PLAINTIFF'S EXHIBIT
G-301

Minutes
GENERAL MEETING
Asbestos Textile Institute
June 10, 1966
Barbizon-Plaza Hotel, New York, N.Y.

In Attendance:

AMERICAN ASBESTOS TEXTILE CORP.
J.L. Rainey
J.M. Christenbury

ASBESTOS CORPORATION LTD.
A.C. Steele
E.L. Alexander (A.C.S. Ltd.)

BELL ASBESTOS MINES LTD.
Wm. J.W. Smith
R. Dodds-Hebron

JOHNS-MANVILLE CORP.
W.S. Hough
E.A. Schuman
P.A. Rogers
C.L. Sheckler
W.C. Atkinson

CASSIAR ASBESTOS CORP. LTD.
T.T. Tigert

CADWALADER, WICKERSHAM & TAFT
P. Jay Flocken (Legal Counsel)

ASBESTOS TEXTILE INSTITUTE
H.E. Sunbury (Secretary)

ASTI Headquarters Staff
P.J. Smith

GARLOCK, INC.
G.E. Houghton
- - Olson

H.K. PORTER COMPANY, INC.
AP. Gouveia
J.D. McClure

RAYBESTOS-MANHATTAN, INC.
J.A. Brown, Jr.
J.A. Bettes, Jr.
L.C. Williams
J.P. Wronski
R.B. Smith
J.W. Hawkins
P.Q. Scowcroft

TALLIANTIC CLUSKEY FABRICS CO.
J.L. Mitchell
Ted D. McCluskey

UNITED STATES RUBBER COMPANY
A.C. Link
S.J. Peele, Jr.
E.A. Morris
Dr. J.H. Wolfsie
W.C. Hitchcock

U.S. PUBLIC HEALTH SERVICE
Dr. L.J. Cralley

NICOLET INDUSTRIES
R.P. Griffin

Luncheon Guests

Mrs. J.A. Bettes, Jr., Mrs. S.J. Peele, Jr., Mrs. W.C. Atkinson
W.C. Hitchcock, U.S. Rubber Co., New York
W.A. Singleterry, U.S. Rubber Co., New York
R.P. Griffin, Nocolet Industries

**** MINUTES ****

1. President John A. Brown, Jr., called the meeting to order at 9:30 A.M. and asked each person present to stand and identify himself and his company affiliation.

2. The minutes of the last meeting were presented for reading. Mr. Peele moved that the reading be omitted, seconded by Mr. Atkinson and so voted.

3. The Financial Report was presented by Mr. E.A. Schuman, Treasurer. Mr. Peele moved that it be accepted, seconded by Mr. Hough, and it was so voted unanimously. The report is attached.

4. P.Jay Flocken, legal counsel, presented a report entitled 'Some Aspects of the Legal Problems on Asbestos Publicity: Grounds for Possible Libel Action and Standing to Sue'. Mr. Flocken referred to a recent example of statements made on a radio broadcast and then discussed the general problems involved in bringing an action for libel where the product or manufactured article has been named but no particular manufacturer has been named. Counsel discussed briefly the New York Court of Appeals' rulings in Drug Research Corp. v. Curtis Pub. Co., 7 N.Y.2d 435, and Harwood Pharm. Co. v. Nat. Broadcasting Co., 9 N.Y.2d 460. In conclusion, it was stated that without either a specific and direct reference to a particular plaintiff or necessarily implying plaintiff's fraud or deceit in putting a dangerous product upon the market, the probability of success of a libel suit in the circumstancesreferred to would be difficult to assure.

5. Mr. A.C. Steele, Asbestos Corporation, Ltd., presented an interesting report, on behalf of the asbestos fibre producers, concerning supply and demand for raw asbestos fibre. He mentioned the current shipping strike, which if long continued, could have a most adverse effect on mine operations.

6. Dr. J.H. Wolfsie, Corporate Medical Director, United States Rubber Company, was the Guest Speaker, and his subject was "Asbestos and Health".

Dr. Wolfsie referred to the alarming information that has appeared in the lay press concerning the alleged deleterious effects of asbestos on the health of the public. Apropos of this, some of the highlights of the present state of knowledge on the effects of asbestos on health were reviewed. Dr. Wolfsie read excerpts from certain news releases, and said that he could find many weaknesses in the statements made.

Dr. Wolfsie described the development of a preventive medical program to protect the health of employees from possible adverse effects of exposure to asbestos, and gave a brief account of the development of the present preventive health program in the United States Rubber Company for its asbestos employees.

An extensive question and answer period followed Dr. Wolfsie's talk, and our members were most appreciative of the privilege to hear him.

7. The committee reports were given by the chairmen of their respective committees as listed below. The full text of their reports is attached to these minutes.

Air Hygiene & Mfg. Committee - W.C. Atkinson, Chairman

Sales Promotion Committee - W.S. Hough, Chairman

Technical Committee - J.D. McCluer, Chairman

Fiber Testing Committee - J.F. Wronski, Chairman

8. A "CERTIFICATE OF APPRECIATION" in the form of a Scroll was presented to Mr. John A. Bettes, Jr., on behalf of the members, by President Brown.

