

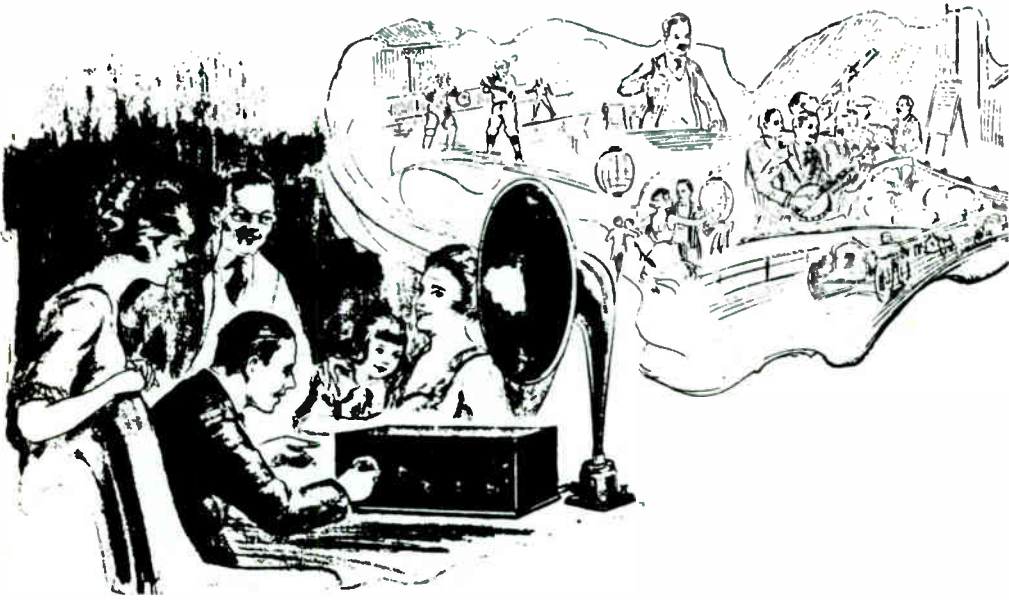
Indiana Historical Radio Society

BULLETIN

Vol. 8

September 1979

No. 3





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FOR INFORMATION WRITE TO:

Vice President - For legal matters of the I H R S.

Secretary - For general correspondence and membership applications.

Treasurer - For membership payments and address changes.

Historian - For history of the I H R S and for donations of material for the Society Scrapbook.

Please use a Self Addressed Stamped Envelope when corresponding.

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VALPO TECH MEET

The Indiana Historical Radio Society will hold its fall meeting at Valparaiso Technical Institute and the Wilbur B. Cummings Museum of Electronics on Saturday, September 15, 1979. Valpo Tech is located on Lincoln Way West, Indiana Road 130, eight blocks west of Indiana Road 49, in Valparaiso, Indiana.

Schedule - Eastern Standard and Central Daylight Time:

- 9:30 AM - - Coffee and Doughnuts for the early birds.
- 10:00 AM - Museum of Electronics will be open. SWAP MEET in the parking lot. (Inside in case of rain.)
- 11:00 AM - Program, A W A show POLAR ADVENTURE.
- 12:00 Noon COMPLIMENTARY BUFFET, courtesy of the Valpo Tech Alumni Association. Mail a post card to Valpo Tech and let them know how many are coming in your party, or call 219-462-2191.
- 1:00 to - - Business Meeting and Election of Officers. Office
1:30 PM recommendations from the Nominating Committee are:
President, Don Johnston
Secretary, Ron Thomas
Treasurer, Gary Vierk
Vice President, Frank Heathcote
Editor, Fred Prohl
Historian, Ed Taylor
- 1:45 PM - - Program, RESTORING CABINETS, a Show and Tell Demonstration led by Ron Scranton.
- 2:30 to - - MUSEUM OF ELECTRONICS will be open. SWAP MEET in
3:30 PM the parking lot.

NOTE: Overnight accommodations are available on the campus on Friday night. Contact Valparaiso Technical Institute, P.O. Box 490, Valparaiso, IN 46383 or call 219-462-2191.

* * * * *

VALPO TECH HAMFEST - Sunday, September 30, 1979

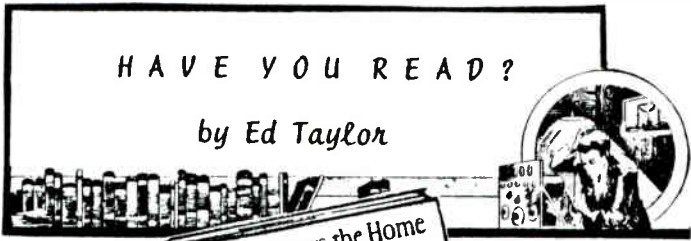
Write for information.

