

Spring 2010 Newsletter

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Caution: Performing repairs on radios could be dangerous. SARS assumes no responsibility for accidents resulting from any information contained in this web site or newsletters.

General Info

Southeast Antique Radio Society
113 Laurel Ridge Drive
Alpharetta, GA 30004
<http://www.sarsradio.com>

Club Officers

President: Rich Rodgers
Vice President: Gary Beale
Secretary: James C DelPrincipe
Publicity & Membership: Gordon Hunter
Treasurer: Tom Knutson
Newsletter Editor: Mark Palmquist
Webmaster: Rich Rodgers

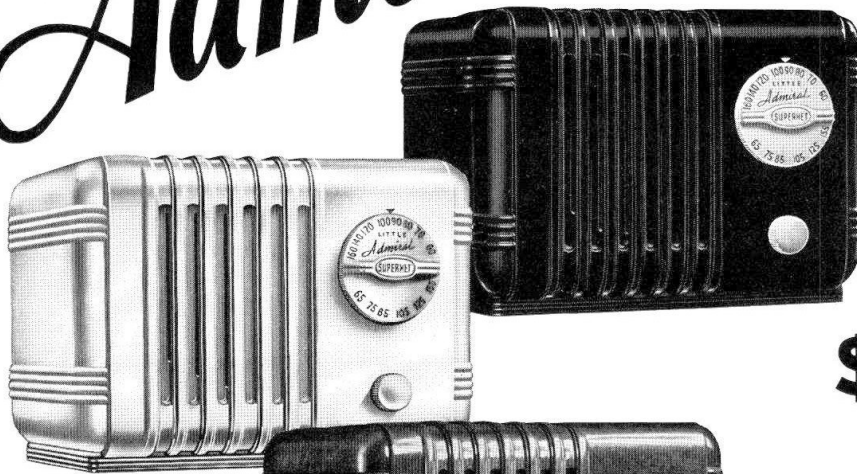
Support Your Club

The Southeastern Antique Radio Society meets on the second Monday of each month at RYANS Restaurant, 7045 Jimmy Carter Blvd. Norcross, GA 30093. Meetings start at approximately 6:30 PM. Most attendees arrive early and eat before the meeting. In addition to club business, meetings have a "Show and Tell" session where members bring in items to display and discuss. All are encouraged to participate in this activity.

Next Swap Meet

Saturday June 19, 2010 at 8 AM
Fairfield Inn & Suites
11385 Haynes Bridge Road
Alpharetta, GA 30004
See <http://www.sarsradio.com> for more details

"LITTLE"
Admiral **5 TUBE "SUPER"**
WORLD'S SMALLEST SUPERHETERODYNE



THE MIDGET of them all! Modern bakelite cabinet measures only 7 1/8" wide by 4 3/8" high by 4 1/4" deep. Shipping weight only 5 1/2 lbs. A full 5-tube super with two bands. Range 535 to 1730 KC. and 1800 to 4500 KC. Has 4" dynamic speaker, iron core antenna coil, 1 1/2-watts output.

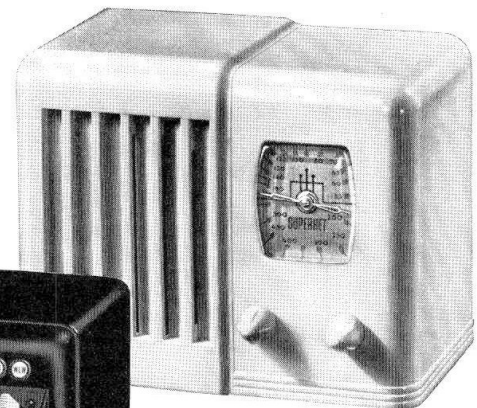
\$15⁰⁰
LIST

**IN RED, BLACK,
 IVORY & WALNUT
 BAKELITE
 CABINETS**

Model 123-5E Black Model 124-5E Walnut
 Model 125-5E Ivory Model 126-5E Red

5 TUBE AC SUPERHET \$16⁹⁵
AUTOMATIC PUSH-BUTTON TUNING AND UP

In Genuine Bakelite Cabinets
 113-5A Black \$16.95, 115-5A Walnut \$17.95,
 115-5A Ivory \$19.95.
 5-Tube A.C. superheterodyne table model with tuning range from 535 to 1735 KC. Push-button tuning. Exclusive "Magnascope" dial, full A.V.C., two stages R.F., and 5" dynamic speaker. Cabinet measures 11" wide by 6 3/4" high by 7" deep.



