

The Airframe

Next, wipe the surface with a clean, soft cloth or sponge using a warm cleaning solution of isopropanol to remove grease or oil on the transparency. You may want to experiment with different cleaning agents to see what works best for you. If so, try aliphatic naphtha type 2, hexane, or kerosene, but when using the latter two be sure to flush the area with water when the grease or oil is removed. Never use any abrasive materials, strong acids or bases, methanol, methyl ethyl ketone (MEK), or any ammonia-based glass cleaner, as all of them will damage the acrylic. And despite their ready availability, be careful about using approved plastic cleaners in aerosol cans. The chemical itself may be both safe and a good cleaning agent, but the aerosol propellant chemicals may damage the acrylic. It isn't like cleaning your car, is it?

Here's something else to consider; choose a cleaning rag carefully. Any of the following are considered safe: 100% cotton flannel, 100% cotton terrycloth, or genuine chamois, but not the synthetic or imitation kind. These rags may be reused if cleaned thoroughly, dried, and stored in plastic bags to prevent contamination from dust. Always avoid using paper towels unless they literally feel like cloth when rubbed against your face. When in doubt, don't use it. And certainly avoid using shop towels, even clean ones. Shop towels are used to clean up metal shavings and all kinds of chemical spills; you never know what is trapped in the fibers.

When cleaning a transparency, never rub in a circular motion, as it causes "glare rings." Instead, you should rub in one direction, preferable up-and-down, as horizontal scratches are more noticeable than vertical. It is also a bad idea to rub more than once with the same section of cloth because the dirt on it will scratch the transparency. Take a good look at the cloth after you make a pass over the windshield with it; you have just created homemade sandpaper! Instead, fold the cloth so as to expose a clean area and wipe again. When finished, rinse thoroughly, dry the cloth, and store in a plastic bag.

You should also avoid excessive rubbing with a dry cloth, as it scratches the surface and builds up a static charge that attracts dust particles. When you're done washing the window, remove excess water with a chamois, but don't completely dry the transparency with it. Instead, let it air dry. Once completely dry, many owners will polish the transparency with a thin coat of hard wax such as Johnson's J-Wax or Turtle Wax. While that's a good idea in principle, in practice there's a problem. Many automotive waxes contain abrasives that will scratch the surface of acrylic. It is a better idea to polish the transparency with Micro-Surface Finishing Products—Micro-Mesh antistatic cream, which is designed to remove water spotting and leaves a high-gloss protective finish on the surface. Waxing the transparency prevents pitting by reducing its water-absorption capability.

The Three Transparency Killers

There are three naturally occurring killers for acrylic transparencies: ultraviolet light, water, and abrasion.

When aircraft are stored in outside tiedowns, the acrylic transparencies are left exposed to the sunlight all the time during daylight hours. You can count on a useful life of approximately two to three years! Ultraviolet breaks down the composition of plastic, causing acrylic transparencies to age and get brittle. The telltale sign is a yellowish