

Team work is part of ham radio. In fact every qso calls for co-operation between stations and others on the same frequency. During the contest, how many stood by and accepted other qso’s? That’s co-operation... Q384 kHz was busy with qso’s, beautiful dc notes (as Qrm) -- and just off to one side appeared the sound of a beautiful signal: the spark of KCC. Many OT’s caught their breath... for it was Lou Vermond, VE3BDV, who had permission from the Canadian government to re-create the signal to commemorate KCC’s 75th Anniversary... the old Marconi station on Cape Cod... in comparison it was a beautiful sound compared to present-day sterile signs.

Our best DX in the Contest was chalked up by W2AN and W2UTH/KH6... Holcomb, NY to Honolulu, a distance of 4750 miles. If Fran, JS3AC on Grenada wkd Hank... it would have been 6250 miles. We hope some of our overseas members will join us in future contests... A high scorer in previous contests, W1PEG, was missing this year due to sub-zero temperatures in his shack. How about a heater Bill! Amazing things can happen: W2OLL running 1.5 watts to a mod. transistor rig had a W9 complaining he was QRMing W1AW’s code practice!... W3BY picked up a 1935 cabinet xmtt at Gaithersburg built by former FCC Chief Engineer Andy Ring. After much smoke and blowing fuses... he solved the problem by replacing the 666’s... and then there was the smooth doc note from WA3MAS... 3 stations had a "ping" to their notes: W2ARK w 210 tnt, W3DD with 50 watt Hartley and N3AYU with 210 Hartley. N3AYU was honored with (2) OOnotices. W2AN’s primary keying rang like a church bell!

(Continued on next page)

Hello Bill!
I’m working on my transmitter
For the AWA OT Contest.
W2FW had a fb RAC note which got (1) OO notice. Apparently the OO’s love rice boxes.... High-power modern xmrts drive some fellows up the wall. W7FS complained about their QRM while using his old 210 tubes in a TNT and Grebe CR-18 rx... he writes he has some 202’s and other components... we can’t deny the modern transmitter men the pleasure of working the sweet sounding OT xmrts... We can only ask them to be discreet and rag-chew on a freq. where qrm doesn’t bother anyone.... On this subject, Ken Steckler, W8SS, operated with a mod transceiver but admits he has a TPTG 210 with Bodine MG for plate supply plus a 3-tube RX. Just think Ken the score you would have had with a "5" multiplier....

"TO FOUND BRASS HALF THE NIGHT"

Should we have one extra night with OT xmrts only... with max input, say 50 watts? Perhaps we should... The summary shows a remarkable increase in both OT TX and RX... and your letters promise more OT equipment for 1983. Let’s make it a banner year in both size and fun! Dates and rules for the ‘83 event will be announced in the December OTB.... 73, Ken, W2BGN

**Cablesystems**

**AWA ON CABLE TV**

Members served by Cablesystems of Eden Prairie, Minn., may have an opportunity to see the AWA videotape titled "A Tour of the Antique Wireless Museum". The cable system covers a wide area including Minneapolis. The AWA Board feels this is good exposure for the Association and will promote interest in historical radio.

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**Texas Broadcast Museum**

1701 Market Street
Dallas, TX 75202  748-1112

This museum has been mentioned before in the OTB. A recent news bulletin tells of many new items on display. A place to visit if in Texas.

**British Receiver Circuits**

AWA has an overseas source of schematics for pre-WWII broadcast receivers made in England. If you have need for such a circuit, send SASE to AWA Headquarters with name and model of set plus 40¢ in stamps.

Quick reference to:

**Recent Original Articles**

_of interest to radio historians_

"Modern Operation at WCC" p. 38
"73" magazine, July, 1982

"Artistic Panels", "Electroless Nickel Plating" IHRAS, Vol.4, #1

"The Stenotube" Radio Age, Vol. 8, #4

"Experimental Diodes"
MAARC Broadcaster, Vol. 4, #1

"The Cabot Receiver" Radio Age, Vol. 8, #6

"List of British Radio Shops"
B.V.W.S., Vol. 6, #4

The addresses for publications reviewed in the OTB may be found on page 24, #22-3. A correction may be found on page 5, #22-4.

Additional addresses:
"Radio Age", 636 Cambridge Rd.
Augusta, Georgia 30909
Rates: $9.00 and $12.00 annually

"The Titanic Commutator"
Box 53, Indian Orchard, MA. 01151
(Write for information)

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**The Auction**

at 1982 Conference

Early auction registration shows some nice pieces to be sold (IP-501, Federal, etc.). If you have pre-registered equipment and at the last moment decide to withdraw, please let me know as soon as possible. This will allow others to place items for sale.

-- Lauren Peckham, Chairman
**KEY and TELEGRAPH**

Editor: Lou Moreau, W3WRE
305 N. Llanwellyn Avenue, Glenolden, PA 19036
All correspondence requires SASE for reply

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**Fig. 1** 10 KW. Naval spark key (W2Z1 collection)

**QUE:** Were there many changes in keys for our armed services in the spark era?

**ANS:** Yes. The changes came as the state of the art improved. As with most new things, they learned by doing. The large 1905 DeForest 10 Kw. key (Fig.1) had 1/2" silver contacts mounted on large cooling fins which were suitable for the "brute force" primary keying of spark days. This particular key was used at the Naval station, Penscola, Florida.

In addition, some spark keys were designed to fit special conditions such as flameproof keys used on early aircraft and submarines. The contacts were covered to prevent fire from possible sparking. The key at upper right (Fig.2) was used in a sub-patrol plane by Ed Raser, W2Z1 while on duty during WWI. It was the first plane to have a 1/2 Kw 500 cycle set aboard.

The key at lower left was used at a Japanese land station and is an excellent of a rugged WW2 military key.