5 TUBE \$12⁹⁵
AC SUPER

Model 516-5G—In walnut bakelite cabinet 8 3/4" wide by 6 3/4" high by 4 3/4" deep. A full 5-tube A.C. super at an amazingly low price. Tuning range 535 to 1735 KC. Has illuminated pillow shaped dial and 5" dynamic speaker. Unusually high selectivity and sensitivity. Underwriters approved.
 517-5G Ivory Bakelite \$15.95



ADMIRAL RADIO-PHONOGRAPH COMBINATION
\$29⁹⁵
LIST

MODEL 521 5C 5-Tube AC-DC radio with tuning range 535 to 1735 kilocycles. Has pillow shaped airplane dial, manual tuning, 5" dynamic speaker. One stage R.F., 1 1/2-watts undistorted output, 2-watts maximum. Phonograph has RCA motor and RCA crystal pick-up. Plays up to and including 12" records (with lid closed). Cabinet measures 12" wide by 12" high by 11 1/2" deep. Never before at such a sensational price!

CONTINENTAL RADIO & TELEVISION CORP.

3800 W. CORTLAND STREET, CHICAGO, ILLINOIS

Be sure to visit our display of 1938-39 Admiral Radios at the Blackstone Hotel when in Chicago for the Radio Parts Show

A Simple Variable Frequency AM Transmitter

By James C. DelPrincipe

The 1.0 MHz crystal controlled AM transmitter project was very successful and at least a dozen members of the club built one to enable their vintage radios to receive program material generated by a computer, CD Player or MP3 player. In this article we up the ante and enable you to broadcast anywhere in the AM spectrum where there is no interference from local stations.

In the recent past the SARS group built a number of AM transmitters using the ECS-2100X clock chip. It needed a minimum of components and time to construct. The transmitter's greatest strength was the fixed frequency at AM 1000 on the dial. It was easy to find and tune. The transmitter's greatest weakness was the fixed frequency if it happened to fall near a strong commercial station.

A remedy for this would be an equally simple transmitter with a variable frequency. There are many variable frequency oscillators (VFOs) we could choose for this purpose. Some of these are the Armstrong, Hartley, Clapp, Tuned plate-tuned grid, and many more. They are generally distinguished by the way feedback occurs within the circuit. For example, the Hartley uses a tapped coil to feed some of the output back to the input. This is true in both transistor and tube circuits (solid state or hollow state).

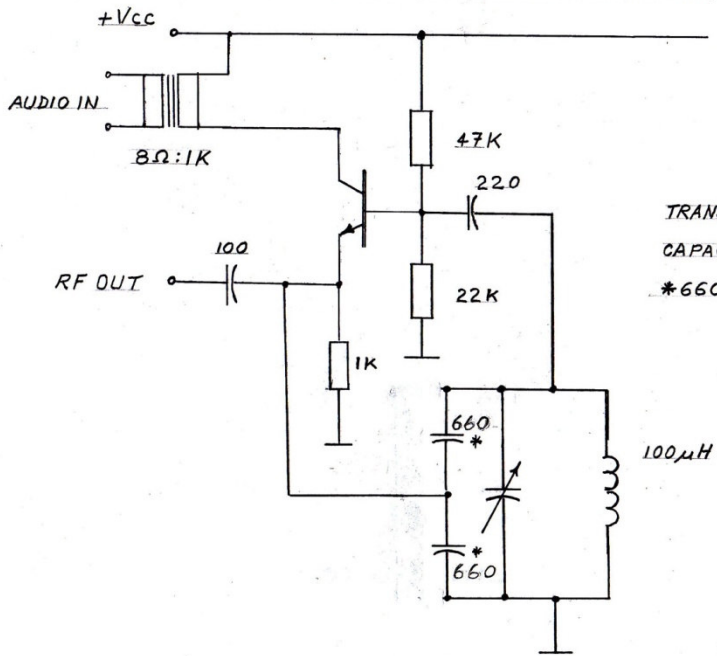
My favorite oscillator for RF frequencies is the Colpitts, characterized by a split or double capacitor for feedback. It's easy to construct with no special tapped coils to wind, has good output and reasonable stability. The frequency is determined by an inductance and combination of capacitors including a common variable capacitor. You could also use a Varactor and vary the bias voltage on it. This works quite well, especially at higher frequencies.

