

Restoring mantle radio cabinets: several approaches

Knobs and Cabinet Trim

Plastic, Bakelite and metallic parts can initially be cleaned with warm water and washing-up liquid. A strong washing-up liquid such as Fairy Excel is recommended. The water should not be so hot that you cannot put your hand in it, as very hot water can cause plastic parts to soften and distort, and clear plastic items to cloud. Leave the parts to soak for a few minutes, to soften the dirt. An old toothbrush is ideal for cleaning the parts and removing the grime from the finger-grips of the knobs. Once the parts are clean, rinse them in clean running water to remove the detergent, and leave them to dry.

Brass items can then be polished using Brasso or a similar product. You will often find that they have been coated with a lacquer, which has become chipped and stained. Once you have a good polished brass surface, it should be protected with lacquer to prevent it becoming tarnished and dull. The aerosol lacquer mentioned earlier is ideal for this. Brass trim on knobs is difficult to spray without coating the rest of the knob; you could either mask it carefully or leave it without lacquer.

Chrome plated items can be carefully polished with Brasso, taking care not to remove the plating. If the plating is already badly chipped and damaged, you may have to paint over it. Chrome paint is available, but generally does not look as good as the real chrome.

Plastic and Bakelite knobs can be wax polished in the same manner as for Bakelite cabinets (described later). If the knobs have printing that is lightly recessed, and some of this is missing, it can be replaced with suitable colour model paint. Any paint on the surface can be removed with Brasso once the paint is completely dry (24 hours).

George Smith adds this suggestion:

Coca Cola 2 litre bottle caps, filled with resin, sprayed satin black, drilled and screwed will substitute for unobtainable knobs (changed as a set!), as will 4 pint milk lids (larger).

Cleaning Bakelite Cabinets

The Bakelite or plastic cabinet can be washed with warm water and washing-up liquid. A washing-up brush and a toothbrush are useful for getting the muck out of the corners and recesses. When the cabinet is clean, rinse it in clean water and leave it to dry naturally.

The best finish can be obtained by using a specialist Bakelite polish. Bake-o-Bryte is available from the publishers of Radiophile magazine for £2 plus 50p postage, and gives excellent results. Alternatively, a good quality wax polish such as Colron Finishing Wax (available from DIY stores) can be used. If the surface is dull and cloudy, it can be improved with the gentle application of a slightly abrasive polish such as Brasso.

Repairing Bakelite Cabinets

Clean cracks and breaks can be successfully repaired with a little superglue. Do not apply the glue directly from the bottle, as you will get far too much. Place a few drops on a piece of scrap card, and use a pin or piece of wire to apply it to the crack or break. In the case of a crack, apply the glue to the inside of the cabinet and let it work its way into the crack by capillary action. Once the glue is thoroughly dry (allow several hours), any excess can be gently removed with a razor blade or modelling knife.

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Superglue is only suitable for repairing clean breaks, and is unable to fill even small gaps. If the broken parts do not fit cleanly together, you will need to use an adhesive that fills the void. An epoxy resin such as Araldite (the standard type, not the fast drying) is suitable. Any excess can be removed with a modelling knife once the glue has dried completely (at least 24 hours).

More major rebuilding work can be carried out with a two-part car body repair filler such as Davids Isopon P38. Cardboard coated with adhesive tape can be fixed to the inside of the cabinet to act as a mould to hold the filler in place while it dries. The filler should be built up over three or four layers, allowing an hour or so for each layer to set before applying the next. When the filled section has sufficient strength to be self-supporting, the cardboard can be removed.

Continue to apply layers of filler until the outside is slightly oversize. Additional filler can be applied on the inside if necessary to give extra strength. Leave the cabinet for 24 hours for the filler to set fully, then sand it carefully to shape. When you are close to the right shape, use finer sandpaper, and finish off with fine wire wool. Any voids can be filled with additional filler.