* * * * *



HAVE YOU READ?

by Ed Taylor



In 1922 the Radio Corporation of America published a fat 128-page book that set the stage for its entry into the huge consumer market in a big way. Entitled "Radio Enters the Home", it's subtitled "How to enjoy popular radio broadcasting, with complete instructions and description of apparatus." "For those who desire to be entertained with radio concerts, lectures, dance music, and for the radio amateur and experimenter."

With quaint scenes of little tots listening to bedtime stories from the radio, a bearded farmer listening to weather reports, a happy family listening to its new "Aeriola", Boy Scouts on "manoeuvres" with their portable battery-pack equipment, and adults holding a dance (or perhaps a "radio party"), the book today delights any who like a glimpse of everyday life in the 1920's.

Jammed with pictures and drawings of apparatus made by RCA, General Electric, Westinghouse, and other great corporate names, it's a treasure trove of information for today's radio amateurs, radio collectors, and everyone interested in electronic matters.

The Vestal Press of Vestal New York has just released a quality reprint of this exceedingly rare volume for the benefit of those who like to study a time when life was maybe a little less hectic and perhaps a bit less complicated than it seems to be today!

Copies of this 8 1/2 x 11 size paperback book are available directly from the publisher at PO Box 97, Vestal NY 13850 for \$12.50 plus 50¢ shipping, or through any bookstore.



Mr. Jones Tunes In!

*Lem Misses a Million Dollar Program
and Discovers That Tubes Wear Out*

By Robert L. Kent

LEMUEL JONES sighed as he arose from the table. He was tired. It had been a prodigious day at the office and a quiet evening in the big chair beside the radio looked mighty good.

"Ann," he said to his pretty wife, "Ann, I read today about a wonderful new program that is to go on the air tonight. A million dollars is being spent on it and the piece in the paper said that there's a big surprise for listeners. I sure want to listen to that program. Seems as though the radio is getting better every day."

"Well, Lem," replied Ann, neatly folding her napkin, "I hope you do hear it but I have my doubts. Our set has been acting queer lately. It seems to die down to a whisper and when it does come in stronger there's a funny sound and you just can't hear a thing. I'm tired of the exasperating thing."

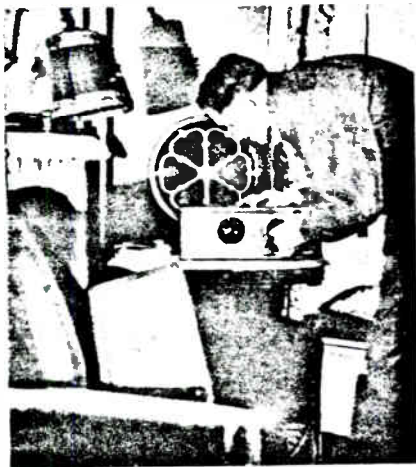
"Don't tell me those kids have been fooling with the radio again, Ann."

"Now Lem, you always say that, but I know they haven't because I have kept them out of that room."

"Well, we'll see," and Lem stalked from the room, into the sun parlor, and let himself wearily down into the cushioned easy chair. "Boy that feels good," he murmured, reaching for the dial on the radio. He threw the switch and whirled the dial to his favorite station.

He waited. A droning sound issued from the speaker and, faintly at first, then louder, came a noise that certainly was not music. Nor was it the velvet voice of the announcer.

Mr. Jones fidgeted, but waited. Two creases appeared between his eyes. His sensitive ears were offended. He



twisted the dial to another station. The result was exactly the same.

"Darn," growled the head of the Jones family, raising his lanky form from the chair. He was angry. His face was diffused with blood—a characteristic of the Jones clan when aroused or embarrassed. Lem noisily pried off the top of the radio and his body bent in the middle like a jack-knife. He peered closely at the conglomeration of tubes, wires and what-nots. He pushed each of the tubes to make certain they were firmly in their sockets. He gently pulled a wire here and tentatively touched a gadget there, but if there was any improvement it was not apparent. Now Lemuel Jones had not the least conception of the inner workings of a radio set. No, Lem knew nothing about radio and his pushing and pulling was a desperate and forlorn hope

that perhaps some miracle would happen. But nothing did happen and after minutes of fussing with the works he finally desisted.

Ordinarily he was a mild mannered individual, but at the end of that fifteen minutes he was in much the same state as the golfer who has been hooking and slicing through eighteen holes of golf. He gritted his teeth and said things half under his breath that Ann would have been extremely shocked to hear. He banged the top on the radio and sulkily picked up the evening paper—a perfectly good evening wasted—and he had wanted to hear that wonderful new program.

