UC 149-2

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INTERNAL CORRESPONDENCE

METALS DIVISION

P.O. BOX 579 - 4625 HOYAL AVE., NIAGARA FALLS, NEW YORK 14302

To (Name) Mr. T. R. Alexander
Division Corporate Distr. - 6th Floor
Location New York, NY

Date April 19, 1978
Originating Dept. "Calidria" Asbestos
Answering letter date
Subject DOT Docket HM-160

PLAINTIFF'S EXHIBIT
UC-3527

Copy to Messrs.
C. R. Allenbach
T. W. Carmody
W. G. Kahler
W. E. Martin
R. M. Mitchell
J. L. Myers
A. C. Sada
E. W. Shortridge
J. J. Sibley
W. C. Thurber
File

Dear Mr. Alexander:

Mr. Myers has asked me to respond to your letter of March 14, 1978 on the above-noted subject. I am very much involved in the drafting of an asbestos industry response by the Asbestos Information Association/North America. A copy of a preliminary analysis of the proposed regulation and a draft AIA/NA response are enclosed.

In the response we wish to make the points of lack of proper documentation of "unreasonable risk" and the unsuitability of rigid containers for the record in case it is necessary to move into the courts. The real immediate problems are the definition of "occupational exposure to asbestos" and the ban on the use of open trucks. The requirement that only the consignee may unload also presents some problems.

The basic strategy is to try to trade off considerably more extensive labelling for relaxation in the requirements. This approach was selected on a tentative basis by the AIA/NA Executive Committee to see how it looked on paper. It is quite likely that considerable revision in the draft may occur, so your comments are requested.

I have discussed the question of a Union Carbide response with Mr. Thurber. Our feeling is that if the AIA/NA response is satisfactory to UCC interests, there is little to be gained by a separate response. If not, we will respond separately.

I will stay in contact with you as this matter is finalized.

Very truly yours,
H. B. Rhodes/rm
Harrison B. Rhodes

HBR/rmm
Encs.

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[4910-60]

DEPARTMENT OF TRANSPORTATION

Materials Transportation Bureau

[49 CFR Parts 172, 173, 174, 175, 176, 177]

[Docket No. HM-160; Notice No. 78-3]

TRANSPORTATION OF ASBESTOS

AGENCY: Materials Transportation Bureau, DOT.

ACTION: Notice of proposed rulemaking.

SUMMARY: The amendments proposed herein would require certain kinds of asbestos to be shipped by all modes in non-specification, rigid, airtight packagings, such as metal or fiber drums; or in bags when shipped in closed freight containers. The proposals are intended to reduce the risks to property and to the public health and safety associated with the generation of airborne concentrations of asbestos that may result from the packaging and handling of asbestos fiber shipments. The available data clearly indicates that regular, long term exposure to airborne concentrations of asbestos fibers poses a range of carcinogenic and other serious health risks; and recent studies suggest that these dangers are also associated with exposures that are low-level, brief or intermittent.

DATE: Comments must be received on or before May 2, 1978.

ADDRESS COMMENTS TO: Dockets Section, Office of Hazardous Materials Operations, Department of Transportation, Washington, D.C. 20590. It is requested that five copies be submitted.

FOR FURTHER INFORMATION CONTACT:

Alan I. Roberts, Director, Office of Hazardous Materials Operations, 2100 Second Streets SW., Washington, D.C. 20590, 202-426-0656.

SUPPLEMENTARY INFORMATION:

I. BACKGROUND—PRODUCTION/CONSUMPTION/TRANSPORTATION PATTERNS

Asbestos is a generic term used to describe a number of naturally occuring fibrous, hydrated mineral silicates. It includes chrysolite, crocidolite, amosite, anthophyllite asbestos, tremolite asbestos, and actinolite asbestos. These are all asbestiform minerals which, when crushed, produce asbestos fibers with various chemical and physical properties.

Asbestos fibers are generally characterized by high tensile strength and flexibility; and favorable chemical resistance, heat and frictional properties. Certain grades of asbestos can be spun and woven, while others can be laid and pressed to form paper, or used for structural reinforcement of materi-

Rigid, airtight packaging required except bags can be used when shipped in closed freight containers.