Modulation is provided by a small transformer (8 Ohms to 1000 Ohms) in series with the collector of the single transistor. It is, of course, low level modulation since this is applied directly to an oscillator. Too high a level would cause instability. For greater "talk power" an amplifier stage could be added with higher level collector modulation.

For around the house reception, a short length of wire up to 3 meters is sufficient. It is suggested that for broadcast frequencies you use a metal enclosure to prevent "pulling" the frequency by body capacity when you adjust it. The circuit is constructed on "Perf board" with solder pads. Component leads will provide interconnects. Be careful soldering transistors and diodes. They are very heat sensitive. Good results will be had from a 2N3904, 2N2222 or 2N4401.

Set the level of your audio source such as a CD player or IPOD to strike a compromise between power out and clarity.

VARIABLE FREQUENCY AM TRANSMITTER



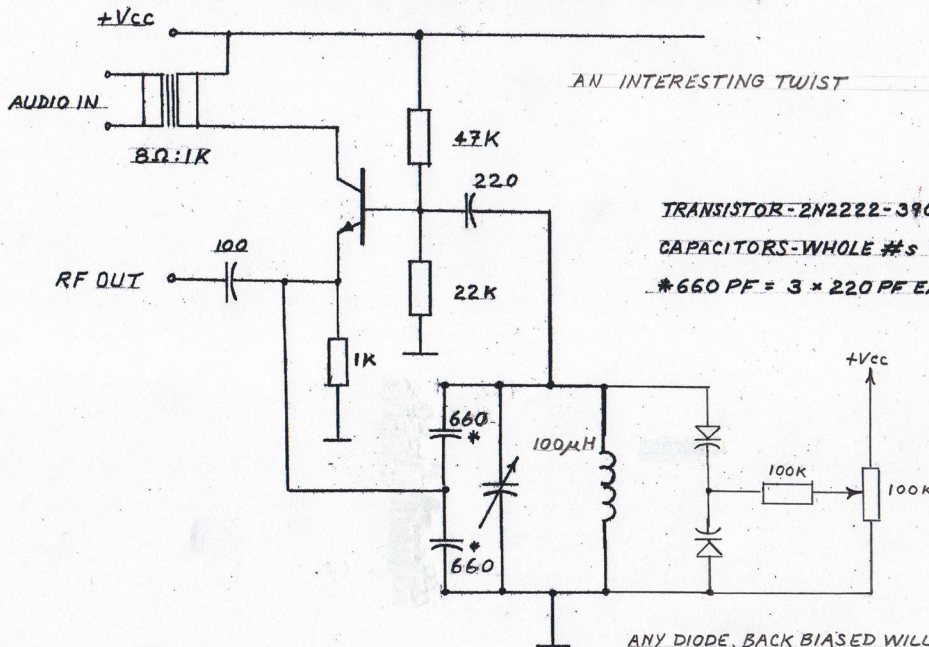
TRANSISTOR-2N2222-3904-4401

CAPACITORS-WHOLE #s = PF.

*660 PF = 3 * 220 PF EACH.

VOLTAGE VARIABLE FREQUENCY AM TRANSMITTER

AN INTERESTING TWIST



TRANSISTOR-2N2222-3904-4401

CAPACITORS-WHOLE #s = PF.

