

Deadly retreading chamber fires often tied to improper use of flammable solvents By Jeff Yip

LAS VEGAS—Dead curing chambers and retread carcasses do tell tales.

Forensic evidence shows that random, potentially catastrophic curing chamber fires can be triggered by improper use of prohibited flammable truck tire demounting fluids, tire experts are warning.

Investigation of a non-fire incident at a Midwest tire retreading plant by the Occupational Health and Safety Administration (OSHA) resulted in fines related to the improper use and storage of a flammable tire demounting fluid. This example, coupled with chamber fire data, serves to highlight the long-standing industry use of dangerous flammable fluids in everyday truck tire servicing.

The improper use of flammable solvents and lubricants—in some cases, workers were even observed using gasoline—can come back to bite retreaders.

“This stuff is everywhere and it’s not stored properly 99 percent of the time,” said Norman H. Ball, training officer for Michelin Retreading Technologies. Mr. Ball, who chairs the Tread Rubber and Tire Repair Materials Manufacturers Group’s (TRMG) Technical Committee, outlined the problem at a presentation at the recent Global Tire Expo in Las Vegas.

According to Mr. Ball and Kevin Rohlwing, senior vice president of training for the Tire Industry Association (TIA), all tire companies agree that flammable and petroleum-based lubricants should never be used to separate tires from their wheels.

Trucking company managers need to look at the products their technicians have been using—and that means not just the label on the can or bottle. Study the material safety data sheet (MSDS), Mr. Ball advised. “If it includes a long list of chemicals, chances are it contains harmful and flammable products.”

Mr. Rohlwing stressed that manufacturers need to provide data that prove their material is safe. “You need to ask for proof, just don’t take their word for it. Tell them they need to provide data and testing that proves it’s safe.”

The challenge is getting workers to break long-standing bad habits. After spending years of doing their jobs one way, tire workers will pour or swab these hazardous solutions automatically on tires, even when studies have shown that not every tire needs to have bead-demounting lubrication.

The OSHA regulation that outlaws flammable lubricant being applied to bead and wheel mating surfaces is CFR 1910.177.

Fires have been around since precure retreading came on the scene, but the rising occurrence of fires taking place in the curing chambers is probably due to the higher temperatures now used in modern retreading processes, Mr. Ball said, noting that the combination of flammable demounting fluids, oxygen and rust particles found in tires being retreaded constitutes a “perfect storm” that can lead to a disastrous blaze.

How bad? Insurance company representatives have stated that past claims for chamber fires range anywhere from \$6,000 to \$300,000, Mr. Ball said.

The recommendations come in the wake of the study and a survey done this past summer by the Tire Retread & Repair Information Bureau (TRIB).



Norman Ball, training officer for Michelin Retreading Technologies, said at the SEMA Show that flammable solvents and lubricants not stored properly can lead to possible fires. Photo by Jeff Yip.

One retread system had more than 20 fires in steam-heated, double-envelope curing systems. Investigators concluded that all the fires were caused by flammable materials introduced into the curing chambers. In two other cases, the flammables were human error—a flammable- soaked glove and using cement to seal an envelope.

“You can’t legislate against stupid,” Mr. Ball said wryly.

The chamber fires may have been ignited by static electricity generated by rapidly flowing hot air during curing, he said. Thanks to modern technology and sensors, fire suppression systems often help keep the initial fire from doing catastrophic harm to property or personnel.

But tire retreaders must warn first-responders who want to open and inspect the chamber that doing so will likely trigger a second, more serious blaze if done before 24 hours, Mr. Ball said.

There is additional evidence that suggests a leaking envelope contributes to the classic “fire triangle” of oxygen, fuel and ignition source. Those who have looked into the mishaps say they’re likely caused by chamber pressure that flows through the leaking envelope out of the vacuum manifold, Mr. Ball said. Fresh air enters the chamber to maintain target pressure and that generates an abnormal amount of static electricity.

The TRMG approved an addition to the Industry Recommended Practices for Tire Retreading & Tire Repairing (IRPTRTR) and that update, Addendum No. 7, will include the responses to the TRIB chamber fire survey. TRIB will have the updated version available before the end of the year.

There is at least one safe option available now.

Karen Rattray, vice president of sales for Alpharetta, Ga.-based Pro Chem Inc., told the group her company, working with TRMG and TIA, has developed a safe lubricant. Tire Release is a low-viscosity, environmentally friendly, nontoxic and non-corrosive product that has a flashpoint of 297 degrees F.

It can be applied with the “pin hole” method for demounting tires from their wheels or swabbed for mounting tire-and-wheel assemblies. It contains rust inhibitors and is stable to minus 30 degrees F, Ms. Rattray said, adding that, unlike many solvents, Pro Chem’s Tire Release doesn’t require special breathing apparatus or protective clothing.

The suggested retail price for a gallon of Tire Release is \$39.90, and the company said that amount can treat up to 150 tires.

Jeff Yip is a Texas-based freelancer who writes for Tire Business.

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