



How to Polish a Vintage Airstream

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Airstream shells are made of aluminum. Aluminum reacts with oxygen in the air to form aluminum oxide, or oxidation. But unlike steel when it oxidizes to form iron oxide, aluminum doesn't rust. The chemical reaction between aluminum and oxygen doesn't eat away at the aluminum, it actually builds on it . . . and darkens it.

That's the chemical part of the story, but not the part that has brought you to the point of polishing. More likely, this is an emotional decision. Once you've seen a freshly polished Airstream, it's hard to look at Airstreams or aluminum the same way again. The mirror finish on that vintage streamline shape is nothing short of stunning. The rivets and seams are accented against the mirror panels, and you feel the urge to run right home and polish your own trailer. It isn't about the chemical reaction, it's the emotional one.

This article provides a basic description of how to polish a vintage Airstream. But first, it's important to know that polishing isn't for everyone. And it isn't for every trailer.

Can My Trailer Be Polished?

Only *alclad* aluminum trailer skins can be polished. Alclad is an industry term for a type of aluminum alloy sheet with a very thin layer of very pure aluminum electrochemically bonded to both sides. The aluminum alloy underneath the cladding is strong and gives the trailer skin its strength. This aluminum cladding is soft and is what shines when polished.

While some travel trailer manufacturers used polishable alclad only until the early 1960s, Airstream



used alclad panels into the 1980s. Starting in the middle of the 1982 production run, Airstream changed the type of aluminum they used on trailers, and trailers from that year forward cannot be polished.

Another change to Airstream exteriors was the addition of a lacquer coating over the aluminum starting in the 1960s. The coating—called *plasticoat*—was added because the aluminum skins were oxidizing so quickly that customers were complaining. Airstream had been applying glass wax to slow down the oxidation, but it didn't last more than 6 or 7 months.

Starting as early as 1958, Airstream dealers started offering an early version of *plasticoat* on a handful of trailers as a way to stop the oxidation. In 1961 it became an official option you could have applied to your trailer for an extra charge. In 1964 it became standard on all trailers.

The formula has changed several times over the years, some versions lasting longer than others. But

eventually they all fail and start to flake off as the aluminum expands and contracts with the heat of the day, and the UV rays dry out the coating, making it brittle. Usually the failure starts on top, like a sunburn. It takes many many years for the sides to peel.

A previous owner of your trailer may have struggled with this problem and either had the trailer replasticoated, had the *plasticoat* stripped off completely and polished (or tried to polish) the trailer, or simply let time take its toll and watched as most or all the *plasticoat* disappeared.

If your trailer has any *plasticoat* on it, the coating must be entirely removed before polishing. Directions for determining whether or not your trailer still has a *plasticoat* and removing it are detailed later in this article.

Is Polishing For Me?

Polishing is labor-intensive. The time it takes depends on the size of the trailer, the amount of oxidation, the efficiency of your technique, and the number of

breaks you need. At a minimum, expect to spend at least three full weekends on this project. Add a weekend to your timeline if you have to remove a plasticcoat. It is not uncommon for the project to take twice that much time.

The good news is that once a trailer is polished to a mirror shine, the second time takes far, far less time. That's an important thing to know since you may very well be repolishing every year to keep the shine.

Once the aluminum surface is polished, future polishing will be easier and the shine will last longer because the aluminum surface becomes smoother and is further "healed" with every polishing.

To understand the smoothing and healing process, it is important to understand that aircraft-grade aluminum polishes—like Rolite and Nuvite—do not remove oxidation with a chemical process, but rather by an abrasive process. Aircraft-grade polishes are specifically designed to be used in steps, somewhat like sandpaper. Each successive step is a finer polish. The coarser polishes are used on highly oxidized or slightly corroded surfaces. The finest polishes are used only after nearly all oxidation has been removed.

The skin of your Airstream is covered with small and microscopic scratches, pits and other imperfections. By smoothing the surface during polishing, the surface area is reduced, providing less opportunity for oxygen to bond with the aluminum to form the aluminum oxide.

In addition, oxidation left on and *in* a polished surface increases the breeding of more oxidation, causing the polish job to dull more quickly. The cleaner the surface of oxidation, the longer the polish job lasts.