The rattling of dishes in the kitchen finally ceased and Ann entered. Lem looked at her over the top of his paper.

"It's no use, Ann," he said. "The thing won't work and I don't know what's wrong with it. Better get a service man to look it over tomorrow and have him put it in shape."

MR. SMITH, of the Radio Shoppe, grinned as he turned from the phone. "Hey, Al," he shouted to a young man in the rear of the store who was busily tinkering with an old battery model, "wrap up a set of tubes for a Sweetone set. Mrs. Jones is having trouble. It's the tubes. Funny, but people wait until the last minute to call a service man and then they want service in a hurry. And how!"

"Yeah, that's right," replied Al with an answering grin on his freckled face, and walking forward with the package of tubes. "They forget that tubes wear out!"

I H R S MEETS AT LOGANSPOORT

Approximatly thirty I H R S members and family met at Logansport, Indiana on July 14, 1979 for a day of fun. The swap tables were full of sought after radio items, the picnic tables were filled with more than enough good food, and the company was very enjoyable.

Highlights of the meet included a demonstration on winding transformers and a "popular vote" favorite radio contest. Ron Scranton provided the equipment and expertise for an audio transformer winding demonstration. Well done Ron! Frank Heathcote directed the "popular vote" contest. All members, wives and friends enjoyed this part of the program. Many voters indicated they would like the opportunity to choose their favorite radio more often.

The winners were as follows:

- I Indiana made radios to 1940.
Frank Campbell with a Fairbanks Morris
- II Unusual or disguised radio.
Gary Vierk with a Bottle Radio
- III Crosley Radios
Del Barrett with a Crosley 52

(Sorry, due to a film processing problem, we have no pictures of the contest radios - maybe we'll get them in the December Bulletin).

An Indiana made battery radio was auctioned; with the proceeds going to the Museum Fund.

Several items were discussed at the business meeting. Updating the I H R S constitution and distributing it to members was discussed. A nominating committee for selecting a slate of officers for 1980 was established. Length and activities of the Auburn meet was discussed.

Continued on the next page.

(Logansport continued)

A request was made of all I H R S members to consider hosting a meeting during 1980. It is important that the meeting schedule be established soon for publication in the December 1979 Bulletin.

I H R S thanks Frank Heathcote for a fine job in hosting the meet.

Hear Europe with the Universal Plio-6



35 Meters to 3600 Meters

No Batteries

are required even to operate the powerful receiver pictured above, if you use the new laboratory type

**Model A
Power Unit**

A new broadcast receiver representing the highest type of efficiency obtainable in point of extreme range, tremendous audibility and remarkable selectivity.

Maximum Efficiency — Inexpensive

Parts or Completely Constructed

Write for information today

NORDEN-HAUCK, Inc.
Engineers
1617 Chestnut Street, Philadelphia, Pa.

A THOUGHT OF THE DAY

Some receiving sets are made to catch the purchaser instead of the music.

HUNTERS CORNER - - -

Walt Sanders has had a busy (and expensive) summer locating goodies: an A K 10A Breadboard (set #4550) at the Logansport meet; a Majestic Grandfather clock with a model 20 radio at a local estate auction; a General Television and Radio novelty radio built in the shape of a Grand piano; and a table model Columbia victrola.

George Hausske traveled to Muscatine, Iowa to pick up a Garod "RAF". The four tube unrestored set is pictured on the following page of this Bulletin. George also now has an Amrad tuner, #3730.

Leo Gibbs picked up a Perkins miniature loose coupler and a glass enclosed 23 plate variable condenser, both around WW-I vintage.

At a recent flea market Fred Prohl picked up a mint Etherion Crystal Set, type M.R. 101, along with mint Carlisle & Finch phones - both were in original packaging. At the same place he found a Jewell Wave Meter (150 to 650 meters).

THE MENGEL COMPANY, Inc.

