

## Tire Noise, Vehicle Vibration Issues On the Rise

([PRWEB](#)) July 16, 2000 -- By Chuck Slaybaugh, Tire Business staff ©

AKRON (June 30, 2000)--Tire noise, vibration and ride harshness have long irritated passenger car owners--and tire dealers know they'll be the first to hear about it should any such difficulties arise.

Moreover, the trend toward increasingly vibration-sensitive light trucks and sport-utility vehicles--along with a proportionate increase in ride-sensitive light truck owners--have made such concerns more widespread than ever before.

Dave Scribner, Hunter Engineering Co.'s product manager for balancer and changer units, told Tire Business there has been a "dramatic rise in vibration-related issues"--particularly in the case of light trucks.

Part of this is due, he said, to changes made by automakers in the construction of LT-type vehicles. In adapting vehicles originally intended as cargo carriers to meet the needs of family transportation, original equipment manufacturers have made SUVs and light trucks more sensitive to tire-/wheel-related vibrations, he said.

Meanwhile, light truck owners, many of whom traded their family sedans for SUVs, vans, pickups etc., are looking for the same cushy passenger car ride--sometimes hand-in-hand with off-road traction capabilities.

With this in mind, Hunter Engineering two years ago introduced its GSP 9700 Vibration Control System wheel balancer. Along with conventional spin-balancing capabilities, the unit also measures the uniformity of the tire-wheel assembly, including radial force variation--namely, changes in the stiffness of the tire's sidewalls and footprint while it is rotated under load.

By determining the lowest spot on the metal rim and positioning it with the stiffest spot on the tire, technicians can make the assembly roll more easily and smoothly. This is called "OEM matching"--a process previously carried out solely by car and tire makers using "uniformity graders" costing up to a million dollars.

What Hunter's GSP 9700 has done, Mr. Scribner said, is make such capability affordable for the average tire shop.

Ironically, developing it has put Hunter Engineering in the midst of a controversy with at least two major tire makers, as well as companies marketing competitive wheel balancers who claim their machines accomplish the same result without the ability to measure force variation.

At first, the GSP 9700 seemed to be welcomed by tire and auto makers alike. Goodyear, for one, purchased a quantity of the machines for its company-owned stores. But the tide of opinion changed dramatically after users of the machine began rejecting and returning non-uniform tires to suppliers for adjustment.

Goodyear and Michelin North America Inc. since have stipulated that data generated by the GSP 9700 will not be accepted as the basis for tire warranty claims.

Michelin said: "This type of machine" (the GSP 9700 was not mentioned by name) does not have the capability



to accurately measure and determine tire uniformity, but does have the capability to optimize ride performance in the tire mounting process by properly measuring the tire-wheel as an assembly and offering a match-mounting preference."

For his part, Mr. Scribner said that while he takes issue with Michelin's statement regarding the GSP 9700's alleged inability to accurately measure tire uniformity, he doesn't blame Goodyear and Michelin for taking such a stand.

"I can prove the machine does correlate (with tire industry standards for uniformity) very, very well when it's used properly," he said. "But in the wrong hands it can be a nightmare. I wouldn't want to open the flood gates for every tire shop that sends stuff back just because they bought a machine.

"We've created a piece of equipment that is revolutionizing the industry. But as a result of unintended consequences of people using the machines improperly, it's creating a lot of questions along with the answers it's (providing)."

Revolutionary or not, the machine is only as good as the person operating it, he said. "You have to have someone who's willing and able to be trained to use the machine properly and who understands the big picture. We don't want people using the machine as a screening device."

Hunter Engineering is putting together a national training and certification course to teach technicians the do's and don'ts of using the GSP 9700. The course, details of which still are to be worked out, likely will be rolled out in September and offered at each of the company's 30 regional training centers across the U.S., a spokesman said.

Some of the controversy is related to the fact that "we're measuring things that have never been measured before in a retail environment or repair shop," Mr. Scribner said.

"We're finding out wheel balancing is not sufficient to solve a significant percentage of vibration issues. And that's due primarily to changes in the industry--vehicles becoming lighter and components fewer."

Tire uniformity can best be explained, he said, by thinking of the tire as a series of springs, some of which have slightly different tensions than others. As the wheel rotates, the stiffer springs create a bump, or if they're weaker, they create a low point. The difference is expressed in pounds of force.

"The technician has to understand that just because a tire has some (non)uniformity in it, that doesn't make it bad."

Logically, a perfectly round tire and wheel are ideal. But any vehicle run for 60,000 miles or more is likely to have one or more out-of-round wheels. And under such circumstances, a tire that also is slightly out of round may actually be preferable to one that's perfectly round, Mr. Scribner said.

"If a wheel has any kind of runout in it due to potholes or anything else, it's better to have a tire with a little (non)uniformity in it to cancel out the runout in the used wheel," he said.



**Contact Information**

**David Scribner/Product Manager**

HUNTER ENGINEERING COMPANY

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