

Robison on Rovers

Protecting your Land Rover from Rust and Corrosion

Welcome to the second installment of Robison on Rovers in the Rovers North News.

Many of you have read my posts on the RN and DiscoWeb bulletin boards, and some have corresponded with me on various topics. For those who don't know me – I am a Land Rover service manager in Springfield, Massachusetts. I've worked continuously with Land Rovers since their re-introduction to North America some fifteen years ago. I manage J E Robison Service – on the web at www.robison.com – an independent Land Rover specialist shop in Springfield, Massachusetts. In my column I can answer your questions at more length than is possible on the bulletin boards. Each issue, I will take on a few of the interesting questions I receive or will address a topic of interest to Land Rover owners.

I am a long time Land Rover owner. I've had many Rovers over the years, and currently have a 2000 Range Rover, a 1996 Disco, and a 1966 Series. My father has a 1995 Range Rover, and my brother has a 2003 Discovery. So we're a Land Rover family.

If you have questions or issues you'd like discussed email robison@robison.com

Land Rover products, with their mix of aluminum and steel body panels, are quick to corrode on salt covered American roads in winter. Range Rover Classic, Discovery, Defender and Series models are especially prone to corrode. Many of these trucks in the Northeast salt belt show signs of rust when only 2-3 years old. The newer Range Rover and Freelander models are less corrosion prone because they are more effectively rust proofed at the factory, but even these newer models are prone to rust and corrode when driven in high-salt areas like Vermont, or when off-roaded and submerged in water. In fact, off-roading presents a particular corrosion problem for Land Rover owners. When off-roading, the vehicle may be immersed in water, filling many bare metal cavities that are always dry in on-road use. Additionally, the underside gets packed with mud that never dries as it gets wetted by tire spray and holds water essentially indefinitely.

I spent considerable time looking into the products available to prevent our Land Rovers from rotting away, and in this month's column I report what I learned. First, I found that there are a few other types of rustproofing and undercoating products on the market. Although at first they may seem the same I found they are actually quite different. The materials I looked at

1. rust-eating paints;
2. rubberized undercoats,
3. tar-based undercoats,
4. and wax and oil-based undercoats, which I found to be best.

Rust-eating paints like POR-15 and Extend contain acids that dissolve rust combined with paint to cover

the bare surface. These products work well to halt rust when painted over clean rusty metal, but they do not work well if the painted part stays wet for a long period – for example, when water and mud spray under a vehicle and stay damp for days. Furthermore, the paints do not offer any resistance to chipping from gravel abrasion and they do not bond well to painted surfaces. Finally, many of these compounds are not effective at all on corroded aluminum.

I concluded that rust-eating paints are good when painted onto a bare chassis. For example, they can be great when painted onto a Series chassis when doing a full frame-off restoration. And they can be effective when painted onto damaged metal as a spot repair. However, they are not very effective as a protective undercoat for an entire vehicle.

Rust-eating paint is a good product for a restorer, a chassis builder, or someone doing spot repairs. However, it's not a product that is suitable for rust-proofing entire vehicles. A bare chassis that has been painted will still benefit from being sprayed with a wax and oil-based treatment as described below.

The next product – rubberized undercoat – is not marketed as a rustproofing product. It's marketed as "undercoating", whatever that is. Despite that,

many people buy spray undercoat from 3M and others and cover their Rover chassis in the belief that rustproofing is what they are getting. It's not. The rubberized product tends to peel away from the metal over time and trap water between the undercoat and the metal below. I am not a big fan of these products. Once they crack or get cut water gets under them, and rust begins.

Rubberized undercoats are intended to provide some measure of sound deadening and gravel abrasion protection to car chassis. They are not a rust-proofing material. I don't recommend these products because of the risk they will trap water and cause damage later on. You can accomplish the sound deadening and gravel protection just as well

with the wax and oil based compounds described below.

Tar-based rustproofing products were marketed in the 1980s by several chain store operations. They have largely fallen into disuse. Tar based products are potentially hazardous, and they are difficult and messy to apply. They do not offer any benefits I can



Professional Waxoyl 120-4 application fills all areas of door and body cavities.

see over wax/oil-based products and they have a number of disadvantages.