Mr. Bettes, better known as "Jack" to his many friends in the asbestos industry, is planning to retire in July 1966 from his position as Manager, Asbestos Textile Division, Raybestos-Manhattan, Inc.

Jack Bettes is a past president of the Institute, and has served it in many other capacities as well during his more than twenty years of faithful attendance at our meetings.

In accepting the Scroll, Jack expressed his great appreciation for it and also for the most enjoyable private cocktail party held in his honor on Wednesday evening, June 8th.

Jack stressed the value of the Institute as an aid to management training, and pointed out that getting to know each other is most important, as it builds confidence. He mentioned that the Institute has been of great value in bringing the mining industry in close contact with the asbestos textile industry, to their mutual advantage.

As a suggestion, Jack believes that our industry should spend more time promoting new uses for asbestos, and less time in defensive tactics against competitors.

Immediately after his retirement, about July 14th, Jack and his most attractive wife, Helen, will leave for an extended auto trip to the far West.

We will greatly miss his counsel and advice on Institute matters, his leadership in our industry, and the opportunity for personal contact with him. Our members wish him a most happy retirement!

9. The next meeting of the Institute will be held at The Homestead, Hot Springs, Va., on October 6th and 7th, (Arrival Oct. 5th).

This is the Annual Meeting, and The Homestead was selected as being a delightful spot to bring the wives! Reservations are required thirty days in advance. So, plan to bring your wife, and help to make this Annual Meeting the Biggest and Best ever!

10. There being no further business to come before this meeting, on motion duly made and seconded, it was voted to adjourn. The luncheon that followed the meeting was made more enjoyable by presence of several wives as our guests.

Respectfully submitted,

H.E. Sunbury
Secretary

ASBESTOS TEXTILE INSTITUTE

Report of Funds — May 9, 1966

Balance on Hand at Last Report, Jan.10, 1966

General Fund	$ 1877.40	
Savings Fund	18798.19	
Petty Cash Fund	15.02	
		$20690.61
Receipts		
To Savings Fund (Interest)	211.77	
To General Fund (1966 Dues)	8750.00	
To General Fund (Book Sales)	37.75	
To General Fund (Expense Refund)	56.00	
		9055.52
Total On Hand and Received		$29746.13
Disbursements		
Legal Retainer (3 months ending 2/28/66)	500.00	
Telephone (4 months)	75.79	
Meeting Expense - Feruary 1966	685.28	
Fibre Test Manual Exp.(2nd Edition)	63.86	
Handbook Expense (3rd Edition)	372.01	
Secretary's Salary (6 months)	569.45	
F.I.C.A. Tax (Adjusted to July 1963)	220.80	
Secretary's Travel	125.00	
Office Rent (6 months)	383.32	
Exhibit Expense	52.00	
Printing & Office Supplies	73.75	
Stenographic	99.50	
Petty Cash (Vouchers 223-238 incl.)	71.72	
		3292.48
Balance on Hand as of May 9, 1966 -------		$26453.65

Funds		
General Fund (Bank Statement of May 9, 1966)	$ 7415.41	
Savings Fund	19009.96	
Petty Cash Fund	28.28	
Total Funds		$26453.65
Assets as of May 9, 1966		
General Fund	$ 7415.41	
Savings Fund	19009.96	
Petty Cash on Hand	28.28	
Accounts Receivable (1966 dues)	500.00	(*)
" " (Book Sales)	21.55	
Postage on Hand	6.50	
Furniture and Equipment (Nominal Value)	1.00	
Total Assets		$26982.70
Liabilities (None)		
Net Worth		$26982.70

Respectfully submitted

H.E. Sunbury

H.E. Sunbury, Asst. Treasurer

(*) Paid 5/18/66

Minutes

AIR HYGIENE AND MANUFACTURING COMMITTEE
June 9, 1966
Barbizon-Plaza Hotel, New York, N.Y.

Attending:

Members:	W.C. Atkinson, Chairman	Johns-Manville Products Corp.
	L.C. Williams	Raybestos-Manhattan Inc.
	C.L. Sheckler	Johns-Manville Products Corp.
	R.B. Smith	Raybestos-Manhattan Inc.
	A.C. Link	United States Rubber Co.
	Ted D. McCluskey	Tallman-McCluskey Fabrics Co.
	A.P. Gouveia	H.K. Porter Co. Inc.
	H. Walker	American Asbestos Textile Corp.
Guests:	Dr. J.H. Wolfsie	United States Rubber Co.
	Dr. Lewis J. Cralley	U.S. Dept. of Health, Education & Welfare
	Mr. Sands	U.S. Rubber Co.
	Mr. Langlois	Garlock Inc.
Absent:	K.W. Nelson	American Smelting & Refining Co

Bausch and Lomb Automatic Dust Counter

Due to Mr. Nelson's unavoidable absence the intended demonstration of the 40-2 portable dust counter was postponed.

There was some discussion on the merits of this counter and the consensus was that it would be of particular value in monitoring and quick checking operating areas after correlating with the Greenberg-Smith Impinger.

Environmental Health Survey

Dr. Lewis J. Cralley reported that the survey is progressing on schedule and that they are now in the areas of Friction Materials, Asbestos Cement Products and Insulation Materials.