**Fig. 2** (W2Z1 collection)

**QUE:** What commercial companies made keys for the armed forces in the spark era?

**ANS:** There were several. Here are a few: DeForest, General Radio, Amrad, Vibroplex, L. S. Brach, Western Electric, W. S. A. as well as various Navy Yards.
FROM HEADQUARTERS

10TH ANNUAL ARCA MEET

Rainy weather marred outside activities at the recent ARCA Lake Placid Meet, but the warm hospitality of the Hilton Motel's host, Jack Davis, more than compensated. Food, service and meeting facilities were excellent.

It had been sometime since I had driven to Lake Placid from our camp on the other side of the Adirondacks. I found the 1960 Olympic site most interesting, particularly since, like others, I had watched the games on TV.

John and Ruth Drake did a great job of coordinating activities. I attended several meetings including Ralph William's talk on the A-K numbering system. The first numbers were issued to receivers in 1922 starting with 3590. This series ended in 1924 with 4950 with a change to 7570 in 1925. The last number was 9090 issued 6/29/27 to the Model 51 receiver.

A talk on unusual crystal detector circuits aroused much interest—particularly the use of dual detectors. One circuit, without the conventional ground return, brought comment. A member seated near me mentioned he had experience with a circuit which momentarily gave response in only one headphone. This was a baffling phenomena (?). The speaker, Larry Wright, assured the group that his double detector gave response in both headphones.

The discussion ended abruptly when President Drake, his eye on the time, opened a business meeting. It was an enjoyable affair and gave me an opportunity to see old friends such as Paul Giganti....

VERY SAD

Most radio historians are familiar with the picture of Maj. Armstrong standing in the garret room of his one-time home where many years earlier he had perfected the regenerative circuit. He is seen surveying the radio gear of his youth.

The famous house on Walburton Avenue in Yonkers is described in all Armstrong's biographies and most recently in "73" magazine.

What a shock to see a picture of the house in June "73" (page 101) -- it had been vandalized and torched! The famous attic room is but a shell. Art Bonte, W2ZYC, reports that this senseless destruction occurred on Oct. 18, 1981.... but Bob Cobaugh, W2AY adds a happier note: He tells us that an amateur repeater station is operating from the old Armstrong Alpine, N.J. FM site on 220 and 440 mc.

The station is maintained by the Edwin Armstrong Memorial Amateur Radio Club. They are seeking from the FCC the call of W2XMN... Armstrong's old FM call... we wish them success.

I DON'T BUY

Now on the market is a wrist watch containing a tiny AM radio. The receiver draws 2 ma. and is good for 100 hours operation. I don't get very excited over this novelty--and that is exactly what it is. The user has to run a phone cord from the watch to the earphone. A plain nuisance. Why not have a conventional miniature receiver in the shirt or coat pocket? I am sure it would cost less and work better.

OLD TIME RADIO BUFFS

Each year, hundreds of radio buffs have re-lived the early days of radio programming when they meet in Connecticut. Activities include several well-known former radio stars as guest speakers as well as workshops and sales of nostalgic radio software. I've never attended one of these meets, but they sound like lots of fun. One will be held this year on Oct. 22-23 at the Newark, N.J. Airport Holiday Inn. Write: Jay Hickerson, Box C, Orange, Ct. 06477

[Continued on next page]
PRETTY HORRIBLE
Earlier this year I received a directory listing antique collectors, clubs and suppliers. It is without a doubt the most inaccurate and poorest publication I've seen recently. It was riddled with errors and mis-information. Here are some examples:
--QST magazine is listed as a supplier/club of antique equipment with a West Hartford address.
QST changed their address to Newington in 1963 and most certainly is not related to antique radio!
--"Ham Radio Horizons" magazine was listed. It is no longer published!
--SOWP is listed as an antique club. I am sure Bill Breniman would be overjoyed to learn this.
--the writer compiled collectors who have been dead for several years such as George Starry.
--In an attempt to build up the directory, he lists the same person several times under different headings.
--In his fumbling attempt to increase names in the directory (without sufficient information) he lists collectors merely as "Ted", "Ed", etc. He obviously didn't know their last name.
--Names were misspelt with incorrect addresses.
--and lastly, many well-known collectors were omitted.
Obviously, I do not recommend this directory.
Along the same line, I recently received a letter seeking general information on "restoring antique radios". The writer's boss, an editor, had given her the assignment since he understood there was a potential market for such a publication. She has my sympathy. I am anxiously waiting its release.
PLUS - MINUS
So far this year, attendance at collector "meets" have not followed the usual pattern. Registration has fallen off at some while others report record turnouts, an example being the AWA/IHRS gathering at Auburn, Indiana, had 206 registered. To bolster attendance,

AVAILABLE: RADIO HISTORY ON VIDEOTAPE
If you have a videotape playback you may be interested in a professional movie produced by Harris Corporation at the AWA Electronic-Communication Museum.
The viewer has a half-hour tour of the museum, with commentary, showing radio development from early Marconi days to mechanical scanning television.
Moving at a brisk pace, the tour is climaxed with the operation of high power spark transmitters. It may well be the only sound movie of its kind.
Two different types of videotapes are available:
½" BETA and ⅛" VHS at $30.00 each plus $3.50 shipping.
Send order to: PCI Recording Studio
703 Atlantic Avenue
Rochester, NY 14609
(Telephone: 716-288-5620)
Ask for:
"A TOUR OF THE ANTIQUE WIRELESS MUSEUM"
some groups are having joint meets such as one scheduled in Illinois where several clubs got together for a possible 200 to 300 registration.
Flea market interest is greater than ever whereas dinner attendance has dropped drastically, particularly at amateur hamfests. Registration at the Rochester Hamfest was over 5,000 with fewer than 200 at the evening dinner. Maybe the current recession has some fellows "unloading" while others are looking for a "buy" in the flea market.