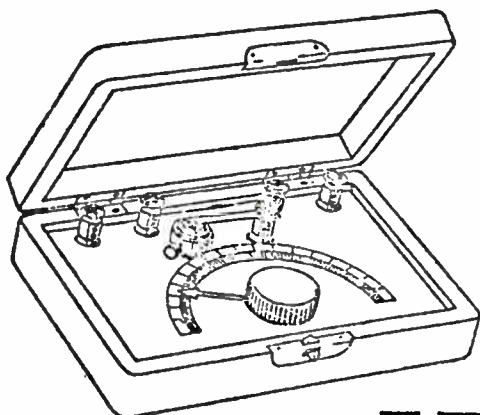
SALES OFFICE

200 Fifth Avenue, New York City

Louisville

Jersey City

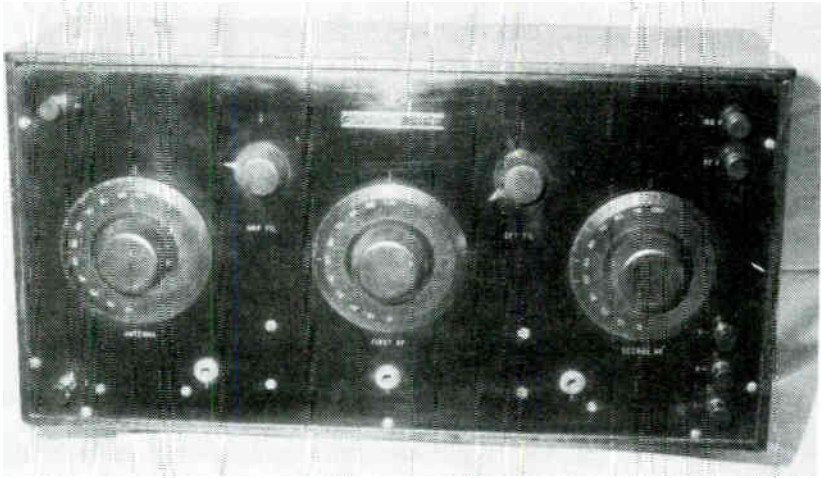
Saint Louis



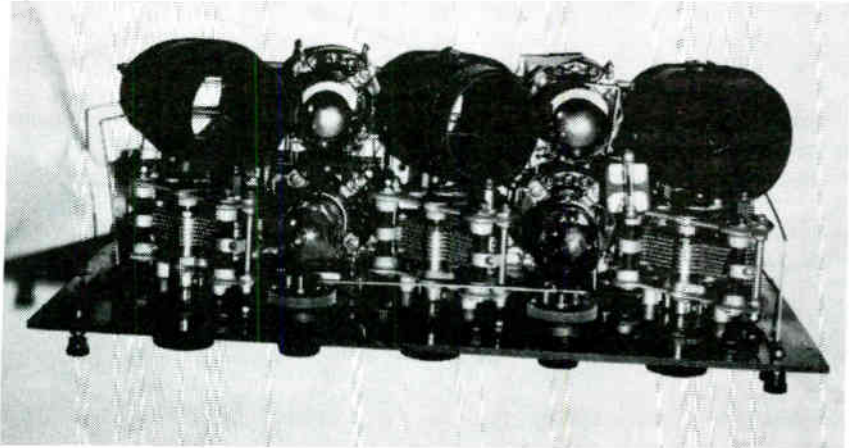
ETHERION

A PERFECTED and PROVEN RECEIVING INSTRUMENT for RADIO TELEPHONY and TELEGRAPHY

HUNTERS CORNER CONTINUES



George Hausskes GAROD "RAF" Receiver. George rates this set highly because of its beautifully crafted components and wiring.



The Garod "RAF" chassis. The four tube radio is a reflex set with three tuning stages and two AFTs.

INDIANA HISTORICAL RADIO

"THE CRAZY KID ON THE CORNER"

by
CHESTER F. PETERSEN

Pioneer Broadcaster, Chester F. Petersen started experimenting with wireless in 1914 on East Michigan Street in Indianapolis. The following article is part of a set of personal experiences written by Mr. Petersen. This portion relates to his first experience with wireless and radio in Indianapolis.

My parents bought a lot and built a building at the corner of Oakland Avenue and East Michigan Street in 1914. The nearest house was at the corner of Gray Street and East Michigan. For the most part, it was all vacant ground in every direction. The East side was just beginning to grow and expand, so our neighbors were few. That meant that I, a ten year old, didn't have playmates until they moved in, in the years to follow.

Time hung heavy on my hands for a short while, until I became acquainted with a young fellow by the name of Emerson Koch, who lived a block away. He was experimenting with a new thing called wireless, and I became tremendously interested.

Soon, I had some wires up in the backyard. Later on, a pole that went up some 40 or 50 feet, which from time to time had every kind of wireless aerial that could be thought of. After school, there was little time for play. My time was devoted to building wireless parts and sets. In those days, we had to make almost everything we used. There were no electronic parts stores such as we see now. And there was very little printed material.

The younger generation taking up the highly complicated field of electronics today, might have quite a time in trying to imagine a time when everything had to be hand-made, just



to receive the dots and dashes that were in the air. There was no music - no TV ... and in fact, anyone who had wires strung up was looked at with a lifted eyebrow.

