

Saving Ol' Paint

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No, this series of articles is not about saving the painted pony in your pasture. Although in some ways, the gentle care required for an old horse is applicable to the focus of this series – saving the original paint on your collector car. With the rising interest in the last few years in collector car circles for *original* cars, restoring the original finish can significantly improve the car's appearance and enhance its value. By restoration I am talking about restoring the shine to the original finish, not fixing scratches or chips and the like about which I wrote a few years ago. Nor, can the methods described in this article address cars where the original finish has failed and is cracking, checking, pitting, etc.

Tools and Materials Needed

Restoring an original finish begins with determining the thickness of the paint remaining. Paint thickness is easily determined with a paint thickness gauge (see Figure 1). This gauge is magnet connected with a spring to a graduated cylinder. The spring and magnet are calibrated so that as paint thickness decreases thereby increasing the magnet's attraction, the graduated cylinder move farther out of its holder. There are more sophisticated instruments for measuring paint thickness, but this simple gauge provides sufficient accuracy for this purpose.



Figure 1 - Paint thickness gauge

Carefully survey the entire car with the gauge. It is to be expected that paint will be thinner on ridges and edges. Typically, a new car will have 6 to 8 mils total of paint, of which 2 to 3 are primer. Depending on the age of the car and the extent of polishing by prior owners, the total finish may be 4 to 6 mils thick of which only a couple of mils are the finish color. This is the reason I earlier mentioned the need for careful work. Usually, the paint will be thinnest on any ridges and on panel crowns (convex surfaces). If the paint gauge reveals 10 plus mils, the car in all probability has been repainted and is not the original finish. If the gauge won't stick to a spot, it is a good indication that some "bondo" is lurking behind the paint.



Figure 2 - Compounds and micro-fiber cloths (one for each compound)

For the restoration, three different compounds are required for dark colors; light colors can get by with two. I prefer 3M products, although equivalent grades by others should accomplish the same results. These compounds are (1) rubbing compound [3M # 6085, or 6062], (2) swirl mark remover [3M # 6064], and (3) ultra fine swirl mark remover [3M # 6068]. These compounds are not like the rubbing compounds of old that exhibited a gritty feel when rubbed between a finger and thumb. Although these compounds do contain polishing ingredients,

these ingredients cannot be felt in the finger and thumb test.



Figure 3 - 3-inch polishing machine & pads. The wool pad on the left is more aggressive and is only used where spots require more aggressive treatment and there is sufficient paint thickness

To complement these compounds three different grades of polishing pads are required – yellow foam for the rubbing compound, black foam for the swirl mark remover, and blue foam for the ultra fine swirl mark remover. These pads increase in softness from yellow to black to blue. Also, required are three micro-fiber polishing cloths to remove the compounds remains after polishing, one for each compound. It is good practice not to use the same cloth to remove different compounds. Finally, a machine is needed to power the pads. I prefer a 3-inch diameter, air-powered rotary buffer (such as Chicago Pneumatic 7201P) for restoring original finishes because of the increased control it provides by virtue of its size and variable speed. When I am confident about the paint thickness and am working on a large flat surface, such as a door side, top, etc. I will use a typical 8 or 9 inch rotary buffer. I also use the large buffer with the blue foam pad as the blue foam is sufficiently new that a 3 inch diameter version is not available.



Figure 4 - Large buffer pads – black, yellow, and blue (very soft, on the right)

Restoring the Finish

With all the materials at hand, the first step is to thoroughly wash the car to remove all dirt and any wax. Accordingly, a good quality dish washing soap is used instead of soap specifically intended for washing cars. This is followed by a good wax and grease remover, to remove road tar and similarly soluble contaminants. If there is tree sap or other contaminants, application of a clay bar according to the manufacturer's directions should remove them.

Buffing can create quite a mess – the buffer will fling compound a considerable distance, even if you are careful. Therefore, I cover the car with plastic masking film (old sheets will also work) and expose only the panel on which I am working. The sheeting is re-positioned as a panel is completed to expose a new panel and cover the one(s) just restored. Another preparatory step is tape any ridges with masking tape to prevent the buffer from burning through the paint which is undoubtedly thinner in such areas than the rest of the panel. Taping is also recommended for panel edges unless you are experienced with buffer operation for the same reason. These taped areas are polished by hand using the same compounds and pads after the machine work is done.

