

Selling Radios and Related Equipment on eBay

By Jack Crider

Editor's note: Jack is an experienced eBayer and he led a discussion at the January meeting on what he has learned from his experience to date selling radios and other equipment using the on-line auction service. Some members tried his suggestions and at the February meeting reported good results. Here are some key points contributed by Jack and others at the meeting:

1. Use the “**Buy it Now**” feature for both selling and buying. When an item is listed with a **Buy it Now** price, a willing buyer can immediately claim the item by bidding the asking price. There is also a reserve price that is lower. Once the reserve price is reached, **Buy it Now disappears**. The **Buy it Now** encourages bidders to try to find the reserve price. When buying, sometimes a seller just wants to get rid of something at any price, which may turn out to be a bargain. Scrolling new listings with the **Buy it Now** filter turned on will help one spot these bargains. If you have an item you just want to dispose of, don't necessarily list it for \$0.99 at the beginning. Someone may be lurking out there who really needs it and will **Buy it Now** for \$9.99!
2. Always include the packing, shipping and insurance charges in the reserve price. This lets the buyer know that “what you bid is what you pay”. We have had many compliments from buyers who have been gouged by sellers who added excessive charges after the fact. When buying, if these charges are not specified, it's a good idea to use the “ask seller a question” feature to clarify shipping charges before placing a bid. Another advantage of including the shipping charges is that buyers who want to pay immediately with PayPal or BidPay don't have to exchange emails to get the shipping charges and close the transaction. Be careful with your listings to ensure that foreign shipments are excluded from this offer.
3. Good photos are very important in getting the top dollar and are inexpensive and fun to prepare once you have made an investment in a digital camera. A high-dollar camera is not a necessity since eBay will generally crunch the photo to a lower resolution mode for display. Some club members have set up an inexpensive photo studio with neutral background and lighting to make their photos look more professional.
4. Make sure your feedback remains POSITIVE by describing auctions accurately, answering questions honestly, paying and shipping promptly and packing items so that they arrive safely. The feedback system is one of the most powerful consumer protection tools available in the market place. Many eBayers won't deal with bidders or sellers who have zero or negative feedback.
5. Ebay recently provided a new listing feature called “**Turbo Lister**”. This feature enables sellers to design professional looking HTML listings off-line and also provides an inventory of items to sell in an Access type database. At your command, **Turbo Lister** will automatically upload all your items in your inventory file. According to eBay, the best time to have your auctions close is Sunday night, when most people are

at home and have time to watch auctions close. Friday night at rush hour is probably the worst time. Don't forget time zones either. California bidders are three hours behind Eastern Standard Time.

Refinishing Wood Cabinets part 3 of 3

By Mark Palmquist

In this last installment we will describe more restoration products used by professionals and list some sources of supply.

Toners: A toner is simply a lacquer which has a dye or pigment added so the user can achieve a desired color match by spraying on as much or a little as needed to get the desired color. Toners can be applied on top of a previous coat of lacquer to adjust the color. The “sunburst” color effect found on guitars is a good example of what can be done with toners. Toners come in a wide selection of colors. I recently purchased a “starter kit” of Touch-Up aerosol color toners from **Wood Finishers Supply** www.woodfinisherssupply.com (WFS) in Marietta, GA with Van Dyke Brown, Dark Walnut, American Walnut, Red Black Mahogany, Dark Red Mahogany, Brown Red Mahogany and Black. This represents a small fraction of available colors. Antique Electronics Supply www.tubesandmore.com carries **Mohawk** finishes, which are also highly recommended for restoration work.

Touch-Up Wax Sticks: These are like crayons, which are rubbed into a nail hole or gouge to bring up the damage level to the surface while matching the color. **Marking Pens** are also available with matching colors. These are available at most home-improvement stores. **Handy Ace Hardware** in Tucker, Georgia (arguably the best hardware store in America) has a good selection, as well as **WFS**.

Glazes: Glazing is the process of applying a thin coat of pigmented coloring between coats of finish. It can be used to even out colors if a wood surface contains sapwood and heartwood. Since the glaze is applied to a previous coat of finish, it can be brushed out to even the color or removed in certain areas to achieve a desired effect. For a complete discussion of how glazes work consult Bob Flexner's [Understanding Wood Finishing](#). **WFS** carries a complete selection of glazes for brush application or in marker-pen form.

Stains: Stains come in **pigment** or **dye** form. A pigment stain carries solids that lodge between the fibers of the wood to change the color. Dyes are chemicals that are dissolved in the carrier and actually penetrate the fibers of the wood to change the color. **MinWax** has a good selection of pigment-based stains that seem to match many old radios. You wipe it on, wait a while and remove the excess. If you want it darker, apply a second coat later per the directions on the label. I have not used dye stains (other than toners) so can't recommend a product or source.

Water-based products: For safety and environmental reasons, many refinishers prefer to use products that do not contain volatile organic compounds (VOC's). These are certainly safest for use by amateurs and homeowners. **Highland Hardware** www.highlandhardware.com in Atlanta has been a pioneer in promoting these safe and friendly finishing products and has a most knowledgeable staff you will ever find to answer any woodworking, tool or finishing question. Highland has weekly seminars featuring world-renowned experts on furniture making, tools and refinishing. Check their website for a schedule of upcoming events.