*660 PF = 3 * 220 PF EACH.

ANY DIODE, BACK BIASED WILL ACT AS
A VERACTOR - VARIABLE CAP.
MORE VOLTAGE = LESS CAPACITENCE

Beat Frequency Oscillator BFO

For those of you who enjoy listening to short wave on our old radios, have you ever wondered why you can't hear Morse code or single sideband? Morse code or CW sounds like a series of thumps if you can hear it at all and single sideband sounds like Donald Duck having a bad day.

The Broadcast stations we normally listen to use a carrier and two sidebands. Because of this, we normally use a vacuum tube diode to provide envelope detection. In the case of CW, which is nothing more than switching a carrier on and off, there are no sidebands to detect. For single sideband there is not even a carrier.

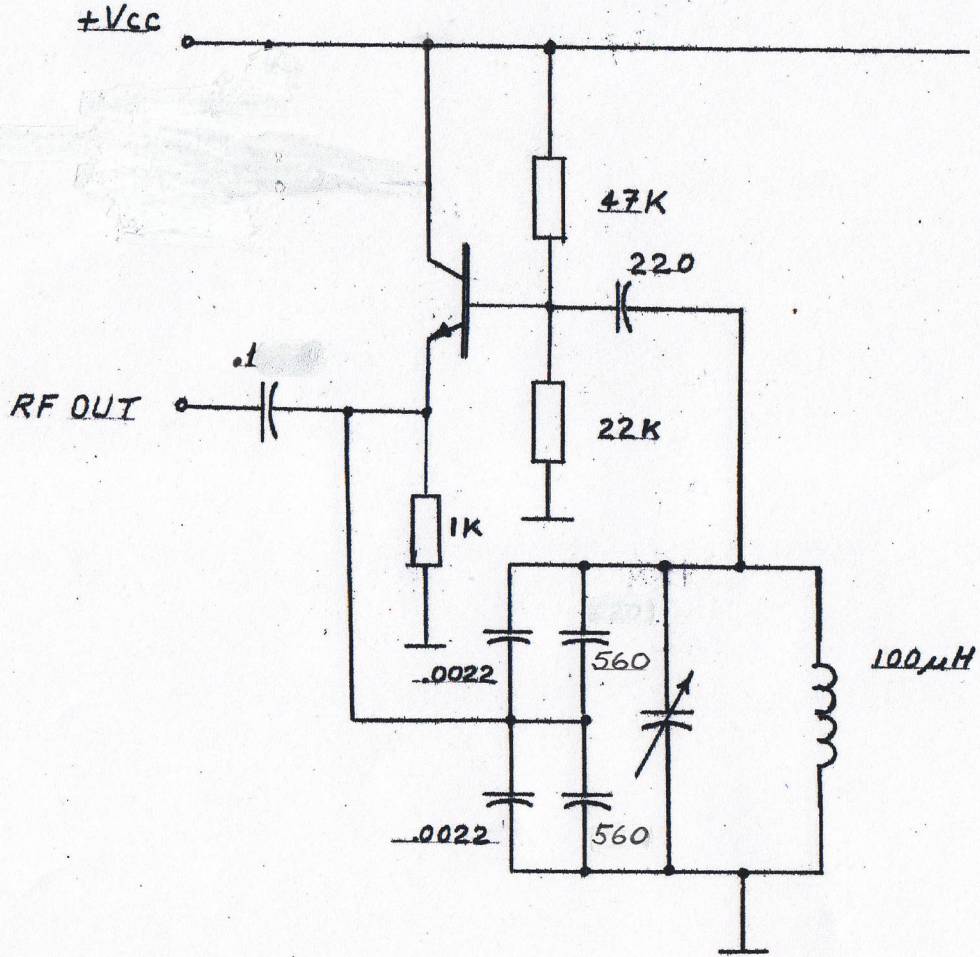
Is it possible to replace this carrier back at our radios? Fortunately, the answer is yes and since our Superhetrodyne receivers convert all incoming signals to a single intermediate frequency, it's simple and easy. We just need a device called a beat frequency oscillator or BFO. This is a simple oscillator that injects a signal into the IF. The oscillator must be variable frequency to adjust the 'pitch' of a CW or sideband signal and to accommodate different IF frequencies.

