


INTRODUCTORY
ESSAYS

Vintage
Radio
Identification
SKETCH-BOOKS
of
D. H. MOORE

● VOLUME I

for:
Paul J. Bourbin
in appreciation & w/
all good wishes.

J. H. Moore

The Editorial Group,  Ltd...

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DEDICATION

.....to a way of life
that should not have
been forgotten.



Acknowledgements

Bits and pieces of these volumes have been published, referenced, reviewed in several media devoted to the hobby of vintage Radio, including a few foreign countries, such as New Zealand, Japan, Canada and England. Such favourable notice for such a labour of love is hereby acknowledged in appreciation.

Thanks must also be offered Stan Lopes who tediously edited the technical authenticity of circuitry to be found in Volumes II through VII. His labours have resulted in an obvious authenticity, we feel, especially for those who delight in tracing out vintage schematics. He even found technical errors in original sources!

Special thanks are due Douglas G. Yule, who originally sponsored this effort as a contribution to the hobby, without whose prompting these Sketch-Books may not have come into existence. Also, thanks are given to Howard W. Granoff, of the OLDE TYME RADIO COMPANY, whose unflagging enthusiasm and publicity has done much to make these Sketch-Books known within the fraternity.

And in as much as fraternalism is the basis for shared enthusiasm, which is what any hobby is, and because of the original and dramatic shift away from the current vintage Radio fare, it follows that the publishers and the author, being human, would appreciate hearing from you, your comments, along with any suggestions you'd care to offer with an eye to producing bigger and better vintage Radio literature in future.



Vol. I: Introductory Essays

INTRODUCTION.....	1
About The Other Volumes.....	6
Early Radio Pioneers.....	7
Biographical Footnotes.....	13
Edwin H. Armstrong.....	18
Marconi's Long Island Station.....	21
Super-Het: An Historical Note.....	22
The First Super-Het.....	23
Early Radio Buffs.....	24
President Harding's Radio.....	25
Hugo Gernsback: A Special Pioneer,	26
The First Magazine.....	30
Ralph 124C 41+.....	33
Gernsback Alumni.....	35
Bruce Bliven On Radio, 1927.....	36
Aesthetique.....	37
Graphic-Art In Radio Media.....	38
Early Radio Company "Bugs".....	44
The Human Side Of Radio.....	48
The Eveready Hour.....	49
Applied Graphic-Art.....	50
Slogans & Pufferisms.....	53
Radio "Literature".....	55
Radio Cartoon Humour.....	58
Verbal Radio Humour.....	61
A Radio Cross-Word Puzzle.....	62
Radio Sheet-Music.....	63
Marketplace Machinations.....	64
Representative Radios 1924/1925	65
Pre-1925.....	66
Representative Radios 1925/1926	67
1925.....	68
Representative Radios 1927/1928	76
1927.....	74
Reach Of The Octopus.....	77
1928.....	78
1929.....	81
Representative Radios 1929/1930	83
1931.....	84
How's That, Again?.....	86
Fascinating But Forgotten.....	87
The Start Of KDKA.....	90
Radio Cabinets As Furniture.....	97

Innovative Hardware.....	94
Major Radio Cabinet Makers.....	98
Cabinet Corner Details.....	99
A Study In Size.....	102
Radio Kits Of The Twenties.....	103
The Amplion Story.....	105
A Reinartz Note.....	106
What's In A Name?.....	107
Manufacturers' Literature.....	109
Curious Configurations.....	112
Early Thermionic Emission Valves.	114
A Lady's Radio Garter.....	115
Welty's "Etherways".....	116
Murphy's Marvellous Valve.....	117
The First P.C. Board?.....	118
A Clough Circuit Note.....	119
A Foreign Note.....	120
L'Recepteur Abele.....	127
Forgotten Circuits Index.....	129
Certificates of Merit.....	139
It Was Ever Thus.....	140
Reflexions In A Murky Mirror.....	141
Mirror II.....	145
Norwegian "Folksmottager".....	150
Suggested Bibliography.....	151
Manufacturing Men of Merit.....	154
It Was Ever Thus.....	155

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INTRODUCTION

Radio communications is a science, but its application is an art...my homily for today. It is also a social phenomenon.

When any advent becomes universal in its application, and filters into the subconscious awareness of everyman to where he takes a casual acceptance of it in his daily life, that is a social phenomenon. Other examples would be the telephone, the motor-car, the electric bulb and the aeroplane. Such phenomena have become common-place in the daily life of everyman, to such a degree that their marvellousness and their pristine magic are rarely thought about, or even comprehended. Yet it's just those aspects which permit personal relateability. Radio is probably the most trenchant of such phenomena.

And because it was the social implications of early Radio that first aroused my interest, I set about over the years to collect a respectable body of pertinent social data, as well as technical information which would dramatise the human element in early Radio. Naturally such acquisitional data were personally oriented, just as sketch-books of any individual in any field have always been personal expressions. I eventually got around to organising my accumulated data into these nine volumes, comprising my VINTAGE RADIO IDENTIFICATION SKETCH-BOOKS, where "IDENTIFICATION" is the operative word. I would share them with you.

I have never found, over the years, any library, a museum or individual vintage radio buff having a *complete* collection of vintage radio literature - *i.e.*, magazines, sales catalogues, advertising flyer promotions, company or individual histories. I also grew quickly discouraged trying to find schematics and technical data in the so-called standard references, such as Riders, Sams, Beitmann, RCA manuals, etc. I found that they practically ignored all of the "orphan" radios and true pioneers, which were and are my chief interests. That was when I started gathering the data you have before you as I found it here and there,

In attending many a flea-circus, thrift-store, swap-meets around the country, one can spend much time pawing through boxes after boxes of "junk", looking for a long-sought-after piece of hardware, accessory, or pamphlet; and the time would be generally wasted. Many early manufacturers offered their wares in what they hoped would be distinctive configurations, to separate their wares from others, even when the item, itself, was exactly the same. Resistors and tube-sockets are very good examples. In as much as distinctive configurations of most any man made item can be distinguished at a glance on a table at ten feet, the

idea of compiling sketches of such configurations occurred to me, which proved to be highly successful, as far as my finding items of interest.

However, these Sketch-Books are *NOT* an attempt to detail the history and rise of early Radio, nor to allude to details of divers machinations which transpired as periferal issues. They are reflective of those aspects of early Radio which fascinated me, being chiefly concerned with the period from 1910 to 1931, with a few passing references to before and after that period. The period covered represented, you'll find, the period of greatest activity, imagination, and progress.

As I do not share the current mystique of some collectors anent such marques as RCA, Philco, Crosley, Atwater Kent, and such, the references to them in the following pages are best classified as incidental intelligence, like salt and pepper on eggs - not truly essential but adding a bit of flavour. These Sketch-Books reflect, I feel, awareness of the ignorance, the innocence, the ingenuity, as well as brashness and dedication of early radio pioneers, manufacturers, managers of media, and opportunists, hucksters, and con-men. They also imdicate by inference the authentic evolution of Radio to the point where, nowadays it has long been taken for granted.

What was it actually like, there in the early days, to be faced with a plethora of circuitry, each claiming to be the ultimate in reception, distance, quality of reproduction; when few men were abroad in che land who really knew what they were doing? Just how effective or scientifically sound were the accessories, the hardware, the claims, of manufacturers? - what were their limitations, their virtues? How long did it take the home-constructor to learn how to seperate the "schlok" operators along Cortland Street from the legitimate manufacturers, such as Pilot, Samsom, Flewelling, Bruno, Walker? The *human* side of Radio, as I have suggested, fascinating in itself, but for which you cannot find allusions in such as Riders, Sams, Greenwood, et al.

These Sketch-Books offer some of the sociological aspects of the rise of early Radio, along with hard-to-find technical data, and details of actual results I have come by from constructing from scratch many of the early circuits, mostly with original parts. You may find it of more than passing interest to peruse them, hopefully to add to your knowledge and your fond affection for old radios.

Those sets we refer to today as "orphans", and those sets offered as kits (long before Heathkit came into being) have always been the more interesting, as many were quite innovative, due to manufacturers trying to devise schemes for getting around the growing monopoly of the octopus known as RCA and affiliated companies, until the monopolies were finally broken by a decision from the Supreme Court. Among companies that come readily to mind were Remler, Victoreen, Grimes, Harkness, Flewelling, Sargent, Rayment, and Herman Bernard, who managed to thrust

his "Diamond-Of-The-Air" circuitry upon the home-constructor for many years, with all of its variations, while he was managing editor of the weekly tabloid known as "Radio World". It was a competent circuit, and many a home-constructor swore by it. Certainly, their stories or their labours were much more interesting than that of corporate cartels, and their efforts reflected a truer view of what Radio was coming to mean to everyman of the period.

Books such as those by Gernsback (both of them), Henney, Morecroft, Gheraldi, and McMahon's expansion of Greenwood's efforts in our own time, remain quite useful and really indispensable to sincere followers of the hobby; but none offer the kind of personally relateable references for those who, like myself, find a sense of adventure in constructing from the baseboard up, the old circuits using original parts - the search for the latter being, in itself, an adventure. And while we have several regional and nationally-oriented old radio clubs scattered across the country, each of which issues a bulletin or newsletter or gazette or journal, such media are quite ineffectual in any true sense of raising the level of contemporary awareness and interest of everyman in the romance of early Radio.

It has been my observation that while all reflect a kindred spirit, they are limited in scope, space, in-depth presentations, and seem to reflect the personal biases or interests of the editors. I do not fault them for their private enthusiasms, but when a nationally oriented hobby is to be served, provincial interests are anathema. In truth, I've sometimes wondered if there is not a *clique*-mentality that is creeping into producers of regional radio-hobby media. There is one group, for example, in which the names on the mast-head of their booklet continue to appear year after year, simply changing titles, which becomes self-defeating, obviously, as it suggests a sort of self-cannibalisation.

Also, of course, probably the greatest threat to the fun, the enjoyment of vintage Radio as a hobby, lies in the current hysteria anent so-called price-guides. They are like a bad joke that failed, and I've mused upon why there is no out-cry of protest. Myself, I will accept no man's assessment of the value of a given marque; as such is always a matter of individual desire, feeling, relateability of the item under discussion. We are all familiar with the destructive effects of similar so-called price-guides in the areas of old cars and photographic hardware, not to mention the devastation of common-sense when it comes to pricing houses (called "homes", for some strange reason) in California, for example. So I say a pox on all price-guides - think on your own, your enjoyment of the hobby will increase.

Perhaps a word about nomenclature might not be amiss here as someone has to make the effort. There is absolutely no such animal as an "antique" radio, by legal definition. The term "vintage radio" I

find, while also a misnomer, is much more on the mark. The legal definition of an antique was long ago set by the U.S. Custom Service; they have defined an antique as any object made, produced, manufactured before 100 years prior to its entry into the U.S. This means that we may refer to antique radios in the year AD 2054, from this writing....

While there may be a reasonable doubt about Atwater Kent, of A-K fame, being the first "radio millionaire", there can be little doubt that the majority of our early Radio pioneers were men of modest means. America in the Twenties was still flushed with the exhilarating faith of believing in the limitless, albeit dubious, blessing of what was referred to as the Industrial Revolution, the largesse yet to be dispensed of the Great God Machine, and the new secularism that was abroad in the land. A new kind of Utopia was envisioned, of a kind that was never imagined by all of the early social philosophers, including the Germans of the last century. The spirit of the day was manifested in an all-consuming belief that Science could be the magical key to a more abundant life, and that Valhalla was just around the corner.

It was not surprising, then, that the advent of primitive Radio magnetised the imagination of thousands, and in the decade known as The Twenties, the U.S. Patent Office was deluged with literally hundreds of applications every single day. By the end of the decade, they numbered in the hundreds of thousands, and most were generally worthless; all claiming some new and startling discovery or invention which would be a boon to the infant art of Radio. There were a few of course whose labours did, indeed, advance the art, and are now mostly forgotten - men such as Lacault, Flewelling, Victoreen, Sargent. The advances they contributed have long been incorporated into modern radio.

Printed media for Radio also came into being and did much to magnetise interest in everyman, not just engineers. At one point in the decade, there were 32 publications devoted to Radio, weekly, monthly, quarterly. It is of passing interest that quite a few men working as editors or writers for our early media sooner or later left to set up shops on their own as manufacturers or distributors of their little private circuits or hardware or accessories. Such men would include or be represented by Lacault, Lynch, Harkness, Grimes, Jones, Cockaday as well as Herman, Flewelling, Miller, Hayden. It was the spirit of Radio that imbued them all, a spirit that is rather notable by its absence I would say, in today's fraternity.

Unlike Grebe, Crosley, Andreas, Tyrman, Kent, not to forget the cynical octopus known as RCA, none of these contributory pioneers were men of money. They had no personal wealth or corporate means and organisation behind them; no venture capital or easy access to new bank loans. Still, they persevered, each caught-up in his private and sometimes baseless dream of an ultimate radio circuit - and we are all the richer for their dreams.

The romance of early Radio may also be inferred from the frequently fanciful names given circuits, such as *Ultradyme, Phoenix, Megadyne, Rex-O-Dyne, Strobodyne, Orthosonic, Imperial, Transoceanic, Aeolian, etc.* Even one-tube sets were given fancy names, and contrast such a sense of personal identity these names suggest with the advert of today offering the latest electronic gadgetry, still called radios and designated by cabalistic numbers and letters. There is nothing in such designations that is personally relateable. There were of course individuals even in the glory days of Radio whose personal ambitions and vanity moved them to dramatise their names, such as Scott, Silver and Grimes, Harkness and Browning. But while there is certainly nothing immoral in dramatising your name, what that name contributed must figure in any final assessment, wouldn't you say?

Human nature being what it is, the desire to be noticed, or have one's efforts recognised wrought some rather odd and generally acrimonious letters to the editors of early media; but the bitterest language was reserved for the myriad of patent infringement suits brought during the Twenties, chiefly by and against RCA. Nor were our early media above capitalising on Death to gain a momentary increase in their readership. When Lacault died at a relatively young age there in 1929; radio media immediately began publishing laudatory articles, not about the man! - but "*...his last and greatest circuit, completed despite his impending death...!*"

Try as they might, however, none of our early pioneering enthusiasts could ever design more than seven basic radio circuits. I note that today we have but two, one of which was given impetus after Hitler's War. But my point, again, was that all of our early pioneers were infused with a spirit of the romance of Radio, of great expectations, of wonder - which none of modern electronic marvels is capable of conjuring in the mind of everyman.

In 1922 a certain W.C.Holmes of New York wrote to one of our better early magazines, *Popular Radio* to tell its editors:

"Thank God your magazine makes Radio human! It is the romance of Radio, the humaness of it, I find in your magazine! Long may you endure!"

And, speaking for myself, it is that sense of romance, of humaness, of shared enthusiasm so rarely encountered among some segments of the current fraternity, and that, too, undoubtedly influenced the compilation of these Sketch-Books. You may find allusions to a lost spirit in every volume - hopefully - which will permit you ready access to recapturing some of our lost romance.



About The Other Volumes ~ ~ ~

The other eight volumes of these Sketch-Books deal with a rather wide range of early radio sets that were powered by AC, DC, or batteries, along with contemporary hardware, accessories, components, constructional details, coil-winding data, operating procedures, and trouble-shooting tips for certain marques. The material derives from my research amid vintage Radio media, as well as results obtained via my own experiments and constructions. And because these Sketch-Books, in their entirety, are in a very real sense a sole-source for much of the data they contain, they constitute a ready-reference.

Where you find parenthetical references under an item, or a parenthetical reference in the lower left-hand corner of any page, the explanation is as follows: ('26-10) = the item was first offered the public in 1926, and cost \$10; (PR 11-25) = the original schematic or technical information first appeared in the November, 1925, issue of Popular Radio.

Certain "orphan" marques are covered more extensively for several reasons, such as their long-time popularity, or because I was fascinated by their evolution - from an engineering point of view. It will be noted that such "orphans" were ignored by such as Riders, and other so-called standard references. Among such are the following:

<i>Ultradyne</i>	<i>Strobodine</i>	<i>Victoreen</i>
<i>Bremer-Tully</i>	<i>Hammarlund</i>	<i>Infradyne/Remler</i>
<i>Silver-Marshall</i>	<i>Flewelling</i>	<i>Sargent-Rayment</i>
<i>St. James</i>	<i>Roberts</i>	<i>Madison-Moore</i>
<i>Acme</i>	<i>Pilot</i>	<i>Erla</i>
<i>Thordarson</i>	<i>Ferranti</i>	<i>Browning-Drake</i>

Conventional abbreviations of the period are used throughout these Sketch-Books, most of which I am sure are familiar to you from reading early magazines. A full depiction of early schematic symbols, before they were standardised for the industry by the RME in 1928, will be found in Volume VII. A partial quick reference to most commonly used abbreviations is:

S-M = Silver-Marshall	Na-Ald = Napier-Alden
B-T = Bremer-Tully	B-D = Browning-Drake
L-W = Loftin-White	H-B = Herman Bernard
C-H = Cutler-Hammer	C-W = Cutler-Washington
Mar-Co = Martin-Copeland	R.E.L. = Robt. E. Lacault
RMA = Radio Mfgs. of Am.	ICA = Insuline Corp. of Am.
IRC = Internat'l. Resistor	IRE = Inst. Radio Engineers

EARLY RADIO PIONEERS

In the Introduction you may have noticed the reference to the *humaness* so obvious in early Radio - it's engineers, media managers, writers, company officials, and such. It was this aspect of the nascent art that attracted me, as much as appreciation of the audacity, daring, inventiveness, as well as the ignorance of most of early Radio pioneers. This caused me to go looking into the background - as opposed to the *history* - of vintage Radio.

While "pioneer" has become, like so many other words today, a rather amorphous designation inaptly applied by the uneducated among us, in our frame of reference it may be defined simply as those men who had a go at pushing the then-known frontiers of wireless communication. Some succeeded in expanding those frontiers; many simply spent a lot of time re-inventing the wheel. All, however, were essential to progress in Radio.

The cuts which follow depict the physical likenesses of a handful of our early Radio pioneers, most of whom are probably familiar to you, but here you have them collected. You may not remember for what contribution each is remembered, due in large measure to the inadequacy of available biographical material, yet each was a pioneer.

Most of those depicted were active members of the IRE, or shared a common impetus towards Radio after serving in some capacity or other in the Military during the Kaiser's War. These would include such names as Haouck, Flewelling, Lacault, Carter, Frost, Jones, Armstrong. This fact was always mentioned in any editorial references to these men, especially if they were heavy advertisers.

Notable, too, was the fact that most of these pioneers by the standards of the day - with the usual exceptions - were men whom women would discuss as good-looking. Looking at the cuts of Robt. E. Lacault and Kennedy, for example, one is instantly reminded of early *Arrow Collar* adverts of the time. Of course, the opposite was true if we consider the cuts of Sarnoff, Priess, DeForest, Atwater Kent.

But in the final analysis it comes down to this:

In order to know where you are, you must first know where you've been!





L. L. Karas—A. C. Equa-
matic and Knickerbocker 4



The new Ultra-Lowloss condenser is
the latest improved radio device de-
signed by R. E. Lacault, formerly
Associate Editor of Radio News, the
originator of Ultradyne Receivers
and now Chief Engineer of Phenix
Radio Corporation.



Ernst Tyrman
Tyrman 10 and 70



Merwyn Heald
Hot-Spot 14



Harry Madison
Madison-Moore International



T. H. H. Naken
Ultra-6



Robert St. James
St. James Twin Four

**Geo. W.
Walker
Co.
for
"1928
Victoreen
Universal"**



John F. Rider



Arthur H. Lynch



E. N. RAULAND



COLIN B. KENNEDY



LEO FENWAY



KENNETH HARKNESS



A. J. CARTER



HERMAN BERNARD



A. J. HAYNES



A. A. HOWARD



McMURDO SILVER

EA Smith



HERBERT FROST



HOWARD A. SAMS



CHAS. FRESHMAN



D. MACFARLAND MOORE



A. ATWATER KENT



J. P. Morecroft



JOHN L. RESINARTZ



EDMUND T. FLEWELLING



Paul James



WILLIAM H. PRIESS



J.A. Hammond

BIOGRAPHICAL FOOTNOTES

A.J.HAYNES designed the first untuned RC receiver in 1923, built, and what we came to know as a 3-circuit tuner. A year later he kitted the first super-het to be made available to the public. A couple of Haynes' circuits will be found in Vols. II-A and VIII, including his multi-valve set. Haynes survived the '29 Crash and set-up shop as Radio Constructor Labs. By 1938 he was producing a 7-tube, 7-band "communications receiver" which he called "Super Clipper". It covered 13 to 555 meters, with an integral pre-selector, and a signal-booster. The whole sold for \$30.

D. MacFARLAN MOORE is mostly unknown today, yet his early patents for the first Neon-lamp (not tube) aided the reasearch of Jenkins and Baird into television viewing through a scanning-disc. It was his pioneering efforts, also, that eventually gave us the "magic eye" as a resonance indicator.

E.T.FLEWELLING was born in Boston in 1887, did not get his radio experience during the Kaiser's War, and was 35 years old when Neely proudly announced on the cover of Radio In The Home that as well as Grimes and Harkness, Flewelling had joined his staff. He contributed a few original designs to the game, including SW adapter and converter circuitry, and test instruments. Later he joined in Dayton the Day-Fan company, left to set-up his own shop known as Day-Rad - which brought legal altercations from Day-Fan. He then became president of Radio Products Company, still in Dayton, from which emanated a small but quality line of test equipment. He retired to a farm in Michigan in the early Thirties.

JOHN GELESO was Chief Engineer for Pilot during the hey-day of Pilot moving into the short-wave field with the "Wasp" and "Super-Wasp" receivers. He returned to Italy in the mid-Thirties to set-up the Geleso Electronics firm, showing a certain foresight, in as much as this was well before the current mystique had grown up around the word "electronics". He manufactured his own designs for amateur transmitters and receivers and exported them to the U.S. The cabinets of both units was identical, finished off in pearl-grey with black trim - very pretty sets. Unfortunately, they were not as sensitive nor as selective as the competition, which included Collins, Hallicrafters, National, Drake.

NATHANIEL BALDWIN was born poor, in Mormon Territory, and received an education by going to school at night. At 22 he was an instructor

at BYU, where he taught for several years, until an argument with the Regents forced him to leave. He went to work for a powerhouse that permitted him some leisure. While there, he began experimenting with telephone receivers. He eventually evolved the diaphragm which became known as the Baldwin Mica-Diaphragm Phone Unit. This allowed him to go into business, and for a couple of years he was quite successful. He went into receivership for the first time in 1924, and again in 1928. Bankers' Trust took over for the implementation of the re-organisation, returning the plants to Baldwin for full control. By this time, Baldwin plants were in Brooklyn, San Francisco, and Salt Lake City. He also tried his hand, quite unsuccessfully, to kit and market a small receiver, with RF coils bearing his name. He was not a businessman, and did not survive.

ROBT. T. ST.JAMES was another war-spawned radio engineer, and served as Director of the Naval Radio School at Harvard, training operators in wireless. He was a charter member of the ARRL and an active member in the IRE. His brief claim to fame rests on two configurations of a more-or-less conventional for the period, superhet. They were known as the "Twin Four" and "Upright Eight", both of which are detailed in Volume II-B. Considering his background, his arguments for the virtues of his circuitry were rather specious. One of his far-fetched analogies was likening Radio to Kodak (that is, a camera). Still, like others, he tried for his hour in the sun.

VICTOR COCKADAY was brother to Laurence M. Cockaday, the latter being Technical Editor for Popular Radio and was an early collaborator, later regretted, with McMurdo Silver on what were TRFs of current circuitry, the difference being in the coils. Cockaday went on to produce sets under his own name for a couple of years, along with his oddly configured coil (shown in Volume II-A). His most widely touted set was known as the L-C. Victor, who was a tenor, had his brother, through his contacts in Radio, get him contracts to sing over WJZ. This was in 1926.

ARTHUR H. LYNCH was an amateur drummer and would play them anonymously at his home on Long Island during his remote-controlled broadcasts. Playing drums was, however, only one of his many vanities, as he shared with McMurdo Silver a neurotic compulsion towards being the centre of attention, in person, in print, in meetings. (He also had a lousy tailor, and was addicted to what were called "jazz-bow" ties of wild design.) His inability to stay long on a job was but one manifestation of a man who had early on projected a larger picture of himself, and never managed to fill it. Nor was he above dramatising his smallness of soul in public; witness the following extract from an editorial by Henry M Neely, as publisher of Radio Home (renamed from Radio In The Home):

"In the October issue of Radio Broadcast, Arthur Lynch, editor, devotes two valuable pages to an exchange of letters concerning what he considers unfavourable comments by Mr. Flewelling on a circuit published in his magazine. These two pages ended with a letter of very abject apology, with my name signed to it! I did not write that letter! Mr. Lynch wrote that letter and sent it to me, asking me to sign it. I declined to do so, and sent back a substitute letter, which did not seem to satisfy him. He apparently does not like my style of letter-writing, for - without permission from me! - he went back to his own letter and my signature was put on it!....."

HENRY M. NEELY, aside from being the publisher and Editor of Radio Home, had been a song-and-dance man before the Kaiser's War, as well as a journalist of sorts, called journeymen in those days. He was also something of a graphic artist, and was the first to sprinkle little graphic symbols and images throughout the pages of his tabloid publication, a couple of which you will find inside the following pages. The tube with the encircling electron paths is a good example. When he ceased publication in the mid-Twenties, he went back to being a journalist in Philadelphia.

DAVID GRIMES merits a passing thought, if only for his opportunism. He also had an excellent tailor. In the early days he was editor for Neely, during which time he developed his "Duplex" series of circuits. He then set-up shop to manufacture his sets in NYC, and was given generous publicity in all Radio media. During this period, he licensed his "Duplex" circuitry to most any "orphan" manufacturer who would pay the royalty. He then moved to become a captive employee of RCA, working in their Patent or Licensing Department, where he remained for a couple of years.

JOHN A. VICTOREEN, born in Pennsylvania in 1902, was a distinct and authentic contributor to the advance of early Radio. His Model 112 "Victoreen Super-Het" was one of the most popular super-het circuits of the Twenties, offered as a kit by Geo. Walker. The "Victoreen" was the first set to have a national fan-club built around it, that lasted for three years. (The only other receiver to have a fan-club was the many variations of Bernard's so-called "Diamond Of The Air", which was continuously touted for nearly seven years in Radio World, where he was Technical Editor. But it must be mentioned that his "Diamond" could never be compared with the "Victoreen".) Victoreen was one of the first amateurs to take the Government tests after the War; making his own equipment as well as his own vacuum tubes! In the days when metropolitan newspapers had a "Radio Editor", the N.Y. "Times" devoted two full pages to his Model 112, resulting in thousands of sets being sold all over the world. He attended the first to

held Radio Exposition at Chicago in 1919, where the attendance was in excess of 75,000...you might like to contrast the figure with modern attendance figures of any national trade-show. Victoreen also designed the first hi-fi amplifier, with a 450-volt centre-tapt transformer. He joined in the fight against RCA and the Armstrog super-het patents, and RCA actually sued his small company - without really knowing whether they owned the rights, or not. AT&T took up his case, and eventually won, although he had decided that it was time for him to quite Radio. Today, for this writing, he is still in business in Maitland, Florida, the product being ultra-sophisticated hearing aids, and he is also writing books on the subject of impaired hearing.



JOHN A. VICTOREEN

JOHN C. TULLY joined Bremer in 1924 to manufacture hardware and accessories but quickly went into designing sets using original toroidal coils, known as the "Nameless" and "Counterphase" series. He was president and tresurer for seven years, until Brunswick bought them out.

ALFRED A. GHERARDI was briefly another editor for Gernsback, but left to set-up Radio Technical Company, to publish his own books, which were quite a contribution to the legitimacy of radio literature, and which today must be considered as standard references. You will find his chief works listed in the Bibliography at the end of this volume. The '29 Crash caused him to retrench with smaller quarters on Lower Fifth Avenue, before throwing in the towel in 1932. The smaller quarters he occupied were subsequently taken over by book publishers Barnes & Noble, who have also published decent works.

HARRY W. HOUCK was an amateur wireless operator in 1910; operated one of the first licensed stations in Pennsylvania in 1912; and was associated with the development of the first super-het, with Armstrong, in Paris. After the Kaiser's War, he worked with Armstrong for awhile, had numerous patents granted to him, was active in the IRE and Radio Club of America, then went to work for Dubilier as a Chief Engineer for a decade. Resigning from Dubilier, in 1931, he went to Kolster as Assistant Chief Engineer.

B.J.GRIGSBY began his industrial career as a manufacturer of automobile accessories. He entered the radio field in 1924, setting-up what we now know as the Majestic line of radios, although his original produce consisted chiefly of speakers and battery-eliminators. By 1929 Majestic was the world's largest producer of radio sets. He led many of the suits against RCA, and continued suits against RCA even after the Supreme Court ruled against the octopus. Majestic filed for bankruptcy in 1933.

JUDGE WOOLEY's name is not likely to stir many memories today, but it was fascinating to discover that it was he who ruled against the suits involving the Lowell-Dunsmer patents over the use of rectified AC, rendering it invalid on the grounds that it was no invention, but a piecing together of previously known methods. Apparently, Judge Wooley had to do his home-work to reach such a decision, but, then, he was not the usual type of Federal judge sitting in the U.S. Circuit Court of Appeals, 3rd District, Philadelphia. The fascinating part lay in the fact that it was the same Judge Wooley who, in 1930, heard the stormy trial of James Joyce's "Ulysses", in which the book was charged with being obscene. Wooley found the book to be of genuine literary merit, and not obscene. So when you see copies of Joyce's classic on book-shelves today, thank Judge Wooley for that.

EDWIN H. ARMSTRONG



Among all of our early Radio pioneers the name of Edwin H. Armstrong will always rank in prominence. Yet a subtle irony may be in the fact that when one looks into the history of the man, one finds an adequate history of his achievements, but very little about the man. A definitive biography of the man has yet to be written.

He was born in Yonkers, New York, in 1890, became enamoured of the infant art of Wireless while in high-school, and became experimenting in his bedroom. In 1911 he abandoned the Fleming Valve in exchange for the new "Audion". A year later the idea of tuning plates occurred to him. He found that the signals grew stronger, but at one point they became mushy, followed by a hissing sound. This was to become known as regeneration.

It was an uncle who suggested that he have a copy made for his schematic diagrams by a notary. The date was 31 January, 1913. The

date was to take on an enormous significance during the following decade when claims for inventing regeneration went all the way to the top of our legal system - and Armstrong was to lose, despite the enormous clout of Armstrong's backers, RCA.

A subsequent patent, along with others from time to time, was assigned to Westinghouse, which brought him into contact with RCA, and the relationship lasted through the decade of the Twenties. While Armstrong's patents were the basis of a dozen-odd patent infringement suits, the man, himself, remained aloof. Westinghouse alone filed 14 suits based on Armstrong's patents - and lost every one.

During the Kaiser's War, Armstrong was an officer in newly formed U.S.Signal Corp, and worked on designing the first super-het in Paris, along with a coterie of British and French officers, details of which you will find on page 21 of this volume. The sought-for virtues, as defined by Latour, who headed the Paris project, of such a circuit, was an ability to pick-up low power signals from German trenches using a small loop. Because of his work he was advanced to the rank of major and also received the rank of Chevalier of the French Legion of Honor.

After the War he continued to experiment, seeking methods to obviate the hissing of the regenerative circuitry. Eventually, early in the decade of the Twenties, he offered the "Super Regeneratives" to the world, patented in 1922. He disclosed his work first in a paper delivered to the IRS, which was printed in full by Gernsback in Radio News for October of that year.

He was active in the IRE, was president of the Radio Club of America, assisted in the design and construction of station LBCG, a professorship at Columbia - from which he had graduated in 1913, and a continuous flirtation with RCA suggests he led a full life for someone who shunned the spotlight.

And shunning the spotlight he certainly did, even when the legal storms were raging through the courts over his patents. He seems to have been as reticent as Coolidge, and was more studious than other men of his ilk, never argumentative. A man, in other words, at ease in the sense of his own becoming. As I have suggested, a decent biography of the man would be a distinct contribution to our paucitic literature of the rise of early Radio as a distinct sociological phenomenon.

* * *
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Armstrong's 6-tube Portable Super-Het, which he designed and constructed in 1924; shown here while he was vacationing at Palm Springs, Florida that year. Over-leaf you will find a cut of Armstrong several years later, after he had discovered Marconi's station on Long Island. Enquiries made by me of local authorities at Babylon turned up little more than abysmal ignorance on their part, as well as a total indifference to the history of their region.

A shack at Babylon, N. Y., recently was identified by Major Edwin H. Armstrong as the first Marconi wireless station in the United States, erected thirty years ago. Major Armstrong is shown in front of the shack, which has been removed to Rocky Point, N. Y.



Super-Het: An Historical Note

The evolution of the super-het was actually brought about as a need of the Allies during the Kaiser's War, and it turned on production of ultra-audible frequencies. British and American teams of radio engineers got together with the French in Paris, and went to work. The project was under the command of A Latour, supervised by a Lt. Lucien Levy, on whose team was Robt. E. Lacault and Lt. H.A.Round of England. Lt. Round's experiments with an early Russian amplifier will be found in another section of this volume. The American team comprised Pressley and Priess, Lewis and McDonald, as well as Houck and Armstrong.

Parenthetically, as was learned after the War, the Germans, under Meissner and Schottley, had been working along the same lines. I rather imagine they would have come up with a successful super-het.

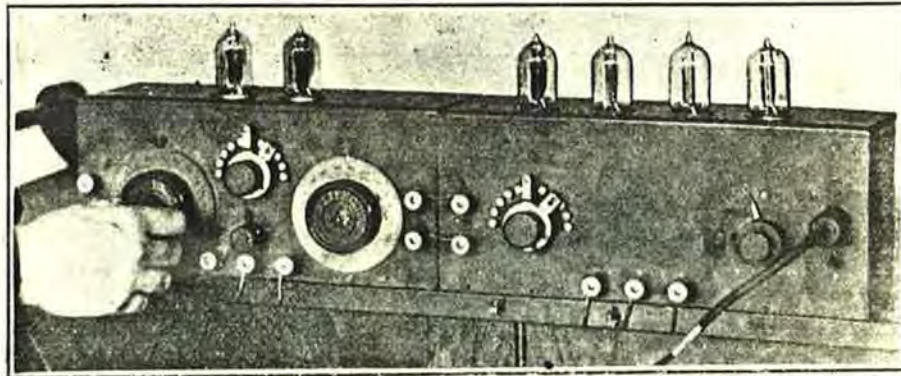
The Americans were all members of the newly formed Division of Research and Inspection, U.S.Signal Corps. Of that original team, a few went on to become radio designers and manufacturers, such as Houck and Priess and Pressley. Armstrong, himself, never became a maker of radios; he simply sold or licensed his patents.

The French had produced a 6-stage, 4-tube amplifier known as the L-3; the British had produced a 7-tube amplifier known as the #55. The Allies settled for the L-3, simply because it was the only one available immediately. It fell to Armstrong to improve the L-3. The task simply stated was to select some frequency that could be handled with the tubes of the times, building an effective amplifier for that frequency, and then transferring the incoming signal to the readily amplifiable value by some converting means that had no low limit. The problem was presented to Armstrong in June of 1918.

Armstrong designed an 8-tube receiver consisting of a rectifier and three stages of IF, a separate neutrodyne oscillator, second detector, and two AF stages. The IF stages were tuned via coupling the 100 KC air-core transformers and a regeneration control. The first sets were somewhat critical in adjustment, sometimes requiring an hour, and considerable skill was needed to operate them. However, at this stage, development ceased with the signing of the Armistice in November.

After the War, Armstrong continued his experiments, assisted by Houck. With the 6-volt tubes available in 1922, the "A" battery drain was 10 amperes! Improvements continued during the Twenties, both by Armstrong and a host of others, until the development of the Super Het passed to the large manufacturers associated with RCA. The first commercially feasible super-het was a 6-tube set by RCA in 1926.

First Super-Heterodyne



Armstrong's original super-heterodyne, developed during the closing days of the Kaiser's War.

The set was still in use in 1928 in the office of Chief Signal Corps Officer, U.S.Army, at Washington. Today it is part of the historical collection of that office.

Armstrong was to subsequently lose a suit against other pioneers, chiefly DeForest, as the inventor of regeneration. Despite the powerful backing of RCA, who held an inordinate number of Armstrong patents, the decision by the Supreme Court in 1929 settled the issue, and thereby released a flood of Rube Goldberg circuits.

For more details on Armstrong, himself, refer to other sections of this volume.



Early Radio Buffs

It was inevitable that after Pres. Harding had a radio receiver placed in the White House, that the Washington colony would quickly follow in imitating the President. Below are a couple of notables who followed.

