

Polishing Aluminum Panels

The Swift Method to a Mirror Finish

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The Swift Method achieves a micro-finish on aluminum with high gloss, definition and depth as evidenced by the reflection of the Flying Lady mascot in 3AU's bonnet, the author's 1924 Silver Ghost.

A perfectly polished aluminum bonnet on an early car is a real eye-catcher but is terribly hard to achieve. That's because polishing aluminum is dirty work. It seems the more you polish, the more black residue is produced.

On close inspection, one can often see tiny specks of the black residue trapped in the surface of the aluminum panel and possibly milky-looking areas that lack the shine of an adjacent area. A newly devised technique, the 'Swift Method,' produces a mirror finish on aluminum that is faster and easier than any products or techniques tried by the author and maintains the shiny finish longer than conventional polishing methods.

Aircraft aficionados at the Swift Museum Foundation¹ who faced the task of shining and maintaining aluminum panels on vintage air-

craft developed the Swift Method. After much trial and error, they developed a method that combines special polishing compounds, a specific type of polishing cloth and an unusual polisher to produce a polished, mirror-like finish on aluminum without swirl marks, black specks or bright sparkles. The author found the Swift Method also worked well on brass, nickel and German silver.

Polishing Aluminum Panels

Before polishing, aluminum panels should be cleaned of any dust or dirt. The goal is to remove abrasive particles that might be ground into the soft aluminum during the subsequent polishing. Swift recommends rinsing the panels with clean water; mopping the surface with a clean, soft, wet cotton cloth; and re-rinsing with clean water. Further clean the surface with TSP

(tri-sodium phosphate) dissolved in water to remove any surface oils, silicone or wax. Thoroughly rinse then fully dry the surface to reduce the chance for water spots. Move out of direct sunlight for the washing and polishing process.

Swift uses Nuvite's NuShine II² graded polishes that range from quick-cutting abrasives to micron-level finishing compounds. Swift recommends starting with Nuvite G6 (quick-cut) for rough surfaces with deep scratches, or the less abrasive Nuvite F7 for surfaces with heavy oxidation. For previously polished surfaces, Nuvite recommends the C grade of polish prior to final polishing with Nuvite S.

Beginning with the Nuvite G6 or F7 polish, use a rotary polisher with a wool compounding pad (3M compound pad #05711) at approximately 2,000 rpm. Some of the large rotary polishers are capable of much higher speeds and are not recommended by Swift or Nuvite since they might burn the surface. Smear a small amount (less is better—use about half a fingerprint of polish every 3 inches ["fingerprint" is indeed the unit of measure used by Swift and Nuvite and means, literally, the tiny amount needed to leave a fingerprint]) of the Nuvite G6 or F7 polish over a 1–2 sq ft area of the aluminum panel. Mop the surface with the polisher's pad (polisher not running) to further distribute the polish.

Begin polishing the small area with back and forth, up and down passes of the rotary polisher. The panel will initially turn black from the process. Keep up the polishing process until the compounding pad mostly picks up the darkened residue. If the surface takes more than a minute to be cleared of residue, you are using too much polish or your compounding pad may be dirty. Move to an adjacent area and repeat the polishing process until you have covered the entire area to be polished.

As the compounding pad loads up with the aluminum and polishing residue, clean it by periodically running the tip of a screwdriver across the spinning nap to dislodge the residue. The dirty pad can be soaked in a bucket of TSP and warm water overnight to dissolve the black residue before washing with detergent and put back on the polisher to spin dry for future use.

Switch to the Nuvite S polish and use half a fingerprint every 6 inches and buff out with



Nuvite produces graded polishes that range from quick-cutting abrasives to micron-level finishing compounds. The compounds are used by major aircraft manufacturers and operators in the U.S. for polishing aluminum panels.



A rotary buffer with a variable speed provides more control of the polishing process. Consider using the 3M system with hook and loop fasteners for quick and easy changing of the buffing pads.



The Cyclo polisher has dual counterbalanced heads that move in a random, overlapping pattern. It operates smoothly and with little effort. It is also a great polisher for waxing cars.

the rotary polisher. Use half as much Nuvite S polish as you used in the initial polishing with the G6 or F7.

