

The Endless Quest for Effective Rust Prevention

By: Benjamin Preston

The automotive industry has come a long way when it comes to protecting its new vehicles from the ravages of rust. Better galvanizing and preventative coatings have, said Mike Quincy, an automotive content specialist at *Consumer Reports*, caused rust to nearly disappear from the list of reliability issues that once plagued even newer cars.

But anyone who has ever owned an old car or truck knows that rust, or the potential for it, lurks in all of a vehicle's dark corners and crevices. What starts as a light orange frost one season can turn into bubbling paint another, flakes another, then, finally, the dreaded assault of what many refer to as "cancer" – holes.

Having purchased an Arizona-fresh 1987 Subaru GL wagon last year, I knew that if I didn't do something – anything – to prevent the humid, salty air of summer and the salty springtime road film that inevitably finds its way into everything in New York City, that the wheel wells on this thin-skinned Japanese car would quickly come to resemble a piece of burnt toast with large, ragged bites taken out of it.

There are many ways to keep a vehicle from rusting – keeping the paint touched up, washing the undercarriage frequently and avoiding driving on salt-covered roads or in any kind of moist weather. But for tips on further prevention, I explored the nearly endless array of options available on the internet. Some products were just for the wheel wells and flat undercarriage parts. Others could be sprayed inside doors and other cavities where corrosion-causing moisture might collect.

Finding the "best" one is a nearly impossible task, as there are so many options.

The guy in [one YouTube video](#) shouts the merits of spraying rubberized undercoating beneath his '69 Plymouth Roadrunner. But others online say that rubberized undercoating can cause problems if there are any gaps at all. Moisture and salt can build up in cracks and damage the metal underneath. The same can be said of factory-applied rubberized undercoating. I've personally seen unnoticed cracks in undercoating gain attention only after becoming gaping rust holes.

Some rust-preventative paints are, as advertised, hard as a rock when they cure. But after using [POR-15](#) on an old Toyota several years ago, I learned that unless it was applied absolutely perfectly, it would peel in places, leaving patches of metal open to corrosion. Painted-over nuts and bolts disturbed the integrity of the paint's surface when they were removed — another drawback.

So I kept searching, and found that many people recommended wax or oil-based chemicals that could be sprayed into tight corners every year and allowed to drip down through doors and inside body panels. [Eastwood](#) was one of the ones noted as an effective wax product, and [Krown](#), an oil-based spray inhibitor available in Canada, was frequently lauded by the chorus of unqualified internet commenters. Not many among this electronic peanut gallery seemed to like Ziebart, which makes a harder waxy undercoating.

Further digging revealed that many school districts in Upstate New York use [Carwell](#), the American version of Krown, on bus fleets. The [United States Marine Corps Corrosion Prevention and Control program](#) uses it on a number of its truck and equipment fleets, albeit in conjunction with other products. If it worked well on heavily used fleet vehicles operating in a part of the country where road salt can make a car's body panels resemble Swiss cheese in only a few years, I reasoned that it might be just the stuff I was looking for to protect my "new" Subaru from the ignoble fate suffered by other old cars I've owned.

Peter Marini, head mechanic of the Fairport Central School District, near Rochester, N.Y., said that before the district's entire fleet was being serviced with Carwell's spray-on rust inhibitor every year, his shop had to repair wheel openings, stair wells and doors on buses on a regular basis.

"When I started here, we had just started doing buses with the Carwell product," he said. "On half the fleet, we'd be replacing panels all the time. To date, I don't do any rust repair, and we're talking 16 years."

Tom Delavan, Carwell's fleet manager, said the company serviced about 115 buses for Fairport annually, as well as buses for other school districts, fire trucks and military vehicles at Army and Marine Corps units around the region. Carwell's largest fleet, he said, consisted of about 120 buses at the Rush Henrietta School District, located not far from Fairport.

"The service life for a bus is 10 to 11 years," said Kurt Gerould, Rush Henrietta's head mechanic, who has had Carwell treat the buses in his charge for years. "But in 10 to 11 years, we don't have to replace body panels and parts because they don't rot out the way they used to. It's been a cost savings just in that."

Mr. Delavan said Carwell serviced about 3,000 vehicles per year in its retail service bays, which are located near Buffalo, N.Y. He said the company also treated about 3,300 fleet vehicles with its mobile units – an armada of trucks and vans equipped with portable air compressors, tanks of rust inhibitor and two- to three-man crews. He said they serviced roughly 200 school districts, 150 highway departments, 16 fire departments and several equipment rental operations, too.

The rest of the company's business comes from direct sales of its rust inhibitor products, and from application equipment employees fabricate at the shop in Buffalo. Mr. Delavan

said those products were usually bought by classic car owners, "regular" car owners, fire departments; anyone who needed to keep a vehicle from rusting.

Bernard Friend, the operations manager of the the Marine Corps' corrosion control program, said that although the Corps does use Carwell's T32 rust inhibitor on a number of its trucks and other "assets," the chemical is part of a larger rust prevention strategy designed to reduce equipment costs by making things last longer. The suite of products the Marine Corps uses includes paints, primers, corrosion inhibitors, desiccants, film coatings, polyurethane coatings, and various tarpaulins and covers.

