

September 27, 1976

TO: Asbestos Study Committee

SUBJECT: Asbestos Dust Control in Brake Service Centers

As a matter of background we have been asked several times over the past 2 or 3 years by the Asbestos Information Association (AIA) to get something together concerning asbestos in brake linings. Comments have been made concerning the AIA booklet "Asbestos and Brake Linings," that it is purely a reference source providing background for the general public. It does not accomplish anything as regards educating users of asbestos bearing brake linings.

Comments were passed at committee meetings to the effect that the booklet is really of little value. However, no action has been taken by the committee as regards providing AIA with something of more value. In June 1974 I received a memo from Mr. I. H. Weaver concerning a write-up that had been done by Mr. Moalli of Raybestos-Manhattan. It was a general write-up on precautions that could be taken in brake shops when working with asbestos bearing brake linings. Mr. Weaver had several editing changes and I made some changes to the write-up. This subject was dormant since then, but I resurrected it when I received two recent requests concerning recommendations in the brake service shops. One letter was from State Farm Fire and Safety Casualty and the other was from MOTOR Magazine. Copies of the correspondence are enclosed.

I believe if industry is to present its side concerning asbestos, I had to reply to these inquiries. We should make objective and responsible recommendations. For that reason, I went to the files and pulled out this write-up that had been forwarded by Mr. Weaver in 1975. This write-up is the best I have. I took the liberty of using and sending it to those inquiring about asbestos in the brake shops. I indicated that it is in draft form and I do not have a final write-up. Engineers at Raybestos-Manhattan are reviewing this currently to see if changes should be recommended. I would very much appreciate it if members of the Asbestos Study Committee would review this write-up and make recommendations. If there is some significant area we have missed, we would appreciate comments and recommendations in that area. In the meanwhile, until I get a final draft on these recommendations, I will send copies of this draft.

Over the past week or so I have been in contact with Mr. I. H. Weaver who had earlier served as Chairman of the Asbestos Study Committee. Mr. Harry Wagner, present Chairman, has been quite ill for the last several weeks. Thru the President, I have asked Mr. Weaver to serve as acting Chairman of the Asbestos Study Committee until the membership of this committee is settled. I have, therefore, been working with Mr. Weaver concerning this write-up.

E. W. Drislane
Executive Director

P.S. After preparing this memo, Mr. Weaver sent me the enclosed "Recommended Procedures for Reducing Asbestos Dust During Brake Servicing."

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ASBESTOS DUST CONTROL IN BRAKE SERVICE CENTERS

INTRODUCTION

Most friction materials in use today contain about 50% to 60% asbestos fiber. A great deal of publicity has been given to the fact that when inhaled or ingested, asbestos fiber may be injurious to your health.

When incorporated into brake linings, the asbestos fiber is "locked" into a matrix of other materials and presents little hazard. Furthermore, studies have shown that as brake linings wear, the great preponderance of the product of that wear is no longer recognizable, physically or chemically, as asbestos dust. The majority of problems that arise in brake service areas of garages are those of precaution and good housekeeping.

PRECAUTIONS TO BE FOLLOWED BY BRAKE SERVICE SHOPS

If it is assumed that there is free asbestos dust in brake service shops capable of being made airborne, and the following precautionary measures are taken on this basis, problems of asbestos dust should be essentially eliminated.

PERSONAL

1. Use coveralls as protective outer clothing. This is done quite frequently by mechanics to save wear and tear on their personal clothing, but if this suggestion is considered as related to asbestos fibers, it would tend to eliminate the transport of any fiber to a mechanic's home or outside of the brake service shop. The coveralls should be laundered frequently, and care should be taken in handling soiled coveralls to prevent generation of airborne fibers.
2. Develop good personal hygiene practices. Washing thoroughly before eating will prevent the ingestion of any foreign matter. Food should not be stored or eaten in the work area.
3. It is a well-published fact that smoking is injurious to your health. When coupled with asbestos dust, problems are accentuated. Do not smoke.

THE BRAKE SERVICE SHOP

1. Keep the entire area dust free by utilizing a vacuum cleaner and/or periodic floor washings. Particular attention should be paid to window ledges, frames, overhead lights, girders, rafters or any inaccessible place that will collect dust. This should improve working conditions and mechanics' morale. NEVER use an air hose or any other method that would tend to cause the dust to become

airborne. This includes sweeping with a broom. If it is deemed necessary to sweep the floors, make sure a sweeping compound or dust suppressant is used to minimize the dust.

2. Vacuum cleaners for asbestos-containing dust should be in good condition, without leaks, and equipped with extra high efficiency filtering systems capable of screening out the smallest of dust particles.

BRAKE SERVICE WORK

1. When removing the drums or disc brake rotors, place each down carefully so that as much of the dust as possible is contained. For drums, the open end should be placed upward.
2. Remove all parts necessary, including the shoe and lining assembly and place carefully alongside of each drum/rotor. Again, handle carefully so as not to cause any airborne dust.
3. Vacuum each backing plate and drum/rotor with an attachment that will provide the greatest amount of suction (such as the radiator cleaner attachment as used in the home). Repeat the procedure with an attachment that is used for dusting. This usually has bristles or a brush that will loosen the dust particles and draw them into the vacuum. Repeat the procedure for each wheel followed by a general vacuuming of the floor in the general work area. NEVER blow dust away with an air hose. The vacuuming procedure should not take long and will eliminate most airborne dust, creating better working conditions. Make sure that the drum/rotor is vacuumed along with the ancillary parts.
4. Recondition, repair or replace parts of the hydraulic system.
5. Lightly sand the bosses on the backing plates or the appropriate metal-to-metal contact points of the disc brake. Lubricate these points.
6. Remove the newly relined brake shoes from their box and return the used shoes into the same box, being careful not to disturb any dust created by wear or handling of the brake lining.
7. Most brake shoe and lining assemblies received in the service shop for passenger cars and light trucks need not be ground or "arced". Most are already cam or contour ground.
 - (a) for drum brakes up to .030" oversize in diameter, use the standard thickness lined brake shoe without further grinding.
 - (b) for brake drums .030" and over, an oversize thickness lined brake shoe will fit properly without further grinding.

If grinding is necessary (as may be the case of heavier truck shoes), use only a grinding apparatus which is adequately equipped to collect the dust generated. This is very important and, if a doubt exists, the equipment manufacturer should be consulted concerning suitability of the dust collection system for use with asbestos.

8. If the drum is turned, do not use an air hose to blow out the metal chips. Carefully remove the drum from the lathe, turn over to empty the loose chips and wipe the surface with a clean cloth moistened with denatured alcohol.
9. Reline the vehicle in the normal manner.

You will find that this procedure will not increase the time required to reline a vehicle if the operations are organized properly. Working conditions for all concerned will be more pleasant and safer. This applies as well to other operations surrounding the brake service areas. It should enhance the feeling in the mechanic that should make him better organized with respect to his tools and procedures to be followed. Remember, the air hose should never be used around brake service work. Even though studies have shown that only 2-3% of the products of brake lining wear may be in the form of asbestos fiber and the fibers in the brake linings are "locked in", good work practices can eliminate all dust problems.