Ticking Time Bombs? NOT!

It's not the age of a tire, but its overall condition, maintenance history, and inflation history that determine its fitness for duty.

Two major television news reports within the last year cast a shadow over aging passenger-car and light-truck tires. Fatal accidents allegedly resulting from age-related tire degradation have focused attention on unsold new tires being put into service long after their "best-before" date. In reality, there is no official best-before date for light-duty tires – nor for heavy-duty truck tires.

This tempest in a teacup began when ABC's "20/20" investigative reporter, Brian Ross, filed a story suggesting that older tires – anything over six years of age – were sold as brand new in tire shops all across America. Ross suggested in as many words that these tires were little more than ticking time bombs.

A similar report, "Expired Tires" on NBC, highlighted an alleged tire failure that claimed the life of a 20-year-old Florida man. The tire in question was said to be a spare tire that had been installed on the car just three days prior to the accident.

Video footage showing the tread on the accident tire led me to believe that tire had plenty of miles on it prior to the incident. And at no time during either of the two network news stories was there any discussion about the speed the vehicle was traveling at the time of the incident, or what the tire inflation pressure might have been. Both or either could easily have contributed to the type of failure illustrated in the video.

The tail end of the NBC report revealed that the tire in question had been included in an earlier major recall, and that it should have been pulled from service by the previous owner of the accident vehicle.

Is there, or should there be, concern over aging truck tires? The tire experts we look to frequently here at *Heavy Duty Trucking* say the answer is no. Getting a million miles of service over a decade or more (with several retreads) isn't uncommon for premium truck tires these days. That's what we've come to expect from premium tires, and that's about what premium tires should deliver – assuming they have been well maintained and skillfully retreaded.

Peggy Fisher, president of Tire Stamp and a highly regarded tire expert and lifelong participant in tire-related activity within the Technology and Maintenance Council, says it's wrong to lump heavy truck tires in with passenger and light truck tires in this context.

"There is no comparison. These tires are built entirely differently than passenger and light truck tires," she says. "Medium and heavy-duty truck tires are designed to run 1 million miles today. That means they have to be retreaded several times, and could take up to 10 years or more to run this many miles."

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Absence of Evidence

Both of the aging-tire "exposés" allege the practice of selling expired tires is rampant across the U.S. Both networks sent undercover camera crews out to buy tires at various dealerships, and both reported being able to buy old tires from stock at several tire dealers – some as old as 12 years. New, unused tires sitting in stock for more than 10 years suggest there's an inventory management problem at some of these dealers, or the tires they found and bought were odd sizes or special-order stock that never sold. The reports never made that clear. (While the investigative reports never asked the question, you have to wonder why a tire would sit in inventory that long if stock was being regularly rotated and moved through the supply chain.)

But that still doesn't answer the questions of whether or not old tires are actually a safety hazard.

Appearing briefly on both reports, Dan Zielinski, vice president of communications with the Rubber Manufacturers Association, said there's no scientific information that points to when a tire should be removed from service solely because of its age. RMA believes there are too many variables to set a timeline for tire expiration.

"Tires are not milk. Milk will go bad in maybe 10 days or so. Tires [and] their performance are affected by a number of issues," Zielinski said in the NBC report. "Right now there is no information that points to a specific date when tires will no longer be able to perform solely due to age."

PHOTO COURTESY MICHELIN

Before you pull that trailer out of the field for an emergency load, have a look at the tires. Aging probably won't be an issue, but low pressure, flat-spotting, and sidewall deterioration might be.

Jim Davis, public relations manager at Goodyear Tire and Rubber, agrees. He says that while the age of a tire really isn't a key factor, tire care, maintenance, and general condition of the tire are factors that will affect performance and service life.

Still, Ford Motor Company and DaimlerChrysler (as the company was then known) added tire-age advisories to their owners' manuals in 2005 suggesting older tires be taken out of service after six years regardless of the mileage. Several German automakers and Toyota have had similar warnings in place since the 1990s.

All that information and much more about age-related degradation is summarized in a document titled, "Tire Aging Tests, Data and Policies Continue to Emerge," copyrighted in 2006 by Safety Research & Strategies. SRS is a research enterprise with tight ties to several law firms specializing in product liability litigation — which would go a long way toward explaining the hype surrounding aging tires.