"There's a tremendous laundry list of products we apply to equipment," he said, adding that the Marine Corps has a process for testing the effectiveness of different products before they're put into use. "Paint protects a surface more than any inhibitor could, but the inhibitors get to the seams and crevices, and on removable parts."

Along with products from 3M, Sherwin Williams, Hentzen Coatings and others, Mr. Friend said Carwell's T-32 was an effective rust inhibitor.

Armed with all of this information, I decided that, for me personally, the best course of action concerning my rust-prone Japanese wagon would be applying Carwell's inhibitors at home. The problem – Mr. Delavan and the online opinionosphere were in agreement about this – was that it wouldn't do any good if improperly applied.

"This product is only as good as its application," he said. "If you're not putting it where you need to put it – inside doors and rockers and such – it's not going to be as effective."

Unfortunately for me – and for anyone who lives in a place where the highway department uses salt on the roads in the winter, or places further east and south, where the air is salty and humid – Carwell's retail locations are centered around Buffalo and Syracuse. That is not at all close to many places – the entire Northeast, the Midwest, the Atlantic and Gulf Coasts and mountainous areas all around the country – where rust is a problem.

And the company's mobile trucks don't make house calls – they service fleets.

The only thing to do, I reasoned, was to become a trained technician so that I could spread the knowledge of how to properly treat a vehicle to those who lacked the time, money or wherewithal to drive to Upstate New York. So I took one for the team and drove seven hours there and seven back in one day, spending several hours with Mr. Delavan learning how their product works and how to apply it.

Ken Wild, Carwell's general manager, explained that T-32, which has been deemed by the authorities as environmentally safe, is basically a penetrating oil. Once sprayed onto a piece of metal, it creeps into areas that haven't yet been treated, oozing into corners and

crevices, displacing moisture and salt, and working its way around existing rust to bond with unoxidized metal.

Mr. Delavan showed me how to do the spraying, which was pretty straightforward. Here's how it's done:

Suit up in clothing you don't mind getting dirty. T-32 is oily, and gets all over everything. It's a good idea to wear a dust mask to keep vapor out of your nose and mouth. Safety glasses, although advisable, make it difficult to when spray gets on them (if you get this stuff in your eyes, it blurs your vision until you blink the oiliness away).

Open the hood, tailgate or trunklid and all the doors.

Drill small holes in the jamb side of each door, and in the door sills for access inside the rocker panels.

Use a long wand attachment to spray inside the doors and rocker panels, making sure you see "smoke" (atomized oil) start to billow from cracks on the other side of the door, tailgate or panel. Spray the seams around all the doors and tailgate/trunk lid— Carwell says T-32 will creep between them. Make sure to spray under the fuel cap access door, if the car is equipped with one.

Spray inside the wheel wells: Make sure to get around the edges, and up where the shocks or struts are mounted.

Use a flexible hose attachment to spray inside the spaces in the bottom of the hood, watching for smoke to emerge from the opposite ends of where you're spraying. There are many places for moisture to collect in there.

Spray around the sides of the engine compartment, behind the lights. Don't worry about getting it on wires, as Carwell says it will seep beneath the wire casings to prevent corrosion. Be sure NOT to get it onto engine drive belts and tires, as it is very slippery and, as Mr. Delavan said, would "make the belts pop right off."

Pop plastic plugs in all of the holes you have drilled.

Raise the car and begin spraying the bottom. Start with all of the holes and cracks that can be seen; anyplace where moisture could hide. Move from the front to the back and systematically shoot every hole. Then, start back at the front and spray the entire bottom of the car, moving toward the back.

Then you're essentially done. The outside of the car gets washed (to get rid of the oily residue). The car will drip for a few days, so it's probably not a good idea to park it in your garage or driveway, but Mr. Gerould says that even though his dripping buses cause a mess, the stuff washes away after some wet weather passes through. (Carwell's own facility, which never gets a reprieve, is perpetually slippery).

Whether or not my old Subaru will rust after a winter driving on salty roads remains to be seen, but the locks and parking brake cables, which were a little stodgy after 27 years in the Arizona desert, are already working a lot better. It's basically as if someone PB-Blaster-ed my whole car.

The downside, other than the mess, is that Carwell recommends applying T-32 every year. At a retail location, that costs a little over \$100 for a normal-sized car. It's cheaper to do it yourself, but you need an air compressor and some sort of spray gun. Mr. Delavan said that a \$20 paint sprayer from Harbor Freight Tools would work fine, but recommended Carwell's more complicated (and accordingly more pricey, at nearly \$500) sprayer pot for more thorough application to the insides of doors and rockers and inside cab corners and such.

The bottom line of all of this is that rust prevention saves money and time in the long run. Everyone I talked with – bus mechanics, the Marine Corps rust prevention people and even a guy who owns a [yard full of rusty Subaru parts](#) in Connecticut (and first got me thinking about this) said that keeping rust at bay will make your machine last longer, whatever it is.

Of course, Mr. Quincy's practical advice for those who wish to avoid dealing with the headache and expense of rust repair is simple: Don't buy rusty cars and don't drive old cars during the winter. Easy, right?