SPEAKING OF RECORDS
I note that amateur achievement awards were first recorded when the ARRL established their "Worked All Continents" award (WAC) in April, 1926. This was followed by "Work 100 Countries" or DXCC in September, 1939.
On the subject of records, I find that the first time a car was driven one mile in less than a minute was in November, 1906, at Ocean Parkway, Brooklyn. A fellow by the name of A.C. Bostwick drove his 40 h.p. Winton the mile in 56.4 seconds or 63 m.p.h. --73, BK
WILLIAM GIBBONS HOUSEKEEPER:
DEVELOPER OF THE GENERAL METHOD OF SEALING BASE METALS, MOSTLY COPPER, TO AND THRU GLASS TO PRODUCE MECHANICAL AND VACUUM TIGHT SEALS.

by J. W. Stedenfeld, W2TBS, ex-W3CWM

After WWI, as commercial radio developed, the race was on for high power transmitting stations for coast to coast and trans-Atlantic communication. This was the era of low frequency, long wave usage, with spark slowly fading out as the Alexanderson type of alternator was becoming the only reliable source of high power. The advantages of short-waves had not yet been recognized and accepted for commercial use. High power, high wattage transmitting tubes had not yet been developed. As an example, in the famous one-way Arlington-to-Paris tests by W. E. in 1915, a bank of 550 W. E. Type W or 204B in parallel were used in the final R.F. amplifier!

William G. Houskeeper, 1883-1962, was monumental in the development of the first high power transmitting and rectifier tubes. He invented and developed small and large seals of metal to and thru glass and devised mechanical designs of large tubes and components leading to tubes of 100 K.W. output. Born in Coatsville, Pennsylvania, he received a B.S. from University of Pennsylvania in 1903, M.E. from M.I.T. in 1905, and E.E. from University of Pennsylvania in 1908.

He first worked for Westinghouse, in Pittsburgh (1907) and Philadelphia (1908), on the first metallic flame arc lamp. From 1908 to 1912 he was engaged in development work on tungsten filaments and lamps at the Bloomfield, New Jersey works of Westinghouse, becoming engineer in charge in the lamp department, developing machines for the production of tungsten filaments, especially in long lengths. He was also in charge of the mercury arc rectifier division.

In 1913 he joined the Western Electric and Bell Telephone Laboratories in New York as engineer in charge of switchboard lamp development. W. E. made thousands of these tiny lamps, using expensive platinum seal wires. Although very expensive, it was the only successful material available; it did not oxidize when heated and the coefficient of expansion was close to that of glass.

Houskeeper was partially successful in using copper wire, which has good electrical and heat conductivity, by using borax as a flux. Differences of thermal expansion causing shearing and tensile stresses caused some failures of the copper to glass seals. Stymied, he conceived, in a sudden flash of inspiration, the idea of "feathering" or thinning the cross-section of the copper wire where it passed thru the glass to a very thin edge, thus reducing stresses to lower than the copper-glass adhesion strength and producing a successful copper-to-glass seal.

During WWI Houskeeper had charge of the first factory for the manufacturing of the VT-1 type tubes. In 1918, after the war, he researched tube manufacturing equipment, developed a commercial form of ionization manometer and vacuum flow meter. In 1919 he was in charge of the mechanical designs of vacuum tubes, properties of materials of construction and tube components, and reduction of tube design to commercial manufacturing form. The demand for high power was rapidly increasing, with many people and companies involved in the effort. Using the knowledge and experience acquired with his pre-war copper-to-glass seals leading to a breakthrough in the development of the first really very high power tubes by Western Electric.

These tubes had cylindrical copper anodes, or plates, on the outside diameter which were submerged in circulating cooling water. The first big triode, Type T rated at 10 K.W. was built in 1921, followed in 1922 by a Type U with a 100 K.W. output!

[Continued on next page]
The Telemobiloscope

An Edwardian radar

Many believe the first operational radar was developed during WWII by Watson-Watt and his colleagues. Wrong! In the July 1978 Wireless World AWA member Dr. V. J. Vivian Phillips, Swansea, U. K., describes what may have been the first practical radar. He tells of the work done by Christian Hulsmeier of Dusseldorf in 1904!

At right is a sketch of the equipment he used for his first patent. The coherer receiver with horn type reflector is at top. The spark transmitter and corresponding reflector at bottom. Note the set did not judge distance; it only indicated the presence (and direction) of an object. A full description of the equipment is described in the 1904 issue of Electrical Magazine.

(Reviewed by Peter Vanquis)

WILLIAM G. HOUSEKEEPER
(Continued from previous page)

These tubes, along with newly developed large tube rectifiers were used in the trans-Atlantic tests of January 1923.

It is no exaggeration to say that the invention of these seals by Houskeeper made possible the construction of vacuum tubes capable of handling power of almost any magnitude. Although given most recognition for his invention on seals, he said, "I feel my work on the design of big tubes is much more important than my work on seals".

His widow, Mrs. Rose Houskeeper, told me that "Billy" as she called him, always gave credit to his associates and the facilities of W. E. and the Bell Labs. Without them he said it would have been impossible to have done what he did. He was granted eight U.S. patents with Westinghouse and 64 U.S. patents with W. E. and Bell Labs with a total of 141 world wide.

He retired in 1929. The last remaining artifacts of his original seals, a few tubes, technical papers, note books and copies of his patents were donated to the AWA Museum by his widow.

--J. W. Stedenfeld, W2TBS

SHARP MEMORIAL HALL

Planning a business or pleasure trip to Japan and wish to see historical radio material? -- may we suggest you visit Sharp Memorial Hall. You will be pleasantly surprised when you see the large display of early receivers and other equipment manufactured in Japan -- some dating 60 years ago: L-tubers, TRF, early AC sets with horn speakers, etc. The exhibit is tastefully laid out in a large modern building. For more information, write: Taizo Arakawa, N2ATT 444 Westminster Place Lodi, New Jersey 07644

STOLEN!

