

1 SUPERIOR COURT OF NEW JERSEY

2 LAW DIVISION: MIDDLESEX COUNTY

3 DOCKET NO. W000026087

4 GEORGE M. BADE, SR., and

5 ROSE BADE, his wife;

6 OSCAR HUBER and PATRICIA HUBER,

7 his wife; ANDREW KREBS and

8 ELIZABETH KREBS, his wife;

DEPOSITION UNDER

9 MAT MATHES and MARY MATHES,

ORAL EXAMINATION

10 his wife; JOSEPH PIETRAS and

OF

11 BLANCHE PIETRAS, his wife;

MATTHEW M. SWETONIC

12 JOSEPH ROLANDS and RUTH ROLANDS,

13 his wife; RONALD S. RESZLER and

14 RORY RESZLER, his wife; WILLIAM T.

15 ROLANDS and MARY ROLANDS, his wife;

16 EDWARD E. TERMyna, SR., and

17 FLORENCE TERMyna, his wife; WARREN J.

18 TUMLER and VERONICA TUMLER, his wife,

19 Plaintiffs

20
21 vs

22
23
24
25
PLAINTIFF'S
EXHIBIT
637

23 ARMSTRONG WORLD INDUSTRIES, INC., formerly

24 known as ARMSTRONG CORK COMPANY, et al.,

25 Defendants

1 TRANSCRIPT of the deposition of the witness,
2 called for Oral Examination in the above-captioned
3 matter, said deposition being taken pursuant to
4 Superior Court Rules of Practice and Procedure by and
5 before DIANA L. R. SENATORE, a Notary Public and
6 Certified Shorthand Reporter, at the Offices of HILL
7 and KNOWLTON, INC., 420 Lexington Avenue, New York, New
8 York, on Tuesday, June 7, 1988, commencing at
9 approximately 10:15 in the forenoon.

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I N D E X

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WITNESS NAME

PAGE NO.

MATTHEW M. SWETONIC

Direct by Mr. Placitella

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E X H I B I T S

EXHIBIT NO.	DESCRIPTION	PAGE NO.
P-1	Transcript of a presentation given to the Asbestos Textile Institute on 6/7/73 by M. Swetonic	40
P-2	Document entitled "What you should know about asbestos and health."	44
P-3	Document entitled "Recommended work practices, fabrication and use of Asbestos Paper Products	44
P-4	Letter dated June 10, 1987	79

2

1 M A T T H E W M. S W E T O N I C,

2 88 Aldridge Road, Chappaqua, New York,

3 10514, called as a witness, having been

4 first duly sworn according to law,

5 testifies as follows:

6 DIRECT EXAMINATION BY MR. PLACITELLA:

7 Q Good morning Mr. Swetonic, my name is
8 Chris Placitella.

9 A Good morning.

10 Q I'm with the law firm of Wilentz, Goldman
11 & Spitzer, and I represent certain plaintiffs in an
12 asbestos personal injury case, of which Hill and
13 Knowlton is not a party.

14 A Uh-huh.

15 Q We are here today for the purpose of
16 taking your deposition to determine what knowledge you
17 have concerning some of the facts and circumstances
18 involved in these cases. Have you ever had your
19 deposition taken before?

20 A No.

21 Q I'm going to ask you some questions which
22 I ask that you answer to the best of your ability. If
23 for some reason you don't understand a question, please
24 tell me that and I'll attempt to rephrase it. If you
25 answer it I'll assume you understood it. Do you

1 understand that?

2 A Yes.

3 Q Okay. I also ask that you keep your
4 answers to my questions verbal, as the court reporter
5 can't take down a nod of the head or a shrug of the
6 shoulders, okay?

7 A Fine.

8 Q If during the course of the deposition
9 your attorney should object to a question that I ask,
10 please don't answer it until such time as we have the
11 opportunity to discuss what we should have learned a
12 long time ago in law school, probably what we should
13 not have forgot, and she tells you whether you can
14 answer the question or not.

15 A I understand.

16 Q Give me the benefit of your education.

17 A Bachelor's Degree in Writing from the University
18 of Pittsburgh. Master's Degree in Journalism from
19 Columbia University.

20 Q When did you receive the Master's?

21 A 1965.

22 Q You currently work for Hill and Knowlton;
23 is that correct?

24 A That is correct.

25 Q Did you hold any job prior to your getting

1 your Master's Degree?

