

December 13, 1977

TO: ASBESTOS STUDY COMMITTEE

SUBJECT: Abt Associates--OSHA Contract for "Trainer's Guide"

On December 8, 1977 I forwarded to the Committee Members a copy of drafts of the "Trainer's Guide" prepared by Abt Associates under a OSHA contract. I made various enclosures with that memo. At that time I did not have my comments ready concerning the draft which I had reviewed.

I am now forwarding for your consideration comments that I have made concerning this "Trainer's Guide". I would appreciate your reviewing both the draft that you were sent earlier and my comments to help in making a final submission to Abt Associates.

In particular I'm looking for any inaccuracies or debatable issues in my comments as well as items that I may have missed in my review of the Abt Associates draft.

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December 13, 1977

TO: ASBESTOS STUDY COMMITTEE

SUBJECT: Abt Associates--Development of Training Materials for those
Working in Brake Shops

This past week I received from Abt Associates Inc., a consultant working for OSHA, a copy of a draft "Trainer's Guide" for those working with asbestos in brake shops. Mr. Bob Mereness of the Asbestos Information Association had suggested that Abt Associates send us this material so that we could review it and comment on technical accuracy and other phases of the guide. Back last February I had met with an individual from Abt Associates and Mr. Ike Weaver concerning training materials that they were working on in response to this OSHA Contract. This is the first copy I have seen of their work, as they had not contacted me since their initial discussion last February.

I forwarded last week to Committee Members one copy each of the draft as I received it. I also enclosed a copy of their letter to the Asbestos Information Association of November 18, 1977 asking for comments. Also enclosed was their December 2, 1977 letter to the Institute asking for our review. You may note in their letter of November 18, 1977 that they would appreciate the comments in about two weeks time. Obviously two weeks has already passed since November 18th. It is going to take longer than this for us to prepare comments.

In reviewing the draft copy please note that some pages are missing. Actually the missing pages were blank and had no content, and therefore I did not copy them. The blank missing pages are 10, 40, 52, and 62. As we should make some comments to Abt Associates I have outlined briefly some items with which I take exception.

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Pages 3, 37, 80

Reference is made to "The Backyard Mechanic." I do not believe the selection of "The Backyard Mechanic" is proper reference material for this guide.

"The Backyard Mechanic" is exactly what it infers (a write-up for the amateur interested in servicing his own vehicle). The first section in "The Backyard Mechanic" has two paragraphs on brakes. The brakes illustrated are drum brakes without automatic adjuster parts. These brakes must go back over ten years. Just about all Bendix type servo brakes that are in cars today have automatic adjusters. A later section in "The Backyard Mechanic" has four pages on work with disc brakes. This again is tailored for the part-time auto mechanic and its illustration shows what appears to be a Volkswagen caliper disc brake. This particular brake is not representative of the caliper disc brakes used on most American vehicles. The servicing routine on this brake is not representative of what mechanics in brake shops would be working on. As this draft "guide" is aimed at brake shops, I do not believe reference material should include instructions aimed at the "do-it-yourselfer."

A more appropriate reference might be the repair manuals available from the major car manufacturers or manuals such as "Chilton Auto Repair Manual."

Page 4

It is stated: "It is now recognized that asbestos can cause several types of cancer among workers who breathe or swallow the fibers." It has unquestionably been proved that cancer can be caused by exposure to asbestos fibers. While there is a definite correlation between gastrointestinal cancer and exposure to asbestos, I do not believe that it has been established that ingested (or "swallowed") asbestos causes cancer. I think that this sentence might better be expressed: "It is now recognized that asbestos can

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cause several types of cancer among workers exposed to the fibers."

Pages 21 and 61

Comments are made about the increased risks of those workers who smoke as compared to those who do not smoke. On page 21 it says that: "Smokers have up to 92 times the lung cancer risk as non-smokers who do not work with asbestos." On page 61 it says that: "We all know that smoking increases people's chances of getting lung cancer. Well, for asbestos workers, that fact goes not only double but about eight times. Studies of asbestos workers show that those who smoke have eight times the lung cancer risk of those who don't and about ninety times the risk of the general non-smoking population." I believe Dr. Selikoff has stated also that non-smokers working with asbestos have no more susceptibility to lung cancer than non-smokers from the general population. It might be that this attribution to Dr. Selikoff is called for to put the incidence of lung cancer into proper perspective. It might also be a strong incentive to the brake shop workers to not smoke or to give up smoking.

Page 25

The draft states: "This picture shows maximum and average asbestos levels which were measured around certain typical brake shop operations." I question the use of the adjective "typical." I believe the shops in question were New York maintenance shops working on heavy segments for sanitation trucks and the like. This data appears to be that which was developed in the paper by Dr. Rohl entitled, "Asbestos Exposure during Brake Lining Maintenance and Repair." I do not think that the shop referred to in Dr. Rohl's paper could be called typical. Its operations were primarily in the truck service area. The "Trainer's Guide" for brake shop managers should be tailored to the shops like Sears, Midas, Auto dealers and others

working on passenger cars and light duty vehicles. A shop such as these would be considered typical. There is considerably more grinding, drilling, chamfering and cutting in a shop servicing trucks than in a shop servicing passenger cars. I believe that this guide should state exactly what type of shop the chart refers to and point out that this is not a typical brake shop operation. While the absence of dust collection equipment in the shop cannot be considered typical, the blowing out of dust from brakes would be typical.