Control of Dust by Treating Stock

Reports were given on the results obtained in control of dust by the application of oils and other solutions both to blended stock and to asbestos fiber.

Two companies are experimenting with S.D. 5 made by the Lenox Chemical Co. Preliminary controlled test runs indicate that it is possible to reduce the dust counts by applying up to 1% by spraying it on the fiber or on the stock. Further experimental runs will be made to determine the minimum effective amount to be used and its effect, if any, upon the products.

Another company has been using a mineral oil sprayed on the stock with satisfactory results.

General

There was some discussion and exchange of ideas on how to control dust at braiders and narrow fabric looms.

One company has installed vacuum ducts in the center of the braiders except where they make braid over braid. Here it is installed at the perimeter of the braider. Both systems have reduced the dust counts considerably.

Another company has succeeded in reducing the dust at weaving by running the warps over a smooth pick-up roll running in a trough containing a solution of 20% Velubra Softener GSE and 80% water. The softener is supplied by Amalgamated Chemical Corp., Roner and Ontario Sts., Philadelphia, Pa.

The softener prevents the yarn from drying out by absorption of moisture from the air resulting in a smoother and less dusty yarn.

Proposal by the Industrial Hygiene Foundation of America, Inc.

Dr. Robert deTreville and Dr. Paul Gross of the Industrial Hygiene Foundation had been invited to attend a luncheon meeting for the purpose of presenting to the industry, through the A.T.I., a proposal for a supplementary investigation of the Specificity of Asbestos Bodies and the biologic effects of trace substances associated with Chrysotile Asbestos.

In addition to the speakers, 26 members and guests attended the luncheon meeting.

It was suggested that a contract could be arranged between the Industrial Health Foundation and a group of interested corporations who would contribute the funds for the investigation which would amount to a total of $350,000; or it could be separated into two parts, the first of which would cost $150,000 (Phases 1 and 2), and the second part would cost $200,000. The second part would be optional at the completion of part one.

With the consent of Drs. deTreville and Gross, a copy of the presentation is attached to the minutes.

Pamphlet on Method for Determining Asbestos Dust Concentration

Since February, 20 additional copies have been shipped, by request, to companies in the U.S.A., Canada, England, The Netherlands, Norway, Sweden and Australia.

In total, 232 copies have been shipped out. There are still approximately 800 on hand.

The Secretary has a record of all shipments.

Respectfully submitted,

W.C. Atkinson, Chairman
Air Hygiene & Mfg. Comm.

INDUSTRIAL HYGIENE FOUNDATION OF AMERICA, INC.
Mellon Institute, 4400 Fifth Avenue
Pittsburgh, Pa. 15213

June 1, 1966

Prospectus for An Investigation of:

a. The Specificity of Asbestos Bodies and
b. The Biologic Effects of Trace Substances Associated with Chrysotile Asbestos.

INTRODUCTION

Thomson (1) found that about 30% of the people that had died in hospitals in Capetown (500 consecutive autopsies) had "asbestos bodies" in the lungs. The same author (2) found a similar prevalence of "asbestos bodies" among the hospital deaths in Miami, Florida. Cauna, Totten and Gross (3) examined the lungs of 100 non-selected hospital deaths for which autopsy permission had been obtained, and found that 40% of these had "asbestos bodies" in their lungs. Ian Webster (4) recently reported a 47% prevalence in Johannesburg.

There is, at present, a reasonable doubt that "asbestos bodies" are specific indicators of the inhalation of asbestos fibers. Such bodies have been found in coal miners and talc workers where they have been called "pseudo-asbestos bodies". Recently Davis (5) and Collet (6) have demonstrated the intracellular development of "asbestos bodies" secondary to amorphous material.

Asbestos occupies an anomalous position in its ability to produce lung damage, causing diffuse fibrosis and possibly also lung cancer. It is anomalous inasmuch as no other silicate has been shown to possess this ability. The fibrosis encountered in talcosis is limited to the tremolite variety, which is asbestos-like. On the other hand, the pneumoconiosis associated with the mining of mica (another silicate) has not been investigated experimentally, and the fibrogenic activity of the dusts coexisting with the mica has not been evaluated. Other silicates may evoke either minimal or relatively slight inflammotory changes, and are incapable of producing lung cancer.

Inasmuch as certain polycyclic hydrocarbons and trace metals known to be potent cancer-producing agents have been demonstrated in asbestos, particularly nickel, chromium and benzopyrene, the possibility exists that the trace metals and/or the polycyclic hydrocarbons may be solely responsible for the observed pathogenicity.

This possibility is supported by two findings:

1. The report of Braun and Truan (7) which indicated that the prevalence of lung cancer among Canadian asbestos miners was no greater than that of the general population. This was in contrast to the report of Doll (8) which indicated a greatly increased risk of lung cancer among British workers exposed to asbestos dust while fabricating the asbestos.

2. In a recent investigation in the laboratory of the Industrial Hygiene Foundation, lung cancers were found in rats exposed for 18 months to high concentrations of chrysotile dust.(9) Because rats exposed to chrysotile dust by other investigators failed to develop lung cancer, there is a good probability that the chrysotile dust that produced lung cancer was significantly different from that which did not have this effect. It is possible that this difference is

caused by a coating of nickel steel alloy applied to the asbestos dust particles during the continuous hammer milling process used for rendering the dust respirable. This method has not been used by previous investigators. Nickel has been found capable of producing lung cancer in trace amounts.