Regular, long-term exposures pose a range of carcinogenic and other serious health risks, recent studies suggest these dangers are also associated with low-level, brief, or intermittent exposures. Note the use of the word "suggest".

General comments on the movement of asbestos. Seem to be reasonably correct.

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als such as cement, plastic, asphalt and tile. The asbestos content of these latter products ranges from 5 to 15 percent by weight.

Although asbestos is adaptable to more than 2,000 uses, the construction industry accounts for nearly two-thirds of the United States (U.S.) asbestos fiber consumption. The remaining 33 percent is utilized in a myriad of industrial and consumer products.

During the ten-year period ending 1976, the total amount of new asbestos introduced into the U.S. transportation system averaged approximately 1,700,000 short tons annually. Slightly more than half this tonnage consists of crude or milled asbestos fibers, with the remainder consisting of asbestos contained in products manufactured in whole or in part from asbestos. There is, of course, a lag between the time a shipment of asbestos fibers enters the transportation system and the time that shipment enters the transportation system as a manufactured product.

Growth in the utilization and transportation of asbestos is expected to slowly increase at a rate of about 2 percent per year.

During the entire history of the asbestos industry in the United States, domestic sources have been able to meet only a small percentage of U.S. requirements. Roughly 90 percent of the total U.S. industrial demand for all grades and types of asbestos fibers is thus dependent on foreign imports—with Canada being the major source of supply. In 1975, 93 percent of U.S. imports came from Canada with the next largest suppliers being the Republic of South Africa (3 percent) and the U.S.S.R. (2 percent). Eight other countries shipped smaller amounts of asbestos to the U.S. in 1975.

The transportation pattern for asbestos is characterized by three distinct stages:

In the first stage, asbestos ore is transported from the mine site to a milling plant where the ore is crushed and processed into fibers.

Of the five mills operating in the U.S. as of late 1976, three are located at the mines, but the other two are 32 and 52 miles distant. Transportation is reported to be by open-hopper vehicles such as dump trucks.

The second stage is characterized by the shipment of crude or milled asbestos fibers from the mills (mostly foreign) to industries that use asbestos in the products they manufacture. The largest industry in this category (SIC 3292) as of 1972 consisted of 142 establishments primarily engaged in the manufacture of asbestos textiles, asbestos building materials, asbestos insulating materials for covering boilers and pipes, and other products composed wholly or chiefly of asbestos fibers. Other industries receiving asbestos fibers are mainly industries engaged in the production of asphalt felts and coatings (SIC 2952), hard surface floor coverings (SIC 3996), gaskets (SIC 3293), and paper products (SIC 2261).

General comments on the movement of asbestos and asbestos-containing products. Seem to be reasonably correct.

Three stages of transport noted:

1. Ore to mill.
2. Fiber to user.
3. Finished, asbestos-containing products.

Transportation of ore to the mill site.

Two U.S. mills "reported" to transport ore in "open-hopper" vehicles.

Transport of crude or milled fiber to various users.

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These industries generally receive their shipments of asbestos fibers in pressure packed, five-ply paper or woven vinyl bags weighing about 100 lbs. per bag, with the bags glue-locked to each other and shrink-wrapped to a pallet (wrapped with a film of plastic which is then shrunk). In the aggregate, rail shipments handle about 80 percent of all milled asbestos fibers entering the U.S. transportation system, with merchant vessel shipments accounting for the remaining 20 percent. Packaging for ocean transportation, both for imported and exported asbestos fibers, is changing to containerization. All shipments, for example, from the Union of South Africa have been reported to be containerized. Although rail shipments of asbestos fibers are not yet being containerized, the majority of such shipments are made in sealed, railroad box cars which are routed for the most part direct to the asbestos products manufacturing industries.

The third stage in the transportation of asbestos involves the shipment of manufactured products made wholly or in part from asbestos. Approximately 61 percent of the asbestos used in manufactured products is firmly imbedded or "locked in" such products as floor tiles, asbestos cement pipes and sheets, floor products and plastics. These products generate less airborne fibers than asbestos manufactured products that are friable or in powder form, although at the present time, it is not known whether the transportation of products in either category under current conditions presents an unreasonable risk to the public health and safety. As defined in the Department of Commerce's 1972 Census of Transportation, approximately 92 percent of asbestos manufactured products are shipped by motor vehicle, with rail and all other modes accounting for about 7 percent and 1 percent, respectively.

