

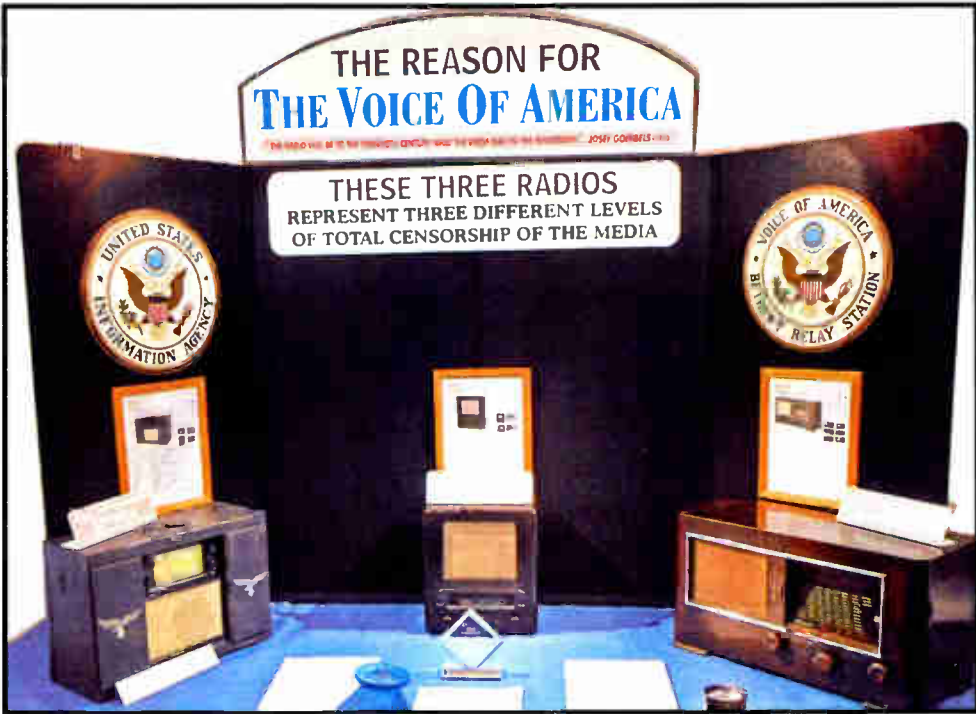
The
Indiana
Historical
Radio Society



Volume 42

September 2013

Number 3



The Voice of America — page 9

The BULLETIN
A PUBLICATION OF THE INDIANA HISTORICAL RADIO SOCIETY
FORTY-TWO YEARS OF
DOCUMENTING EARLY RADIO

The Indiana Historical Radio Society Bulletin

September 2013

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The Cover: Bob Sands' ARCI Radiofest Old Equipment Contest entry "The Reason for The Voice Of America" was awarded, in addition to first place, the "Best Historical Display" award. Congratulations Bob!



DIY alert! A new contest category is planned for the IHRS Spring Meet in Kokomo. Let loose your imagination and construct a One Tube AM receiver in time for the Spring 2014 IHRS meet. A few guidelines have been established—the rest is up to you. (See page 11 of this Bulletin.) Also in this issue of the Bulletin you will find two "teaser" articles on how to build a one tube radio. The articles are just that—thought provokers —intended to get you started on the construction of a DIY prize winning set.

Fred Prohl

FROM YOUR PRESIDENT'S KEYBOARD

Greetings to you, the IHRS Member and Radio Enthusiast.



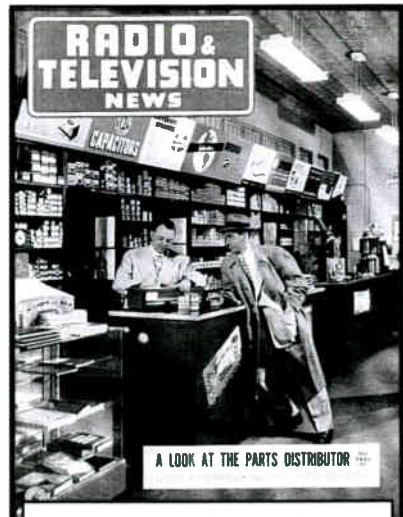
The Sun Room with an Atwater Kent

Wow! What a summer! I'm always mindful of how fast summers go by. When I was in school (as a student), it seemed that we were out for summer vacation around the 24th or 25th of May with school reconvening for the fall term soon after Labor Day. This year, I saw school (as an instructor) dismiss for the summer on June 5th, Merrijoy and I left on vacation on the 9th, returned home near the end of June only for me to take off again for western Minnesota to retrieve an antique truck we found and purchased. A couple more weekend trips and a very early school start up August 7th rounded out the short summer. I started back up August 21st as an assistant again, this time in 2nd grade.

Included in the August schedule was our quarterly officers' meeting. Getting together at MCL in Carmel makes for a great setting for your officers to catch up on what each has done since the last meeting or meet, enjoy some great food and then to get down to business with

how we can continue to make IHRS a great club for each member and to continue to make each radio meet a great venue. I enjoy the fellowship and expertise of my fellow officers. I'm not sure if it's appropriate to call Shirley Gross a "fellow" officer, but she was there AND I'm sure everyone knows how valuable an asset she is to our club. We missed Dr. Ed Taylor meeting with us, but he had that day already scheduled to be elsewhere.