The following receivers were recently stolen from the Foothill Electronics Museum:

--Kennedy #281, Serial #4408
--Kennedy #525, Serial #5639
--Kennedy #110, Serial #524

If you have information regarding these sets, please communicate with the museum:

Foothill Electronics Museum
12345 El Monte Ave.
Los Altos Hills, Calif. 94022
(415) 948-8590, Ext. 381
J.S. Timmons and the Timmons Radio Products Corporation

J. S. Timmons started his business in a barn in Germantown, Pennsylvania. He used only his name for identification in the early years of 1922 and 1923. It is believed he incorporated in 1923 or 1924 as the Timmons Radio Products Corporation, a name he retained until he sold out to Philco.

The first product was a horn speaker. A cut-away profile of the re-entry horn was used as a typical ad in early Popular Radio and other radio magazines. The horn was built into a small cubical box about 9" on each side with a black wire mesh screen and a volume control adjustment on the earphone driver. It was called a "TIMMONS TALKER". (See picture)

Later, two more horn speaker designs were added. Type N was without a volume control and a type A was with volume control. (See Ad.) These newer designs advertised in 1924 had an added wooden grill decorative feature. The wire mesh screen and the round logo nameplate were of gold motif on the type A.

Left to right: First and second speaker

By 1926 Timmons Radio Products Corporation was marketing two different style cone speakers, a "B" supply, a power amplifier, and a power amplifier and "B" supply combined. The latter supply used a UX-216B and a UX-210 type tube. By 1927 a Concert Grand non concentric cone with a ship's picture on the face was added. In 1928 another cone speaker design was added.

The Timmons Corporation made earphones for other manufacturers and a Wm. Penn headset for the public market but did not use the name Timmons on it. They made two headsets for Brandes. A higher priced, smaller version, was made for the Navy and a commercial, larger version made for the public. The largest earphone buyer was Music Master.

Mr. Timmons estimated his Corporation made about 100,000 earphones drivers for Music Master. Music Master still owed the Timmons Radio Products Corporation money when Music Master Corporation went under. (September 1926 Radio Retailing ad announced "receivership" for the Music Master Corporation.) Prior to that time John Timmons said he recognized the over-extended position of the Music Master Corporation and took many opportunities to approach the Corporation for his overdue receivables.

A $100,000 debt was reduced to $50,000 and then to $1,500 when receivership occurred. Other creditors did not fare as well. Mr. Timmons tells of being at Mr. Eckhardt's office (President of Music Master) early every morning just prior to receivership. Each day he left with a check for some amount from Walter Eckhardt. Every day there was another man, always second in line, behind Mr. Timmons. He was a Mr. Sheip. (It is believed he made the Music Master wooden bells.) One day in a joking manner, Mr. Sheip remarked to Timmons, "You must live here!"

Mr. Timmons started his training at the Baldwin Locomotive Company in 1911 and completed his apprenticeship in 1914. He went to work for the Callophone Company before WWI. Where he was involved in making intercom paging systems. The company leased the systems but did not sell them. While there he invented a throat transmitter in the chin strap of an aviator's helmet during WWI period which he sold to the Navy.

About 1925, Mr. Atwater Kent asked Timmons to work for him and take certain key responsibilities in the AK plant. Mr. Kent explained he wanted to have more time for other interests. Mr. Timmons thought the offer over and the next day turned it down.

The Timmons Corporation employed nearly 300 employees at its peak production period. The Timmons Radio Products Corporation was sold to Philco in June, 1928.

(Note: The above information was obtained by the author from John Timmons.)

J. S. TIMMONS
339 East Tuliphecken Street
GERMANTOWN, PHILADELPHIA, PA.

Ad for Timmons in March, 1924 issue of "Popular Radio"
DESIGNING A CRYSTAL SET
by Tex Sloat, W7AHK

This project started as a comparison check of various minerals used in crystal detectors. The receiver used six separate detectors, any one which could be switched to the tuner by use of jacks and plugs. Using a curve tracer, I noted the difference while using galena, iron pyrite, silicon and carbonundum.

It was interesting, but nothing was found to assist in receiver improvement. Nearby powerful stations almost filled the dial with their babble and the response varied over the broadcast band. Some checking was necessary.

Warming up the Q meter, the coil was checked. It was a spider-web type made in the early 30's. Its "Q" was 70. I wasn't satisfied with this, so I took a piece of plastic water pipe 2 3/8" in diameter, 3" long and threaded a groove on a lathe, 27 turns to the inch. The new form was wound with #24 enameled wire with a tap at 12 turns.

A check showed the inductance to be 200 mh. with a Q meter giving 170 at 550 kc., 230 at 1000 kc. and 262 at 1500 kc. This new coil replaced the original and resulted in a vast improvement.

Now to work on the selectivity problem. The writer has always felt that wavetaps used in a situation such as this are "excessive baggage", an attempt to overcome deficiencies in the existing circuit.

In all articles written on crystal sets, I can recall nothing on impedance matching. This called for some investigating. I wound another coil of the same dimensions but this time with cotton covered wire so I could get at the bare with a darnning needle attached to the crystal detector.

![Circuit Diagram]

L₁ - See text
L₂ - 8 or 10 turns inside L₁
C₁ - 400 mmfd or greater. I used a Pilot "Capacigrad" in my set.
C₂ - .006 mfd.
M - 0 to 50 micro-ammeter (may be omitted for general use.)

Watching a micro-ammeter connected in the circuit and probing the turns, I found good selectivity was at 12 turns from the crystal end. It was even better at the 15th turn but the receiver response dropped off considerably.

This experiment determined the position for the permanent enameled wire coil and a tap was made at the 10th turn which was a compromise for this particular location and distance from the transmitters. Very simple and no wavetaps! Obviously, different length antennas may have some slight effect on results.

When wiring, keep the coil leads away from the sides of the coil, and do not stay too far from the given values as they were carefully metered. If you wish loudspeaker reception, use a small amplifier such as Radio Shack #277-1008. The writer wishes to thank Logan Belleville for his help and use of measuring equipment.