Some older tar-based products also trap water like the rubberized undercoats I looked at. The hard undercoating applied to 1960s Porsche automobiles was a good example of that – we would peel away great sections of undercoating to find steel underneath that was perforated by rust. In fact, you could peel undercoat from a car that's been dry for weeks and find damp metal trapped underneath.

The final category is wax and oil-based rust-proofing. The product is a mix of paraffin wax and special rust-inhibiting petroleum oils. The oil stops the rust and corrosion, and the wax keeps the oil from washing off. Many companies have produced wax and oil rustproofing formulations over the years. After review, I concluded the wax and oil-based products are best for our Land Rovers. They are safe to handle, easily applied, and they do a good job of protecting the entire vehicle. They are equally effective on steel or aluminum. They are easily touched up if scraped or worn, will reveal themselves if scratched, and won't trap water when they get old. Wax and oil-based products can actually be applied to a wet vehicle and they will displace the water to bond to the metal!

In fact, Texaco developed a wax and oil-based rustproofing product to corrosion proof the holds in cargo ships. The material was poured into a flooded cargo hold, and then the ship's pumps were used to pump the hold dry. As the water receded, the rust-proofing material would stick to the sides of the hold and finally it would cover the bottom. It was said to be quite effective, and it was used until environmental laws changed and ships could no longer flush their holds with seawater.

A product that worked in a saltwater environment like a ship's hold sounded like just the thing for a Rover in salty winter water and summer mud.

When I investigated wax-based rustproofing products for Land Rovers the name that kept coming up was Waxoyl. Waxoyl, made in Switzerland, is one of the most widely distributed automotive corrosion protection products and is praised throughout the UK and European automotive community. Waxoyl has been developing rust inhibitor products since 1939, but only recently have their products been available in the US.

The art of creating a good undercoating is in the blending of the oils and waxes to get the best result, and after looking at the testimonials it was clear that the Waxoyl people were the leaders. It was frustrating trying to buy the products, though. It was legal to ship motor oil, and it was legal to ship wax, but for some reason it wasn't legal to mix the two and ship the result? That didn't make sense. Recently the EPA came to the same conclusion, and Waxoyl is now shippable in gallon containers through UPS. Finally we can buy it!

Waxoyl is recognized as the premier product to prevent rust and corrosion of new Land Rovers. There is no better protection for a vehicle that will be immersed in water or run on salt covered winter highways. Not only does Waxoyl prevent corrosion on clean new vehicles, it is also very effective at halting the progress of existing rust on older vehicles.

Waxoyl appointed Rovers North as the exclusive distributor of Waxoyl products for the Land Rover market, and they in turn signed Robison Service up as the pilot installation center. Rovers North offers Waxoyl products in bulk for professional installation and in spray cans for do-it-yourself use. Last summer, the Waxoyl factory rep came to Robison Service to train our staff on their products and applications.



Hardwax undercoating being applied using Professional sprayer.

Consumer Waxoyl products have been available in America for some time, but are less effective than the professional application as the spray cans are not able to propel the products as deeply into recesses and holes. The professional products are the same materials, but are applied with special spray applicator guns using shop compressed air. There is a special fogger applicator for the clear rust inhibitor (Waxoyl 120-4) used in areas like