As always, I'm looking forward to the Greenfield meet with the turning of the leaves...a great turnout with radios to sell, buy and admire... a fine carry-in lunch...our fall IHRS meeting...and the promise of snow soon to be on Indiana's horizon. Oops! Did I say snow? Sorry about that.



My Favorite Radio Magazine
Cover—May 1952

The James Dean Run
September 26-29, 2013

Fred Prohl, our editor, thought it would be interesting to tell you about Fairmount's annual event. On the last full weekend (Thurs. – Sun.) of September, Fairmount has a festival to commemorate one of the town's great names, James Dean. 2013 will be the 34th gathering of carnival vendors, rides, elephant ears and activities that extend for 4 days and features lots of cars. The total number of car show registrants over the past few years has diminished somewhat because of gas prices, but we still usually see a minimum of 1500+ hot rods and classic cars. A Saturday parade is included with entries from just about anyone and everyone. I was in the parade several years ago during my campaign for continuing my spot on the town council. Merrijoy and I have rented bedrooms for the last 14 years during the festival and look forward to our guests who stay with us. It's almost like a family gathering as it's been the same folks for most of the 14 years.

It was during the festival weekend a number of years ago when I saw an IHRS member leaving an antique store with an old radio he had just purchased and a smile on his face. If you could ever visit Fairmount during that fun-packed weekend, be sure to look me up. We don't have any bedrooms to

rent, but I can sure direct you to where the action is. We even had a special event ham radio station one year.

Most recently you may have seen or heard the news of the collapse of most of the old Fairmount High School. It's going to be a monumental task now to find the money necessary to finish getting it down and cleaned up.

Obviously too big a task before this year's festival. Too bad. Since FHS was James Dean's alma mater, many memories have emerged with the school's collapse.

Summer Projects

As I mentioned earlier in this article, summer is a busy time. It's also a great time to do any outdoor activities and to finish any outdoor projects that may be needing attention. A standard joke among ham radio operators is that antennas don't break until cold weather. The joke ceases to be very funny when there's 6 inches of snow on the ground, the thermometer is hovering near zero and one's antenna just came down. Being winter that way it is in Indiana, it's a typical, almost normal, occurrence to have happen, however.

Last winter my antenna became inoperative. Though it didn't come down, time and corrosion made it ineffective. Whether it's a transmitting dipole or beam, or if it's a long wire that is up for

shortwave listening, they still need attention regularly.

Hardware stores offer many solutions for the radio listener or operator to use for simple antenna repairs or new construction. PVC pipe and fittings come in a multitude of configurations so that you can put together a really nice antenna. Coils can be wound on PVC pipe; antenna stands can be put together using PVC materials with no more tools than a hacksaw, measuring tape and a can of glue; even plexiglas can be cut, shaped and drilled to accommodate u-bolt fasteners using just about any design you can think up.

My soon-to-be completed dipole support is made up of salvaged pieces of 2x4, the top pipe from a chain link fence and bits and pieces of 1x4 and screws. With some paint, it should make it through the next few seasons of ice and snow.

One warning must be included here – **WATCH WHERE YOUR ANTENNA WIRES AND POLES GO!** Do not get close to a power line of any kind. Even ladders placed too close to power lines can prove to be dangerous.

Another Project that can be Done in Any Kind of Weather

Storage is always a problem. When we moved back to Indiana, I went without any storage for over 25 years. A rental unit would be utilized upon demand. Then when circumstances would change and we didn't need the storage unit any longer, then we'd let it go. The next

collector car or collection of radios would come along, and I'd be chasing some more room to use...again.

It did change somewhat when we moved to Fairmount. A nice sized shop came with the property we bought. It didn't take long to be faced with still too much to store and too little space to store it in. Since then, we've had the privilege to attain another building directly across the street from our home – even with the increased storage, I find a great need for organization and shelves are the answer.

Proper storage shelving is almost always a problem. Back in the summer of 2012, I put together a shelving unit that wasn't too extensive in design. I enjoy certain elements of woodworking. In fact, I've made the boast on several occasions that I could probably make anything out of a 2x4. At least, I haven't found anything so far I couldn't make out of a 2x4. So when I decided to build another shelf, I decided upon the same design and materials.



From Your President (continued)

Except for using OSB, all the rest of the materials are 2x4s.

The cutting is simplified to only cutting out the 15 21" pieces of 2x4, cutting 3 sheets of 4x8 x7/16 OSB in half lengthwise and then notching the half sheets. With the 16 uncut 2x4s, 8 feet in length and a quantity of #8 and #16 nails, you're ready to construct. 2 1/2 inch screws may be used in place of the #16 nails if you so desire. With all materials ready and no interruption, you can cut and put one together in 3 hours or less.

Caution at this point...these, as described, are 8 feet tall. So if you plan to put the shelving unit in a room with 8 foot ceilings, you either have to modify the height (the shelving, not the ceiling) or you'll need to assemble them a bit differently. You'll be unable to put them together on the floor and then stand them up as the adjacent corners are more than 8 feet tall when they're going up.

