



## **Tyres, Tires, and More Tired - Part 1**

**by Jim Lunson**

I recently examined the tires on my MGB with the thought that they may need replacing. A quandary becomes what to buy. Tires have greatly changed from when the car was made presenting many options. Our MG cars were all made back before radial tire construction took over the market. Designed for bias ply tires, the MGB for example, originally came with 5.60x14 size tires. These numbers equate to 5.60" width of tread, height profile (from rim to tread top) a standard 80% of the width and 14" diameter. MGAs and earlier cars had different sizes, but followed this same numbering system. You would have to check your manuals for the exact requirement. Today's tires bear no resemblance to this nomenclature.

Using the MGB as the standard for this article, tires now come in sizes like 165x70x14. This equates to 165mm width of tread, height equal to a ratio of 70% of width, and still 14" diameter. The comparison of sizes is not hard doing a little math: width is 165mm (vs.  $5.60 \times 25.4 = 142\text{mm}$ ); and height is  $165 \times 70\% = 115$  (vs.  $142\text{mm} \times .80 = 113\text{mm}$ ). So, within a few millimeters, these sizes are comparable. The new tire is slightly wider, but is basically the exact replacement. So check your manuals and do a little math and you can determine what current size fits your MG.

The problem in buying new tires today is two-fold. First, finding the size you need is difficult as most manufacturers only make select sizes that are a popular fit for most modern cars, and secondly, with advances in tire design, much more performance can be achieved by changing profiles. The size selected has four goals; fit the rim width, fit the car mechanics, look proper on the car, and provide the handling desired by the driver. For the MGB, this usually equates to a size of 175 (or 185)x70x14 in tires made today, but let's look at the details.

Rim width: most MGs use a rim width of 4" to 5 1/2" width. This includes both earlier cars and either wire, steel or Rostyle wheels. The maximum width that can be safely put on this width rim is 185mm. Anything wider has a danger of popping off the rim during a sharp turn. Aftermarket rims such as Panasport, Minilite, Aero and others have wider sizes that of course will take wider tires. And the early MG T series had narrower rims that take narrower sizes. But the wider the tire, the more tread contacts the road improving cornering, and making for a smoother more secure ride.

Car mechanics: The tire has to fit in the wheel well without dragging against fenders when turned sharply or hitting any of the brake or steering mechanisms.

Extra wide tires and rims can lead to interference with many of these front end mechanisms, especially the steering tie rods on the front. It is essential that these dimensions be considered before making changes as handling and safety can be affected. There is not as much room inside the fender as you may think.

Proper looks: The MG designers produced beautiful body shapes for all their models and the tire size they used formed an integral part of this design. Tires too small, too tall or too wide will have a severe effect on the appearance. Ever see a modern Chevy Suburban with oversize 20" rims and 45 ratio series profile tires on it - certainly changes the vehicles appearance?

Handling: A show car needs one type tire, a racer needs another and the daily driver or interstate cruiser still another. Today's automobile tires are usually listed as passenger, performance, racing or light truck. The application of each is obvious based on which handling characteristics you desire for your car and carry different features. Shorter height tires (65 and lower ratios) yield much better cornering characteristics, although the ride suffers as there is less give going over bumps or potholes.

My thoughts turned to tires after putting two new tires on my Oldsmobile and having the technician tell me that the old tires coming off showed a lot of rubber deterioration, in addition to the obvious tread wear. Sure enough, in looking closely at the sidewalls, there were thousands of hairline cracks in the rubber on the sides facing outward. There were also long cracks in the bottom of the grooves of the tread running around the tire. This situation prompted me to take a look at the tires on my MG. The tread on these tires is still great and in looking back over my records, this set has only racked up 18,000 miles, but with further check of the old invoice, I found that they are also now 11 years old. In looking closely at the tires, sure enough I spotted the same rubber cracking I found on the Olds. Not good.

I chuckle at the response I get when asking someone how long should tires last. The reply is usually something along the lines of 40,000 to 60,000 miles on a good set of radials. Not an answer. That is how far they will roll, not how long they will last. The actual time limit on a tire lifespan depends more on where it is kept. Sunlight is the big culprit as it breaks down the rubber compounds causing cracks and failure. My Olds sat outside and had never been garaged. The worst cracks were on the outside sidewalls while the insides were fine. In looking at my MG which stays inside except when being driven, these tires lasted 11 years and have considerably less damage to the sides, although it is starting to show now. Rubber does not last forever like steel.

There is the story of one club member who took his MG out for its first run in the spring after sitting all winter and blew out two tires in the first 30 miles, leaving him stranded and scratching his head. The tires still had lots of tread. Seems that his car sat outside in his driveway every winter, diligently covered by an expensive car cover, but one that covered all but the bottom half of his tires. After doing this for about 5 years, the tires were ready for disaster. And the tires on the shady side of the car during the winter are the ones that survived.

So as we go into the winter months and a lot of our cars get stored, try to get the tires covered as well as the rest of the car, and be ready next spring to check the tires and for more than just looking at the tread wear. Cracking of the sidewalls and in the tread that occurred during the winter can be serious, especially on that first spring run. We don't need to have anyone stranded or in an accident due to a blowout caused by old tires.

I'll discuss in more detail the selection of new tires in the next issue, including date stamping, handling profiles, speed ratings, one-upping, castor angles, rim offsets, and other exciting tire related information that applies to our MGs.



## **Tyres, Tires, and More Tired - Part 2**

by Jim Lunson

I wrote last month about tires on our MGs and the danger of their aging long before the tread wears out. We'll look at what replacement options are available in this day and age for a car at least now 30 years old.