2 A For about six months I was a reporter for the
3 Easton Express in Easton, Pennsylvania; daily
4 newspaper.

5 Q How old are you today?

6 A Today?

7 Q Yes.

8 A Forty-five.

9 Q When you finished your Master's Degree in
10 1965, what was the first job you had after that?

11 A Johns-Manville Corporation.

12 Q What did you do for them?

13 A Initially I started out as an assistant editor
14 on their company magazine.

15 Q How long did you have that job?

16 A Roughly to 1967, when I then was named editor of
17 that publication.

18 Q What was the name of the publication?

19 A I knew you were going to ask that. I don't
20 remember.

21 Q And as editor what were your basic
22 responsibilities?

23 A Just basically to put out this magazine, which
24 primarily talked about what employees were doing in the
25 company, occasional features on the, some of the new

1 products that they were developing, that sort of thing.

2 Q Okay.

3 A For example, their insulations were used in a
4 lot of spacecraft so we would do stories on that
5 practically every month, or however many times a year
6 it came out.

7 Q But you don't remember the magazine name,
8 though?

9 A No, I really don't.

10 Q Did the magazine ever deal with issues
11 such as asbestos and health?

12 A I'm trying to remember if it did or not, because
13 again as I say, I knew that would be something you
14 would ask. I don't remember, to be totally honest with
15 you.

16 Q How long did you have the job as editor of
17 that magazine?

18 A For approximately one year, sometime into 1968
19 it changed.

20 Q And what is your next job?

21 A I was approached by the company because one of
22 the specialties that I had taken at Columbia was
23 science journalism.

24 Q So you stayed editor of the magazine until
25 sometime in 1968?

1 A Right.

2 Q And then your next job was?

3 A I then approached by the company, as I was
4 saying before, because I had done science writing as a
5 specialty in the second half of my year at Columbia, to
6 help them with their evolving public relations problems
7 with asbestos and health. And they gave me a title
8 that was something like coordinator of special
9 projects. One of those very fuzzy type names.

10 Q How long did you have that job?

11 A Until 1972 when Manville moved to Denver and I
12 did not want to leave New York. So I took over a job
13 as the executive secretary of the Asbestos Information
14 Association of North America.

15 Q Let me go back to the public relations job
16 you had with Manville from '68 to '72.

17 A Uh-huh.

18 Q What specifically was your job function?

19 A I was -- I reported to two people who were sort
20 of in charge of the total public relations effort on
21 asbestos. A fellow named Bill Raines, another fellow
22 named Jack Solon, who is really the head of advertising
23 and public relations, Bill Raines being the head of
24 public relations. And I worked basically for those
25 two.

1 Q What did you do?

2 A Well, for example, I would help write background
3 papers on various types of asbestos-related diseases
4 like asbestos and mesothelioma, asbestos-related
5 disease, and different types of products like asbestos
6 cement or the insulations or that sort of thing.
7 Pretty much a writing assignment. I would also write
8 testimony for executives who were going to testify at
9 say OSHA or EPA hearings, that sort of thing, or at
10 least would do drafts of them in any case.

11 Q Every time you generated a piece of
12 written work, would that be filed somewhere?

13 A Yeah, it would have been.

14 Q How was that filed?

15 A Well, it was -- it was just in what we would
16 call our old asbestos and health files at
17 Johns-Manville.

18 Q And who was the custodian of those files?

19 A They were just in the department.

20 Q Which department was that?

21 A Public relations.

22 Q So the public relations department was
23 centered in New York City at the time?

24 A That's correct.

25 Q And they had their own files on asbestos

1 and health?

2 A To the best of my recollection, yeah. I mean, I
3 would have a filing cabinet with the stuff that I was
4 working on but --.

5 Q When the transfer was done out to Denver,
6 were those files shipped to Denver as well, to your
7 knowledge?

8 A I would assume they were because they were, you
9 know, we were actively working on the issues. So there
10 would be no reason for them to be tossed away.

11 Q Was the custodian of those records -- who
12 was the person in charge of them?

13 A Well, Bill Raines did not go out there. He went
14 to -- he went to another company. I would guess Jack
15 Solon.

16 Q Is Jack still with the company?

17 A No, he's retired.

18 Q Do you know who his successor was?

19 A No, I really don't.

20 Q Now, in preparing these papers or writings
21 that you spoke about, did you ever to go back and do
22 research on asbestos and health?

