Asbestos Textile Institute
Air Hygiene Committee
September 9, 1953
Essex House

GAR 000209

In Attendance: R. Smith, B. W. Luttenberger, E. T. Johnson, T. G. Schmidt, H. L. Jackson, D. R. Holmes, J. W. Weber, J. G. Schoepf, G. Kovack, J. D. Beatty

Guests: Dr. O. A. Samder, Dr. H. White, Dr. P. A. Theodos, Dr. P. Cartier, Dr. H. W. Hetherington, Dr. E. S. Lyers

Following the format of the previous meeting, the Doctors met in separate session and continued the deliberations previously outlined.

1. A review of the x-rays presented by each of the participating Doctors established that x-ray classifications of Negative; A-2, moderately advanced; A-3, far advanced, were rather uniformly identified. There was considerable variance of opinion, however, in the borderline classifications of P-2, linear exaggeration and A-1, early asbestosis. It was the conclusion that this difference was a matter of individual interpretation and one which could not easily be resolved.

   The consensus was that it was impossible to make a diagnosis of asbestosis on x-ray alone since similar shadows can be reproduced by other disease processes. The employment history showing adequate periods of exposure (a minimum of 5 years in the textile industry, 10 years in the mining industry) and a medical history revealing clinical symptoms are necessary for accurate diagnosis.

2. Diagnosis is complicated in obese persons. Obesity tends to compress the lung and produce an x-ray appearance of asbestosis. Overweight often times is accompanied by heart complications not at all related to the asbestos exposure. It was the consensus that asbestosis should not be considered as an aggravating factor to heart conditions due to overweight.

3. As a result of discussion on the relationship of off-the-job behavior to disease production, Dr. White and Dr. Theodos agreed to study their plant populations to evaluate the problem. The results of their investigation will be presented to the Doctors at a future meeting.

4. Concerning the diagnosis of a disabling (compensable) asbestosis, the following factors were enumerated:

   a. Adequate exposure (5 or more years in visually dusty atmospheres).

   b. Typical x-ray patterns and indication of emphysema.

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c. Symptoms such as shortness of breath, dry cough, easy fatigue on exertion is moderately advanced asbestosis and easy fatigue without exertion in far advanced asbestosis. Cyanosis may be present if right heart strain is evident.

d. Decreased chest expansion accompanied by moist crackling rales.

e. Lung function studies indicating a marked reduction in timed vital capacity and blood arterial oxygen before and after exercise.

f. Lung biopsy (if feasible) in questionable cases.

5. While there is no cure for the asbestotic fibrosis, symptomatic relief and improved ventilation is frequently obtained through the use of intermittent positive breathing exercises using oxygen and bronchodilators. Although the improvement in ventilation is not always maintained, repeat treatments continue to provide relief.

In cases involving right heart strain and cyanosis, digitalis is indicated.

6. In reviewing the problem of job transfer as a means of prevention, the Doctors recommended the following criteria:

a. If x-ray diagnosis is established for persons under 40, transfer to a job of less exposure should be made. This assumes, of course, that study has determined that the individual's present job environment contains an asbestos exposure.

b. If progression is seen on serial films, job transfer should be made without regard to the individual's age. Again, the present job should be evaluated in terms of exposure potential.

7. Recommendation was made that basic research be considered in the areas of -

a. evaluation of different types of fibres in disease production,

b. a relationship of heart function to asbestosis. Dr. Theodos will outline in more detail a proposal for this investigation.

The Air Hygiene Committee reviewed the status of the proposals for evaluation of instruments and methods in measuring atmospheric contamination.

of fibre diameters encountered in airborne asbestos fibres was submitted to the Travellers Engineering Laboratory in Hartford. While there has been verbal indication that they would undertake this work for us, official agreement has not been obtained pending the working out of some technical difficulties. When approval is obtained, the member companies will be advised in detail of sampling procedures, sampling location identification and shipping instructions. All member companies indicated that they would participate in forwarding samples for this analytical research.

2. Question was raised concerning the identification and removal of organic fibres from the samples submitted. While this item would not affect the sample taking, the matter will be discussed with the Laboratory to insure the counting of asbestos fibres only.

3. It had been determined that the U. S. Public Health Service was engaged in an evaluation of several types of air sampling apparatus. Although their original research program had not included the use of asbestos as an atmospheric contaminator, they appeared receptive to the idea and official approval is expected shortly. The instruments being used in this study include all five of those which our Committee previously had listed as worthy of study.

4. It was the consensus that every effort should be made to expedite items 2 and 3 in order that a yardstick might be established with which to evaluate the effectiveness of engineering control and provide a basis for job study necessar for medical control (item 6, Doctors discussion).

5. Mr. E. T. Johnson reviewed the control methods at the twisters Dust counts (in terms of dust particles, not fibres) indicate excellent control.

6. It was agreed that at our next meeting, each member would present a review of their companies' experience (successful or unsuccessful) with dust collector equipment. Capacities, operational methods, efficiencies and maintenance costs would be compared.