So, is polishing for you? This article helps you assess the work involved. Your ability and willingness to do the work must be weighed against the value to you. It is undeniable that the pride of ownership and resale value of a trailer are substantially increased. But since oxidation doesn't harm a trailer's skin, perhaps you will decide you can live with the unshined look.

How to Polish an Airstream

The following polishing procedures were developed from our own product field testing, polish manufacturer lab and field testing, and feedback we've gathered from our customers who have experimented with various polishing techniques and products over more than five years.

Polishing techniques continue to evolve. Although we can confidently recommend the following procedures, they are not the only way to get satisfactory results. You are encouraged to experiment if you have the time.

Tools, Equipment and Supplies

In practice, a polish's aggressiveness depends on the polishing pads or fabric and the tool being used. Therefore, you'll need two different power tools to complete all the polishing steps:

- 7/9" Variable Speed Polisher capable of operating at ~1500 rpm
- Cyclo dual-head orbital polisher

Along with power tools, you'll need the following pads and other items:

- 7" "Velcro"-type buffing pad adapter
- 7" cotton buffing pads (3 or more)
- A "spur" buffing pad cleaner
- Foam pads for Cyclo
- Several yards of heavy 95% cotton flannel or 100% cotton t-shirt fabric
- Diaper cloth or other very soft cotton rags
- Scaffolding and ladders for safe work on side and top
- Rubber mats or carpet pad to protect trailer from ladder rubs
- Appropriate grades of Rolite or Nuvite polishes (see Steps 4-6)
- Mineral spirits

Step 1: Remove parts that might be damaged during polishing

Lenses on porch, tail or marker lights should be removed. Any other plastic or painted parts that might be damaged during polishing should be protected by taping off or removing them. Remove the red WBCCI numbers and VAC decals and buy new ones to replace them.

Glass windows are safe, but plastic vent covers may become discolored or damaged. Door and window gaskets are safe from polishing, but should be protected during plasticcoat removal (if applicable).

Step 2: Clean the trailer

Oils and waxes can interfere with effective polishing. Use a soft wool car wash glove and warm soapy water (dishwashing liquid is fine in this case) to thoroughly wash your trailer. If you see any bird droppings, tar or pine sap anywhere on the trailer, take mineral spirits or other solvents and remove those deposits. With a rigid plastic or wooden tool, pick any dried loose caulk out of the seams.

When you are finished cleaning and prepping, be absolutely satisfied that the surface is clean. Any dirt, sand or grit left on the trailer when you start polishing will cause severely damaging scratches in the trailer skin. Note: do not use any cleaning product containing ammonia. Ammonia reacts chemically with aluminum.

Step 3: Remove plasticcoat

All remnants of a plasticcoat must be removed before a trailer can be polished.

If you aren't sure whether your trailer has a plasticcoat, there are several ways to find out. First, take a look at your trailer from a distance. Does it look like it has a sunburn up top? Are there distinct splotches of darker oxidized aluminum and then the rest of the trailer is looking fairly good? If so, you have a plasticcoat and the top has failed. This is natural since the top of the trailer gets a lot more UV and heat than the rest of the shell.

Another way to check conclusively to see which areas have a plasticcoat and which do not is to get a clean white cotton cloth and a tube of white (not gel) toothpaste. Pick a few inconspicuous areas of the trailer to polish with the toothpaste, the rag and your finger. Do just a small one inch patch. Are you getting black aluminum oxide on the rag? Or is it just dirt? If you have plasticcoat in that area, you won't get any oxide because the

plasticoat is protecting the aluminum from your polishing efforts.

If you need to remove theasticoat, you will need to use either paint stripper or lacquer stripper. This is a process much like stripping a finish from wooden furniture *except* you should never use any abrasives on your trailer (other than the polish, itself). That means: no steel wool, no green plastic scrub pads, and of course, no sandpaper. We recommend using an environmentally safe paint stripper, like Napier RemovAll, 3M Safest Stripper or Citristrip. These products are much better for you and the groundwater, and they don't kill the grass when you hose them off.

Before applying the stripper, on a warm day park your trailer in the shade. Brush the stripper on to one or two panels of your trailer. Follow the directions on the container, requiring it to sit for a period of time while it dissolves theasticoat. If you need to work it around to loosen theasticoat before hosing off, use the tips of a large house painting brush. They are soft and won't scratch. You can also use a plastic putty knife, spatula or scraper. You may have to reapply the stripper if some coating remains. When your entire trailer has been stripped, clean the trailer well according to the instructions in Step 2.