Wash the polished area with water and detergent to remove the remaining residue from the panel before proceeding with the final polishing stages. This is the last stage in the process that Swift recommends using any detergent to clean the aluminum panels. Thoroughly rinse the panels to be certain they are clean to prevent the coarse residue from scratching the final finish.

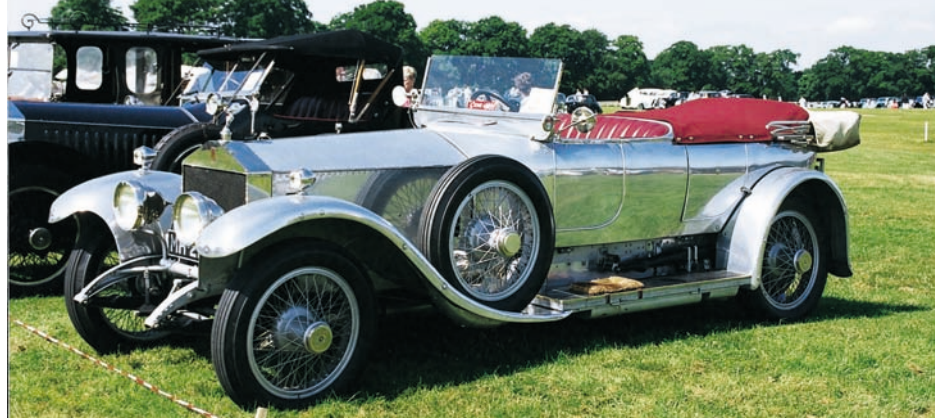
The final polishing step uses the Cyclo Model 5 polisher³, Nuvite S polish and Swift's 95/5 material⁴, similar to a very heavy weight sweatshirt fleece used as a polishing cloth. The Cyclo is an industrial strength polisher with dual counterbalanced heads that move in a random, overlapping pattern. 95/5 will not work with just any old rotary polisher since there is no easy way to hold it on the polisher due to the centrifugal force of the spinning head. It is also a great polisher for painted surfaces since it will not burn paint finishes or leave swirl marks like high-speed rotary polishers. Swift has experimented with different types of polishing pads, cloths and types of polishers and has found the above combination to work the best.

The 95/5 material is stretched over the Cyclo's heads with the fleece side out. The loose ends of the material are held by the user's hands against the handles of the Cyclo polisher. It is not as neat looking as individual polishing pads for each head, but it is very effective and provides a quick way to change to fresh material. The heavy fleece of the 95/5 material traps the aluminum residue and should be moved frequently on the Cyclo heads to minimize the build-up of residue and improve the polishing efficiency. Swift recommends draping the Cyclo's electrical cord over your shoulder to keep it from touching or being dragged across the panels being polished.

Use only a tiny amount of Nuvite S for the final polishing step. It takes only a small fingerprint of Nuvite S polish every six inches. Do not overdo it since more is *not* better or faster. Distribute the polish on the panel with a wiping motion of the Cyclo before turning it on. Polish the panel in an up and down and side-to-side



The 95/5 material is wrapped over the Cyclo's twin heads and held in place by the operator's hand. Be sure that the material does not cover the vents on the back of the Cyclo to avoid overheating it. Note the black aluminum residue picked up by the 95/5 material.



Indian Maharajas ordered some of the most dramatic examples of polished aluminum bodies. 50RE is a 1920 Silver Ghost Barker torpedo tourer. It was originally supplied via R-R (India) to His Highness the Maharaja Regent of Jodhpur, India. Current owner D.M.T. Hilditch, Wales, UK.

pattern, frequently changing to clean areas of the 95/5 material. The black oxidation should come up and then begin to disappear in a minute or less. If the black does not start to disappear after about a minute, there is too much polish on the surface and the pad is sliding around in the excess polish.

The finished panels should have a mirror finish with no milky areas. You may want to move your car into the sun for a final inspection to determine any areas that might need a light touch-up with the Nuvite S polish.

