



## On My Mind: Burnell Curtis, President

**T**he Lone Star Region is in full swing with its activities. By the time you read this, we will have had our spring tour through the hill country as well as our first concours of the year. We have two Drivers Education weekends scheduled before summer as well as many formula 1 dinners. I encourage you to join us at these outstanding events.

Recently my technical work has focused on rust. Since 1976 Porsches have come with galvanized body panels. That greatly reduces the chance of rust, which is one of the worst things that you can have with a car. However, it is still possible to have rust. If you find some on your car, what will you do?

I recently had a large number of sheet metal parts that were rusty, and I had to remove the rust before I could prime them. I have removed rust from body part by every method possible and I believe these are the advantages and disadvantages of the methods.

There are four ways to remove rust. The most common way to remove rust is to sand (or grind) it off. Sanding is usually done with a hand held grinder and a fiber coated disk. This will remove the surface rust but not the rust that has penetrated deep. If you grind the metal enough to remove the rust in the pits, then the metal will probably be too thin. Also, a grinder and disk will get the metal very hot if used too much in one spot. This heat will warp the metal and then you have greater problems.

The second most common way to remove rust is to use a wire brush on a grinder. This method is slow but will do the job. A grinder and wire brush will also get the metal hot and warp it. The wire brush method also had difficulty in removing the rust from the pits in the metal but it will do it if you are persistent.

Another method to remove the rust is sand blasting. Sand blasting will remove the rust absolutely. It will dig into the pits and remove all of it. Problem is, sand blasting will also heat sheet metal enough to warp it. A real expert sand blaster can sand blast in sweeps across the metal and not warp it. Sand blasting is expensive to do at home. You need a large compressor, sand blasting equipment, and safety equipment. It is also messy; as sand will be everywhere you do not want it. If your part is small enough to fit into a sand blasting cabinet, then the job is much easier and mess free.

I recently had some large pieces of sheet metal that were rusty and I used another method to remove the rust. I used muratic acid and phosphoric acid. To remove the rust this way, you **MUST** use rubber gloves, you **MUST** use eye protection, you **MUST** do this outside or with lots of ventilation or use breathing equipment, you **SHOULD** wear old clothes that can be thrown away if necessary, and you should be very careful. That said, here is what you should do. Remove all paint and grease as the acids do not remove them. Pour some of the muratic acid in a plastic container and use a small paintbrush and paint the parts with the acid. The surface rust will instantly disappear. The deeper rust will turn black. Use a wire brush or sandpaper or steel wool to scratch the black material. It will now turn rust colored again. Paint it again. Keep this up until all black material is gone. Then wash the part with water and you will see bright shinny metal. Now the bad news. Before the metal is dry, it will form rust on it again. This is call flash rust. I do not know of any way to avoid this. To remove the flash rust, use a commercial phosphoric acid solution. These are sold in auto paint stores, and probably auto parts stores, for rust removal. The product that I used was called Gem. It is a liquid and can be brushed on. After you brush it on, the instructions say to let it sit overnight. That is done to allow the product to penetrate the rust and convert it to an inert material. If you are sure that all rust is gone, then do not wait overnight, but wipe the surface with a rag or paper towel. When it dries you are ready to paint. If you let it dry overnight, the surface will be covered with a powder. Wire brush it off and you are ready to paint. In my recent work, I did the parts in two sessions because I had so much of it. The first group went as I described above. The second group did not. After drying overnight, the parts had surface rust. The difference was the weather. It was almost

100% humidity when I did the second group of parts. I had to wipe the parts down with the phosphoric acid solution, let them dry, and then prime them.

Good luck with removing that nasty rust from your parts.

See you at an event.

Burnell