Page 37

The draft states that the first operation in brake maintenance shops which is "known to produce dangerous levels of asbestos dust in the air" is "blowing out brake drums with compressed air. This is the chief hazard in automobile brake shops."

There is a question as to whether the decomposition products of used brake linings are the chief hazards in automobile brake shops. While this may be the case, I do not believe that it has been established that dust from the decomposition products of brake linings blown out with compressed air is the dangerous form of asbestos dust in the workplace. It is more likely that grinding, chamfering, drilling and cutting of new brake materials may be a more serious problem as regards producing respirable asbestos dust which would be the known dangerous ~~asbestos~~ asbestos product in the workplace.

Further the draft indicates that ^{the dangerous} operations are the grinding of used truck brake linings and the beveling of new truck brake linings. These questionable conclusions from a non-typical shop are apparently the result of relying strictly on the Rohl report of operations in a truck shop. My observation is that very few automobile brake shops bevel (or chamfer) new truck brake linings. Most do not even work on truck brake linings. There may be

more problems with grinding, drilling and chamfering (beveling) operations in a shop which feels that they have to adapt materials to fit particular brakes. Most shops do not do grinding, drilling or chamfering of brake linings before installation. Most lined brake shoes are usually ready for installation without additional machining.

It might also be commented at this point that the authors' emphasis on blowing out of brake drums and grinding and beveling brake linings, and with illustrations always showing drum brake linings, that the new and now common disc brake linings have not been mentioned. Obviously disc brake linings are widely used and are on over 50% of the brakes on new cars today. The only drum brake linings are on the rears. In many cases these drum brake linings are not relined as often as the disc brake linings. There seems to be too much of a reference to drum brake linings.

I agree that blowing out brake drums with compressed air is not a good practice. I do not believe that it has been established that this is the chief hazard in automobile brake shops. The wording should refer to blowing out "brakes" with compressed air. Most times the mechanics take the air hose directly over to the vehicle with disc or drum brakes and blow out the dust from around the caliper or cylinders before proceeding with the reline. Blowing out dust from brake drums or disc brakes is a bad practice and should be discontinued. I believe in the foregoing sections that illustrations should be made to disc brakes when they talk of drums throughout the content of this paper.

Page 42

Again the illustrations are for brake drums or lining for drum type brakes. It might be well to have an illustration of someone standing and vacuuming the dust from the disc brake assembly on the car.

Page 43

Again it is stated that the worst offender among brake shop operations is blowing the dust out of drums. I agree that this is a common practice that should be discontinued. However, the wording should also refer to disc brakes and my comments on page 37 still apply.

There is another item on page 43 on which I question the accuracy. The draft states that brake linings also contain silica which can cause lung disease and lead which harms the nervous system. The sentence is not correct because brake linings do not necessarily contain silica or lead. While it is true that some brake linings may contain silica and some may contain lead it is more likely that the majority of brake linings commercially used today do not use either silica or lead.

Page 45

The draft states: "Do not use for cleaning brake drums, surfaces, or equipment." It is referring to compressed air nozzles. Again, the specifying of "brake drums" is not proper because mechanics not only use compressed air for blowing out disc brake assemblies but they also use it for blowing out the backing plate assemblies on drum brakes. If such a label is to be used it should read "Do not use for blowing out dust from brakes, drums, discs, rotors or calipers," or some other wording to this effect.

Page 47

Again the draft states: "The first thing the workers should learn is the proper way to clean out brake drums." Again, the emphasis is on brake drums which are now being superseded by disc brakes. It might also be suggested that shops could remove the dust from brake drums by taking them directly to a workbench and tapping out dust on old newspapers which could then be wrapped and put in disposable plastic bags. This is prior to the washing out with a wet rag.

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Page 65

The draft states that the monitoring tests must be done at least every six months. It is my understanding that the monitoring should be done at least every six months where asbestos concentrations can be expected to exceed the 2 fibers per cc limit. If experience in earlier monitoring and in the introduction of good work practices indicates that the concentrations would not be above 2 fibers per cc, I question whether monitoring must be done "at least every six months."

Page 69

In this section the draft indicated how much it would cost for a proper set of measurements. It indicates that the cost would run about \$20-30 per measurement. To get a proper set of measurements it indicated that one should take two samples per work station and four samples per worker. Using the illustration of a brake shop with three mechanics and eight work stations they indicate a need for twenty-eight samples. This is twenty-eight samples figuring two samples for each of the eight work stations and four samples for each worker. I would think that this would scare off the brake shop from the cost of monitoring. It would seem more proper that a hygienist could select two or three typical work stations and one or two workers. While a work station is being monitored a worker ^{may also} is also being monitored. This would cut the number of samples taken to six or ten to monitor the brake shop indicated. I believe that OSHA should give some advice to Abt Associates as regards what they would consider proper monitoring for the illustration that was made. It is quite likely that a small brake shop would take strong exception to the cost involved in making the number of tests indicated in this illustration.

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The foregoing comments are made to assist Committee Members in reviewing this draft. It may be that I am inaccurate in some of my comments and it may be that certain comments should be enlarged on or changed in some fashion. Perhaps other comments are called for. I believe that it is important that the Friction Materials Standards Institute replies to these draft comments. I would appreciate receiving comments from Committee Members from which I could make a final draft and submit it to Abt Associates. Your help on this would be most appreciated.

E. W. Drislane
Executive Director

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