

Tech article, July, 2010

Here it is almost July and it is already time to start shopping for Christmas or Chanukah for the loved one in your life. No, not your spouse or child -- your car. What else gives you such pleasure, satisfaction, and aggravation? Of course it is your LBC. Now there are lots of things you could shop for and more catalogues than you can count, from which to order stuff, but what do you go for?

The shiny new mirrors, the chrome wire wheels, maybe something more mundane like a tune up kit, no, you want more and better than that for your car. You want to improve the performance of your LBC, make it faster and handle better. It needs another set of floor mats like you need another pair of slippers (actually, I do need new slippers, no bunny ones please). So, let's talk about performance enhancing items, like Viagra for your car.

First, I will give you my theory on the proper way to approach performance-enhancing items. Never give your car the ability to go faster than you can stop it and handle it. So, that means we start with BRAKES first, not last. For most of what we will be talking about here, you really should follow these steps: brakes, suspension, and then power. Of course, I am assuming you have the ability to perform your part as the driver.

As we are not going to discuss making your car so fast that you will overpower your original braking system, by much, you should first evaluate what you have. Check for any leaks and excessive wear on the pads and shoes. Also, remove the rear drums and check the operation of the adjusters and parking brake system. Front pads should have at the minimum  $\frac{1}{4}$  of their life left. Rotors should be smooth and not hot spotted or warped. If you feel a slight vibration when you gently apply your brakes, look for warped rotors first, not loose bearings.

To find a warped rotor easily, jack up the car, remove a wheel and place a stationary object right next to the rotor, I use a jack stand (not the one that should be under the car). Then slowly rotate the rotor sliding the stationary object closer to the rotor until it just touches it. When it just barely touches, continue turning and see if it touches all the way around. If not, the rotor is warped. It is almost as cheap now days to buy new as have them turned. But beware of third world cast rotors; they may be as bad as your old ones.

So, if you want to upgrade your brakes, where to start? Let's pretend the master cylinder is good or you can replace it with new or rebuild it. Some MGB cylinders are a chore to rebuild. There are several brake upgrades on the market for most of our LBCs. They range from just slotted rotors and better pads to ventilated, slotted, zinc plated (stops rusting on rotors) rotors with 1.5 lb four piston aluminum calipers.

What you really need would be the slotted rotors and better pads. But what you really want is the vented rotors with 4 piston aluminum calipers. What are the differences? First is the cost. The rotors and pad upgrade is just a little over \$100 where as the whole system for the front brakes runs from \$650 (for my front set up) to over \$1,200 from Moss. There are several kits in between this price range. Google big brake kit, MGB and see what you can find. Performance wise, they both give you about the same stopping distance as either could lock up the front wheels in a panic stop. Standard stock brakes can do this. Then your tires become part of the equation in your stopping distance. What the uprated brakes give you is the ability to repeat the panic stops time after time without brake fade. Like when you go to run the Dragons Tale, or a track day at a local racetrack, you can accelerate down the straights and into the turns knowing you will have brakes when you apply them. This is a nice feeling.

And when we get to improving the engines performance, it will be nice to know that your brakes will be up to the task of stopping you. I know you will not be going much faster on the streets so stock brakes will work fine there, but with more power, you will be challenging more twisty roads at higher speeds and this is where you want better brakes.

Next year on Chris Gore's tour, you will be able to run in the fast group and belong there. Let your cars ability tell you where to run and not your ego!

Not that ego is a bad thing. A lot of work is done to our LBCs because of ego and I appreciate that. I think a big brake kit with Wilwood calipers and vented rotors look great on the cars. More of you should have them. Other than the expense of the parts, the labor is not that great. Most of you can install a brake up grade yourself with very little trouble in less that ½ day. My kit installs exactly as the standard brake replacement. Others do as well.

You notice that I have not mentioned rear brakes yet. That is because they do so little in stopping the normal road car, upgrading them much past better shoe material is a waste of money. I do like to put aluminum drums on the rear of TR4A thru 6s though to reduce a little weight and the drums look cool, ego here. The expense and hassle of installing rear disc brakes on our LBCs that do not come with them is not necessary, it is money that can be spent better elsewhere. Your front brakes do better than 90% of your stopping so put your money up front.

We are now stopping better so let's see what we do next. Still not power so hold on for that. The car needs to be able to handle better now that you have more confidence in your ability to stop and that is where we go next. To improve handling, there are several things you can do. Some are free and the cost can go as high as you can afford. For free; make your car as light as possible. This means removing all the junk in your trunk before you go for that mountain drive. Every ten pounds of your car is like gaining one horsepower.

I do not mean leave your spouse at home, just all the crap you accumulate in the trunk. If you are on a group drive, everyone does not need to carry a jack and a full toolbox. One or two amongst the cars is good enough as long as you are amongst friends. Leave the alternator, spare parts, three quarts of oil, gallon of water (in a container, this is almost one horsepower you loose carrying this), and anything else you can do without at home. You are not going to be that far from home base most of the times you go driving.

Aluminum wheels are another way of reducing weight and here it helps in two regards. One is a lighter car and the other is less unsprung weight. I will discuss this shortly. Remember the aluminum rear brake drums I mentioned earlier on the Tr4A thru 6s, here is where that helps handling. The less weight you are slinging around corners, the faster you can go. So, if you know how far the drive is and that you can do it on a half of tank of gas, why fill it to the top? A gallon of gas weighs about 6.5 lbs so five extra gallons is over three lost horsepower. Fill up on the way home, after your left all the slower cars in your dust. OK, you get the picture, lighter is faster and it costs nothing to reduce the weight of most of our cars by 20 pounds or more.

Another free improvement to handling is tire pressure. Upping your pressure about 2 to 3 lbs per tire can improve the tires performance and gas mileage (slightly). The factory recommended pressures are not there for optimum handling; they are a compromise for comfort and handling. Higher pressure is a harder tire and a little stiffer ride. That stiffer tire is what will improve your handling. Let me again assume here that your tires are good to start with.

One more cheap trick, and this works only with the MGs and Healeys, sorry Triumphs, is to remove your refillable shocks and refill with a straight 40-weight oil. This does take awhile to do but is well in the realm of your ability and it only cost one quart of cheap oil. We have discussed doing this in past articles so we will not cover it again. If you want more info on this, please give me a call and I will be happy to discuss it. And here is a big bit of news: if your shocks are leaking some at the arm seals, they do not need to be replaced. Buying rebuilt shocks is not much better, if any, than keeping what you have. They are refillable; each one has a reservoir on top just for this purpose.

You will just have to check the shock level once in awhile. And to top them up, most of the refill spot can be reached without removing the shock. Ever notice those little plastic plugs next to where the battery cover is in your MGB, pop one out and there is the refill plug for your shock. How nice is that, the factory planned on you refilling your shocks as needed.

I just realized how long I have been typing, I could have pulled the clutch out of a TR6 and an MGB in the same amount of time. So, look for next months column to continue this. We will finish handling and get into engine performance then. Until then, see you somewhere on the road. Barry