23 A Yes.

24 Q In order to --.

25 A Yeah.

1 Q What kind of research did you do?

2 A Well, we had been collecting, you know, basic
3 stuff out of the, out of the medical literature.

4 Q When you say "we," who are you talking
5 about?

6 A Well, Hill and Knowlton and Johns-Manville.

7 Q So Hill and Knowlton had a relationship
8 with Johns-Manville at that time?

9 A Yes.

10 Q Okay, go ahead.

11 A I can recall at one point a meeting at which
12 somebody commented on the fact that we had more than
13 4,000 papers on asbestos and health in the file at that
14 particular point in time.

15 Q Now, when you say at that point I found
16 about 4,000 articles on asbestos and health, at what
17 point in time are we discussing, just so I know, about
18 1968?

19 A Well, it was probably later than that. We're
20 probably talking '71 or something in that ballpark.

21 Q Did Hill and Knowlton maintain their own
22 file on asbestos and health at that time?

23 A Yes, they did have -- yeah, they did.

24 Q And who was the custodian of that file?

25 A Probably a fellow named Carl Thompson.

1 Q Is Carl still with the company, do you
2 know?

3 A No, he's retired.

4 Q Now, after Carl left what happened to that
5 file?

6 A No, but it's different than that. What happened
7 was that when Manville moved to Denver all of the Hill
8 and Knowlton files were turned over to the trade
9 association.

10 Q What trade association?

11 A The Asbestos Information Association.

12 Q Okay. And when was that?

13 A Late 1971 probably.

14 Q Okay. So Hill and Knowlton didn't retain
15 copies?

16 A Not to the best of my knowledge.

17 Q Now, you said you did some research for
18 Mansville when you took over in this public relations
19 job. Did you ever document the earliest articles that
20 you can recall concerning asbestos and health?

21 A I'm sorry, I don't quite understand.

22 Q Let me rephrase the question. Did you
23 breakdown the articles into the various diseases, or
24 did you just lump medical articles together when you
25 were doing --.

1 A No, these were all medical articles we are
2 referring to. Basically they were, they were looked at
3 by a combination of either disease or, you know,
4 product line for example, insulations for example.

5 Q Okay. Did you maintain copies of the
6 papers you wrote for Manville?

7 A I probably -- they were probably at the trade
8 association as well.

9 Q So then you didn't maintain personal
10 copies of the papers, did you?

11 A No.

12 Q Can you recall writing any papers
13 concerning exposure to insulation products and their
14 effect on human health?

15 A Yes.

16 Q Did the papers have titles?

17 A Oh, they probably did. It was something like
18 Asbestos Insulation and Human Health or, you know, some
19 such name.

20 Q Was that paper published at all?

21 A No. I mean not -- you mean like in a journal or
22 something?

23 Q Right.

24 A No. No. No. These are not medical papers.
25 These were background papers.

1 Q Okay.

2 A I'm not a doctor or a scientist.

3 Q Where did you get the information for the
4 paper?

5 A Generally out of this, out of the medical
6 literature as it existed.

7 Q Who supplied the medical literature to
8 you?

9 A The company. And they did searches through the
10 medical literature to get all there was out there.

11 Q Did you consult any physicians in
12 connection with this paper Asbestos Insulation and
13 Health?

14 A Basically we would, we would write a paper or I
15 would write a paper. Then the company would, would
16 have it reviewed by their consultants, medical
17 consultants.

18 Q And do you know who that was?

19 A The primary one in those days was a fellow named
20 Dr. George Wright.

21 Q Did you ever meet Dr. Wright?

22 A Oh, yes.

23 Q What would his role be in conjunction with
24 these particular papers? What would he do?

25 A He was a consultant to Johns-Manville. He was

1 affiliated with, as I recall, St. Luke's Hospital in, I
2 can't remember where it was. I just remember it was
3 St. Luke's Hospital someplace.

4 Q When you had this job in public relations,
5 did you consult or collaborate with any other asbestos
6 companies?

7 A Not until the trade association was formed.

8 Q And when was that?

9 A In, I think, maybe late 1970.

10 Q Can you recall with respect to the paper
11 on Asbestos Insulation and Health what the earliest
12 articles you were able to find in the medical
13 literature were implicating asbestos insulation as a
14 health hazard?