Capacitor FAQ (Frequently Asked Questions)

Inoperative radios almost always have at least one bad capacitor, especially radios that have been “on the shelf” or “in the attic” for many years. Several fellow collectors have asked me questions about capacitors so the editor will attempt to add to the general confusion by trying to answer them.

Q1: What do capacitors do in my radio?

Capacitors in radios generally perform one of five functions:

1. **Filtering** – Filter capacitors smooth out the half-wave rectified DC voltage from the rectifier tube (5Y3, 35Z5, 35W4). If your radio has a loud hum when you turn it on, chances are the filter capacitors are defective. These capacitors have values typically from 10 μ F to 50 μ F. One of them is usually connected to the cathode of the rectifier tube.
2. **Tuning** - A capacitor connected in parallel with a coil or inductor will have one frequency where it most likely to carry a signal from point a to point b with lowest loss. When you turn the tuning knob on your radio, you are simultaneously changing the resonant frequency of the oscillator circuit and the antenna or Radio Frequency (RF) circuit. This enables you to select one station while rejecting the others.
3. **Trimming** – Very small capacitors are usually wired in parallel or series with larger capacitors or coils, to enable fine-tuning of resonant circuits. When you align a radio, often you are adjusting small trimmer capacitors that are placed near coils, transformers or larger variable capacitors.
4. **Coupling** – Coupling capacitors allow AC signals to flow while blocking DC signals. In a typical All-American Five, a coupling capacitor connects plate pin 3 of the 12SQ7 Audio Frequency Amplifier to grid pin 6 of the 50L6 audio output tube. The plate likes to operate at +50 volts DC but the grid prefers to operate closer to zero volts DC. Capacitors enable making the connection between the plate and the grid without connecting them directly with a wire. If your output tube gets very hot and the sound is badly distorted, you probably have a leaky coupling capacitor between these 2 stages that enables too much plate current in the output tube because of a too-positive grid bias.
5. **RF Bypass** – At some point in the radio circuit the high frequency (e.g. 455 kHz Intermediate Frequency (IF) is “detected” by the 12SQ7 and converted to audio frequency. Since the IF is no longer needed, it can be shunted to ground via a bypass capacitor while a larger capacitor couples the audio to the next stage.

Q2: How do you test capacitors?

Test benches in the heyday of tube radio had a variety of capacitor checkers that would measure the value of a capacitor and test them for opens, shorts or leakage. I have an EICO 950 Resistance/Capacitance bridge as well as a more modern B-K Precision model 875 RLC tester. Sometimes you can test a capacitor while it is still “in-circuit”, but to be sure I usually disconnect one end of a capacitor. I always replace the filter capacitors in a radio if they look like my father or grandfather installed them. The construction methods, quality controls and materials used in today’s capacitors are superior to yesteryear, although you have to respect the pioneers of radio who made parts that are still functioning well after 70 years. Leakage, opens or shorts are the most common failure mechanisms.

Q3: How do you replace capacitors?

This depends on the level of authenticity you wish to maintain in your radio. In a first class preservation effort, you want it to look like the original parts are still in there. One way to do this is to “gut” the old capacitor by melting the wax that holds the innards in place and separating the tubular shell from the old capacitor. Then place the new capacitor (which is generally much smaller – more on this later) inside the old shell and fill the void with beeswax or hot-melt glue. If you do a google search <http://groups.google.com/> on “gutting wax caps” you will see a variety of ways people do this. All involve getting things hot enough to melt wax so use common sense and work outside if

possible. My first efforts in this direction resulted in deep-sixing my wife's electric fry pan after contaminating it with nasty black wax from an old Majestic. I now have a smoke alarm mounted directly above my radio bench!

Some people send metal electrolytic capacitors (usually mounted in cans above the chasses) out to be rebuilt in the original can. An alternative is to carefully separate the can from the base with a Dremel tool and pull off the top and remove the guts. Wire the new capacitors inside the case and slip the top back on and secure it with tape, wax or hot-melt glue. Awhile back I found some cardboard tubes that fit over the old metal cans and make them look like new.

A third alternative is to leave the old metal cans in place and wire new, smaller electrolytics in their place underneath the chassis. From the top everything looks original. I never replace a capacitor by wiring in parallel with the old capacitor. I always completely disconnect the old capacitor from the circuit and wire the new one in its place. I also completely remove the old lead wires from terminals and clean the old solder off the terminals before wiring the new parts in place. This goes for resistors as well. You can always spot a sloppy repair job from the past when someone just clipped the old part out and tack-soldered the new leads to the old ones. I often put some heat shrink tubing over the new leads as well, if there is any chance they could short out to ground or to another component. This is not something a pure preservationist would do, but I prefer to do it for safety reasons.

Q4: Why are the replacement capacitors so much smaller?