(continued on next page)

("Crazy Kid" continued)

During the First World War, we had to lock up our equipment so there was no transmission nor reception of messages. There were some Government communications, but nothing for the amateurs.

But, right after the war, the amateurs all unlocked what they had, and set in once again to improve what they had. I built a very fine crystal set --- waited a long time to get a crystal, and then had a lot of fun listening to code messages. Then came the opportunity to buy one of the DeForest audiotrons; the first radio tube ever offered to the amateur, and licensed for the amateur use only. What an improvement! (I still have the tube.)

Along about that time, one of the young men in the neighborhood returned from the Navy, and soon he was a regular visitor at my home. He loved to copy the code messages from the Government wireless station at Arlington, West Virginia. He had been stationed there during the war, and I suppose it was like old home week to him.

Then one afternoon, the most amazing thing happened I had ever experienced. I heard music! Everyone gathered around to take a turn with the earphones ... and I called my friends who were also amateurs. One of them came flying up to our house on his bike, jumped off and just let it go rolling down the street. Breathlessly, he came running into the house for the greatest thrill we ever had with wireless.

The music came all the way from the Speedway. There was a military encampment there during the war, and some how they had figured out how to send phonograph music. We boys visited out there later on, and for us youngsters, it was surely a sight for sore eyes ... so much equipment. Which, by the way, would be considered nothing today.

My Navy friend took up teaching in the ex-servicemen's night school, and, my wireless set was purchased for instruction purposes. Along with it, I, a teen-ager was chosen to give some instructions in practical set building. My Navy friend was Joseph G. Wood, who later became a prominent attorney in Indianapolis.

It wasn't long until a few radio sets began to come on the market; with departments opening up in L. S. Ayers; the Baldwin piano Company; Carlin Music Store; Wideners, (which became Wilson-Stewart Music Company); and a few other places. The interest was developing. Then, in 1920, I believe it was, the first election returns were broadcast from K D K A Pittsburg. I had a big loud-speaker in the storeroom on the corner, and we really had a crowd to hear the returns. It seemed like from then on, everyone wanted a radio, as they had been named.

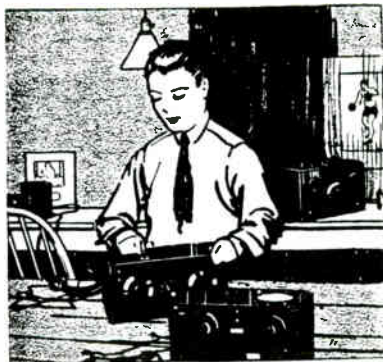
(continued on the next page)

("Crazy Kid" continued)

After school and Saturdays, I was really busy installing sets and putting up aerials for Carlin Music Store. I well remember being driven to Rockville one Saturday to put up a promised aerial. It was 22 degrees below zero and we had a Ford Touring car. But the aerial was promised, and the promise was kept, even though there was quite a bit of snow and ice on the roof of the three story house where it was installed.

Along about that time, we used to have radio parties. The living room would be filled with neighbors and friends - and especially on the nights when a prisoner down in Missouri was taken to the studio to play the piano. He literally played his way out of prison, for it wasn't long until he was released. The telegrams and letters poured in, in his behalf.

Wilson-Stewart gave me a job in their store, selling radios and demonstrating them at night. When I look back, I sometimes feel ashamed of myself. I put more storage batteries and morning glory horns in people's living rooms; with parts and pieces strung out all over the place. But, it made a lot of people very happy, and I hope they have forgiven me.



Soon thereafter, I was given a job announcing for W F B M. We went on the air at six in the evening and signed off when we ran out of program material. Some times it was late - other times just a few hours. The studio wasn't a very big room, just big enough to hold a piano - our one carbon microphone - and the announce desk. The walls were hung with green burlap for sound-proofing, and when we had a remote program, we signed off, took our only mike and amplifier under arm and then signed back on the air when we arrived at the location. I remember one remote program, in the old Chamber of Commerce Building on South Meridian Street.

And I remember two mistakes I made. One was the announcing of a musical number by a title it could never have had, but it sounded that way to me on the telephone. The orchestra in the main dining room of the Indianapolis Athletic Club phoned their selections to me in the radio room; and I really made a blurb of it. I didn't know music, and I guess I can be thankful there weren't many listeners who did either.

("Crazy Kid" continued)

Oh yes, the other mistake. It was a final one. One of the better known milk companies came up to do a program. It wasn't paid for, nor was the advertising they received. My program was set up to give them an hour, with another program to follow. They insisted on broadcasting for more than an hour, which I refused to let them do. You are right. Next day, I was called on the carpet for not cancelling the program scheduled to follow. Even though I was right, I was wrong. I parted company with the original W F B M owners. Needless to say, the milk company lost a customer.

