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Nation's mechanics at risk from asbestos

Deadly fibers are found in brakes, but officials have kept silent

Thursday, November 16, 2000

By ANDREW SCHNEIDER AND CAROL SMITH
SEATTLE POST-INTELLIGENCER REPORTERS

Millions of brakes on cars and trucks -- and millions more waiting on parts-shop shelves nationwide -- contain asbestos fibers that can kill mechanics.

Federal health and safety officials acknowledge the risks inherent in asbestos brakes. Yet the agencies, apparently relying on the auto industry to police itself, have done nothing in recent years to warn workers or check on workplace safety.

Almost everybody interviewed during the Seattle Post-Intelligencer's four-month investigation -- mechanics and the government officials charged with protecting them alike -- said they thought asbestos had been taken out of brakes years ago.

"It's an intolerable risk," said Dr. William Nicholson, professor emeritus at Mount Sinai School of Medicine in New York and a leading authority on the hazards of asbestos in brakes.

Tests conducted for the P-I by government-certified laboratories found alarmingly high levels of asbestos contamination in gas stations and brake-repair shops in the District of Columbia and six states, including Washington. Public health experts said the exposure levels were so high in some locations that more than one in 10 mechanics working without protective gear would likely contract cancer.

But the government has issued no warnings to the nation's 750,000 brake mechanics in the past decade. No alarms have been sounded by worker safety, environmental or public-health officials because no one has looked at the dangers.

"The government is not doing its job," said Dr. Richard Lemen, a former U.S. deputy surgeon general.

During the past three months, the P-I collected samples of dust from floors, work areas and tool bins in 31 brake-repair garages in Baltimore, Boston, Chicago, Denver, Richmond, Seattle and Washington, D.C. Asbestos, almost exclusively chrysotile, which has been used for decades in brakes, was detected in 21 of the locations. The amount of asbestos in the dust ranged from 2.26 percent to 63.8 percent.

Personnel working for the U.S. Environmental Protection Agency (EPA) entering any area where asbestos contamination of material is 1 percent or higher are required to wear protective suits and full-face respirators.



Mechanic Bill Rice replaces a set of brake shoes. Rice says he can't even change a tire without getting brake dust on him. He says he tries to hold his breath to avoid inhaling it.

Meryl Schenker/P-I

See also:

- [Cancer victim changed his own brakes for years](#)
- [Asbestos miners, producers have fought bans](#)
- [Nation's mechanics at risk from asbestos](#)
- [A mechanic's epitaph: 'Someone has got to warn these kids'](#)
- [Graphic \(60k\): Asbestos test results](#)

"If the measurements are valid, that's a very concentrated source of asbestos in the dust," said Aaron Sussell, an industrial hygienist with the National Institute of Occupational Safety and Health (NIOSH) in Cincinnati. "At those levels, it's not going to take a lot to put asbestos into the air at a hazardous level."

In several repair bays, the P-I analysis found mechanics were being exposed to large amounts of airborne fibers. Most health experts agree that the primary exposure route or pathway for asbestos to cause harm is inhalation.

In air samples taken during nine brake jobs, analysis found significant amounts of asbestos in six.

"Assuming the samples were properly collected, the results indicate some workers' exposure was about 43 times higher than what is recommended," said Dr. Christopher Weis, regional toxicologist with the EPA in Denver. "At these exposure levels the theoretical risks to those mechanics would be on the order of about 1.5 increased cancers for every 10 workers."

That level of risk, Weis cautioned, is calculated on exposures continuing for a full career.

"Actual worker risks may be higher or lower depending upon individual susceptibilities and environmental factors," he added.

Mount Sinai's Nicholson, who has been researching the link between asbestos and disease for 30 years, agreed with Weis' assessment.

"For it (asbestos) still to be hanging around in the year 2000, in products it need not be in, is just amazing. It really is a concern that must be addressed."

Confronting asbestos

Bill Rice is a jocular, graying mechanic. For most of his 60 years he has managed and owned seven auto shops in the Puget Sound area. He was one of the few mechanics willing to participate in air monitoring and speak on the record about it.

Rice refused the offer of a respirator, as did the other eight mechanics who agreed to be tested for the P-I.

"I probably swallowed so much asbestos in the old days that I'm fireproof," he jokes, his laughter a bit forced.

