

## **Part One: Where The XJS Rusts and Why**

The majority of XJS body parts are made from mild steel. Mild steel is basically pure iron with around 2% carbon content to give it additional strength.

Now nature generally hates pure iron, it will not rest until it has changed this anomaly to its preferred state of iron oxide or rust as it is more commonly known. Nature is tireless and omnipresent, and is probably sniffing around your car right now.

For iron/steel to become iron oxide, three things are required: iron, water and oxygen. The following is what occurs when the three get to party.

When water comes into contact with mild steel, two things begin to happen. Water, an electrolyte, combines with carbon dioxide in the air to form a weak carbonic acid, an even better electrolyte. As the acid is formed and the steel dissolved, some of the water will begin to break down into its component pieces -- hydrogen and oxygen. The free oxygen and dissolved steel bond into iron oxide, in the process freeing electrons. The electrons liberated from the anode portion of the steel flow to the cathode, which may be a piece of a metal less electrically reactive than steel, or another point on the piece of steel itself. This is why rust grows in piles.

The chemical compounds found in liquids like the salted spray from winter roads make them much better electrolytes than pure water, allowing their presence to speed the process of rusting. It's like the "Fire triangle" in the health and safety classes; fuel, oxygen, heat - take away one and the fire goes out. Substitute that with steel, oxygen, and water and you have the "Rust triangle" - unfortunately in the case of old Jaguars, it's normally the exhaustion of the steel that stops the rusting!

So there we have it, every Jaguar that comes into my little hovel is at least 20 years old and has met with lots of salty water and oxygen, there's no point me commenting on low quality steel and poor build quality, that horse bolted years ago. Mother Nature gave the majority of these cars just five years start, and she's been breathing down their necks ever since.

## **How to make a Jaguar rot even faster**

(Requires minimum effort)

1. Leave it exposed to the elements for long periods. Doesn't matter if the doors are closed and windows up, water will find a path down to those lovely thick moisture retaining carpets and box sections where it will do its worst. A musty smelling car is obviously a bad sign, I've pulled carpets out of Jags which have flowed like a river, and the smell reminded me of horrible things I did from childhood.
2. Keep the drain holes blocked up, Windscreen surround, scuttle, boot aperture, sills, doors and chassis rails, they've all got drain holes and most are generally blocked within 5 years of leaving the factory (most commonly with rust flakes) Blocked holes mean trapped water and lack of a drying air flow.
3. Cover the rust with paint, filler or underseal, Brilliant, the process has already started now you're giving it a cosy little bush to hide under. Water will permeate through and be retained by whatever's been plastered on. It will then fester away unnoticed until it bursts out like the alien from John Hurts stomach. How many cars do you see running around with rust coming through recently applied grey primer? I rest my case M'Lud.
4. Keep the car off the road, This is the last nail in the coffin, the first three examples have done their bit and now some random electrical malfunction (probably a corroded earth) has deemed the car a non runner. Its sat outside full of water, no speed assisted ventilation, drain holes bubbling over like manhole covers in a downpour and plastered in a mixture of dulux and porous filler. The car is approaching a hypothetical crossroads, hopefully me and/or the reaper have already passed by!