Most radios were designed with an IF of 455 Kilocycles but many were not. The BFO described here varies from about 430 KCs to 500 KCs which will work with most radios. If you have some other intermediate frequency, it's easy to adjust for this. You only have to change the inductance or a capacitor.

At these frequencies, there is little need for shielding. In most cases a short wire connected to the output is enough to couple with your radio. If your radio is exceptionally well shielded, you can connect to the grid cap of the IF tube.

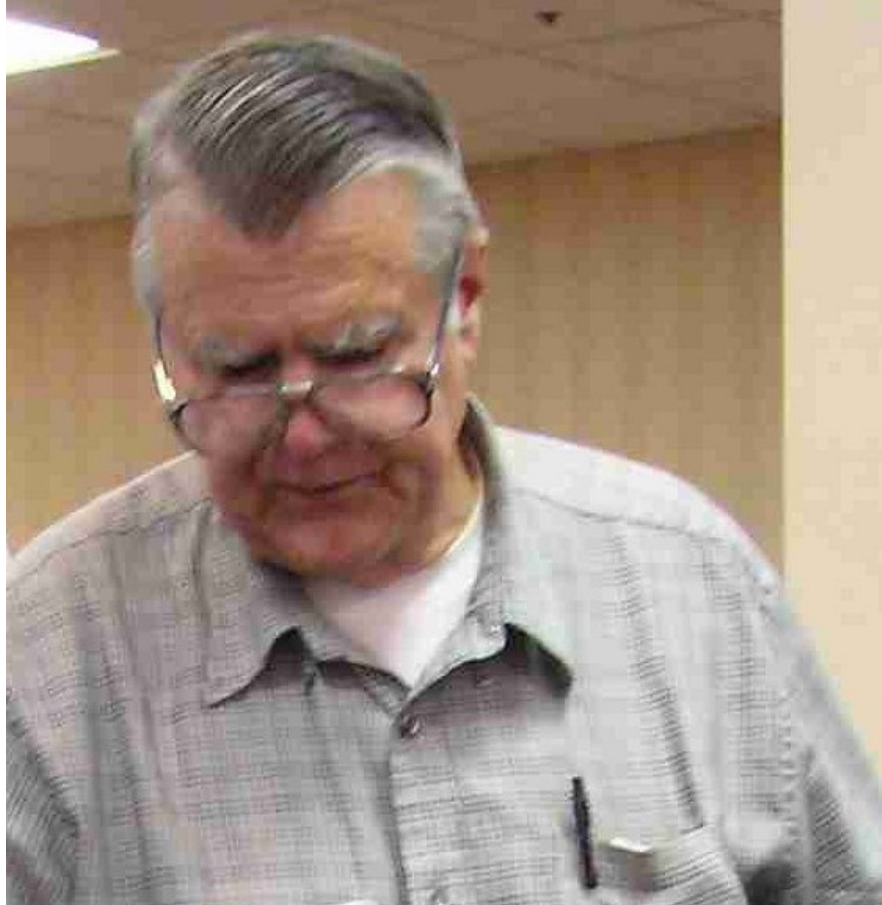
Select a short wave band for listening. Switch on the BFO and tune in a broadcast station. Now adjust the BFO frequency until you hear a tone like a whistle or squeal. You are ready to hunt for those mysterious CW or SSB signals. When you find one you can fine tune the BFO for best pitch. It takes a bit of practice. Not all of our radios do this equally well. It depends upon how coarse or fine their tuning is and a vernier knob is a big plus.

BEAT FREQUENCY OSCILLATOR



Farewell to Marty Reynolds

Long time SARS member Marty Reynolds passed away at 3:00 PM on Good Friday, April 2, 2010. A memorial Mass was held at Immaculate Heart of Mary (IHM) church on Tuesday, April 6. He is survived by his wife, Kathy, two children, two grandchildren and one brother. The following eulogy was written by Paul Gargiullo.