Continued on page 5

**Shops and Clubs:
 Call for our Special Offer on
 Waxoyl Professional Starter Kit.**



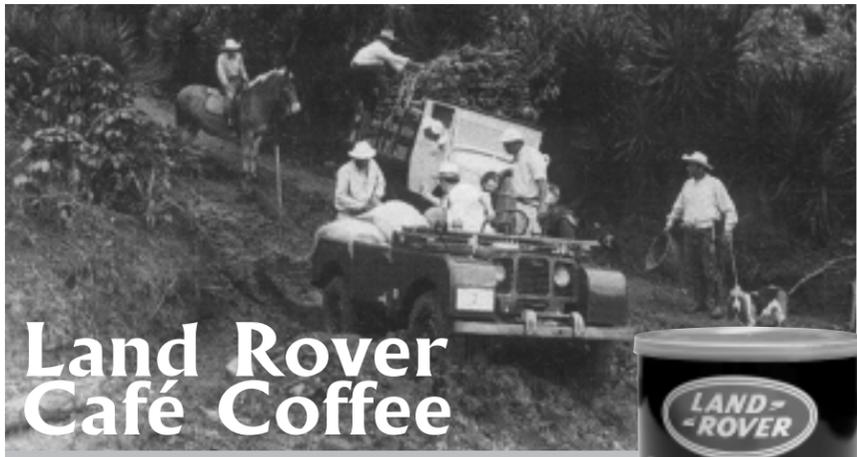
Protect Your Land Rover From Corrosion

Waxoyl Professional Protection

Made in Switzerland to meet the tough European standards, Waxoyl products are now available through Rovers North in convenient DIY large 500ml aerosol cans. Perfect for your underbody, chassis and interior body cavities as well.

- RNW5004 120-4 Rust Inhibitor Protection 500ml, interior body cavity & chassis.....\$ 15.95*
- RNW5006 Hardwax Underbody Protection 500ml, exterior chassis & underside.....\$ 16.95*
- RNW5009 Cream Wax - Pure Carnauba 0.5 liter - exterior paint finish & protection.....\$ 23.95
- RNW5010 100+ Paint Sealant Sponge. This easy to use high polymer formula sponge is designed to shield your paint finish against fading, oxidation and industrial fall-out. One application stands up to over 100 car washes.....\$ 14.95
- RNW5118 Magic Clay System. Includes one Clay Bar, one liter of Moisturizer, and application spray bottle\$ 39.95
- RNW5019 Magic Clay Bar (one bar)\$ 27.50
- RNW5020 Magic Clay Moisturizer (one liter).....\$ 14.95
- RNW5031 IR-Tissues Professional Cleaning Cloth\$ 15.95

***SAVE 10% on cases of 12 - please inquire!**



Land Rover Café Coffee



We are pleased to announce that Rovers North is now the exclusive North American distributor for Land Rover Café Coffee. Picked by hand from select farms in the renowned Naranjo region of Costa Rica, this is the only gourmet coffee good enough to be called Genuine Land Rover!

Imported directly from local plantations – where it has been harvested using Land Rovers for more than fifty years – exotic and aromatic Land Rover Café coffee is available in 10 oz. cans, conveniently ground for ease of use.



The first Land Rover introduced to Costa Rica in 1949 revolutionized the way coffee was harvested. The steep and mountainous terrain of the countryside, while providing the perfect climate for coffee cultivation, proved to be quite challenging when it came time for harvest. Teams of oxen pulling carts full of coffee beans had to be led by hand down the treacherous trails. This slow and arduous process was quickly made obsolete as coffee producers discovered how efficiently they could transport the beans using Land Rovers. Small enough to fit on trails without destroying plants on either side and at the same time offering tremendous hauling capabilities, Land Rovers have become an integral part of the harvest process.

With each can of coffee sold, Land Rover Café makes a contribution to INBioparque Costa Rica, a nonprofit education center whose mission is to promote greater awareness about the value of biodiversity and improve the quality for Costa Rican society as a whole. Find out more at www.inbioparque.org.



Land Rover Café, while not exporting enough coffee yet to obtain Fair Trade certification, pays its growers 40-50% more than the norm, ensuring them a livable wage.

Land Rover Café coffee is available directly from Rovers North and select Land Rover dealerships throughout the country with a retail price of \$8.95 per 10 oz. can. Call us today to order yours!

For the full Land Rover Café coffee story, visit us online at www.roversnorth.com.

North to Canada, Part II, continued



To pass the day we toured the Rocky Mountain Elk Foundation. The RMEF is dedicated to protecting elk habitat and monitoring the various herds. Next we went to Fort Missoula. The fort was established in 1877 by the army and troops participated in a bicycle corps among other interesting assignments. While I was walking Tess this morning I thought I heard someone call my name. I figured it was my imagination – who would know me at a truck stop in Missoula? In fact it was a friend driving through with a compressor bound for Washington. What are the chances that we would be at the same place in Montana at the same time?

On Day 26, I arrived home. We traveled about 10,500 miles [more or less] and had a great time – amazing sights, wonderful weather, and return trip already under planning. Of course, I'll take the Range Rover and try to convince Dad to leave the Dodge at home.