The only problem with these repair techniques is that the epoxy or filler is not the same colour as the cabinet. With care and practice, you may be able to mix an appropriate coloured powder paint with the filler to disguise the repair. This will only work if the cabinet is a single colour, and even then, it will be very difficult to get an exact match.

George Smith adds these comments:

I have had a few plastic sets cracked from main dropper heat, normally this entails the plastic stretching and cracking inwards. This compounds the problem of not having enough room for it to go back into place. I use Davids resin and fibreglass mat from car shops. The secret is not to use the cross-sectioned thick mat, but the thin tissue mat that is sold also. This does not fall apart and leave strands like the repair mat. I have tried the expanded aluminium David's make, but it was no good at all. Obviously the plastic has to be scratched up a little for the resin to bond, use about five layers of tissue, and this is done on the inside!! Cutting a pencil to size will allow a little 'prop' to push out the crack from inside while it sets, if needed. (It pulls out of the resin easily when it sets).

There is nothing for it but to fill the outside with car body filler, prime and spray. Hopefully the radio will be a colour, but if it is plain Bakelite, make a decision!

Incidentally Plastic Padding make a rigid and a flexible filler in tubes. A little more expensive than a big tin, but probably with wastage in tins, nothing to worry over. Use flexible filler. I have done an orange Philco, white(ish) Philips and a couple of red/maroon something's, I am only too pleased that they at least look nice again, I am not concerned with their value - they were not worth anything cracked anyway!

Paul Gordon said:

In relation to bad cracks in Bakelite cabinets, I have found that I can closely match the colour of the Bakelite by filing down either the back of a knob from the same set or from a back section that's not noticeable. I use the resulting powder mixed with either a clear epoxy resin or, if you're quick, superglue for little gaps!

For polishing the Bakelite cabinets, I use a good quality car polish to obtain the initial shine, then I keep it in durable condition by rubbing in Linseed oil. As the Bakelite is porous, it

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soaks in and keeps the finish looking like new and more "durable". Of course, you must leave a thin film to soak in for a few days and then rub it over with a clean dry cloth - works for me!

If a cabinet is pretty scratched, often a fine steel wool will do the trick, or some fine emery paper, then polish.

BORING OLD BAKELITE? NOT IF WE CAN HELP IT!

Bakelite was a heat-molded phenol-based precursor to modern plastics. It could be molded into almost any design imaginable, and unlike modern plastics, was almost indestructible. However. It was rather brittle and could crack, plus it was susceptible to fading if exposed to years of sun. We'll cover crack repair next time, but here's a method to rejuvenate even the most faded Bakelite cabinet!

First, remove the radio and all hardware until you're down to the bare Bakelite cabinet. Either cover the paper label with plastic, or carefully remove it and re-glue it when you're done. You can remove paper labels (from Bakelite only! Don't try this on wood or modern plastics!) by dissolving the glue with a little Acetone. Acetone will have no effect on the label itself, but will just loosen the glue so it slides right off. If you have ANY question about the use of Acetone on a radio, try it on the inside of the cabinet in an inconspicuous place first.

Now give the radio a good cleaning with warm water and mild dish washing soap. Use a toothbrush to get in all the tight places. Allow to dry. Once the radio is clean, begin the polishing process. I use Wright's Brass Polish Cream, of all things. With a clean rag, apply a light coat of brass polish to the radio and allow to dry to a thin, white, chalky film. Using another clean, soft cloth, buff the polish off. You may need to do this three or more times for faded or scuffed Bakelite, but once or twice is sufficient for most radios. As you polish, you may notice a rather gross, brown substance on your rags. This is tobacco tar built up from years of second hand smoke! The more of this you can remove, the shinier your radio will be. Plus, imagining this gunk in your lungs may give you added incentive to kick the habit, an ancillary benefit to restoring old radios ;-)

The brass polish can also buff out small nicks and scratches while providing a great, glossy finish to your Bakelite. Use brass polish on the clear plastic dial lens covers and knobs, too. But be careful to use this ONLY on bare Bakelite, and not on any painted areas, or applied labels or logos, as the polish will REMOVE them. And never apply it to the dial face itself, or to a dial lens cover that is not plain, clear plastic. It'll rub off the design. I've learned that the hard way!

