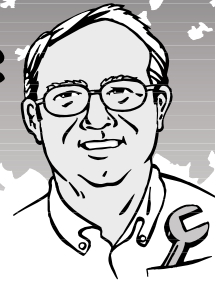


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# The Shade Tree Mechanic

By Steve Mergele



## *Decoding your Tires' Age*

Once again, one of our VMCCA members has written an article that should be of interest to us all. Not only for or "old cars," this article also pertains to our modern cars, tow vehicles and trailers. Just a few years ago there was a rash of rollovers in one of the Big Three's most popular SUV's. When all of the dust cleared, tires seem to be the common problem. Although the blame was placed on one prominent tire manufacturer the problem went deeper than that.

It has been known for a long time by tire manufacturers, dealers and the U.S. Department of Transportation that tires age even though they have been sitting in a warehouse—or on our collector cars sitting in a climate controlled garage. When exposed to the elements, just like with people, the aging process is accelerated. This tire aging is something the industry would just as soon you, the motoring public, didn't know about.

This article was written by Norm Gabe of the VMCCA Sun Coast Chapter in Florida. Norm has written several technical articles for both the Sun Coast Chapter newsletter and the Classic Thunderbird Club of South Florida. Norm's background is an engineer by trade. Even though tires are not his field, when Norm was looking for replacement tires for his '66 Corvair, he opened a can-of-worms on how to decode all the Greek on the sidewall of a tire. Sounds like tires sure are his field in this fine article.

## Is it Time to Re-Tire?

By Norm Gabe

I hope you enjoy driving your old cars is much as I do. However it is time for me to "retire," that is, change the tires on some of my old cars. According to the U.S. Department of Transportation or the DOT, there are an estimated 23,000 car crashes yearly which result in over 535 fatalities "solely due" to tire failures! According to numerous automobile manufacturers and tire manufacturers, any tire that is over five years old is allegedly unsafe for driving at highway speeds and should be replaced. Therefore, that "spare in the trunk may be junk," even if it's brand new and never used.

### ***How to know what kind of replacement tires to buy***

What type of replacement tires should you buy? Always stay with the same tire width and aspect ratio, or as close as possible to what was originally designed for your car from its manufacturer. Any change in outside diameter of a tire or its width can seriously affect vehicle safety, handling characteristics, fuel economy, and the accuracy of your speedometer. You may not be able to exactly match the dimensions of bias ply tires measured with the U.S.

system, with radial tires measured with the metric system, but you should be able to come darn close. Any competent tire installer or the equivalent third grade math student should be able to perform the conversion calculations from the U.S. to the Metric system. (I prefer the third grader). I also prefer to use replacement Metric radial tires in lieu of bias ply tires wherever possible.

### ***How to tell a tire's birth date***

Just like all of us age, the rubber compounds used in the manufacture of a tire begin to slowly rot and age from birth. Therefore, the DOT has required mandatory coding placed on all passenger tires sold in the U.S. that includes the birth date of the tire. This information must be stamped onto at least one side of the tire (usually on the inside where it will be difficult for you to read). This code always starts with the letters DOT, followed by a series of letters, then followed by either three or four numbers. If the coding ends with only three numbers, your tire was manufactured prior to the year 2000, and should now be unsafe at any speed! After the year 2000, the

first two of the four ending digits indicate the week of the year manufactured, and the last two of the four digits indicate the year the tire was manufactured.

### ***What else your tire is telling you***

There is a wealth of additional information that the DOT requires to be placed on passenger car tires, which includes but is not limited to: tire size, tire rim diameter, tire speed rating, tire load rating, maximum recommended tire pressure, and uniform tire quality grading or the "UTQG," which is an information system to help you make relative comparisons on all passenger tires. This rating tells you about a tread wear test, a traction test, and a temperature test.

**Tread wear grades** are an indication of a tire's wear rate based on a controlled test tire grade of 100. The higher the number, the longer the tread should last. Only 40% of all tires tested have a tread wear of less than 200, and only 2% have a tread wear that exceeds 600.

**Traction grades** are solely a tire's ability to stop straight ahead on a wet concrete or asphalt pavement. The traction grades do not rate the tire's resistance to hydroplaning, or its traction capability on dry pavement, or its turning or cornering traction capabilities, all which are important things to know. Traction is graded from highest to lowest as AA, A, B, and C. Approximately 75% of all tires tested are rated "A" for traction.

**Temperature grades** are an indication of a tire's resistance to heat. Temperature is graded from highest to lowest as A, B, & C. Approximately 59% of all tires tested are rated "B" and only 11% are rated "C" for temperature. Please note that tire speed, tire loading, and the tire inflation level can also significantly impact a tire's heat buildup, and an under-inflated tire will generate severe excess heat buildup, **so always keep your tires properly inflated.** All "C" rated tires will not pass a 1/2 hour temperature lab test at 100mph. All "B" rated tires will pass the same 1/2 hour temperature lab test at 100 mph but will fail below 115 mph. Only an "A" rated tire will withstand a 1/2 hour temperature lab test at 115 mph without failing.

Note all UTQG testing are done on brand new

tires that are properly inflated. As tires get older, "their ability to perform" significantly decreases. Too bad we do not have Viagra for tires yet, although the Nitrogen folks think we do.

### ***A "Tired" Lesson Learned***

The information that I could still read, that I took off a tire of mine that was properly inflated and

recently blew apart on the Florida Turnpike while traveling in the slow lane @ at 55 mph was as follows: ...."P 185/80 R 13, DOT BEJK JHUU 0400, Tread wear 340, traction A, Temperature C." Converting this into plain English, this was a passenger tire 185 mm wide with an 80 mm aspect ratio of height to width, of radial construction, and designed to fit on a 13" diameter wheel. The tire was made on the 4th week in the year 2000. Therefore, it should have been replaced over two years ago! The UTQG rating for tread wear was 340, the traction rating was "A" and the temperature rating was "C", (far below average for most



replacement tires available for temperature, and not a good choice for South Florida high speed driving in the heat).

### ***Fast facts***

For you racing buffs, you may also wish to check the speed rating of your tires, which starts with "M" through "Z". As the letter increases, usually so does the tire speed rating, except for the "Z" rated tires that have lower speed ratings than "W" and "Y" rated tires recently introduced, and "H" rated tires. Any tire rated higher than "Q" is speed rated for over 99 mph, which should be barely O.K. for your average South Florida commute during rush hour.

### ***Rimmed with caution -- the switch from bias to radial***

Although the cheapest radial tire made today is far superior in safety and handling than any tire made ten years ago when new, it is not always possible to switch from bias tires to radial tires without also having to change tire rims. A radial tire produces side forces against a tire rim not present with a bias tire, that could cause an old rim to fail. To play it safe you may wish to replace your rims if you are converting