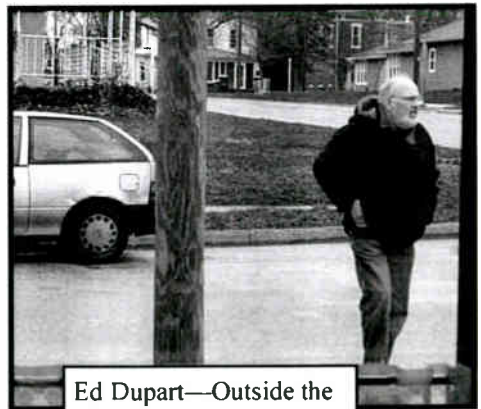
This design of shelving will hold anything you can carry. I have some old ham radio linear chassis and their associated power supplies on a portion of the first rack I built. No sag, and I'm confident they're remain that way. Even the very top shelf is a great place to store the shipping boxes that your newer equipment came

in. Of course, with any shelving unit, you'll find it can become a "catch-all" for anything. If that's the case, build as many shelving units that you need.

If you would like to have the simple plans with the dimensions that I used, I'll be glad to send them to you by email or the post office. Just let me know. My contact information is located in the inside of the back cover.

In closing, I'd like to once more encourage you to continue the quest to reach more radio enthusiasts for IHRS. Over 40 years ago, a group of people with a vision started **Indiana Historical Radio Society**. It's up to us to do all we can to keep the club healthy and moving forward. See you all in Greenfield.

Dave Mantor

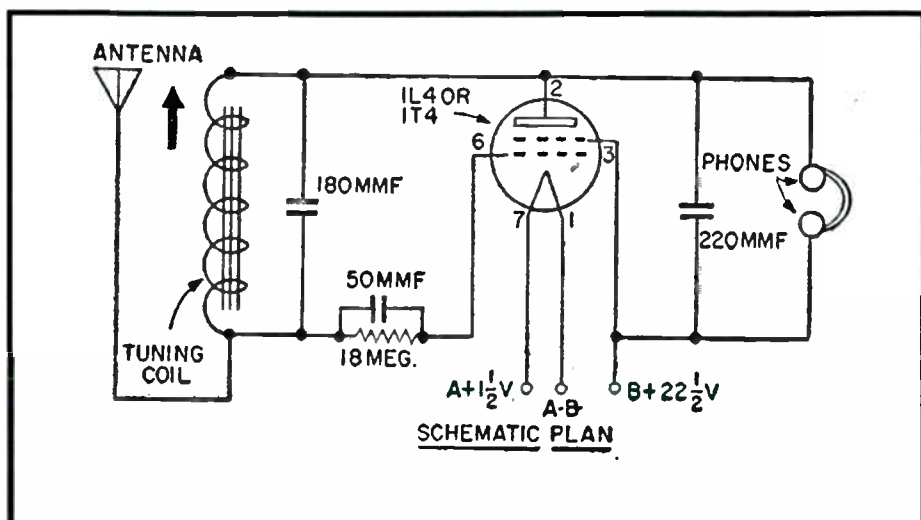


Ed Dupart—Outside the Ligonier Museum

A DIY One Tube Radio Construction Teaser

Pee-Wee Radio Packs a Punch

Radio TV Experimenter, 1957 page 27 Science and Mechanics Publishing



Although this truly tiny radio uses a minimum of components, it will out perform conventional 'regenerative' sets which are more complex and less efficient than the super-regenerative circuit this midget uses.

Moreover, a regenerative type set is often difficult to tune since either a variable capacitor or resistance circuit must be used in addition to tuning control to prevent excess feedback (whistles). The pee-wee set shown is single-dial tuned and provides excellent earphone reception. With 4000 ohm headphones, it has brought in stations 1500 miles away.

For local earphone reception, clip the antenna lead to a metal object, or for very loud volume to

a finger stop on a dial phone. In remote areas, use a 50 ft. antenna and a ground connection to the metal battery clip which is at A-minus and B-minus potential (see Figs. 1 and 2). A ground is not needed otherwise.

Build the set on a $\frac{1}{2} \times 2\frac{1}{2} \times 3\frac{3}{8}$ in. "bread-board" pine block. The panel is a $2\frac{1}{4} \times 2\frac{5}{8}$ in aluminum metal plate attached to the base with wood screws. The tuning coil is a ferrite slug-tuned antenna loop coil with a snap-mounting. The screw-driven slug permits the set to be tuned with micrometer sharpness. Once tuned, it will not jar out of adjustment as do variable capacitor-tuned sets.

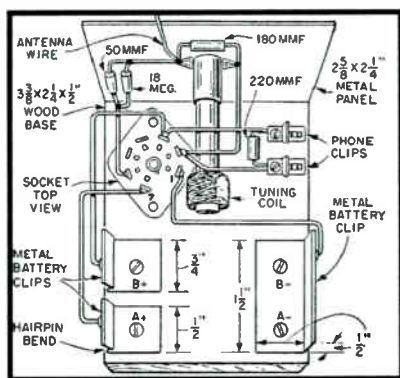
The set is powered by a $22\frac{1}{2}$ volt hearing aid B battery such as

Pee-Wee One Tube—continued

the Eveready #412. The A battery is an ordinary penlite cell such as the Eveready #911. Both cells connect to the circuit by means of simple homemade clips.