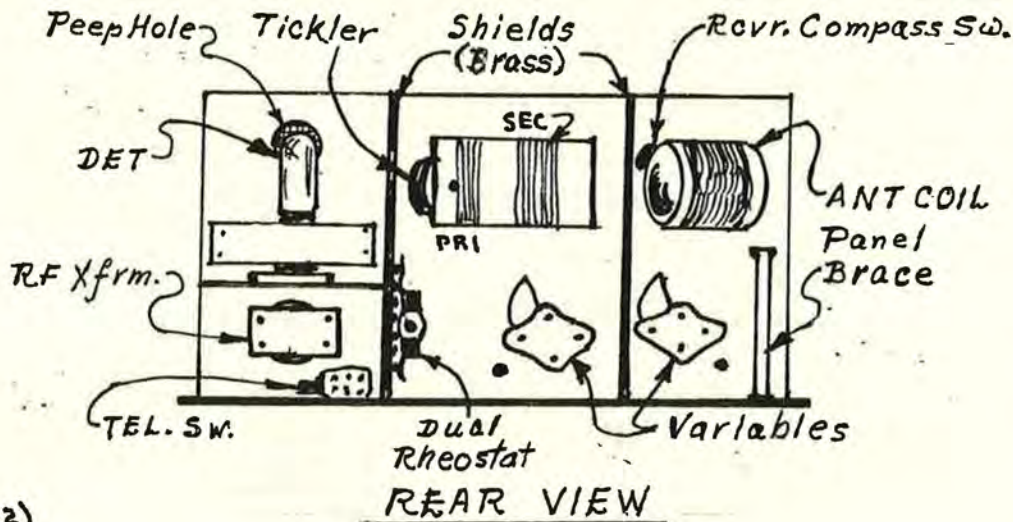
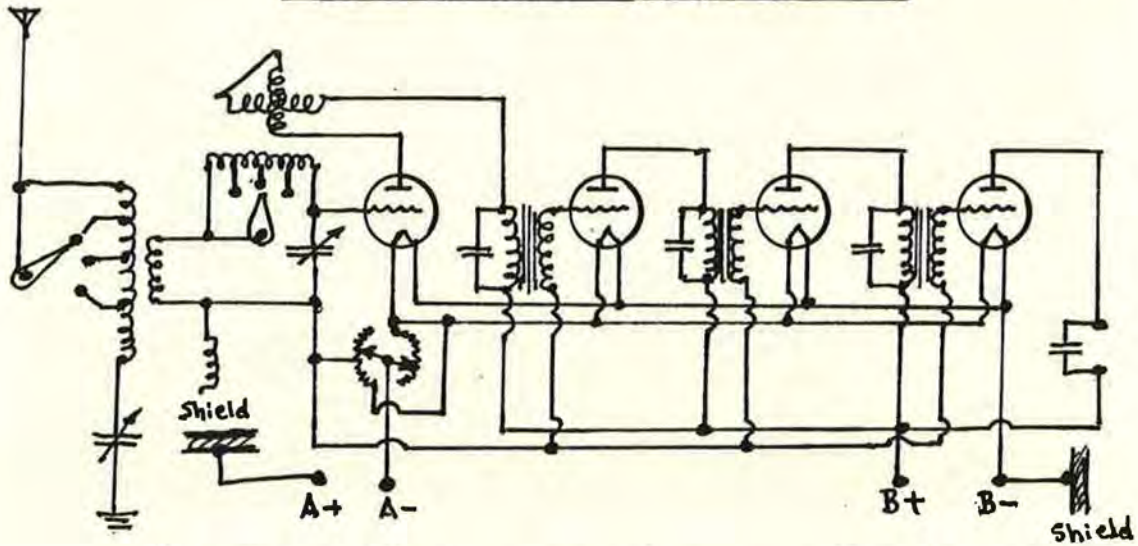
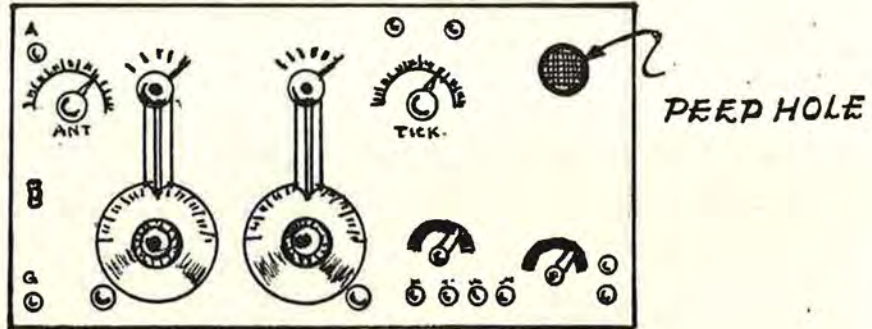


HERBERT C. HOOVER, Secretary of Commerce
(In charge of all radio broadcasting.)



Gen. JOHN J. ("BLACK-JACK") PERSHING

Pres. WARREN HARDING's 25,000 METERS RECEIVER, 1922; first president to install a radio in the White House; Built by the Radio Division, Bureau of Engineering, in the space of two and one-half hours.



(RN 6-22)

REAR VIEW

HUGO GERNSBACK: *A Special Pioneer*



"Most of you are like sheep following blindly some well-meaning but misguided leader. Someone gets up a certain type of outfit, and immediately the majority of radio amateurs follow suit and copy it down to the last screw!"

- 1922

If any one individual could be said to tower over all of his contemporaries in raising the awareness of everyman to the magic and the romance of Radio, that man would have to be Hugo Gernsback. Unhappily, his true & full story has also yet to be written, together with

that of his media empire. Actually, it may be too late.

There is a saying among the Germans that heroes are not at ease in the presence of other heroes; a much older Irish saying is the one that states falcons don't chase butterflys. When the Gernsback empire collapsed in the late Twenties, there was an almost audible sound of relief among media managers of lesser talent and merit. And when in the bitter transfer of power brought former employees to the fore, the case of Arthur Lynch is a classic example, it was a bit surprising to read the vitriolic editorials written by such as Lynch against Gernsback. Little men will always attack big men, Lilliputian-fashion.

* * *

Hugo Gernsback was born in the Grand Duchy of Luxembourg.. of what he later referred to as well-to-do parents. At the age of six he was given an electric house-bell, a roll of lead-encased wire, with an old Leclauche wet-cell battery. But it was the mysterious green of the spark at the platinum contacts that really fascinated him. He mastered the intricacies of house-bells rung by electricity, and began in his home-town installing such bells for neighbours. Later, he included the installation of telephones to his services. All of his electrical goods had to be imported from Germany and France.

Shortly after his 13th birthday, Mother Superior Bodewing, of the Carmelite Convent, asked him to install telephones between the cells of the nuns, so that they might converse while resting. In spite of his tender years, special dispensation from Pope Leo XIII had to be gotten before he could enter the Convent grounds.

Learning of Marconi's experiments, Gernsback set about imitating what Marconi had done. He also decided to install lights illuminated by electricity in his parent's home, using wet-cells as primary energy source. He designed his own batteries, and succeeded in rigging a system that functioned as a trickle-charger during the day, and supplied energy to his lamps after dark. His light-bulbs emitted a luminance on the order of 2 watts.

Later, he attended university at Brussels and in Germany.. all the while reading voraciously everything he could find on emerging sciences of the times. In 1903 he decided to come to America in order to exploit his original battery, as such an opportunity did not exist in the Europe of his day. The battery was a compact 4" x 6" x 4", and was rated at 124 amperes. But it proved too costly to manufacturer, in terms of the state-of-the-art, so with a partner, L.A.Coggeshall, they redesigned the battery and set-up shop for its manufacture and Electro Importing Company was born. The first office was in lower Manhattan on the corner of a street that was to become the Mecca of all radio fans, Cortland Street, the "Radio Row" of the Twenties. The business proved

quite successful - until the Depression of 1907.

An interesting situation developed when Gernsback placed the first-ever advert for radio apparatus in Scientific American, and Youth's Companion. Some readers immediately complained that no radio set could be sold for \$7.50, therefore Gernsback was a charlatan. The editors were so startled by the reaction of readers, who also took to writing letters to the mayor of New York. The up-shot was that Gernsback was visited by a burly Irish policeman (all policemen were Irish in those days) to investigate the claims of both the adverts and the disbelieving readers. The cop was sufficiently bedazzled and after an hour or so with Gernsback, left quite befuddled. The charges faded.

He then decided to issue a catalogue, the cover design of which is reproduced below. If you have copies of Radio Broadcast from the late Twenties, you might like to compare the concepts behind both covers - that is, the winged female figure.

Among his customers at the first radio shop he set-up, an innovation also, were the sons of Teddy Roosevelt and the grandsons of Rockefeller. He next organised the Wireless Association of America, issued the first directory of wireless stations, the names of the operators - chiefly maritime, compiled technical data, created lapel-buttons for members of the Association, and began publishing a myriad of technical and semi-technical booklets.



THE FIRST CATALOGUE

Modern Electrics became Radio News in 1920, and the men he selected as his editors included such subsequently significant figures as Lescarbours, Cisin, Fitch, Laughter, Sleeper, Lynch, Lacault, Jones and Rider. Among the many media innovations created by Gernsback, many of which are still used by all media in one form or another today, was the tipt-in coupon for replying to advertisers, and the reply postal. With the latter, the reader simply filled-in the card for a particular advertiser's product. The so-called give-away contests were also about to sweep the country for the first time, and while other Radio editors were offered free items of hardware for a susbscription, Gernsback was offering cash prizes to his readers for ideas on Radio.

Robt. E. Lacault, my favourite early Radio pioneer, joined Gernsback in 1920 as Senior Editor, thereby causing Lynch to resign in a huff - perhaps the first manifestation of his wayward ego, which was to grow more wayward as the decade progressed. Gernsback referred to Lacault as his "most brilliant editor". Lacault resigned in late 1922 to set-up his own operation, known variously as R.E.L., Phenix Radio, and Radio Engineering Labs, all located in New York.

The multiplicity of "firsts" created by Gernsback are too well known to be repeated here, along his equally famous predictions of the science-dominated future of mankind (which we are currently in the throes of, and not always with Gernsback's initial enthusiasm) and all represent a further justification for extolling a unique man.

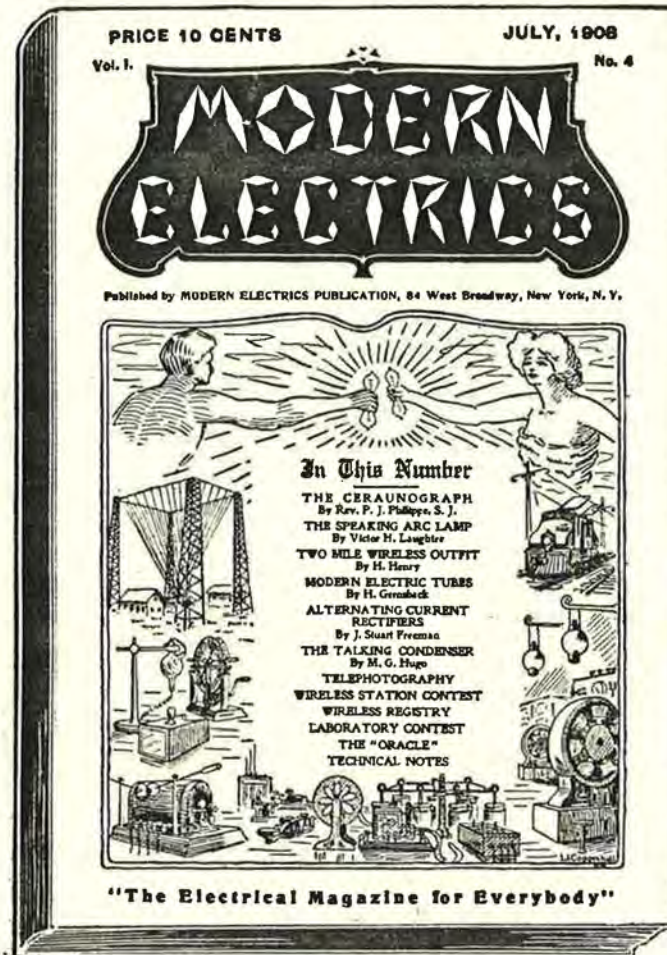
When there was a move in Congress to ban all amateur Radio operators from the air, Gernsback conducted a one-man fight for many months against the bill. He won, and the Radio Bill that was to become the law of the land was copied almost word-for-word from the passionate editorial written by Hugo Gernsback.

* * *

In 1917 Modern Electrics was sold to a combine that put it through several name-changes, eventually becoming Popular Science, but it never became a threat to Scientific American.

He anticipated that the U.S. would be drawn into Wilhelm's War, and set-up the Radio League of America to train radio operators a year before America entered the War. His Wireless League was dropt and the make-up of the Board of the RLA included DeForest, Tesla, Fasenden among others.

A modish lapel-button was again designed, and the students of the League went on to serve in all branches of the Military when as a fact the U.S. did enter The Great War. In return, Gernsback received many letters of commendation from the Government, as well as what were termed Certificates of Appreciation - the forerunner of what we later



THE FIRST MAGAZINE

The precursor of *Popular Science* and *Radio News*, and all the other media which came into being thereafter. It might be said that Gernsback was not above using other names for articles to fill his pages, when he could not get outside material - or he was interested in developing a specific theme in a given issue. It should also be pointed out that the use of stylized covers in a recognizable format, and extensive utilisation of graphic-arts was also a device carried on by all the followers, and were only abandoned in the early Thirties, as editors tried to maintain readership and advertisers.

were to know as "E"-flags awarded D.O.D. contractors during another's Great War.

The League was disbanded after the War, and Maxim came to the fore with his ARRL. Gernsback went back to his publishing empire, bringing out magazines and books that seemed endless. During the 20's for example, 1,500,000 of his Radio booklets were sold world-wide and Radio News became the dominant Radio magazine in the world. The book business was merged with his Experimenters Publishing Company in the late Twenties - the holding company for all of his media.

It might also be mentioned that in 1908 Gernsback wrote a piece of science-fiction that continues to awe all of us: "A Romance of the Year 2660". The main title was "RALPH 124C-41+". It was first published serially in Modern Electrics, and was brought out as a book in 1926. The book retailed for \$2.50, postage paid: today, a copy can bring \$50.

While H.G.Wells and later E.R.Burrough came to be accepted by everyman as the masters of science-fiction, RALPH remains much more remarkable in that mechanical, electrical, chemical devices, and exotic weapons and communication equipment were all foretold; on the one hand; and rendered in a personally relateable way for readers of the day. You will even find echoes of RALPH in Orwell's 1984.

The story itself was conventional enough, being the story of "the world's greatest scientist" (a designation I have frequently thought Gernsback would have liked to have been applied to himself) falling in love with a beautiful stranger who appears on his "space-probe" screen from outer space. He finds he has a rival, an evil scientist. He subsequently bests his rival for the womans affection, and there follows wonderful running battles in space with all manner, and imaginative exotic weapons. Placed in the context of its time, RALPH was a remarkable acheivement on all counts.

Oddly enough, while ours has become the age of immediate "put-downs", of instant and mindless rejection of another's ideas and feelings and enthusiasms, RALPH was accepted in its time as easily as everyman accepted the 'Summer Fiction' (light fiction to be read when one was sojourning at one's Summer cottage) which appeared every year on schedule. Popular authors of such fiction were McGrath, Vance, and such stalwarts as Howell, Hopkins, Grey, and Phillips.

Modern Electrics
Radio News
Short-Wave Craft
500 Radio Wrinkles
Radio Educator (5 Vol.)
Houdini's Exposés
Popular Magic

Popular Science
Radio-Craft
Radio Amateurs' Handibooks
Amazing Stories
How To Make It
Short-Wave Manual
Mystery Magazine

The preceding listing is of titles published by Gernsback and his media empire, while a listing of his technical and semi-technical books and booklets would appear to be endless. Not all publications dealt with Radio, which would suggest the far-ranging interests of Gernsback. He seems to have been a rare combination of businessman and scientist.

The collapse of his empire occurred in the Spring of 1929, months before the Stock Market crash. It was taken over by a trio from Chicago - Harrington, MacKinnon, Fly. They set-up shop as Tech Publications, and employed that gadfly of the Radio fraternity, one Arthur H. Lynch, as Editorial Director - a title he relished.

An aside on Lynch might not be amiss here:

In 1922 he was a Gernsback editor, staying only because he expected to be appointed Senior Editor. When Gernsback hired Robert E. Lacault as Senior Editor, Lynch resigned with bad grace. When he plied his trade, which seems to have been an adroit use of personality combined with shrewdness, he became an editor for Radio Broadcast, tried his hand at manufacturing voltage equalisers similar to Amperite, contributing modifications of suddenly popular circuits to various media, always as an "improvement", and always wearing atrocious bow-ties. The later re-organisation of Radio News in late 1929, he was appointed editor by the receivers, and his first editorial was a full-page paean of sophomoric vitrol aimed at Gernsback.

As editor of the new Radio News, Lynch retained Cockaday, who had joined Gernsback from Popular Radio, Gordon Taylor, and Dorff. Lynch did show excellent judgement in retaining J.F.Odenbach, who came to Gernsback at the very beginning, and who was responsible for those excellent schematics of the early Radio News. Frank Jones had been the Technical Editor for a long time, and was immediately sacked by Lynch, who fancied himself as a technical editor.

He resigned (again) after two years, to front for an English company, British Rheostat. This was in 1931, and when he resigned from that slot, he moved to Radio Broadcast, briefly. Freud was wrong when he insisted that sex is man's strongest drive - it isn't, as it's personal vanity! - and Lynch's vanity was too transparent not to merit the attention of what we may call Radio-Sociologists of later years.

* * *

Actually, there has always been a lot of confusion around the demise of Gernsback's empire, and I have only been able to come by bits and pieces. By July of 1929 Hugo and Sydney Gernsback, always his treasurer, were back in business with editorial offices on Park Place, the newspaper-row of New York at the time, and with a printing plant a



Unlike Jules Verne, Gernsback built all of his scientific marvels upon the Victorian concept of romance, although the mantel clock jars a bit.

far cry from newspaper-row - Mt. Morris, Illinois. The new company, called Techni-Craft Publishing Corporation, began operations with a magazine called Radio-Craft. In his maiden editorial for Radio-Craft Gernsback wrote in part:

"Another new Radio Publication? - in 1929? at this late date? Aren't there enough radio publications now, most of which, as the trade well knows, are NOT successful?.....It would be simple to get out publications in a different field, but I'm backing my faith in Radio with a new and better Radio publication - when practically ALL other present Radio publications are in the decline, admittedly.This is what you WON'T get: a re-hash of stuff so sadly prevalent in present-day radio magazines; picture stories of how Roxy killed a fly on a microphone; pictures of the latest radio mast in Timbukto; a picture gallery of radio announcers flanked by goggle-eyed sopranos; radio mathematics that are swell food for Einstein, but give you indigestion; curves, graphs, charts for everything imaginable, and a total loss to you....."

It is possible to detect a certain sense of bitterness in the above, which would be expected; which suggests that the story behind the collapse of his empire could have a few interesting facets. If you are at all familiar with Radio media of the Twenties, you will have no difficulty in recognizing his various veiled references pertaining to Radio World, Radio Broadcast, Citizens' Call Book, as well as his own original Radio News.

There had been, briefly, Popular Book Publishers, a transitional effort by Gernsback prior to Techni-Craft; which in turn was superceded by Rad-Craft Publications which gave way to Gernsback Publications in 1932. Again, a myriad of little pocket-books were sponsored by Gernsback, treating of separate aspects of Radio. Rider had tried the same scheme a few years earlier, before he conceived of an overwhelming contribution in his Service Manuals, which today we all refer to simply as Riders.

Gernsback, himself, continued to play around with latest tubes, accessories, advances - that is, he tried applying them to an earlier time. His "Tetradyne" and "Megadyne" are good examples. I've constructed both circuits and both work quite well. But like all men of exception who have lived beyond their hour of glory, Gernsback or his latter-day endeavours never seemed to regain his original flair.

The exceptional man should never live beyond his period of contemporary glory, for then his mortality gets in the way....





LEE DeFOREST and HUGO GENRSBACK on the occasion of the opening of WRNY, the radio station of *Radio News*. The date was the 12th of June, 1925.

A FEW EARLY GENRSBACK PERSONNEL & WHAT THEY BECAME...

Robt. E. Lacault	Radio Designer & Manufacturer
Alfred P. Morgan	Radio Manufacturer
Victor H. Laughter	"Supreme" Test Equip., Pres.
Isidor Goldberg	Pilot Radio Co., Pres.
Clyde Fitch	"Tropodyne" Designer
John F. Rider	Rider's Manuals
A.P. Peek	Mgng. Ed., Scientific American
Samuel Cohen	General Instrument, Pres.
Robt. Hertzberg	Mgng. Ed., Modern Mechanics
Austin C. Lescarborra	Many Media Manager; Author
H.G. Cisin	Radio Designer
Milton B. Sleeper	Radio Designer, Manufacturer
Pierre Boucheron	Gen. Mgr., Remington Arms Co.
Harry W. Secor	Mgng. Ed., SWC
E. T. Jones	RCA Engineer
Leon L. Adelman	Sales Mgr., Cornell-Dubilier

BRUCE BLIVEN ON RADIO, 1927 ~

It is extremely doubtful that anyone of the current generation, claiming specious relationship with American Letters, would sit up and take notice at mention of Bruce Bliven. Yet his editorship of *The New Republic*, which came into being in the Twenties, affected every other socio-political medium of the decade, and his influence can be spotted in many present-day political publications. As was Edmund "Bunny" Wilson, he was a force to be reckoned with, if you were seriously concerned with American Letters. I met him some time after his political views had become a bit radical, and when he asked me to contribute to his magazine, I declined, as I was and am non-political anent all things. However, the degree of Bliven's perceptivity may be gotten from the following comments written by him in 1927.

"In advocating that we should put an end to the ceaseless flow of oral garbage into our homes which the radio at present provides, I am not suggesting that we should slavishly imitate the experience of any other country. I happen to believe, after a good deal of first-hand experience, that radio broadcasting in England is much better than in the U.S. If we set to work to really reform radio broadcasting, being Americans, we should be able to produce something better than exists anywhere else in the world.

"I remember the days, 15 years ago, when radio broadcasting was just making its appearance. At that time, we were all tremendously excited about its marvellous possibilities. So far as America is concerned those possibilities have not been fulfilled. What radio does in the realm of serious music is a disgrace. What it does in the field of education is pitiful. What it does in the field of news is nothing. The newspaper publishers have effectively stopt intelligent reportage.

"There are those who will immediately parade forth this-or-that "good" program, most of them lasting the conventional 15 minutes. That is like saying of a beautiful woman that she appeared in a white dress, only part of which was dirty... Radio as presently constituted has driven all listeners away, save morons - if you don't believe this, ask your friends. Turning on the radio today is the equivalent of letting off a stench-bomb in the family living-room!"

As I have stated, and iterated, the advent of Radio must be viewed in the light of sociological phenomena, and Bliven's jaundiced eye simply tended to emphasise this, I feel. The not-so-gentled irony, of course, is that his comments of 1927 are more apt now, than in 1927, and decidedly applicable to the idiot-tube of TV.

AESTHETIQUE



The Spirit of Radio

It quickly became the vogue in the early days of Radio media to have all manner of awards and prizes offered for new circuits, new applications, new DX records, new ideas, telegraphic speed, even verse. The awards were usually silver loving-cups, medals, certificates of merit, or a piece of equipment.

The rather lovely marble statuette shown above was designed and crafted by one Leo Bayman, N.Y.C., in 1924, and was on display at the Metropolitan Museum of Art that year. It created quite a stir, even among people with no interest in Radio, *per se*.

The concept of a forward-flinging female figure representing the spirit of something-or-other has its roots in ancient times. Gernsback used such a figure on the cover of his original magazine, shown elsewhere in these pages. You might want to compare that cover with the covers of *Radio Broadcast* of the latter Twenties, showing the "spirit" was still alive.

The concept of the forward-flinging female figure was also used by early motor-car manufacturers, as radiator ornaments and as logotypes. Rolls-Royce had early on standardised on a dual winged figure in silver.

GRAPHIC-ART IN EARLY MAGAZINES

One aspect of early Radio media that is never mentioned or acknowledged as the minor art-form it frequently was, is the draftsmanship of some early schematics published in those media; along with an adroit application of what was then called Commercial Art, both to cover design and the inside pages. Many were superb examples of forms of graphic-art that seem to have passed.

Modern schematics offer a variety of graphic symbols, with most of them drawn with pre-punched templates and 2H lead, as modern "draftsmen" have never served an apprenticeship on the board, and if you took away their pre-punched templates, probably wouldn't be able to draw a straight line. Having spent many years on the board, I have an off-hand contempt for these modern poseurs. While modern schematics obviously convey technical intelligence, none have that subtle or overt aesthetic appeal of earlier schematics of Radio circuitry.

The early employment of pictorial hook-up diagrams was the key to arousing the interest of everyman in Radio, as everyone looks at pictures. Also, of course, neither technical knowledge nor an high degree of skill was required to follow such pictorial diagrams. Oddly enough, something very few people seem to know - it was E.H.Scott who conceived of the idea for pictorial diagrams. The idea was quickly adopted by all media of the period. The time was 1922.

That serious editorial thought was given to the presentation of schematics may be seen in the offerings which were actually a miniature blue-print. Editors also employed reverse-printing, double-ringed tube socket designations, two-colour wiring, etc. Print media which immediately come to mind are Popular Radio and Radio World.

The sad thing for me has always been that the draftsman or the commercial artist employed by early magazines were never identified or given a credit-line on the masthead, save Harry J. Marx; as a superb draftsman he insisted that his elaborate signature appear on all of his reproduced drawings. He was very "big" on Roberts. Covers, on the other hand, were always credited to the commercial artist, on the cover and on the masthead. Being not unfamiliar with both commercial art and engineering drafting, I've always appreciated the talent and conceptuality of many a drawing in our early media.

Logotypes (called "logos" today as a further indication of our growing semantical carelessness) were early on stylised by all of the early Radio magazines, as well as house-organs, newsletters, bulletins, etc. Some prominent commercial artists were employed both for magazines and manufacturing firms. Trade-marks, "bugs", a distinctive graphic symbol were all designed by commercial artists. Probably the most distinctive of the early "bugs" was "Dr. Mu", designed by Weise, and used for a long time by Grebe.

Later on came a stylisation of cover designs were in vogue with those of Radio Broadcast, Radio Engineering, and Popular Radio a good example. The latter magazine's covers represented what was probably the most adroit blending of commercial art and technical illustration - although that latter term did not come into being until after another German generated war. A selection of logotypes, trade-mark and "bug" will be found in a few pages.

Radio News retained its distinctive logotype longer than a decade, longer than any other, but after Gernsback lost control, covers became banal and unimaginative, much like the so-called electronic magazines of today. Radio Engineering and Radio Broadcast attempted to ride out the early years of the Great Depression by slimming on their contents and changing their staid but recognizable covers. They failed, which could be a lesson for the perceptive among us.

The point of all this, really, is that when you objectively consider the fitness of early Radio media graphics - that is, when cover design, graphic art inside and editorial copy all complemented each other - and then consider the garish mish-mash of magazine cover designs today, all turning of grotesque colour-photography, projecting images that bear no relationship with the contents or readership, you may better understand what I've been writing about, and realise a new appreciation of how neatly integrated were all aspects of vintage Radio media.

In terms of authentic commercial art, the San Francisco magazine Radio (originally Pacific Radio, begun in 1922) seems to all who note such things as having had the edge, as we say. The covers of the very early Radio News also displayed excellent examples, and were the first to employ genuine humour, a bit of drollery, which was imagery with which everyman could immediately relate. And it could be mentioned, I suppose, that genuine humour is utterly, totally absent from our modern media, whether the commercial magazines allegedly the voice of the electronics mystique, ham radio, or even the little regional publications of the various vintage Radio groups across the U.S.

Humour was found in early Radio - jokes, cartoons, verses, and even short stories built around humour. This being the age of the instant put-down, the immediate snide comment, the thrusting forward

of an obviously closed mind, genuine humour and honest laughter would probably create mass hysteria, were it encountered today.

Such magazines as *On The Air*, *Radio Journal*, *Radio Retailing*, *All-Wave Radio*, *Radio Service*, even *Radio Design*, were all, more or less, conventional in cover design, and few were truly visually as distinctive as those already mentioned. Neely did experiment with the new printing technique known as rotogravure, after Hearst had used it in his newspapers; Neely also employed sepia-toned illustrations that gave a certain distinctiveness to his pages, until he changed *Rites*, and *Radio In The Home* became *Radio Home*.

The art of photographic reproduction was still evolving in the Twenties and by modern standards, much early photographic reproductions would be deemed rather poor, even though they did serve the primary function of a photograph - that is, the image conveyed intelligence to the unknown viewer, either technical or personal. Quite a few editors and writers considered themselves adept at Photography, a few names would include Lynch, Hayden, Winner, Bernard. But they were simply amateurs of the point-and-shoot mentality. But they did try.

By the late Thirties photographic reproduction techniques, including early and crude reproduction of colour, had evolved so that the superb draftsmanship and perceptive commercial art that enhanced much of our early media were no longer economically viable; we're all the poorer for it. While ours is an obsessively visually-oriented and mindless generation, due chiefly to the idiot tube of TV, there still remains something fine and re-assuring to be found in reviewing roles played by early draftsmen and commercial artists.

For despite the precision of modern photographic reproduction of photographic illustrations, there is an ancestral instinct in everyman that causes him to immediately respond to the human aspects of any universal aesthetic experience; and drawing, at any level, has always been integral with everyman's aesthetic perceptivity, proof of which may even be traced back to the cave drawings found in Switzerland a couple of generations ago. There is a personal relateability I have long observed, for example, even in a free-hand sketch, that can never be evoked, regardless of how adroitly executed, by a photograph.

One thing all early Radio media shared in common was their oft-stated editorial policy. All carried a high moral tone, and oddly enough, were always more-or-less always adhered to in their copy, the letters to their editors clearly demonstrate this, I feel. It might also be mentioned that all early Radio media carried adverts unrelated to Radio, for such things as beauty secrets, trusses, razor-strops and how to win at Bridge. Probably the most startling were those ads which offered a free home-trial of a case of Kentucky whiskey...! The free-trial gimmick is still with us, of course, and currently covers everything from a free trip to Hawaii to a million dollars.

Quite a few set-manufacturers offered a 10 to 30-day free "home-trial". Ozarka, Bell, Packard, Mid-West, Pontiac come to mind. Free home-trials were also offered dealers when a new marque was put on the market. Apparently, personal honour and integrity were still nationally valid attributes of the American character in those days. Naturally, there were those who took advantage of such trust, and an occasional item would appear in our media telling of dealers who had been conned out of radio sets, usually in some small town. The *modus operandi* was always the same - strangers would come into a rural, or provincial town, order sets from every dealer in town offering free home-trials, and then would abscond with the sets.

The boot-legging of name-brand tubes was also a diversion for a few opportunists. Fly-by-night groups would set-up a tube manufacturing plant in some out of the way place (while the scheme required light and portable equipment, which was really readily available, it wasn't too much of a task to actually make a tube), print a few hundred labels copied from such as RCA, Ce-Co, Cunningham, produce the tubes and saturate the immediate market with cut-rate fees. Then just as quickly, they would disappear.

There were legitimate small manufacturers of tubes, such as Speed, Songbird, Magnatron, Sonotron, who suffered most from the boot-legging of tubes, as after awhile everyman began to associate a cheap tube with a small manufacturer. And, of course, there were the unscrupulous dealer who aided and abetted the boot-leggers. Today, we would refer to their activity as the "grey market", as trafficking in portable electronic gear and Japanese cameras illegally is called.

What does all this have to do with graphic-art in commercial art in early Radio media? - simply an aside pointing out a colary between between everyman's response to graphics, whether offered on a magazine cover or on a boot-legged tube carton.

Graphics also came into the game early in the form of QSL cards, a designation we still use. Some were rather elaborate, even ornate in their employment of graphic-art. But originally a QSL card was sent by a listener to a radio station, not to acknowledge having heard a distant ham operator. They were so popular that many printshops paid their rental by sale of such cards. One of the more perceptive printers was one in Mendota, Illinois, d.b.a. Radio Printers. They offered "Thank You" post-cards at \$1.20 for 100 cards, postage paid. The purpose was to fill-in the blanks on the card and post the card to your favourite radio station, with a request for a favourite musical number to be played or sung. A facsimile of such a card will be found over-leaf. Your name and address were printed *gratis*.

Another employment for graphic artists was the designing of lapel-buttons, usually depicting a company's "bug" or slogan. The

lapel-button was extremely popular with all special-interest groups, as fraternalism was very "big" in the Twenties, when identification, always important to small egos, was fashionable. It was the hey-day of fraternal organisations, such as Odd Fellows, Masons, Woodmen of the World, Knights of Columbus, Ancient Order of Hibernians, even of the K.K.K. Among Radio interests making use of lapel-buttons: Ozarka and Maxim (ARRL), Rider, Supreme and Kurz-Katsch.

* * *

<p><i>Thank-You</i> for the pleasing program heard</p> <p>between.....p.m. andp.m. on192..</p> <p>We have aset.</p> <p>Remarks: _____</p> <p>_____</p> <p>We would appreciate hearing.....</p>
--

The cards were standard post-card size and the postage required was 1¢ within the continental United States. Some of the more elaborate "Thank You" cards, costing a bit more than \$1.20 per 100, also carried pale pink embossed bas-relief of Washington - the usual way the U.S.Post-Office printed its post-cards.

* * *

To give what credit I can to those commercial artists of the period, whose talents lured many an eye, I list a few names.

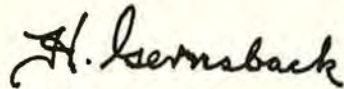
<u>ARTIST</u>	<u>MAGAZINE</u>
Frank B. Masters	Popular Radio
A.G.Hagstrom	Popular Radio
W.H.Andrews	Radio (Originally Pacific Radio)
Brian Kelly	Radio
"Barrister"	Radio
Howard Brown	Radio News
Fred. J. Edgars	Radio Broadcast
Henry Hopkins Dunn	Radio Broadcast

T. Pignone
Charles Hargens
E.K.Bergey
H. Westen Taylor
Ralph Fallen Coleman
W.V.Chambers
Sarkis Beulan
W.H.Weise

Radio-Craft
Radio In The Home
Radio In The Home
Radio In The Home
Radio In The Home
Radio In The Home
Radio Covers - 1927/1928
Designer of Grebe's Dr. Mu

* * *

And in passing.....



Facsimile of Hugo Gernsback Signature
(1926)

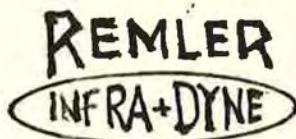
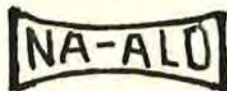


Cumingham



ERLA

BRACH



GREBE RADIO

~~CROSLEY~~



Readrite



YAXLEY



GREBE

Doctor Hfu



POPULAR
RADIO



HAMMARLUND



NATIONAL

KARAS

AEROVOX

DAVEN



RIOLE
RADIO

FORMICA



PILOT

TOBE



REL

SLEEPER

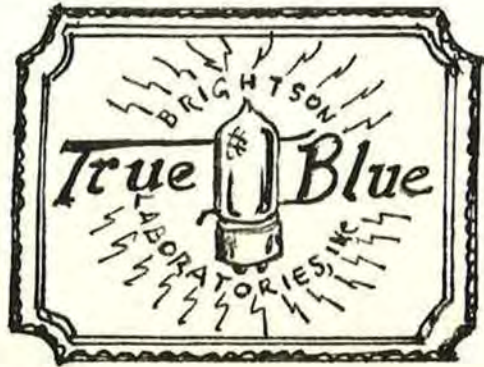


ULTRADIXRE





AMERICAN
BOSCH



CUTLER-HAMMER



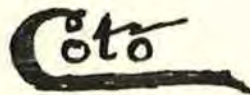
WALBERT



ALLEN-BRADLEY



TYRMAN



STURRUP-PLIMPTON



RAULAND



F.A.D.A.



LACAULT



OZARKA



WESTINGHOUSE



KURTZ-
KASCH



G.E.