Working mask-free with his bare hands, Rice wrestles a brake drum off the rear wheel of an old bronze Buick and drops it to the ground. A cloud of black dust mushrooms into the air.

"There's a lot of dust in the drum," he says. "That's why I drop 'em -- to get most of that stuff out."

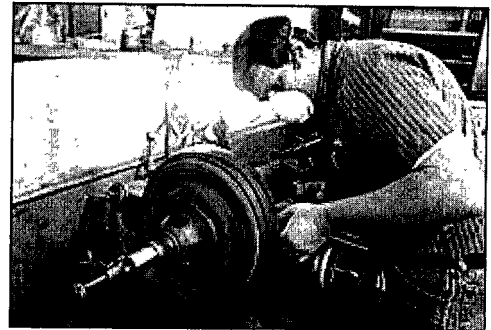
Mechanics need a clean surface to remount the new brakes.

"When I started doing this back in '64 we used a whisk," he says, preparing to hose down the exposed brake surface with water.

"I should be wearing a mask," he says with a laugh. Dust forced into the air by the stream of liquid hitting the collecting pan swirls near his face. "But nobody does."

Rice hands the drum off to Larry Carpenter, 35, who will turn it on a lathe to restore its shape before it's replaced. Carpenter puts a paper mask on for the job, something he never used to do and something that offers little or no protection against the deadly fibers. He's worried now about asbestos.

"I've been doing this for 18 years and I never thought about it," he says. "All the manufacturers, all the after-market parts suppliers, everybody who sells parts -- that's all you heard -- no asbestos."



Mechanic Larry Carpenter at 1st Tire and Wheel turns brake drums on a lathe to restore their shape. Carpenter wears a paper mask, which offers little or no protection against asbestos fibers.
Meryl Schenker/P-I

For a century, asbestos has been used to line brakes. The heavy woven fiber tolerates heat better than most materials.

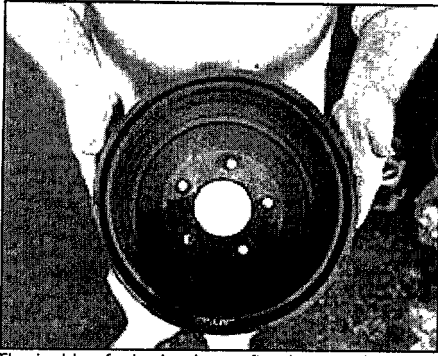
Asbestos has been used to line brake shoes, half-moon-shaped metal parts inside the brake drum, which is sandwiched between the wheel rim and the wheel hub. When the brakes are applied, the brake shoes are forced into contact with the inside surface of the brake drums to slow the rotation of the wheels.

Analysis of the old brakes Rice removed from the Buick showed 55 percent asbestos. The dust covered his clothing and hands, and the floor and work area contained more than 17 percent of the chrysotile fiber. The results of the air monitoring showed dangerous levels of the cancer-causing dust was in the air he was breathing.

"This stuff can be killing you and you'd never know it until you were dead," he said, reacting to the test results.

Early warnings

In the 1970s and 1980s, the EPA, the Occupational Health and Safety Administration (OSHA) and the U.S. Public Health Service all worried about the asbestos-caused deaths of thousands of mechanics who worked on brakes and clutches.



The inside of a brake drum often is coated with a black dust containing asbestos. Mechanics often hose down the drums with water, forcing the dust into the air, where the asbestos fibers can linger for hours or even days.

Meryl Schenker/P-I

An accurate death count may never be known because the impact of asbestos-related disease occurs from 15 to 40 years after exposure.

Plainly written, blunt and graphic descriptions of the cancer dangers were produced and shipped to all public high schools and vocational-technical schools in the United States in 1986 and 1987, said Steven Johnson, EPA's deputy assistant administration for the Office of Prevention, Pesticides and Toxic Substances.

The government warned that:

"Asbestos released into the air can linger long after a brake job is done and since asbestos can spread 75 feet from the work area, it can be breathed in by everyone inside a garage, including customers.

"Asbestos can be carried on work clothing, contaminating the family car and home. This can cause asbestos disease among family members."

But since the early '90s, government safety efforts -- at the state and federal levels -- have stagnated. Federal research programs to find ways to control asbestos exposure among auto workers slammed to a halt. The government quit paying for them. Auto worker exposure was no longer a priority.