15 A No.

16 Q Do you remember from what decade they
17 came?

18 A No, not really. I remember better the, you
19 know, when the diseases were found, you know, in the
20 medical literature as opposed to their association with
21 any particular product.

22 Q Okay. Well, can you recall with respect
23 to asbestosis the earliest articles you were able to
24 find in the medical literature?

25 A My recollection is that they were probably in

1 the 1930s.

2 Q Do you remember the authors of any of
3 those papers?

4 A No.

5 Q Do you remember what the papers said?

6 A Just basically that heavy exposure to asbestos
7 insulations or asbestos could cause, you know,
8 asbestosis.

9 Q Okay. Did you have any discussion with
10 any physicians or any other representatives of Manville
11 concerning those findings?

12 MS. FIGUEREDO: By those findings you
13 mean?

14 Q The papers dating back to the 1930s on
15 asbestosis.

16 A I'm not quite sure about what you mean by
17 discussions.

18 Q Well, did you have discuss with Dr.
19 Wright, for instance, about the articles you found
20 dating, concerning asbestosis back in the 1930s?

21 A Probably no specific discussions.

22 Q Was it part of your job to communicate
23 your findings to someone else within the company?

24 A Well, it's not findings. You know, we had the
25 processes -- basically we had this great body of

1 medical literature. And it would be to go through that
2 particularly looking for epidemiological studies or
3 studies that were trying to indicate at what level
4 these various diseases, exposure level these diseases
5 were caused. And those were the most important things
6 that we used in the, in trying to prepare these
7 background papers.

8 Q This body of literature that you're
9 discussing, was that something that was accumulated
10 over time by Manville and they had it in a file, or did
11 you go out and do a search or someone at your request
12 go out and do a search at that point you wanted to
13 write the paper?

14 A I don't know the answer to that, because some of
15 those papers were in place when I got involved in the
16 job. And I don't know, I just don't know the answer to
17 that.

18 Q Did Manville have a medical library at the
19 time?

20 A I don't recall.

21 Q Now, you said that part of your endeavor
22 was to determine exposure levels. What did you mean by
23 that?

24 A Well --

25 (Recess.)

1 A -- determine is not a good word. All we were
2 looking for was what was in the literature with regard
3 to the exposure levels at which asbestos caused disease
4 of various types.

5 Q And what did you find?

6 A Basically the problem with the, at that time is
7 that the dust samples -- again, I'm just referring to
8 the literature -- that the dust samples that had been
9 taken years before that were recorded in the literature
10 were not the same sampling techniques that were being
11 used at that particular point in time. And so it was
12 kind of difficult to arrive at what would be
13 considered, you know, a "safe level" of exposure. So
14 of course, there was a lot of research going on trying
15 to correlate, you know, one with the other. And we
16 just tried to help explain that as best we could.

17 Q Did Manville have a position or a belief
18 at that time, to your knowledge, as to what was the
19 safe level of exposure in terms of asbestosis now?

20 A Asbestosis. I'm sure that they did. I can't
21 say specifically what that might have been for
22 asbestosis.

23 Q Did you ever research the concept of
24 threshold limit value for them?

25 A Of course, that's what we were, you know,

1 essentially looking at, is to try and determine what
2 sort of, what would make sense in that regard.

3 Q Did you reach any conclusions or did
4 anyone working with you reach any conclusions
5 concerning the reliability of an established threshold
6 limit value?

7 A In other words, would it work?

8 Q Right.

9 A Yeah, I think they believed that there was a
10 level that could be set by the government that would
11 protect people, if that's what you mean.

12 Q Do you know what that was?

13 A No, they thought, I think, you know, in the low
14 numbers of fiber per cubic centimeter, whether it was
15 going to be -- whether it would be two or four or five
16 or somewhere in that general ballpark.

17 Q Did you also do research and prepare a
18 background paper concerning asbestos and lung cancer?

19 A I'm sure I did.

20 Q Okay. And who did you consult, or what
21 did you consult in preparing that paper?

22 A The same processes as the other ones.

23 Q Can you recall the first articles that you
24 were able to -- the earliest articles you were able to
25 find demonstrating an association between asbestos and

1 lung cancer?