TUSKA



ELECTRO IMPORT
(Gernsback)



CLAROSTAT



FERRANTI

TRANS-AM

Waltys



GENERAL RADIO



EXCELLO





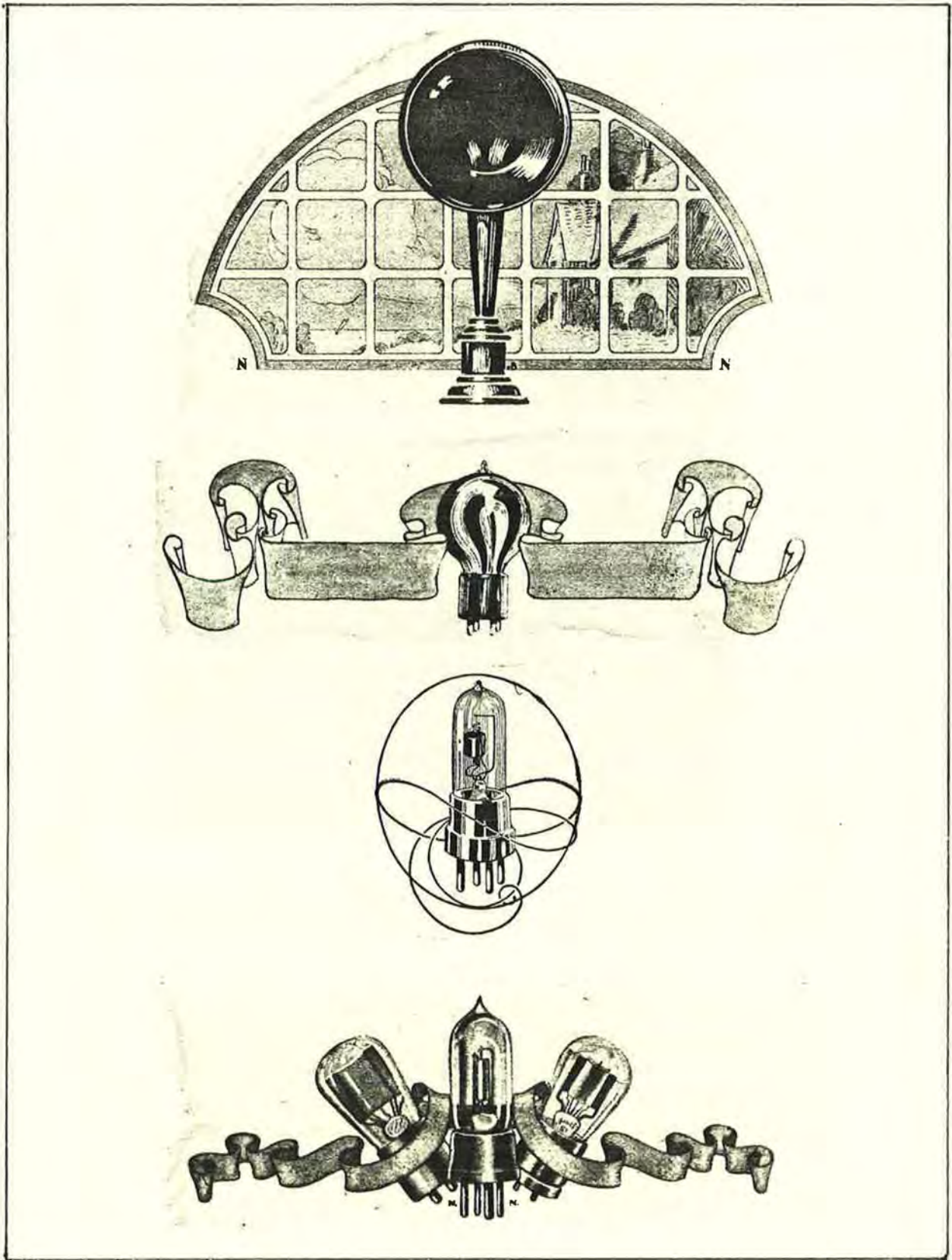
THE
HUMAN SIDE OF
EARLY RADIO

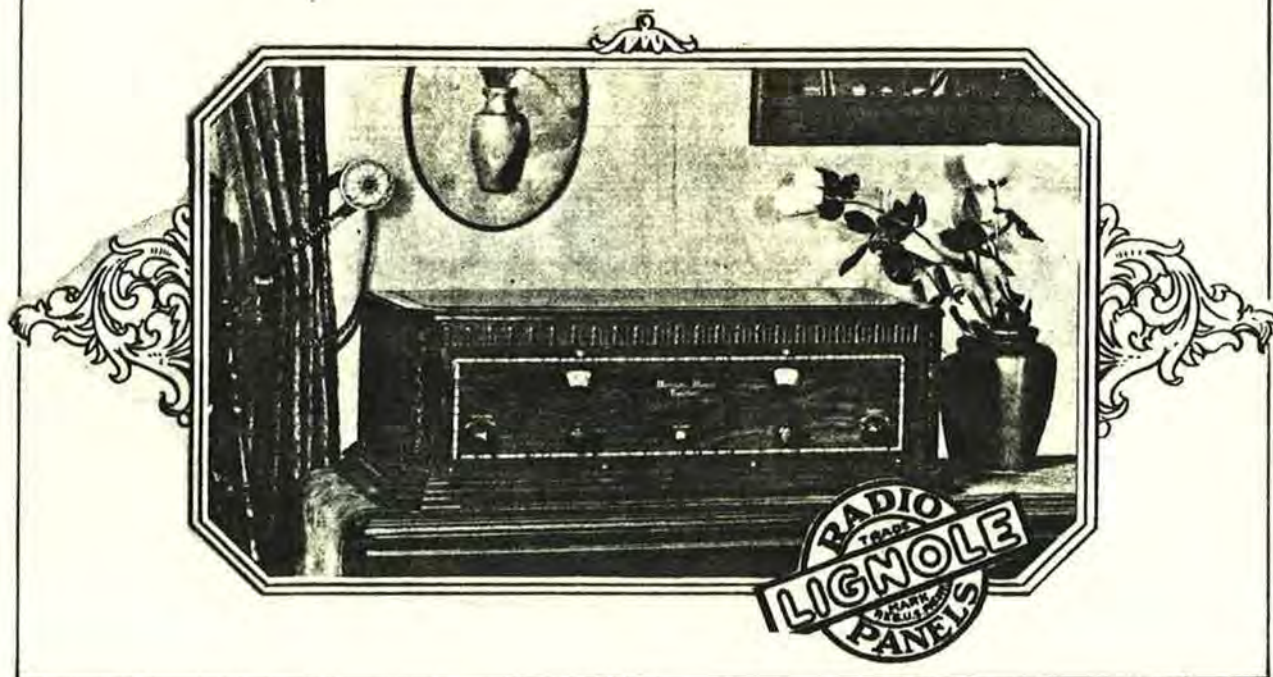
(E.K. Bergey, Commercial Artist)

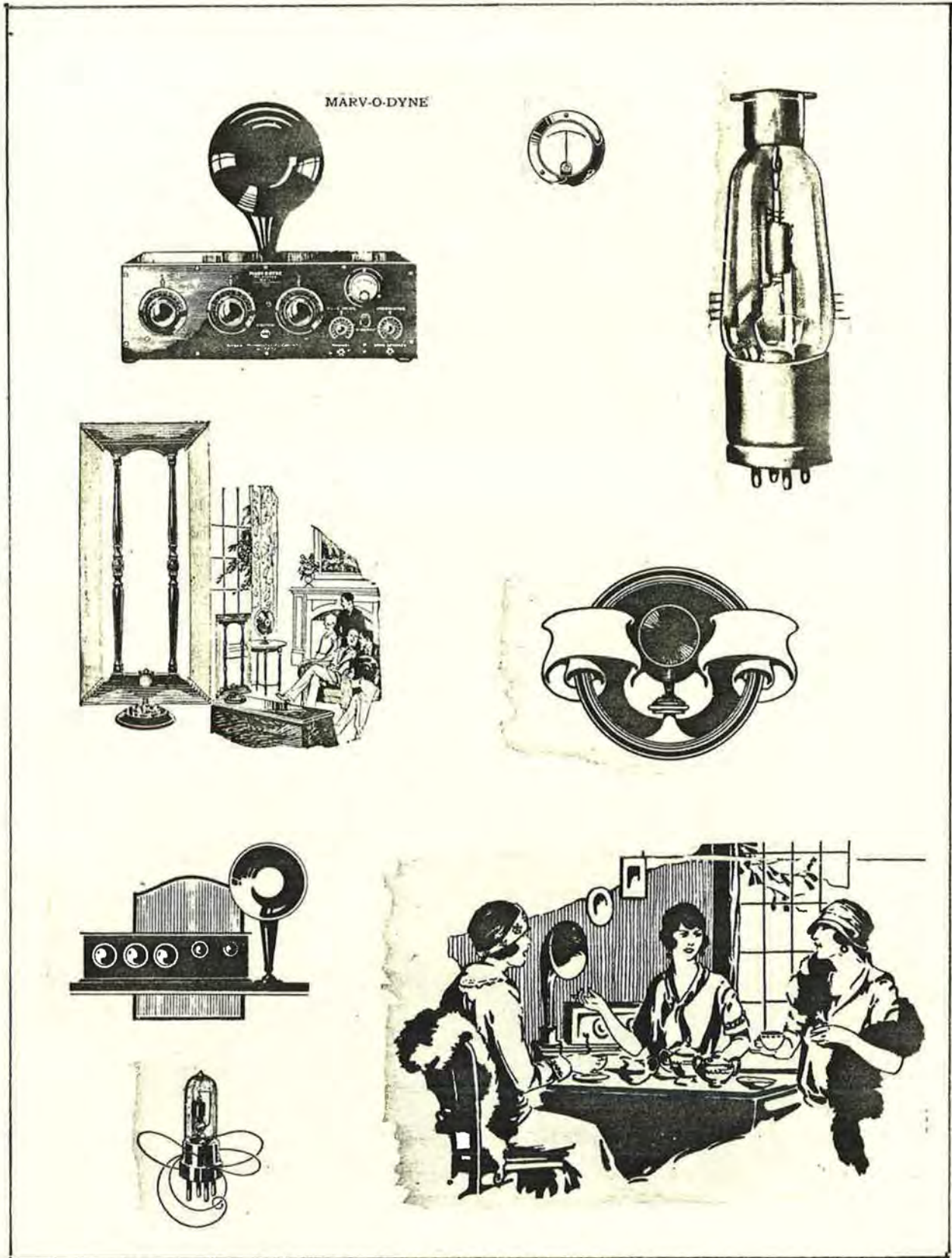


The Eveready Hour

Having mentioned the adroit blending of commercial and graphic art in early Radio media, here are a few examples worth noting to support that contention. What they all shared in common was an ability to visually establish an immediate personal relatedness with the unknown viewer. You might want to compare the response you have to the following with your response to those glib, slick, and screaming coloured photographs cluttering--up current special-interest media. I doubt that you'll find that quietly *human* aspect in any modern media. ●







SELECTED VINTAGE RADIO ADVERT SLOGANS & PUFFERISMS

<i>Boss Of The Air!</i>	Silver-Marshall
<i>The "B" Without the Buzz!</i>	Mayolian
<i>All In One!</i>	Thordarson
<i>You're There With A Crosley!</i>	Crosley
<i>The Highest Class Radio In the World</i>	Leutz
<i>"Armoured!"</i>	Bosch
<i>Just As If You Were There!</i>	Borkman
<i>The Tube Of Longer Life!</i>	Ce-Co
<i>The Nearly Perfect Transformer!</i>	Ferranti
<i>It Gets the Last Mile!</i>	Airgap
<i>Enjoy the Most Powerful Set!</i>	Miraco
<i>We Make Any Set Work Great!</i>	Rider
<i>The Best Dial For Finer Tuning!</i>	Fynur
<i>A Far Better Inductance!</i>	Aero
<i>Most Sensitive Set Ever Designed!</i>	Harkness
<i>Sensation of the Nation!</i>	Polk
<i>Built To Last A Lifetime!</i>	Streamline
<i>Radio's Greatest Values!</i>	Radio Specialty
<i>The World's Largest!</i>	Braun
<i>The Most Powerful NEW Miraco!</i>	Mid-West
<i>The Best Set Yet Designed!</i>	B-C-L
<i>None Better!</i>	Aero
<i>Reap Big Dividends!</i>	Thordarson
<i>Distance To Stagger the Imagination!</i>	H.F.L.
<i>Far In The Lead!</i>	Halldorson
<i>Parts With A Purpose!</i>	Walbert
<i>The Stradivarious of Radio!</i>	Mercury, 1924
<i>The Stradivarious of Radio!</i>	Scott, 1930
<i>The Finest Radio Tube In the World!</i>	Brightson

PUFFERISMS

The Ultimate In Radio Reception
The Masterpiece of Masterpieces!
A Revelation In Radio Reproduction
The World's Greatest!
The First of It's Kind
New & Improved
The Closest Thing To Perfection
Nothing Finer
An Absolute Necessity!
Supreme In Performance
Chosen By Experts!
Absolute Fidelity
An Amazing Special Offer
Big - Powerful - NEW!

Proved!
One-Dial Control!
It Has A Soul For Music
Fit For A King
You Must Be Satisfied or Your Money Back!
Amazing New Business In Your Home!
More Popular Than Ever Before
Save 20% to 50% On the Finest Radio!

NON-RADIO ADVERTS THAT APPEARED IN EARLY RADIO MEDIA

<i>Are you old at 40? - send for free book.</i>	Electro-Therman
<i>Pep, nerve, vigor gone? - write today.</i>	Lionel Strongfort
<i>Make money at home.</i>	Am. Show-Card School
<i>By merit alone!</i>	Chiropractice Universal
<i>Why good dancers are popular.</i>	Authur Murray
<i>Sex facts made plain.</i>	American Publishing
<i>Surplus Army tents.</i>	Atlantic Stores
<i>Free Scout knife - sell home products.</i>	Martin Chemical
<i>Beautify your nose!</i>	M. Trilety
<i>12 Months to pay.</i>	Mead Cycle Co.
<i>Are you self-conscious?</i>	M. Veritas
<i>Learn clock repair.</i>	American Time Clock
<i>Make your face show manhood (face creme)</i>	Stag Labs
<i>New kerosene burns vapours!</i>	Simplex Utilities
<i>Learn how to box.</i>	Jimmy DeForest Boxing Sch.
<i>Valet "Autostrop" razor free!</i>	A.S.Safety Razor

There were many more, of course - all indicative of the fact that Radio was becoming accepted as another social phenomenon and that those being attracted to Radio were everyman; thus he was susceptible to all the merchantile blandishments which had accompanied the advent of the telephone, the telegraph, the motor-car, electric light bulb, the aeroplane. So it is not to be wondered the M.A.M (Madison Avenue Mob) became firmly entrenched into the American way of life, as Radio gave them an extraordinary new tool for conning everyman.

While there were a few so-called advertising agencies before the Kaiser's War, their national influence was marginal. They came into their own under Coolidge, emerging as a fixed feature of what he had called "the business of America". They have remained secure in their entrenchment ever since, to our detriment, with the idiot tube a constant reminder of a power and an influence over which we have no control. So our early Radio media, essentially a product of its time, were caught-up in the mindless servitude.

* * *
 * *

RADIO "LITERATURE"

Actually, some early Radio magazines could be considered as general media, with Radio Home probably being the best example, wherein one would find articles on Radio, along with articles on food preparation, household hints, biographic sketches of old maids who kept parakeets, the fraud of "Betty Crocker", etc., etc.

But the general aspect alluded to turned on the lack of any definitely special-interest editorial policy, much like that currently being offered us, sans levity, sans humour, sans authority. Too many so called writers and editors of our special-interest media today, whether claiming to address Photography, Electronics, Computers, etc., waste a lot of space trying to be "cute" with a language they've never mastered and their fear of being found out is abnormal.

On the other hand, it should be noted that media management in early Radio media - writers, editors, illustrators - were highly educated men, and were not instantly defensive when making use of educational posits-e.g., employment of Greek and Latin terms. It might also be said that their audience was generally more educated than the products produced on our college campuses today, who know nothing of Greek or Latin, and who become violently irritated when their lack of awareness of *kultur und Zeitgeist* is made obvious by even casual references.

Much of the personal relateability of early Radio media was the consistent publication of short fiction, verse, cartoons - all with a Radio theme, naturally. Among the more prolific short-story contributors were Earle Ennis, Paul Oard, and Sewell Peaselee White, whose main character was one "Sparks McAllister", running through many pieces.

All such stories and even verse were written in the vernacular, the slang of the day - much of which would never get into today's advertiser-intimidated media - as well as then then-emerging parlance, as well as the evolving technical vocabulary, of Radio. But I note that there did seem to be one mandatory requirement, there had to be *humour!*

One of Ennis' pieces was a Christmas tribute, 1927, written for Radio, and abstracted below:

"Know thou, O Tara, that this thing called Radio is the child of silence and slow time! Radio is a song sent winging by the sun-god as he strums his gleaming copper harp with unseen fingers. Radio is the lightning-bolt trapt within a cage of glass...Radio is a presence!...O, thou Tara, hast thou not heard? Radio is a whisper through the

night, a sigh out of nothingness!...Radio, this god of shadows, which yet has no shadow...Radio is knowledge, energy, wisdom, power..."

Prolix, of course, and with rather sophomoric allusions, an occasional neat turn of phrase. But the point to be reflected upon is a *spirit and an attitude* conjured by the phenomenon of Radio. Even in our non-technical literature of the period, references to Radio were predicated upon a sense of wonder and of awe.

Just as our early media managers, like our early engineers, sought to at least allude to a wedding of Science and Art, albeit a bit unsuccessfully, they were not above pressing into service a traditional literary form or two, such as verse and essay. Oddly enough, there were many more women contributing light satirical verse than men, so it may appear that Women's Lib is really old hat. Again, despite imperfections of metre and imagery, such verses reflected a *spirit and an attitude!*

THE FLIGHT OF YE BOILED OWL:

*Oh, this is the thing that's been worrying me,
Since the day when my fingers first pounded the key;
What shoveth the signal o'er mountain and sea
And tickleth the Ham so he shouteth with glee
When he findeth his call raiseth WNP?*

*Is it the Aerial,
Or is it the Set?*

*I have pounded my key on CW and Spark,
I've had cards as far east as Asbury Park;
In other directions I've made quite a fair mark
If more Hams were perchance to embark
And would QSL card, I'd be less in the dark:*

*But - is it the Aerial,
Or is it the Set?*

*So the question of old that we frequently stirred
To dope out the answer, has been transferred -
The "Hook-Up" is now the all-powerful word,
(In my dreams I've often attempted to murder
the guy who invented them). Well, be it so!*

*In Wireless there's one thing I never shall know -
Was it the Aerial,
Or was it the Set?*

The original contained 15 stanzas: I've selected the first two and the last one, as I feel they make the point mentioned above. In the following example please note the young woman's rather odd name.

A CHRISTMAS RADIOGRAM

Katherine D.M.Simons, Jr.

I'm listin', laddie, listin' thru' the weary miles between
Your northland and your southland, where Xmas day is green;

And the love-song of your spark-gap in the old code reaches me
Thru' the receiver's thrpbbing to your calling oil-break key.

Across the wireless roadway to my answring aerial's reach,
The trackless wave-train brings in the wonder of your speech;

And the hot-wire meter's fingers mark th' high voltage strength
Of the current crying to me thru' the Audion's grid length.

But as the charged clouds flutter with staic's low recoil,
When my fingers seek to find you in the restless tuning coil

.....
Seeking just to bring your face from the loneliness of space.

* * *

CASABIANCA BROUGHT UP TO DATE:

The boy stood on the burning wreck, he didn't want to go,
He'd caught a new one on his set - its letters he would know.
His father called; he would not flee; the water reached his ears,
And as he sank he cried with glee: "By heck! - I had Algiers!"

* * *

EPITAPH FOR A DX HOUND

Here lies interred Josephus Byrd,
Who passed, from joy, away,
The station call that he last heard
Was 7NY, Bombay!

* * *

RADIO!

Grace Isobel Colbron, 1923

Flinging free from the guardian wires into the blue above, the
human voice goes soaring forth, the simply spoken tone; bridging
the breadth of the sea's expanse, the cloud-wrapt mountain's
heights; over the fertile prairies broad, the forest's fragrant
night; calling across from land to land greetings of freindship
go, with the intimate touch of the spoken word, its warmth and
human glow. Before the Word in the distance shrinks as the sense
of Brotherhood grows. Before the Wonder of the Word the Past grows
pale, but the Future is with promise bright, for Radio - a new light.

RADIO CARTOON HUMOUR

-- AND ALL MEDICAL AUTHORITIES
RECOMMEND DR. FLOOY'S FORMULA
FOR AILMENTS OF THE HEART,
LUNGS, STOMACH, LIVER,
KIDNEYS, INTESTINES,
PANCREAS, GALL BLADDER,
THYROID GLAND, OESOPHAGUS,
AND VERMIFORM APPENDIX !



Contrary to the current fashion among most comic-strip artists, and especially so-called cartoonists, a fundamental fact about cartoons can not be said to simply caricature in usually derogatory manner, a person or a group or a cause. It has always been the instant human relateability of a cartoon that was basis for statements. Most people respond to good clean humour, but are rarely amused by malice or blatant bias.

The majority of cartoons in our early Radio media turned almost exclusively on the pun. To dismiss as certain small minds do punning, is a public admission of ignorance of a language's viability. Intelligent punning can become an artform

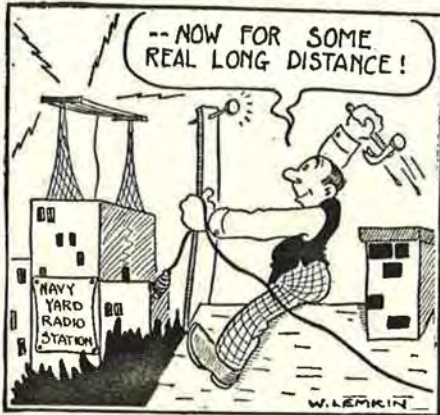
of language all by itself. It's greatest glory was achieved at the close of Victoria's reign. And our early Radio cartoons were predicated upon that traditional basis - that is, the new jargon of Radio was applied to ordinary human situations, and as such were personally relateable.

Like all cartooning, the humour was topical. The cut at right, for example, a genuine complaint among many listeners, is a good case in point. Kipling's "Road To Mandalay" was actually sung interminably. There was a reason - baritones were able to sound more "real" than tenors, due to the imperfection of early AF amplifying systems.





A RADIOPTIMIST

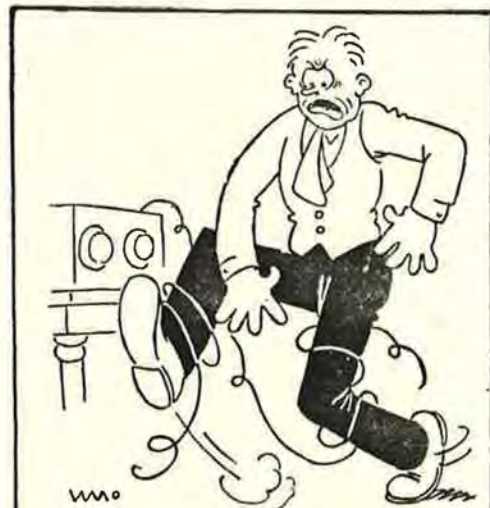


"Why do you use such a low aerial?"
 "So I can get the low-wave stations better."

The Rebus



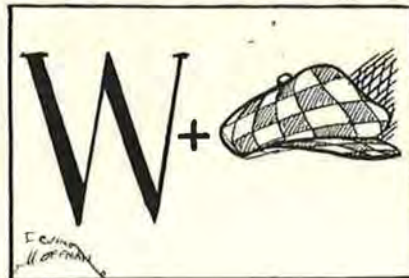
WHAT station does this represent?



"Now I know why they quit calling it wireless and call it Radio!"



What Station Is This?



VERBAL HUMOUR APPEARING IN EARLY RADIO MEDIA

HE: "Hey! - why did you turn out the lights?"

SHE: "The radio instructions said to burn the lamps as low as I can."

TEACHER: "What was Columbus trying to find in 1492?"

PUPIL: "A short-wave hook-up to get India!"

OLD LADY: " I'm returning this horn speaker. I've tried every possible way but I can't get any station at all."

SALESMAN: "What make of set are you using?"

OLD LADY: "Set? Oh, I don't have a set."

HAM: "Man, yo gal's so dumb she thinks a plate supply is a dish factory."

SAM: "Go on - that spade yo'all promenades with ain't got sense enough to squeal when she's tickled."

(NOTE: So-called dialect jokes and short stories were quite common in all media, both general and special-interest, during the Twenties and Thirties - Negro, Yiddish, Irish, gangsters, etc. Even the *Saturday Evening Post* published coloured dialectical stories, and by famous writers. Such would impossible today in American media, although so-called stories in dialects of ethnic minorities are still published abroad, and even read over the B.B.C.)

BILL: "Had your radio long?"

BELL: "I've had it so long I remember when we used candles instead of bulbs."

"My wife gave me a two-tube set for my brithday."

"Regenerative?"

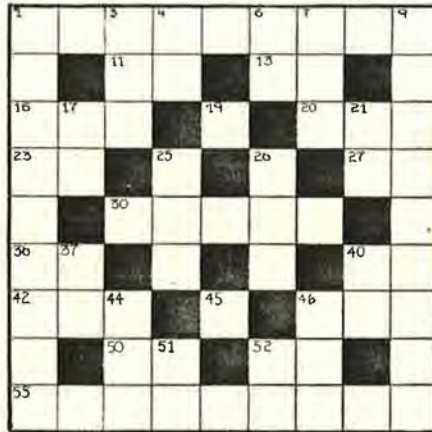
"No. Shaving and toothpaste."

"The average man's life today is now divided between two tubes - radio and inner!" - 1925.

TO BE AN ANNOUNCER: one must be articulate, polite, erudite, keen-witted, sanguine, resourceful, musical, virtuous, wise, calm, pleasant, chivalrous, dynamic, pragmatic, and *frightfully* clever. Aside from that, he must be an ordinary human being.

- POPULAR RADIO, 11-'26

A RADIO CROSS-WORD PUZZLE
(1925)



HORIZONTAL

VERTICAL

1. Radio stations ___ programs.
11. Abbreviation for radio frequency.
13. Ham abbrev. for "old man".
16. Don't ___ aerials to metal poles.
19. Abbrev. for aerial.
20. Pacific Wireless League.
23. Ex-president of the U.S.
25. Dielectric.
26. Watts.
27. "The" in French.
30. Greatest hobby in the world.
36. Radio Waves.
42. Interrupted continuous waves.
45. Ground.
46. "Increase power".
50. International Wireless.
52. Filament switch.
55. A wonderful circuit.

1. To feed plates & FIL you need ___
3. Galena is obtained from lead ___
4. Abbrev. for audio frequency.
6. Abbrev. for company.
7. Term used in measuring current.
9. Synonym for earphones.
17. Internal resistance.
21. Wavelength.
25. During ___ DX is not easy.
26. Call letters for McKeesport.
37. Wound coils.
40. 1st & last letters of power.
44. Call letters for Philadelphia.
46. "Change wavelength to..."
51. Western Electric.
52. Filament switch.

Modern Radio media are too self-conscious to indulge in whimsy, but our early media managers had no fears of being found out, that is they knew who they were, and had qualified for the positions following their names. And because they were sure of themselves, a personal relateability was easy to establish by means of cartoons, verses, and even cross-word puzzles in which they frequently poked fun, particularly in the jokes they published. They above should test your wits.

Radio News' Radio Music Contest



As a further example of how and why Radio was a sociological phenomenon, the above reproductions of popular sheet-music are offered.

In September of 1923 Gernsback offered a prize of \$300 for a popular song extolling the virtues of Radio. In April of 1924, an award was given the above selections. Naturally, it is doubtful that anyone is now alive who remembers or ever heard those tunes, but as a slick publicity gimmick, it was clever. Such efforts to impress a thought on the mind of everyman are still very much with us, whether the pitch is that of cigarettes, whiskey, drugs, or sex.

Gernsback was the first to consistently offer cash prizes to his readers for new ideas, circuitry, applications of old principles. I also found out that he was the first to capitalise on the then current craze for puzzles, and cross-word puzzles in particular. His most notable and above all others was his "Radio Puzzle", usually displayed on the cover of Radio News. It was a rather fiendish display of an assortment of various radio parts, unconnected, and the reader was to design something that was original and would function.

MARKETPLACE MACHINATIONS

In the following few pages will be found random samplings of business machinations which occurred during the rise of Radio. They're listed by the year in which they occurred, and in most instances, the implications of the action are obvious. While some of the listed machinations had little to do with radio engineering, they, never the less they affected the ultimate face and future of Radio.

You will also find an epitomé of the myriad of patent suits that flooded court dockets of the Twenties, mostly brought against an octopus known as RCA. With hind-sight, considering the rationale some judges used to decide cases makes one woder about our legal system. I have also found, in my research, that even then Federal judges were as prone to being corrupted as everyman. The shinanigans of RCA in trying to con DeForest's company out of DeForest's patents would be a good case in point, detailed farther along.

The ultimate formation of the RMA (Radio Manufacturers Association) probably did more to stabilise the industry than all the legal decisions handed down during the hey-day of patent infringements.

Some of the mergers listed seem to be rather curious; some were obviously for mere survival. After the collapse of Wall Street in 1929, very few patent litigation was engaged in, probably because no-one had the money to pursue such litigation; plus the fact that by the beginning of 1930, more than 11,000 petitions for bankruptcy testified that the Radio industry was also on the verge of collapsing. And while there were other machinations than those listed, I have limited myself to the major ones from 1925 to 1930, simply because those years cover the period of greatest activity and advances.

* * *

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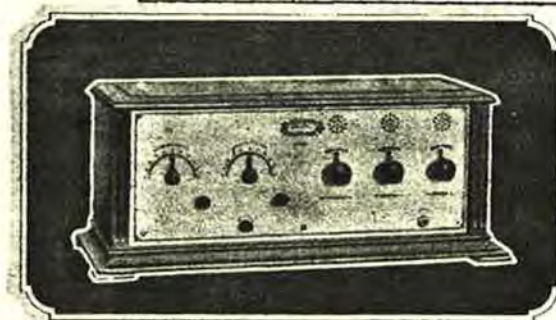
RCA (Radio Corporation of America) was formed as a patent pool for G.E., Westinghouse, United Fruit Company, AT&T, and Wireless Specialty Apparatus, thus laying the foundation for all of the patent litigations of the next decade. The actual date for the formation of RCA was October, 1919. A forgotten aspect of the formation of RCA is that RCA could not have come into being were it not for the confiscation of German Patents when the U.S. entered the Kaiser's War, and licensing them to the companies listed.

* * *

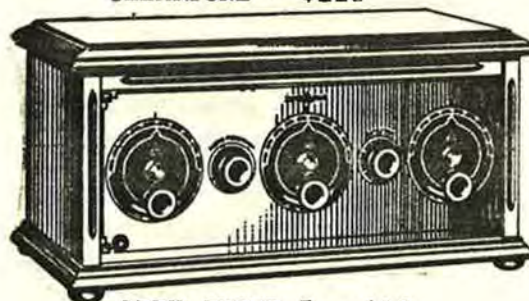
REPRESENTATIVE TRFs of 1924



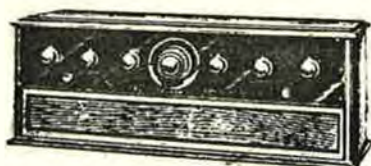
BESTONE V-60
5 Tube - \$165



GLEARTONE - \$120



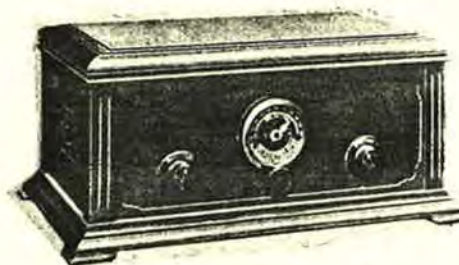
APEX SUPER 5 - \$95



THERMIODYNE TF-6 - \$140



MARVODYNE



MAGNAVOX TR-5 - \$125



A-C DAYTON X-L-5 - \$115

Pre-1925

E.M.SARGENT, in Oakland on the 1st of October, 1922, announced the opening of an exclusive radio supply house, Radio Service Co., Inc. This was before he joined Rayment and commenced the long line of "Infradyne" circuits, and the Remler association.

E.T.CUNNINGHAM was General Manager of Remler Manufacturing Co. during 1921. He had commenced trading as the Audiotron Manufacturing Co. in 1915 in S.F. His greatest success was, of course, after he got into the tube manufacturing business under an RCA license agreement.

V.H.LAUGHTER started in Memphis, manufacturing a Type 2 Tube socket in 1921, that retailed for 75¢. Later, the radio game was to know him as the head of Supreme Instruments, some of the best to come along.

CUTTING & WASHINGTON began designing radio equipment in 1915, supplying original designs to U.S. and foreign navies, the merchant marine, and foreign broadcast stations. In 1922 they entered into the "Radio-In-The-Home" movement with their Model 11A portable receiver. It was originally called "Town & Country" portable, and was a 2-tube single circuit set, retailing for \$97.50. The set also incorporated a switch for double-circuit reception.

OLA TUBES were originally manufactured exclusively by Cunningham and RCA under mutual agreements, and sold for \$9.00.

J. WALTER THOMPSON is known today as a high-powered ad-agency on Madison Avenue, with intercontinental offices. In 1922 one Stanley B. Jones, who was employed by Thompson as an "account executive", began contributing articles to Gernsback's newly named *Radio News*. His articles had a broadly humorous turn, had little to do with radio, *per se*, and the burden of their refrain was manufacturers could sell more radio outfits by employing the services of a "good" ad-agency, preferably J. Walter Thompson.

JOHN A. REINARTZ set-up shop in 1921 as the Reinartz Radio Company, to manufacture and sell SW. sets, using his subsequently famous "Reinartz Coil" - which, incidentally, was pirated by many a "schlok-shop" operator on Cortland Street in NYC. The company folded in 1922, and Reinartz licensed his coil.

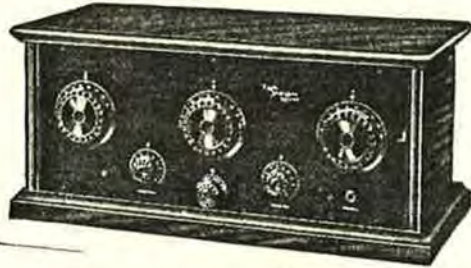
REPRESENTATIVE RADIOS of 1924/1925



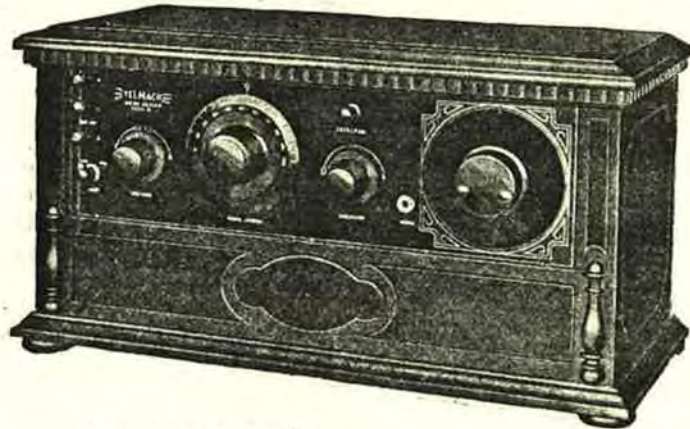
GAROD V
Neutrodyne - \$195



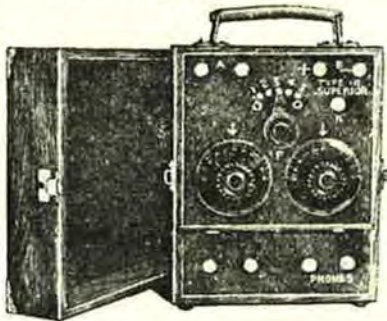
ACME 4-TUBE REFLEX PORTABLE



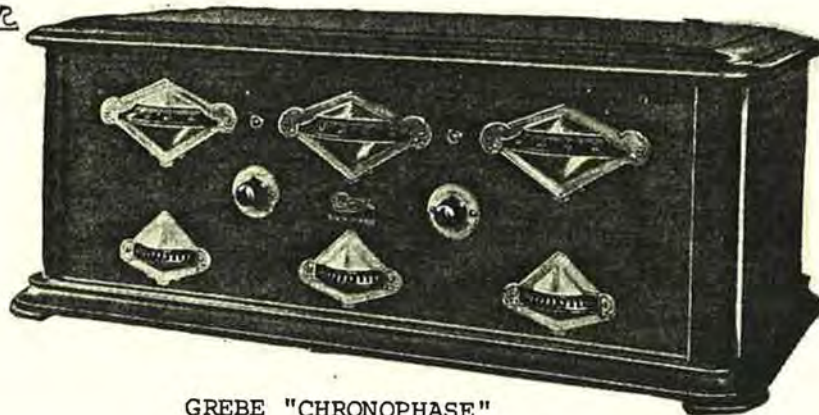
EAGLE MODEL E
Neutrodyne - \$75



TELMACO APEX



SUPERIOR
\$ 35



GREBE "CHRONOPHASE"

1925

VICTOR TALKING MACHINE enters radio field with a loudspeaker, later known as the RCA 100.

19,459 radio companies were incorporated last year, of which 16,895 were located in N.Y.C.

\$5-million worth of radio business was transacted at the Second Annual L.A. Radio Exposition, staged under the auspices of the American Radio Exposition Co., N.Y.C.

FRESHMAN brings out "Masterpiece" after moving to larger quarters in N.Y.C. Freshman began in business with a single item - the "Antella" (illustrated elsewhere in these volumes), which was a mains antenna device.

HARRY A. HILL invents and markets the "Filter Speaker", forerunner to the air-horn concept (illustrated elsewhere in these volumes).

CLEVELAND PRESS, newspaper, opens a free radio school for the general public, with movies and lectures on how sets were assembled and operated.

"ANTENNAPHONE" introduced - a 6" coil encased in cotton and placed underneath the base of the (then) upright telephones, and connected to the ANT post of the set. It was not very successful.

GOLDEN-LEUTZ corporation formed from Golden, Leutz, and Experimenters Information Services.

Dr. A.H.TAYLOR, head of the Navy's Bellevue Labs, stated that DX transmission below 10 meters would never be possible.

JOHN McCORMACK, Irish tenor, was 50 years old in 1925, and was appearing on various radio shows in the U.S., and while he received handsome fees, went on record as favouring a tax on every radio set to be used to pay the performers.

COLIN B. KENNEDY was elected president of the Voice of St.Louis, while retaining control of his company. VSL was operated by the Greek Skouras Brothers - one of the brothers, Spyros, later became president of 20th-Century-Fox.

RADIO TOKYO went on the air for the first time with a one hour broadcast in English and Japanese, beamed to the West Coast of the U.S. We know it today as "Radio Japan, the Overseas Broadcasting Service of NHK."

WESTINGHOUSE announces a technological advance in the isolation of pure metallic ductile thorium. It will be produced in filamentary form to replace the minute admixture of tungsten now in use among tube manufacturers.

WLS, Sears-Roebuck's Chicago station, ups power to 1.5KW.

JAPAN lifts its ban on foreign radio imports. It is anticipated that there will be a rapid influx of crystal sets and low-priced receivers. The average weekly wage in Japan is between \$3 and \$10, so only the wealthy will be able to afford the better sets.

HEARST joins J. Schenck in a scheme to erect a chain of broadcast stations across the country; opposed by the Commerce Department - at that time controlling allocation of all wavelengths. This scheme was later realised as ABC, NBC, CBS.

WARE RADIO shuts down their total operation, due to cancellation by Music Master contract to purchase Ware's output of 7-tube sets. Paul Ware said Music Master had received 20,000 sets; M-M said it had received only 4,900. The WARE sets were being "dumped" in department stores, chiefly in N.Y.C.

RADIO EXPOSITIONS (trade-fairs) staged during the final quarter of this year numbered 13. They were staged in such cities as Boston, San Francisco, Cincinnati, Chicago, N.Y.C., Pittsburgh, St. Louis, and Milwaukee. This meant an average of four fairs per month.

AMERICAN BROADCAST CLUB formed by Radio World. No dues, no obligation, no newsletter - simply "to unite broadcast listeners and radio fans in general, in a common bond to promote their welfare as the occasion requires". (Nothing really ever came of this pitch.)

WAHG, Richmond, N.Y., was utilised by society matrons to make a pitch for contributions to the \$4.5-million building fund for a proposed Business Women's home. Among the "400" names were such as Vanderbilt, Morgan, Carlton, Nash, Pollock, Bingham, Samaroff, McCamas, Beecher, Silberta, Kelety. Marie Dressler, actress, was also among the group. These names mean little to the current generation, but at that time these women dominated and ruled High Society in the U.S.

MUSIC MASTER contracted with Sleeper Radio Company for 50% of Sleeper's production to be the "Music Mastersets". This occurred after Music Master cancelled their contract with Ware: see above.

HAYNES-GRIFFEN capitalisation raised to \$150,000.