The socket for the miniature pentode (a 1L4 or 1R4) is a wafer type. Note that the type of Fahnestock clips used have holes in the end so phone tips may be inserted "jack-fashion".

The 180 mmf ceramic capacitor shunted across the tuning coil allows the set to tune from about 1400 to 660 kc. However, to tune above 1400, this value should be about 100 mmf. To tune below 660 kc, use 250 mmf. The 180 mmf, however, is the best all-around



value for tuning in the majority of U. S. radio broadcast frequencies. By dis-connecting the coil capacitor, this set will tune in the 75 meter "ham" band as well as ship-to-shore and other special service transmissions.

To shut off the receiver, simply remove the A battery (penlite cell).

8

When inserting batteries, no harm will come should the penlite cell accidentally contact the B-battery clips. *However, should the B-battery make contact across the A-battery clips, the tube will blow instantly!* So, when installing or replacing the B battery, make sure the tube is out of its socket. To prevent accidental tube blow-out, drive a 1-in. brad into base board between the two batteries; this brad will prevent the B-battery from fitting between the wrong clips.

The 22 1/2 volt hearing aid battery will last quite a while. The penlite cell will require more frequent replacement. But, if you rotate two pen-lite cells, using each not more than 1/2 hour at a time, you'll get about 100% increase in life of the A batteries which you use.

Materials List—Pee-Wee Radio

- 1 2 1/4 x 2 5/8 aluminum metal panel
 - 1 1/2 x 2 1/4 x 3 3/8 in. pine wood base
 - 1 7-pin miniature wafer socket
 - 1 1L4 or 1T4 miniature pentode tube
 - 1 Ferrite slug-tuned antenna coil
 - 2 Fahnestock clips
 - 1 Eveready Mini-Max (or equiv.) #412(E) 22 1/2 v. battery
 - 1 Eveready Nine-Lives (or equiv.) #915 1 1/2 v. Penlite cell
- CAPACITORS
- 1 50 mmf ceramic fixed capacitor
 - 1 180 mmf ceramic fixed capacitor
 - 1 220 mmf ceramic fixed capacitor
- RESISTOR
- 1 8 megohm, 1/2 or 1/4 watt composition resistor

Voice Of America—the Bethany Relay Station—Bob Sands

The Voice Of America ARCI contest entry shown on the cover of this issue of the "Bulletin" was a first place winner for contestant Bob Sands this past August. Bob's VOA entry was also awarded the "Best Historical Display" plaque. The following is the content of his display:

THE VOICE

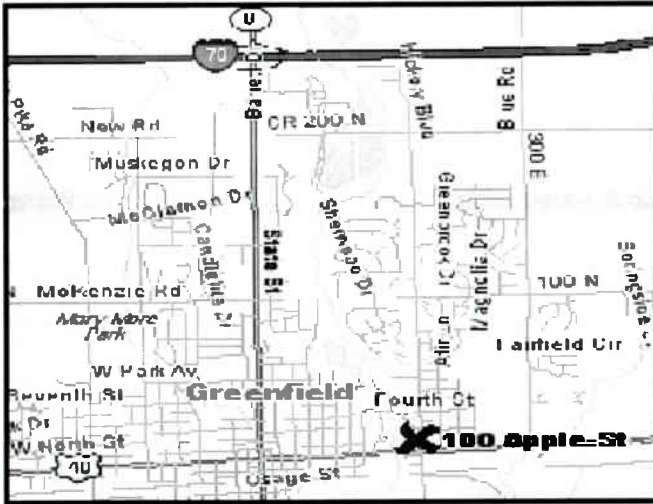
Months after Pearl Harbor, the Crosley Corporation was commissioned to engineer a shortwave installation to reach a global audience. All units had to be custom-built from the start, tubes, output circuits and antennas capable of handling enormous power, 200KW. All this had to be designed and built—fast. When completed, 730 acres, known as the Bethany Station, housed six of the most powerful transmitters the world had ever seen and twenty-two of the most sophisticated antennas (14 rhombic, 8 curtain). Any one of six transmitters could be switched to any of the twenty-two antennas—all with 20db of gain. When Hitler received word of the VOA he himself referred to them as "The Cincinnati Liars". The name, Bethany Relay Station, was so called because no programs ever originated from there. All programming was sent by telephone wire from New York City. Power, 3.5 million watts, was derived from two feeds—one from Dayton and one from Cincinnati. Operating frequencies were 6-26 Mhz. In the late 1960's three of the Crosley transmitters were replaced with three Collins 250KW units and two CEMCO 50KW SSB units.

However, technology continues to advance in the field of international broadcasting. As a result, most of the equipment of the VOA's 114 transmitters are more than 20 years old, half have been on operation for thirty years and four were manufactured more than fifty years ago. Today's technology dictates that satellite links from Washington to areas closer to our intended markets be utilized. Smaller stations of generic and flexible design will enable America's voice to become stronger and less susceptible to silencing.

Voice Of America—continued on page 14

On Saturday, October 12, 2013
the Indiana Historical Radio Society and the Hoosier Antique
Phonograph Society will meet at the Riley Park Shelter, Greenfield

The Riley Park Shelter is located one block north of US 40 on Apple Street, Greenfield. Radio Swap space is available inside and outside the shelter building.