Truck Tires are Different

Twice during ABC's report, a shot of a peeled truck tire tread lying at roadside flashed on screen. Nothing different from any of the thousands of "alligators" we see at roadside every day, but the shot and the narrative posed a suggestive question: Maybe aging truck tires are equally dangerous?

That's highly unlikely, says Goodyear's Davis.

Is Tire Age a Factor in Trucking?

"Over time, with use, tires do age and fatigue, but that is controlled with proper application and maintenance," says Guy Walenga, director, engineering commercial products and technologies with Bridgestone Firestone North American Tire.

The sidewall ozone condition that one may notice on tires is an observable aging process. As tires are designed to run more original miles and more retread miles, tire casings had to be developed to not age prematurely and thus be pulled from service too soon, he explains.

In addition, anti-ozonants are incorporated into rubber compounds to keep the rubber pliable, its appearance clean, and to control the appearance of ozone-related aging. Most of the industry will measure the depth of any ozone appearance condition. If it is 2/32 or deeper, or if body ply cable is visible, the tire would be considered scrap. The body plies and/or belt wire and the rubber bond are strong and remain so for a properly applied and maintained tire, through the original tread use and subsequent retreads.

"We have documented casings with 1million miles or more that were retreaded and repaired multiple times while in service," Walenga notes. "It was finally their appearance and the fact that they made our goal of 1 million miles that caused their removal from service."

Also, fleets set age limits on the tires they will repair and retread based on the fleet's operation, experience, maintenance, dealer/retreader recommendations, and overall product performance.

"The aging tire dialogue has so far been confined to consumer tires," he says. "It just doesn't apply to heavy truck tires. The difference is the extent to which truck fleets manage and look after their tire investment. The key is consistent care."

As noted earlier, there was no discussion of inflation pressure or vehicle speed in the TV reports. There isn't a self-respecting fleet manager in the country who could argue that inflation pressure isn't the chief cause of much of the tire debris found at roadside today. Failures resulting from pressure-related sidewall failures and tread separations are well documented and well understood. Fleets are making substantial investments in pressure monitoring technology and inflation systems to combat the problem (more on that next month).

Still, those same self-respecting fleet managers will probably tell you there is a correlation between a tire's age and its failure rate. Simply put, says Fisher, older tires do fail at a higher rate than brand new tires, because they have had more opportunity to be run underinflated, overloaded, abused, and damaged over the course of their lives.

"Tires build up and accumulate a heat history caused by all of the above, and this fatigues and eventually fails tires. However, if a truck tire is maintained properly, there is no reason why it cannot live to a ripe old age of let's say 10 years, be retreaded several times, and run a million miles," she notes.

How's 10 years for a best-before date? For the price, you won't find may other components with the level of stress and exposure a tire undergoes lasting better than a decade.

What's Bad for Tires?

There are practices that could potentially shorten the service live of your tires. Among them:

- **Improper repairs:** Simply stemming the flow of air from a punctured tire isn't the end of the repair process. Bad repairs may allow air or moisture to penetrate the casing and cause separations or corrosion within the body of the tire.
- **Underinflation:** Insufficient pressure won't support the sidewall of the tire as it is designed to, and constant excessive flexing of the steel cords in the sidewall eventually weakens them to the point where they will fail. Maintaining adequate pressure for conditions will go a long way toward extending tire life.
- **Atmospheric conditions:** Exposure to UV radiation and ozone will in time take their toll on the rubber. Antioxidants and anti-ozonants are added to rubber compounds today to minimize potential dangers from exposure to air and direct sunlight. If you're storing tires, keep them out of direct sunlight.
- **Steam cleaning:** It is common practice to use pressure washers or steam cleaning equipment to wash trucks and tires, but that equipment can be harmful to tires when the nozzle is concentrated in one spot for a period of time. Nozzle temperature on steam cleaning equipment typically reaches 280 degrees, and if the nozzle is held too close to the sidewall of a tire for as short a time as 45 seconds, a small spongy blister may appear on the sidewall. When this blister is cut open, one will observe reverted rubber resulting from the excessive localized heat, warns Bridgestone.