## **How to stop an XJS rotting quite so fast**

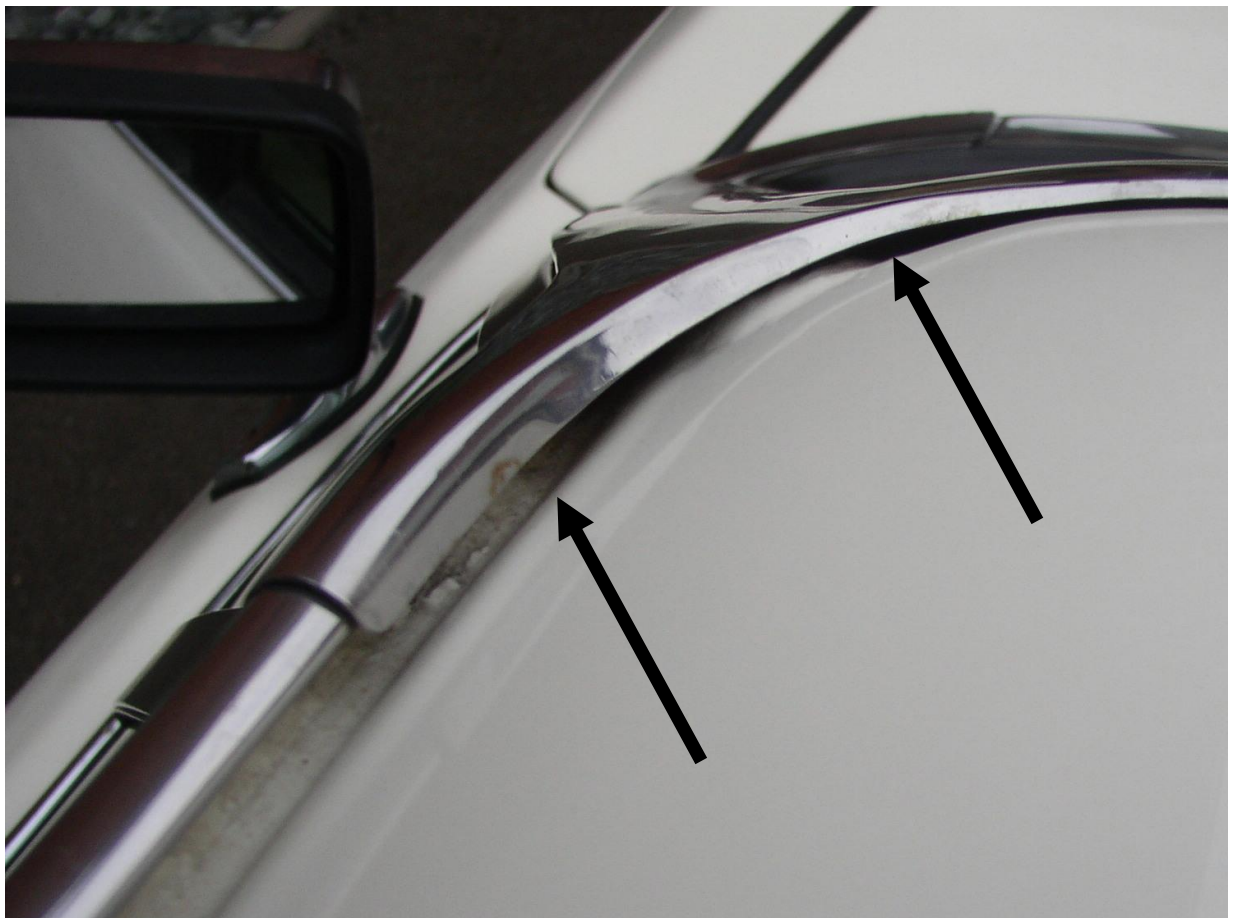
1. Keep it covered. Your not quite sucking those eggs properly granny! No real need to elaborate here, if you haven't got a garage or a 'lean to' then a cover is the last resort. Covers are ok but they have to be tailored to the car, the car has to be clean and dry otherwise the cover will just scratch the paint and seal the moisture in. They also have to be well secured during high winds; otherwise the neighbour's fence will end up looking like the Cutty Sark in full sail. The cover manufacturers also advise to take it off every week or so to let the car breathe, enough said.

## 2. Clear those drains

There are drain paths all over an XJS. Water from the roof leads a torturous path via near and off side windscreen pillars, (beneath the stainless trim) then along a gutter atop the inner wing before trickling down over the headlight housing, through the engine bay and onto the floor. It then does the easy bit and finds its way back to the sea. Any kind of blockage along this path (normally black sealant) and the water stops right where it is until rotting its own way out.

The wiper plenum is drained by two rubber and metal pipes which run down the 'V' of the engine bay and deposit their water onto the top suspension ball joints. Getting these blocked saves the ball joint but turns the plenum into a fish pond. Sills and doors don't have drain holes as such but slits placed periodically along their length. A hacksaw blade can be used to clear these out and let the air circulate.

*Pic 1. Roof Gutter and drain path via windscreen pillar.*



*Pic 2 Windscreen pillar drain hole and wing gutter.*



Lower rear quarters, absolute classic. The boot aperture has drain holes at the top left and right hand corners. The filler cap plenum also drains into these. The water then flows through rubber hoses which are pushed onto a drain stub fixed to the lower leading edge of the rear quarter. These drains block at source, block half way down or block at exit. If they block at exit or the hose becomes detached from the stub then the lower quarter fills with water and rots itself out. On a 20 year old car pulling sharply on the bottom part of the hose normally detaches the drain stub from its already rotten surround. If you kneel down and find the drain hole is non existent fear the worst, the previously rotten panel has had a skim of filler which has also covered the drain! This mini eco system is hidden away behind the boot trim carpet which is glued on to the panels and goes right to the bottom of the rear quarters, thus helping any water that gets there to hang around even longer. With a strong hand and grim determination you can tease the trim clear of the quarters and dry everything out. (There is enough stickiness left on the stuff to keep it in place when put back on the panel.) It's not easy to see to the bottom so I'm afraid it's a matter of putting your hand in and dragging out whatever has accumulated down there. The best way to clear the drains is to go from bottom to top. Most foot pumps are sold with an array of attachments, one being a red plastic tapered item which fits neatly into the hole at the lower quarter. Plug it in and pump gently, you'll either hear a satisfying 'pop and hiss' as the blockage is cleared or the air line will jettison itself with gusto, if this is the case you'll just have to keep plugging away so to speak. On the left hand side there are two upper drain holes, one from the boot and one from the filler aperture. These join via a plastic 'Y piece' before entering the single drain hose. Just stick your thumb over each hole in turn to ensure the other one is clear.

*Boot aperture drain LH side.*



A day spent hanging out the carpets and clearing all the drains on an XJS will slow the rust process dramatically, and if you can keep the car in a dry environment then it probably won't get any worse at all. Things like rusty doors, wings and rear quarters are not structural and won't fail an MOT unless they have jagged edges that can impale pedestrians or decapitate the odd cat. They may not look nice but the name of the game is to keep the car dry and running and therefore stop it getting any worse.



*RH rear quarter drain hole.*



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