2 A My recollection, probably in the late '40s,
3 something like that.

4 Q Can you recall who the author of those
5 articles were?

6 A No, I have the recollection it was a British
7 paper, but I'm not sure.

8 Q Can you recall any particular
9 epidemiological studies that you found which
10 established an association between asbestos and lung
11 cancer?

12 A Well, that's what I'm referring to,
13 epidemiological studies.

14 Q Okay. Did Manville ever give you any of
15 their own data with respect to their own employees when
16 you were writing up these background papers?

17 A No.

18 Q So this was basically a search of what was
19 out there at the time?

20 A Yes, that's correct.

21 Q Did you put your conclusions as to when
22 this first association became known in this background
23 paper?

24 A Most likely. I mean, that would be the standard
25 way I would write things. So I would assume I did

1 that.

2 Q Did anyone, to your knowledge, come back
3 to you and disagree with your conclusions?

4 A No.

5 Q Did you submit those papers to Dr. Wright
6 again for review?

7 A Oh, yes.

8 Q And did he disagree with the determination
9 or conclusions that you reached concerning asbestos and
10 lung cancer?

11 A No, not to the best of my recollection.

12 Q Did you also attempt to determine whether
13 there was a safe level of exposure in terms of
14 contracting lung cancer from asbestos?

15 A The process of looking at TLV's for asbestos was
16 just applied across the board for all the diseases.

17 Q Did you ever do a background paper
18 concerning exposure to asbestos and mesothelioma?

19 A Again, I'm -- don't remember precisely doing
20 that, but I assume I did, because we had a great body
21 of those papers, eight or nine of one type or another.
22 So that would be naturally one to be done.

23 Q Do you recall the earliest articles that
24 you found in Manville's files demonstrating an
25 association between asbestos and mesothelioma?

1 A Yeah, that's definitely in the '50s. An
2 epidemiological study of one type or another.

3 Q Can you recall specifically the name of
4 the paper or the study?

5 A No.

6 Q Or the author?

7 A My recollection, it was a paper out of South
8 Africa or Rhodesia, as it was then known, on the
9 asbestos mines and crocidolite mines in South Africa is
10 my recollection.

11 Q Does the name Wagner ring a bell?

12 A Yeah.

13 Q Can you recall when you looked at the
14 Wagner paper whether there was any mention of
15 different exposure levels in that particular paper?

16 A No, I can't remember:

17 Q Did you ever do a paper for Manville
18 concerning the risk of contracting asbestos-related
19 disease from low level exposure and do a medical search
20 in connection with that?

21 A I don't think as a specific paper not that I --
22 not that I recall.

23 Q Did you ever do that type of research in
24 looking at the medical literature in possession of
25 Johns-Manville?

1 A Yeah, that was obviously part of, you know, when
2 going through the whole OSHA process to find out, you
3 know, at what levels things are gonna not happen again.

4 Q Can you recall the earliest papers that
5 you found concerning low level exposure to asbestos and
6 asbestos disease.

7 A Well, what -- okay, let me ask you a question.
8 I have to ask you a question; that is, what do you mean
9 by "low level"?

10 Q That's a fair question. Did you ever do
11 any research papers, for instance, bystander exposure,
12 people who actually didn't work with insulation
13 products but were exposed as bystanders?

14 A I don't recall their ever having, ever having
15 seen such a paper. The only -- Okay.

16 MS. FIGUEREDO: Don't guess.

17 THE WITNESS: No.

18 Q Did you ever see any papers concerning
19 exposure and risk of disease or disease developing in
20 family members?

21 A Yes.

22 Q Can you recall the earliest paper in that
23 regard?

24 A Oh, gosh that, that came probably late. That
25 was again, I think, a British paper, too. Woman

1 author. I met her a couple of times. Probably,
2 probably that would have been in the late '50s, early
3 '60s I would think would be my best guess.

4 Q That's your best estimate?

5 A Yeah.

6 Q And do you recall what the substance of
7 that paper was, what it said?

8 A Yeah. Basically she had found cases of
9 mesothelioma in the households of people who had worked
10 in asbestos factories of one type or another, I don't
11 recall what kind, in England somewhere.