(Ed note: Another article will appear in a future OTB by Joe Herwath showing another approach to building an efficient crystal set.)
POPOV'S DETECTOR
by Pete Gummelt, Victoria, Texas

Linc Cundall's article, pictures, and schematic of the "Oscillaphone" in the March, 1982, edition of the Old Timer's Bulletin bring to mind the difficulties in overcoming problems of information and material relating to radio "way back on the farm" in Central Texas in 1934.

An awareness of radio and very meager description came to me from the Book of Knowledge in the Oak Grove School, a two-room elementary school of yesteryear. I was inspired to build, somehow, a transmitter and receiver. Sharecropper's kids in those days had no money, and plowed junk was hardly a source of radio components, but I was determined.

The razor blades are two dark objects in center of picture.

The Book of Knowledge contained an article on the history of wireless, a staid discourse with very little descriptive detail. It introduced me to Alexander Popov's and Shoemaker's experiments with something called the Micro Radio Phase Detector at the turn of the century. To me the information, such as it was, suggested that I use a light carbon rod laid across the edges of two single-edge safety razor blades to serve as my detector. A carbon rod from a used flashlight dry cell and two Gem single-edge razor blades sufficed. The photo illustrates my original model and the schematic shows how it was used in the receiving circuit.

The first time I went "on the air" back there in the early '30's I used a home-brew transmitter with a Ford Model T spark coil as the heart of my rig. The radiating system, that is to say, its antenna, involved two 3" x 3" metal squares cut from a Prince Albert tobacco can soldered to two short lengths of barbed-wire strands. The tips, separated by about a quarter of an inch, provided the spark gap. All in all, it crudely resembled Heinrich Hertz's famous transmitter - sans brass knobs. My Popov-inspired receiver was about 50 feet away. The first transmission and reception were perfect. My kid sister, aged 9, copied me "five by five".

A year or so later I learned about the needle and carbon block Oscillaphone, so I used it to refine my receiving apparatus. The photo brings out some detail of my "advanced" equipment.

The carbon-block Oscillaphone. Note the "wet" battery at upper left.

75th Anniversary
1907 - 1982
DeForest Audion
RESTORING OLD EQUIPMENT

How did you SOLVE a problem when re-storing a receiver? Drop us a note telling how you did it.

RESTORING A MARCONI TYPE 106

by Joe Horvath, W6GPB

When I first started collecting early receivers I acquired an incomplete Marconi Type 106 set. The front panel had no graduation scales and it was obvious the set never had engraved panel markings like other 106 receivers. (See photo of an original 106 receiver at AWA Museum with engraved panel.)

I learned that certain models of the 106 had a metal plate on the panel with the markings. I searched for several years for such a set but could not find one. I had just about given up hope when Frank Camenisch dropped by.

Frank was all smilies as he handed me a copy of Electronics World, November, 1959. He said to turn to page 62 which I did and there was a picture of my old Marconi set with the metal dial plates. Former AWA member Howard Pyle had written an article on the set which had been converted to a 106-D. Nevertheless, it was plain to see the two main dials were metal engraved and not the panel itself.

The magazine photo of the 106 matched my faded spots where the old original dial plates had been. One could tell the size of the plates and type of graduation scale.

The first step was to make templates with the graduation scale for the left and right tuning dials. The same was then done for the potentiometer and the coupling controls (see photo).

This was where Woody Wilson was a big help. His son-in-law was a draftsman and made the drawings we needed. Woody then (Cont. bottom next page)
COLOR CODES
by Ed Taylor
(Reviewed from IHRS Bulletin)

Color coding was used by manufacturers of a variety of radio parts as a help in distinguishing the various values of equipment. Dial lamps, battery cables, and resistance line cords are some of the accessories that were so identified.

Several types of dial lamps were manufactured to meet the filament-voltage requirements of different sets. In color coded bulbs, the beads on which the filament is mounted come in four hues - brown, blue, pink, and white. A dial lamp with a brown bead is rated at 6.3 volts and 0.15 amp., and is used in sets having tubes of similar rating, such as the 12SQ7.

A blue bead indicates that the filament voltage of the dial lamp is 6.3 and 0.25 amp, for use in sets having 6.3 volt, 0.3 amp. tubes. White is used for lamps of 2.5 volts and 0.5 amp., while a pink bead identifies lamps of 2 volts and 0.6 amp. for battery sets.

Many battery and three-way portable sets have a color-coded battery cable that will tell you immediately what wire should be connected to which battery in case the instructions are lost or a battery plug is broken. The red wire is usually A + , the black wire, A - ; the blue wire, B + maximum; the yellow one, B - ; the white, B + intermediate (22 1/2 or 45 volts); the brown, C + ; and the green C - . They leave no need for guesswork.

There is a special color code employed for identifying the resistance value in the old line cords used in AC/DC receivers. As a rule, these line-cord resistors have three wires, one red, one black, and a third wire that is the color-coded resistor wire.

In this code yellow means 135 ohms; blue, 160 ohms; white, 180 ohms; green, 200 ohms; light brown, 220 ohms; orange, 260 ohms; grey, 290 ohms; maroon, 315 ohms; and dark brown, 360 ohms. However, if the value is stamped on the plug the color code does not apply.

Mounting Speaker Cones

One of the greatest difficulties many servicemen experience when reassembling a speaker is in holding the outside rim of a cone in place on the speaker frame while the cement is drying. The method employed at our shop never fails to line up the cone perfectly.

After shims are placed on pole pieces of the speaker, the cone is lined up around the outer rim of the cone and cement applied on the speaker frame. The rim of the cone is then pressed in place carefully and held with several spring-type wood clothes pins. For small cones six or eight pins are required, but for larger cones 10 or 12 are required to do a good job.