General admission is \$5.00 per family. Swap N Sell vendor fee (includes registration fee) is \$15.00 for current members of the Indiana Historical Radio Society and \$20.00 for non-members.

Schedule of events:

7:00 AM Set up Swap N Sell of vintage radio equipment.

Set up indoors or out in the parking lot, first come first serve.

8:00 AM The IHRS Fall Foliage Meet officially begins

9:00 AM Popular Vote Contest entries in place

Contest categories—1. Pre 1930 Radio 2. 1930 to 1942 Radio

10:45 AM Auction of donated radios

11:15 AM (Immediately following auction)—Lunch – If you are able, bring a dish to share along with IHRS provided meat service.

An IHRS Business meeting will immediately follow the lunch.

Contact for the IHRS Fall Greenfield Meet:

Fred Prohl, (812) 988-1761 or email inhistradio@gmail.com

Information also at indianahistoricalradio.org

Plan Now—Start Now

Build a One Tube AM Radio for entry in the
IHRS Spring Meet Vintage Radio Contest, Kokomo 2014.
A prize will be awarded to first and second place winners!

Guidelines for a Do It Yourself One Tube AM Receiver:

~The one tube radio is constructed by the contestant. ~ Contestant can choose and build from a published circuit or from a circuit of own design, using period parts. ~ It is suggested the circuit will use components representing the period of the tube selected. ~ Part selection may be from the surplus parts box, or constructed by contestant. ~ It is understood vintage capacitor components may need to have current capacitors in place for successful circuit operation. ~ The power supply is the builders choice and is not considered in the One Tube circuit judging.

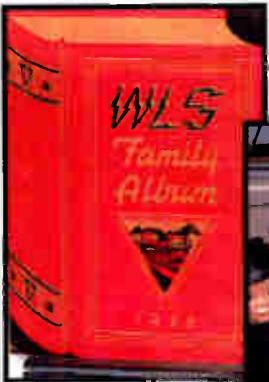
The DIY One Tube AM Receiver will be judged as follows:

- ~ Does it work, driving headphones or a speaker, depending on circuit design. ~ Adherence of construction to schematic.
- ~ Adherence to use of period parts. ~ Construction techniques, parts layout, soldering, etc. ~ Supporting documentation.
- Overall presentation of the One Tube AM Receiver.

MEMBERS OF THE INDIANA HISTORICAL RADIO SOCIETY!

In addition to regularly scheduled meetings, the IHRS offers a network of individuals interested in Vintage Radio, and a quarterly "Bulletin" of vintage radio history, radio restoration topics, and reviews of unique radios. Checks for membership should be payable to the Indiana Historical Radio Society in the amount of \$15.00 per January through December year. Send payment to: Herman Gross, IHRS, 1705 Gordon Drive, Kokomo, IN 46902. Important: To ensure receipt of the "Bulletin" and other IHRS communications clearly print name, address, phone number (and email address).

ARCI Radiofest— August 2013— Atrium Display
RADIO'S GOLDEN AGE—1938



THE REASON

The condition of the nation could not have been better for him. The country had suffered a draining defeat in World War I and as result was in a severe depression. There was no employment available and the Reichsmark was worth almost nothing. The treaty of Versailles forced Germany to pay reparations to France and Great Britain. In 1930 the economy collapsed. It was the perfect time for Adolf Hitler to take control.

But first, there had to be someone or something to blame for the crisis the country was experiencing. Hitler chose the Jews—the business people—the industrialists—the capitalists—they caused all this. But how could he convince the masses that they were to blame and that he—Hitler—could restore economic health?

Hitler employed Josef Goebbles as "Reichsminister for Propaganda and National Enlightenment". Goebbles had complete control over radio, press, cinema and theater. Now the masses could be indoctrinated into the Nazi way of life. Goebbles main method was to use radio. Germany had 69 international transmitters, Japan 46, but the U.S. had only 13. Wartime construction brought our total to 39. Since much of Europe is multi-lingual, shortwave (or international) bands were very popular and listening to shortwave was akin to a hobby. The Philips station PCJJ was started on 1927. The BBC in 1932 and Radio Moscow in 1939.

However the Third Reich wanted the people to hear only music and speech that they—the Third Reich approved. Therefore all shortwave listening was banned. SW radios were confiscated or destroyed. If caught hosting others as in a resistance group, that meant treason and death. All programs heard must have originated in Germany!

In 1933 the government issued specs for "The People's Receiver". The Volksempfänger, A 3 tube TRF with regeneration sold for 37 reichsmarks—half of what other similar receivers cost. Twenty-eight manufacturers were licensed to produce these seven million radios which must be built to these specs only. Of course, no shortwave. Medium and long wave only. The VE301DYN stood for, VE Volksempfänger, 301—January of 1933 (the date Hitler came to power). DYN—a model with a dynamic speaker. Other radios were produced using similar authorized circuitry. A two tubes model, Kliene Volksempfänger (little peoples receiver) and a four tubes in a nice wood cabinet. But, no shortwave.

Therefore, with conditions as known and described in Germany, the office of the coordinator of information in the USA made the decision to build the Voice Of America with the ability to literally blanket Germany with the truth about the war, and accomplish part of this broadcasting from a suburb of Cincinnati, Ohio USA.