My Memories of Marty Reynolds

I appreciated very much receiving a copy of Marty's obituary because it captured so well his character and spirit as I remember him, and it also brought forth my own memories of our encounters over the years. I first met Marty when I joined the Southeastern Antique Radio Society (SARS) about ten years ago, and I would also run into him at many HAM fests around the Atlanta area. Once a month we have a SARS dinner meeting at restaurants that tolerate us bringing in dirty and bulky old radios, radio parts and other paraphernalia for the after dinner "show and tell".

Marty was an impressive expert on many topics: antique radios, military and HAM radios, physics, electronics, mathematics, just about anything technical and scientific. He had PhD level understanding of these things. He could explain the mathematical application of Fourier series in describing radio frequency harmonics. Yet he was always unassuming, delightfully humorous, and his humor was often off-color for which we forgave him. He would kindly and generously spend time to answer my many questions on radio and electronics theory and history.

It was obvious how much joy he received from his hobby of bringing back to life old radios and building electronic projects. One dinner meeting he brought in a high voltage power supply that he built inside of an empty margarine tub. It used small parts to convert the voltage of a few small batteries up to a hundred volts or so through use of an oscillator and an induction coil. All in a margarine tub, probably because it was handy. He said that he finished it around 3 or 4 AM, and then he turned on the History Channel to watch a documentary on German Tiger tanks in WWII. I got the feeling that he didn't want to miss anything by sleeping.

I enjoyed the times that he and his friend Reed Fisher (a fellow physicist and HAM) would bring in a project they had worked on together. They demonstrated a set of WWII FM walkie-talkies, jam packed with miniature vacuum tubes, that they restored to working order. Marty talked about how the FM frequencies that were used during the war were low enough to refract off the ionosphere like short waves, and be heard for great distances in the Pacific theatre. There were many other projects and discussions like this.

Marty frequently operated vintage HAM radios during the Classic Exchange and similar radio events sponsored by the Antique Wireless Association. He recounted how on one of those occasions there was a really loud bang with sparks and smoke inside his transmitter because a high voltage wire had come loose and shorted out against something. He grinned and said "That's what I *love* about this hobby"!

Marty would usually show up in the "bone yard" of HAM fests, with a table or tarp full of old radios and parts to sell and to pass on to a good home that would adopt them. One year, late in the day at the Stone Mountain hamfest when most everyone had gone home, there was on the ground in the bone yard a small box full of dusty vacuum tubes pulled from old TV sets. Marty said " Paul, it looks like these tubes have been abandoned. You need to take them home!" I had to beg off, my arms were full and besides my wife was beginning to give negative feedback about all the stuff I came home with from HAM fests. I am *certain* that Marty took those tubes home. Some people spend their lives rescuing whales and endangered species. Marty spent his life rescuing a different sort of endangered species.

About a week before Marty died, I telephoned him and we talked about different things: his cancer and the ups and downs of his treatments. But he seemed to be at peace and was appreciative of the call. He wanted to know about the SARS events he had missed because of his illness. I told him about the talk given by John Jenkins at our February swap meet. John is President of the American Museum of Radio and Electricity, and he talked about the development of Maxwell's equations and the difficulties that physicists and mathematicians had during the 19th Century struggling to grasp the concepts of electric and magnetic fields, mysterious things you could not see or feel yet they exerted forces that could be measured. Marty said "You know we still don't really understand these things". That was Marty the scientist speaking. The nature of science is that we really don't fully understand things, we create and test theories and use mathematical models to revise our understanding, but it is an ongoing journey. I think that the intellectual journey no doubt gave Marty a lot of joy and satisfaction during his life, but he was also playful and humorous about it at the same time, and that's how I prefer to remember him. Paul Gargiullo, KI4CBT

ZENITH LEADS

This is the new 1933-1934 Zenith Challenger Line!

