

New Method for Cleaning Atwater Kent Breadboard Tags

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Collectors have seen beautiful examples of the famous Atwater Kent radios assembled from individual modules mounted upon a mahogany board. But there are many examples of these radios that were stored in appalling conditions over the decades and now require some level of cleaning or refinishing to halt further deterioration and often, to make minimally presentable for exhibition.

The RF transformers are found where the outside winding insulation is badly stained, bleached, the cotton insulation rotten or the entire winding has even slipped off the Bakelite former. For some time, restorers have known how to replace this wiring with 'new old stock' SCE (Single Cotton – Enameled) magnet wire that they dye using RIT 'dark green' fabric dye.

The brass screws, nuts, washers and thumb nuts on the unit can be badly corroded but can be cleaned with simple to implement methods.

So now you have bright brass hardware and nice new green wire for your transformer but what do you do about the badly oxidized brass tag mounted in the very center of the top? The bad tag is going to look even worse being surrounded by the, like new, other parts. I have encountered this problem before but never achieved a satisfactory solution until now.



Here is our candidate for the new restoration technique. The oxidation of the brass has progressed to the point that the black background has been almost completely lost in the upper-left quarter of the tag. The red enamel surrounding the AK logo is almost gone. There is heavy corrosion around the top-right edges of the tag and the gold tone finish of the lettering is lost.

For the best implementation of the restoration process, the tag will have to be removed. Fortunately, it is held in place by two black-finish mushroom head pins driven into plain through-holes in the Bakelite. These pins can be pressed-out from the back. For this operation, the tag will need to be supported on a small block of hardwood that has two 1/8" diameter holes for the heads of the steel pins to drop into. It is best not to attempt to drive the pins out using a small hammer and punch; much safer to chuck your punch in any ordinary drill press and use the quill feed to apply just enough pressure to make the pins press-out.

Once the tag is free of your transformer, clean it with detergent and flush. Then clean with alcohol. Use an Xacto knife blade to scrape the corrosion off the edges of the tag. On this example, the top-right border was heavily corroded. I was able to scrape-down to clear brass for most, but not all, of the corrosion area. Avoid being too aggressive.

Use a birch toothpick to clean the rest of the surface. You don't want to use so much abrasion that it exposes the yellow brass. The reason being, that the paint you will apply will adhere better to the thin film of brass oxidation and original black oxide remaining than will virgin brass. Wipe the part vigorously with alcohol and a gauze pad.



You are ready to fill the background areas with flat black and red enamel paint taken from ordinary spray cans. I simply spray a tiny fraction of a teaspoon of paint into a well of a disposable artist paint pallet and wait some few minutes for a lot of the solvent to evaporate. Then I use a tiny sable brush to fill the areas of the tag. I don't want to apply a heavy coating.... Just the

minimum to make sure the coating is thick enough to be opaque... In this case I had to add some red paint to the center of the tag. You do not have to worry about precision placement of the paint.

You want the paint to be thoroughly cured before moving on to the next step. I have a 250-Watt heat lamp mounted onto a standard. It is connected to a lamp dimmer. That way I can place the tag under the lamp and adjust for a gentle heat of maybe 120 F for a duration of an hour or two.

Now comes **Part One** of the "new method".

Previously I would have used something like 1500 grit sandpaper to remove the high spots of paint and expose the yellow brass lettering.

But the better way to remove excess paint and reveal the bright yellow brass surface is to remove by rubbing on the face of a new piece of, unfinished MDF shelving (not coarse particle board). You must have a sharp cabinet makers steel scraper to draw across your MDF board. As the MDF fills with excess paint, the scraper removes it and MDF fibers that are pulled from the surface. The whole rubbing process can be completed in just a minute or two.

Should you have some areas that do not clear of excess paint, rub the tag along the cut edges (sides) of your MDF board a few times. These cut surfaces are not level and can be used to find the remaining low or high spots of excess paint.

Part Two of the "new method".

You now have all the lettering and graphic of the tag free of paint and it is time to remove the exposed oxides on the brass. This is done by dissolving a tiny pinch of Sodium Bisulphate crystals in a teaspoon of common drugstore OTC 3% Hydrogen Peroxide solution. (The Sodium Bisulphate dry acid is used to reduce the ph in spas and swimming pools. Available at Walmart or any pool supply store... A 'lifetime' supply for radio collectors is going to set you back less

than \$10.) This combination solution, long used by jewelry makers, removes oxides from brass without leaving a 'pink blush' on the brass and you have avoided leaving fine lines of sanding. (It is also great for cleaning old nickel-plated parts.)

To the dry surface of your MDF board, I use a disposable pipette to apply just a few drops of the solution and then rub the face of the tag back and forth through the wet spot. After a few seconds, check your progress. Use the scraper to draw the old solution and lifted fibers away from your work area and apply a few more drops of solution. After two or three cycles you should see bright yellow brass free of 'pink blush'.



Wipe the tag with pure water and dry. Protect the yellow brass lettering by applying a thin over-spray of clear or transparent tint lacquer. (Too much lacquer will cause the paint below to bleed.)

In this case, clear lacquer should be tinted with TransTint "honey amber" transparent dye to add a certain warm, gold tone to the yellow brass luster. This is best done using an air brush.

Considering the original condition of this tag, the transformation of this tag produced better results than any I have seen before.

This tag now appears consistent with the look of the new winding, cleaned brass hardware and of course, the cleaned Bakelite molded shell.

What if you cannot remove the tag or if it is curved? You can still use the cleaning method if you substitute a smooth Birch wood Pop-Sickle stick (craft stick) for the MDF board. You will just have to exercise greater care in holding the flat of the stick as close to parallel to the tag face as possible. You still use the same two-step process of beginning with touch-up paint if necessary and its removal of excess with a dry stick followed by removing the brass oxides with



a drop or two of acid solution applied to a clean stick. When you clean off the acid with a wet cotton ball or gauze pad, use compressed air to blow-out any solution that may have wicked under the tag and dry thoroughly before applying a protective clear coat.

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