Although asbestos and glass are both silicates, the industrial health experience with workers of these two materials has been vastly different. No pulmonary disease has been reported in workers exposed to glass dust.

Nevertheless, the dust of filamentous glass has been labeled as highly dangerous in the lay press by association with asbestos. It is a fact that although the effect of flake glass dust on the lungs of animals has been reported, no similar study has been made of the dust of filamentous glass which does not have an associated resin or filler.

PROPOSAL

Phase 1.

It is proposed to examine the response of animals lungs to different inorganic fibrous materials of contrasting chemical composition, and to characterize the differences and similarities in the response.

Phase 2.

It is proposed to investigate the influence of trace minerals and polycyclic hydrocarbons (i.e., benzopyrene) associated with chrysotile ore or the subsequent processing on the long-term response of the lung to the dust.

Another objective of this phase is to obtain definitive data on the long-term effect of dust derived from filamentous glass upon the lungs. Three varieties of such glass dust will be investigated:

1. with the phenol-formaldehyde-type of binder
2. with the binders used in textiles
3. without binder.

Phase 3.

A comparative study of the three main types of asbestos dust (chrysotile, amosite and crocidolite) is proposed to attempt to pinpoint the cause of biological activity - i.e., whether due to silicates per se or the associated trace metals or hydrocarbons. Positive findings would be a basis for identifying any possible health hazards and for suggesting specific engineering or other process controls to eliminate such hazards.

MATERIALS AND METHOD

Phase 1.

The following fibrous materials will be reduced to respirable particle size (< 3μ) and will be injected in amounts of 3.5 mg. to 30 mg. as aqueous suspensions:

1. chrysotile dust (Prepared by milling in Wright mill and with demonstrated carcinogenic potential)
2. Chrysotile dust (unmilled synthetic)*
3. Aluminum nitride
4. tricalcium phosphate (filamentous)
5. fibrous glass
   a. with phenol-formaldehyde-type binder

5. b. with binder used for textiles
   c. without binder
6. magnesium hydroxide (brucite)
7. mineral wool
8. zinc oxide (filamentous)

*Synthetic chrysotile has been prepared at Arthur D. Little Institute by Dr. William Granquist. Electron photomicrographs show the characteristic tubular crystals.

These materials will be injected intratracheally into hamsters under ether anesthesia. Previous experience has demonstrated that asbestos bodies will form in response to chrysotile dust within five months. The animals will therefore be held for six months and then killed. Asbestos bodies will be sought in lung juice as well as in the lung tissues.

The lungs will be expanded with buffered formalin under a head of 10 cm. of water. Blocks removed from these lungs will be sectioned at 6μ after paraffin impregnation. These sections will be stained by different methods and photographed sequentially to provide means for studying more completely the tissue reaction to these various materials. Search for the so-called asbestos bodies will be made using routinely stained sections, and sections stained for iron. In addition, unstained cleared sections will be examined under dark-field conditions for asbestos bodies. The latter glow when examined in this manner.

The differnece in tissue reaction between the synthetic chrysotile dust and that which is known to be fibrogenic as well as carcinogenic will point to the contribution to pathogenicity made by one or more of the various trace substances which may be associated with chrysotile asbestos dust as a result of processing.

The development of "asbestos bodies", better termed Ferruginous bodies, to dusts other than asbestos would point to the non-specificity of these structures and to the desirability of collecting such "asbestos bodies" from human lungs in order to subject them to electron-probe analysis. Such analysis could give information in regard to the chemical make-up of the dust responsible for the development of the Ferruginous ("asbestos" body).

Phase 2.

In order to explore the etiologic role of the various components of chrysotile asbestos in the production of lung fibrosis and lung cancer, six series of rats will be injected intratracheally with the following:

1. chrysotile dust known to be carcinogenic (9)
2. synthetic chrysotile
3. synthetic chrysotile plus nickel
4. synthetic chrysotile plus chrome
5. synthetic chrysotile plus nickel, chrome and benzopyrene
6. nickel alone or with carbon as carrier
7. chrome alone or with carbon as carrier
8. benzopyrene with carbon as carrier

These rats will be held for two years and then killed. The lungs will be prepared for examination and sections cut in the same manner as in Phase 1.

Three other series of rats will be injected intratracheally with the following dusts:

1. filamentous glass with phenol-formaldehyde-type binder
2. filamentous glass with the binders used for textiles
3. filamentous glass without binder.

These animals will also be held for two years and then killed. The lungs will be prepared and studied as in the preceding groups, with special attention to asbestos bodies in lung tissues or juice.

The number of animals per series will be such that there will be no doubt regarding the statistical significance of the results.

Phase 3.

SUPPLEMENTARY PROPOSAL

(Note: The following supplement has been added to the original proposal of April 15, 1966).

INTRODUCTION

Because of the interest of a number of companies in biologic investigations similar to those planned for chrysotile asbestos, but using instead, amosite and corcidolite, an additional investigation is proposed to be undertaken concurrently with the one proposed April 15, 1966.

