

Project 911S

Part 12: Undercoating — God's curse to restorers and racers alike

by Mitchell Sam Rossi

PHOTOS BY THE AUTHOR



I now know the misery of Sisyphus. Having cheated death, as Greek legend states, the Corinthian king was sentenced to push, for eternity, an enormous boulder up a hill only to have it slip from his grasp as he neared the summit. It was a cruel, agonizing struggle he was never to overcome.

I know this torment, or as near as I can imagine, after having tried my hand at removing the undercoating from my 1970 911S. To be certain, like the Tartarus stone, this horrific material is bewitched, a vile black scourge to anyone building a race car or looking to restore a 911 to extreme concours condition.

There is little argument that undercoating offers a huge advantage to automobiles operated under normal circumstances. First, it is a defense against highway noise caused by the ceaseless assault of road debris pounding the undercarriage and rendering the passengers deaf. The thick, rubberized skin also protects the car's painted surfaces from becoming pitted and scored.

The early 911, like most vehicles from that era, had yet to benefit from the automotive primers and metal treatments employed today. Thus, a compromise in the paint led directly to the blight of corrosion, especially in regions that used de-icing salts on their roads.

As Porsche took great pride in the longevity of its powertrains, it was compelled to ensure its cars lasted as long. As one factory brochure from the early 1970s stated, at least 35 lb of the protective material was applied by brush to the 911's underside.

In 1971, the factory made further inroads with respect to anti-corrosion by adopting a galvanized floor pan. Galvanizing uses electrolysis to coat either

steel or iron with zinc, which in turn hinders corrosion. Porsche used this process for the 911's entire chassis in 1976.

For a street car, undercoating is a must. The project car, however, was slated to spend 99 percent of its life on the track and away from corrosive elements. Of course, there would be Sunday afternoon outings along California's Pacific Coast Highway and an occasional autocross event that could be attended without the ensemble of trailer, tow vehicle and the mass of equipment required for high-speed competition.

By eliminating the protective seal, these jaunts on public highways would have to be planned with an eye on the weather. The last thing one wants to do is be caught in a downpour in a car with no undercoating, no heater, plastic windows and competition brake pads, which by nature need high heat to work properly.

From the aspect of building a track car, the negative side of undercoating is simply its weight. While the factory might have stated there was 35 lb under the car, it failed to mention the amount inside the passenger compartment, trunk and engine bay. It is hardly a stretch of the imagination to guess there is another 20 lb of this sealant in the cockpit alone.

For Phase II of the project, the S was stripped to the bone. Only the wiring harness remained, each end bound and protected in layers of aluminum foil, plastic and duct tape. To keep the chassis mobile, it was bolted to a custom-built four-wheel dolly.

Once the car was stripped, it seemed only a matter of perseverance and proper tools to shuck the rubberized husk. With hindsight, my naïvete about this step in the project still makes me cringe.

Equipped with a 25-gal., 6-hp single-stage air compressor, a half-dozen wire wheel brushes and an armory of grinding tools, I donned an old shirt, jeans, hat, paper mask and a full-face safety shield. Slipping under the right rear fender, I began my crusade.

After 4 hours the weight of the air tool had quadrupled. The wire brushes had shed most of their brass quills, which, accelerated by their whirling velocity, had pierced my shirt and penetrated my skin. What little undercoating I managed to clean had turned into a blizzard, covering me like gray snow. When the air cleared, only one vertical panel lay bare.

The next day I employed small cup-type wire wheels that could reach into the crevices between the fender and chassis. Six hours later and the right rear fender was nearly, but not completely, void of undercoating. The following weekend was spent inside the left fenderwell.

With progress painfully slow, a fellow racer suggested another tactic. It involved a propane torch and a stiff-bladed spatula. Needless to say, this is not a technique to be recommended. It was not only as tedious as the wire brush but was both messy and a shade on the dangerous side. The 30-year-old



• Armaments for the first assault on the undercoating.

coating, I quickly discovered, can burn steadily.

Not succumbing to defeat, the fourth weekend arrived and only the two rear fenders and a minuscule corner of the engine compartment were showing raw metal. But, I had a new weapon in my arsenal—the Würth DBS 3500 pneumatic wire brush.

Outfitted with talon-like spikes embedded into a circular belt, this cumbersome, two-handed contraption gave me new hope. And, indeed, it clawed the undercoating with voracity. Inch by inch, the black tide began to retreat under the assault.