II. General Effects of Airborne Asbestos Exposure/Evidence of Accidental Release of Asbestos Fibers

The MTB believes it to be firmly established that asbestos, in its several commercial forms, poses serious health hazards to individuals subject to long term exposure to airborne asbestos concentrations. As noted in the 1972 preamble of the Occupational Safety and Health Administration (OSHA) standard on asbestos (37 FR 11318): "No one has disputed that exposure to asbestos of high enough duration is causally related to asbestosis and cancers * * *". Recent new evidence, however, as reported by OSHA, not only tends to confirm this finding but also suggests that serious potential health risks are involved with even relatively low-level, brief or intermittent exposure to airborne asbestos concentrations. Although there is no detailed information available on the amount of asbestos fibers released in transportation, the MTB believes that, in con-

Discussion of Fiber Shipment - Although much of this appears to be correct, there are several important inaccuracies:

1. 3-ply bags of both sized and unsized Kraft paper are quite widely used.
2. In some parts of the country substantial shipments from producer to customers are made in bags on uncovered flatbed trucks.
3. A myriad of smaller users are supplied with bagged fiber from warehouses in open trucks.

Transport of Finished Products - Note particularly the statement ". . . it is not known whether the transportation of products in either category under current conditions presents an unreasonable risk to the public health and safety. The two categories of products referred to are those with "locked-in" fiber and those which are friable. The use of "unreasonable risk" rather than zero risk is also noteworthy.

"Recent new evidence" cited by OSHA is given as the basis for serious potential health risks with "relatively low-level, brief, or intermittent exposure. It is stated that, "Although there is no detailed information available on the amount of asbestos fibers released in transportation" the MTB believes that there is sufficient basis for establishing regulatory control.

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sideration of the carcinogenic and other health hazards associated with asbestos, there is a sufficient basis for establishing regulatory control of asbestos in transportation.

III. Relationship to HM-145

On December 9, 1976, the MTB published an Advanced Notice of Proposed Rulemaking (41 FR 53824) in Docket No. HM-145 entitled "Environmental and Health Effects Materials." In that Notice, the MTB announced that it was considering whether new or additional transportation controls are necessary for certain classes of materials which are not generally subject to the existing Hazardous Materials Regulations.

A large number of comments were received in Docket HM-145. The MTB has concluded that a considerable amount of time and effort is still needed in staff evaluation of these comments before it will be in a position to issue a notice or notices of proposed rulemaking for environmental and health effects materials, either on a comprehensive or on a selective basis.

Large number of responses require time for comprehensive study.

Several comments on HM-145, however, were specifically directed to the idea that transportation regulatory controls for asbestos be established as soon as possible, with the suggestion that asbestos be addressed on an individual basis, rather than writing until the eventual resolution of Docket HM-145. The MTB agrees with the urgency of the views expressed on this matter, and therefore asbestos is being treated separately under this proposed rulemaking.

Several comments urged immediate controls on asbestos. MTB agrees and is treating asbestos separately.

IV. Quantitative Versus Qualitative Standards

In determining that there is a need for transportation controls on asbestos, the MTB has considered the desirability and practicality of utilizing quantitative or qualitative emission criteria or some combination of the two, either as developed by the MTB or as developed by other agencies.

Currently, quantitative permissible exposure limits for asbestos, as promulgated by the Environmental Protection Agency (EPA) have not been established for environmental or non-occupational settings. The EPA's standard for airborne asbestos emissions falls under its "no visible emissions" criterion. This is in contrast to the quantitative criteria established by OSHA for airborne concentrations of asbestos fibers in occupational or worksite conditions. The criteria of OSHA consist of an 8-hour time weighted average standard, and a maximum "ceiling concentration" standard. Both standards are to some extent based on the ability of current devices to measure asbestos airborne concentrations in a systematic, meaningful manner, and are not directly based on any causal or threshold relationship between the standards and the probability of contracting an asbestos induced disease.

Notes that EPA uses "no visible emissions" standard and OSHA a numerical standard.

Claims that both standards are conditioned by measurement device limitations and are not directly based on health risk.