As in the proposal dealing with chrysotile asbestos, the purpose of the presently proposed concurrent investigation is to attempt to pinpoint the cause of the biologic activity of all three main types of asbestos dusts: whether this lies in the silicates per se, in the associated trace metals, or in the associated hydrocarbons.

Because neither amosite nor corcidolite is available as a pure synthetic material, the investigation proposed for these two types of asbestos is necessarily different from that proposed for chrysotile. Nevertheless, in order to make the investigation complete, it is desirable to include also chrysotile in the new investigation since different methods are involved.

Inasmuch as the biologic activity of asbestos seems to have two components: (a.) inflammatory--responsible for asbestosis, and (b.) neoplastic--responsible for lung cancer and mesothelioma, it is advisable to investigate both of them. This can readily be accomplished within the four year span contemplated for this investigation

In order to determine whether the biologic activity of asbestos resides in the silicate, in the associated trace metals, or in the associated hydrocarbons, attempts will be made to remove the trace metals and the hydrocarbons from their respective silicates and to compare the biologic activities of such "purified" asbestos samples from which these associated materials have been removed.

PROPOSAL

As a prerequisite to any biologic testing (insofar as the lungs are concerned), it is necessary to reduce the asbestos to a respirable particle size. This will be done in the following manner: the amosite and crocidolite will be ball-milled and then fed into continuous hammer mills modified from a design by Holt and Young (10). The dusts emerging from the hammer mills will be collected in electro-

static precipitators. This method has been used successfully by us to reduce chrysotile asbestos to a particle size, 70% of which was respirable. A sufficient quantity of finely divided chrysotile dust is available for the purposes of this investigation.

All three types of asbestos dust will be deprived of the greater portion or of all of their hydrocarbon content in one of two ways:

1. by continuous extraction with various solvents
2. by heating beyond the decomposition point of the hydrocarbons.

The trace metals will be removed from the three types of asbestos dust by treatment with aqua regia followed by treatment with EDTA (ethylene diamine tetraacetic acid, a chelating agent).

One batch of each type of asbestos dust will be subjected to both procedures, i.e., removal of trace metals and removal of hydrocarbons.

Accordingly, each of the three types of asbestos dust will consist of five batches, each with a different composition:

1. the unaltered dust as collected in the precipitators
2. the dust minus the hydrocarbons (heat-treated). Here, it is anticipated that there may also have been some change in the chemical structure of the asbestos through loss of some molecules of water of hydration.
3. the dust minus the hydrocarbons (solvent extraction). Here, it is anticipated that the extraction may not be 100% complete.
4. the dust minus trace metals
5. the dust minus trace metals then subjected to solvent extraction to remove most of the hydrocarbons.

In order to investigate the inflammatory component of the various (15) batches of asbestos dust, these will be injected intratracheally into rats and hamsters. The lungs of these animals are expected to show definitive changes within one year after the intrapulmonary introduction of the dusts.

In order to explore the lung cancer aspect of the neoplastic component of the biologic activity of asbestos dust, additional rats will be injected with the same batches of dust as above and allowed to live out their lives. Most of the animals, however, will have died before the end of the third year.

The other (mesotheliomatous) aspect of the above neoplastic component will be investigated by injecting the 15 different batches of asbestos dust within the pleural cavity of rats and hamsters and allowing them to live out their lives. Most of these animals will also have died before the end of the third year.

For the investigation of the inflammatory component of asbestos dust, a large enough number of animals will be put on test to allow sampling at intervals throughout the year and still have an adequate number remaining to represent the 12 month old lesion.

A tabular summary of the protocol is attached.

REPORTS

Definite trends in regard to the inflammatory component are expected to be demonstrable in animals that will be killed prior to the 12 month period (as indicated under footnote (b) in the Tabular Summary). An interim report covering the findings in these 420 animals will, therefore, be issued at the end of the first year.

Because few, if any, tumors are expected to develop prior to 24 months, no interim report on the neoplastic component will be issued until the end of the third year. The final report covering the

entire investigation will be issued toward the end of the fourth year. This report will probably be in the form of several manuscripts suitable for publication.

SUPERVISION

Research will be performed under the direct supervision of Dr. Paul Gross, Director of the Foundation's Research Laboratory. The Foundation's studies on asbestos presently are being conducted under partial support of the U.S. Government through a National Institutes of Health grant and a contract with the U.S. Public Health Service, Division of Occupational Health (Dr. Lewis J. Cralley).