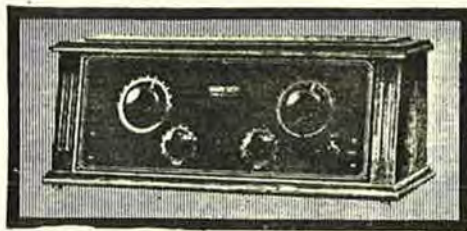
REPRESENTATIVE RADIOS of 1925/1926



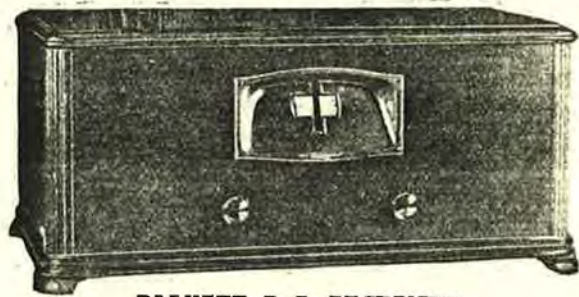
COUNTERPHASE SIX - \$165



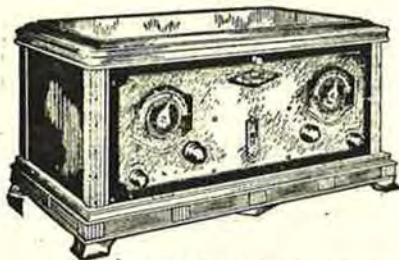
MARWOOD TRF - \$47



WORKRITE Model 16



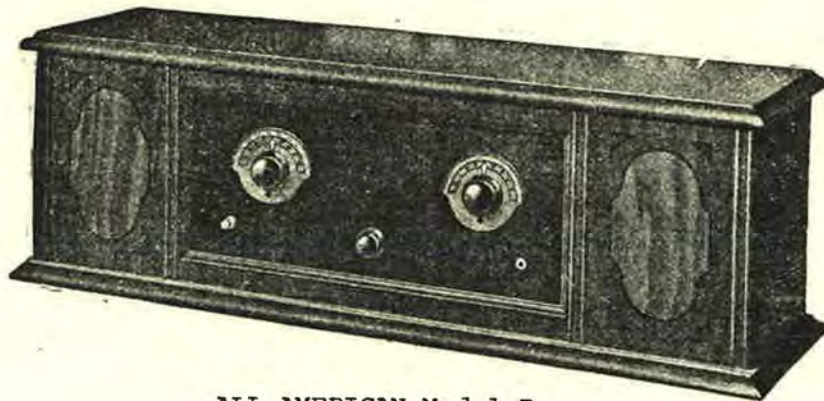
BALKITE P-P RECEIVER



SLEEPER CONSOLETTTE - \$175



THOROLA Model 57 - \$60



ALL-AMERICAN Model R

1926

A. GREBE loses suit against Hazeltine over Neutralisation Patent.

HAZELTINE brings suit for the third time against Atwater Kent for infringement of his Neutralisation patent.

DeFOREST sues RCA over the *Phonofilm* (sound on film) patent. The RCA version was known as *Pallophotophone*. RCA eventually lost the suit.

"RADIO ENGINEERING" magazine set-up with Sleeper, Davis, and Atwood as editors; later taken over by Bryan Davis. Meanwhile, Doubleday-Page were under-writing *Radio Broadcast*.

"PRINTER'S INK", the "bible" of print-media advertising, released its figures for advert lineage for the year, showing that 20,621 lines had appeared in *Radio Broadcast*, followed by *Radio News* with 18,930, *Popular Radio* with 14,872, *Radio* with 12,770, and *Radio Age* having the lowest with 4,395. All were respectable figures.

EXCELLO RADIO PRODUCTS set-up, to produce console cabinets for radios.

GENERAL TUBE COMPANY introduces the "Good Dollar Tube".

SLEEPER RADIO CO. capital increased to \$20-million, with preferred stock selling at \$100 per share.

ADAMS MORGAN, makers of the *Paragon* radios, was sold to the Paragon Electric Co, a new organisation, to produce and distribute a shielded set employing double-impedance for AF, called the *Paragon Shield Six*.

HILER's Double-Impedance AF units patented, and Ford Mica & Radio Co. was the first to manufacture the units. Units were subsequently used by several manufacturers, including Harkness and Muter.

LIGNOLE radio panels introduced to the public, probably the most beautiful panels ever to grace a radio set. They were made of rotary-cut walnut and ribbon mahogany impregnated with insulating compounds. Its dielectric constant was 4.

MICHAEL BLAN, The Radio Man, was fluent in seven foreign languages, and was the first dealer to import foreign radio media in German, French, Russian, and Japanese.

Maj. ED. BOWES "Family Hour" went on the air for the first time; later to become known as the "Amateur Hour", broadcast from the Capital Theatre in New York City.

(1926 Continued)

RCA sets-up the National Broadcasting Corporation, with plans to have a "Blue" and a "Red" network that would span the country. Adverts announcing the move carried, in heavy italic type, assurances that RCA "...has no desire to create a monopoly, but is interested only in providing the best in service to the listener." In light of the history of RCA, that statement should have appeared in The New Yorker's *How's That, Again?* department.

EDISON claimed that Radio was a fad, that radio-music was distorted, and that the novelty would soon wear off. There was an immediate and massive outcry from set manufacturers and media managers, resulting in another of those synthetic controversies so popular at the time; and like all such controversies, was never resolved, any-more than H.G.Well's remarks describing Radio as a toy.

U.S.ELECTRIC CORP. was formed from the combining of operations of Apex, Workrite, Sentinel, Slagle, and Indiana Electric.

THERMIODYNE RADIO organised in New York City, while the MOHAWK Battery Company was formed in Schenectady.

ESTEY PIANO CO. were manufacturers of cabinets for WARE Type W radios. When Music-Master cancelled its contract with Ware, Estey went in for some frantic advertising, offering all Ware cabinets on hand at their cost.

QUEEN MARIA of Roumania visted the U.S., and arrangements had been made by RCA for her to speak over RCA's network stations both here and in Canada. There was a misunderstanding of time, and she arrived at the studio 30 minutes early. On being informed of this, she promptly left. Later, Sarnoff spoke over the air, apologizing to his listeners and somewhere along the way managed to used the expression we used to know as *lese majesty*.

KELLOGG SWITCHBOARD made national headlines, but not because of their radios, when their \$2-million dollar plant at Chicago was broken into by a gang of 16 thieves, who subdued five employees, set-off blasts of dynamite at pre-selected safes, and escaped with loot valued at \$100,000. The thieves were not interested in finding money, but only in the platinum and industrial diamonds used by Kellogg in the manufacture of their switchboard and radio contacts.

(1926 Continued)

NATIONAL BUREAU OF STANDARDS determined that solenoid-type and basket-weave coils offered the lowest RF resistance, using #24 DCC wire. A somewhat smaller but negligible resistance was determined when using #32-38 Litz wire. Colloidon was found to be the best binder, and that spacing of turns in an ordinary solenoid coil (single layer) did not lower the resistance appreciably.

J. D. CHISHOLM of England demonstrated his "secret wireless" transmitter, which worked on a combination of wavelengths. A special receiving set was required, keyed to the transmitter. Today, we call such a device a telephone "scrambler".

ZANESVILLE, OHIO, passed an ordinance that fined anyone using a vibratory battery charger during the hours of 6 p.m. and 5 a.m. the sum of \$10. The purpose was to keep the "ether" free from local interference during normal broadcast reception.

MAJ. ARMSTRONG's feedback patent was declared invalid, voided, and cancelled in Philadelphia during November by a Federal court. It was decreed that Lee DeForest was the first and original inventor. This ruling automatically threw out of court no less than 14 pending suits, brought by Westinghouse (holders of Armstrong's patents) against other manufacturers.

FORTY Radio Dealers' Trade Associations were in operation across the country in this year, with most of them based in Chicago and the three "C" towns of Ohio. NYC held third place. Probably the oddest association of radio dealers was that set-up in Pittsburgh as The Radio Council of the Chamber of Commerce, under-pinned with Doubleday money.

Shakespeare Used Some Radio Lingo

Shakespeare, though he wrote three centuries before radio, said:

"Ah, stand by."—Anthony and Cleopatra.

"Take up some other station."—Coriolanus.

"His lecture will be done ere you have tuned."—Taming of the Shrew.

"And my dial goes not true."—All's Well That Ends Well.

"Tis no matter how it be in tune, so it makes noise enough."—As You Like It.

"And those musicians that shall play to you hang in the air a thousand leagues from hence."—Henry IV.

REPRESENTATIVE RADIOS OF 1926/1927



BOSWORTH SIX - \$155



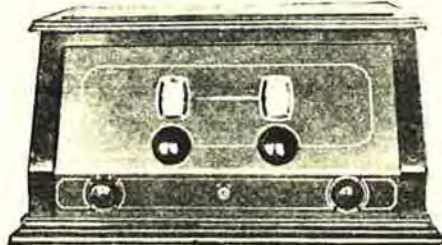
B-T COUNTERPHASE 8
\$180



THOROLA TUDOR, MODEL 57
\$185



GRIMES INVERSE DUPLEX
\$115



A.F. HENNINGER
6-Tube TRF w/
R-C AF Amp.
\$125



NORDEN-HAUCK SUPER TEN
\$195



AMRAD SUPER SIX
\$165

NOTES

1927

MACKAY formed from Federal Telephone, DeForest, and Kolster.

"RED NETWORK" set-up by RCA in the South, as an NBC affiliation.

NEW YORK CENTRAL railroad equips its trains with radios.

KENNETH HARKNESS CORP. set-up in NYC to sell his radios and, of all things, automobiles. The corporation was capitalized at \$5,000... and there were those firms that came into being with a capitalisation of less than \$200.

GREBE, DAY-FAN, FEDERAL accept RCA's Clause 9 contracts.

RFI SPEAKERS became the joint-venture of Radio Foundation of NYC, and Spartan Electric of New Jersey.

ARBORPHONE combines with Wells-Garnder to produce radio sets. The name "Arborphone" was the marque of Precision Products Company. The merged companies would be known as Consolidated Radio Corporation, a Delaware corporation, as was the fashion.

ARBORPHONE was the first to use the initial Loftin-White AF circuitry. During the Summer, they sent a "Radio Coach" on tour around the country to dramatise their receivers. The use of trucks and busses to advertise radios, complete with a blaring loud-speaker mounted on top and a Gramophone inside, was quite common in the Twenties. A snapshot of the "Radio Coach" will be found elsewhere herein.

ERLA 3000-S1A tube was demonstrated in Rochester for 3,000 consecutive hours of burning. The tube was never commercially feasible.

CLAROSTAT introduced their new "Power Clarostat", with a rating of 40W at 85 mA; while BENJAMIN introduced the 5-prong socket.

VICTOR TALKING MACHINE goes public by offering \$40,250,000 worth of stock, with common stock selling at \$115 a share. Eldridge R. Johnson, president of Victor, owned \$28,175,000 worth of stock.

BRAXTON-KING introduces shielded IF plug-in transformers at \$18 each.

SAMSON introduces their Model 132 "B"-eliminator with ratings of 40W, 200 VDC, at 80 mA; Model 162 at 500 VDC and 75W; A-B-C eliminator 232 at 200 VDC and 80 mA. Samson did not stay with eliminators for long, but began concentrating on power amplifier systems, especially for Public Address systems, with the PAM unit their most popular.

(1927 Continued)

EXPORT STATISTICAL DATA: The U.S. had 29.4% of the world radio market, with Germany at 25.6%, Great Britain 20.5%, France 13.7%. In 1926 total export value was \$8,794,453; the first half of 1927 showed an export value of \$3,705,861.

RCA's Clause 9 challenged again by seven independent tube manufacturers, which held that all licensees had to equip their sets with RCA tubes.

SOCIALIST PARTY applied for a broadcast license to be called WDEBS, in honour of Eugene V. Debs. Among the trustees for the station were Upton Sinclair, Norman Thomas, Elizabeth Gilman.

WTFF, the station of the K.K.K., owned by the Independent Publishing Co. of Washington, D.C., granted a license by the FRC (now the FCC). The double-"F" in the call was taken from the K.K.K.'s tabloid title "Fellowship Forum".

NBC requested permission from the FRC to construct a still at Belmore, Long Island, claiming they needed great quantities of distilled water to cool the giant tubes, as ordinary water left deposits on the plates. As this was the era of Prohibition, such permission was mandatory. (They did not get the permission.)

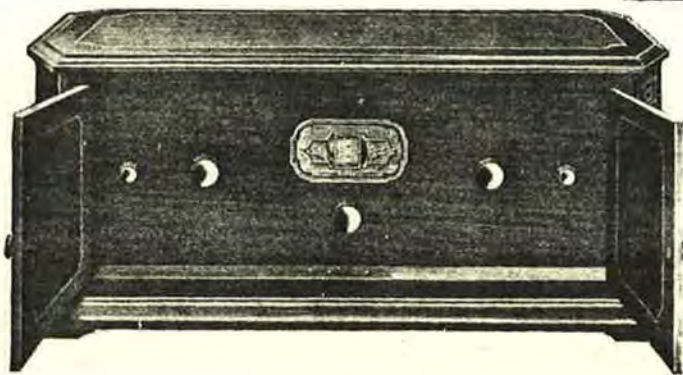
H.G.WELLS called radio "...an inferior substitute for better systems of transmitting news or evoking sound". Needless to say, instant remembrances of similar statements by Edison last year appeared in all editorial copy. Even Sarnoff felt compelled to respond (even then RCA was thin-skinned and fearful of being found out), and spent much time on the air and in print labouring the technical achievements of radio, chiefly by RCA.

BEFORE WOMENS' LIB...in a poll of radio listeners for their favourite kind of music or entertainers conducted in Milwaukee, out of a listing of 15 categories, it was found that organ music rated first with 91.13%. Female singers and popular music were last, as rated by both men and women, getting only 20.58%.

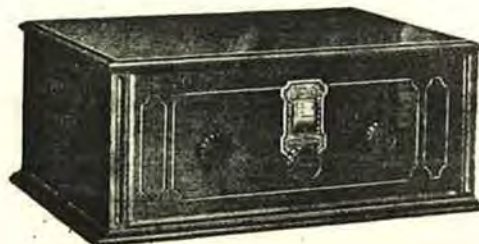
"FURNITURISATION" of radio cabinets was extended to broadcast studios, turning some into theatrical sets, with potted palms, Oriental carpets, Tiffany lamps, and "...draperies of artistic design to harmonize with the artistic temperament of the performers!" The most popular potted flower was the Chrysanthemum, and all male performers wore tuxedos - the women, evening gowns.

DEMSEY-TUNNEY fight was broadcast nation-wide over the CBS network, with Major White out-polling MacNamee as the best announcer. ●

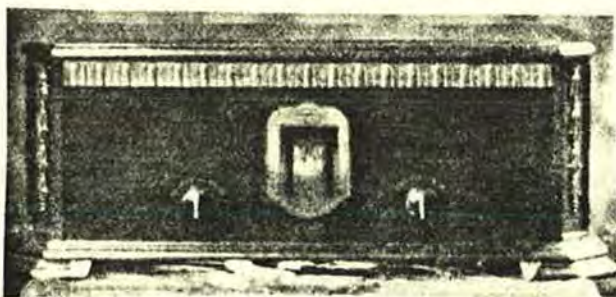
REPRESENTATIVE RADIOS of 1927/1928



BROWNING-DRAKE Model 6-A



AMRAD WINDSOR - 7 TUBES
Neutrodyne

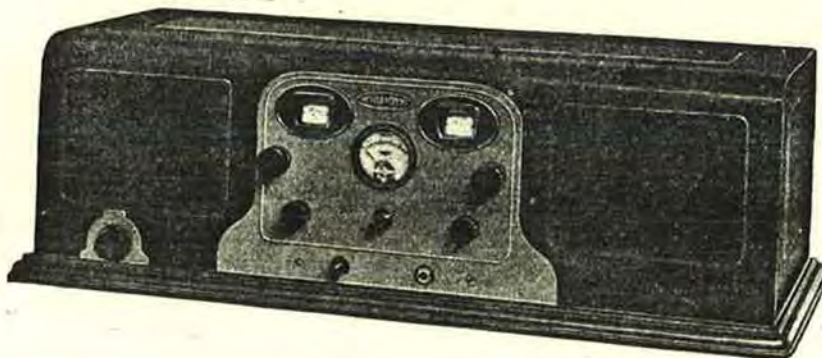
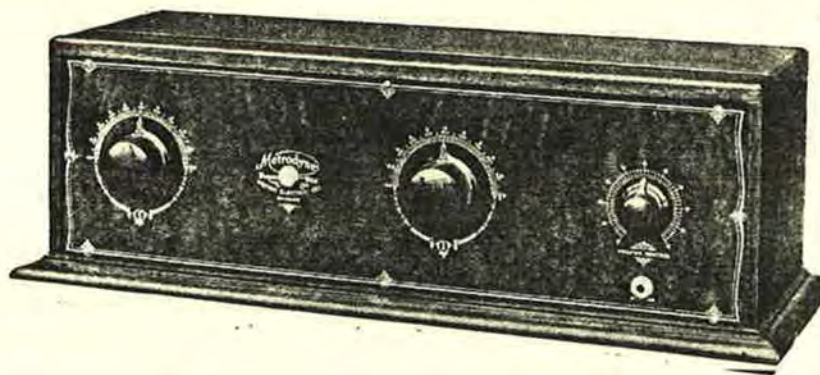


HAMMARLUND-ROBERTS



ALL-AMERICAN SIX
Rice Neutralisation

METRODYNE
SUPER SIX



BREMER-TULLY
INFRA DYNE 28

REACH of the OCTUPUS

While RCA tried most mightily to monopolise practically every aspect of radio design and manufacture, and almost succeeded, just how far-reaching and insidious their control was, before the Supreme Court finally stopt them after years of costly litigation, is barely recalled. In the following listing you will recognize every name; this was only the listing for 1927!

All-American	Bosch
Bremer-Tully	Crosley
Day-Fan	Fada
Federal	Freshman
Farrand	Freed-Eisemann
Federal-Brandes	General Radio
Gilfillan Bros.	Grebe
H.J.Power (Abox)	Howard
King	Mohawk
Mar-Co	Murdock
National	Phanstiel
Radio Receptor	Steinite
Timmons	U.S.Electric
Ameri-Tran	Atwater Kent
Zenith	Splitdorff
Stromberg-Carlson	Sleeper
Ce-Co	Raytheon
Philco	Pilot
Cutter-Washington	Kolster
Cunningham	Spartan
Sonora	AC-Dayton
Sparks-Worthington	Silver-Marshall
Haynes	Mu-Rad
Am-Rad	Madison-Moore
Mid-West	Magnatron
Speed (Tubes)	Pierce-Airo
Keystone	Buckingham
Audiola	Kennedy
Oriole	Thor
Armour (Tubes)	Ureco (Tubes)
Metro	Westingale
Distantone	Kellogg
Gem (Tubes)	Sonotron
Sargent-Rayment	Hammarlund
Ferguson	Valleytone
Chelsea	Cecilian (Tubes)
Arborphone	Van Horne

1928

RCA loses suit to Dubilier over patent infringement of an AC device known as the "Hum-Dinger"; along with the use of rectified AC to obtain a negative grid bias.

RCA loses appeal to the Supreme Court to force licensees to use only RCA tubes in their sets. The appeal was denied under Section 16 of the Clayton Anti-Trust law. But it was to be two more years before the infamous Clause 9 was finally laid to rest.

RCA's gross income for the first quarter was \$16,792,547.

RCA merges with the Victor Talking Machine Company.

RCA and RUSSIA form a co-operative agreement to exchange patent and technical data and technical assistance. The Russian firm was known as Society State Electro-Technical Trust of Weak Current Factories. I've not been able to find out what "weak current" was.

RCA and KAO (Keith-Albee-Orpheum circuit) complete a deal for an elaborate and far-flung chain of broadcast stations. KAO was the dominant force in sending vaudeville and stage-shows around the country.

AT&T sells its holdings in RCA to other RCA corporate owners, while retaining 98% of Western Electric. AT&T had previously sold station WEAJ to RCA's NBC network.

De-Forest drops its legal suit against Crosley, and Crosley becomes a member of the DeForest Board of Directors.

A-C DAYTON acquired sole rights to manufacture the Flewelling SW Adapter, and Flewelling joins its engineering staff.

AMERICAN MECHANICAL LABS, who had used the trade-name of "Clarostat" for their products, became the Clarostat Manufacturing Co. in Brooklyn.

LEKTOPHONE licensed JENSEN to produce controlled-edge cone speakers, new dynamic speakers, and other types. Macey Cabinets designed some of the dynamic speaker housings for Jensen.

DRESNER SW CONVERTER Model 1 introduced (See Vol. III).

GREENE-BROWN and ERLA combine to form a new ERLA corporation.

J.B.JUNGUEIRA of Brazil tried to get exclusive rights to the word "Radio", by registering it as a trade-mark under the Santiago Trade-Mark Convention of 1923. He lost.

(1928 Continued)

LACAULT (R.E.L.) designs a new low-loss variable, having 3 rotors and 2 stator plates, especially for SW circuits. Another design was for a push-pull stator variable, both of which are depicted in the ULTRADYNE Monograph, available as a separate publication.

EBY licensed by RCA to manufacture AF amplifiers and a power unit known as EBY 220 Power Audio Amplifier, having an output of 1.5W, 2-stages of transformer-coupling, with 26, 71A in P-P, and 80 tubes. The venture was short-lived.

WARD LEONARD introduced their porcelain-base "Dual Adjust" voltage divider and regulator - depicted in Vol. VII; while in Chicago the MASTER ENGRG. CO. was set-up to produce their Master Voltage Control.

STATION PDQ, Crooksville, Ohio, was an outlaw station that interrupted local broadcasts to disseminate local gossip. It was finally tracked down to a farm outside of town, and was the prank of college kids.

R.M.A. establishes industry-wide definitions of radio terms for the five types of radios then in vogue - Battery, Electric, Socket-Powered, AC Tube, DC Electric Tube sets.

HAROLD P. DONLE invents the "Sodion" tube as a detector, he immediately announced the Donle-Bristol DA-2 tube, a 6V special amplifying tube usable without any changes in any circuit. It was of the oxide-coated filament type, having a platinum base.

SPLITDORF-EDISON form an association for the manufacture of radios and phonographs. Chas. A. Edison, the inventor's son, was elected a member of the Board of Splitdorf-Bethlehem Electrical Co. Walter Rautenstrauch was head of Splitdorf at that time.

NORMAN THOMAS, perennial Socialist candidate for president of the U.S., spoke for WEVD at Woodhaven, N.Y., when the station was charged by the FRC with failure to serve the public interest. Thomas' brief contained the immortal phrase: *"To destroy us is unthinkable - and un-American!"*

GRAYBAR ELECTRIC sold to its employees by Western Electric. Formed in 1925, it has 2,500 employees in 1928; capitalized at \$9-million in shares having a par value of \$100.

MARCONI WIRELESS in Great Britain obtains a royalty from all British radio manufacturers for a Marconi license, on the basis of 12-shillings, 6-pence for every valve (tube) used in a given set. (The shilling at that time was worth approximately 25¢ U.S.)

(1928 Continued)

KOLSTER develops the first practical device for remote tuning and volume control of a radio. The Algonquin Electric Company came out with a similar device in 1926, but it failed to gain wide acceptance. The Kolster device incorporated a dial that matched the dial on the radio; changing the dial setting on the device automatically changed the dial setting at the radio. The device was completely wireless and was operative up to 50 feet from the set.

PILOT produced a popular kit known as the "Air Scout". The Boy Scouts of American objected and asked Pilot to discontinue using the name, to keep Scouting free from all commercial association. Pilot complied and the kit was re-named "Air Commander". By 1933 the BSA was apparently not so epicene, as the name "Air Scout" was used by Try-Mo. The name "Commander" was also used by several other set manufacturers from time to time, including Lacault.

BAKELITE CORPORATION went to court, charging German manufacturers of materials made from synthetic phenolic resins with unfair competition, violation of patent rights, and deliberately removing the mark of origin, and offering their product through U.S. distributors as the genuine U.S. product. Bakelite won the case. It would seem that the "boot-legging" of tubes was not the only illicit operation going on in the early days of radio.

AM. ACADEMY OF ARTS & LETTERS sets-up a gold medal award for the radio announcer judged to have the best diction....no comment.

AM. ASSOC. FOR ADVANCING ATHEISM applied for a radio station license at NYC; application was rejected out of hand, with the suggestion that the Association buy time on any existing broadcast station.

GENERAL RADIO loses Hiler-coupler suit in Boston. Gen-Rad product of like nature (an impedance-coupled AF transformer) was ruled an infringement of the 1926 Hiler patent. Gen-Rad will now become a licensee of the Hiler Radio Corp.

DUBILIER loses suit against Aerovox over patent infringement of the mica-molded condenser processes.

Dr. STILLE, in Paris, demonstrated the first magnetised wire (steel) recorder, and AT&T was immediately interested.

CROSLY acquires WSAI, Cincinnati, while retaining WLW, which was seven years old as of this date. Crosley applied for a power increase to 50 KW from his current 5 KW.

1929

MERGERS:

AMRAD control passes completely to Crosley.
HOWARD merges with EVERETT PIANO CO.
RAYTHEON merges with NATIONAL CARBON.
POLYMET merges with EASTON COIL CO.
PEERLESS merges with NEWCOMB-HAWLEY AS United Reproducer Co. (URC)
U.R.C acquires control of "ARBORPHONE".
PHILCO acquires MURDOCK RADIO CO.
GRIGSBY-GRUNOW-HINDS (Majestic) buys out PFANSTIEL.
BRUNSWICH buys control of BREMER-TULLY and VITAVOX.
EDISON buys out SPLITDORF.
GMC buys out DAY-FAN.
MARVIN TUBES taken over by STUDEBAKER and KENNEDY.
WARE merges with AMERICAN PIANO CO.
UTAH, CARTER, EBY, RUNYON combine their activities.
FRESHMAN merges with FREED-EISEMANN (EARL and FREED).
SONORO buys FEDERAL.
NAT'L. UNION merges SONOTONE, TELEVOCAL, MARATHON, MAGNATRON tubes.
FLEWELLING resigns from RADIO PRODUCTS CO., to manufacture radio service equipment under the trade-name of DAYRAD.
ERLA buys control of CABLE PIANO CO.

LOFTIN-WHITE sell their amplifier patents to RCA.

PENTODE was invented by Receptile Co., Ltd., England; introduced to the U.S. market during the Summer.

HOWARD S. SAMS appointed territorial manager of sales for Silver-Marshall, after resigning from E.T.CUNNINGHAM.

INDEPENDENT TUBE MANUFACTURERS accept RCA's restrictive licenses - CE-CO, Tung-Sol, Raytheon, Ken-Rad, Hygrade, Champion, Allan, Nilco, United, National Union.

DeFOREST sues RCA again, after winning the last suit. This time it was deceit and deception by RCA employing a proxie to front for a take-over bid of DeForest stock and assets.

DeFOREST sues PILOT over regenerative patents, with other suits promised on a national basis. Pilot claimed the regenerative patent was public property. Pilot lost the suit.

JENKINS announces mass-production of scanning discs for TV sets.

(1929 Continued)

AMERICAN BOSCH wins suit brought by Robt. Bosch, Germany, for sole use of the name "Bosch" on radio sets.

AMERICAN BOSCH grants license to Fabrica Italiana Magneti Marvelii, Milan, for the manufacture and sale of Bosch receivers.

NIKOLA TESLA honoured by Jugoslavia on a postage stamp.

COLUMBIA GRAMAPHONE sets-up a radio manufacturing plant in England.

KOLSTER signs agreements with Telefonfabrik Berliner Aktiengesellschaft for manufacture and sales of Kolster and Brandes radios. Kolster and Brandes had already been operating in England for several years.

W.L.ECKHARDT, former head of MUSIC-MASTER, buys entire stock on hand of EARL radios and chasses - 9,000 and 20,000, respectively. This was after the FRESHMAN merger listed above.

RIDER issues two Servicemens' Manuals for the first time, which eventually became what we now call the Rider Manuals.

THOM. A. EDISON CO. discontinues making phonograph records.

NATIONAL UNION RADIO opened a "Tube School" in NYC, under E. Gordon Taylor, former technical editor on several radio magazines, to explain vacuum tubes to users and distributors. It did not last long.

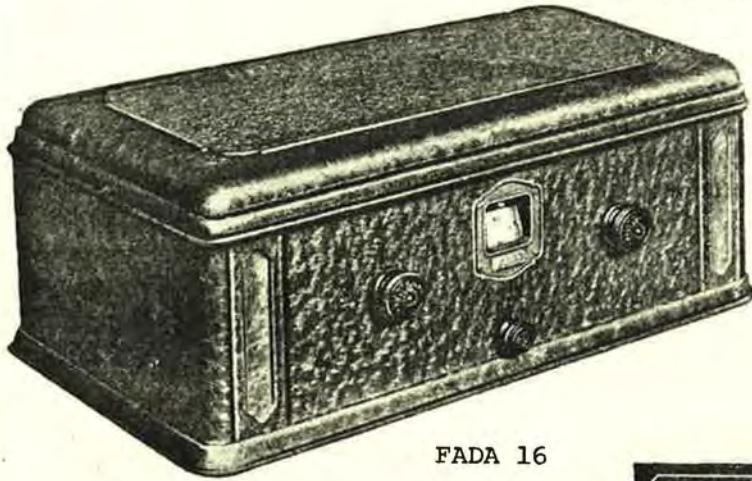
RADIO BLUE BOOK came into being, suggesting that dealers were unable to any longer trust their own judgement on the value of a trade-in, or the price to fix on used radio equipment. Use of such mental crutches is rampant today, among used-car salesmen, camera shops, etc.

ROBT. E. LACAULT dies in NYC, after completing his design of the set that was to be known as the RE-29 super-het. His firm, R.E.L./Phenix, was managed for a brief time by Alice Lacault, but she quickly sold off assets and patent rights. Several firms continued to use the name "Ultradyn" up to 1934, but it was never the same, obviously. Alice resided at 1931 Broadway, at 65th Street.

DAVID GRIMES appointed Chief Research Engineer at Pilot, replacing Geloso, who returned to Italy.

BRUNSWICK-BALKE-COLLENDER (known as Brunswick) purchased BREMER-TULLY, chiefly to obtain B-T patents controlled by RCA, Meissner, Hazeltine, and Latour of France.

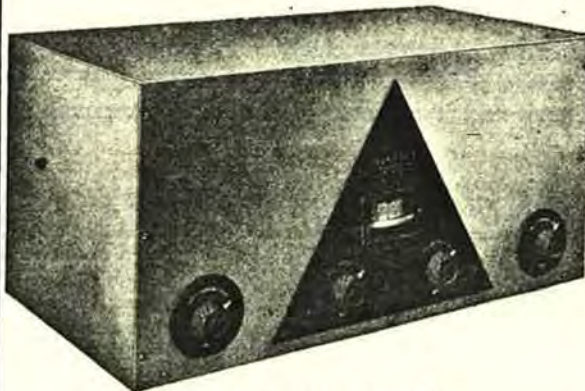
REPRESENTATIVE RADIOS of 1929/1930



FADA 16



BREMER-TULLY 6-40



NORDEN-HAUCK DX-10



ZENITH

1931

GRIGSBY-GRUNOW (Majestic) withdraws from the RME, and promptly sues RCA for triple damages caused by the alleged collection of royalties by RCA and the infamous Clause 9. This action followed the Supreme Court's action that finally stopped RCA's practice.

GRIGSBY-GRUNOW, the world's largest radio set manufacturer, is optimistic enough to allocate \$3.5-million dollars for advertising this year, and anticipate sales in excess of \$600-million.

RCA capitulates to Anti-Trust charges brought against it by DeForest, Arcturus, Schickerling, Gold Seal, Duratron, Supertron, Van Horne, Universal Electric, Radex, Globe Electric, Diamond Radio, Republic Radio, Vest Battery, Mutual Electric, Continental, Cleartone, et al. DeForest was awarded \$1-million dollars. Suits against RCA's attempts to monopolize the industry began in 1922.

ERLA sued by several small concerns in a bankruptcy petition. It seems that ERLA was unable to pay its debts. The aggregate monies owed to all such concerns by Erla was \$30,000....

KOLSTER-BRANDES bankruptcy proceedings halted by a re-organization scheme to form a new company, to be capitalised at \$4.5-million dollars. Rudolf Spreckels, sugar baron and the major stock-holder, agreed.

PILOT markets the first auto-radio, as a kit. It was designed to be installed in the rumble-seat or on the running board. It was operated from inside the car by means of a six-foot flexible cable. The unit was steel-encased, 7" x 18" x 22", and weighed 30 pounds.

STANDARD OIL of New Jersey sets-up its own Southern Radio Corporation, in order to have direct contact via radio with its extensive oil holdings in Bolivia. Until now, it required two weeks for a cablegram to reach the sites.

K.W.RADIO, a syndicate of NY businessmen, buys Temple Corporation.

U.S.COMMERCE DEPT. reports that there are now 13.5-million radio sets in the country, with NY, California, and Illinois each having in excess of one million sets.

WOR, Newark, New Jersey, played recordings over the air for the first time. Heretofore, all broadcasts were live. Unfortunately the experiment was successful, and today we all drown in an ocean of

cacophony via radio.

BANKRUPTCY petitions were filed by the following, among others:

TEMPLE	GREBE	DeFOREST
KOLSTER	SONORA	PARAMOUNT
EARL		

Even radio announcers, who were even then striking poses as "personalities" on par with entertainers, were filing for bankruptcy. A good example would be Norman Brokenshire, a very popular announcer, who filed a petition for bankruptcy with liabilities of \$8,205, and assets of \$614.

BOSCH agrees to merchandise a new line of radios called ESSEX made by a new company set-up by Morris Metcalk, ex-president of the RMA.

McMURDO SILVER leaves Silver-Marshall to set-up his own company bearing his name, to produce the first of his all-wave "masterpieces".

Dr. HARVEY P. DAVIS died at his home in Pittsburg in October. He was V.P. of Westinghouse and chairman of NBC. He started KDKA in his garage (see picture), and was known in the media as "The Father of Radio Broadcasting".

DeFOREST elected president of the IRE, while L.G.Pacent became president of the Radio Club of America - whose initials coincided with RCA's. Pacent had been a long-time manufacturer of hardware and accessories after the Kaiser's War; having been exposed to radio during the war, like Frost and Carter, who were in the same business.



Dr. Lee DeForest (right) and Louis Gerard Pacent, pioneers.

HOW'S THAT, AGAIN?

In November, 1925, when Herbert C. Hoover was Secretary of Commerce and Radio Chief of the U.S., a Fourth National Conference on Radio was held in D.C., involving all broadcasters. One of the reports that was read had been prepared by the Advertising & Publicity Committee and began like this:

"It is the consensus that both direct and mixed advertising were objectionable to the listening public.

"Indirect advertising could be made detrimental to the interests of both the public and the broadcasting station. The following resolutions have been unanimously adopted by the Committee for the guidance of all broadcasting stations:

"RESOLVED: That the Radio Conference deprecates the use of radio broadcasting for direct sales efforts, and any form of special pleading for the broadcaster or his products, which forms are entirely appropriate when printed or through direct advertising.

"RESOLVED: That the Radio Conference urges upon all owners of broadcast stations the importance of safe-guarding their programs against the intrusion of that publicity which is objectionable to the listener and consequently detrimental to the broadcast station....."

Viewed from today's rather low and common points of view such high-minded concerns will strike many of today's self-centered, generation as extraordinarily naive, on the one hand; and an invasion of self-proclaimed spurious "rights", on the other.

However, just as it has been said by some perceptive wag hung around Tammany Hall, a country gets the politicians it deserves, so, too, perhaps, it may be said that a generation with a sensitivity of a slug and the perception of a mole deserves the cynical tawdriness of radio today and the idiot-tube, and the cacaphony they presume to call "music".

Perhaps we need another Hoover Committee.....



FASCINATING BUT FOGOTTEN

In 1927 the broadcasting networks were being established in all regions of the country, which was to lead, in time, to a floor on which fees charged radio advertisers would start, and not go below. I have culled a few fees then being charged by representative stations wround the country. The fees currently charged by the broadcast chain are, of course, obscene, not to mention those charged for one minute of exposure on the idiot tube. The following, however, suggest a certain reasonableness:

WEAF	- N.Y.C.	\$480 per hour
WGN	- Chicago	350 " "
WEEI	- Boston	350 " "
WRC	- Washington	210 " "
WSD	- St Louis	250 " "
WCCO	- Minniapolis	250 " "
WCSH	- Portland	\$170 per hour

All stations offered discounts to long-term advertisers, on the order of 6% for a 6-month contract, 10% for a full year, or a 15% in small cities. The Atwater Kent Hour, for example, cost \$4,890, and the Dempsey-Tunney fight cost \$27,000, picked-up by U.S.Steel.

* * *

DeForest's AUDION came about in much the same manner as did Edison's discovery that carbonised cotton would take current without breaking - *i.e.*, almost by a fluke. DeForest has tried many materials in seeking to create the triode valve, but it was not until he almost in disgust inserted a woman's hairpin between the plate and filament, of the Fleming valve, that he succeeded.

* * *

The scanning disc, so essential in early television experiments, was actually invented by Nipkow in 1884, who used it primarily to scan bodies in motion. The first synchronous motor, also essential to the evolution of television, was invented by Tesla a few years after Nipkow's disc, and what we now know as a photo-cell was the discovery of Hallache in 1888. The neon-lamp was patented by E. Farland Moore at the turn of the century. There has always been a meaningless debate over whether Baird or Jenkins first combined all these inventions to commence designing early TV transmitters and receivers.

* * *

Metallic cadium was first utilised for batteries in 1924, I was surprised to learn recently. They were strictly labatory-use-only as they were too expensive to construct to be commercially economical for the times. It's virtue was then as it is now, a constant voltage output.

output. Today, of course, "ni-cad" batteries abound.

* * *

In 1925 there were 63 radio broadcasting stations owned and operated by churches or religious groups. There were also stations in the control of such as the K.K.K and the Socialists... Ten Universities and Colleges owned and operated stations, with a preponderance by colleges that offered religious training - e.g., Loyola, Vilanova, Wesleyan, Catholic University, et al. The Knights of Columbus operated a chain of stations from Seattle to Texas to D.C., as did YMCA.