Such was radio in Indianapolis in its early days. I have often heard it said a person has to be a little nuts to be in it, and I suppose it is true. I got that label at a very early age; they called me "The crazy kid on the corner" when I first put up my "wireless" poles in 1914, which was before R C A had their plant at La Salle Street, or Mallory was on Washington Street.

Even at Tech High, when I wrote in my Junior essay, "We may live to see the day when we will see our motion pictures in our living rooms at the time of their production, and from the place of their production" - the teachers comment was, "What a wonderful dream". Was it? I suppose it was, but it has been said, "Dreams are what things are made of". My great hope is, that the younger generation of today will also be dreamers, like Armstrong who had the original FM circuits and many other important radio circuits used today. Like DeForest who contributed so much to the vacuum tube; and ever so many other men who contributed their part in the field of communications. Yes, I sincerely hope our younger dreamers will be able to dream and bring about a world in which there is no more war. In that we have failed - but perhaps within the short span of fifty years it may come about just as we have seen radio and TV come about in slightly more than that many years.

To these dreamers I wish the very best, and I hope you will encourage them in their dreams.

Chester F. Petersen 1964



(continued from previous page)



CHESTER PETERSEN AND HIS WIRELESS RECEIVER 1919 - 1920

The receiver consisted of a loose coupler (wound on a Quaker Oats box), a DeForest Audiotron, an Illinois variable condenser, a potentiometer, and Murdock head phones. The handbuilt receiver was sold to an ex-servicemans night school for practical radio building.

* * *

Editors Note: Mr. Petersen is now living in California and is operating a recording service called the Sound Of Palm Springs. His career has followed many paths in the radio industry after his initial experience in Indianapolis. He has been an announcer - writer - account executive - and sound effects artist to Edgar Bergin, Bob Hope, Bing Crosby and many other well known names in the entertainment field. He worked 1000 shows for N B C and about 500 in television and film. The I H R S thanks Mr. Petersen for the article and hopes he continues to record his experiences in radio.

WIRELESS

*Cipule
yates*

**TUSKA
RADIO**

*Catalog Number Four
contains Marvellous
article on tuning
Receiving Sets
Ten Cents
brings it
to you*

THE PRESIDENT HARDING -

We venture to predict our President will address the nation. Let Tuska Reliable Radio make you a part of his audience.

Tuska Quality Radio Apparatus means a lifetime guarantee of reliable service.

Ask for Tuska Radio at your dealers today.

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TUSKA RADIO

Established 1911



THRILLS!!

Tuska Receivers give never-ending thrills, from far and near. Famous for 13 years for volume, sensitivity and selectivity.

THE C. D. TUSKA CO.
Hartford, Conn.

TUSKA RADIO

★ ★ RADIOADS ★ ★

WANTED: Antenna coil shield box - located at left side of dial, for 23 tube Scott. Or will buy or trade for junker complete. Also need speaker and power supply for AM/FM Phantom Deluxe. I plan to be at Canandaigua. Don K. Johnston, R. 1, Box 218-A, Windfall, IN 46076

SELL OR TRADE: Have 58 issues of Radio Craft in good shape from August 36 to December 44 for \$1.25 each or \$40.00 for the lot. Also have Crosley VI, Federal A-10, and AK-10 Breadboard available for trade on early Paragon or Amrad set. Need Neutrowound lid and tube caps. Add postage. George Hausske, 1922 E. Indiana St., Wheaton, ILL 60187

SWAP: One new four way phone plug in original carton which was pictured on the inner back page of the March issue of the Bulletin, for a operable UX199. Leo Gibbs-W8BHT, 701 Brookfield Rd., Kettering, Ohio 45429

WANTED: Any information on the Sears Meteor table-top radio. Last patent date 1,618,017. Mark Grantz, 2377 North Dianne Drive, Michigan City, IN 46360

WANTED: Cabinet for Crosely XJ; cabinet, antenna coil and 3 lead audio for RCA X; and AK UV sockets. Walt Sanders, 15 Todd Place, Terre Haute, IN 47803

FOR SALE: Copy of Radiola III and IIIA Users Manual, \$2.00 each post paid. Also Nathaniel Baldwin Reproducer in good condition \$7.50 pp. James Fred, Cutler, IN 46920.

SELL OR SWAP: Phone Condenser, approx. 25 pf. Send SASE for description. Will swap for pre 1930 radio literature or what-have-you. Fred Prohl, 7257 Murphy Drive, Indianapolis, IN 46256.