TABULAR SUMMARY OF PROTOCOL

Type of Asbestos	Batch (a)	Dust Injected Intratracheally for Inflammatory Component		Dust Injected Intratracheally for Lung Cancer	Dust Injected Intrapleurally for Mesothelioma	
		No. Rats (b)	No. Hamsters (b)	No. Rats (c)	No. Rats (c)	No. Hamsters (c)
Chrysotile	1	20	20	20	20	20
	2	20	20	20	20	20
	3	20	20	20	20	20
	4	20	20	20	20	20
	5	20	20	20	20	20
Amosite	1	20	20	20	20	20
	2	20	20	20	20	20
	3	20	20	20	20	20
	4	20	20	20	20	20
	5	20	20	20	20	20
Crocidolite	1	20	20	20	20	20
	2	20	20	20	20	20
	3	20	20	20	20	20
	4	20	20	20	20	20
	5	20	20	20	20	20
TOTALS		300	300	300	300	300

(a) The following batches are identified:
No. 1 = dust as collected from electrostatic precipitators
No. 2 = dust extracted with solvents
No. 3 = dust heated to decompose hydrocarbons
No. 4 = dust treated with aqua regia and EDTA
No. 5 = dust treated as with No. 4 and No. 2

(b) Two animals killed immediately after the dust injection
Four animals killed 4 days after the dust injection
Four animals killed 1 month after the dust injection
Four animals killed 6 months after the dust injection
Six animals killed 12 months after the dust injection

(c) All animals allowed to live out their lives

REFERENCES

1. Thomson, J.G., et al. Asbestos as Modern Urban Hazard. S. Afr. Med. J. 37:77-81, 1963.

2. Thomson, J.G., et al. Asbestos as an Urban Air Contaminant. Arch. Pathol. 81:458-464, May 1966.

3. Cauna, Dzidra; Totten, Robert S.; and Gross, Paul. Asbestos Bodies in Human Lungs at Autopsy. JAMA 192:371-373, May 3, 1965.

4. Webster, Ian. Report of progress quoted in the Annual Report of the Pneumoconiosis Research Unit of the South African Council for Scientific and Industrial Research. 1965.

5. Davis, J.M.G. Electron-Microscope Studies of Asbestosis in Man and Animals. Ann. N.Y. Acad. Scie. 132:98-111, 1965.

6. Collet, A. Personal Communication, 1965.

7. Braun, Daniel C. and Truan, T. David. An Epidemiological Study of Lung Cancer in Asbestos Miners. AMA Arch. Inc. Health 17: 634-653, June 1958.

8. Doll, R. Mortality from Lung Cancer in Asbestos Workers. Brit. J. Ind. Health 12:81, 1955.

9. Gross, P. and deTreville, R.T.P. Experimental Asbestosis: Studies on the Progressiveness of the Pulmonary Fibrosis Caused by Chrysotile Dust. To be published.

10. Holt, P.S. and Young, D.K. A Dust-Feed Mechanism Suitable for Fibrous Dust. Ann, Occ. Hyg. 2:245, 1960.

MINUTES OF THE SALES PROMOTION COMMITTEE
ASBESTOS TEXTILE INSTITUTE MEETING
JUNE 9 - 10, 1966

A full complement of all member companies was present at the Sales Promotion Meeting on June 9, 1966.

We reviewed all known foreign competition situations feeling that it is quite important to stay abreast with inroads that have been made in the U.S.A. even though to date they might be considered minor in sales volume. The latest report from the U.S. Department of Commerce, Washington, indicates the following imports into the U.S.A. which are sizable enough to be of some concern:

	March 1966		1st 3 mos. 1966	
ASBESTOS YARN, Etc.	Pounds	$	Pounds	$
United Kingdom	51,132	29,425	119,230	96,044
Japan	15,103	8,041	49,043	26,505
Canada	5,246	4,019	9,095	8,089
Total	71,486	41,485	178,268	130,638

We have been unsuccessful in placing the A.T.I. display at the Franklin Institute Museum, Philadelphia. It was decided that the Sales Promotion Committee would issue a leaflet or make available photos to be sent to a sizable list of technical and engineering schools soliciting the use of the display on their campus.

We discussed the Asbestos Fibre stockpiling program reporting that Arizona so-called Textile Grade Asbestos Fibre purchased by the U.S. Government against recommendations by the A.T.I. resulted in no bids for resale at a recent opening in Washington, D.C.

It was reported that North American Asbestos Co., Chicago, Illinois, is now marketing an asbestos felt as a fire resisting protective insert in mattresses for the hotel, motel and hospital trade.

We completed a lengthy review of all copy and format for the third edition of the A.T.I. Handbook which will go out for bids in July and probably be published in the Fall of 1966.

ASTM approval was received to use 29 pages of ASTM specifications for a charge of $273.

(Signed) W.S. Hough

W.S. HOUGH
CHAIRMAN

MINUTES: Asbestos Textile Institute
Technical Committee Report
June 9, 1966

The meeting was held at Barbizon - Plaza Hotel, New York, N. Y.

IN ATTENDANCE: Edward A. Morris - U. S. Rubber Co.
C. E. Houghton - Garlock, Inc.
J. W. Hawkins - Raybestos - Manhattan, Inc.
William Maaskant - American Asbestos Textile Corp.
Irvin Barnett - Johns - Manville Corp.
J. D. McCluer - H. K. Porter Co., Inc.
H. E. Sunbury - Asbestos Textile Institute
Paul J. Smith - A.S.T.M.

SUBJECTS DISCUSSED:

A.T.I. Hand Book. Confirmation of weight values on Tapes.
The Technical Committee was requested to review and confirm the weight values of metallic and plain tapes for reprinting in the revised third edition of the Hand Book. These values are presently shown in Tables Q and R respectively. The Committee made a detailed study of this and recommended the following:

To recommend the weight values for decimal tapes as given in Military Specification Mil-C-3053D for .010", .015", .020" .025", and .030" since the industry usually makes these tapes to conform to the Military Specification and also since there is very minor deviation of the weight values in the Military Specification from those in the current Hand Book.