Unfortunately transcriptions of the early broadcasts from a religious university or special-interest group of the kind mentioned, are not easy to come by. Most, of course, were not transcribed. However, were such available, I rather imagine they would all offer what could only be deemed a remarkable sociological statement on America's psyche of the period. They would be a true reflexion of the society's *morés* and tribal *tabus*, more so than the images created by Hollywood and newspapers of massive gangsterism and unbridled flapperism, etc.

The rise of strictly religious stations was obviously forecasting the massive plethora of "evangelical" radio stations suffocating the air-ways today, including those strange little short-wave or medium-wave stations located in another country, financed by American money, and beaming their private conceits to all and sundry. And like their State-side counterparts, are not bashful about soliciting funds *ad infinitum*, *ad nauseum*. Barnum's famous dictum always comes to mind.

* * *

The NA-ALD trade-mark we are all familiar with, letters in a dog-bone outline, and was actually a transposition of the first two letters of the names of the two men who founded the company in 1922, at Springfield, Massachusetts - ALDEN-NAPIER. They began business as manufacturers of but one item - a tube socket molded of the then-new compositional material "Condensite", which sold for 35¢.

* * *

The Chittenham Hotel, Columbus, Ohio, was the first to install radios in their main lobby for the benefit of their guests. Engineers sought a method of getting the reception from the lobby up to the rooms. Their first attempt was to place mikes in the lobby, connected through an AF amplifier to telephone lines. The scheme did not work, there in 1922.

* * *

OZARKA was the first set manufacturer to set-up seminars to train their "drummers" in the gentle art of selling Ozarka radios, He trained 2,000 salesmen per year, creating sales-pitches which are the basis of much modern selling of most anything, from motor-cars to deodorant soaps. Bell, president, sufficiently impressed Don Patterson, publisher of Radio Age, that he devoted three issues to Ozarka. That Bell's sales-techniques were successful would tend to suggest to some that human nature doesn't change.

So-called sleep-learning has recently enjoyed a vogue, with dubious results. However, in 1922 the U.S.Navy at Pensacola conducted a series of sleep-learning experiments with Naval cadets. The Morse Code was sent continuously while they slept on the work-benches where they had studied during the day. To quote a report on the subject:

"It is very interesting to watch the students during one of these night periods. If the sending operator intentionally and continuously makes errors, the students will toss around most unusually. If the sending stops, or the rate of sending is changed, it is sure to disturb them. Yet even in the midst of a deep sleep, the call "SOS" will awaken them instantly!"

* * *

LITZENDRAHT, abb. Litz. = "braided wire". This German wire was loudly touted as the perfect Radio wire for a couple of years, and especially as the best wire for loops. And today among the fraternity one can still encounter those who still believe that Litz-wire was something special. Actually, the staff of Radio Engineering in 1929 exposed the myth in a series of articles. They demonstrated that if a single wire in Litz-wire (which was a skein of extremely fine wire) was broken an obvious break would occur in whatever was being passed through.

* * *



To my generation the name of Glenn L. Martin was always associated with the production of aircraft; later, of course, they got into the missile field. Their main plant was at Sparrow Point, just a little way out of Baltimore, and upon my graduation from N.Y.U., they offered me my first job. Their last big push in the marketplace after giving up the aircraft business was with the TITAN missiles, on which I also worked. So it came as a distinct surprise to come across in the 1926 issue of Citizens' Call Book, the above advert. Everyone, apparently, had a go at producing something for Radio in those days. Other than the above cut, I have not come across any other reference.

* * *

Voice transmission was first accomplished by Valdemar Poulsen in 1902. Poulsen was called "The Danish Edison".

* * *

THE EVEREADY HOUR, the radio program sponsored by the Ever-ready-National Carbide Company, was the first radio program to develop what we now call continuity-scripts. They were a cross between the then popular "photo-play" and the traditional play, and were the work of one Paul F. Stacy, in 1925.

* * *

In 1931 the Smedley Press published *The Life and Works From Dr. Lee DeForest* for the astonishing sum of \$52.50! Considering times and the availability of money for books, it was a staggering sum. The average price for a hard-cover popular book of the period was \$1.00.

* * *

E.H.SCOTT, among his other contributions to Radio, was also responsible for conceiving of the scheme to render schematics as pictorial diagrams. This was in 1923, and probably did more than any, to infer to everyman that he, too, could construct a "Radio". Next came the kitted radio, long before Heath, and even then there were intrepid souls who bought a kit, constructed something, and still could not tell you how or why it worked - even as now. The kit-idea caught fire in 1924, and were distributed by such shops as Woolworth's, Sears and Roebuck, Kresge, Kress, Montgomery-Ward, Western Auto.

* * *



Long before the shrill voices of those queer females of Women's Lib could be heard in the land, there were women in fact who were doing quite well all by themselves in Radio, and remaining always feminine and attractive. One such woman comes immediately to mind - Miss NATALIE GITTINGS. She was the Director and Producer and Announcer of "Crosley Women's Hour" over Powell's station in Cincinnati, WLW, and offers a distinctive and pretty case in point.

* * *

Several large manufacturers early on realised the potential for sales by means of Radio and sponsored programs in their own name. Such would include Scott, Atwater Kent, Victor, Crosley, Eveready, et. al. Among media, Radio News and Radio World also used their own stations, less to sell magazines than to dramatise the romance of Radio. Aside from radio manufacturers, the first commercial firms to utilize Radio were the Great Atlantic & Pacific Tea Company - known simply as A&P, Bristol-Meyers, and Chase & Sandborn (coffee).

* * *

ARCTURUS is perhaps best remembered for their blue tubes, I would imagine, but they were not the first to do so. While several of the smaller tube manufacturers had flirted with blue tubes, the first offering was by the Brighton Labs, of New York and Philadelphia. Their tubes were coloured a delicate blue, with brightly polished bases, in satin-lined presentation boxes, individually or grouped. The average

price was \$7.50, when RCA was selling O1As for \$3.50. Rather than make outlandish claims for their tubes, the Brighton people simply guaranteed each tube for 90 days.

* * *

THEO. NAKKEN was so enamoured of Lacault's "Ultradyn" circuitry, that he decided to design a simpler version under the name of "Ultra-5" (refer to the ULTRADYNE MONOGRAPH for full details) in 1924. Later that same year Mid-West announced their "Ultra-5", which continued in production until 1927. I have been unable to establish a relationship between the two names - can you?

* * *

MERCURY Radio was a set produced under license from Grimes, of his "Inverse Duplex" circuit. Their slogan was "The Stradivarius of Radio". What makes that an interesting fact is that from 1930, and for the few years he remained in control of his company, E.H.SCOTT was using the same slogan. The "bug" in both was a violin, of course.

* * *

Booze, broads, and ballyhoo were very much the fashion; the year was 1926. It was the era of Prohibition and even the king-pins of Radio were not above suspicion. Atwater Kent, with a small party on his yacht, sailed from Philadelphia towards Bar Harbour - a favourite watering-place for the rich. His yacht was fired on by the U. S. Coast Guard, stopt, and boarded. Apparently, no booze was found, and it was put down as a "misunderstanding".

* * *

Mailing lists magazine subscribers, radio club rosters, even independent dealers were big business in the Twenties. There were opportunists who compiled such lists by questionable means, and sold the lists to most anyone with a mail-order pitch. (The flood of junk-mail you daily find in your mail-box was started by such opportunists.) The cost in 1925, for example, for a listing of 30,000 independent dealers was \$22.50. The fees have increased since then...

* * *

McKESSON-ROBBINS is known today as a giant pharmaceutical or diversified cartel that also traffics in wine. In the Twenties M-K was in the radio business, marketting a TRF under the label of "St. Regis" which was a battery-operated job. Other non-radio-based companies that had a go at the new-fangled thing called "Radio" were Fairbanks-Morse and United Motors, Macy and Gamble department stores, Goodrich, Harley Davidson, Walgreen Drugs, Goodyear, and Spiegel Stores. I've sometimes wondered why Woolworths never got into the act.

* * *

ARTHUR H. LYNCH, ex-editor of Radio News, ex-editor of Radio Broadcast, ex-president of the Lynch Corporation, ex-ecutive of a firm called Stenode, ex-import manager for a British rheostat manufacturer, joined the Triad Tube Corporation in 1934, and was never heard from.

* * *

Like Sears-Roebuck shoes that were predicated upon the condition of being good-better-best, there were also makers of tubes for the same sort of qualification. Among those were CE-CO, ARCTURUS, and TRIAD, even though they eventually bent the knee to the octopus known as RCA. TRIAD produced an excellent short-wave tube in their S-30 and the ARCTURUS PA and PZ tubes would out-perform any other. Unhappily, all production of such tubes was short-lived.

* * *

Airplane-type dials with dual pointers were introduced with great fan-fare in 1934. In that same year the use of pre-selectors or an additional RF stage ahead of the receiver became mandatory for all multi-tube sets. "Pre-Selector" was simply another name for a booster or TRF stage ahead of the tuned modulator. But by 1934 there were few genuine innovations or advances to be made, and the day of the home-constructor was over.

* * *

BAKELITE NOTE: Bakelite and Formica were the two best-known names in Radio, chiefly because most panels were made of such, after the demise of hard rubber panels. The chemical name for Bakelite was and is Oxy-Benzyl-Methyl-Engly. It was non-hygroscopic, would hold-up under temperatures to 400° Centigrade, and was practically impossible to break or destroy. Aside from panels, it was also used for sockets, dials, knobs, binding posts, terminal strips, transformer side-panels and switch casings. One of the most prolific users of Bakelite in the latter half of the Twenties was Goldberg of PILOT. For panels, Bakelite compound was reduced to a molten state and mixed with paper pulp and allowed to harden. It was originally called Bakelite Dilectro. In its original hardened state, it was a dirty brown in colour, and that was the colour preferred by all Government agencies. Black and piano-finish panels arrived in the mid-Twenties, but no-one ever editorialised as to why, nor why the piano-finish gave way to "grained" types.

* * *

In this so-called "permissive society" it may be difficult to imagine that something as innocuous as a radio set could be banned from use by the general public: but radios were banned by law in New Jersey, New Hampshire, and Massachusetts for awhile in the latter end of the Twenties. The law ruled that radios in automobiles (this was before there were radios designed to be integral with motor-cars) created preoccupation of the driver's mind, thus increasing the risk of a car accident while listening to a broadcast....

* * *

AMATEUR RADIO was 20 years old on the 13th of August, 1932. The Radio Act of 1912 first recognised radio stations operated by individuals for non-commercial purposes. In 1932 there were 30,000 hams in the U.S. The ARRL, founded by Hiram Maxim in 1914, had to wait some time for Congressional recognition as a legitimate radio operation.



THE HOUSE THAT BUILT RADIO BROADCASTING

Actually, it was a garage in the suburbs of Pittsburgh, in which Dr. Frank Conrad carried on his experiments with radio-telephone, as it was called in those days. The results of his experimentation are well-known today as radio station KDKA, atop the Westinghouse roof, in Pittsburgh, which began operation on the 2nd of November, 1920.



INNOVATIVE HARDWARE

Like anything else that could be exploited to separate men from their money, early Radio had its legions of confidence-men, fly by night operators, charlatans, vendors of dubious or spurious wares and inventions. Probably the most outlandish were the so-called medical devices claimed to cure practically everything the human body's heir to. I understand that there are "collectors" of such devices in the hinterland today, but I've also observed that no-one has come up with an explanation of why everyman is so gullible.

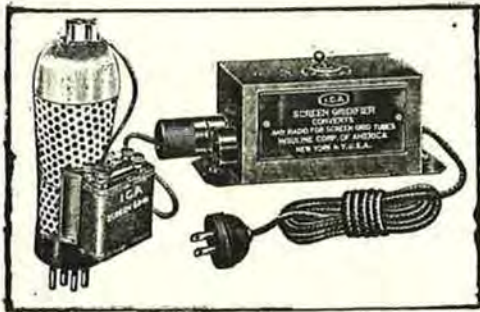
However, while there were many kitchen-table inventors attracted to Radio who produced elaborate and useless gadgets, there were also those who actually made contributions to the game, and not always amid the convenience of corporate laboratories. I've appended a handful of truly innovative hardware.

Some showed remarkable imagination, if faulty engineering. Some would have hastened the advance of Radio had their inventors as now, been able to secure the ever-essential financial backing. There is much the same situation today in "electronics", although it is a bit more hysterical and frenetic. This was also true of the motor-car, aeroplane, cameras, during their struggling-to-be-born days.

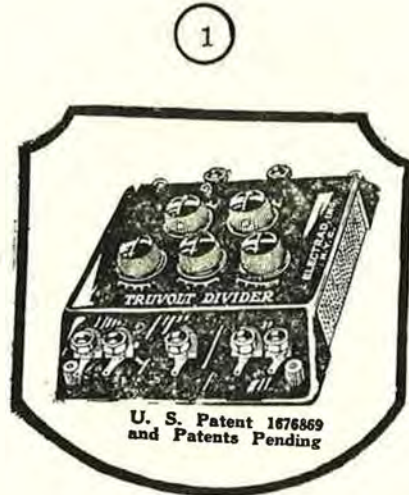
Among innovative hardware were the following items:

- | | |
|-----------------------------|-------------------------------|
| 1. "Truvolt" Divider | 13. Variable Grid-Leaks |
| 2. King Rheo-Sockets | 14. Yaxley Power Control |
| 3. ICA Screen-Gridifier | 15. B-M-S Crystal Detector |
| 4. Carter's Plug-In Caps. | 16. Korach Compass Loop |
| 5. S-R Station Isolator | 17. X-L Control Unit |
| 6. Durad Embedded Bases | 18. Pilot "Redi-Blox" |
| 7. Eby Grid-Leak Combo. | 19. "Permec" Crystal Receiver |
| 8. "Infradyne" Amplifier | 20. Mar-Co Illuminated Dials |
| 9. Buell-Flewelling Xfrmrs. | 21. "Phasatrol" (Rider) |
| 10. Slo-Blo Fused Switch | 22. Stienite Wave-Trap |
| 11. G.E. All-Wave Ant. | 23. Variable Plate Cleaners |
| 12. Lignole Panels | 24. Walker "Multi-Unit" |

There were, of course, many more, but all of the above are of more than passing interest. The evolution of panel designs merits a Monograph by itself, but would more properly come under the heading of the employment of graphic-art in Radio, as such designs were more influenced by eye-appeal than engineering considerations. But I might mention that, for me, one of the most arresting panel designs was that used by Lacault for his elegant "Ultradyn L-3".



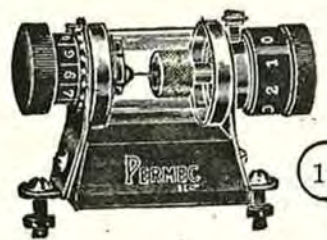
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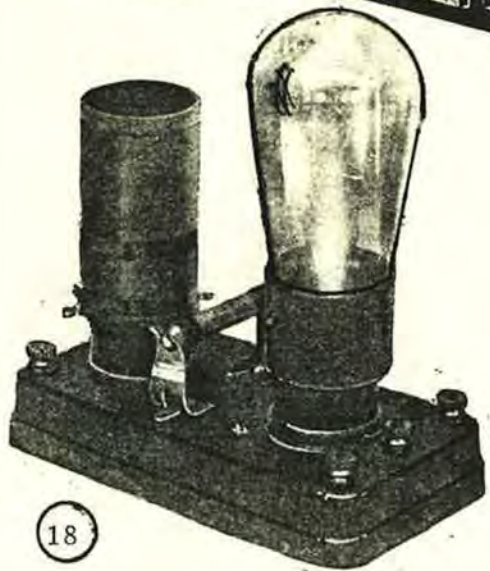
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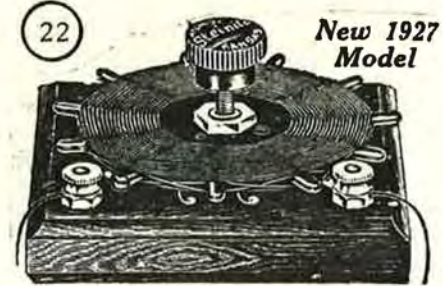
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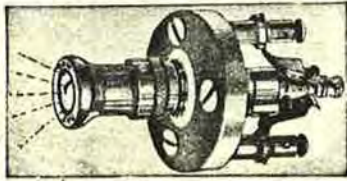
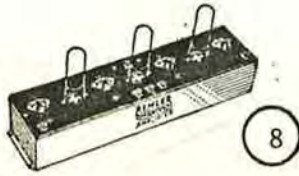
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18



22



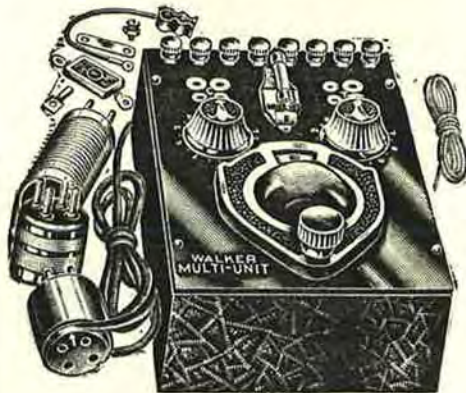
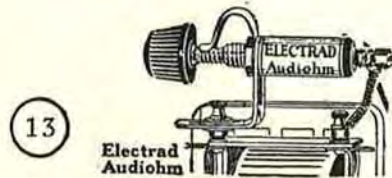
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12



9

RADIO CABINETS AS FURNITURE

In the beginning to "furniturise" radio cabinets, there was the usual editorial controversy. Such controversy attached itself immediately to any new claim, in any quarter. This new controversy however turned on no more than bread-boards vs. panels vs. enclosures.

The majority of cabinet designs were quite acceptable, with those from Corbett, Fritt, and Excello probably being the most aesthetically pleasing. Towards the end of the Twenties, massive and sometimes elegant consoles came to the fore, but all were crippled by the market crash. At the other end, of course, were cabinets which might only be described as repulsive, such as those by Federal and DeForest and Kolster-Brandes.

Actually, there were about three dozen radio cabinet makers in the Twenties who were impressive with their designs and constructions, although they, too, fell victim to the Great Depression. There was a price range for all pocket-books, ranging from \$3 for the cheap ones by Southern Toy to grand consoles by Excello, the latter offering the most expensive, save, perhaps, the later massive consoles for the Scott chasses.

A listing of most of the better cabinet-makers is appended, with the cabinet-makers captive to corporate manufacturers omitted.

All manner of woods were used in radio cabinets, including soft pine, red and brown mahogany, rosewood, black walnut, teak, with an infinite variety of veneers. Some of the patterns made with veneer overlays were quite striking and showed great talent and artistry. In Volume V of these Sketch-Books you will find several pages of cabinet designs, along with some speaker configurations.

The unhappy advent of plastic in the Thirties and the price for traditional cabinetry made the making of radio cabinets economically unfeasible. The Depression also affected the great lumber mills, and cabinet-makers became a dying breed.

Manufacturers of speakers also tried to "furniturise" their wares, such as Saal, Sonocorde, Music-Master, Rola, Yahr. These were usually of a pedestal or end-table configurations (see Vol. V). Probably the most elegant of the cone-speakers was the one produced with pleated Burgundy-coloured silk by Sonocorde.

* * *
* *

MAJOR RADIO CABINET MAKERS

Most of us will immediately recognize a Corbett "C" or Fritts DeLuxe cabinet - they are that distinctive, were very popular for years, and enhanced many a pedestrian panel. Listed below are the names of major radio cabinet manufacturers. Several reflected the obvious love designers and craftsmen involved, some added flair to the furniturisation of radio cabinets. In Volume IV you will find further examples of radios as furniture, as well as a thesaurus of panel designs.

1. EXCELLO, Cicero, Illinois.
2. CHARLOTTE FURNITURE CO., Charlotte, Michigan.
3. STANDARD RADIO CABINET CO., Chicago.
4. SOUTHERN TOY CO., Hickory, North Carolina.
5. D.H.FRITTS, Chicago.
6. CORBETT CABINET CO., St. Mary's, Penna.
7. STANDARD PIANO BENCH CO., Chicago.
8. RADIO CABINET CO., Indianapolis.
9. UNITED RADIO CABINET WORKS, Chicago.
10. CONNER RADIO CABINETS, New Albany, Indiana.
11. I.A.LUND CABINET CORP., Chicago.
12. SUPERIOR CABINET CO., New York City.
13. ASTON CABINET MFGRS., Chicago.
14. UTILITY CABINET CO., Waukesha, Wisconsin.
15. KUND & EIBEN, Pittsburg.
16. PERKINS PHONOGRAPH CO., Chicago.
17. PERKINS-CAMPBELL, Cincinnati.
18. NATIONAL CABINET CO., Dayton.
19. DONAHUE LUMBER CO., Perth Amboy, N.J.
20. WIRTHMORE CO., Rockford, Illinois.
21. WINDSOR FURNITURE CO., Chicago.
22. BERNARD FURNITURE CO., Philadelphia.
23. BERLEY & GAY, North Chicago.
24. CHILLICOTTI RADIO CABINETS, Missouri.
25. IDEAL RADIO CABINET CO., Blue Island, Ill.
26. SIGNAL CABINET CO., Minominee,
27. A-1 WOOD-WORKING CO., Los Angeles.
28. BLANDIN PHOTOGRAPH CO., Racine, Wisconsin.
29. DETROIT WOODCRAFT CO., Detroit.
30. LUD RADIO CABINET CO., Chicago.
31. M.B.G. EXPRESS BODY CO., Crystal Lake, Ill.
32. EHLERT CABINET CO., Chicago.



CABINET CORNER DETAILS



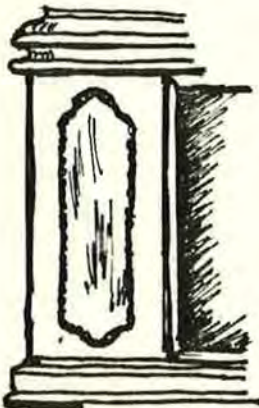
FADA



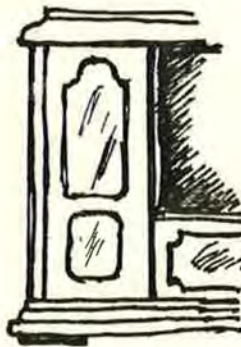
CORBETT



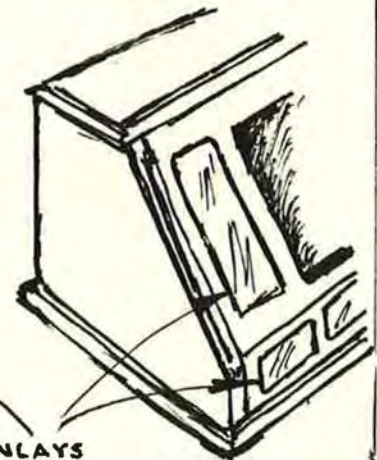
CORBETT "C"



FADA



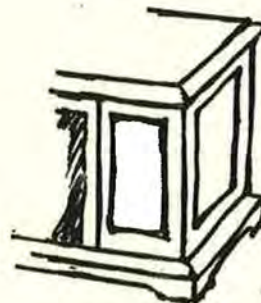
BREMER-TULLY



BÖSCH



PFANSTIEHL

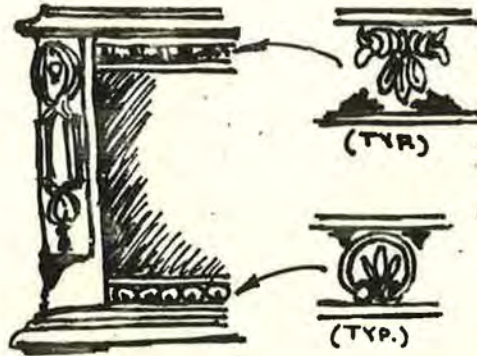


SOUTHERN TOY

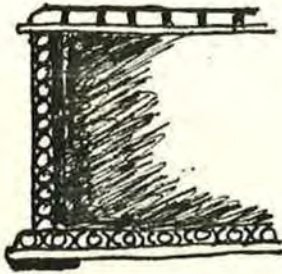
CABINET CORNER DETAILS



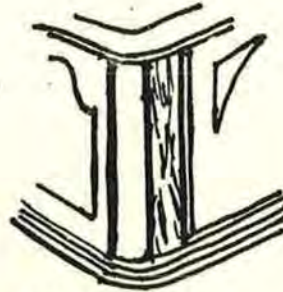
CORBETT "C"



BROWNING-DRAKE



SOUTHERN TOY



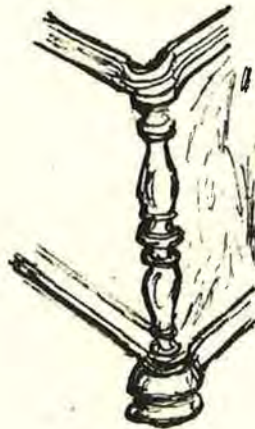
BROWNING-DRAKE



WESTINGALE



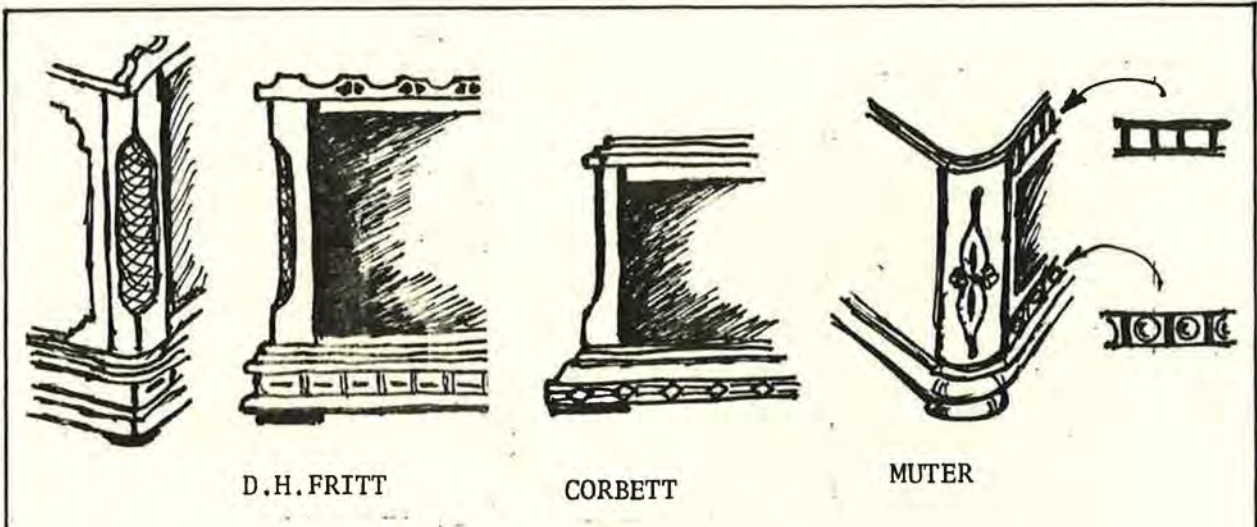
SIGNAL TYPE "W"



GREBE



CHILLICOTTE



As I've mentioned here and there, I've always liked Lacault and his circuitry, but I must confess to arching an eyebrow when exposed to an editorial written by him in Radio News for June, 1922. He had entered the bread-board vs. panel controversy. In a phrase, if we can call a full page editorial a phrase, he was against panels. Quoting one E.E.Bucher of *Wireless Experimenters' Manual*, Lacault wrote:

"A panel or cabinet adds nothing to the electrical efficiency of a set, except that it is manipulated with less difficulty than the isolated instrument"

The statement was frankly stupid, as every school-boy knows that panels do not add to a set's efficiency, save metal ones designed into the grounding circuit of the set, but this came later. Lacault used a very poor argument, and it bothered me. I suppose one might say that such blunders made him human, along with being a bright young man and could also account for the starkness of the cabinetry he employed for housing his Ultradyne L-1 and L2.

He obviously went through a turn-about of 180° by 1926 when he produced his Ultradyne L-3 in a most elegant cabinet and grille.



A STUDY IN SIZE FOR 1926



**KENNEDY
CORONET**

A mantel receiver with R-C amplifier; 17" high x 16½" wide, and weighing 31 pounds.

THE FURNITURISATION OF RADIO CABINETS BEGAN WITH A VENGEANCE IN 1925, AND CONTINUED INTO THE FIRST FEW YEARS OF THE THIRTIES, GIVING WAY FIRST TO THE ECONOMIC INFEASIBILITY OF WOOD-WORKING SKILLS DUE TO THE DEPRESSION, AND THE ACENDENCY OF PLASTICS AND OTHER CHEAPLY FORMED AND PRODUCED MATERIALS.

**THE OTHER
EXTREME**

An elaborate multi-purpose console, featuring a silver chest, writing desk, book-case, electric clock, radio compartment. Custom built by the Superior Cabinet works of Brooklyn, for \$500.





COUNTERFLEX KIT

\$39.50

TYPICAL KITTED RADIOS OF THE '20s



COMPLETE KNOCKDOWN SET
FRESHMAN MASTERPIECE
THIS WONDERFUL SET
\$39.50



Bald Shortwave Kit No. 1-T.
Complete with
4 Coils..... **2950**



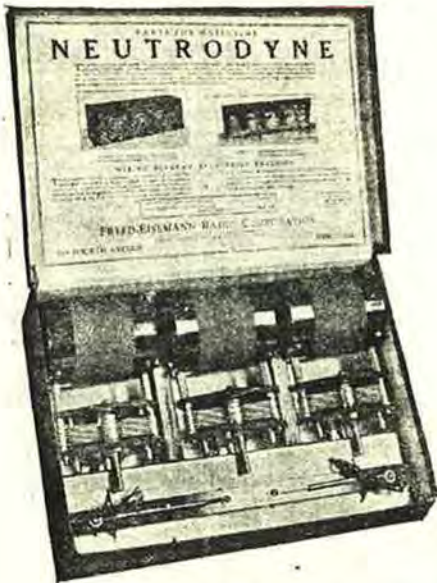
"Pacific Quintet" Super-Het Kit
Consisting of 1 Pacific "Ranger" No. 30 Oscillator Coupler, 3 Pacific "Ranger" No. 25 Intermediate Frequency Transformers and 1 Pacific No. 20 "Ranger" Filter Transformer. **\$15.**



OFFICIAL
Browning-Drake
KIT

OFFICIAL
Browning-Drake
KIT

TYPICAL RADIO KITS of the TWENTIES



FRED-EISEMANN NR-5



MODEL L-2 KIT - \$30



FADA NEUTRODYNE - \$24



NEW and Greater
Quadriformer Essential KIT

TRADE MARK REG.

Quadriformer
AERIAL COUPLER

Quadriformer
INTER-STAGE TRANSFORMER

Quadriformer
RECTOR-SIGNAL TRANSFORMER

Guarantee

This kit contains the three new shielded double gauge QUADRIFORMERS; a specially designed Inductivity Control; and the Quadriformer—the new and latest invention of Gearhart-Schlueter—each makes the receiving set usually efficient on all wave-lengths. It is also included complete along with wiring instructions, for building the new and greater Quadriformer VT-4 two-dial 8-tube receiver that will do things no set in radio history ever did before. Simple to build. Easy to tune. Absolute purity of tone and maximum power and efficiency.

There are QUADRIFORMERS also to be used in any brand radio frequency generator, making a wonderful improvement. For further details write to Gearhart-Schlueter and we will send you a copy of the literature. The literature will cover a whole range of wavelengths, including from below 100 meters to well over 1000.

The Quadriformer Instruction Book, may be purchased separately for 25 cents.

\$17.50

GEARHART-SCHLUETER RADIO CORP'N. Fresno, California

THE AMPLION STORY

One of the better, if not the best for a long time, loud-speakers was the first one, invented by Alfred Graham of London in 1887. It was demonstrated to the British Admiralty at that time, and Graham was off and running, as they used to say.

1893: the first Graham commercial loud-speakers were offered to the public, chiefly to maritime operators and shore-links, as radio was awhile down the line.



1887

1894: Graham speakers employed throughout the British Navy; and the Graham transmitters were applied to phonographs.

1896: Graham Loud Speaking Naval Telephones developed and adopted by the British Admiralty.



1898: Graham's "Watertight" loud-speakers patented, and placed on British and foreign naval vessels around the world.

1906



1920

1902: Graham made sole-source as supplier of loud-speakers and audio systems to the British Navy.

1906/1919: 12,000 Graham units were in service around the world.



1922

1920: Graham "Amplion" loud-speakers produced for radio; distributed in the United States for the first time.

1922: "Amplion" speakers adopted as a standard by non-British radio-set manufacturers.

1924: "Amplion" speaker manufacture set-up in the U.S. as Amplion Corporation of America.



1926: The famous "Amplion Dragon".



A REINARTZ NOTE

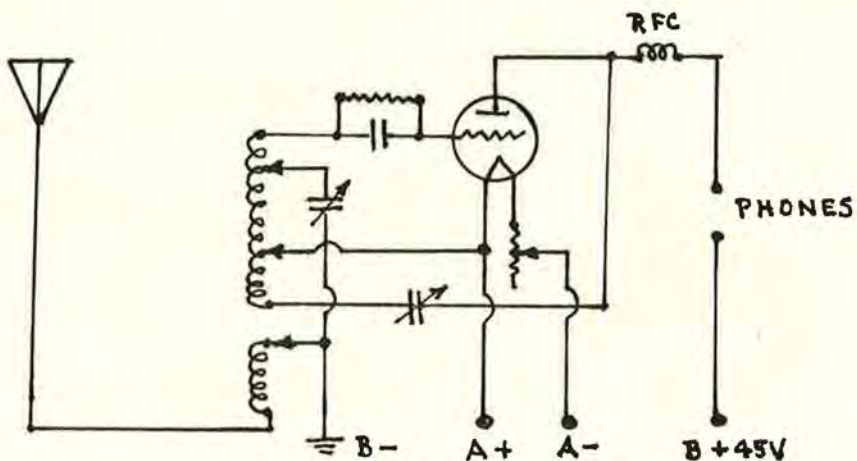
In 1923 Germany was still occupied by the Allied Forces, as Berlin is today. The newly formed German Wireless Trust and associated amateur "unions" made public an appeal "...to all civilised countries, and broadcasting companies of the entire world" to advocate annulment of the Allied regulation prohibiting wireless reception within the occupied zone. The appeal also read in part:

"The restriction is an unworthy measure, as it prevents large parts of the cultured people of Germany from sharing benefits of civilisation".

The Teutonic mind has always been an intorted thing, and if you walked out of Hitler's War, you may recall similar bleeding-hearts utterances in the aftermath. However, while Germany was complaining of being restricted, the frontiers of Radio were being pushed back. Lure of the Artic and Antartic was popularised in many media, and when Mac-Millan mounted his assault on the North Pole, he went looking for the best communications equipment and operator. He settled for the newly-formed Zenith company of Chicago, and one John Reinartz.

Reinartz designed the receiver shown below for the expedition, and also went along. The set covered every then-known short-wave band, from 20 through 80 meters. The grid coil was wound on $3\frac{1}{2}$ " \emptyset form in either the Lorenz or solenoid fashion, with three turns of #16 wire DCC, for 20 meters; 6 turns for 40 meters; and 12 turns for 80 meters.

The ANT coil consisted of 5 turns of #16 DCC wire for 20 or 40 meters, and 10 turns for 80 meters. Three coils were required there being an RFC wound with #30 DCC wire on a 3"x1" \emptyset form. Variables were 5 plates each. The antenna employed was 30' long.



WHAT'S IN A NAME?

As with any on-going discipline with an historical perspective, its advances and continuing authority have always turned on *names!* Radio is not different, and while most old radio enthusiasts are eager to ply you with a recital of the names of popular marques, names of or knowledge of the men behind those marques are rarely mentioned, nor are they even known in too many instances. This is unfortunate, as it reflects an incomplete grasp of the hobby, on the one hand - thereby denying the person fullest enjoyment from the hobby; and ignores an historical fact about human nature - that people are essentially prone to be interested in people.

And the handle that fits all forms of that interest is the name, always the name. Have you ever tried discussing your wife with a stranger and never mentioning her name? Can you really discuss vintage radio marques without referencing their makers? It had become faddish, for some inexplicable reason nowadays, for the current generation and its economic over-lords to invent non-traditional names, such as four-letter names for girls - Jeri, Toni, Samy, etc. It will pass.

But names, in themselves, can be fascinating, and while I was flipping through some early Radio media recently, looking for an historical reference to the origin of "ether", I began to read the caption under the myriad of "radio personalities" that were displayed. Suddenly, I was struck by the plethora of strange-sounding *names!* I had not noticed them before, and I started reading all of the captions, and in the interim compiled the following listings:

Female Christian Names:

Candace	Caryl	Vivette
Vella	Nellie	Ione
Jacquinet	Fannie	Leila
Ada	Zola	Eva
Winnie	Eunice	Alma
Belle	Josephine	Hilda
Edrea	Madge	Alta

Family Names Appearing In Radio Media:

Flohn	Gunzmann	Stiffler
Falch	Atlass	Jeske
Knecht	Seiniger	Stade
Klemm	Rupp	Swindell
Diskay	Esson	Cloyd
Vastine	Czukur	Totten
Dearville	Behnke	Ganoway

Broemer	Gandet	Chassy
Fanning	Moslin	Heiny
Erismann	Zell	Melnhardt
Fuhr	Schuermann	Saudek
Dreisbach	Wetzler	Riner
Hinrich	Clar	Steindell

Personal Names Appearing In Radio Media:

Dailey Paskman	Modesta Mortenson
Reber Boulton	Alta Turney
Elfreida Steindorff	Hjalmar Stromberg
Merwin Dobyus	Dale Stenz
Devora Nadworney	Frankie Peoper
Snedden Weir	Olcott Vail
Hedda Comoro	Gena Zielinski
Candace Holmes	Joska DeBabary
Melba Alter	O.V.Kovaleva
Kess Lindhe	Jeroslav Cimera
Clementine Malek	Toufic Moubaid
Bonita Frede	Iva Bigelow
Esmeralda Mayes	Valeski Bari
Eulalie Kober	Vin Lindhe

Granted, these names have nothing to do with the purpose of these Sketch-Books, but could suggest that the hall-mark of any sociological phenomenon involves and turns on people, not hardware, and the personal relateability of such phenomena. And certainly this applies a bit to vintage Radio. However, to validate inclusion of all this, below I have appended a listing of names that were involved with Radio.