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The MTB believes that its proposed non-specification packaging standards as applied to the transportation of asbestos fiber is an effective and efficient means of precluding potential problems associated with asbestos airborne emissions occurring during transportation; and that they are consistent with the standards of both EPA and OSHA.

Proposal is claimed to be an effective and efficient way to prevent potential problems and is consistent with both OSHA and EPA standards.

V. Scope and Impact

The standards as herein proposed would only apply to the transportation of what are generally regarded as milled or crude asbestos fibers, but would exclude asbestos contained in a natural or artificial binding-material and manufactured products containing asbestos.

Standard applies only to milled or crude fibers. Bound asbestos and manufactured products excluded.

In light of the regulatory controls already in existence or under consideration by other federal agencies, and until such time as the MTB has more specific and concrete information that the normal packaging and handling of these forms of asbestos is such as to create unreasonable asbestos exposure problems, the MTB does not believe their specific regulation in transportation is warranted.

Specific transportation regulation not needed at this time.

In reviewing the potential inflationary and economic impacts associated with the proposed rule, the MTB has determined that such impacts will be minimal. Based on the foregoing discussion of the production and transportation pattern for asbestos shipments, it is clear that the only aspect of that pattern which might experience a cost impact pertains to import and export shipments by merchant vessel. This follows from the fact that the proposed rule would generally require all such shipments to be containerized in contrast to packaging alternatives now available to shippers. However, the cost-differential between these alternative cargo handling methods is not only very small, but a significant portion of such shipments are already containerized, or being containerized.

Potential inflationary and economic impacts are alleged to be minimal.

Main change will be the use of containers in ocean shipments and this is to a considerable extent the current practice.

As proposed herein, a new paper shipping name "Asbestos" would be added to the list of hazardous materials in 49 CFR 172.101. The proposed classification for "asbestos" would be as an ORM-C (Other Regulated Material, Group C).

Primary drafters of this document are A. W. Grella, Technology Division, Office of Hazardous Materials Operations; J. S. Nalevanko, Economist, Materials Transportation Bureau; and Douglas A. Crockett, Office of the Chief Council, Research and Special Programs Directorate.

In consideration of the foregoing, Title 49, Code of Federal Regulations, Parts 172 through 177 would be amended as follows:

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PART 172—HAZARDOUS MATERIALS TABLE AND HAZARDOUS MATERIALS COMMUNICATIONS REGULATIONS

§ 172.10 [Amended]

1. In § 172.101, the Hazardous Materials Table would be amended by adding a new entry, immediately following "Arsine," to read as follows:

These identify applicable sections of the regulation and do not in themselves present any problems.

Note that no labels are required. The ORM-C definition is only required on shipping papers for air and water shipments.

'* (2) Hazardous materials descriptions and proper shipping names	(3) Hazard class	(4) Label(s) required (if not excepted)	(5) Packaging (a) Exceptions	(5) Packaging (b) Specific requirements	(6) Maximum net quanity in one package (a) Passenger carrying aircraft or rail car	(6) Maximum net quanity in one package (b) Cargo only aircraft	(7) Water shipments (a) Cargo vessel	(7) Water shipments (b) Passenger vessel	(7) Water shipments (c) Other requirements
(Add)									
Asbestos	ORM-C	None	173.1090(b)	173.1090(c)	No limit	No limit	1, 2	1, 2	Stow and handle to avoid airborne particles.

PART 173—SHIPPERS—GENERAL REQUIREMENTS FOR SHIPMENTS AND PACKAGINGS

2. § 173.1090 would be added to read as follows:

§ 173.1090 Asbestos.

(a) Asbestos includes any of the following hydrated mineral silicates: chrysolite, crocidolite, amosite, anthophyllite asbestos, tremolite asbestos, and actinolite asbestos, and every product containing any of these minerals.

(b) Asbestos which is immersed or fixed in a natural or artificial binder material (such as cement, plastic, asphalt, resins or mineral ore) and manufactured products containing asbestos are not subject to the requirements of this subchapter.

(c) Asbestos must be offered for transportation and transported in—

(1) Rigid, airtight packagings such as metal or fiber drums, or

(2) Bags when in closed freight containers, motor vehicles, or rail cars, that are loaded by the consignor and unloaded by the consignee.