After polishing, apply a few light coats of paste furniture wax with a damp rag and buff off. Do this a couple of times, three or more for badly faded Bakelite. This whole process may take a few hours, but you'll love the fabulous, mirror finish you can get on your old Bakelite radios! I've gotten amazing results with just a little elbow grease, but many collectors use buffing wheels and the effect is great.

Next time we'll talk about deep fading and scratches, and repairing cracked Bakelite!

Restoring Bakelite By Curt Arndt

I've restored a dozen plus trafficators over the years and I learned how to bring back Bakelite without removing its unique look and patina from an elderly gentleman who restored old radios (the knobs and assorted pieces were Bakelite). Bakelite is one of the first plastics (Dr.

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Leo Baekeland, 1908, father of the plastics industry) made from a formaldehyde formula and some sort of filler, which was in many cases wood (read sawdust). It tends to dry out over the years and needs to be re-moisturized to keep it from becoming more brittle than it already is and you will see that there are a number of ways to accomplish this.

Usually I clean the pieces first with warm soapy and a toothbrush to get the years of dirt, grime, grease and misc. crud off. If the surface is at all rough, which it will be if it has spent any amount of time exposed to the elements, the surface will need to be smoothed out. I usually will start with #0000 steel wool (equal to 600 grit sandpaper) and then work through 1000 then 1500 grit wet sandpaper. I then polish the piece carefully on a on a special soft string wheel with plastic polish on my buffer. **WARNING**, be extremely careful to hold on to the piece tightly because if you loose your grip and the piece hits the floor, it's history!

You may now notice that the piece has a speckled brown/golden tinge to it and no I'm not talking about brown Bakelite, that's different, what you see I believe are the filler specks (sawdust pieces) that have bleached out over the years from exposure. Depending on the degree of discoloration the piece can be dyed with black India Ink.

The next step is to re-moisturize the piece. I normally use plain black Kiwi Shoe Polish and then hand buff until there is no residue left. Other folks that I know have used Neatsfoot oil, mink oil or clear mineral oil none of which I have tried but from seeing some of their finished work it looked very good. Finally I will apply a good Carnuba wax to finish. The results can be spectacular and far superior to just painting the piece, which may be your other option if the piece is broken and you repair it with filler.

Restoring bakelite or plastic cabinets is mostly a matter of cleaning and polishing. I recommend starting with the gentlest possible means and materials, and resorting to stronger methods only if necessary. I always start out with warm, soapy water, some clean, soft cloths, and a soft toothbrush for the small crannies. Cotton Q-tips and round toothpicks also come in handy for tight spots. Avoid solvents, especially when working with an unknown modern plastic. Nothing is more disheartening than watching your newfound treasure start to dissolve under your fingertips! The strongest cleaner that I use for cleaning stubborn grime is window cleaner such as Windex.

For cabinet polishing, I prefer Novus Plastic Polish, grades #1 and #2, available from Antique Electronic Supply. Novus polish is gentle enough to safely polish the most delicate plastic dial covers, yet the #2 grade does a fine job on faded old bakelite, too. Other collectors polish with various substances, such as very fine-grade automotive rubbing compound, power buffing wheels, and so on. Some collectors wax bakelite cabinets after polishing, but I've not found that worth the bother, if you've done a good job of polishing. Be patient, and stick to soft cloths and elbow grease.

Cracks in Bakelite and plastic cabinets be reglued with cyanoacrylate ("crazy glue") if the break is clean. Larger defects in a plastic cabinet can be patched with a product called "Plas-T-Pair," available from Antique Electronic Supply. Larger breaks in a Bakelite cabinet may be harder to repair, although I have heard of people patching them with a mixture of ground Bakelite and some sort of glue.

This information has been collected from many sources over quite a few years.