Interviews with state and federal occupational health and safety agencies and the EPA garnered the same comments: There is no indication that auto workers are still being harmed by asbestos. But the same agencies reluctantly conceded that they hadn't checked.

"We don't know how many cars that pull into service stations to have their brakes relined have old asbestos linings. We don't know whether these workers are being exposed. We just don't know," said Peter Infante, OSHA's director of the Office of Standards Review.

Interviews with state and federal officials uncovered only a handful of inspections during the past five years specifically for asbestos exposure of brake workers. None was found where air sampling for asbestos was done at repair stations.

"If you don't do air monitoring, you can't determine compliance," Infante said.

EPA's Johnson said his agency "is concerned for anybody exposed to asbestos."

But when asked if EPA had done anything in the past five years to determine whether auto mechanics were still being exposed to lethal levels of asbestos, Johnson said, "No. We have not gone out and tried to search that information out."

In 23 states, OSHA has given the responsibility for worker safety to state government.

"I am unaware of any OSHA State Plan states that are currently targeting auto-repair shops for asbestos exposures," said Keith Goddard, president of the association representing those state programs.

Of the dozen OSHA states contacted by the P-I, all but one, including Washington, said they believed the problem of asbestos in brakes no longer existed, and that they did little or no routine air monitoring of gas stations for asbestos.

"We don't specifically target (auto repair shops)," said Barry Jones, manager of enforcement for Oregon OSHA. "We haven't targeted it because it's mostly gone."

North Carolina doesn't either.

"In the three years that I've been here, it's not been an issue," said Bob Andrews, director of North Carolina's OSHA program. "Most brake pads don't have it anymore."

'It was banned'

Those most at risk -- the mechanics -- believe there is no longer asbestos in brakes. In interviews with 143 repair-shop managers and owners, auto-parts salesmen and mechanics across the country, 137 of them said there was nothing to worry about because the government outlawed the use of asbestos years ago.

At a Seattle outlet for a national parts chain, a sales clerk said, "None of the brakes we sell have asbestos. It was banned." The clerk invited a reporter into the storeroom to see for herself.

The first box of brakes the clerk handed her was plainly marked "contains asbestos."

He told her the interview was over and asked her to leave.

Consumer Product Safety Commission spokesman Russ Rader said, "Our legislation prohibits us from regulating car parts."

That responsibility, Rader said, falls to the National Highway Traffic Safety Administration. But an NHTSA spokesman was unaware that asbestos was still being used in brakes.



Bill Rice, manager of a 1st Tire and Wheel center, has been in auto repair for decades and says he knows he should wear a mask when he works with brakes. "But

nobody does," he adds.
Meryl Schenker/P-I

"That (asbestos) hasn't been allowed in brakes for some time," said NHTSA spokesman Tim Hurd. "We don't test for asbestos in car brakes. It's not covered by any of our safety standards."

NHTSA asks brake manufacturers to certify that their brakes meet certain performance standards, such as stopping distances, but does not require brake manufacturers to list the ingredients in their brakes.

"That's not something we have jurisdiction over," he said.

Even scientists and doctors who specialized in researching asbestos exposure to auto workers admit they didn't know asbestos brakes were still being sold.

"I'm surprised there was asbestos. I was startled at the numbers," said Dennis O'Brien, acting deputy director of NIOSH's division of applied research and technology, when asked about the results of the P-I's testing.

"I thought the EPA had banned it 10 years ago and that the ban had taken effect. In addition, I thought the product liability would have forced it off the market."

In 1989, EPA did succeed in getting a ban against all asbestos products, but it was short-lived. Two years later the Canadian and U.S. asbestos industry sued EPA in federal court and succeeded in getting the ban thrown out -- not on its scientific merits but on the agency's cost-benefit analysis.

In 1993, the agency came to the brink of getting all makers of cars, trucks, buses and motorcycles for sale in the United States to voluntarily agree to halt the use of asbestos within a year. Again, the asbestos industry intervened and threatened to file antitrust suits. Again, the effort failed. (See accompanying story.)

"It frustrated everyone involved," Johnson said. "EPA believed we had exhausted the remedies available to us under our legal authority."