But, almost as soon as it started, the Würth began to slow and falter. In the far corner of the garage, the air compressor roared as it tried to keep pace. It could not. Designed for the professional automotive restoration shop, the swirling claws required a larger air compressor capacity than the home unit could offer. Try as it may, there was not enough pressure to keep the belt spinning. The boul-



• Air tools (clockwise from top): Würth DBS 3500 pneumatic wire brush, DeVilbiss die grinder and the Campbell Hausfeld mini-angle die grinder.



• Wasting dry ice on the floorpan.



• Slow and tedious attacks on the right rear fenderwell.

der had slipped from my hands and was tumbling down the slope.

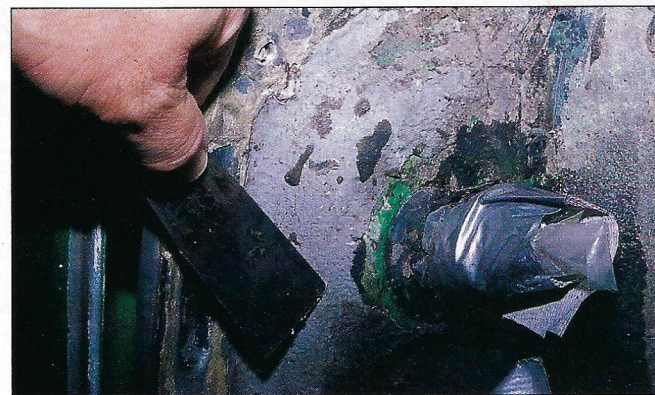
Still, there was plenty of undercoating at the other end of the chassis that could be attacked with the modest air-powered wire brushes. And inside the car was another place I could take up my quest. Unlike its rubberized belly, the interior floor pan was covered by a hard, waxy material that could be chipped free with a hammer and chisel. I had actually cleaned a few square centimeters while attaching the eye-bolts for the anti-submarine belts.

Several dependable sources had suggested covering the floor with dry ice and allowing the material to become hard and brittle. It would then simply break free in large black sheets. Anyone selling the Brooklyn Bridge, please call, because I'll probably believe that, too.

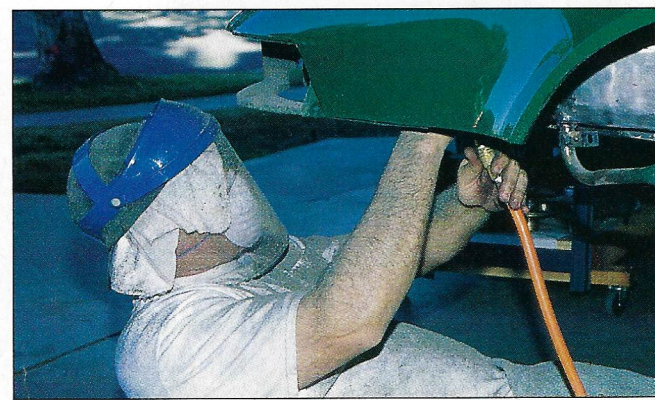
A block of dry ice set directly on the floor did not work. Nor did a block of dry ice broken up and spread across the floor. Sure, driven to sub-zero temperatures, the material splintered before the chisel blade, but it didn't peel off in sheets. The chis-



• Wire brushes (l to r) new, used and defeated.



• Undercoating at the right front fender.



Project 911S

el and hammer required more effort than the air tools, and now my fingers were freezing. The boulder, it seemed, was heading down the hill again.

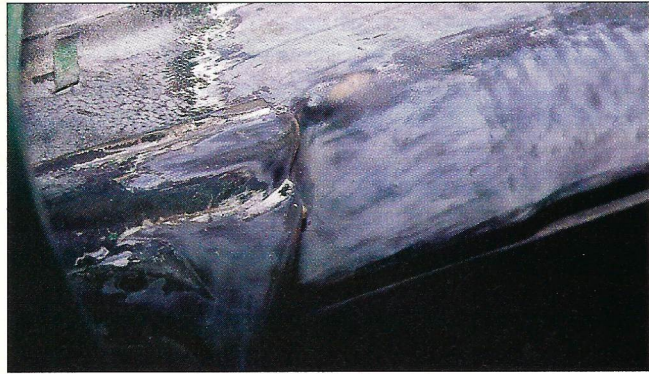
Finally, taking into account the time and effort spent on removing such a minuscule amount of the car's leathery hide, I decided to resort to the slash-n-burn approach to chassis preparation—sandblasting.