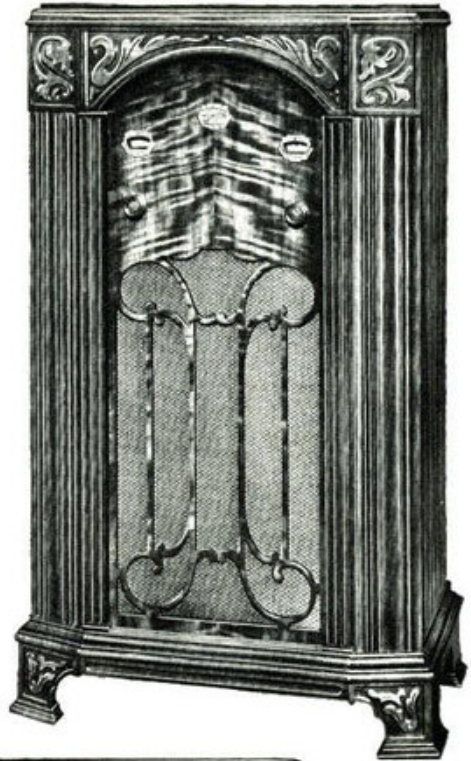
Read the descriptions of each model illustrated. Remember, they are six, eight, and nine tube superheterodynes with new-type tubes . . . automatic volume control . . . vernier tuning . . . especially constructed over-size dynamic speakers . . . cabinet designs that introduce *a new trend in radio furniture!*

Only Zenith's experience in building high-priced QUALITY radio receivers could have produced this low-priced QUALITY LINE.

See this new line QUICK!—Communicate with the Zenith Distributor serving your territory!

ZENITH RADIO CORPORATION
3620 Iron Street • Chicago, Illinois

MODEL 750 →
6 tube advanced type AC superheterodyne circuit. Shadowgraph Tuning . . . Automatic Volume Control . . . Dynamic Speaker . . . dial calibrated in kilocycles—tuning range 1750 to 535 . . . gets police calls! Never before has a Zenith console radio with Shadowgraph Tuning been sold at such a low price. Front panel of this console is of matched, mottled Australian laurel wood, with genuine wood carvings. 38" high; 13" deep; 22" wide.



MODEL 705 →
6 tube advanced type AC superheterodyne circuit. Automatic Volume Control . . . Vernier Tuning . . . Dynamic Speaker . . . dial calibrated in kilocycles—tuning range 1750 to 535 . . . gets police calls! Cabinet has beautifully figured butt walnut front—genuine imported marquetry inlay with top border finished in maple burl—solid walnut top—fluted ends. 8 1/4" high; 15 3/4" wide; 6 1/2" deep.



← **MODEL 706**
A cabinet of modern design. 6 tube advanced type AC superheterodyne circuit. Automatic volume control . . . Vernier Tuning . . . dynamic speaker . . . dial calibrated in kilocycles—tuning range 1750 to 535 . . . gets police calls! The cabinet is of solid walnut with butt walnut panel. 8 1/4" high; 15 3/4" wide; 7 1/2" deep.



Alternative paints - The Resurgence of Wrinkle and Hammer Tone finishes

By James C. DelPrincipe

Wrinkle Finish: In the 1920s many radios were made with a finish known as wrinkle paint. In the intervening years, while this finish died out for broadcast radios, communications and test gear continued with wrinkle paint through the 30s and up in to the 70s. Restoring a wrinkle finish has been a challenge because it was difficult to find and the paint was a challenge to use. Today wrinkle paint is making a comeback of sorts in a most unlikely place. Custom cars and motorcycle enthusiasts have discovered this unusual finish and vendors are catering to their business much to our advantage. A company known as VHT - for very high temperature - has a line of specialty paints for engine parts that withstand the rough service of engine and drive train components including Header Paint meant to survive the heat of an exhaust manifold. O' Riley Auto Parts is a local supplier that carries a full line of their products, including wrinkle paint.

Their product is a bit different to use in my experience and somewhat easier to achieve a consistent and attractive wrinkle if you follow a few simple steps.