James Millen	Keith Henney
Volney Hurd	Zeh Bouck
Austin Lescarbours	Joseph Calcaterra
Milton Sleeper	Stuart Rogers
Laurence Cockaday	McMurdo Silver
Lloyd C. Greene	Kendall Clough
Glenn Browning	Wilmer S. Trinkle
E.M.Sargent	Herman Bernard
Percy Graffam	Hollis de Neefe
Gerald M. Best	Gordon Taylor

How many do you recognize, and what was their claim to fame?

* * *
* *
*

MANUFACTURERS' LITERATURE ---

Any special-interest calling, discipline, profession advances only to the extent that it's special-interest literature is valid, authoritative, and useful to its followers.

During the rise of Radio in the public consciousness, there was a veritable flood of literature, not only by means of magazines or periodicals, but also by Radio parts and sets manufacturers, dealers, and the newly created sections of metropolitan newspapers usually called "The Radio Page". Before consolidations or bankruptcy occurred amid our early media, there were 32 publications devoted to Radio, monthly, weekly, quarterly. One notes also that the same names of editors, contributors, writers cropping up on the mastheads of several magazines. In all, there were by actual count 23 writers whose names were always to be found amid media, such as Lacault, Harkness, Sleeper, Rider, Anderson, Hayden, Bernard, O'Rourke, Winner.

Today, it is not uncommon to find nearly all special-interest media - Photography, Ham Radio, Computer Engineering, Electronics, Motor-Cars - owned by groups such as Bill-Board Publishers, Gulf-Western Oil, Coca-Cola, CBS, and such. Our early Radio media were pioneering ventures by a far-sighted few, at least until the end of the Twenties. Then, we find the major magazines owned by book publishers, some radio stations, ad-agencies, banks, real-estate firms, etc. Naturally, alien ownership influenced editorial policy, and the personal relatedness as well as the air of romance passed from Radio media.

And as any special-interest group needs ancillary support, early Radio found this in the Niagara of literature from manufacturers, dealers, suppliers. Not all were direct sales-pitches; rather, a majority were simply interested in the education of the public to the wonders of Radio. Granted, such pitches were ultimately self-serving, but their educational influence cannot be gainsaid.

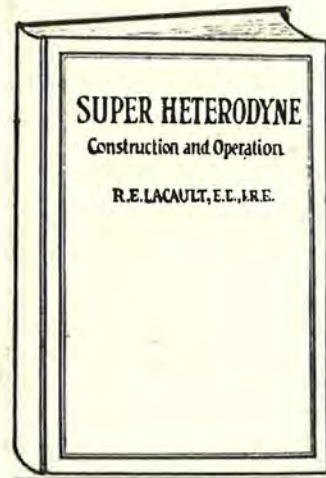
<u>TITLE:</u>	<u>PUBLISHER:</u>	<u>YEAR:</u>	<u>PRICE:</u>
Helpful Hints For Better Radio	DeForest, 32p.	'28	~
How To Build The "Brunola"	Bruno, 28p.	'27	\$0.25
Manual & Data Book	Remler, 58p.	'29	.50
Radio Handbook	Kellog, 54p.	'23	Free
Vallantine Varioformer	Boonton, 25p.	'23	Free
"My Log Book"	Kurz-Kasch	'26	Free
Short-Wave Handbook	Cockaday	'33	Gift
Radio Key Book	Rauland, 48p.	'25	.10

ON MANUFACTURERS' LITERATURE (Continued):

<u>Title:</u>	<u>Publisher:</u>	<u>Year:</u>	<u>Price:</u>
How To Build the Ultradyne	Lacault, 32p.	'24	\$0.50
The Portable Super-Het	Silver	'24	.50
Short-Wave Coil Book	Radio-Craft	'29	.25
Reactron "B" Eliminators	General Radio	'24	Free
Best's 5 Tube Super	Radio	'26	.05
The Bass Note Circuit	Bass	'26	.50
Radio Products	Eisemann	'23	Free
Infradyne Instructions	Sargent	'26	1.00
Circloid Hook-Ups	Erla	'25	Free
Power Amplifier Manual	Thordarson	'28	.25
B-Power Supplies	Tobe	'27	.25
Book of Waveland	Waveland	'22	Free
Radio Guide Book	Telmanco, 25p	'24	.10
RF Amplifiers	Harkness	'27	Gift
Resistance In Radio	Lynch	'27	.25
Amperite Blue Book	Radiall	'29	Free
Gateway To Better Radio	Clarostat, 88pp.	'29	.25
Radio Construction Book	Karas	'28	Free



How to Build and Operate the Ultradyne



ON MANUFACTURERS' LITERATURE (Continued):

<u>Title:</u>	<u>Publisher:</u>	<u>Year:</u>	<u>Price:</u>
How To Build...	Gearhart-Shiller	'25	\$0.25
Radio Handbook	I. C. S.	'25	1.00
Quality Amplification	General Radio	'26	Free
Resistor Manual	Daven	'25	.25
What To Build?	Alden Mfg. Co.	'25	Free

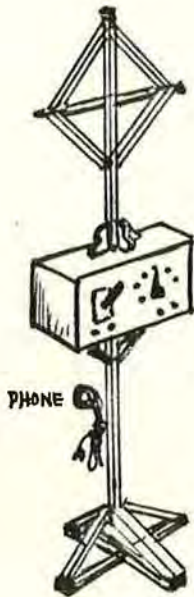


Portable Super-Het	Silver-Marshall	'24	.50
Radio Key-Book	Rauland, 48p.	'27	.10
Radio Handbook	Kellogg, 23p.	'23	Free
Five Tube Super	Best	'26	.05
Variotransformers	Ballantine, 25p.	'23	Free
Short-Wave Handbook	Cockaday	'32	.25
Radio Log Book	Kutrz-Kasch	'26	Free
How To Build Super-Hets	Lacault	'26	.50

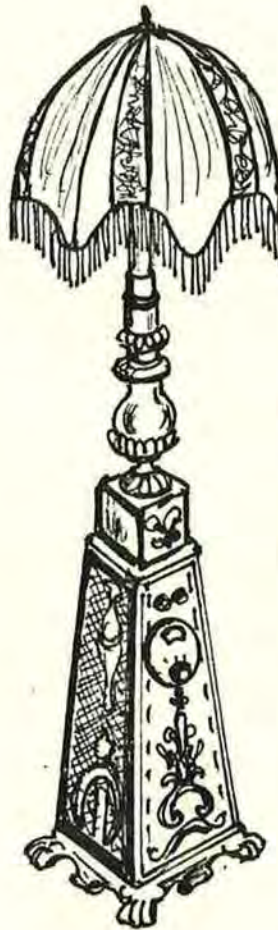


Servicing Radio Receivers	Jewett	'25	.25
Radio Encyclopedia	Gernsback	'27	2.85
Musings Of Dr. Mu	Grebe	'24	Free
Better Results From Radio	Willard	'24	Free
How To Build Your Own Radio	Banning	'25	\$4.00

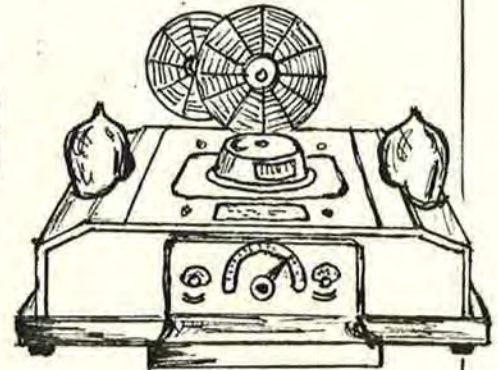
Curious Configurations



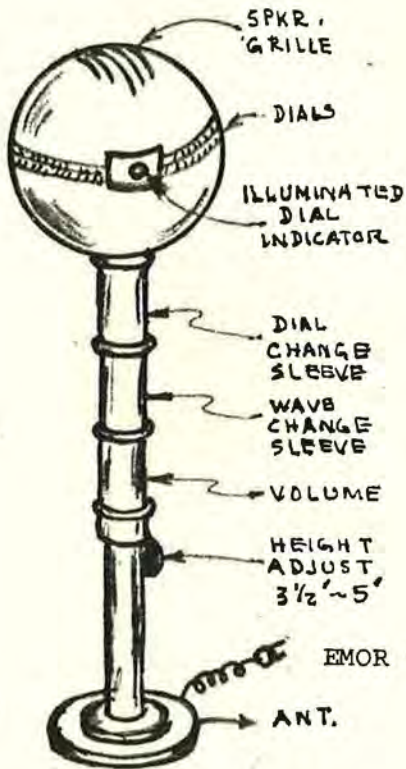
G.E. "BEDSIDE"
LOOP RECEIVER
(1922)



5-TUBE TRF - SPEAKER
IN SHADE (1926)



Brownie 2-Tube Rcvr.
Moulded Case - (GB) - 1924



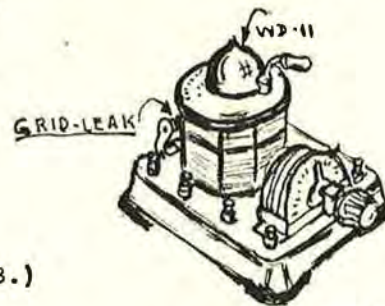
- SPKR. GRILLE
- DIALS
- ILLUMINATED DIAL INDICATOR
- DIAL CHANGE SLEEVE
- WAVE CHANGE SLEEVE
- VOLUME
- HEIGHT ADJUST. 3 1/2' - 5'

EMOR '46 MODEL 100 (G.B.)

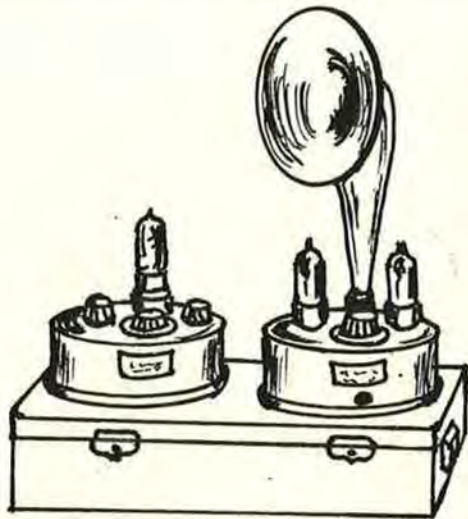
ANT.



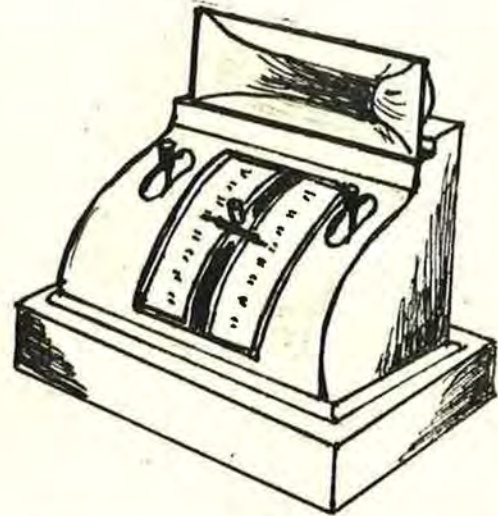
"ROTOFOR" VARIOMETER
5-TUBE TRF (1926)



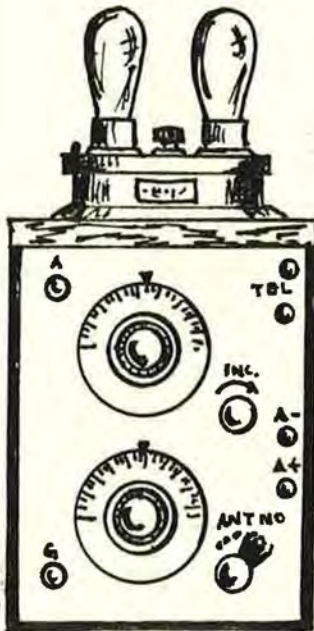
MARTIAN "BEAUTY"
(1923)



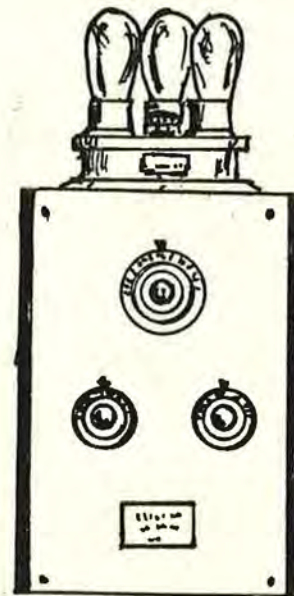
"VICTORY GRANDTONE" #550
1923 - \$65
Battery cabinet leather-covered.
DET unit at left. Victory Radio
was a S.F. company.



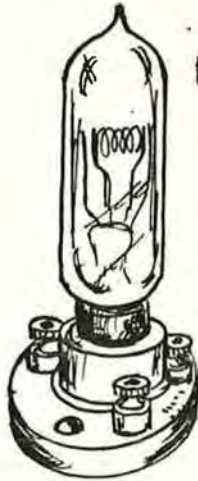
DUNN MANUFACTURING CO. - 1926
Main tuning lever actuates
the other two levers, each of
which could be moved alone.
(See also Thompson's "Minuet".)



HYBRID AMPLIFIER &
TUNER; 1923-\$65



WESTINGHOUSE R-C
TUNER; 1924-\$70



ELECTRAD DIODE
2-Element Tube
to Replace Xtals.
1923 - \$2.50



CFCN "PEANUT" TUBE,
Canada - 1923 - \$7



WELSH "PEANUT TUBE,
W.T. 501 - 1923 - \$2.75



MEYERS -99/01A
1926 - \$2.50



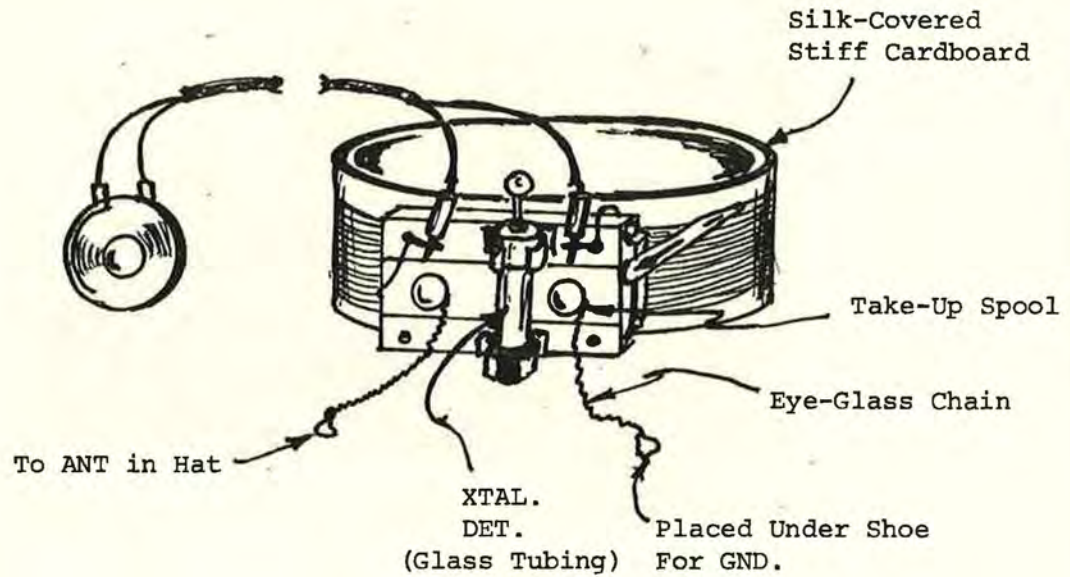
EDISWAN VALVE (G.B.)
Dual Filaments, 16 to
100 V. 1929 - 69¢



AMRAD "S" TUBE 4000-1
Gaseous Rectifier,
100 mA @ 1K VDC
1924 - \$7.50

EARLY THERMIONIC EMISSION VALVES

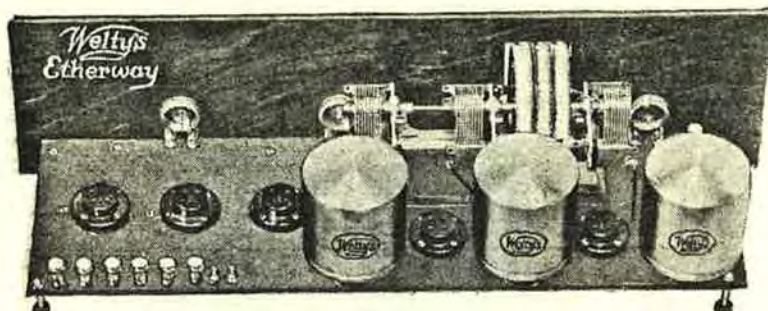
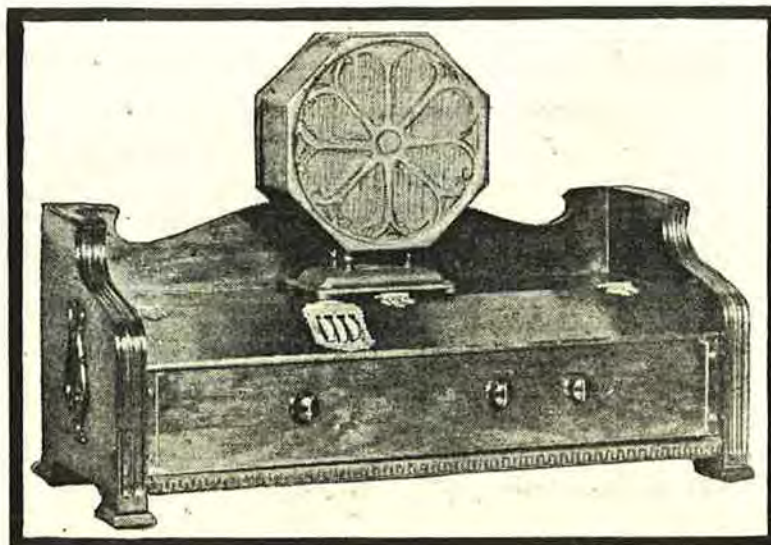
A LADY'S GARTER RADIO RECEIVER, 1922



Designed and constructed by Walter P. Miller, staff-photographer for the *Post-Intelligencer* newspaper. It was originally worn by a female reporter, as shown below.



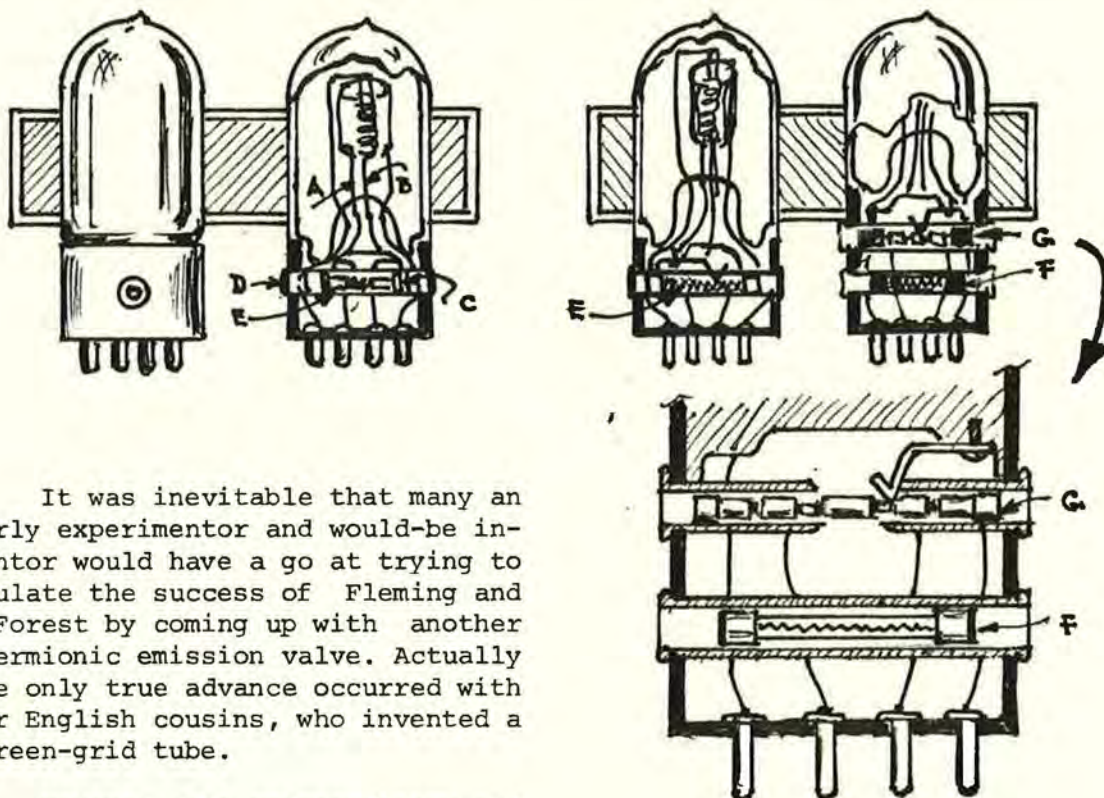
THE RADIO GARTER IN ACTION

WELTY'S "ETHERWAYS" RCVR.; 1926

This unique cabinetry was one-of-a-kind, having been constructed in the laboratories of the Welty Electric Company. It was a 5-tube TRF using the Alden Localized Control variable condenser assembly for the first time, which will be found detailed in Vol. II-A. The cabinet was made of one-half inch solid walnut, beautifully finished, with the Octacone speaker. The panel swung up and was connected by flexible leads to the sub-panel. A lovely item.

* * *
* *
*

MURPHY'S MARVELLOUS VALVE, 1926



It was inevitable that many an early experimenter and would-be inventor would have a go at trying to emulate the success of Fleming and DeForest by coming up with another thermionic emission valve. Actually the only true advance occurred with our English cousins, who invented a screen-grid tube.

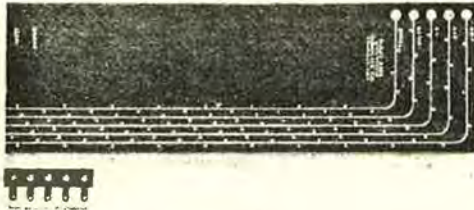
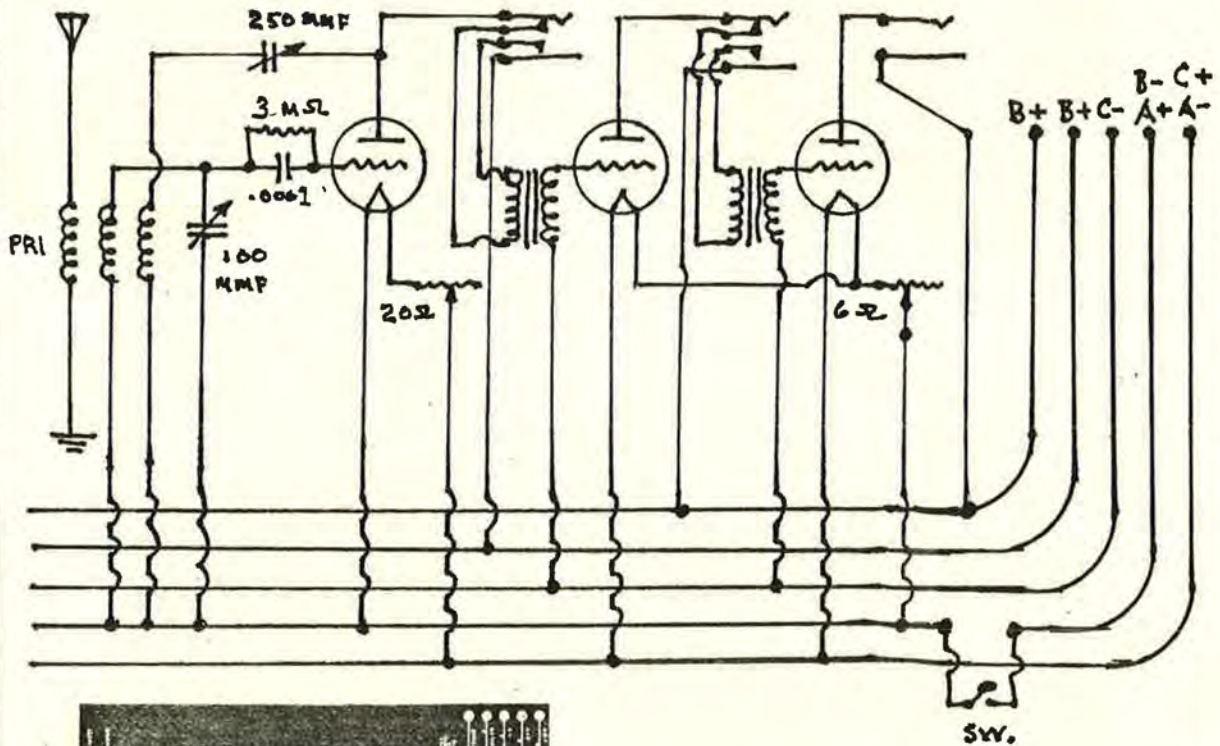
However, the extraordinary and fascinating tube invented by Philadelphia's Edmund G. Murphy in 1926, deserves a passing mention. It was truly ingenious. In configuration a X99 tube would be a good comparison. It had two filaments, shown by the letters "A" and "B" in the upper left-hand sketches. Either of the filaments could be energised simply by shifting the element "C" within the metal tube designated "D". The element was a tube of insulation with a metal cap and plug at each end, containing separate fuse-strips "E".

The upper inside right-hand sketch shows "E" and the lower sketch shows a filament fuse "F". By shifting "E" one way or the other, an increase or decrease in resistance could be introduced into the circuit.

The upper right-hand sketch is a modification, wherein a complete stage of resistance-coupled AF amplification could be obtained within a single tube. The plate circuit was completed through the resistance element "F", which was in series with the plate. The grid circuit included "G", which was a combined condenser and impedance, the condenser was in series with the grid. A most marvellous valve.

* * *

THE FIRST PRINTED-CIRCUIT BOARD?



REGENERATIVE RCVR. ON "DURAD" BASE

In 1925 the people at the DURAPLATE COMPANY in Philadelphia came up with a very clever idea...that failed. They took a composition-board and embedded square buss-bar in the forms shown above, with connecting binding posts at one end. Components were affixed through pre-drilled holes to the buss-bar. The DURAD was offered the public for less than a year, and then dropt from ken. The reason was simply that the new composition board incurred too many losses. However, it was a clever idea, and may be considered the forerunner of what today we refer to simply as a PC board.

THE CLOUGH CIRCUIT

Kendall Clough was Chief Engineer for Silver-Marshall for several years, and was responsible for designing exceptionally efficient audio-transformers. His last major contribution to the art seems to have been his design for a choke-coupled resonated push-pull transformer. It created a minor controversy among set-builder and suppliers, primarily because its circuitry was unorthodox for the time. The following comments were made by Clough in 1929 as an explanation of his circuit, best explained, perhaps, in terms of a S-M AF transformer known as the S-M 257. We are all familiar with the Clough units, but just how and why they worked is not too well known, hence the following could be of passing interest.

"The push-pull circuit will always give a more-or-less exact reproduction of the wave-form which it receives from the detector for amplification. The only connection by which detector distortion of this form could be corrected would be by amplification of the push-pull system to the detector, itself - which has been done by some experimnters.

"In phase relationships existing in the push-pull amplifier the windings connected into each side of the circuit are practically unity-coupled, in a good design. All the flux existing in the core by virtue of the primary excitation links both halves of the secondary winding completely.

"This is equivalent to saying that the voltages across the two halves of the windings must be equal and, due to the fact that the two windings are in the same direction, the outer ends of the secondary must be exactly in opposite phase with respect to the mid-tap terminal of the secondary.

"In the resistance-coupled push-pull device no such definite controlling element enters to keep the voltages applied to the two grid circuits of the definitely equal magnitude; whereas, in the transformer-coupled circuit, these two voltages are always definitely related to a single quantity, the magnetic flux of the core.

"If there are any harmonics in the detector output, these are also manifested in the magnetisation winding in the iron, and, thereby, in the voltage applied to the grids of the secondary. If harmonics are generated in the plate circuit of the amplifier tubes, these cancel to a large extent in the output transformer."



A FOREIGN NOTE

While we are primarily interested in the development of an ongoing thesis of early Radio, it is obvious that foreign engineers were not idle, and their efforts deserve a passing reference.

Marconi controlled most of the basic radio patents outside the U.S., but it is interesting to note that while MARCONI WIRELESS produced elegantly crafted sets, they struck one as being thoroughly British - that is, the sets were over-designed, over-stressed or overly complex in operation. In the mid-Twenties there was much to do in media of Marconi's sending sound along a beam of light; even though extravagant claims for future applications abounded, future applications seemed to have been limited to the one display at the Chicago Radio Fair of 1928. Another novelty, in other words, as was Tesla's pyrotechnic displays.

Not only foreign marques interested Americans of the Twenties, but also the foreign markets. The U.S. radio exports can only be described as awesome, and even after The Crash, continued quite strongly through the Thirties, like the Buick motor-car, which was the best-known American motor-car abroad. The exports were primarily expensive multi-valve communications-type receivers, with Philco leading the field. And worth noting, also, was the fact that a bevy of countries actually prohibited the importing of U.S. radios for a time, including England, Holland, China, Japan.

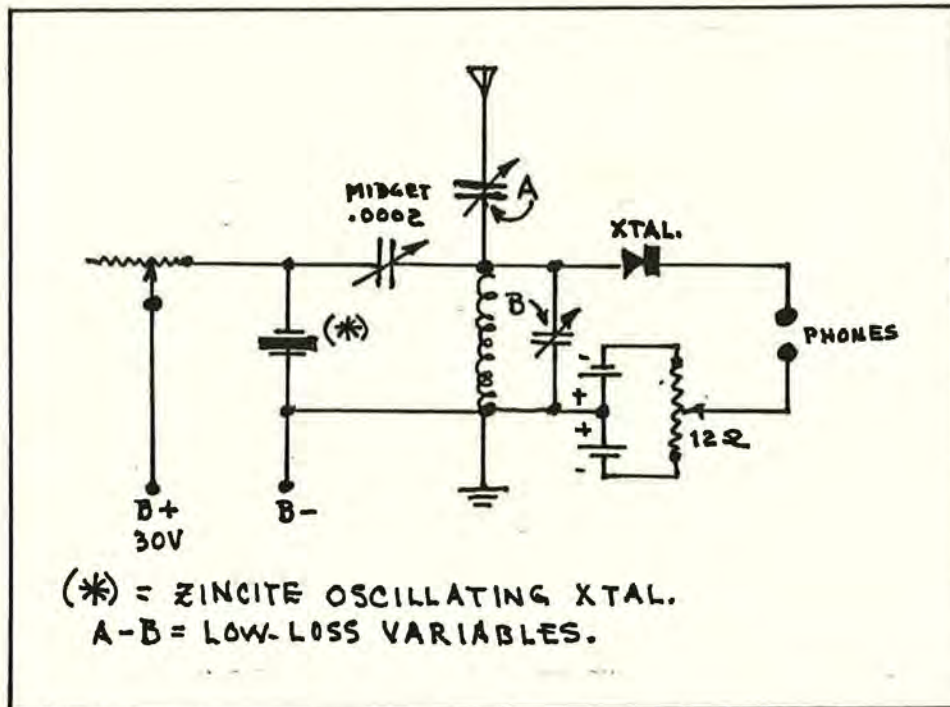
Several companies had long had established facilities set-up in foreign countries, such as Kolster, Brandes (before they combined forces), Victor, American Bosch, Columbia, Brunswick.

Nor were foreign set manufacturers indifferent to attaching fancy names to their sets, such as in England, for example, one found the Trinadyne, Filadyne, Retrosonic, D-G-R. The latter being a designation for Double Ground Reception. All of which would tend to suggest the universality of the personal relateability early set designers and builders had with their creations.

I have appended a handful of early foreign circuitry which you may find of passing interest and a bit edifying.



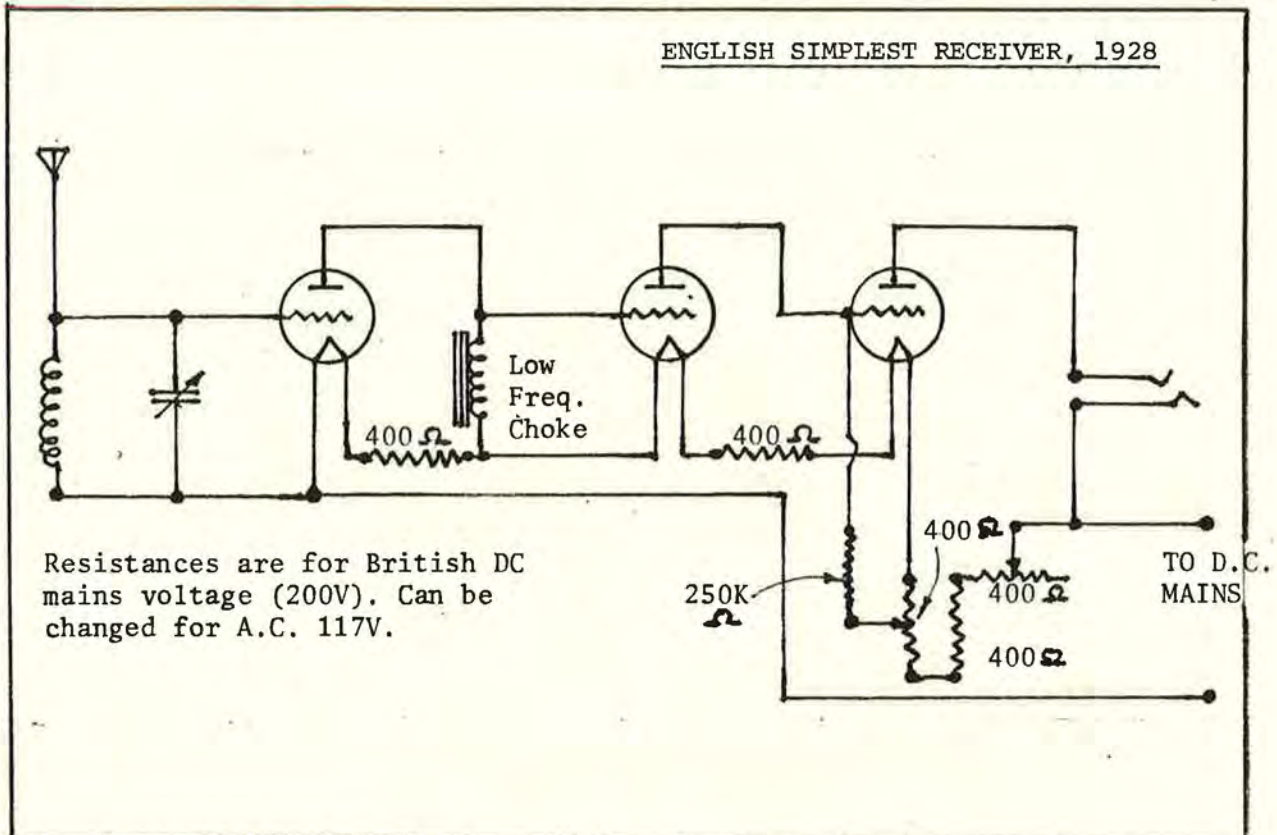
A RUSSIAN XTAL. AMPLIFIER, 1926;
TESTED BY CAPT. H.J.ROUND, ENGLAND



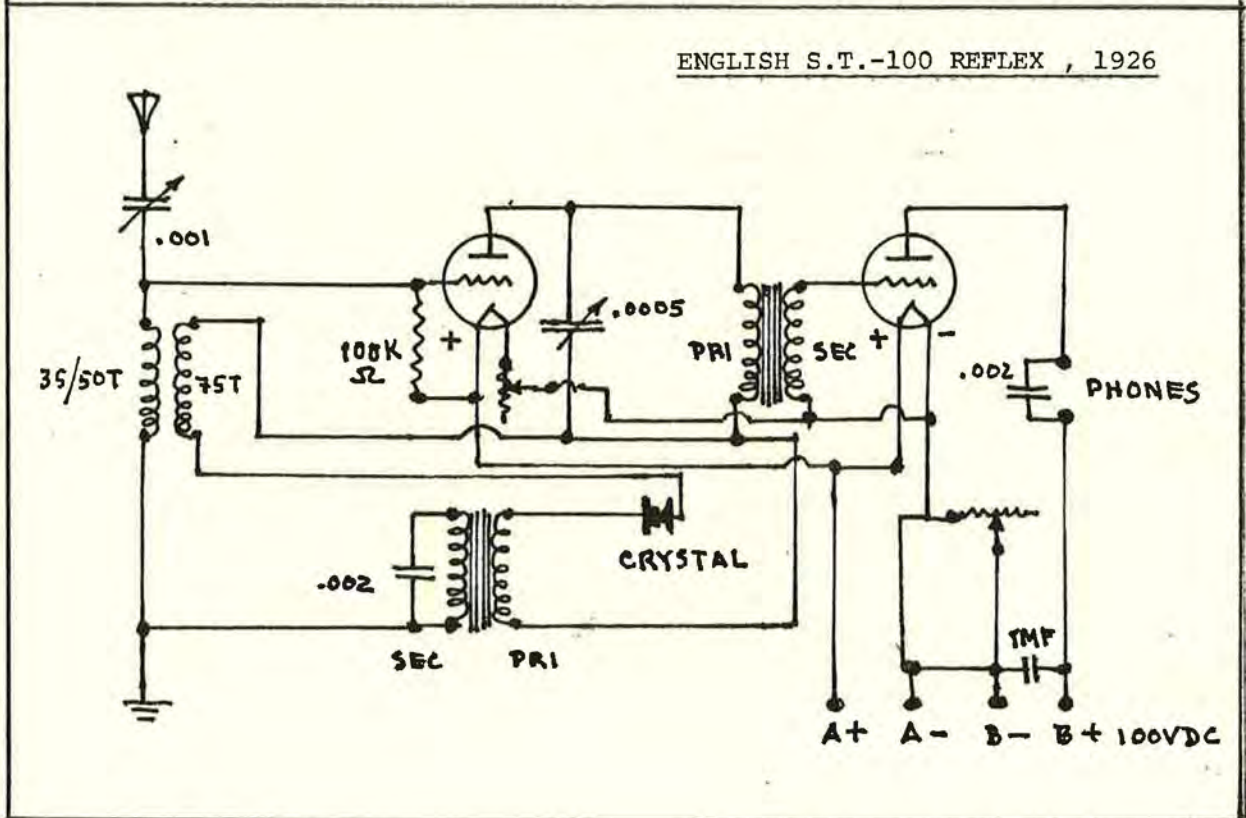
In 1925 a Russian engineer by the name of O.V.Losser, invented what he claimed as a new crystal escillator, schematic for which is shown above. In England, Capt. Round, of the Paris-Armstrong-Super-Het days, checked it out for the Royal Society, and in 1926 offered the following conclusions:

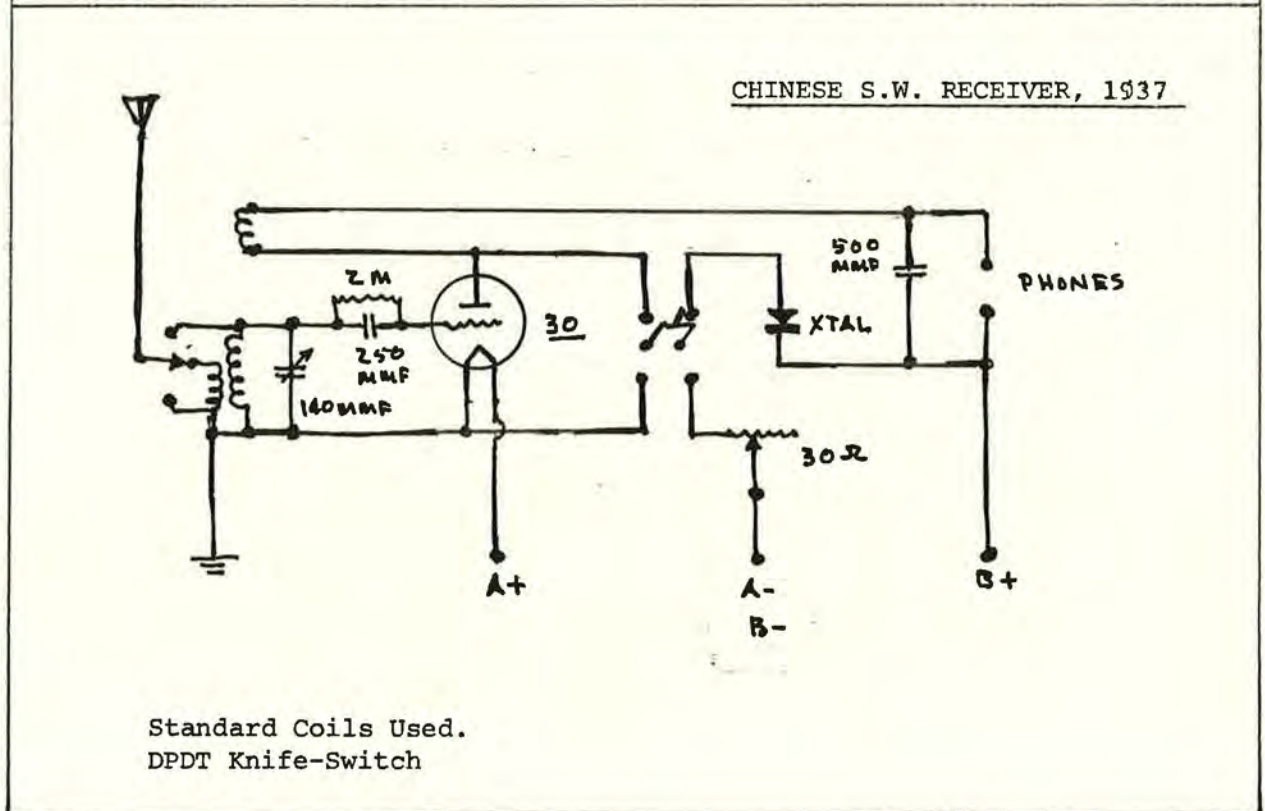
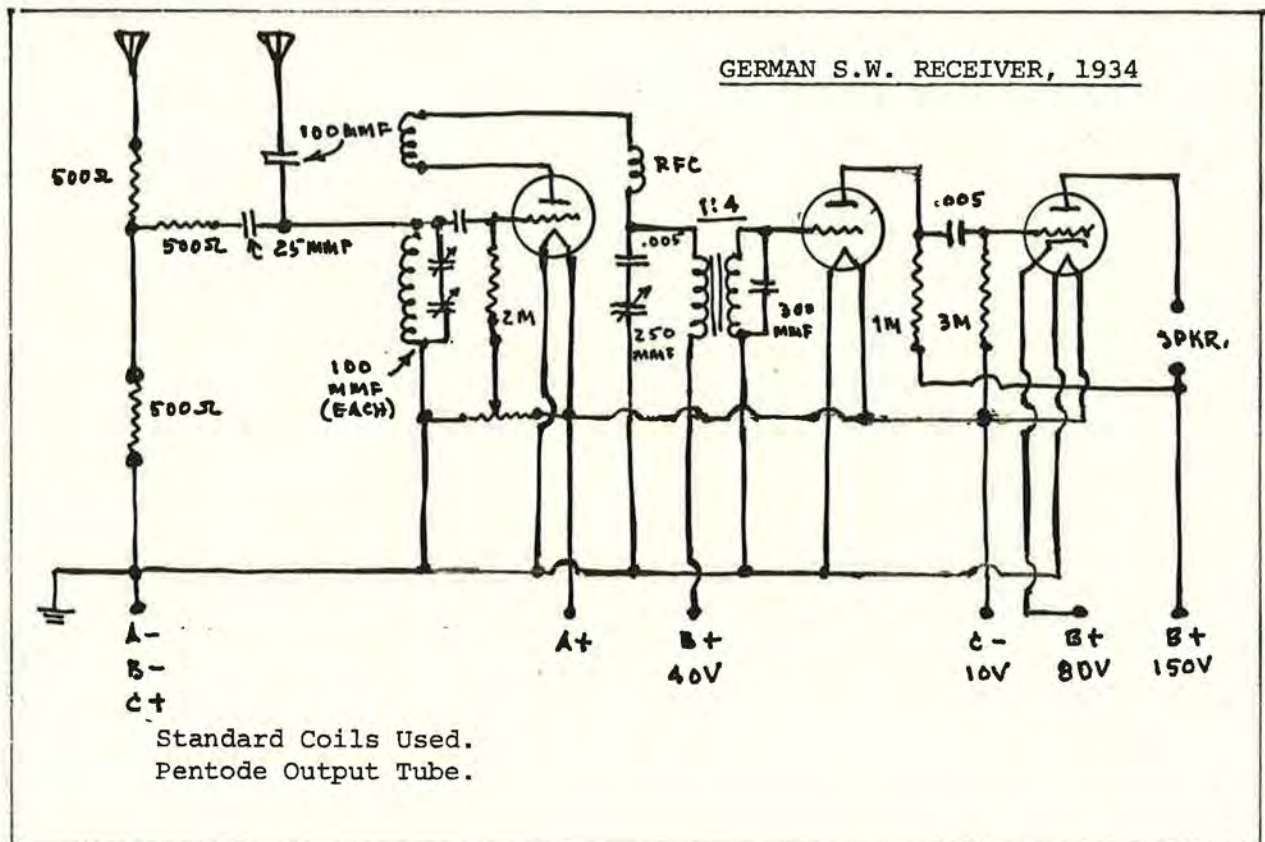
1. It was possible to maintain oscillations in a Zincite crystal circuit and an energy source.
2. The contact of the cat-whisker with the Zincite served as the generator of the oscillations.
3. Oscillations were unstable and sensitive spots on the Zincite were hard to find.
4. Pure, crystalline Zinc Oxide was better than natural Zincite in the above application. Zincite is impure Zinc Oxide.

ENGLISH SIMPLEST RECEIVER, 1928

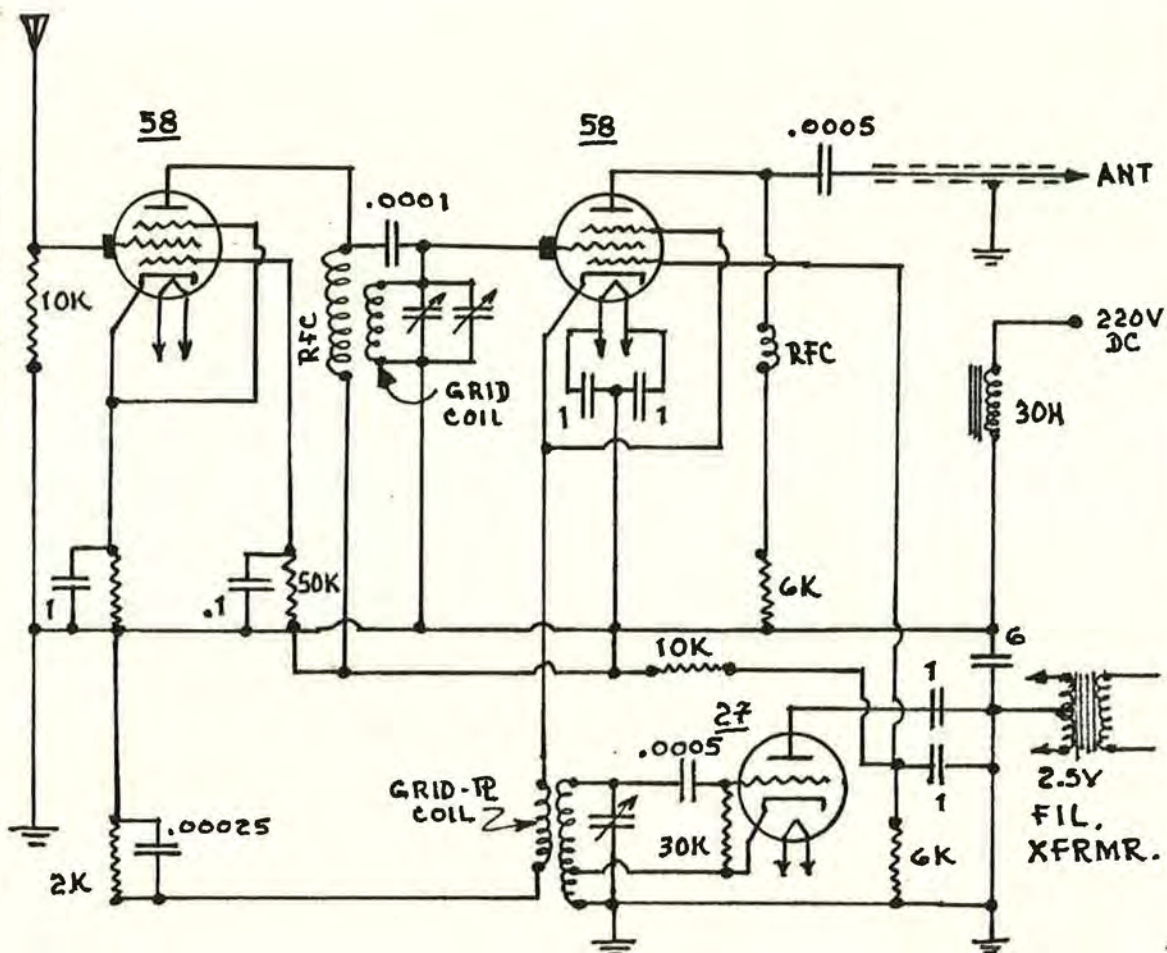


ENGLISH S.T.-100 REFLEX, 1926



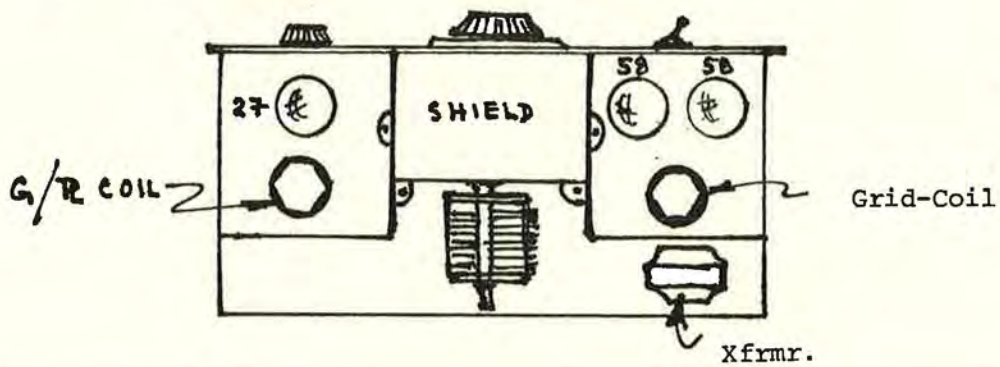


ITALIAN S.W. CONVERTER, 1934

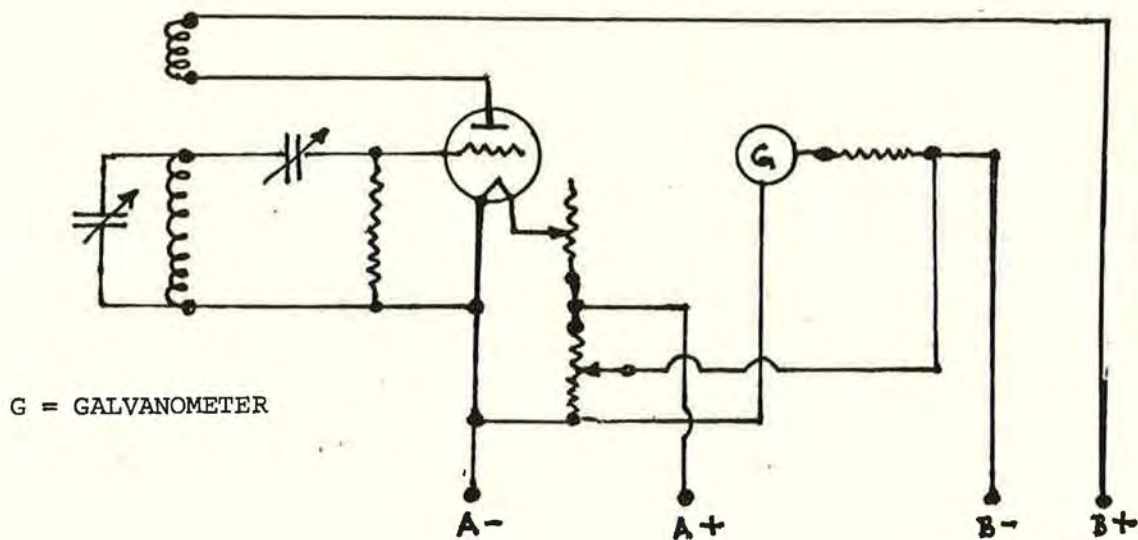


GRID-COIL = SINGLE WINDING

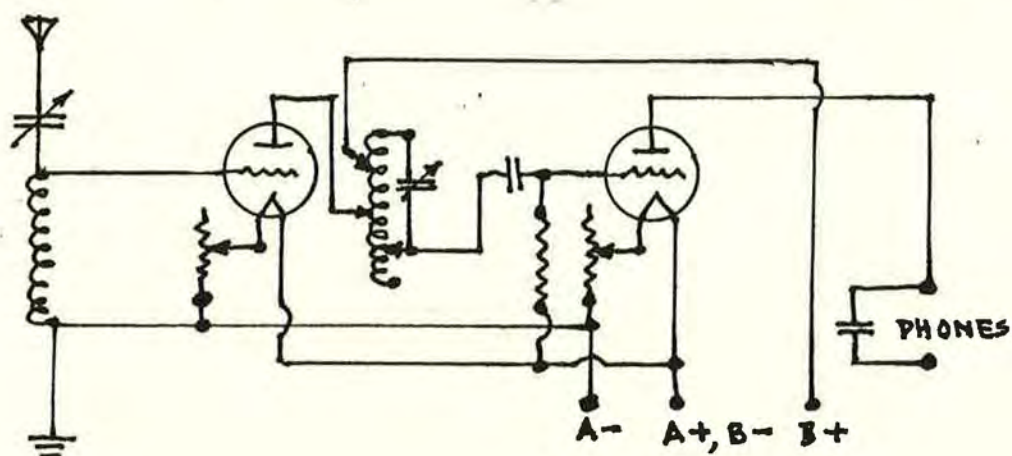
GRID-PLATE = DUAL WINDING

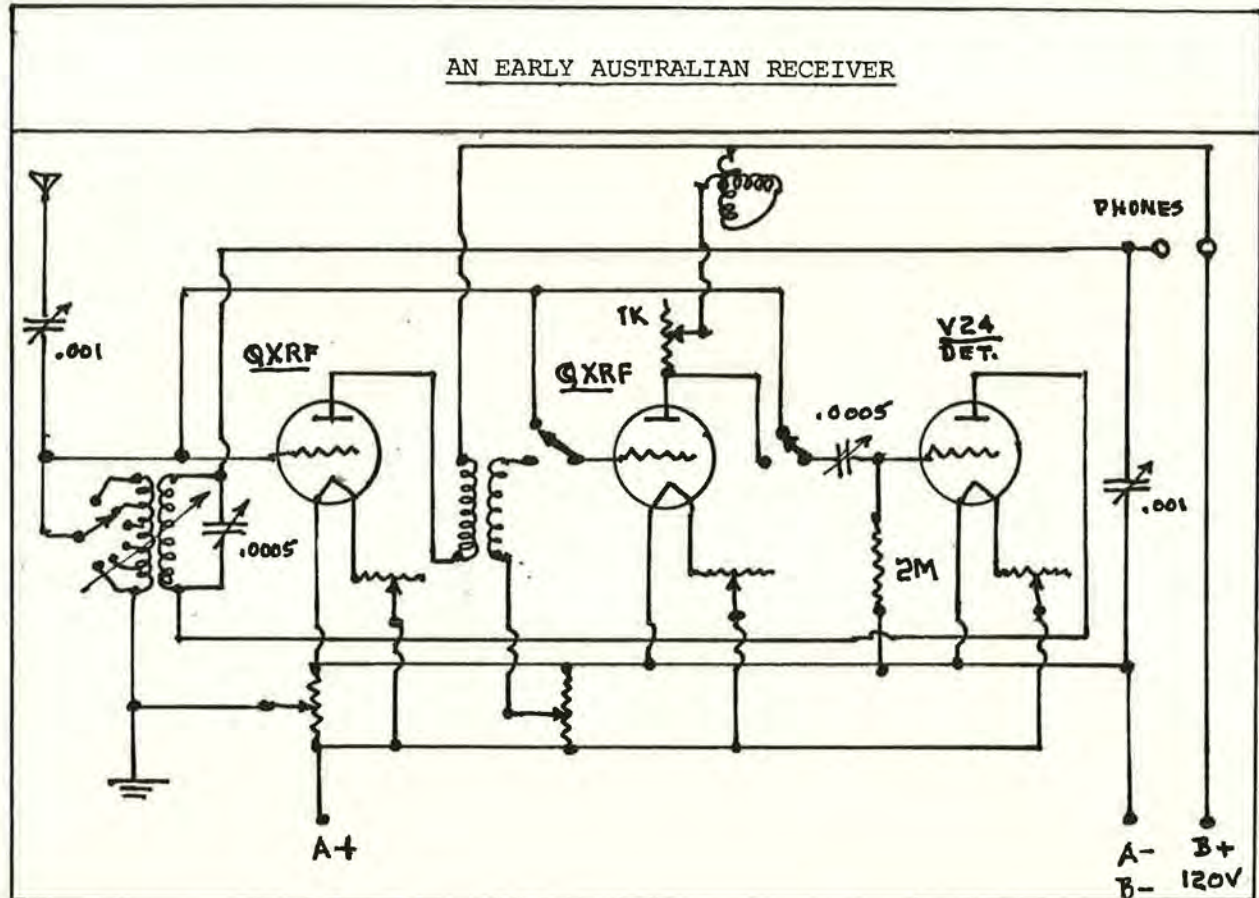


IRISH V.T. RELAY, 1921



"Recepteur Abelé", 1918-1927





In June of 1923 a Maj. Mott of Catalina Island sent a test signal "de 6XAD". His transmitter radiated 3.8A at 100 W using Western Electric 50-watt tubes.

The schematic shown above is that of one C.D.Macluren, of Sydney, who picked-up Mott's signals, and subseauqnetly verifying them. He stated that the signals were weak, but readable. Values for the components are unknown at this late date.

Meanwhile, one F.R.Rose of Intercargill, New Zealand, was also picking-up Mott's signals, verifying them as "surprising loud". The tube designations shown were British-Marconi.

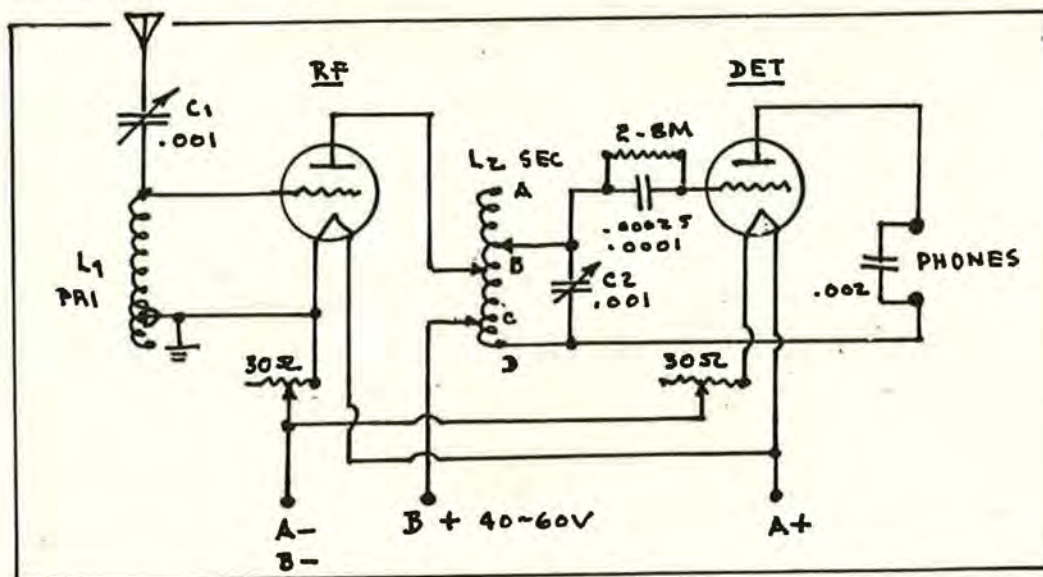
The Recepteur Abelé

We have all grown accustomed to being surrounded by things as have been built for change and never for duration, a kind of cynical planned obsolescence. It was not different in the early days of Radio with one exception - the Abelé Receptor receiver.

The circuit came into being during the Kaiser's War from M. H. Abelé, of the French Signal Corps (another famous member being Robt. E. Lacault), around 1918. The circuit remained in production and unchanged until around 1930, and was the most popular short-wave set for European amateurs, probably because of its fantastic range - 1500 to 25 K meters,

The Reinartz tuner, somewhat similar, came along about the same time and was immensely popular here, but its longevity could never be compared with the Abelé circuit. Essentially, the circuit employed capacitive coupling through a tube, as well as electromagnetic or electrostatic feed-back. The tube was placed between the PRI and SEC windings of the coils (each a separate coil) and had the advantage of intruding a 1-stage RF amplifier in that part of the circuit. This did away with all re-radiation into the antenna. It also limited a feed-back effect between PRI and SEC.

L2 and C2 (see schematic) formed part of an oscillating circuit and this permitted direct dial calibration in meters. The PRIMARY was periodic, while the SEC remained tuned. The SEC winding was also used as a means of providing regeneration, and to secure a step of TRF coupling via C2. Thus, coupling and regeneration were secured through the use of but one winding.



THE ABELÉ RECEPTOR NOTESSht. 2

1. PRI and SEC coils should be placed at least 3-feet apart and at right-angles to each other.
2. Any type of vacuum tube may be used.
3. L1 = 65 Turns of #22 or #28 SCC;
L2 = 40 Turns of #22 SCC, tapt every 2 turns;
Coil Forms = 3½" Ø for both coils.
4. L2 may be controlled by the use of tap-switches, or alligator clips.
5. L2 ratios should be approximately as follows:

$$\frac{AD}{BC} = 2:1 \text{ to } 3:1$$

$$\frac{AD}{CD} = 10:1$$

6. See too Abelé schematic on the preceding page for a different grid-leak configuration. Either way will work equally well.
7. It was the fashion to construct the Abelé circuit on a breadboard, although a few were offered as a cabinetted set, chiefly to Belgians and Frenchmen towards the end of the Twenties. The circuit was always offered in two pieces, designated for only C1 and L1 sections.

BIBLIOGRAPHY OF FORGOTTEN CIRCUITRY

What follows may be considered as something unique in modern vintage Radio literature - a single source for circuit references you will not find any other place. Rather than get lost amid the deteriorating pages of ancient media, or trying to remember if such and such a circuit was ever published, these listings should be of moment, now and in future. These listings go well beyond my own interests.

AH = Amateurs' Handibook	AW = All-Wave Radio
RN = Radio News	R = Radio
RB = Radio Broadcast	RE = Radio Engineering
RS = Radio Service	PR = Popular Radio
CB = Citizens' Call Book	RW = Radio World
RITH = Radio In The Home	RH = The Radio Home
SWC = Short-Wave Craft	RC = Radio-Craft
OSWM = Short-Wave Manual	LG * Radio Listeners' Guide
OTA = On The Air	RJ = Radio Journal

What might be found in Rider's, Sams, Beitmann, RCA's Service Manuals, Vintage Radio, Gernsback's Encyclopedia is not listed here.

- A -

Aero Automatic Tuning Unit	CB Fall, 1930
Aero Seven AC	LG Dec., 1927
Aero Overseas Four AC	CB Nov., 1929
Aero Metropolitan Four	LG Jan., 1929
Aero Internat'l. Four	CB Mar., 1929
Aero Chronophase 5-Tube	LG Jan., 1929
Aero SW Converter	PR Mar., 1928
Aerodyne Six	LG Dec., 1927
Acme AC Four	CB Mar., 1929
Acme AC Seven	CB Mar., 1929
Acratone Model 157	AW Sept., 1934
Alden Localized Rcvr.	CB #3, 1926
Alden Localized Rcvr.	CB Mar., 1927
Amrad Model 70 AC	CB Nov., 1929
AmTran Power Amplifier	PR Jan., 1928
An Improved Super-Het	RR Mar., 1926
Apex Model 7-A	CB Apr., 1932
Autoplex Receiver	CB Fall, 1924
Arcadia Model 150	CB Apr., 1930
Adding "C" Battery to AF	OTA Feb., 1926
A-B DC Power Pack	PR Dec., 1926
AB Power Unit	AH Vol. 4, 1927
Army Crystal Circuit	PR Dec., 1926
An Edison "B" Battery	RJ Jul., 1925

Addendum: RM = Radio Mechanic

- B -

Balanced Infradyne Rcvr.	AH Vol. 2, 1926
Bosch Model 28 & 29	CB Nov., 1929
Bosch Model 20	CB, 1932
"B" Eliminator	OTA Feb., 1926
"B" Eliminator	AH Vol. 2, 1926
Bodine Twin-8 Rcvr.	CB #3, 1926
Braxton-King Super-Het "C"	CB Fall, 1930
Braxton King Model A & B	CB Nov., 1929
Braxton-King Screen-Grid SW	LG Jan., 1929
"B" Eliminator	RR Mar., 1926
Bremer-Tully "Nameless"	CB Fall, 1924
B-T "Nameless" Rcvr.	RH May, 1926
B-T Power Six	CB #3, 1926
B-T Counterphase	RR Mar., 1926
Browning-Drake Rcvr.	PR Jan., 1928
B-D Receiver	CB Spring, 1926
B-D Rceiver	CB Mar., 1927
Bruno Powertone	RH May, 1926
"B" Eliminator w/ Raytheon B	CB Spring, 1926

- C -

Camfield Super-Selective	CB Mar., 1927
Cascade Regen. Rcvr.	AH Vol. 2, 1926
Carborundum Super-Het	AH Vol. 2, 1926
Citizens' 3-Tube Rcvr.	CB Nov., 1929
Citizens' Jr. 2-Tube	CB Mar., 1927
Citizens' Booster Stage	CB Mar., 1929
Citizens' Shield Grid Booster	CB Sept., 1928
Citizens' Super-Eight	CB Mar., 1927
Cockaday 7-Tibe Rcvr.	CB Fall, 1924
Counterphase Circuit	AH Vol. 2, 1926
Crosley Showbox Model 705 AC	CB Mar., 1929
Crosley Gembox Model 608 AC	CB Mar., 1929
"C" Voltages From Raytheon "B"	PR Nov., 1926

- D -

Dayton Navigator AC	CB Nov., 1929
Dymac Somerlog Rcvr.	PR Nov., 1926
"D"-Coil Super-Het	RJ Jul., 1925
DC A-B Power Supply	AH Vol. 4, 1927
Diamond Of The Air	RH Feb., 1926
Diamond Of The Air	RM Mar., 1926

Doerle SW New Rcvr. R Jun., 1933

- E -

Electrifying the LC-27 PR Mar., 1928
 Equamatic Receiver (Karas) CB #3, 1926

- F -

Federal Model H, AC CB Nov., 1929
 Flewelling Single-Circuit CB Fall, 1924
 Flewelling DC P-P Amplifier PR Mar., 1928
 Frost "B" Supply CB Mar., 1927
 Freed-Eisemann NR-80 CB Nov., 1929
 Four Tube TRF CB #3, 1926
 Four Tube Reflex CB Fall, 1924
 Four AF Amplifiers AH Vol. 2, 1926
 Four Tube Shielded Rcvr. RM May, 1927
 Five Tube TRF CB #3, 1926
 Five Tube TRF CB Mar., 1927
 Five Tube Reflex CB Fall, 1924
 Five Tube TRF CB Spr., 1926
 Five Tube Toroidal Coil Set CB Spr., 1926
 Five Tube McCullough AC CB Spr., 1926
 Forty-Five KC Receiver CB Spr., 1927
 Forty-Five/Five Hundred M. CB Fall, 1924

- G -

Grimes Inverse Duplex PR Dec., 1926
 Glo-Linimnator Pwr. Pack RM May, 1927
 Griffith Orthophase PR Mar., 1928
 Grebe Synchrophase 7, AC CB Nov., 1929

- H -

Hammarlund-Roberts Hi-Q CB #3, 1926
 Hammarlund-Roberts Hi-Q CB Nov., 1929
 Hammarlund-Roberts Hi-Q CB Mar., 1929
 Hammarlund-Roberts #29 CB Mar., 1929
 Hammarlund-Roberts 5-Tube RR Mar., 1926
 Hammarlund-Roberts Hi-Q PR Mar., 1928
 Hammarlund-Roberts Hi-Q PR Jan., 1927
 Hammarlund-Roberts Hi-Q Six PR Mar., 1928
 Hammarlund-Roberts Pwr. Pack PR Jan., 1928
 Hammarlund-Roberts Hi-Q PR Apr., 1928
 Hammarlund-Roberts Comet CB Apr., 1932

Hammarlund-Roberts TRF	RH May, 1926
Hammarlund-Roberts 5-Tube	CB Spr., 1926
HFL Isotone #10	CB Sept., 1928
Harkness Counterphase	RH Oct, 1924
Harkness Inverse Duplex	RH Oct., 1924
Harkness HK-27	PR Jan., 1927
Harkness Counterphase	PR Jan, 1928
Harkness Counterphase AC	PR Apr., 1928
Halldorson S.G. 56 Rcvr.	CB Sept., 1928
Haynes Regen. Rcvr.	CB Fall, 1924
Hatry's Single-Tube Circuits	AH Vol. 2, 1926
Henry-Lyford Rcvr.	PR Jan., 1927
Howard Model DL	CB Apr., 1932
Hoyt Augmentor Circuit	AH Vol. 2, 1926
Howard Model S-G-A	CB #3., 1930
Hot-Spot Fourteen	LG Dec., 1927
Harkness S.G. DeLuxe	CB Jan., 1929
Hollister AC-8	CB Mar., 1929

- I -

Interflex-Four Rcvr.	AH Vol. 2, 1926
Interbalanced Regen. Rcvr.	AH Vol. 4, 1927
Infradyne	PR Dec., 1926
Infradyne Improved	CB #3, 1926
Improved Lab Super-Het	AH Vol. 2, 1926
Interpol Five Rcvr.	CB Dec., 1927
Impedence-Cpld. Super-Het	CB Mar., 1927
Interflex Regn. Rcvr.	AH Vol. 2, 1926

- J -

Jones Super-Het	AH Vol. 4, 1927
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- K -

Karas Equamatic 5-Tube	CB Mar., 1927
Knapp "A" Supply	PR Jan., 1928
Knickerbocker Four	LG Dec., 1927
Kaufmann's Circuits	CB Fall, 1924

- L -

La-Peer AR-9	CB Dec., 1927
Lentz SW Model C	CB #3, 1930
Lincoln One-Spot 8-80	CB Sept., 1928

Lincoln DeLuxe Rcvr. 31	CB #3, 1930
Lloyd C. Greene Concert	CB Fall, 1924
Lodge "N" Receiver	CB Mar., 1927
Loftin-White Tuner & Amp.	CB #3, 1939
Loftin-White Receiver	AH Vol. 4, 1927
LC Intermediate Pwr. Pack	PR Dec., 1926
LC Senior Power Pack	PR Nov., 1926
LC Jr. Power Pack	PR Jan., 1927
LC-28 Screen-Grid Rcvr.	PR Apr., 1928
Lab Super AC Receiver	CB Dec., 1927
Lab Model 9 Super-Het	CB Sept., 1928
Low-Loss Tuner	CB Spr., 1926

- M -

Madison-Moore Super-Het	CB Spr., 1926
Madison-Moore One Spot	CB #3, 1926
Marcodyné TRF	CB Spr., 1926
Monoflex Circuit	CB Spr., 1926
Melo-Heald Super-Het	CB Mar., 1926
Mohawk Lyric S-6	CB Apr., 1932
Mohawk 6-Tube AC	CB Mar., 1929
Mohawk 8-Tube AC	CB Mar., 1929
Mohawk Pwr. Pack	CB Mar., 1929
Monoplex Circuit	CB Fall., 1924
Monoflex Circuit	CB Spr., 1927
Making An Ohmeter	AH Vol. 2, 1926
M-S New Super-Het	AH Vol. 2, 1926
M-S Silver Six	RR Mar., 1926
M-S Portable Super-Het	CB Fall, 1924
Modern P-P Amplifier	PR Jan., 1928

- N -

National S.G. Five	CB Sept., 1928
National MB 29 Rcvr.	CB Nov., 1929
National "B" Eliminator/Amp.	CB #3, 1926
National "B" Elim.B-H Tube	CB #3, 1926
Neutrodyne Receiver	CB Fall, 1924
Neutrodyne Receiver	AH Vol. 2, 1926
Nelson Model N-30 AC	CB Nov., 1929
New Home Receiver	PR Jan., 1928
Noiseless AF Amplifier	AH Vol. 2, 1926
Norden-Hauck Super DX-5	CB Fall, 1930
Norden-Hauck Admiralty 10	CB Nov., 1929
N-27 Nine-In-Line Improv.	CB Mar., 1927

- P -

Pilot Auto Radio	CB #3, 1930
Pilot BC Power Pack	PR Jan., 1928
Pilot Super Wasp	CB Nov., 1929
Perfam AC-Four	CB Dec., 1927
Phasatrol Five Rcvr.	CB Mar., 1927
P-P Amplifier	CB Fall, 1924
Powers-Casen Rcvr.	AH Vol. 4, 1927
Popular Radio SW Converter	PR Apr., 1928
Portable Super-Het	RM May, 1927
Pilot Super-Wasp	RC Jul., 1929

- R -

RN Lab Portable	AH Vol. 2, 1926
RN Lab SW Rcvr.	AH Vol. 2, 1926
Regenerative Rcvr.	CB Spr., 1926
Regenerative Rcvr.	CB Sept., 1928
Regenerative Rcvr.	CB Fall, 1924
Rauland Photo-Amplifier	PR Jan., 1928
RCB SW Receiver	CB Spr., 1926
Reinhartz-Zenith SW Trans.	RJ Jul., 1925
RN AC Receiver	AH Vol. 4, 1927
Remler 29	CB Sep., 1928
Remler Infradyne	PR Apr., 1928
Robertson-Davis Super-6	CB Mar., 1929

- S -

"S" Tube "B" Charger	RJ Jun., 1925
SW Low-Loss Rcvr.	RJ Jun, 1925
Shielded SW Converter	CB Jan., 1929
Superflex Regen. Rcvr.	CB Fall, 1924
Super-Het Fil. Controlled	CB Apr., 1926
Standard Raytheon Elimin.	PR Jan., 1928
Shielded Single-Control Set	CB #3, 1926
Superdyne Receiver	CB Fall, 1924
Sargent-Rayment Seven	CB Sep., 1928
Scott World Record	CB Sep., 1928
Sargent-Rayment Seven	CB Jan., 1929
Scott SW Converter	CB Nov., 1929
Special T-C Receiver	CB #3, 1926
Six-Tube TRF	CB #3., 1926
Screen-Grid All-Electric	CB Jan, 1929
St. James Receiver	CB Mar., 1927
St. James Super-Het	CB #3, 1926/#3, 1927

Shielded Six Neutralized	CB Mar., 1927
Self-Shielded Six	CB Dec., 1927
Six-Tube Shield. Neutrodyne	CB #3, 1926
Silver Shielded Six	CB Dec., 1927
Silver Model 30-D	CB #3, 1930
Silver-Marshall Model "J"	CB Apr., 1932
S-M Silver Six	RR Mar, 1926
S-M 720 AC	CB Mar., 1929
S-M Round The World Four	CB Jan, 1929
S-M 245 Power Pack	CB Nov., 1929
S-M Model 712	CB Nov., 1929
S-M Model 724 Receiver	CB #3, 1930
S-M 738 Adapter	CB #3, 1930
Silver Portable Super-Het	CB Fall, 1924
Superhet Receiver	CB Fall, 1924
Single Circuit Regenerative	CB Fall, 1924
Shielded Ultradyne L-4	AH Vol. 4, 1927

- T -

TRF 1-Stage AF	CB Fall, 1924
TRF 4-Tube Osc. Supression	CB Spr., 1926
TRF Twin-8 Coils	CB Spr., 1926
TRF Toroidal Coils	CB Spr., 1926
TRF 4-Tube Rcvr.	OTH Feb., 1926
TRF Aerodyne Rcvr. AC	RM May, 1927
TRF Aerodyne, Batt.	RM May, 1927
T-C Samson Rcvr.	RH Mar., 1926
T-C Samson Rcvr.	RH May, 1926
Three Tube Reflex	CB Fall, 1924
Thordarson QSA-5 Rcvr.	PR Mar, 1928
Thordarson Power Pack	PR Mar., 1928
Thordarson Compact "B"	CB #3, 1926
Thordarson Pwr. Amplifier	CB #3, 1926
Thordarson 250 Pwr. Amp.	CB Sep., 1928
Thordarson R-480 Pwr. Amp.	CB Mar., 1929
Tobe "A" Eliminator	PR Mar., 1928
Three Circuit Regen.	CB Fall, 1924
Two Step AF Amplifier	CB Fall, 1924
Transmitting Circuits	CB Fall, 1924
Transoceanic Interflex	AH Vol. 4, 1927
Tropodyne Receiver	AH Vol. 2, 1926
Transformer-Cpld. Amplifer	PR Mar., 1928
Twin Variometer Circuit	CB Fall, 1924
Two-Tube Reflex	CB Fall, 1924
Tu-Ra-Flex Receiver	AH Vol. 2, 1926
Tube Re-Activator	OTA Feb., 1926
Tuned AF Unit	RM May, 1927

Tuned Plate Receiver	CB Fall, 1924
Tyrman Imperial Rcvr.	CB Sep., 1928

- U -

Ultra-Five Regen. Super-Het	AH Vol. 4, 1927
Ultraudion 2-Stage AF	CB Fall, 1924
Ultimax Receiver	CB #3, 1926
Unicontrol 9-In-Line	CB #3, 1926
Uni-Set Receiver	AH Vol. 2, 1926
Universal Four Rcvr.	CB #3, 1926

- V -

Victoreen Super	RH, Feb., 1926
Victoreen AC Rcvr.	RM May, 1927
Victoreen Super	PR Jan., 1928
Victoreen Supreme	CB #3, 1926
Victoreen Universal	CB Mar., 1927
Victoreen Modernized	CB #3, 1930
Victoreen Super-Het	CB Spr., 1926

- W -

Walbert Isofarad Rcvr.	PR Nov., 1926
Walker Multi-Unit	CB #3, 1930
Walker Multi-Unit	CB Mar., 1929
Wave Traps	CB Mar., 1929
Wave Traps	AH Vol. 4, 1927
Wavemeters	AH Vol. 2, 1926
World's Record Super	CB #3., 1926
World's Record Syper 10	CB Dec., 1927

* ● *

While super-het circuitry was rapidly becoming standardised by the early Thirties, there were still innovative minds out in the hinterland seeking to devise new schemes for old circuits, particularly in the field of short-wave receivers. Probably most useful of media of the period were Radio Craft and Short-Wave, by Gernsback's new media empire. The following listings were culled from those two magazines.