I considered having the car stripped with an acidic solution, but this involved having the entire chassis dipped in a huge tank. While the owner of the stripping shop assured me it was a harmless procedure, I had misgivings.

High-pressure blasting sends sand into every crevice of the car and can often be found shaking loose years after the car is finished and on the road. If the corrosive chemicals used in stripping are not completely flushed from the chassis, it continues to eat at the car from within its hidden corners. While sand would be an annoyance, I preferred it over the acid residue.

Media blasting also allowed the wiring harness to be left in the car, albeit wrapped as secure as an Egyptian mummy. To my surprise, the first shops I contacted would not consider doing the work. They must have confronted Porsche's undercoating in the past. Luckily, I was referred to Western Shop Blasting in Santa Ana, Calif.

Western offered several types of blasting compounds, including sand, glassbead, plastic medium, walnut shell and aluminum oxide. Tony Espinoza, Western's manager, explained that each of these compounds had a particular application. Walnut is best used to remove paint but not rust nor undercoating. Glassbead is for fine parts, aluminum oxide for aluminum and wood.

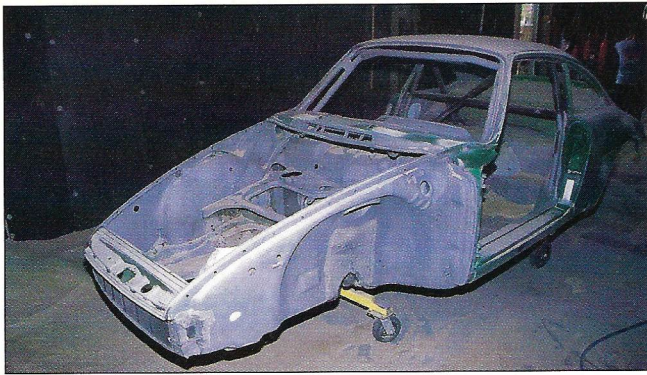


• Undercoating in the engine compartment.

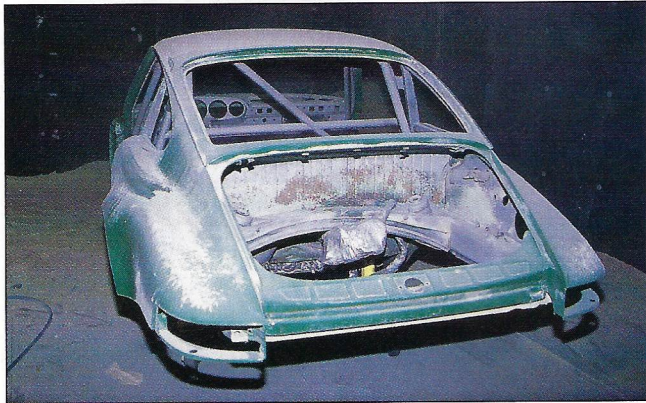


• The undercoating finally succumbs to the sandblaster...





• ...as does the undercoating on the fenders and wheelwells...



• ...and in the engine bay.

Contrary to expectations, plastic medium imparts a rough finish.

For the 911S there was only one option, the abrasive, hard-hitting sand delivered under high pressure. Espinoza suggested that the interior surface of the car's top not be cleaned. Because of the tight focus of the spray nozzle, he was concerned that the unreinforced area would possibly be distorted.

Espinoza estimated that his crew would complete the work in about 5 hours. It took them 10. I felt vindicated. These were professionals with all the right equipment and experience. But, vindicated or not, I was finally rid of the rubberized curse.

The next step, and one taken quickly, was to seal the car with a coat of temporary primer. Thus, it was sent directly to Coachwerks, the paint shop scheduled to apply the car's final finish. This may be Southern California, but bare steel oxidizes instantly.

While the early 911 is renowned for its rust problems, it is not from Porsche's indifference. Clearly the factory tried to address the problems as, 30 years later, removing the undercoating is no easy task. It requires an infinite amount of patience, an excess of spare time and a penchant for self-abuse. This is not a labor of love. It is an unyielding torment and, offered a choice, next time I'll try my hand at Sisyphus's boulder and hill. ❧

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NIGHT
ROAD WHEELS