1. Proper preparation - The old finish should be removed to bare metal.
2. Primer - Use a good quality primer and if the surface is pitted, use a sandable primer, hand rubbed between coats to achieve a smooth finish.
3. Temperature and humidity - both should be modest. Temperatures in the 50s to 70s work best.
4. Shoot it wet. This is essential to a good wrinkle. Forget about several light coats. It does NOT work with this finish. Don't let it run but definitely wet!
5. Wait 5 to 6 minutes between coats and no more. You will not see a proper wrinkle if you let it set up between coats.
6. Give the piece a second coat, wait the required time and then give it a third and final coat.
7. Now for the difficult part. Leave it alone. Don't touch your work for at least 24 hours and preferably 48 hours. I know this is tough but well worth it. The paint does not harden for a very long time. Full hardness is measured in days depending on temperature. It can be baked in an oven but consider your wife's reaction to that.
8. Don't even think of trying to spot paint a defect. If you scratched your new paint start over. Yes, that is a sad state of affairs but you wanted a perfect finish, didn't you?
9. VHT only makes wrinkle paint in black and red. The red is not really useful for our purposes, but you can carefully over spray another color. Do this lightly or you will fill in the wrinkles. Use just a dusting for each light coat. This is a time when you do want several light coats of spray.

Hammer Tone Paint. Many Hardware stores as well as Hobby or Craft stores have begun to carry Hammer Tone paint. This was once popular as a chassis finish on some Zenith radios in the 30s and on electronic equipment starting in the 50s. It is easy to apply but needs just some consideration.

Use a good primer and shoot it wet. There is no special waiting time but it usually only takes one coat. There is no point in additional coats and this is self defeating. The wetter you shoot the paint the more Hammer finish you will see.

SARS Events for 2010

~ Mark Your Calendars ~

| Date | Event | Meeting Topic | Show & Tell |
|-------------|---|-------------------------------|---|
| 06/19/10 | SARS Spring Swap Meet | Alpharetta, GA- Fairfield Inn | Event begins at 8 AM |
| 06/19/10 | SARS Monthly Meeting- Member's Home | | |
| 07/12/10 | SARS Monthly Meeting- Ryan's Restaurant | TBD | Bakelite, Catalin, Plastic and Plaskon Radios |
| 08/09/10 | SARS Monthly Meeting- Ryan's Restaurant | TBD | TBD |
| 09/xx/10 | SARS Fall Swap Meet | Alpharetta, GA- Fairfield Inn | Event begins at 8 AM |
| 09/13/10 | SARS Monthly Meeting- Ryan's Restaurant | TBD | TBD |
| 10/16/10 | Saturday Meeting at Member's Home | TBD | TBD |
| 11/08/10 | SARS Monthly Meeting- Ryan's Restaurant | TBD | TBD |
| 12/04/10 | Christmas Party | Alpharetta, GA | TBD |



MR. HITLER, TAKE A LOOK AT THIS!

Take a good look.

Know any of the people around the table? No, you probably don't.

This little group of ten, Mr. Hitler, are symbolic of the larger group of 130,000,000 who are going to lick the stuffing out of you.

They represent labor *and* management at RCA Victor—they represent *American unity*. In action! They are RCA Victor's "WAR PRODUCTION DRIVE COMMITTEE TO BEAT THE PROMISE." They are stimulating RCA Victor men and women to even greater efforts in the battle of production. They're busy sponsoring the sale of War

Bonds to RCA Victor men and women.

Yes, Herr Hitler, these people are hard at work defeating you . . . in the good old American way.

For we're fighting for all the things we believe in—the things you have threatened. We're fighting for a return to our peaceful way of life . . . the day when we can again make, and our dealers can again sell, RCA Victor radios and phonograph-radios in a world at peace.

Too bad *you* won't be around then, Adolf. But we're afraid your ideas and ours don't mix.

So take a good look now—and see what you're up against!

BUY
U.S. WAR
BONDS

RCA VICTOR

RCA MANUFACTURING COMPANY, INC., CAMDEN, N. J.