Note the use of anthophyllite asbestos, tremolite asbestos, and actinolite asbestos.

Exception is provided for products with natural or artificial binder material. Asbestos ore is specifically included. Definition of binder material is vague, however.

Basic requirement is rigid, airtight packaging. Bags are only acceptable in closed freight containers.

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PART 174—CARRIAGE BY RAIL

3. Subpart Heading M would be added immediately following § 174.812 to read as follows:

Subpart M—Detailed Requirements for Other Regulated Materials

4. § 174.840 would be added to read as follows:

§ 174.840 Special loading and handling requirements for asbestos.

Asbestos must be loaded, handled, and any asbestos contamination of rail cars removed, in a manner that will prevent occupational exposure to airborne asbestos particles. (See § 173.1090 of this subchapter.) *

PART 175—CARRIAGE BY AIRCRAFT

5. § 175.640 would be added to read as follows:

§ 175.640 Special requirements for other regulated materials.

Asbestos must be loaded, handled, and any asbestos contamination of aircraft removed, in a manner that will prevent occupational exposure to airborne asbestos particles. (See § 173.1090 of this subchapter.) *

PART 176—CARRIAGE BY VESSEL

6. § 176.906 would be added to read as follows:

§ 176.906 Stowage and handling of asbestos.

Asbestos must be stowed, handled and any asbestos contamination of vessels removed, in a manner that will prevent occupational exposure to airborne asbestos particles. (See § 173.1090 of this subchapter.) *

7. § 177.844 would be added to read as follows:

§ 177.844 Other regulated materials.

Asbestos must be loaded, handled, and any asbestos contamination of transport vehicles removed, in a manner that will prevent occupational exposure to airborne asbestos particles. (See § 173.1090 of this subchapter.) *

AUTHORITY: (18 U.S.C. 1803, 1804, 1808; 49 CFR 1.53(e) and paragraph (a)(4) of Appendix A to Part 102).

NOTE.—The Materials Transportation Bureau has determined that this document does not contain a major proposal requiring preparation of an Economic Impact Statement under Executive Order 11821 and OMB Circular A-107.

Issued in Washington, D.C., on February 23, 1978.

ALAN I. ROBERTS,
Director, Office of Hazardous Materials Operations.

[FR Doc. 78-5277 Filed 3-1-78; 8:45 am]

*The same basic wording is used for all four paragraphs, i.e., zero occupational exposure is required for loading, handling, and during the removal of any asbestos contamination. This requirement far exceeds the present or any proposed OSHA requirements.

It is also vague and possible unenforceable. Asbestos is ubiquitous and "occupational exposure" is not defined. There is no way to comply with the regulation as written.

Compliance with this requirement could also be interpreted to mean that only rigid or at least fiber-pack containers must be used. Bags do become torn in shipment occasionally and there would be no way to clean up.

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D R A F T

4/18/78

Docket Section
Office of Hazardous Materials Operations
Department of Transportation
Washington, DC 20590

Re: Proposed Changes in Paragraphs 49 CFR Parts 172, 173, 174, 175, 176, 177 - "Transportation of Asbestos" as Published in the Federal Register, Vol. 43, No. 42 - Thursday, March 2, 1978

Gentlemen:

The Asbestos Information Association/North America, an incorporated, non-profit organization of 58 firms and corporations engaged in the mining or milling or asbestos fiber and in the manufacture or processing of asbestos-containing products, submits these comments on the proposed regulations regarding the transportation of asbestos. The Department of Transportation should be aware that substantial changes in the packaging and shipping of asbestos have been made over the past ten years. The jute bags used formerly have been replaced by strong, multiwall kraft paper bags and woven or film plastic bags. In some cases the paper bag is also covered or lined with plastic. The bags are stacked as unitized loads on pallets and the pallets are often covered with plastic film. Pellets, compressed blocks, coarse ground asbestos, and water-wetted asbestos have been developed to control dust emissions in specific applications.

The AIA/NA believes that industry practices in the transportation of asbestos have evolved to a point where there is no significant hazard to the worker or unreasonable risk to the public. Worker safety is well covered by the present OSHA asbestos regulations 29 CFR 1910.1001. The only further regulatory requirement that may be appropriate is proper labelling of containers to prevent possible accidental overexposure to persons who are unaware that asbestos is present.