If you order replacement tubular or electrolytic capacitors from Radio Daze, Antique Electronic Supply, Frontier Capacitor or other suppliers they are often about 1/10 the size of the ones you are removing. The materials (metalized polyester or polystyrene film) in today's parts are engineered for miniaturization without compromising performance or safety.

Q5: My replacement capacitors have numbers on them like "223K" or "472K". What's up with that?

These codes are explained in the table below. "223K" means 22,000 picofarads (22 with 3 zeros). Multiply by 0.000001 to get microfarads, which is how capacitors are most often designated on schematics. Very small capacitors (less than 0.001 μF) are often expressed in "mmf" (micro-micro farads or picofarads) on schematics. What is a Farad? It is the standard unit of capacitance named after physicist Faraday. A one Farad capacitor (which can be found on some monster car sound systems) will increase in voltage at one volt per second with an input current of one ampere. When charged to one volt, it stores one coulomb of current. This is one big capacitor. Capacitors in old radios rarely exceed 50 microfarads or $50 * 10^{-6}$ Farads. There are probably other variations on this scheme.

Capacitance Table

Code	Picofarads pf	Microfarads μf
222K	2,200	0.0022
332K	3,300	0.0033
472K	4,700	0.0047
103K	10,000	0.01
223K	23,000	0.022
473K	47,000	0.047
10K4	100,000	0.1

When in doubt, measure the unknown capacitor on your test instrument.

Q6: What voltage rating should I use?

Always replace a capacitor with one with equal or higher voltage rating. If you remove some original 150-volt electrolytics, you can replace them with 160- to 450- volt units. If two new capacitors are identical except for voltage rating, the one with the higher rating will probably last longer in normal service. Most of the little yellow tubular replacement capacitors are rated above 600 volts, well above any DC voltage likely to be found in an old radio.

Q7: Are capacitors dangerous?

A capacitor stores energy. If you short out the leads of a capacitor that has voltage on it, the energy is released instantly. This can make a spark or give you a shock if your body is in the path between "+" and "-" on an electrolytic capacitor. A capacitor can also short out internally, which can cause other components in your radio to fail because they are forced to carry too much current. If you have no training or experience with working with electricity or

wiring, you might best leave radio repair to the experts. For a good explanation of radio safety, visit this web site: <http://home.attbi.com/~radiowarren/safety.html>.

President's Page – By Rich Rodgers

In this newsletter I'd like to introduce David Sarnoff, arguably the most important pioneer in broadcasting history.

Sarnoff was the eldest of five children born to a very poor family in Russia in 1892. At the age of nine his family immigrated to Manhattan's Lower East Side and he immediately helped support them with a series of small jobs. Eventually he became a telegraph operator for the Marconi Wireless Telegraph Co. of America at the age of 15 after purchasing a telegraph key and learning Morse code.

Four years later, working in a tiny Marconi station on top of Wanamaker's Department store, he picked up a horrifying message on April 14, 1912. The message came from a ship at sea and read, "S.S. Titanic ran into iceberg, sinking fast." Legend has it that David spent the next 72 hours glued to his seat at the Marconi station and provided the world with the very latest news about the Titanic.

Later in 1915 Sarnoff developed the notion of a "radio music box". This was a rather odd proposition considering the only commercial use for radios was within the shipping industry. Of course, amateur wireless enthusiasts were present but nobody recognized the potential entertainment value of radio until Sarnoff. "The idea is to bring music into the house by wireless," he told Marconi executives. Although he was a highly regarded Marconi employee, they did not share in his vision.

Marconi continued to champion his concept of a radio music box and saw another opportunity in 1919 when General Electric formed RCA to acquire the assets of the Marconi Wireless Telegraph Company. Sarnoff realized that RCA needed programming or "content" such as news, sports and music to sell radios to the masses. He managed to broadcast the Jack Dempsey-Georges Carpentier fight in July of 1921. This single event turned out to be a smashing success and commercial radio production skyrocketed over the following years. By 1924, Sarnoff's "radio music box", now called the RCA Radiola, was a tremendous success. Brisk sales at \$75 each led to nearly \$84 million in revenue for RCA between 1922 and 1924.

Naturally, Sarnoff was a star employee for RCA. Not content to rest on his laurels, Sarnoff decided to build a network of hundreds of radio stations that would produce national broadcasts. Sarnoff launched the National Broadcasting Company as a subsidiary of RCA in 1926. Later, he became President of RCA in 1930 and, because of its diversity, General Electric was forced to divest of RCA in 1932. That was just the beginning for Sarnoff because he had the vision to recognize the potential for television. In 1928 had established an experimental station within NBC before beginning commercial broadcasting in 1941 from WNBT in New York City. After the war, prospects for commercial television soared.

Over the years, RCA become a mammoth conglomerate, acquiring companies such as Hertz Rent-a-car, Random House Publishing and Banquet Foods. Earnings made on color television started to diminish.

David Sarnoff retired as RCA's chairman in 1970 at the age of seventy-nine and died in 1971. Sixty-seven years after forming RCA, General Electric absorbed RCA in 1986 as their fortunes began to crumble.

Primary source: Time 100: Father of Broadcasting

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