Robison, continued

bulk heads, door panels and posts, and rocker panels that ensures complete coverage in even the smallest folds and crevices. For coating the inside of frame rails, there are long flexible extension wands with specially designed spray heads that will offer complete coverage. Waxoyl 120-4 is much more effective when applied in this manner.



Waxoyl 120-4 being applied using sprayer with wand attachment to fill small and hard-to-reach areas.

What follows is the story of how we rustproof a Land Rover using professional spray equipment. The Land Rover in the pictures is a 1997 D90 owned by Pat Macomber of the West Connecticut Rover Club. We begin by power washing the entire underside of the truck. We use a gas-engine power wash system that is very effective at stripping off grease, mud, and debris. These power washers are also effective for cleaning out a Rover after an off road run. Although a self service spray wand found at car washes can do the job, our pressure washer is quite a bit more powerful and effective. You have to be careful handling it though, as the water sprays out under such high pressure that it can slice your skin like a knife if it gets too close.

Next we spray the Waxoyl Hardwax on all the exposed surfaces. Hardwax is thicker and dries to a hard black finish. "Hard" is a relative term; in this case it dries about as hard as the body of a candle. Waxoyl Hardwax stays tacky for a few days. Although not absolutely necessary, we usually tape off the springs, exhaust, and other undercarriage parts that we don't want painted.

After letting the Hardwax dry an hour or so we go back and spray a second coat into the areas where gravel and water spray from the wheels. Those areas (wheel wells and rockers) see the most wear. People who run in a lot of mud should anticipate touching up these areas periodically (spray cans of Hardwax will work fine for this), as they wear the Hardwax away.



Waxoyl 120-4 being applied to inside of frame member.

Once the truck is done we generally wash and wax it to ensure no stick residue remains on the paint. Waxoyl products are not harmful to paint, but can

make the truck look dirty if sticky mist gets on the paintwork. Waxoyl overspray can be cleaned off with mineral spirits or tar and bug remover.

Hardwax gets quite thick in cold weather. The process is best done in a 65-85 degree environment. The material will not spray well in colder weather, and it will be runny side and difficult to use in hotter weather outside of these conditions. In colder weather we heat the Waxoyl tanks by immersing them in hot water before spraying.

The entire process takes three to six hours, depending on condition of the vehicle, plus whatever time is needed for drying after power washing and drying of the Waxoyl products. We generally recommend that vehicles be left all day or overnight.

See you next issue
John Robison



Waxoyl Hardwax being applied to the undercarriage.

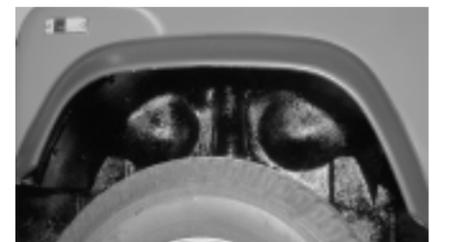
Next we use wire brush scrubbers to remove any scale and flake under the vehicle. This particular Rover has been a pampered pet, so there is not a lot of flake rust to remove. On older, rusty trucks this part of the job can take longer.

Next we apply Waxoyl 120-4. This clear material is a non-hardening product. Using a small tube that we can insert through any 1/4 inch diameter hole we spray inside the doors, in the firewall, in the body cavities, and inside the frame rails. The Waxoyl 120-4 fills enclosed areas with a mist that settles onto the surfaces. This is how we coat the entire inside of a door without taking the door apart. A vehicle that has been properly treated will have a slightly sticky film of protectant on all the inner metal surfaces. On some Land Rovers, some minor disassembly is needed to get into all the areas that need treatment. For example, the area around the tail lamps in Discovery should be treated, as should the compartments under the seats and in the firewall of the Defender.

The most time consuming part of the job is fogging all the areas that can fill with water when off-roading. Conventional rustproofing is limited to spraying the underside of the vehicle and perhaps fogging the doors. Doing a good job on a Land Rover takes quite a bit more time and effort. Additionally, it helps to know your vehicle – you need to know where the nooks and crannies are in order to treat them!



Before Waxoyl Hardwax application.



After Waxoyl Hardwax application.