★ ★ RADIOADS ★ ★

EXTRAS FROM THE MAILBAG

(These radio leads are not from I H R S members.)

For Sale: Two Scott radios in good condition. Kate Simon, 1523 N. Cole St., Lima, OH 45801 (419)224-5676

For Sale: Freed Eismann Broadcast Receiver Model NR-6 No. 194J with a Music Master wooden horn speaker. The best offer exceeding the value of a modest color TV set will result in a deal. P. N. Prentice, 29 Lawrence Road, Hyde Park, N.Y. 12538

The September Bulletin is ahead of schedule in order to announce the Valpo Meet. Those RADIOADS sent in to meet the September 15th dead-line and didn't make this issue will be placed in the December 79 Bulletin.

RADIOADS and information for the December 79 Bulletin should be submitted to the Editor for printing by November 2, 1979.

PSOULIESO

Does not mean anything, but if you want a word that means satisfaction in high-grade radio apparatus, remember

“RADIO  VOX”

Highest grade apparatus only. Ask those who know.

Scientific Engineering Association

817 Main St.
Cincinnati, O.

I H R S MEETING NOTICE

I H R S AT VALPO TECH SEPTEMBER 15, 1979
(See page three of this Bulletin)

A W A NATIONAL CONFERENCE SEPTEMBER 28 - 30, 1979
CANANDAIGUA, N.Y.

I H R S - A W A AT AUBURN APRIL 19, 1980

* * * * *

ANOTHER STEP FORWARD
WITH THE NEW
Tom Thumb STEERING POST
AUTO-RADIO

INSTALLATION—Bothersome and expensive—the only objection to Auto-Radio sales is practically ELIMINATED



A Compact
AUTO-RADIO

SO SMALL THAT COMPLETE SET CAN BE MOUNTED DIRECT ON STEERING POST AND A

POWERFUL PERFORMER

YES SIR YOU CAN INSTALL THIS YOURSELF IN LESS TIME THAN IT TAKES A TRAINED RADIO OR AUTOMOBILE MECHANIC TO INSTALL ANY OTHER MAKE

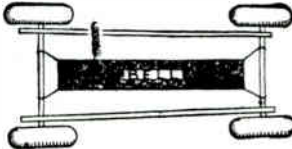
JUST WHAT I'VE BEEN WAITING FOR ALL THESE YEARS



DEALER AND SERVICEMEN—Write Your Nearest Distributor or Direct To
AUTOMATIC RADIO MFG. CO., Inc.
228 CANAL STREET BOSTON, MASS.

Auto Aerials

AXLE TO AXLE TYPE



Size 36"x4".....\$1.00	Size 54"x8".....\$1.50
Size 54"x4".....\$1.25	Size 54"x8".....\$1.75

RUNNING BOARD TYPES

Size 36"x8".....\$2.00

Jobbers Write for Proposition
BELL RADIO SALES CO.
936 Westchester Ave. Bronx, N. Y.

Plug-In Ballast Resistor Data

The data below will prove valuable to collectors of AC/DC radios from the mid 1930's to 1940's. Here is the key to reading the ballast number. These old ballasts are difficult to find so resistor substitutes can be calculated by using ohms law.

Plug-in ballast resistors which are numbered in accordance with RMA standards, are coded as follows:

First: A prefix *K*, *L*, or *M*, where *K* denotes #40 6.3 v. 0.15 a. pilot lamp, *L* denotes #46 6.3 v. 0.25 a. pilot lamp, *M* denotes #51 6.3 v. 0.2 a. pilot lamp.

A letter *B* prefixing *K*, *L*, or *M*, indicates ballast action on pilot light section.

A letter *X* following *K*, *L*, or *M*, denotes a 4-prong base type mounting.

Second: A number, which indicates the voltage drop across the entire resistor unit, including pilot lamp section, at the standard current of 0.3 ampere.