It is best to select a spot that is not too obvious for your trial. Test the spot with the paint thickness gauge to provide a baseline. Mount a yellow foam pad to the buffer and thoroughly shake the rubbing compound (3M #6085 or 6062). Squirt some compound on a disposable brush and use the brush to apply some compound to the trial spot (See Figure 5). Run the buffer at 1200 to 1500 rpms. With the Chicago Pneumatic air-powered buffer recommended (#7201P) too much speed is not a problem. However, if using a full size buffer speed can be a problem as some are high speed models.



Figure 5 - Apply compounds sparingly as shown using a brush. Then, move the buffing pad into the compound at slow speed.

Run the buffer slowly through the compound to apply the compound to the pad and then bring the buffer up to speed (this procedure minimizes flinging compound all over). Work an area about 6 inches square keeping the pad flat on the surface. Overlap the buffer passes about 50%. After most of the compound disappears, stop the buffer and wipe the area with one of the micro-fiber cloths to remove any compound traces. Remember to mark this cloth so it always used with only the rubbing compound. Inspect the area and decide if the area has sufficient shine; also test the paint thickness and compare it with your baseline measurement. The shine should be good, but with some swirl marks showing.

Now, switch to the black pad and the swirl mark remover (3M # 6064). Slightly dampen the pad before use. I use a spray bottle filled with water and lightly spritz the pad before beginning. Using another disposable brush apply some swirl mark remover to the panel. You do not want to mix the compounds. Repeat the buffing process as above. Use a moderate pressure on the buffer and then as the shine begins to appear lighten the pressure until the pad is just touching the surface. Then, clean the area with another micro-fiber cloth; not the same one as used with the rubbing compound. At this point the surface being polished should be nearing perfection with no or minor swirl marks. If the color is light, such as tan or white, you may be done. If a dark color, such as black, some very minor swirl marks may be visible.

If the results thus far are to your satisfaction, proceed to do the rest of the panel with the rubbing compound first and then the swirl mark remover. If the panel contains ridges, I suggest you tape these off with masking tape and do them by hand to prevent burning through the finish with the buffer. You can also do the same with panel edges. After you are comfortable with buffer operations and you are sure the edges have sufficient paint, you can do the panel edges with the buffer IF you follow the proper technique. The correct technique is to consider the pad's rotation and make sure that the pads turns from on the panel to off and not the other way around.

If the paint is a dark color there is one more step. Fit the blue waffle pad to the large buffer and dampen it; the dampness should be more than the black pad. Again, the buffer speed needs to be less than 1500 rpm; I prefer about 1200. Using another brush, apply some ultra fine polish (3M # 6068) to the panel. Apply moderate pressure keeping the pad flat on the surface. As the remaining swirl marks disappear reduce the pressure on the pad. Also, make sure that a wet film is left behind. That film will

quickly dry and as it dries it can be removed with yet another different micro-fiber cloth. Unless the paint is very thin (edges and ridges), you can safely use this setup on the entire panel. If in doubt use the tape and hand method.

Before moving on to the next panel, clean up any residue from crevasses such as along bright trim, edges of panels, etc. with a soft detail brush and/or a micro-fiber cloth.

A couple of more tips before you are your way to the rest of the car.

- Do not drag any power cords across the finish when working on the horizontal surfaces such as the top, hood or trunk. Drape the power cord over your shoulder and back to keep it clear of the painted surfaces.

- Once you are confident of your technique and the thickness of the paint, you can use a full size buffer and appropriate pad for each of the foregoing steps. This is particularly applicable to flat surfaces without ridges such as the bulk of door panels, hoods, tops, etc. When using the large buffer expand your working area from 6 inches by 6 inches to 2 feet square.

Restoration of an existing finish which is sound and in good condition will provide for a much better appearing car. However, it is time consuming so patience is important. You can expect a full size American car to take 40 hours or more to do right; maybe longer.

Once the finish is restored it can be protected by a quality wax. Use only a wax and not a cleaner-wax.