

June 1, 1979

To: Abestos Study Committee

Subject: Report on Exposure to Asbestos by the IIT Research
Institute for EPA

The Asbestos Information Association recently forwarded a copy of a report prepared by the IIT Research Institute for the Environmental Protection Agency (EPA) Office of Toxic Substances. A copy of the report is enclosed with this memo.

Vehicular brake lining servicing is mentioned several times in the IIT report and is considered by those who prepare the report a major source of asbestos exposure to the general population. I will review a few of the highlights where brake servicing is emphasized, and then add some comments concerning the IIT Research Institute report.

On Page 2 of the report, the following statement is made:

Most of the exposure assessment effort for commercial use has been devoted to activities of high exposure levels such as installation and removal of insulation and vehicular brake lining servicing and replacement.

In other words, brake lining servicing, according to this report, produces an asbestos level similar to that for the installation and removal of insulation. Further, all brake repair shops are then grouped into one category which is one of high exposures. It is difficult to reconcile this high exposure level from periodic brake servicing in the local garage, gas station or national/regional chain type brake shops with that in a fleet garage, municipal garage or other location where machining takes place. Most brake repair shops, where the bulk of passenger cars and light trucks are relined, do not machine the friction materials. Machining does take place in fleet garages, municipal garages and custom shops where mechanics may drill, grind or bevel linings periodically through the day. This latter shop is a minority. For that reason, grouping of all brake repair facilities in one category is grossly misleading.

In the conventional brake repair shop such as Sears, Montgomery Ward, Goodyear, Midas, or the local garage, the main exposure to dust would be the blowing out of brake lining wear debris from brake drums, or from around the brake calipers. We have recommended that vacuum cleaning methods be used for this dust removal. However, this wear debris has about 2% asbestos fibers in the dust. And this blowing is done for short periods of time--for less than a minute for each brake. And in studies that Dr. Rohl and others have made it has been noted that the chrysotile fibers in the brake lining wear debris are too short to be measured by optical microscopy, indicating that they are shorter than five micrometers in length. There have been other studies concluding that short fiber asbestos (less than 5 microns) is not the cause of asbestos related disabilities. In other words, (1) the average brake shop has a low period of dust exposure; (2) most of the wear debris is not asbestos; (3) that part which is asbestos is shorter than 5 microns; and (4) there are studies which conclude that asbestos-related disabilities are not caused by short fiber asbestos.

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On Page 10 the report states that "a particularly high exposure risk is indicated for brake lining repair." This again gets into what is an average or typical brake shop. The Sears-Montgomery Ward-Goodyear-Midas type shop and the local garage cannot be characterized as high risk occupations. The average small brake shop will probably do no more than two brake jobs a day. The gas station or corner garage may do a brake job once a week or once a month. The national chains may do five or ten brake jobs a day, but these would be handled by 3 or 4 mechanics, spreading the exposure to the equivalent of 2 or 3 brake jobs per day per mechanic. Assuming these shops do no machining--which is the typical case--the only exposure will come from blowing out brake drum dust which will happen once for each vehicle a day-- probably for no more than 2 or 3 minutes per vehicle. If a shop does not machine brake linings, releasability for this type shop would be Code 3 instead of Code 2 assigned by IIT. For duration, considering blowing out of the dust, the Grade would be Code 3 versus Code 1 assigned by IIT. Using these arbitrary exposure codes we would rate the average brake shop versus the brake repair facility with machining operations as follows:

	Average or Typical Brake Shops (No Machining)	Commercial Brake Repair Facility (Machining operations)
Releasability	3	2
^A Frequency	1 (or 2)	1
Duration	3	1
Population Exposure	2	2

^AFor a gas station or corner garage this would be Code 2.

The result of these ratings for the average brake shop would be an Exposure Index of 6 or 7, rather than the 1 indicated in Table 2, on Page 11.

On page 34, the continuation of Table 10, the report indicates the "Number of Employees Continuously Exposed" as 927,000 for Brake Service and Repair. Again, no attempt has been made to classify the brake shops according to whether they install linings without machining, or install after machining. It is more likely that there are no more than 5,000 employees in brake repair work continuously exposed to asbestos fibers. The other 922,000 are occasionally exposed as indicated for the typical repair shop.

My comments are made from a quick review of this report which came into my hands only a few days ago. The AIA met with EPA on this on May 30, 1979. This was not sufficient time for us to comment on the IIT paper. However, if members wish to send their comments to me I will attempt to have them forwarded to EPA for their consideration.

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Copy-Board of Directors

E. W. Drislane
Executive Director