To confirm the present values of 1/32", 1/16", 1/8" and 1/4" plain tapes and the present values of 1/16", 1/8", and 1/4" metallic tapes as accurant since all the weight values of these come within the tolerable limits of industry's values.

To delete 3/16" plain and 3/16" metallic form the Hand Book since they are not popular sizes.

Industry weight values were found almost identical to Hand Book values with exception of 1/32" plain and the variation here was less than 10% as shown in the appended table. Conformance of Mil-C-1053D with Hand Book is also shown in the table.

The chairman will send a letter with the above recommendation on tapes to H. E. Sunbury with direction that he send this information to Howard Baim who is editing the Hand Book.

Mil-C-10316B. No action to date has been made by the agency on issuing an interim specification correcting the thickness values. The last communication from the agency was on October 29, 1965 at which time the agency agreed to make this correction as requested by W. Haaskant , Chairman of the Technical Committee at that time. A follow up letter to the agency was made May 4, 1966 by W. Haaskant The committee found that the thickness values in Mil-C-10316A are correct but the values in Mil-C-10316B are incorrect.

Consideration was given to two other items but action was not taken In SS-C-466e specifying as optional the use of .006" nickel wire or .008" monel wire in sewing thread, When this specification comes up for revision.
Making a closer tolerance than ± 7% on weight of woven asbestos cloth when specification comes up for revision again, on D1571

Revision of ASTM Specifications D315, D1571, and D2100
At the February 1966 meeting the committee reported completion of the 3rd Draft of D315 tape and the 4th Draft of D1571 cloth and that copies of these two were in the hands of Dr. Scroggie's Editorial Committee and Mr. Nicodemus' A-4 Committee. The committee had reason to believe they would be approved and a favorable report was given. The following week the chairman received a letter from Dr. Scroggie's committee making many changes in both specifications. The committee felt that making further revisions would not accomplish very much and that it would be more effective to allow nephesentatives of A-4 Committee to resolve the differences with Dr. Scroggie. Accordingly, on March 3, 1966 a meeting was held in New York between A-4 representives and Dr. Scroggie and at this meeting the differences were resolved. On the basis of the resolved differences, the Technical Committee drafted the 4th Draft of D315 tape and the 5th Draft of D1571-Cloth. Concurrently Mr. P. O. Nicodemus revised D2100 on electrical insulation and submitted it with D315 and D1571. These were satisfactory editorily so fat as Dr. Scroggie's committee was concerned, but a temporary set-back resulted when the editor of ASTM took exceptions to these three specifications. After explanation and assistance from Paul Smith of ASTM and P. O. Nicodemus Chairman of A-4 Committee, the three specifications were approved with very minor changes. On May 17, a letter from Paul Smith advised the chairman that these three would appear in the 1966 preprint of ASTM. On June 1, 1966, a copy of the preprint was received and only minor changes were noted.

Letter ballots are now out to all members of D-13 Committee on these three specifications. Results of the ballots have not been received.

Committee members were requested to proof read these specifications and report to the chairman before July 1st. any typographical errors or discrepancies. The chairman is to report these to Paul Smith if any are found.

Howard Bain met briefly with the committee and agreement was made that we would convey information on the status of tapes in the Hand Book within the next two weeks and that he would use information in the preprint on tapes, cloth, and electrical insulation for setting up the revised Hand Book.

Revision of ASTM Specification - D1918 Asbestos Content

At the February 1966 meeting the 1st. Draft on D1918 was made. Since that meeting two more Drafts have been made by correspondence, the 2nd. and 3rd. Drafts. At the present meeting the 3rd. Draft was reviewed and minor changes and corrections made. This will now issue as the 4th. Draft dated June 9, 1966 and copies will be sent to Dr. Scroggie's S-6 Editorial Committee and P. O. Nicodemus' A-4 Committee with the request that they review and respond in time for committee discussion at our next meeting August 18 and 19th.

Revision of ASTM Specification - D299 Yarn

A start was made on this specification and approximately half of it was covered. The chairman requested that each committee member continue this specification and also D375 roving and send in their comments on how these two should be revised. The several comments will be merged to form the 1st. Draft of D299 and 1st. Draft of D375 and these will be used as the basis for further discussion.

Next Meeting of Technical Committee

Since there are six more specifications to revise, the committee felt that progress on these would be too slow with one day meetings at the regular ATI meetings, especially in view of other items which come up. Accordingly the next meeting was set up as a two day meeting August 18 and 19th at ASTM headquarters in Philadelphia. At that meeting a decision will be made as to whether we will meet one day ahead at our October meeting.

The committee wishes to acknowledge and thank Paul Smith of ASTM for the contribution he has made in revising these specifications.