Following a recapitulation of the separate Doctors and Air Hygiene Committee discussions, the combined group discussed and concurred that a statistical review be made of the current status of asbestosis in the industry. Accordingly, each Doctor will be requested to submit a list of years of service and x-ray classification for each employee (without name) for each asbestos textile plant. This data will be summarized to reflect the trends, if any, in exposure years to pulmonary involvement and may well serve as a base line against which to compare future progress in the control of environmental exposure and disease incidence.

H. M. Jackson

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Conclusion of a factory physician from X-Ray Reports of workers in an asbestos manufacturing plant which is not working at the present time.

The x-ray exam of 88 employees, male and female, of the plant shows interesting facts on the frequency of asbestosis and the x-ray clinical findings of this workmens' disease.

For the purpose of utmost accuracy, I have excluded from these 88 employees 8 who have not worked permanently in the manufacturing depts.; boilermen, masons, carpenters, etc.

Among the 80 workers, 15 have asbestosis to a more or less marked degree, i.e., 18.7% that are subdivided as follows:

1. <u>According to Age</u>

15 to 20 yrs	2	workers	0 asbestosis
20 to 25 yrs	3	"	0 "
25 to 30 yrs	7	"	0 "
30 to 35 yrs	11	"	1 "
35 to 40 yrs	13	"	3 "
40 to 45 yrs	12	"	1 "
45 to 50 yrs.	14	"	5 "
50 to 60 yrs.	14	"	4 "
60 to 70 yrs	3	"	1 "
70 & over	1	"	0 "

2. <u>According to Seniority</u>

0 to 5 yrs	8	workers	0 asbestosis	
5 to 10 yrs	21	"	1 "	4.7%
10 to 15 yrs	20	"	3 "	15 %
15 to 20 yrs	13	"	3 "	23 %
20 to 30 yrs	16	"	7 "	43.7%
30 & over	2	"	1 "	50 %

3. <u>According to Departments</u>

6 Weavers
2 Braiders
1 Canetouse (?)
5 Spinners
1 Carder

There were five men & 10 women out of a total of 34 men and 46 women.

The most interesting statistics refer to the seniority of the worker. The number of asbestosis cases increases with seniority.

4- It was next decided to expand on the idea of the burlap covered tunnels. To do this, a Sheet Metal Building was constructed 60 ft. wide x 160 ft. long x 22 ft. high. Into this building nine burlap tunnels were built. These tunnels were 150 ft. long and backed up to an existing brick building having 1900 sq. ft. floor area and ceiling height of 26ft. This brick building was used as a Settling Chamber with the dust laden air entering directly into it. This air then passed through holes in the brick wall into the 9 burlap tunnels and filtered out through the pores in the burlap. This arrangement would leave the longer heavier fibers in the Settling Chamber, with the rest dropping out through the entire length of the nine tunnels and collecting on the inside of the burlap. This system would require a crew of 7 men from midnight to six o'clock in the morning every day "Beating Down" the burlap and entering each tunnel to shovel up the dust and fibers from the floor. This system was costly to clean and also subjected the cleaners to dusty working conditions.

5- In January 1953 we discontinued the above described dust tunnels and began operating our two new collecting units purchased from American Wheelabrator & Equipment Corporation. This installation was accomplished by removing 4 of our burlap tunnels from the above Sheet Metal Building. These 4 tunnels occupied a space of approximately 20 ft. x 160 ft. long. In this area we erected our two Wheelabrator Units. One unit was purchased to handle our Preparation Department Air and the other to handle the Card Room Air. Both of these units are on the discharge end of the fans, the same as the burlap covered tunnels were. These two units are as follows:

PREPARATION DEPARTMENT: Handles all dust laden air from this department. It is 15 feet wide x 36 feet long x 22 feet high. Has 736 Cotton Sateen Dustubes 8" diameter x 138" long. Handles 56,200 c.f.m. of air with a ratio of 3.21 per sq. ft. of cloth. Has a total cloth area of 16,928 sq. ft., with an average static pressure at the unit of 1.60" W.G. before shaking and 1.10" W.G. after shaking.

CARD ROOM: Handles all dust laden air from the cards in this department. This unit is 15 feet wide x 56 feet long x 22 fee high. Has 1152 Cotton Sateen Dustubes 8" diameter x 138" long Handles 93,053 c.f.m. of air with a ratio of 3.50 c.f.m. per sq. ft. of cloth. Has a total cloth area of 26,496 sq. ft., with an average static pressure at the unit of 2.00" W.G. before shaking and 1.00" W.G. after shaking.

These dustubes are supported from the top by automatic shakers and on the bottom are inserted in cell plates. Directly under these cell plates are two hoppers with a Screw Conveyor mounte in the bottom of each hopper. The dust laden air enters into the side of the hoppers, where the longer fibers fall directly out of the air stream into the Screw Conveyor and are conveyed