--R.J.
GENIUS AT WORK
Images of Alexander Graham Bell
by Dorothy Eber
(Viking Press, New York, 1982)
This new volume is not a re-hash of
the invention of the telephone; in fact
it hardly mentions that phase of Bell's
life. It is a picture book with compre-
rensive text covering the later years
of Bell and his family in Nova Scotia.
There is a lot of little known material
and photographs on his work with large
tetrahedral kites and hydroplanes. Ms.
Eber has done fine work in research-
ing at the Bell Museum in Baddeck, N.S.
and at the National Geographic Museum
in Washington, D. C.
(Reviewed by Warren Green, W7JY)

SOUND FROM 78'S
Many old time radio buffs have a col-
collection of 78 rpm records. A modern
approach how to play these records is
described in June, 1982 issue of Audio
magazine. You'll need some modern
equipment but it may be worthwhile if
you have a valuable collection. The
author tells how to clean old records,
type of pickup to use and equalizer to
produce best response.

SOCIETY OF WIRELESS PIONEERS
Even though the availability of the
SOWP "Sparks
Journal" is restrict-
ed to members, I
still want to recog-
nize the excellent
historical informa-
tion in this publication. Somehow Editor
Breniman manages to outdo himself
with each issue. For example, the
most recent Journal (Vol. 4, #4) has an
account of the Titanic disaster de-
scribed by a wireless operator-- infor-
mation seldom seen in print. In addi-
tion, there are detailed descriptions of
several high-power commercial sta-
tions: Rocky Point by AWA member
Carl Maylott, Cape Hatteras (NDW),
West Point (WUU), Portsmouth (NMN),
Hawaii (KEH/KIE) and Annapolis (NSS).
Copies are available in the AWA lib-
ary.

If you are (or were) a commercial
operator, you may be eligible for mem-
bership. Write to the following address:

SOCIETY OF WIRELESS PIONEERS, INC.
P. O. Box 530
SANTA ROSA, CALIFORNIA 95402
(Continued on next page)
On Review

AVAILABLE AGAIN
ATWATER KENT - W. P. I.'s FORGOTTEN MILLIONARE
A history of the man and the company...
16 large pages, well illustrated
$4.00 postpaid
John P. Wolkonwicz, 11 Hartford Rd.
Worcester, Mass. 01606

Videogame History

RADIO-ELECTRONICS, July, 1982

Since Videogames are electronic, members should be aware of their beginning. A lengthy article describing early development and present-day variations is in Radio-Electronic magazine (July).

The idea was conceived in 1966 by Ralph Baer, an engineer at Sanders Associates. His brainchild has mushroomed into one of the largest leisure industries in history--from a simple TV accessory to highly sophisticated pre-programmed units--all centered on, of course, modern solid-state circuitry.

--Chas. Willet

A BRIEF HISTORY

of your experiences in amateur or commercial radio is urgently requested by Andy Clark, W4IYT. He is collecting standard cassette tapes of old timers telling of their work with early equipment, station operation, etc. The cassettes will be stored in a fire-proof safe for historical reference. Write: Florida Skip OT Library, Box 501 Miami Springs, Florida 33166

AWA IN JAPAN

The 1981 AWA Conference received a full 2-page spread of color pictures with description in the prestigious Japanese publication "CQ". Credit for the report goes to Taizo Arakawa, N2ATT.

MAN OF HIGH FIDELITY

EDWIN HOWARD ARMSTRONG

by Lawrence Lessing

This out-of-print book is now available through AWA in paperback form. The biography of the world's greatest radio inventor from birth to tragic death, it is also the story of radio and the intrigue accompanying its commercialization.

Armstrong perfected and is credited with the development of the regenerative circuit, super-regeneration, the superheterodyne and frequency modulation (FM). A fascinating book every radio historian/collector should read, it also makes a fine gift.

AWA is indebted to the Armstrong Memorial Foundation for the books. Quantity is limited. Cost: $1.25 at Museum store or by mail with 50c handling/mailing. Send check for $1.75 to AWA MUSEUM FUND and mail to:

Dexter Deeley, 8 Briar Circle Rochester, NY 14618

It is the story of a man's unshakable determination to discover the secret of perfect sound, and once invented, to have it used. And it is the startling revelation of a broadcasting company's challenge to the inventor's right to the rewards of his own invention.

RESTORING

an old receiver or early piece of equipment? If so, write and tell us about it. We're interested in "Short Problem Solvers" as well as detail restoration projects....
NEW EQUIPMENT in A.W.A. Museum
*(sets, parts, magazines, books, etc.)*


Unusual equipment includes a rare Sargent (not Sargent-Rayment) communication receiver plus a fascinating collection of unorthodox variable condensers—all from W2GH/R. P. I.

MUSEUM ACTIVITY

The AWA Museum has been the setting for several commercial television shows this year. In the spring, a "PM Magazine" team paid us a visit and used historical material as a theme in one of their programs. At this writing, we expect a camera crew from the Canadian Broadcasting Company to photograph early Marconi equipment.

CBC is making a movie covering Marconi's work at the turn of the century. It would appear that the AWA Museum is the only source of operational material of that period: a complete 1906-7 ship installation, 1896 replica coherer receiver/spark transmitter, and 1905-07 and 1910 Fleming valves with detector units.

On the local front, AWA recently played host to the area SMPTE Chapter's annual summer meet. The engineering staff from TV/AM/FM stations as well as members local industries were in the group.

MUSEUM ATTENDANCE this past summer has been good, possibly because of free admission and extensive advertising. AWA printed and distributed nearly 5000 brochures in addition to having the museum listed in several New York travel/tourist publications and monthly radio magazines.

Visitors came from all walks of life: groups of elementary grade school children, engineering clubs, and families out for a ride. As in the past, we also had our share of out-of-country visitors. Typical was Herman de Rooy of Philips Corp., Eindhoven, Netherlands, who stopped in on one Sunday afternoon.

The Association is fortunate in having 22 knowledgeable guides who demonstrate equipment, answer questions and show visitors the many exhibits. This brings up the subject of display material.