The only government initiative to squeeze past asbestos interests was a set of workplace standards for asbestos workers adopted by OSHA in 1994. But even those were a watered-down version of the protection that OSHA's staff and consultants felt was needed.

That final effort was followed by a near-total halt to monitoring asbestos exposure in auto workers.

"OSHA should have been testing," Lemen said. "NIOSH should have been testing, and EPA should have been testing."

"For them to say there is not a problem based upon the fact that they've done no testing is irresponsible."

Replacement-parts risk

Brakes on many new vehicles may not contain asbestos.

The makers of 40 cars and light trucks were questioned by the P-I. All but two said they had stopped using the lethal fibers. General Motors said asbestos was still being used in its Chevy Cavalier and the Pontiac Sunbird and Sunfire models. Chrysler refused to answer the question "for competitive reasons."

Clearly the lingering risk may not be with asbestos friction material on new vehicles, but with existing brakes and those being sold as replacements.

The P-I bought sets of new replacement brakes for eight different models of cars and light trucks. Four were labeled as containing asbestos, two had no markings and two were marked "asbestos-free."

Laboratory analysis of the brakes showed that three of the four labeled "asbestos" contained chrysotile and one of the unmarked brakes contained large amounts of tremolite and actinolite, both cancer-causing asbestos fibers. One of the "asbestos-free" brakes also contained tremolite, but at a lower level.

The tremolite is believed to be a contaminant of the vermiculite that most manufacturers use as a filler in brakes. Other makers have used larger amounts as a substitute for asbestos.

If what brake suppliers estimate is accurate, hundreds of different styles of replacement brakes will continue to be made with asbestos and mechanics will continue to play Russian roulette with bullets in half the chambers.

It is estimated that as many as 15 companies manufacture brakes for new cars and between 25 and 50, many of them mom-and-pop operations, are in the business of rebuilding old brakes. Identifying those companies is difficult. In many cases, manufacturers' names and addresses do not appear on the packaging for the brakes.

The P-I identified six manufacturers. Only one, the nation's largest producer of brakes and the maker of the well-known Raybestos brand, agreed to talk on the record.

"There may be a perception that asbestos doesn't exist in brakes being sold today, but it does exist and in significant numbers of products sold by various manufacturers, including us," said Alan Morrissey, vice president of product development for Brake Products Inc. in McHenry, Ill.

"We would like to see asbestos in brake linings banned by the government. It will be safer for everyone. Nevertheless, by next year we will no longer produce any asbestos-containing brakes. It's our decision."

Brakes that the company sells under the Raybestos brand all carry warnings to avoid dust.

"The reasons we have warnings on all of our boxes, whether they have asbestos or not, is that one never knows which fiber in the future will have the potential of having some untoward health problems," Morrissey said.

Even when EPA believed it would get a voluntary ban from automakers, its technical experts worried over the "potential for enormous exposures" from replacement brakes.

"There appears to be little accountability or control that we or any other agency can put on this segment of the automotive industry," said a 1993 EPA memo that talked of "scores of mom-and-pop operations rebuilding brakes with asbestos."

"We have no reason to believe that (they) will ever voluntarily stop using asbestos. The profits are too great. The controls are too loose," the memo continued. It warned that unless asbestos was also removed from replacement brakes, "deaths from asbestos-related diseases 20 or 30 years down the road will be counted in the tens of thousands."

Bob Pigg, president of the Asbestos Information Association, an industry trade group, insists that there is no danger in asbestos brakes.

"The public's exposure to asbestos, if any, is just negligible. There is no public-health risk from using asbestos as a friction material, absolutely none at all," he said.

Deaths expected to rise

Mount Sinai professor Nicholson's extensive research supported the EPA's fear of continuing dangers to auto mechanics.

He estimated about 6 million mechanics have been exposed to asbestos in brakes since 1940, and that those exposures are now resulting in about 580 excess asbestos-related cancer deaths a year.

Within 10 years, the expected rate of mesothelioma deaths alone will be 200 a year from exposure to brake dust, he said.

Other experts acknowledge that for each case of mesothelioma that is diagnosed, there may be dozens of cases of asbestosis.

Deaths caused by exposure to asbestos brake products had been expected to peak about 2012, but if asbestos is still in brakes being sold today, it could mean the deaths would continue to climb.

"This would push the peak back," he said. "Cancer from asbestos is a horrible way to die."