Asbestos Textile Institute
Hygiene Committee Meeting
June 10, 1953

In attendance: J. W. Weber, D. R. Holmes, T. C. Schmidt, R. Smith, J. D. Beatty, Geo. Fabel, H. M. Jackson

Guests: Dr. H. W. Hetherington, Dr. O. A. Sander, Dr. E. S. Myers, Dr. M. White, Dr. P. A. Theodos, Dr. P. Cartier, Dr. K. W. Smith

In a brief review the background, objectives and problems of the Air Hygiene Committee were reviewed for the guests. Some of the unanswered questions were:

1. What dusts or fibres are significant in the production of fibrosis?
2. How can the dust or fibre be measured in the work environment?
3. How can clinical experience be correlated to exposure?
4. What medical standards are available for the uniform evaluation of disease occurence and extent?

The resolution of these questions would lead to the answer of the fifth problem.

5. How can the effectiveness of engineering control be evaluated?

The Saranac research on experimental asbestosis clearly shows the long fibres (10 microns and longer) to be the fibrotic producing agent. The dust per se (particles 10 microns and less in diameter) is relatively innocuous. On this basis, the Industrial Hygiene surveys that have been made in the past, and in which only dust particles were measured, are practically without value. Our committee presently has under consideration the problem of determining a valid method of sampling and analysis for the long fibres. The attention of the Doctors was called, in particular, to the areas of standards for uniform diagnosis of the disease and the accumulation of clinical experience for correlation with exposure data.

Following this review, the Doctors and the Hygiene Committee deliberated separately and reconvened in the afternoon.

The following points were agreed upon in the Doctors' discussion:

1. Complete pre-employment and periodic annual examinations are essential.
   a. Regarded as undesirable for unemployment in exposure areas are individuals who are asthmatics, mouth breathers, who have respiratory difficulties, chest deformities, cardiac disease or are overweight.
   b. X-rays should be of 14 x 17 inch size, taken on equipment of a rating of at least 100 milliampheres. Single PA and lateral pictures should be taken.

c. Timed vital capacity (lung function) tests should be included in the examinations. Maximum breathing capacity measurements should be made if possible.
d. Complete pre-employment history should be obtained with particular attention paid to possible types of dust exposure.

2. The designations for X-ray classifications agreed upon were, negative or borderline, early, moderate, advanced. It was the consensus that there are usually no significant X-ray changes in less than five years of asbestos exposure.

3. For a valid diagnosis of disease it was agreed that (a) a series of X-rays, (b) complete employment history, (c) identification and evaluation of exposure was essential. Further, that the presence of asbestos bodies are not an indication of the disease, but only of the body defense mechanism.

4. The Doctors offered several recommendations for the further consideration of the problems.
   a. A write-up of their deliberations be made and sent to all member company doctors for criticism, review and concurrence.
   b. The Doctors meet with the Air Hygiene Committee at the next meeting to further check X-ray diagnosis. Each doctor will bring films exemplifying each of the four classifications.
   c. Each doctor will bring to the next meeting data on the work force of each plant, indicating the diagnosis and X-ray classification and length of type of exposure for each individual.

The Air Hygiene Committee heartily endorsed this program, and the September meeting will be constituted accordingly. It was agreed that invitation should be made to all doctors of member and associate member companies. Dr. K. W. Smith agreed to prepare the review of the discussion for forwarding to the medical personnel.

5. The Doctors pointed to the value of the Saranac research and indicated several areas where further investigation was needed. These will be further discussed at future meetings and specific proposals presented.

The Air Hygiene Committee wishes to express its appreciation of the significant contributions made by each of the doctors and welcome the opportunity to meet with them again.

In its deliberations, the Air Hygiene Committee reviewed extensively the problems involved in determining a valid sampling technique. T. G. Schmidt reported on his correspondence with Industrial Hygiene Foundation. Question was raised as to the diameter of the fibres of hygienic significance. While the Saranac research indicated fibre length, no observation was made as to the diameter of the

fibres producing fibrosis. None of the doctors present were aware of any data which might shed light on this particular problem.

Since the problem is not one of determining the minimum diameter to which a fibre is capable of being reduced, but rather one of determining the range of diameters of airborn fibre capable of being retained in the lung, the following action was agreed upon.

1. The matter will be reviewed with the Technical Committee to determine whether there is data from that source that will indicate typical diameter size ranges.
2. Each plant will be requested to obtain air hygiene samples from given locations using standard techniques.
3. All samples will be analysed by specified laboratory to insure uniformity of interpretation and results. Analysis of this group of samples should provide a reasonable basis for determining typical fibre diameter size ranges encountered in textile manufacturing. Details of the sampling locations, sampling methods and shipping instructions will be forwarded following discussions with the Technical Committee and the Analysis Laboratory.
4. Develop a research proposal for the evaluation of the efficiency of the four or five available instruments in collecting fibres of the size range determined by the above. It was suggested that equipment manufacturers might be willing to cooperate in such a research program. Discussion of this phase will be held in abeyance pending results of the survey analysis.

Most state industrial hygiene codes set the threshold limit for asbestos dust at five million particles per cubic foot. It was recognized that it would be a long term job to get the states to change to the fibre evaluation even after we have developed for ourselves satisfactory instrumentation and methods. For a period of time, undoubtedly, we will be subject to two standards, that required by the states, and our self imposed standard based on experimental and clinical evidence. The state of New Jersey is at present revising its code on threshold limit values and there is indication that a limit based on fibre contamination will be included. Copies of the Saranac reports and opinions have been presented to the state officials.

John Weber discussed and presented drawings of his design for dust control at the twisters. Although no hygiene survey samples have been taken at this point since the new hood was installed, visual observation indicated that there is excellent control. The hood is designed to facilitate operation of the twister and it does not interfere with the tieing of breaks. Operators have expressed complete satisfaction with the arrangement. Copies of the drawing may be obtained from J. W. Weber, American Asbestos Textile Corporation.

J. M. Jackson
Chairman