Step 4: Pre-Polishing

If your trailer is heavily oxidized (as most trailers are if they have not been polished in several years), begin here.

For this step, you will be using either Nuvite F7 polish or Rolite Pre-Polish and your 7/9" polisher with a new or clean wool compounding pad.

Place one finger across the top surface of the polish, just wetting your finger with polish (do not dip out a quantity of polish) and put a wet "fingerprint" of about half a finger length every 3" or so over an area to be polished approximately 3 to 4 square feet. Work fairly quickly so that the polish does not dry out.

Place the wool compounding pad onto the "fingerprinted" area, and smear the polish around a little before turning on the polisher. Tilt the pad

up slightly so that the pad is not laying flat as it spins, but rather so that only one side of the pad is touching the surface. The polisher should run slowly—ideally 1000 to 1500 rpm. As it spins, move the polisher over the surface at a speed of about a foot every one to two seconds. Light but firm pressure is all that is needed. (If it were a horizontal surface, you would want to use about the weight of the buffer or very slightly more.)

Scratched areas may require working back and forth, then up and down, then diagonally over the scratched area several times to blend the scratches. Do not stop moving the pad and "bear down" on one area to blend the scratch. It can cause the surface to get too hot and scorch.

As you work back and forth, black residue will form over the buffing area. Continue moving the buffer back and forth, up and down, across the surface. After about 30 to 45 seconds, the black residue will begin to lighten and disappear if you have the correct amount of polish.

Continue moving over the area until the black residue is gone and the clean aluminum surface shows. Black residue may remain around the edges of your buffed area, but that will be cleared as you move to the next adjoining area to be buffed. If further work is needed to clear the cloudiness, or if scratches remain prominent, repeat the above process.

Repeat the above steps on the next adjoining area, and so on until the entire panel, and then the whole trailer, is complete.

As you go along, the wool compounding pad will cake up. The oxide and polish will make it look shiny. When this happens, fluff the pile of the pad by "spurring" it with a buffing spur. If you don't have a spur, use a screwdriver blade held vertically against the face of the spinning pad.

At the end of this Pre-Polish step, you will be left with bright aluminum and little oxidation, but there will be very noticeable swirl marks from the pad and the relatively coarse polish being used. They will be removed in the next step.

Step 5: Polishing

After Step 4, or if your trailer is only lightly oxidized, you may start with this step.

Using either Rolite Metal Polish or Nuvite C polish and your 7/9" polisher with clean or new compounding pads, repeat the process described in Step 4 over the entire trailer.

After polishing the entire trailer, use a clean cotton terry towel, diaper cloth or similar fabric to hand wipe the entire trailer to remove any surface polish. Look for accumulations of residue around rivet heads and along panel lines. Mineral spirits may be used to dissolve and remove difficult deposits.

At the end of this polishing step, all visible oxidation will be gone and your trailer will be beautifully polished. You may decide that you don't want to continue to Step 6. Certainly, that is an option, but keep in mind that the more smooth the finish, the longer your polish job will last.

Alternative Steps 4 and 5:

Some polishers prefer using a 1/2" drill with side handle and cotton airway buffs instead of the 7/9" polisher and wool pads.

Step 6: The Mirror Finish

For this step you will be switching to the Cyclo dual-head orbital polisher. You will be using either Rolite AP-300 or Nuvite S polish.

This step is a little awkward until you get used to it. You are using the Cyclo for its random, vibrating movement, and not for its spinning. Spinning causes swirl marks which are quite noticeable in direct sunlight and detract from the mirror effect.

To eliminate the swirling, you will cover the heads with 95%+ sweatshirt fabric, soft 100% cotton flannel or heavy 100% cotton T-shirt fabric. Wrap a section of the fabric over the face of the foam polisher pads, being sure to leave motor vent openings unobstructed. The size of the fabric doesn't have to be exact, but a piece approximately 30" x 40" works well.

Similar to the method in Steps 4 and 5, place one finger across the top surface of the jar of polish, and put a wet fingerprint about half a finger length every 6" or so over an area to be polished approximately 3 to 4 square feet. (Note that this is half the amount of polish used in previous steps.)