It is recognized, however, that public policy today supports the concept of "cradle to grave" regulation of hazardous substances. Accordingly, although we do not believe more regulations are necessary, we wish to offer our full cooperation in the writing of a standard which will protect the workers and the public and at the same time not place unnecessary economic burdens on small business or on the American consumer who ultimately must pay the cost. Our comments are offered in this spirit.

The four areas in the proposed regulations that are listed below cause particular concern. Each area will be discussed and several suggested changes in the regulation are provided:

1. The finding of "unreasonable risk" to the public.
2. The concept of rigid, airtight packaging as an appropriate container for asbestos.
3. The lack of definition of "occupational exposure to asbestos."
4. Shipment in uncovered vehicles and the ban on handling by anyone except the consignee.

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The Finding of Unreasonable Risk to the Public

The _____ Act of 1974 requires the finding of "an unreasonable risk to the public" as the statutory basis for the promulgation of a regulation. The March 2, 1978 DOT Proposal, Part II, makes the following statement:

> "The MTB believes it to be firmly established that asbestos in its several commercial forms, poses serious health hazards to individuals subject to long term exposure to airborne asbestos concentrations. As noted in the 1972 preamble of the Occupational Safety and Health Administration (OSHA) standard on asbestos (37 FR 11318): "No one has disputed that exposure to asbestos of high enough duration is causally related to asbestosis and cancers." . . Recent new evidence, however, as reported by OSHA, not only tends to confirm this finding but also suggests that serious potential health risks are involved with even relatively low-level, brief or intermittent exposure to airborne asbestos concentrations." (Emphasis added)

The claim is first made that asbestos ". . . poses serious health hazards to individuals subject to long-term exposure to asbestos concentrations." As a matter of fact, mankind has been exposed to naturally-occurring low concentrations of asbestos for as long as we have been on earth. There are no known or identified health hazards from this low exposure. The statement as it stands, without some identification of concentration is both incorrect and basically meaningless.

This same deficiency, i.e. no consideration of concentration, is evident in the incorrect quotation from OSHA (27 FR 11318) cited next and which should have read:

> "No one has disputed that exposure to asbestos of high enough intensity and long enough duration is causally related to asbestosis and cancers." (Underlined words omitted in proposed rulemaking.)

It should be noted that, although the OSHA statement above is much closer to correct, there is still considerable dispute among reputable experts concerning the roles of asbestos type, fiber size, and smoking in the asbestos-cancer relationship.

Finally, a reference is made to "recent new evidence" reported by OSHA which "also suggests" serious potential health risks from relatively low-level, brief, or intermittent exposure. The Asbestos Information Association/North America(1) provided comments to OSHA on this "new evidence" (copy attached) with the following conclusions:

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(1) Asbestos Industry Response to Occupational Safety and Health Administration on Proposed Revision to Asbestos Standard 29 DFR, Part 1910, April 9, 1976, Page _____.

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"Review of the literature indicated that no credible epidemiological studies have been published which would suggest an excess of malignant tumors among persons exposed to no more than 2 asbestos fibers per cc of air (TWA), using the prescribed membrane filter test method. This is a fact simply because there have yet been identified for study no populations the exposure experience of which consistently has been as low as 2 fibers. Since all populations studied to date have been exposed to substantially higher concentrations of airborne asbestos, we can conclude only that an excess of all types of asbestos disease is associated with levels of expousre significantly higher than the level currently mandated to become effective on July 1, 1976."

The MTB concludes this section of the preamble with the statement:

"Although there is no detailed information available on the amount of asbestos fibers released in transportation, the MTB believes that, in consideration of the carcinogenic and other health hazards associated with asbestos, there is a sufficient basis for establishing regulatory control of asbestos in transportation." (Emphasis added)

The justification for the regulation is thus based on:

1. Inaccurate statements regarding long-term exposure which do not consider concentration.

2. Disputed "new evidence" which "suggests" but certainly does not demonstrate any hazard from an undefined low-level, brief, or intermittent exposure.

3. No information on the asbestos exposure level in the transportation activities to be regulated.

We submit that this is neither sufficient evidence nor sufficient documentation to meet the statutory requirement of the finding of "unreasonable risk" needed to promulgate a regulation.