J. D. McCluer
Chairman of Technical Committee

Appendix to Minutes of Meeting of Technical Committee
June 9, 1966

Table 1

1/32" Plain Tape

WIDTH	POUNDS PER 100 FEET						
	SUPPLIER			A.T.I.		DEVIATION OF AV. FROM H.B.	
	1	2	3	H.B.	AVE.	AMOUNT	PERCENT
1/2	.80	.70	.70	.80	.75	.05	6
3/4	1.18	1.10	1.05	1.18	1.13	.05	4
1	1.66	1.40	1.45	1.66	1.54	.12	7
1 1/4	2.00	1.80	-	2.00	1.93	.07	3.5
1 1/2	2.40	2.10	2.15	2.40	2.26	.14	6
2	3.10	2.90	2.90	3.10	3.00	.10	3
2 1/2	3.80	3.50	3.60	3.80	3.68	.12	3
3	4.50	-	4.30	4.50	4.43	.07	1.5

Table 2

Decimal Tapes

THICKNESS	WIDTH	POUNDS PER 100 FEET			DEVIATION OF AV. FROM HAND BOOK	
		A.T.I. H.B.	MIL-C-3053D	AV.	AMOUNT	PERCENT
.010"	1/2	.29	.24	.265	.025	8.6
	3/4	.40	.38	.370	.030	7.5
	1	.52	.45	.485	.035	6.7
	1 1/4	.66	.55	.605	.055	8.3
	1 1/2	.77	.64	.695	.075	9.7
.015"	1/2	.37	.36	.365	.005	1.4
	3/4	.49	.50	.495	.005	1.0
	1	.61	.65	.630	.020	3.3
	1 1/4	.77	.79	.780	.010	1.3
	1 1/2	.90	.93	.915	.015	1.7
	2	1.15	1.19	1.170	.010	0.9
.020"	1/2	.46	.45	.455	.005	1.1
	3/4	.63	.63	.630	0	0.0
	1	.80	.80	.800	0	0.0
	1 1/4	1.00	.99	.995	.005	0.5
	1 1/2	1.16	1.18	1.170	.001	0.1
	2	1.52	1.54	1.530	.010	0.7
.025"	1/2	.55	.63	.590	.040	7.3
	3/4	.80	.84	.820	.020	2.5
	1	1.00	1.03	1.015	.015	1.5
	1 1/4	1.28	1.33	1.305	.025	2.0
	1 1/2	1.50	1.58	1.540	.020	1.7
	2	2.00	2.11	2.055	.055	2.7
	2 1/2	2.40	-	-	-	-
	3	2.80	-	-	-	-
.030"	3/4	1.08	1.10	1.090	.010	1.0
	1	1.43	1.46	1.445	.015	1.0
	1 1/4	1.80	1.77	1.785	.030	2.7
	1 1/2	2.13	2.10	2.115	.015	0.7
	2	2.86	2.78	2.820	.040	1.4
	2 1/2	3.45	-	-	-	-
	3	4.17	-	-	-	-

Minutes: ASBESTOS TEXTILE INSTITUTE
FIBER TESTING COMMITTEE
June 9, 1966
Barbizon Plaza Hotel
New York, N.Y.
9:30 A.M. to 12:00 Noon

Attending:

J.Wronski, Chairman	Raybestos-Manhattan, Inc.
R.Dodds-Hebron	Bell Asbestos Mines, Ltd.
T.T.Tigert	Cassiar Asbestos Corp. Ltd.

Subjects Discussed

1. The printing of the new fiber testing manual was completed just about on schedule and copies have been distributed to all companies and groups that had previously placed orders for them. Of the 3113 copies purchased, 423 still remain and are stored in Mr. Sunbury's garage. One hundred of these were ordered by the Institute and are earmarked for sale to parties addressing requests for them to the Institute. The remaining 323 are uncommitted. Of these, 210 resulted from increasing the original order from 2790 to 3000 to take advantage of a price concession. The remaining 113 were the result of a printing over-run and were purchased at a greatly reduced price.

2. Further data on two proposed test procedures -- one for the determination of asbestos fiber frictional properties and the other for determination of suricule content of textile grade fibers -- were to be presented at this meeting. However, the sponsors of these two procedures were absent and discussion is deferred until the next meeting.

3. The committee sends its regards and hopes for an early recovery for Dewey Childers of H.K.Porter who was hospitalized at the time of this meeting.

Respectfully submitted,

J. P. Wronski

FINAL COST FIGURES

TESTING PROCEDURES FOR CHRYSOTILE ASBESTOS FIBRE
(Second Edition)

July 1, 1966

Incidental Expenses

Editorial, travel, phone, etc. -------	$ 895.32
Typing copy ----------	100.00
Shipping cartons ----------	98.25
Total	$1093.57

Total pages

Bound Manuals ----------	669600	(95%)
Reprints of Individual Tests -----	37192	(5%)
Total	706792	(100%)

Incidental expenses pro-rated on pages.

Bound Manuals -- $1093.57 x 95% --	$1038.89
Reprints ------- $1093.57 x 5% --	54.68
	$1093.57

Summary of Costs

Item	Bound Manuals	Reprints
Printing	$4184.40	$750.00
Incidental costs (Pro-rated)	1038.89	54.68
Freight on surplus copies (est)	31.45	
Total	$5254.74	$804.68
Total orders received	2790	5026
Unit cost	$1.883	$0.160

H. J. Sunbury
Exec. Secretary