The German manufactured radios featured in Bob Sands' Voice Of America display.

Credit for technical detail on each receiver is given to:
Radiomuseum (www.radiomuseum.org)



The Seiman's K32GWB
1941—1942
A five tube super-heterodyne
in a wood case.
Six AM circuits, Broadcast,
Long Wave and Short Wave
A battery set for portability

Volksempfänger VE301 Dyn W
1938—1941
A three tube TRF regenerative receiver
in a Bakelite case.
Tuned to one AM station.
AC supply.
Approx 10x12x7 inches in size.



Olympia 384W—Sachsenwerk 1937
1937—1938
A four tube TRF regenerative receiver
in a wood case.
Two AM circuits, Medium Wave
and Short Wave.
Approx. 24x12x11 inches in size.

SOME OFFICERS OF THE WEHRMACT WHO
WERE IN REMOTE AREAS WERE ASSIGNED
"MORAL" RADIOS WHICH COULD RECEIVE
SHORT WAVE. HOWEVER ONLY "APPROVED"
STATIONS WERE TO BE TUNED IN.

Donation Auction – Fall Foliage Meet – Greenfield – October 12

The radios shown below are from the collection of Steve Oblinger. Many of the radios are multiband and are in very good condition.



Delmonico Novum



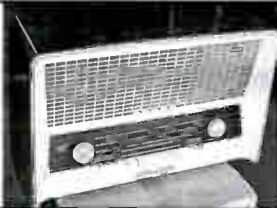
GE 115



Grundig Satalite 208



Hallicrafters S38E



Norelco B3X83A



RCA 2B403 & Juliette



RCA Strato-World 3BX671



Zenith A6001 TO



Zenith D7000Y TO



Zenith G500 TO



Zenith H615



Zenith R723



(two) Zenith Royal 1000 TO

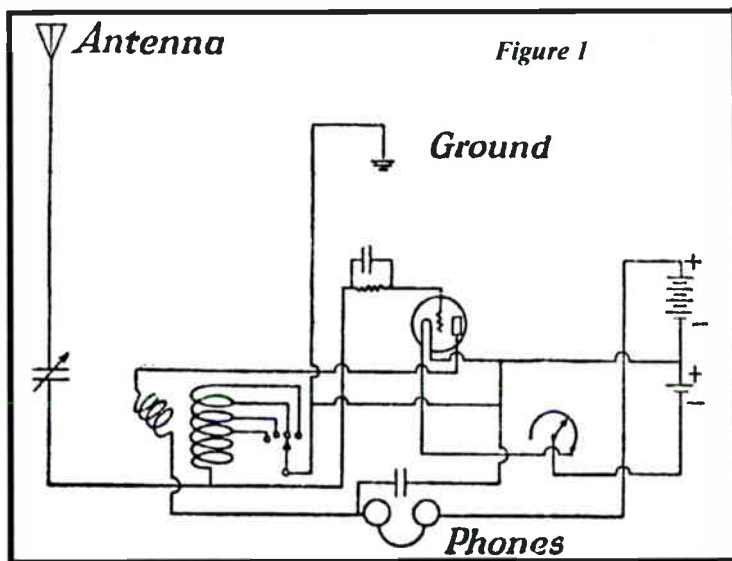


Zenith 3000 TO

A DIY One Tube Radio Construction Teaser

Wiring The Single Tube Set—Watson Davis

The Country Gentleman—June 28, 1924



A REGENERATIVE circuit gives a greater receiving range than any other circuit employing a single electron tube. This extreme sensitivity is obtained by making the tube amplify the received signals in addition to detecting them or making them audible in the phones. A circuit which does not incorporate re-generation requires additional tubes for amplification.

There are several kinds of regenerative circuits but the one described in this article is the simplest and best for broadcast reception. It is wired up from the parts suggested in last week's article and when used with the antenna installation previously described, will receive the programs

of broadcast stations within a radius of about 400 miles. Under good conditions, greater distances are possible.

These suggestions present a simple and effective method of assembling and wiring the parts of the regenerative circuit. If you wish to purchase a set employing this same circuit, the instructions given here will help you to choose the most satisfactory.

Figure 2 shows a top view of the complete layout including all the connecting wires. All these parts and their symbols were described in the preceding article. Study the arrangement of Figure 2 and then refer to Figure 1 where the conventional symbol is pictured for each part in the same relative position.

A DIY One Tube Regenerative Receiver—continued

In Figure 2 the antenna, ground and phones are not shown, but their conventional symbols are shown in Figure 1. The tube socket in Figure 1 is replaced in Figure 1 by the conventional symbol of the electron tube. There is no conventional symbol for a tube socket. The parts and symbols as illustrated in the preceding article will be of value in the understanding of subsequent circuit diagrams.

Selecting the Base

Secure a base of dry wood large enough to accommodate the parts without excessive crowding, and a panel of thin wood—not more than five-sixteenths of an inch thick—which may be stiffened by two or three wooden cleats and which is to be secured in an upright position to one edge of the base. For permanent use, a composition panel of insulating material is desirable because it is neater, is stronger, and is not subject to bending or warp-ing, but if dry wood is used, almost equally good results will be secured. The wooden panel is much cheaper and it is easily drilled.