Pull the fabric tight over the face of the polisher and hold it with your hand as you grip the polisher handholds. You'll be bunching it up and even twisting it as you work to grip it all with one hand. The fabric needs to allow the heads to spin and vibrate underneath the fabric without grabbing it.

Smear the face of the polisher around the area to be polished before turning on the polisher, then turn it on and move the polisher over the area at the rate of about one foot of travel every three seconds. Use only light pressure.

Move the polisher back and forth and up and down. Work the areas around raised rivets and panel lines more, if necessary. Black residue will appear as before.

After 30 to 45 seconds, the black residue will begin to disappear as you continue buffing over the area, and the bright, mirror shine will begin to appear.

Work back over rivets and panel lines to clean the residue from these areas as well as possible.

When the area is clean of surface polish, stop the polisher. Now adjust the placement of the fabric on the Cyclo so that a clean spot of the fabric is now over the heads. Do a final buff over the whole area, continuing the cleaning and brightening of the finish and picking up any light residue caught around rivets and panel lines.

Alternative Step 6:

If you are struggling to work with the cotton cloth wrap on the Cyclo, you don't have to do it. If you don't mind mild swirl marks, simply use cotton terry or wool pile pads on the Cyclo. The swirl marks fade with time.

Finally, finish with a clean flannel cloth or diaper cloth material by hand, lightly cleaning close in around rivet heads and with folded material to get back against the edges of the panel lines. Be careful not to drag any deposited polish onto the clean, clear, polished panel image.

Step 7: Sealant

Unless you intend to pay a professional to immediately plasticcoat your trailer, you'll need to prepare yourself for reoxidation in the months and years ahead. The better your polish job, the slower the reoxidation. But no matter how well you did, your trailer will reoxidize.

One way to slow the reoxidation is to apply a sealant like the kinds that are used after hand washing a car. In the old days, Airstream used glass wax. Glass wax is nearly impossible to find these days. Today some people use car wax, while others use a non-wax polymer sealant made for cars or boats.

The application of any sealant is somewhat controversial. Those who oppose it say it does very little to retard the reoxidation and it slightly dulls the mirror shine. The makers of Nuvite recommend not applying it because they say any sealant needs to be removed before repolishing. They also say that Nuvite S imparts a "protective chemical barrier" to inhibit oxidation.

The makers of Rolite do recommend a sealant. They make a "wipe on, wipe off" polymer sealant that they say is more transparent than wax and is more effective at retarding oxidation.

If you do apply a sealant, you can expect it to retard reoxidation for roughly an additional six months.

Maintenance

Between polishings, keep your Airstream clean. Immediately remove any road tar, bird droppings, insects or pine sap using a vinegar-based glass cleaner or soap designed for washing cars. As previously stated, do not use any cleaner with ammonia as an ingredient.

For stubborn stuck-on messes, use mineral spirits or other solvents. Keep in mind that solvents and deter-

gent can strip protective waxes and polymers from the skin of your trailer.

Re-Polishing

The rate of reoxidation varies somewhat depending on how healed the aluminum is, and environmental conditions like sunlight, pollution and humidity.

Normally, you will need to re-polish once each year to keep your trailer looking great. Fortunately, the annual touch-up can go fairly quickly since it may be possible to do only Steps 2 and 6. In some cases, Step 5 may be necessary.

Frequently Asked Questions

Q. What brand polish is best?

A. We're not snobs about polish. We sell and recommend both Rolite and Nuvite products because they both have been used on hundreds of vintage Airstreams with excellent results. Both are considered aircraft-grade and both are certified safe for use on alclad aluminum by Boeing. Other high quality polish may work well too.

Q. When is the best time to reseal seams?

A. A good time to apply Vulkem or other sealant to seams between panels and around vents and windows is between Step 5 and Step 6. If you wait until you are finished polishing, you'll make a mess of your new mirror finish.

Q. Is it possible to polish through the cladding?

A. As long as you follow the procedures described, it is virtually impossible to wear through the cladding. Aircraft manufacturers and airline maintenance crews polish aircraft dozens and even hundreds of times without wearing through.

Q. Can I sit on top of my trailer when I polish?

A. Yes, you can even stand on it. The trick is to keep your weight on the ribs. The rivet lines follow the ribs on the roof.