Third: A letter *A*, *B*, *C*, *D* . . . etc., repre-

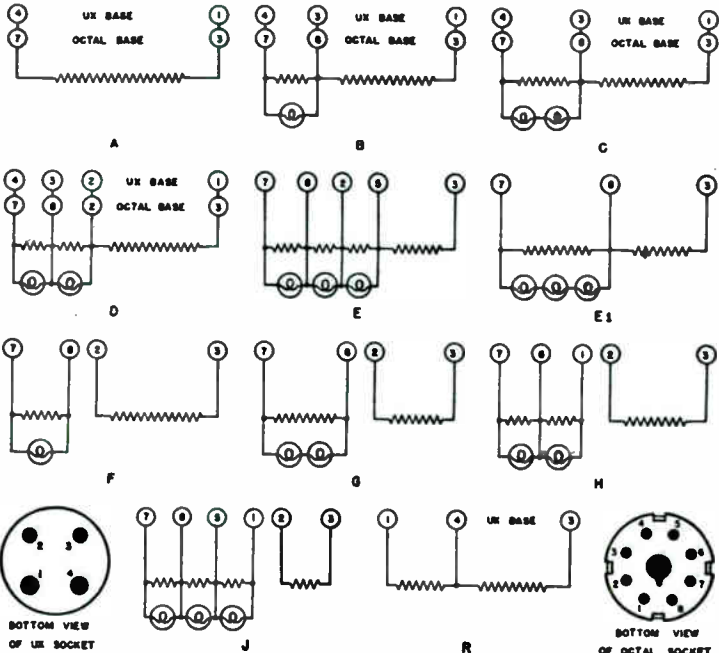
senting the circuit arrangement as designated by the lettered diagrams shown below.

Fourth: A suffix *G*, *MG*, or *J*, where

G indicates a glass type envelope, *MG* indicates a metal-glass type envelope, *J* indicates a direct zero resistance connection between #3 and #4, or #6 and #7, or #5 and #3 prongs of the base.

Voltage drop values and tube complements most commonly used with plug-in ballast resistors are as follows:

80 V. drop for 2-6.3 V., and 1-25 V., tubes,
55 V. drop for 2-6.3 V., and 2-25 V., tubes,
49 V. drop for 3-6.3 V., and 2-25 V., tubes,
42 V. drop for 4-6.3 V., and 2-25 V., tubes,
36 V. drop for 5-6.3 V., and 2-25 V., tubes,
23 V. drop for 3-6.3 V., and 3-25 V., tubes.



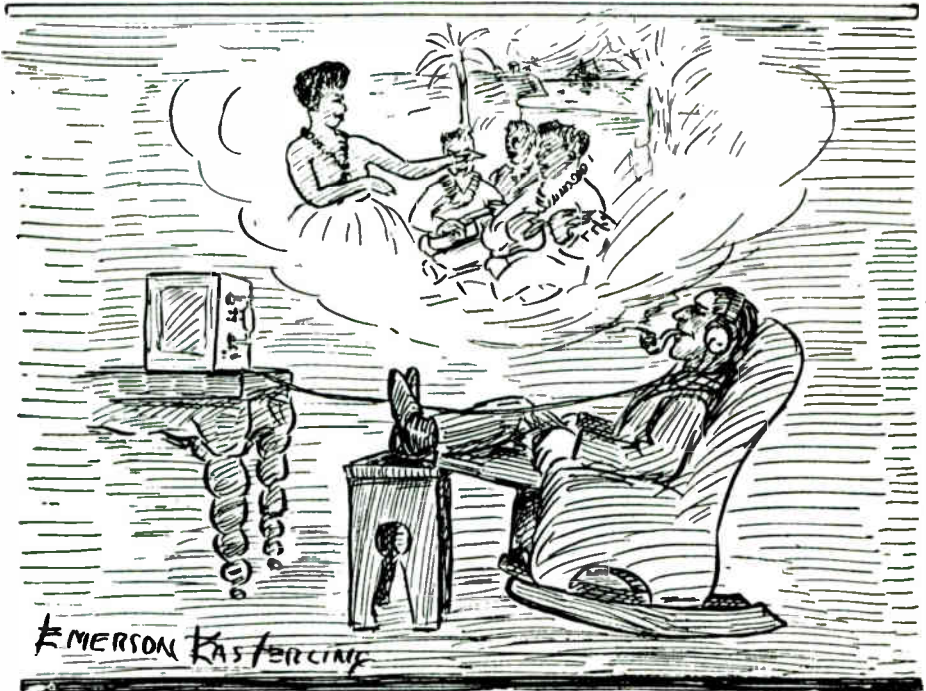
Make Your Own Grid-Leak with a Lead Pencil



Sandpaper the surface of Dubilier Mica-don Type 601 between the terminals. Next rub point of an ordinary black lead pencil over the roughened surface as here shown. To adjust the grid-leak

thus made rub away as much of the graphite that has been deposited as may be necessary.

Every tube should have an *adjusted* grid-leak, and this is the way to make one simply and cheaply.



The "Radio-Bug" Has it on All of Us—He May Put on the "Cans" and Listen to the Ukuleles Strumming Gaily in Far-off Hawaii, and With a Little Imagination—Well Say, Who Couldn't See the "Hula Hula" Maidens Dancing in All Their Native Charm?