These parts are mounted on the panel: The variable condenser, the variocoupler, the switch lever—with switch points and switch stops—the phone binding posts and the filament rheostat. They are mounted about halfway between the lower and upper edges of the panel.

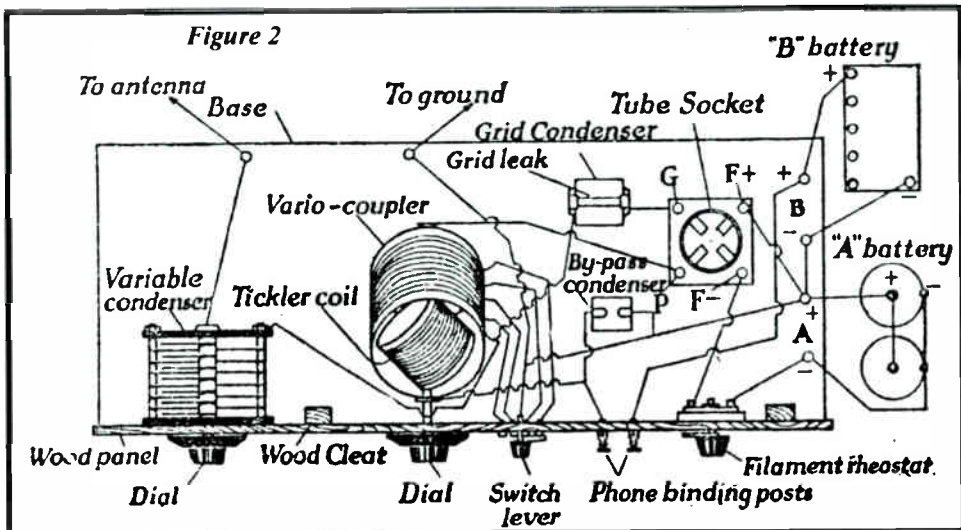
The variable condenser is provided with three machine screws for securing it to the panel. Drill the holes for these screws, a hole for the shaft of the rotating plates, and if a separate vernier—fine-adjustment—knob is used, drill a hole for the shaft of this knob also.

Fasten the condenser in position and place the dial on the shaft of the rotating plates. Turn these plates so that they completely mesh with the fixed plates. Slip the dial around on the shaft until the numeral "100" is at the top, mark this position on the panel and lock the dial in position by means of the small set screw. See that the knob rotates smoothly and stays set in any position.

Next drill the necessary holes for the variocoupler and fasten it in place. Set the dial on the shaft and turn the tickler coil until its axis coincides with the axis of the fixed coil. Twist the dial around on the shaft until "100" is on top, mark this position on the panel and lock the dial in place. See that the tickler coil rotates smoothly and maintains any desired setting.

In order to clearly show all connecting wires, the vario-coupler in Figure 2 is set back slightly from the panel.

Mount the switch points in the arc of a circle having a radius equal to the length of the switch



lever and close enough so that the switch blade will pass smoothly between the contact points. Mount the two switch stops in such a manner that the switch blade will not drop off the contact points. Drill two holes for the phone binding posts near the lower edge of the panel and about one and a half inches apart.

Mount the filament rheostat near the right end of the panel and adjust the spring contact arm so that it presses firmly on the resistance wire, fasten the knob to the shaft, turn it to the left as far as it will go and mark the position of the pointer on the panel. This is the "off" position—that is, it opens the circuit so that no current can flow from the A battery through the filament of the electron tube.

On the base mount six binding posts in the positions shown, spacing them at least one and a half inches apart. As the screws in

the posts project below the base it is best to fasten a wooden strip under each end. Fasten the tube socket, the grid leak and the grid condenser and the by-pass condenser in the positions shown in Figure 2.

No. 20 insulated copper wire or No. 14 bare tinned copper wire may be used in connecting the parts together. The wire is straightened by clamping one end in a vise, gripping the other end with a pair of pliers and pulling until it gives slightly. The wires should be stiff enough to be self-supporting; crossed wires should not touch even though they are insulated. The No. 14 wire is more rigid.

Ends of Connecting Wires

Where the wires cross in Figures 1 and 2 a curved line is used. This indicates that the wires *do not touch* or come close to one another.

In Figure 2 you should carefully discriminate between connecting wires and the outlines of the apparatus, as for example, the edges of the base.

The ends of the connecting wires are formed into an eye or loop and clamped under a binding post or a nut which is part of a terminal of a piece of apparatus. Sometimes this means of connection is not possible, as for instance in the case of taps on the fixed coil of the vario-coupler. In such instances the best way to make connections is by soldering, but if soldering equipment is not available these connections may be made by placing the end of the wire along the terminal where the connection is desired and wrapping tightly with several turns of small bare copper wire—about No. 24.

From the antenna binding post run a wire to that terminal of the variable condenser which connects to the *rotating* plates. From the other condenser terminal lead a wire to that terminal of the fixed coil of the variocoupler which is *nearest* the tickler coil. Then select in order four or five taps from this coil and connect them successively to the switch points mounted in the panel.

If the coil is provided with more taps than these they are not to be used.