As our museum is for the general public (as well as members), it must have a variety of material, not shelves and shelves of broadcast receivers. Thanks to the AWA members, AWA has this variety.
WANTED

-- West coast group seeking information on early radio companies in L.A. area making speakers, eliminators, etc. Any info appreciated. Floyd Paul, 1545 Raymond, Glendale, Calif. 91201

-- Japanese and German tubes and radio gear. WTII or earlier related literature. Buy or swap. Alan Douglas, Box 225, Pocasset, MA 02559

-- Power supply for AK model 325E console. Uses a six pronged plug-in. Also need 1920s Radio Craft magazines. State price and condition. David Bryan, W4EUKJ, 5313 W. Oth St., Topeka, KS 66604

-- Tubes: 4 UV 201A brass based Raditron tubes, 2 brass based WD 11s. Felix Luetold, Langenhanweg 2, CH-4153 Reinach (Switzerland)

-- Howard receivers models 450 and 490. Bob Stephen, 402 Chestnut St., Mt. Shasta, CA 96067

-- Morse relay - straight or polar and Morse register. Also any electro-mechanical encoding or decoding device as Endograph or Entega. Glen Fuller, 76 Hill Ave., Kenmore, NY 14217


-- Need the two dual .00035 tuning condensers for the Bremer-Tully "Counterphase". Also one B-T audio. H.W. Burt, 1000 Plaza del Sol, Roswell, NM 88201

-- Looking for & would like to buy back homemade 2 stage Aeriola amp I made from RCA spare parts in about '72. It had an authentic Radiola panel and W.E. xfmrs. Was adv. by J.Drake in Nov. '72 ARCA btm. Rodney K. Schroek, 402 Lincoln St., Somerset, PA 15501

-- Western Electric tubes, amps, tweeters, drivers, speakers, horns, mixers, microphones, networks and parts. David Yo, P.O. Box 832, Monterey Park, CA 91754

-- Crosley Harko, Jr. crystal receiver wanted for Gray History-of-Wireless Museum. Charles Williams, 400 Broadway, Cincinnati, OH 45202

-- Western Elec. 1A loop ant. and/or 10A Bat. Box for W.E. 4B recvr. Also Mono pre-amp Heath WA-P2 or Dyna Kit with schematic or manual. J.W. Sleicht, 64-10 Woodbine St., Ridgewood, NY 11385

-- Atwater-Kent Model 10 or 10B. Negotiable. Alain Tumburini, 53 ter, rue Edouard Herriot, 70300 LUXEUIL-LES-BAINS, France

-- Manual for early tubes and user manual for Simpson model 1000 tube tester. (Reply will do). Also Canadian made battery sets. Bob Murray, 3216 Assiniboine Ave., Winnipeg, Manitoba R3K 0B1 Canada
WANTED

--Harvey Radio Labs Model 90-T amateur transmitter manual, diagram or info. Also need tone control knob for SX-28. Leland Smith, W5KL, Route 3, Jasper, AR 72641

--Zenith Super VIII or IX, AK Model 60 in original table, Spherical Audion, scanning disc televisions. G. Binaud, Place du Puitts Lavau 85200 FONTENAY LE COMTE, France

--five gang tuning condenser for Zenith model 52. Must be good. Also Crosley AFTs for model 52, need not work. Mark Zimmer, 614 Main St., Davenport, Iowa 52803

--E.H. Scott Philharmonic complete with cabinet if possible. Bob Miller, P.O. Box 416, Babson Park, FL 33827 Tel. (803) 638-6756

--chassis for Philco 50 or Zenith 5-5-29, escutcheon plate, speaker bolts with ornamental Phillips heads for Philco 20, knob for AK cathedral. Have Echophone, Jackson cathedrals plus Dayfan and others. SASE for list. Gary Hill, 1507 Ridge Ave., New Castle, PA 16101

--Kodak C11 one tube set 1924 page 121 of V.R. Jack Wallace, 5516 Gilboy Ave., River Oaks, TX 77014 (713) 732-5189 after 6 P.M.

--American Bosch batteries, manuals, literature. Have other sets to trade. Also need info on Argus Radio Co. sets. All postage refund. Kent King, 5028 Dierker, Apt. C2, Columbus, OH 43202

--Welsh 501 type peanut tube, National FB7 recvr working or not. All letters answered. L.J. Schnedorf, 610 Monroe Ave., River Forest, IL 60305

--AK E or F3 speaker for metal box radio and AK cathedral radio. David Taylor, 108 Bass St., Tallahassee, FL 32301

--3 Magnaformer IF transformers RF61, 2 Ferranti audio transformers AF4, 3 Amperite self adjusting rheostats 1-A or junker Magnaformer superhet. John A. Rawlins, 1920 Stephenson Dr., Mesquite, TX 75149

--want wiring diagram for General Radio power supply type 857-P1. Any information on this would be appreciated. Louis Auerbach, 152-13 Roosevelt Ave., Flushing, NY 11354


--Scott BOD (1947) AM/FM/SW. In good working condition. Garrard 88 changer however cabinet needs work. Have some Scott literature. Also have 1949 Admiral 3001 TV w/manuals. Edgar Roy, 11 Rendall Road, West Roxbury, MA 02132

--battery radios, horn speakers, Riders 1-14, books, etc. Send SASE for list. Want plug-in coils for Grebe CR-18 and General Radio tube sockets, door for Zenith Super VII. Bob Lane, 2301 Independence Ave., Kansas City, MO 64124

--battery sets, horn speakers, cathedrals, tombstones and other early AC sets. Large SASE for illustrated list. Need cabinet for a AK 90. Will buy or trade. Herman Fothen, 10 Jackson St., Sloatsburg, NY 10974

--Splitdorf 6 tube TRF with A&B power supply. Barold 1923 RAF Pastime reflex with crystal detector. Large SASE for list. H.D. Utz, 3406 Kentfield Dr., Sacramento, CA 95821 (916) 483-9966

--spherical audion in original box. Also AK-12 and 10 for trade. R. Brewster, 454 Diabolo Dr., Pittsburgh, PA 15241 Tel (412) 833-4287