Rigid, Airtight Packages to Transport Asbestos

Although substantial and very important exceptions are made, the DOT proposal specifies "rigid, airtight packagings" as the basic container for asbestos. This concept presents several serious problems.

Asbestos is a fibrous material that packs in shipment which makes it very difficult to remove from rigid containers. There is a serious possibility for increased worker exposure. There are no existing mechanical devices to remove the asbestos from this type of container and it would also be very cumbersome if not impossible to empty rigid containers in the dumping hoods for bags that are now in widespread use. New equipment, not now in existence, would have to be developed.

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As discussed previously, asbestos today is typically shipped in bags which contain 100 pounds or roughly 2 cubic feet. The equivalent rigid container would be a 15-gallon open-head drum equipped with a gasket and seal ring to make it dust tight. This type of container, in large lots, costs $3 each in fiberboard and nearly $6 each in metal. Use of these containers would thus add a cost of $60 per ton of asbestos for fiberboard and $120 per ton for metal. If, for reasons to be discussed latter, all 750,000 tons per year of asbestos used in the United States had to be shipped in this way, fifteen million drums would be required at a cost of $45,000,000 to $90,000,000, depending upon the choice of material.

There is also an obvious problem of the disposal of 15 million rigid containers. Return shipment of a rail car of empty air, i.e drums, from the user to the supplier would, for example, cost approximately $____ each coast to coast and $____ each from Houston to California by rail and _____ or _____ respectively by common carrier truck. There would also be damage that would make some portion of the containers unusable.

It is thus our position that rigid containers are not practical packaging for asbestos. If present methods are proven to be inadequate, better non-rigid containers are a more reasonable and appropriate route. If such changes are really necessary, we will be glad to cooperate in their development.

Definition of Occupational Exposure to Asbestos

Potentially, the most far reaching impact of the proposal results from the wording, which occurs with only minor variations to identify the type of carrier, in Parts 174, 175, 176 and 177. This is illustrated by Paragraph 177.844:

> "Asbestos must be loaded, handled, and any asbestos contamination of transport vehicles removed, in a manner that will prevent occupational exposure to airborne asbestos particles." (Emphasis added)

If it is assumed that "prevent occupational exposure" means what it implies, i.e. zero exposure, some very fundamental problems result. First, asbestos is ubiquitous in the environment and there are no workplaces where there is zero occupational exposure to asbestos. Second, zero or any other extremely low-level exposure requirement, as a practical matter would preclude the use of bag and compressed block packaging. Although relatively rare, with the very large volume of asbestos shipped an occasional broken bag can occur. There is no provision for this in a zero exposure standard. The use of fiber drums would reduce this probability and metal drums would reduce it still further but it would still not be eliminated entirely. The present wording is thus so vague that it can neither be complied with nor enforced.

As a minimum requirement to make this provision workable it is necessary to define an allowable numerical level of exposure including both time-weighted average and ceiling, define a fiber as to length and aspect ratio, and specify an appropriate method of concentration measurement. Additional requirements for work practices, respiratory protection, etc. may also be useful.

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Shipment in Uncovered Vehicles - Unloading by Consignee Only

The requirement that bags cannot be transported in open vehicles also presents some serious problems, particularly to small businesses. There are two areas to consider:

1. Shipment of TL amounts of palletized bags on flatbed trucks.

2. Shipment of LTL Quantities either as pallets or individual bags from warehouses to small users.

The flatbed truck shipments are the result of specific transportation needs and are handled by both contract and common carriers. Examples include, but are not limted to, the movement of product from the mill to the rail shipping point, deliveries to larger users within a limited geographical area from an asbestos mill, and backhaul of asbestos from the supplier to the asbestos user's plant. In this type of thipment the pallets generally are protected by one or more of the following procedures:

1. The pallets are shrink or stretch wrapped with plastic film.

2. The individual bags are enclosed in plastic film prior to palletizing.

3. The entire load is protected with a canvas or plastic cover.

The shipments from warehouses are typically less than truckload, i.e. from a few bags to a few pallets. Although the total tonnage is a relatively modest percentage of the total U.S. usage, it is estimated that 500-1000 business, many of them small, are serviced in this manner. Examples include manufactures of caulks, adhesives, sealants, mastics, reinforced plastics and high-performance specialty industrial coatings. In these cases asbestos is typically used to provide unique properties to a small part of the product line. Although some of this asbestos is transported in closed trucks, a very substantial proportion is not. In this situation the pallets generally are covered with plastic film. Similarly, where individual bags are handled, they too are either covered or lined with plastic film.