From the switch lever run

another wire to the ground binding post. Note that a wire branches off from this one and runs to an A battery binding post. It is not necessary that this second wire be connected at the particular point shown; instead it may lead to the ground binding post or to the switch lever.

If you examine the tickler coil you will find that the winding connects to two fixed terminals. In Figure 2 these terminals are, for the sake of clearness, shown at each end of the fixed coil. Connect one of them to terminal P—plate—on the tube socket, and the other to the left phone binding post. Follow through the rest of the wiring as indicated in Figures 1 and 2.

On most tube sockets the filament terminals are marked F plus and F minus. These positive and negative signs are purely arbitrary. In Figure 2 the upper F—filament—terminal of the tube socket *becomes* F plus because it connects through a binding post to the positive terminal of the A battery.

When all the parts have been wired together upon the base you are ready to connect the A and B batteries to the four binding posts at the right. Observe great care in making these connections, as an error will render the set inoperative or apply the high voltage of the B battery to

the filament of the electron tube—which is placed in the socket later—burning it out instantly.

In Figure 2 the A battery is made up of two dry cells, connected in *parallel*. This parallel arrangement is used for any tube listed in the table of last week as requiring a single dry cell for filament operation.

For any type of tube a single B battery unit of 22^{1/2} volts is sufficient. Connect it to the B battery posts as shown in Figure 1. The extra terminals of this battery are only for special use. Connect the antenna wire, the ground wire and the phones to their respective binding posts as shown. One of the phone terminals usually has a red marking, and this should be connected to the phone binding post farthest to the right.

To operate the set place the electron tube in the socket and make sure that the springs maintain firm contact on all four pins in the base of the tube. Turn the knob of the filament rheostat to the right until the filament glows. With a dry-cell tube the filament is only dull red. You are now ready to tune the set to a broadcasting station. Turn the switch lever to the contact point farthest to the right so as to cut into the circuit all the turns on the fixed coil. Rotate the tickler coil until its axis coincides with the axis of the fixed coil—the "100" mark on the dial should now

be opposite the mark on the panel—and turn the condenser knob *slowly* through half a revolution.

If this dial has been properly adjusted as previously described its numerals will pass the mark on the panel, from zero to 100.

At some setting on the condenser dial you will notice a distorted or whistling sound. Now turn the tickler coil *back* and carefully readjust the condenser—preferably with the vernier—until these sounds reappear. Repeat this process of alternately adjusting the tickler coil and the condenser and the sounds will become clearer and gradually take the form of music or voice. If no sounds are heard, set the switch lever on successively different points and repeat the process.

As soon as you hear the whistle of the transmitting station, turn the tickler coil *back*, at the same time readjusting the condenser slightly until the whistling sounds just disappear and the music or voice becomes clear and undistorted. When this condition is secured, the adjustment of the circuit is that of maximum regeneration or just below the point where it begins to oscillate. If the set does not oscillate, reverse the wires leading to the terminals of the tickler coil.



Submit your "FREE TO CURRENT MEMBER" RadioAd by the 15th of February, May, August, or November in time for the Bulletin issue that follows.

Wanted: Tempo 1 Power Supply (Ham). Dave Mantor, PO Box 1, Fairmount, IN 46928-0001 (765)618.8342 Email - merrijoym@yahoo.com Thank you 6/13

For Sale: REPRODUCTION RADIO BATTERIES: I've developed replica battery solutions for most tube and transistor radios--batteries that have not been available for nearly thirty years. They look, they feel and they work--just like the originals! Plus, they are a reusable resource. Inside are holders for AA, C, D and 9-volt batteries. When the batteries wear out, simply remove them and install new ones. Contact Bill Morris at batterymaker@gmail.com or at 317-895-1334. 12/12

For Sale: Reproduction cabinet parts (wood). In stock parts; front panels, rear arch supports, base molding, for Philco models 20,21,70,90 (others per sample). Philco Colonial Clock top trim including finials, Grandfather Clock finials for Philco 570, GE H-91, Crosley 124 (others per sample). Almost any wood part available per sample, any make or model (per quote) (tooling charge may apply). Dick Oliver c/o Antique Radio Service, 1725 Juniper Place #310, Goshen, In. 46526. Ph. (574) 537-3747, e-mail- dolivears@aol.com 12/12

- 2013 Regional Vintage Radio -

Indiana Historical Radio Society

October 12—Fall Foliage Meet in Greenfield

Antique Radio Club of Illinois www.antique-radios.org

October 6—American Legion Hall, Carol Stream

Michigan Antique Radio Club www.michiganantiqueradio.org

Mid-South Antique Radio Club

October 26—Collectors Gallery, 835 Porter Place, Lexington, KY

layvinrad@insightbb.com

AWA-Antique Wireless Association www.antiquewireless.org



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The BULLETIN
A publication of the Indiana Historical Radio Society
Forty-two years of documenting early radio.

Perryman tubes displayed:

R.H. 201A Amplifier and Detector

P.A. 210A Super Power Amplifier

P.D. 200A Super Detector



The Perryman Tube poster board display was acquired by Fred Prohl in 1980 at a vintage paper shop in Indianapolis. The tubes were located at a later date. This Perryman Tube Advertising Display was in the ARCI Radiofest 2013 Old Equipment Contest.