Polishing Nickel and German Silver

Rolls-Royce cars produced prior to around 1930 had German silver and nickel-plated brightwork that require regular polishing to maintain their shine. These cars were produced before the widespread use of chromium plating, an untarnishable finish that requires very little maintenance. Unlike the cool blue tones of chrome, nickel brightwork has a warm golden tone. The warm glow of nickel is offset by the fact that it does not weather well and tarnishes in a manner similar to silver when exposed to the air. It also water spots and the surface can become pitted over time if not regularly maintained. Some owners have gone to the trouble of waxing the German Silver and nickel, clear-coating it and making 'silver cloth' bags to cover their bright-work, all in the hopes of reducing their polishing chores.

Nickel plating and German silver on a Rolls-Royce have a harder surface than an aluminum body panel and do not require as much polishing to achieve a mirror finish. The author used the Cyclo polisher, 95/5 material, and the Nuvite A polish for the initial cleaning. This was followed by the Nuvite S polish. A deep, mirror finish was achieved quickly with the Swift Method. For nickel or German silver that is heavily oxidized, follow the polishing method outlined in the aluminum section that uses the rotary buffer and Nuvite G6 or F7 polish.

Maintaining the Mirror Finish

Swift has found the mirror finish produced by their polishing method holds up very well to the elements. Remember, they are polishing aircraft that are exposed to the same rain and

bugs as your car, only they are traveling at over 150 miles an hour.

To periodically clean the mirror finish, Swift recommends washing the polished surface with plain water (no detergents). Rinse the surface with clean water and then mop with a clean cotton cloth soaked in water to remove any surface contaminants. Flush the polished surface with fresh water to wash away any remaining particles. Dry the surface with a synthetic chamois (Swift recommends "Absorber"). You can follow this with a clean polishing cloth to be sure the surface is completely dry.

Swift notes that the high gloss finish does not require as much re-polishing as other methods they have tried. A quick touch-up with the Nuvite S is generally all that is necessary to periodically restore the mirror-like finish. ®

¹The Swift Museum Foundation, PO Box 644, Athens, TN 37371, Tel: 423-744-9696, Website: www.swift-parts.com. Swift sells the Cyclo polisher, Nuvite polish, and 95/5 material. They also sell a videotape for \$30 that shows the complete polishing process.

²Nuvite polishes are available retail from: Swift Museum Foundation and Nuvite Chemical's website: www.nuvitechemical.com. A ¼-pound tin is more than enough polish for several cars. Manufacturer: Nuvite Chemical Compounds Corp., 213 Freeman St., Brooklyn, NY 11222, Tel: 718-383-8351, Fax: 718-383-0008. In the U.K., Nuvite polishes are available from: Alexander Fraser & Sons, Ltd. Attn: Nick Chilvers, 185-187 High Road, Chadwell Heath, Romford, Essex, RM6 2NR, UK.

³Cyclo Model 5 polisher is available in 120V, 220V, and air-powered versions. Retail U.S. sales from Swift Museum Foundation and Top of the Line, PO BOX 206, Hackett, AR 72937 Tel: 800-533-5743, 501-638-7302, Website: www.topoftheline.com. U.K. sales: Autosmart International Limited, Lynn Lane, Shenstone, Lichfield, Staffordshire WS14 0DH England, Tel: 01543-481-616, Fax: 01543-481-549 (U.S. price approximately \$260). Manufacturer: Cyclo Manufacturing Co., 1438 So. Cherokee St., Denver, CO 80223, Tel: 800-525-0701, 303-744-8043, Website: www.cyclomfg.com

⁴Swift's 95/5 material is a custom-made sweatshirt-like fleece that is 12-13 oz weight, 95/5 (95% cotton, 5% polyester), and contains no dyes. The heavy cotton fleece of this material is superior for polishing aluminum. Swift sells 10 pieces of 95/5 material that are approximately 2' x 2' for \$25. This material improves with washing and Swift recommends that it be washed with regular laundry detergent. Be careful that the polishing cloths are not dropped on the ground or otherwise exposed to small grit that might work its way into your polished aluminum panel or nickel finish.