RADIO CRAFT:

All-Wave Masterpiece	Nov., 1933
All-Wave Antenna System	July, 1934
Autodyne 3-Tube	August, 1932

Automobile Radio Schematics	July, 1934
Bremer-Tully 7-70/7-71	January, 1930
Band-Spread Tuner	April, 1934
Brunswick Model 31	February, 1930
Bosch Model 60/61	August, 1931
Bias Resistance Chart	May, 1934
Clarion AC 160	July, 1932
Colonial 250/229/300	November, 1933
Columbia Model 96	August, 1931
Columbia C-90-A/-B	November, 1932
Crosley Model 54	January, 1933
Crosley Tynamite	July, 1932
Crosley Bonnibon	July, 1932
Crosley Oracle	August, 1931
Coil Winder Data	March, 1934
Federal Orthosonic	January, 1930
Freshman Model N	January, 1930
GE J-125	August, 1930
GE K-80	March, 1931
GE B-52	July, 1934
GE 30 Battery Set	July, 1934
Harkness DeLuxe	July, 1929
Hammarlund Hi-Q	October, 1932
Hammarlund SW Adapter	February, 1930
Leutz Seven Seas	July, 1929
Lafayette 2-Band Rcvr.	January, 1933
Loop Antenna Design	November, 1932
Majestic Model 460	November, 1933
Megadyne One-Tube	July, 1932
Midwest 16	January, 1933
Pilot Wasp	July, 1932
Pilot Super Wasp	July, 1929
Pilot Super Wasp	January, 1930
Philco Models 80/37	January, 1933
Philco Model 70	July, 1932
Philco 15/15X/15DX	August, 1932
Philco Model 91	October, 1932

Pentode Portable SW	August, 1931
Powertone-Wallace SW Rcvr.	September, 1933
RCA R-7	July, 1932
RCA R-7	August, 1931
RCA R-78	August, 1932
RCA P-31	July, 1932
Radiola 67 Power Unit	July, 1932
RF Oscillator	January, 1933
Service Oscillator	July, 1932
Scott All-Wave	November, 1932
Sonora E-AC	August, 1931
Spartan 40 (Auto)	July, 1932
Stewart-Warner 50/51/58	January, 1933
Stewart-Warner 12-Tube	May, 1934
Stewart-Warner 900	February, 1930
SW Converters	August, 1931
SW Superegenade	August, 1931
Steinite 50A/102A	JANuary, 1934
Test Set Adapter	October, 1932
Test Set Adapter	November, 1931
Three-Tube Reflex	October, 1932
Two-Tube SW Set	March, 1934
Variable-Mu Six	July, 1932
Zenith 42	February, 1930
<u>SHORT-WAVE CRAFT:</u>	
Acratone Discoverer SW	September, 1933
A.G.S. SW Receiver	January, 1933
Amateur Transmitters	September, 1933
All-Star, Jr. 5	March, 1935
All-Wave American Bosch	April, 1934
BFO Circuitry	March, 1935
Band-Spread Tuner	April, 1934
Cosman Four (Try-Mo)	March, 1936
Denton Discoverer	March, 1935
Foreign Schematics, SW	October, 1936
Ham Station Monitor	September, 1933
Junior R.G.H.	March, 1935
Kadette Model 65	March, 1935

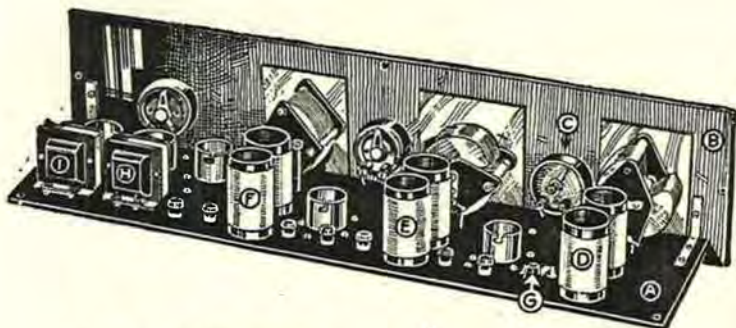
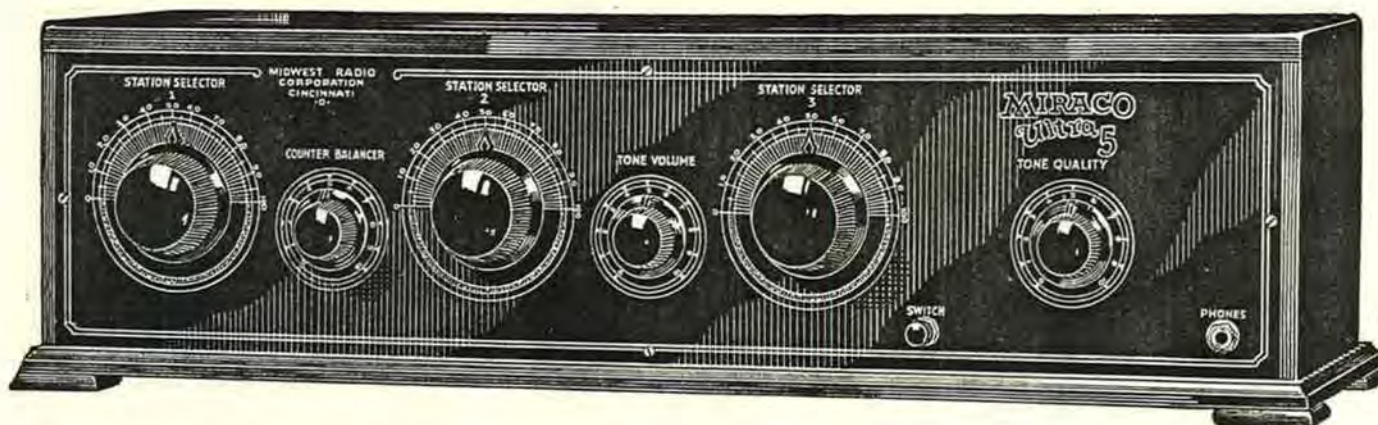
Kolster K-140/K-142	March, 1935
Lafayette 2-Band SW Rcvr.	January, 1933
National HRO	March, 1935
Portable SW Receivers Pentaflex 1-Tube Rcvrs.	Jan./Sept. '33: Oct.'36 Sept.'33/Mar.'35/Oct.'36
Regenadyne Five	March, 1935
SW Converters Stand-By SW Rcvr. Superhet 14-Tube	Sept.'33/Apr.'34/Mar.'35 April, 1934 Apr.'34/Mar.'35/Mar.'36
TRF Pre-Selector Tetradyne SW Rcvr. Tinymite 1-Tube SW Set Three-Tube Super TRF SW Receivers	Apr.'34/Oct.'36 Apr.'34/Jan.'37/June.'37 Sept.'33/Oct.'36 Sept.'33/Mar.'36 Jan.'33/Mar.'36/Jan.'37



Certificate of Merit

Having previously mentioned that our early radio media did much to popularise Radio among everyman, they also encouraged manufacturers by awarding so-called Certificates of Merit - an idea that came from Hugo Gernsback and his Radio News. Other media followed suit and examples of a couple are given below.





- A = Formica Base.
 - B = Bakelite Panel (Note shields).
 - C = "Counter-Balancer".
 - D-E-F = "Duoformer" RF Coils.
 - G = ANT Control.
 - H-I = "Modern" AF Xfmrs.
- Mahogany Cabinet.

This was a conventional TRF of the period, employing binocular coils. There was a confusion of names, in that Nakken came out with his "Ultra Five" the same year, incorporating Lacault's "Ultradyn" principle (refer to the ULTRADYNE MONOGRAPH). 1925 - \$60.

MID-WEST (MIRACO) "ULTRA 5" / 1925

NOTE: This is an excellent example of graphic art in early Radio media.

THE OTHER SIDE OF THE MIRROR.....

A Personal Appraisal Of the Vintage
Radio Hobby After A Long Absence...

I write of vintage Radio as a sociological phenomenon, thus also as a social critic. The two roles are not contradictory, but if neither proposition is really understood as the primary basis and as the essential thrust of these Sketch-Books, misunderstanding ensues. That was also my frame of reference when I attended my first meeting of vintage Radio buffs after a long absence, and I would share a few observations and thoughts with you.

Thirteen years amid foreign cultures, foreign languages, or foreign women can, upon returning to one's native land, cause a distinct psychological dislocation of the values and perspectives which were indigenous to one's maturation, not to mention a renching of an elusive sense of wonder.

The first thing one notices upon returning after a long absence is much like returning to normal life after a long and confining illness, the social changes, the shift of the center of gravity, as it were, of *morés* and *tabus*. For someone of my generation, it was almost like coming into another foreign place. However, I have written of that in another place: here I would like to share some of the impressions gathered while attending a swap-meet of the current vintage Radio fraternity.

My early days in ham-radio (K6KFP) had engendered a lasting affection for the hobby, which, in time, enlarged to include looking deeper into the earlier state-of-the-art, primarily that period that had exploded with rapid advances and innovations, marvellous ingenuity, imagination, and even a commercial sense of adventure. That was the period from 1924 to 1930.

Any special-interest, such as a hobby, has always been what can only be deemed a *mutually shared enthusiasm!* - *irrespective of a multiplicity of levels of interest or knowledge.* Anything else makes it quite something else than a hobby. The resultant of such mutually shared enthusiasm is, obviously, fraternalism. I easily admit that I

was a bit bemused by the seeming lack of even a collective enthusiasm at my first swap-meet in thirteen years.

It was there with a few individuals, most of them of my generation, I noted. There also seemed to me that there was a strange if inarticulated banality, a lack of serious interest or knowledge within the new breed of vintage Radio buffs. Where once we all shared the fascination of a distinctive hobby, we now seem to have the odd phenomenon of ham-radio being turned into merely an extension of the long distance telephone, a mode of insipid and rather common gossip, along with tons of totally unnecessary vulgar language, especially among or seemingly, the modern XYL.

In my time the FCC would not have tolerated such, anymore or less than they would have tolerated some ham operator in L.A. screwing down his key on a frequency being used by a scheduled call simply because he wasn't allowed to break in. I am well aware of the many evils which have followed the de-regulation of many services and pursuits in a society managed by avaricious permissiveness, and that was not my concern - all things pass, it's simply a matter of living long enough. It was the gross lack of frequency control and signals wander all over the dial, and no-one protesting, despite the new fashion for spurious causes and specious rights.

The attendance at the swap-meet was impressive enough - some attendants having come from as far away as L.A., Portland or Seattle, Reno and Las Vegas. There were the to-be-expected dutiful wives and a sprinkling of bored girl-friends. A few names from my time were there such as Herbig, Giganti, Eckland, Wilson, Floyd, but I was listening, and observing, and wondering as I moved amid the crowd. The confusion over terms struck me first, which I do not believe could be put down to the newly espoused and studied semantical carelessness of language. It seemed that anyone expressing even a casual interest in vintage Radio was automatically a "collector", even if he was simply a dealer. This was an ecclesiastical distinction that would have baffled Solomon.

I noted several neat piles of early media, all of the twenties and all representing a treasure-trove of information. I also saw very few people stop at those tables, or even give them a passing eye during the entire meet.

The buying and selling of hardware and accessories seemed to be the main concern of everyone there, and without exception, I noted that when a dealer was asked a price, there was always a long hesitation before a price was announced. Another consistent preamble was to tell the prospective buyer how much money the dealer "had in" a particular item. There were, of course, a couple of dealers who seemed to go out of their way to be quite brusque with prospective buyers. This was particularly noticeable where the prospective buyer was young and

dealer was old. In fact, there was one dealer, while talking with me actually said the following:

"There are really only two people here who actually know anything about old radios - and I am one of them!"

The sad thing was that he was in dead earnest.

There were several very neat battery sets being offered and attracted very little attention. When I enquired after the reason, I was told that most of the people there were only interested in those sets operated by the mains. This then led me into further discussion that revealed another new facet to the hobby - a childish and totally artificial hardware snobbery syndrome, something totally lacking in the early days of the hobby.

While we all have special interests, likes, and private enthusiasms, and there is nothing immoral in that, to favour AC radios and to make snide remarks about someone who favours battery sets, or three-dialers, is more than just bad manners - it is ignorance, and no hobby can thrive and endure on ignorance. Yet I encountered this gross immaturity, and it was rather sad. I kept wondering whatever had happened to fraternalism.

The educated and cultured man may cringe at the increasing semantic carelessness abroad in the land, where "route" has become "rout", and linear distance is no longer expressed in terms of being "farther" but is now "further"; but to attach an artificial significance to equally artificial distinctions between AC and DC radios is something that will bear being looked at rationally.

I was pleased to learn of the various little regional clubs which have sprung-up around the country, and which publish little or small bulletins, newsletters, gazettes, journals. I immediately subscribed to all of them. But as I studied their contents and letters, and studied their mastheads, and read all of the "smalls", an alarming thought suggested itself. Aside from the depressing sameness of such publications and a me-too-ism, that was so obvious, I noted the same names appearing on mastheads as officers year after year, with only their titles changed. This bespeaks a *clique-mentality*, I feel, and as such, can only become detrimental to any hobby. It will lead inevitably to self-cannibalisation.

Even the ARRL seems to have become so institutionalised for the prejudices and biases of its editors, that they no longer offer that most essential ingredient of any hobby - a sense of belonging, if that is *môt juste*, to a distinct fraternal group. I grew up with the notion that all media, communication, meeting, personnel, of any special-interest group - and a hobby is a special-interest grouping,

has a justifiable existence only to the extent that all such promote and advance and enlarge awareness of that special-interest. My paramount impression of the first swap-meet I had attended for thirteen years reflected more of self-serving interests of individuals than a collective sharing of an enthusiasm.

While there was, as I have mentioned, a great emphasis upon buying and selling "junk" (an affectionate term), there was no obvious effort being made by anyone to publicise the local vintage Radio group, nor to any missionary work for any new-comers who may have an interest but didn't know how to have it encouraged. We may assume in all reasonableness that the next generation will produce those individuals who will be attracted to the allure, the romance, the wonder of vintage Radio. Who will guide them, encourage them, educate them, if all they can see are sophomoric *cliques*, generally sophomorically conceived publications, and so-called clubs dominated by a few, or a far cry from organisation, discipline, philosophy, and *purpose!*

I came away from my first vintage Radio swap-meet after the long absence mentioned with an admitted ambivalence of emotion. That all things change is a *cliché* used by men who are too lazy to think, and one should always make a distinction between genuine change, and what is merely concretised indifference to the permanent things. You may recall that this is nothing new, as in the mid-Thirties there in the hey-day of the ARRL, Frank Jones recognized the even-then institutionalisation of the ARRL and set-up a counter publication to the ARRL Handbook. More importantly, *he took a stand for the hobby!*

Who is taking a stand today?

When the fundamental binding medium of any hobby, which was, as I have stated - shared enthusiasm and mutual support, ceases to be a validation of that hobby, then the hobby becomes something else and we should find another name for it.

A mirror has no image of its own.....

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MIRROR II

It is the interchange of personal opinions among members of any special-interest group (we used to call them "bull-sessions") that advances any hobby, as well as re-inforcing and stimulating a basis enthusiasm. Fraternity, like true love, is nothing if it is not sharing - enthusiasm, knowledge, effort, comradeship. I do not sense this among the "new breed" of vintage radio buffs.

Since writing my initial observations after my return to the States, I have wandered in and out of many swap-meets and mingled with groups here and there. The reaction to my initial comments, oddly enough, were strangely consistent, save for one chap from the middle west who felt compelled to write me a "poison-pen" letter, wanting to know who the hell I thought I was...! Obviously, there was no fraternalism evidenced there. Essentially, the more thoughtful ones among us, concurred with my comments, all admitted awareness of the points I had touched upon, and all, with no exception, agreed that there was nothing to be done about it.

If the C.G. of the game has shifted perilously close to the common-place, as I feel it has, I still believe that the fundamentals of any special-interest, such as photography, guns, motor-cars, telephone numbers of young ladies (if one is young), ham radio - do not change, simply because they can't, and remain the same.

Perhaps Howard Granoff, D.B.A. "Olde Tyme Radio Company", hit the target when he suggested that the chaps I had listed as reflecting the early fraternalism that is the cement of any hobby, were all of the same generation. It was a trenchant point, and may explain, up to a point, why certain epicene shallowness can be seen among the "new breed". It could also suggest that my generation has failed to impart an ongoing love of the game...

That latter comment may be important, as I have observed that there is a wide-spread clique-mentality creeping in. People only interested in AC sets look down their noses at those interested in battery sets. Myself, I am interested in both, as collectively they define the hobby. It is like constantly using your right hand and never using your left, which will atrophy, of course. This is kid-stuff. Also, there seems to be a kind of cultism surrounding such marques as Scott, Silver-Marshall, Philco. Yet when you press such vocal enthusiasts about their loves, you find that generally they are surprisingly

and woefully uninformed about the history and the details of the very marques they profess to love.

Cultism and cliques create a fraudulent sense of exclusiveness, of sophomoric snobbery that causes an alienation as well as confusion in the minds of new enthusiasts, wouldn't you say? As for Scott, while he produced some very elegant chassis, it is also a fact that if you inspect some of his chassis closely, you will find indications of poor workmanship, such as globs of solder that have been chromium-plated over, a metal encased capacitor canted instead of being secure on the chassis - that sort of thing. There seems to be a distain for doing one's homework. Which brings up the great and obvious deficiency in our hobby - an amazing lack of complete and comprehensive literature.

When McMahon took over Greenwood's fine effort, he deserved full marks, and he contributed to the game. But I find his efforts a bit too hurried, too incomplete, when they didn't have to be. Too many references in his books are followed by the notation "Information Not Available". This has not been my experience. Granted it takes time, and sometimes money to dig out early authoritative data, but when there is the implication that such-and-such a work is the ultimate authority, and it reveals a lack of thorough research, it becomes suspect. Yet when I have suggested this to others, there was an immediate oral defense of McMahon - illogical, of course, and suggesting that either McMahon was a personal friend, or that no man likes to be found out.

I have met McMahon and found him to be a pleasant chap, casual, and certainly not pretending to be an ultimate authority. When I mentioned the above to him, he acknowledged that it was risk he had long been aware of, but didn't know what to do about it. He also agreed with me in holding that the greatest bane of the game has been the rise in so-called "price guides", which have done more harm to the game than any unscrupulous "dealer". Once upon a time a used-car dealer would appraise your car and make an offer. Today, he won't even look at your car until he consults his "Blue Book". There are now "Blue Books" for used cameras, dolls, stamps, rare books, vintage cars, etc. Apparently, dealers - and buyers - are no longer capable of thinking for themselves. The vintage radio hobby needs no "Blue Book" for those who have done their home-work - it's a matter of knowledge, desire, perspective, but most of all, knowledge.

Another phenomenon I've observed is that when you send a S.A.S.E. in response to some advert in the several regional media offering vintage gear for sale, there are those who not only lack the courtesy of replying, but do not return your stamped envelope! When postage here was only 3¢, such behaviour wouldn't matter too much. Happily, this is not the norm - yet. And there are those who advertise a myriad of "goodies", and then state they will not ship anything. I doubt that there are many in California who would drive or fly to

to New Jersey to take advantage of such offerings.

I've also noted a sharp division between vintage radio and ham radio enthusiasts, at least in California. Just as it is silly to try to create an artificial distinction between AC sets and battery sets, it is equally silly to try to make a distinction between vintage and ham radio, and create a separate mystique for each. Both have the same basis in common, just as you and your sister have the same parents in common. You cannot separate a commonality into parts and attempt to make such parts symptomatic of a whole. The British, Dutch, and German enthusiasts seem to be a bit more civilised in this regard, as there I found fraternalism between all groups.

I am convinced, however, that based upon my observations, correspondence, conversations, that the potential for creating a truly national medium for the whole of the hobby, does exist. While we have regional little magazines, even though some are distributed on a national basis, are fragments of a whole never realised. In fact, one editor actually tells his potential contributors that he wants only very short pieces. Consider, if you will, trying to say anything worthwhile in 300 words.

It is my considered opinion that there is sufficient interest across the country, and there are sufficiently mature intelligences to support such an effort, as well as contribute to it. Its benefits would be obvious, and certainly would off-set some of the creeping evils of the game, as I and others see them the nonce. The awesome, single-handed labours of Hugo Gernsback could easily serve as an example and an inspiration. He did more to educate the general public, as well as create a legion of set constructors, as to the merits and the allure of radio than even Sarnoff could imagine. More importantly, his many media were distinct and authoritative contributions, from which we have all benefitted.

The psychology of nostalgia makes strange bed-fellows, and that's a fact. While there seems to have been, during my residence abroad, several organised efforts here to render anything and everything "nostalgic", much of it is predicated upon scanty knowledge and an instant defensiveness when one is called on the authority of claims, reproductions, history, etc. It seems to be happening to the vintage radio hobby, and that strikes me as a bit sad.

While we may refer to an earlier period in radio as the Golden Age, or the Glory Days, it would be a mistake to insist that everything was sweetness and light, yet nostalgia has the effect on some. One does not have to dig too deeply into radio's history to find blatant indications of the conceit of Lynch, the aggressive drive of Rider's ambition, the fraud of Browning-Drake, the peevishness of Grimes, Harkness, Jones, the cynicism of Sarnoff, and on and on. But the point is that all, in one way or another, contributed to the game that we en-

joy today, and which, ironically, allow us to become nostalgic over the "good old days". Just as salt and pepper add a bit of flavour to a platter of eggs, so too do the all-too-human aspects of some of our pioneers add flavour and a bit of colour to any ongoing calling.

Do you remember when it was the custom to wander around a used-car-lot and kick the tyres? I never could understand what this signified, but the custom no longer seems in fashion. What brought this to mind was observing people who will walk up to a set on display and immediately start twirling dials or throwing switches. When I asked a couple of them why they did that, I received blank stares. Actually, if the set happens to be really rare, such a practice could be quite destructive, and as we all know, a well-bred person is above all else considerate of other people's property and feelings and possessions - including his wife. Common courtesy seems to have been another fatality of this new era of permissiveness during my absence.

In listening, deliberately, to the kinds of conversations that transpire at swap-meets, and this is particularly true of the so-called ham-fests, one is struck by the number of people engaging in the latest electronic jargon, without really knowing what they are talking about - that is, their conversations clearly demonstrate that they don't know what these artificial terms really mean. They seem to feel that use of such jargon, ipso facto, gives them some mythical aura of knowledge and authority.

They make snide noises when an old-timer uses the traditional vocabulary of radio, failing in their ignorance to realise that the synthetic vocabulary of "electronics" is a potpourri of jargon borrowed or pilfered from the optical sciences, photography, electricity, radio, natural sciences, etc. There was also the chap who proclaimed loudly that the decibel was a unit of AF measurement! This was indeed surprising, as when I was studying engineering at NYU, the decibel was merely a conventional notation that permitted design engineers facility in expressing the power of relationships commonly met with in practice - only that, and nothing more. To hear it defined as a measurement of audio amplitude, as visual units of frequency, and other arrant nonsense, does not brook well for the future of the game.

Do you recall the "bug" used by Grebe in their adverts, under the name of "Dr. Mu"? It was a Mandarin head and an artificially concocted ancient Chinese saying was quoted next to it. It was effective, in that it caught your eye. In passing, I would mention that use of a Mandarin head in adverts was first used by the Telephone Condenser Company of England in 1912, long before Grebe came into existence. It would seem that you still can't over-do a good thing, although I would doubt that Weisse, the creator of "Dr. Mu", was familiar with the ads in Wireless World of 1912.

Along with the "Peoples' Car" (Volkswagon), the minions of

Hitler also conceived of a Peoples' Radio - Volksempfänger. While the VW "bug" did not wind-up in every German's garage, as promised, the radio did get into production, and quite a few were around after the War. It was a 2-valve job that retailed at the time for the equivalent of \$2. Recently, I came by another 2-valve job labelled "Folkemottoger", with obvious blood-lines from the German set. It was a compact, metal encased DC mains affair, and was manufactured by two firms in Oslo during the late Thirties.

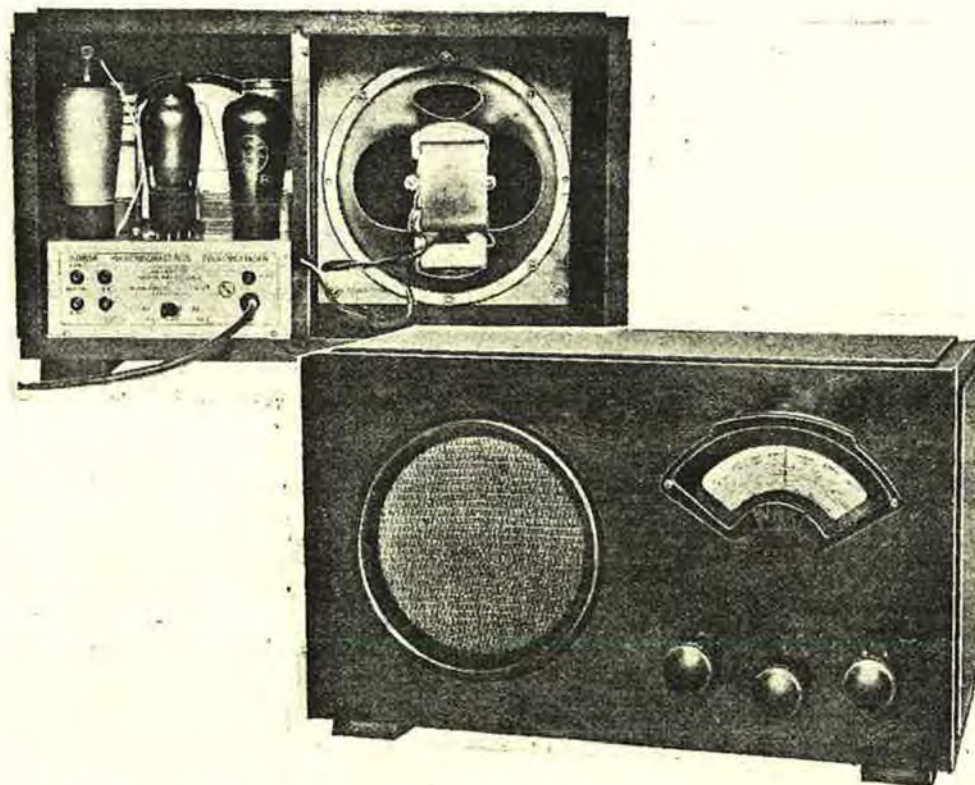
It utilised an RF pentode as a leaky grid-detector, followed by resistance-coupled audio. With an adapter that plugged into the side of the cabinet, worked rather well. It sounded like the audio that came from the early AC-DC jobbies here when plastic cabinets were introduced. Calibrated for the long waves of Europe, each turn of the dial was something of an adventure.

And I would respectfully suggest that when I picked-up this little box, took it apart, cleaned it and over-hauled it to suit its original circuitry, I did not stop to think whether my enthusiasm for the find placed me among the so-called "collectors" or whether it would be dismissed by adolescent distain by immature minds as being something primitive and unworthy of attention.

It was a fun-thing, which is what any hobby should be, and I still smile whenever I turn it on. This, I feel, is genuine appreciation and affection for authentic nostalgia.

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NORWEGIAN "FOLKEMOTTAGER", 1936



AC & Battery Sets: tuning arrangements similar but AC model used an RF pentode as a leaky grid detector; battery model used a triode.

Original price was the equivalent of \$15.

This set was inspired by the success of the German "Volksempfänger". Both names translate as "People's Receiver".



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A typical, low-priced AC German radio, before Hitler. Price was DM 16.

Bibliography

As with any ongoing calling, the basis of endurance turns on the accumulated authority of its literature. The hobby of vintaged Radio is not different, and while most everyone is aware a manual here and there by such as Rider, Gernsback, Ghirardi, Lescarbours, Sams, Beitmann, RCA, it is equally true that very few of us have a library even approximating completeness, in terms of early literature devoted to Radio. While any of the above names still offer an essential requirement for the vintage Radio buff, and represent an ever increasing value and contribution to our knowledge and enjoyment, they really aren't enough for the serious hobbyist.

When one considers the literally hundreds of books written about Radio during the Twenties, it is a bit surprising that a handful only seems to be readily available. I am, therefore, list-a handful of relevant titles for your edification and pleasure, to enhance your affection for the hobby.

Finding some of these titles could be an adventure, alone and unaided. Some, but not many, may be found in public libraries, of large towns. The New York City library, for example, has an excellent reference department along those lines. Also, something no one will tell you is that as a member of a public library, you can order practically any title ever published about most anything via your librarian from the Library of Congress. You simply fill-out a form; the book may be kept for 15 days, on average. There is nothing you have to pay for by so ordering, even when the book ordered may be one-of-a-kind.

The following listing is by no means exhaustive nor meant to be definitive. It is, however, a basis for building a true and authentic library on the rise of Radio as a sociological phenomenon, as well as a new technical albeit minor art.

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8. RADIO FOR EVERYBODY; A.C.Lescarboursa; 1922; Scientific American - Munn & Co.
9. WIRELESS COURSE; Gernsback-Secor-Lescarboursa; 1922; Experimenter Publishing Co.
10. MODERN RADIO SERVICING; Alfred A. Ghirardi; 1935; Radio & Technical Publishing Co.
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12. 222 RADIO CIRCUIT DESIGNS; Norman W. Henley; 1924; Henley Publishing Co.
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14. THE RADIO MANUAL; Sterling & Kruse; Van Nostrand Co.
15. ELEMENTS OF RADIO COMMUNICATION; John H. Morecroft; 1927; John Wiley & Sons.
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20. A FUGUE IN CYCLES & BELS; John Mills; 1937, Van Nostrand.
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23. WIRELESS SERVICING MANUAL: W.T.Cocking; 1935; Iliffe & Sons. A British Publication.

24. MODERN RADIO RECEPTION; C.R. Leutz; 1928; Golden-Leutz.
25. THE RADIO INDUSTRY; A.W.Shaw; 1929; Doubleday.
26. PRACTICAL RADIO TELEGRAPHY & TELEPHONY; R.L.Duncan & C.E.Drew; 1929; John Wiley.
27. SHORT-WAVE MANUAL; H.M.Bayer, 1929; Experimenter Pub. Co. An exceptionally fine little book that came compete with a batch of full-scale construction blue-prints for making a variety of SW. receivers and transmitters. Rare.
28. HORN SPEKAER ENCYCLOPEDIA: Floyd A. Paul; 1545 Raymond, Glendale, California - 91201. This is a brand new book and the first original contribution to modern vintage radio literature in 25 years. Well-organised, authoritative and neatly packaged, a most essential book.

MANUFACTURING MEN WHO MATTERED



L. G. Pacent,
Pacent Elec.



J. H. MORECROFT



F. N. Rauland,
Rauland Corp.



WILLIAM DUBILIER
Vice-Pres., Cornell-Dubilier Electric



ISIDOR GOLDBERG
Pres., Pilot Radio Corp.



WILLIAM H. PRIESS
Pres., International Television Radio



MR. ARTHUR MOSS
President, Electrad, Inc.



POWEL CROSLY, Jr.
Pres., The Crosley Radio Corp.

IT WAS EVER THUS.....

If you're a ham operator then you are intimately familiar with the "hash" and banality of many latter-day operators cluttering up the air these days. This is hardly a new phenomenon, as the reproduction of a cut that appeared in Radio News in August of 1921 shows. It was much too prophetic. Too many latter-day ham operators seem to think that ham radio is merely an extension of the long-distant telephone. It may have been just coincidence, but in the same month that the cut below appeared, the ARRL held its First National Convention & Radio Show, at the Broadway Armory in Chicago. All things change, and nothing changes.....

Radiofone Goulash

HELLO! HELLO SEND ME TWO POUNDS OF SIRLOIN. WHEN ARE YOU COMING HOME WHO IS THIS PLEASE? HELLO! YES OF COURSE
 CAN YOU TELL ME SMITH'S ADDRESS? I'LL MEET YOU AT THE CORNER OF WALNUT AND WALNUT
 ALL RIGHTY, DEARIE THE WIRELESS. THE APPLE AT 8.30. WHAT DID YOU SAY YOUR NAME WAS
 I'LL BE THERE! HOLD AM DETAINED AT THE OFFICE ON IMPORTANT BUSINESS. SHE HAD ON JUST THE CUTEST HAT.
 GEE, GUSSIE HELLO JUST LOOK AT THE PRICE. HELLO JUST THE CUTEST HAT.
 OH, NO! THERE SURELY MUST BE SOME MISTAKE! AND I SAID TO HER "LOUISE."
 IF YOU KNOW WHAT I MEAN. YEP, RUTH GOT THE 50TH TODAY. YOU HAVE TOO MUCH POWDER ON YOUR NOSE.
 AW, WHERE'D YOU GET THAT STUFF YUH BIG BUM!
 HOW ABOUT A LITTLE SUPPER AFTER THE SHOW
GET OFF THE LINE! BY BY BABY.
 SOME SERVICE! YOUR WIFE WILL NEVER FIND IT OUT. AW COME ON, BE GAME!
 HEY, MARY, WHERE DID YOU PUT TH' EGGS? OH, DOCTOR DO HURRY! WELL
 A LITTLE POKER TONIGHT? WHO'S YOUR FRIEND TA TA, ELLA,
 IS THAT YOU CLARA? CAN'T YOU COME OUT TO THE HOUSE SEE YOU NATE @LATER.

Drawn by NATE COLLIER
 The Comic Weekly "Judge" Runs the Above Under the Caption "A Cross-Section of the Air When the Wireless Telephone Comes Into General Use." Evidently Our Esteemed Contemporary Has Never Put a Pair of Fones to its Ears and Listened to the Q.R.M. Babel That Goes On Nightly. The Above is But a Tame Sample. The Artist Also Forgot a Few Gross of "How Do You Get Me Now!"

OTHER PUBLICATIONS AVAILABLE

THE VINTAGE RADIO IDENTIFICATION SKETCH-BOOKS of D.H.MOORE:

- Vol. I - *Introductory Essays*
" IIA - *Broadcast Receivers, A-L*
" IIB - *Broadcast Receivers, M-Z*
" III - *Short-Wave Receivers*
" IV - *Power Supplies & Amplifiers*
" V - *Hardware & Accessories*
" VI - *Early Test Equipment*
" VII - *General Technical Data*
" VIII - *The Early Years: 1910-1925*
Vol. IX - *Supplemental Data Sheets*

MONOGRAPHS ON SELECTED MARQUES:

PILOT	VICTOREEN	ULTRADYNE
SARGENT-RAYMENT	REMLER/BEST	STROBODYNE
BREMER-TULLY	SCOTT (Early)	NATIONAL/HAMMARLUND
BROWNING-DRAKE	INFRADYNE	DOERLE

Other MONOGRAPHS are in preparation and will be announced.

COPIES of ORIGINAL CONSTRUCTION BLUE-PRINTS:

ULTRADYNE L-2	VICTOREEN "Standard" & "Universal"	
"TROPODYNE"	BEST's 115 KC.	B-T "Counterphase Four"
SARGENT Pre-Selector & SW.Rcvr.		B-T "Counterphase Six"

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