The first step is to determine the age of your tires. Because this is a safety issue, the government requires all tire manufacturers to date stamp their tires as they are made. This allows you to check your tires and see just how old they really are. This stamp can be read on the sidewall of every tire, although they try to make it hard for the average customer to read the code.

The date of manufacture code consists of 3 digits located in a rectangular box after the noted DOT letters. This box is found on the sidewall, usually near the rim, usually only on one side of the tire (often the inside where it is very hard to find) and surrounded by other numbers (these numbers are not in a box). The first two digits of this code signify the week of the year (01 to 52) and the last designates the year. This means a code for example of 236 in a box means the tire was made in the 23rd week of the year 2006. The safety people assumed no tire lasted over ten years so there would be no way the 6 meant 1996 instead of 2006. Find this box; start counting the weeks from January and you can figure out pretty closely when the tire was made. And with older tires try to remember at least in which decade they may have been put on the car so you don't lose ten years in the calculation. A few manufacturers also provide a year stamp which is much easier to read, but look for the code box first. A tire with no code is really old and should not be used.

This date stamp in the tires can give you a good idea how old your tires may be and indicate when you should think about replacing them, even if the tread is still good and there is no cracking. It can also be a good guideline to check when buying new tires as sometimes tire sizes for the MG may not be the fastest moving stock and the dealer may have just the size you need, only to find out they have been sitting in his storage or warehouse for 10 years. It happens and needs to be checked.

In selecting new tires, available today is a wide option on profiles. In the current size designation, the profile or height is presented as a percent of the width. Thus, two tires of the same width, but one with a profile of 50 will be a lot lower than one with a 75 or 80% designation. The lower profile tire will be much more responsive to turns, will feel the road better, and will yield faster more positive cornering ability; all

positives for a sports car such as an MG. The downside to lower profiles is that the ride will be harsher as there is just not as much air between the tread and the rim. The car will not take potholes and rough road surfaces nearly as well. I have seen many a dented rim from the streets in DC on cars running with low profile tires. A second problem with low profile tires is that they alter the speedometer reading as the overall diameter of the tire is changed. Think you are rolling along at 60 MPH per the speedometer, only to find you are actually only going 50. So then you speed up to 70, and guess you are going about 60. A policeman's radar will often then tell you exactly how fast you were actually going. This factor can be checked as most tire dealers have a chart that measures the rolling diameter of various size tires. For the MG, compare the old stock size tire that originally came with the car to the new tire and try to keep them close.

One way to get lower profile tires and not affect either the appearance or the speedometer is to do a substitution called one upping. This term means increasing the wheel diameter one inch (say 14 to 15) and then using the lower profile tire to gain the handling. For instance, a tire size 175x70x13 (23 rolling diameter) is the same as a 185x60x14 (22.9 rolling diameter). The problem in doing this on an MG is finding rims of the same appearance in the larger diameter. To do this change, the car either needs wire wheels or aftermarket sport rims as there are no matching rims (either the stamped steel or Rostyle) for our cars in a larger size than the stock wheels. So if you plan to do the one upping improvement, check closely for the rims you need.

In addition to the diameter, two items to check when changing wheel rims are to match the bolt pattern and wheel offset. The bolt pattern is the layout of the wheel lugs on the hub. For cars, the patterns are usually either 4 or 5 lug holes. The 4 lug pattern is measured as the distance across the diagonal of the lugs. For example, the MGB has a 4-4.5 pattern (4 lugs measuring 4 1/2 across the diagonal). Five lug patterns are measured by the diameter of the lug circle. It is measured by taking the distance from one lug bolt to the imaginary circle that lies between the opposite two bolt holes. Bolt patterns for aftermarket sport rims are noted in either inches or metric, but the pattern can be converted by simple mathematics (4-4 1/2 equates to 4-114).

The wheel offset is a bit trickier to measure. This dimension is the horizontal distance from the vertical plane at the exact center of the wheel to the mounting surface of the bolt holes. For example, MGs have a very low offset (about 1), meaning the surface of the bolt holes is close to the center of the wheel and tire. Most modern cars have very large offsets (2-4), moving the mounting surface far outboard to where it is almost flush with the outside edge of the wheel and tire. This

gives modern rims a very sleek look while the MG wheel shows a deep recess (that's where you use chrome rims to hide it). The problem with using a wheel rim with a large offset on an MG is that when it is mounted on the hub, the increased offset moves the entire tire and wheel assembly much further inboard toward the center of the car. The narrowing of the wheel track dimension will cause dangerous handling problems with the car steering. Also, by moving the wheel far inboard, the potential for interference with the steering and brake assemblies is much more likely. On the MG, there is not a lot of inboard clearance and even a slight change will hit the steering ball joint, especially when the steering is turned far in one direction. So be careful when switching rims to check the offset and then watch for interference with the brake and steering.

A last item to note when changing the offset of wheel rims is in the use of spacer plates. These plates, usually 1/4" thick, have bolt pattern holes to match the lugs and can be inserted between the hub and the rim, moving the wheel further outboard and negating the effect of the large wheel offset. These spacers do the job but reduce the protrusion of the lug length through the wheel. The DOT safety people require that on car wheel assemblies, the lug nut has to have a minimum of eight (8) full turns on the shaft before becoming tight. So, if you use spacers, check the turns as you install wheels and make sure this minimum is maintained.

So, in buying new tires for your MG, there are a lot of things to consider, and they all make a difference in the car and your satisfaction with it. Happy tire and wheel hunting.