--old tubes - have over 10,000 on hand. Reasonable prices. Will sell or swap for AK breadboard parts, etc. Rick Welbezahl, 305 Belvidere Ave., Washington, NJ 07882

--RCA sound cabinet apparently built for movie theatre about 1936 with voltage amp, mixer, expander, compressor. Housed in rack cabinet. $100. Henry Schwartzman, 123 Bridge St., Corning, NY 14830

--schematics available for 1921-1961 radios, etc. $3.50 each postpaid. Money refunded if I don't provide at least a schematic. Give all info on requests. Alton Bowman, RD2, Conadigaua, N.Y. 14424

--RADAR by Westinghouse w/o tubes, very good but missing main tuning knob; $110. But would prefer to trade. Want Kennedy XI chassis, National 1-10 power supply type 5886AD. William Alvarez, 19867 E. Vista Hermosa Dr., Walnut, CA 91789

--Western Electric sounder 3C $25. Biaupunkt 4 Band AM/FM portable $25. 2 BC 611 Handy Talkies $35. each, 861 tube for display only $20. Plus shipping charges on all the above. F.W. Chapman, Apt.B-218, 1130 North Lake Parker Ave., Lakeland, FL 33805

--Solid state "B" battery eliminator for portable tube equip. Compact design using 9V transistor battery. SASE for info. Mark S. Starin, 69 Illinois St., Rochester, NY 14609

--Hammarlund HD-140X. Good condition, $130. Ed Best, 2004 University Drive, Durham, NC 27707 Tel. (919) 489-2164
FOR SALE/TRADE

-Radiola model 62 High Boy, cane back, complete with tubes, cabinet fair, chassis complete but not tried out. Charles Kaelber, P.O. Box 3335, Spring Hill, FL 33526 Tel. (904) 633-7202

-1920-1960 QSTs, might break up. Riders 1-16 $100. Many new tested tubes $2 ea. Crosley 50, AK56 plus misc. service manuals. Need Radiola 26 panel and horn driver, RS parts. Merrill Bancroft, 169 S. Row Road, Townsend, MA 01469

-Limited copies of SAGA-hardcover $9.95 or softcover $5.95 plus $1.25 for postage & handling. 10% of proceeds to museum fund. Want Pooley AK-10, David Grimes 3X or Hammarlund Roberts cabinet. Don Patterson, 636 Cambridge Rd., Augusta, Georgia 30909

--trade National Carbon "Eveready" No.1 (1927 ac set) for early crystal radio receiver. Ira Smolowitz, 15 Settlers Lane, Ballston Lake, NY 12019

--Riders Vol. 1-5 abridged plus 6-16 in good condition $10. Plus shipping. Can bring to Canandaigua if arranged. Al Jochem, 2205 Broadway, Quincy, IL 62301

--Hallory Radio Service Encyclopedia has data on almost every make and model before 1946. $15 plus shipping. A. Smith, Stonehedge, Lincoln, MA 01773 617 259-9381

--Gribsy-Grumow Majestic dynamic loudspeaker 6-3 for chassis 90-100. Weighs 19 lbs. Unpacked. Offers, send SASE for page list of transmitting parts 1932-1957 era. Joe Reese, W6VSK, 47270 West Main St., Northville, MI 48167


--Majestic 30 cdt. $70. AK model H horn for $45. jewel 205 tube tester $35. Haevy Wells Bandmaster '40, RME 85 $65, tubes and magazines. SASE for complete list. Ron Boucher, 376 Gilley Rd., Manchester, NH 03103 (603) 669-1898

--Hallicrafters SX-25 with speaker for $75. Prefer pickup. Will swap or trade for SW-3 or what have you. John Uscinowski, RR#1, Box 379, Greenwich, NY 12834

--Hillen 9080Q exciting $30, Conset 10-11 conv. $15, Philco 84 cdt. $40. Army TG35 code mach. w/1 tapes excellent $55. AK55 chassis & speaker $40. 2 EIMAC 100TH $45. All plus shipping. William Ernst, 1619 Campbell Rd., Comins, MI 48619

--Colonial, Crosley, Radiola, Appleby and AK radios, Jewett and AK speakers, tubes, parts, magazines. Send SASE for list. A. Evangelista, 701 Warm Springs Rd., Chambersburg, PA 17201 (717) 263-1693

EARLY NEWSPAPER CLIPPINGS
1905 - 1912

GERMAN SCIENTIST SEES PERIL IN WIRELESS AGE

Says It Will Make Humans Wear Metal, Insulated Clothing.

Berlin, June 3.—If the German scientist Hensingmuller's theories are correct, the approaching wireless age will compel people to wear metal insulated suits to protect them from deadly electric wave dangers. He says a weird new form of violent toothache has already resulted among those exposed. He anticipates that those who are exposed will lose their hair and some of their senses and even their lives.

The scientist points out that there is no essential difference between wireless waves and X-rays, the terrible nerve-shrivelling effects of which are well known. He estimates that only one-third of the one millionth part of the electrical energy generated for a message transmitted between stations on one mile apart is actually used.

The rest, he says, is dispersed in the atmosphere and its people somewhere.

STORM TOPPLES WIRELESS TOWER

NAUEN, Germany, March 30.—A terrific storm caused the collapse this morning of the great skeleton tower 656 feet high, belonging to the German wireless station here. There were no casualties. The tower was recently doubled in height and apart from the Eiffel tower in Paris, was the highest steel skeleton tower in the world. A new plant was recently provided at the station by means of which it was expected that communication would be made with the stations in America.

WIRELESS OPERATOR IS KILLED AT HIS POST

BERLIN, Dec. 24.—What is believed to be the first case on record of a wireless operator being killed at his post occurred last night at Norddeich. The great German wireless station near the North sea. The operator, a man named Muller, must have carelessly come into contact with the wires employed for the creation of electric waves, which are charged with such powerful voltage that death comes instantaneously to anybody touching them.