PLAINTIFF'S EXHIBIT
Union Carbide 351

Union Carbide Corporation
Metals Division
Niagara Falls, New York
September 29, 1975

MEMORANDUM

To: R. E. Byrne, Jr.
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From: H. B. Rhodes

Copies: File

Subject: Visit to the 18th International Congress on Occupational Health - Brighton, England, September 14-19, 1975

The writer attended the above noted conference in Brighton. There were 22 papers directly relating to asbestos presented and about another 15 on occupational lung cancer generally attributed to various particular matter such as silica. Talc was covered in several of these. Abstracts of all papers are available and a complete set of papers will be published in some months.

The conference was attended by over 2000 delegates, including most of the big names in the asbestos controversy. I had the opportunity to talk informally with a number of them and their current views on the toxicology situation will be summarized.

In general, the conference produced only one bombshell in the asbestos area, a paper by Dr. M. Wasserman of Israel. It was in a different session on Geography and Occupational Health. He took a detailed look at about 40 mesothelioma deaths that have been recorded in Israel. There were several among small children, they were about equally distributed between men and women, a substantial proportion had no significant traceable occupational exposure, and the highest rates were not in the two regions of Israel where the plants which handle asbestos are located. He drew the conclusion that the cause was non-occupational exposure to asbestos.

The London Times reported this prominately. Both the AIC and Dr. Muriel Newhouse wrote letters of rebuttal which we assume will be published. Bob Mereness will report details via AIA/NA.

Overall, the mesothelioma situation for occupational exposure continues to look discouraging. The McDonalds opened the asbestos session with a survey of the available information on the incidence of this disease in various parts of the world. They found the incidence extremely high in three situations:

1. Among insulators.
2. Among those who work or live in cities with ship yards.
3. Among those who work or live in certain cities with large asbestos plants.

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The evidence for a gradation of effect for the various types of asbestos continues to be conflicting, except for the mining and milling operations. Here a clear pattern from crocidolite, amosite, chrysotile to anthophylite is found. They conclude that this pattern is generally true with some possible exceptions.

The data used in this study went up to 1972. Mr. John Marsh, (Raybestos-Manhattan) mentioned to me that there are a substantial number of new cases reported that could alter the rate of incidence considerably.

The TBA paper updating their mortality studies that followed was almost unbelievable. It was read by Dr. R. Doll who mumbled so fast that nobody understood a word he said. It was backed up by slides containing large tables of unreadably small figures. Bob Mereness is to get a copy of the paper as are a number of others who couldn't understand it.

I had the opportunity to discuss the Rochedale researches with Dr. Lewinsohn. The key controversy with Dr. Selikoff revolves around the reading of the x-rays. A panel of four, including Lewinsohn is now reading them and the results are being correlated. A meeting to discuss the results is scheduled for January. It looks like this will not be ready in time to help in the U.S. OSHA revision.

The discussions with Lewinsohn and his TBA associates brought out clearly another key point that I do not believe ever really spelled out in the OSHA hearings. This factory that forms the basis for the 2 fiber limit is just now getting their fiber levels down to 2 fibers. All of the mortality data that is being argued over is for exposures well above this.

This point was also emphasized by Dr. Steve Holmes.(Dr. Holmes testified at the OSHA hearings.) The limit is not really 2 fibers but 100 fiber - years based on an assumed 50 year exposure. This is tied to a very critical second condition that concentrations do not exceed 10 fiber/cc measured over a 10-15 minute period. These criteria do not consider mesothelioma.

The TBA paper was followed by Dr. Murial Newhouse with her lastest thinking on her cohort of 3600 asbestos textile workers. She had fitted a distribution function that had worked for other cancers and was predicting a 10-15% death rate from mesothelioma. This was in addition to 20% from lung cancer. This is a very substantial number and the rest of the British experts that I talked to questioned the validity of the extropolation. Interestingly enough, Dr. Selikoff arose and commented that he felt she was high by a factor of about 2. It was interesting to note in all of these discussions that the workers had heavy exposure for a least some period but no real attempt was made to correlate variations in exposure. Dr. Newhouse, however, continues to talk about a dose-response effect in mesothelioma.

Several other papers of particular interest in this seminar related to a cooperative effort to compare asbestos fiber counts by the techniques used in various countries. The general feeling was that the methods left considerable to be desired but in the light of our experiences the comparisons looked pretty good. A key difference found was with the

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U.S. PAT samples that everybody but the U.S. laboratory counted very low. We can understand the problem from our own experience and have a real question in our own minds as to whether the PAT samples are really much more than a numbers game.

The Selikoff et. el. paper on TJC was well presented but looked like the same data as was given in Miami. Dr. Fishbein expanded on the short fiber question to the extent that Dr. George Wright got red and climbed all over him after the paper. George insists that there is no evidence that the short fibers are toxic and a great deal of evidence that they are not. Dr. Selikoff himself finally had to come over and smooth things out. As a consequence, I was only able to learn that they do have additional data but could get no details.

The brake lining paper from Mt. Sinai followed the same pattern as TJC with limited data and lots of concern. Dr. Lewinsohn commented privately that the 0/1, 1/0 and 1/1 x-ray changes that the Mt. Sinai group feature so prominently in their statistics are often more in the eye of the reader than in the film. You have to get into the "2" level before there is no question that a change has occurred. The U.K. public response was that dust was controlled in this application in the U.K.

The crocidolite vs other asbestos question was addressed by one paper from South Africa that argued that amosite plus chrysotile caused as much asbestosis as crocidolite. The statistics were based on the number of miners who came back out of the bush to make compensation claims after working for several years in the asbestos mines. There was considerable question regarding the validity of the cohort but it did bring out some background on the crocidolite situation. When the question of regulations came up in England it looked like the blue asbestos from South Africa would be replaced by better amosite and chrysotile from Rhodesia. It was sacrifices much like the spraying of insulation in the U.S.A. and then the Rhodesian sanctions upset the whole picture.

In summary, I get the overall impression that there is a great deal of concern that the mesothelioma and even the asbestosis picture will get worse before it gets better. There is a growing feeling that short, intense exposures which overwhelm the lung clearing mechanisms may be enough to cause serious harm. The question of how short is vague and depends to a considerable extent on the individual susceptibility. The only one I found who would take a firm stand on the 2 fiber limit was Alex Cross of Cape Asbestos and AIC who felt it was safe for mesothelioma as well.

If anyone would like to look at the abstracts, please let me know.

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