The DOT concern here seems to be the need to avoid airborne asbestos emissions to the environment from the moving vehicle. If this is the case, it is more reasonable and appropriate to require that this packaging be such that there is no visible leakage of asbestos or to cover the entire load in a manner that prevents asbestos from reaching the environment. This can and is being achieved in open vehicles today. Prohibition of their use is not needed.

The requirement that bags shipped in closed trucks must be unloaded only by the consignee also impacts the small volume user adversely. Common carrier shipments of small lots cannot be transferred or consolidated by the carrier. We believe that today's asbestos packaging combined with proper warning labels to protect the worker from serious exposure in the rare case of accidental damage to a shipment satisfies that statutory requirement of "no unreasonable risk" and this added limitation is excessive.

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In conclusion, the only area in the transportation of asbestos by present procedures where there is a potential for serious over-exposure is an accident where the container is badly damaged and where personnel unfamiliar or untrained in the handling of asbestos are involved. We believe it is neither necessary nor practical to require very expensive containers that do not completely eliminate the possibility of risk. Unnecessary risk to the public can be avoided by proper warning labels on the present containers. To this end it will be recommended that an ORM-C label in a form to be described in the next section be required for the largest container in any asbestos shipment. By largest container is meant the bag if a single bag is shipped, the pallet or pallets in a LTL or LCL shipment, or the truck, rail car or container for CL, TL, or full container shipments. In this way proper precautions can be taken if an accident should occur.

Recommended Changes in Proposed Regulations

Before suggesting changes it should be stated that the AIA/NA is in complete agreement with the DOT decision to exclude finished products with bound fiber from the regulation. With appropriate and we believe very reasonable changes in the definition of "occupational exposure to asbestos" there is a viable alternative to rigid containers so this requirement, although inappropriate, would not present serious compliance difficulties. With these comments and reservations the following changes in the proposed standard are suggested:

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Paragrah 173.1090(b)(2) would be modified to read:

> (2) Bags when in closed freight containers, motor vehicles, or rail cars provided that each container is labelled in accordance with the requirements of Paragraph 172.101 with the label specified in Paragraph 173.1090(c)(4).

A new Paragraph 173.1090(b)(3) would be added:

> (3) Bags when in open motor vehicles provided they are covered or are of such construction that there is no visible leakage of asbestos and provided each container is labelled in accordance with the requirements of Paragraph 172.101 with the label specified in Paragraph 173.1090(c)(4).

A new Paragraph 173.1090(b)(4) would be added to define the special label. The telephone contact referred to would be provided by the asbestos shipper. The person contacted would be able to advise on safe procedures if an emergency occurs. Thus:

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(b)(4) The label required by Paragraph 173.1090(b)(2) and (3) shall state:

ORM-C

CAUTION

Contains Asbestos Fibers

Avoid Creating Dust

Breathing Asbestos Dust May Cause
Serious Bodily Harm

IN THE EVENT OF EMERGENCY

Use Water to Prevent Dust

Contact (Telephone Number) for Instructions

The other change recommended deals with Paragraphs 174.840, 175.640, 176.906 and 177.844. In each case the following words should be added at the end of each paragraph:

". . .in excess of the levels specified in Paragraph (b)(2) and (3), CFR 29, 1910.1001."

In making this recommendation it is recognized that the present OSHA standard referenced may not be directly appropriate to the employment conditions encountered in the transportation industry and that the DOT may wish to develop a more suitable standard. The asbestos industry will be glad to cooperate in any such effort as it has in the past and continues to do with OSHA. The foregoing approach was selected because it came from an already well defined regulation and this is a simple and direct method to provide the minimum definition of numerical levels (TWA and ceiling), fiber, and method of measurement needed to make the proposal workable.

We want to thank you for this opportunity to express our views on this important rulemaking. We will be glad to provide any further information or clarification requested.

Very truly yours,

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