

“Aged” Tire Case Numbers Grow: Spares and Used tires Top the List

Copyright © Safety Research & Strategies, Inc., 2005

Following Firestone, SRS began tracking cases involving “aged” tires—tires older than 6-years—that have failed catastrophically causing crashes. With more than 65 documented cases, several patterns are emerging. Nearly one-third of these cases involved spare tires, approximately one-third were tires purchased used. The remaining cases involve tires that were mounted on little-used sports cars, old stock sold as new, or their histories are unknown. What links all of these cases together is the fact that the tires have ample tread and appear safe when they are put into service.

Tires, like any other rubber product, have a limited service life regardless of tread depth and use. As tires age their physical and chemical properties degrade reducing their margin of safety. The goal of the tire manufacturer is to ensure tire fatigue life exceeds the tread life by some design/safety margin for all reasonably foreseeable service conditions, yet nothing has been done by the tire industry to warn U.S. drivers about the increased risk of old tires.

Full-sized spare tires are less common today as many vehicle makers opt for temporary or “doughnut” spares. However, full-size spares are frequently found on SUVs, pickup trucks and vans—vehicles that are more susceptible to loss of control in the event of catastrophic tire failures. In a 1997 report Mercedes Benz Research and Technology division examined the pros and cons of continuing to supply a spare wheel and tire with every Mercedes Benz vehicle. The report noted that drivers in central Europe experience tire punctures every 150,000 kilometers, which equates to driving for ten to twelve years without ever using the spare. Because the spare is used rarely, combined with the negative effects that time and location can have on a “spare wheel... left languishing in the boot where it gradually deteriorates,” you have ample reason to discuss “viable alternatives for the spare wheel.”

The Mercedes report went on to say:

“Tyres undergo an ageing process even when they are not in use. The rubber parts become less elastic, the steel webbing inside the tyre corrodes and the rubber mixture of which the tread is formed hardens. . . a tyre which has been lying around unused in the boot for years is by no means as good as new.”

More recent work from Ford compared spare tires to those in service and found similar chemical characteristics showing that the aging process is occurring statically; thus unused spares were “aging” similarly to those in service.

Used tires, which make up a large number of the aged tire failures identified by SRS, present added and often unseen risks to buyers. The Rubber Manufacturers Association (RMA) estimates the U.S. used tire market at 30 million units annually and nearly 75 percent of all independent tire dealers who responded to a survey indicated they sold used tires.

The used tire market is primarily supplied by tire “recyclers”—companies who are contracted by tire dealers to dispose of tires that end up in their scrap piles. The large tire recyclers are culling as much as 20 to 25 percent of the tires they are paid to dispose of and reintroducing them into the marketplace through wholesale tire divisions who then market them back to tire dealers by the trailer load. In the process the tires are handled, stacked, and stored in ways that can accelerate their internal deterioration—they are exposed to high temperatures and humidity in storage, stacked such that belts can be damaged, etc. Little beyond simple visual inspections and tire age is not a consideration. Some used tire wholesalers provide an automatic refund of 7 percent of the purchase price for a trailer load to account for tires that can’t be used at all because of unseen damage.

Large retailers, including WalMart, contribute to the glut of used tires as they pay low fees for tire hauling. In order to support the low hauling fees, recyclers supplement their income by wholesaling tires for reuse. Other used tire sources include salvage yards, swap meets, and tire dealers who will pay for trade-ins.

Organizations like the Tire Industry Association won't address the issue of used tire safety as their members, who include tire dealers, generate significant revenue from used tire sales. Like the used car business, used tires generate higher profit margins than sales of new tires. Tire business trade journal articles even warn dealers that they lose profits if they are not in the used tire business.

Tire manufacturers have done little to address the issue despite the added liability they face when their brands are reintroduced into the market. Some tire makers warn consumers against using a tire whose history is unknown, but these benign messages are little more than window dressing.

The late Clarence Ball, formerly Michelin Tire Corp. manager of retread engineering argued not only for tire "sell-by" or expiration dates as far back in the late 1980s, he also took the position that there should be standards for used tire inspections.

Many of the "aged" tire cases known to SRS involve spares or used tires installed by tire dealers. These tires appear to be safe—they have ample tread depth and no visual cues of damage. While tire makers take the position that there is no set date at which a tire is no longer safe and it would be a disservice to consumers to suggest one, the real issue hinges on how tires are distributed and retailed. Tire expiration dates will force manufacturers to address their logistics as consumers will demand fresh tires or discounts on older tires. This very scenario is already beginning to play out in parts of Europe where the affects of tire age are understood by the pubic.

[For more details on SRS' tire aging research visit www.safetyresearch.net]