12 Q And did you bring these or have discussion
13 about these papers with anybody at Manville?

14 A Oh, sure. It was a very -- those were very
15 important issues.

16 Q Who did you run those papers by when you
17 found them?

18 A Well, I mean everybody knew that they existed.
19 I mean, the doctors at Manville knew the authors of
20 these papers. They spent a lot of time talking with
21 them about them, what the implications were, what kind
22 of levels one might have projected that the people had
23 been exposed to in the households. You know, this
24 thing, none of this happened in isolation. I mean, I
25 spent many a month in Europe talking around with

1 doctors over there, you know, going over there with the
2 Manville people to get better information on what was
3 going on.

4 Q Which doctors did you go see in Europe?

5 A Good question. I know we went out to a
6 pneumoconiosis research unit, or some such thing in
7 Penarth, Wales. And there was another center for
8 asbestos health studies in Scotland. You know, those
9 sorts of things. And to conferences and that sort of
10 stuff.

11 Q Did you ever meet with a Dr. Nocks?

12 A Dr. Nocks. The name is familiar.

13 Q Company known as Turner & Newall?

14 A Yeah. Yeah, I probably did.

15 Q Did you ever meet with a Sir Richard Doll?

16 A I don't believe I personally did. I, of course,
17 know who he is.

18 Q After you had read this paper over, did
19 you discuss it with Dr. Wright, the paper on
20 mesothelioma in the family of asbestos factory workers?

21 A I wouldn't think we discussed it.

22 Q Did anyone at Manville, to your knowledge, -
23 ever disagree with the conclusions reached in that
24 paper when you brought it to their attention?

25 A Well, no, no one ever disagreed with it.

1 Q Can you think of any other papers that you
2 discovered or you discussed with anyone concerning
3 asbestos disease and family members?

4 A That's -- that's the only paper that I can
5 recall, that one particular paper.

6 Q Can you recall ever reading any papers in
7 possession of Manville concerning asbestos disease
8 found in residents around an asbestos factory or mine?

9 A The only one that I can recall was there was
10 some higher incidence of mesothelioma in the vicinity
11 of a shipyard in Scotland or some such place. That's
12 the only one I can recall.

13 Q Can you recall approximately when that
14 paper was published?

15 A Well, no. It was probably again in the '60s.

16 Q Can you describe the relationship between
17 Hill and Knowlton and Johns-Manville when you first
18 went to work for Johns-Manville?

19 A Hill and Knowlton was not retained by
20 Johns-Manville when I went to work there. They were
21 retained sometime in 1968 specifically to work with
22 them on the asbestos and health situation. But when
23 precisely they are, I don't know. They were in place
24 when I was offered to change jobs within the company.

25 Q Do you know who the account representative

1 from Hill and Knowlton was at the time?

2 A Carl Thomson.

3 Q You tell me he's retired, correct?

4 A Yes.

5 Q Did he have any associates that worked
6 with him on that account that still work at Hill and
7 Knowlton?

8 A No.

9 Q Can you recall any of the associates he
10 had with him on that account?

11 A Jim Callaghan. Do want more? I'm trying to
12 remember. Fellow named Bill Jenkins. Those are the
13 only two additional I can remember.

14 Q What specifically was Hill and Knowlton
15 retained to assist with by Johns-Manville?

16 A Well, basically to counsel them on how to
17 discuss the implications of the asbestos and health
18 problem with the public, with their employees, with
19 government, whatever.

20 Q Now, at that time was Hill and Knowlton to
21 your knowledge retained by any other insulation
22 manufacturer or asbestos manufacturer?

23 A Not to the best of my knowledge.

24 Q Are you aware of an agreement between
25 Johns-Manville, Owens-Corning, Pittsburgh Plate Glass

1 and Certain-Teed in the late 1960s retaining Hill and
2 Knowlton concerning the issues of asbestos and health?

3 A When would this have been?

4 Q '67, '68, '69.

5 A No, I thought it was just Manville.

6 Q Did Hill and Knowlton have its own medical
7 people at the time that assisted Manville?

8 A You mean doctors, professionals.

9 Q Doctors.

10 A No.

11 Q What type of assistance did it give
12 Manville other than writing copy for them and helping
13 them with press releases, that type of thing?

14 A Just, you know, just counsel them on, as I said,
15 on public relations aspects of the issue.

16 Q Did Hill and Knowlton give Manville any
17 technical support?

18 A No.

19 Q Did they ever, during the time that you
20 worked there, counsel Manville on how to deal with
21 lawsuits arising out of asbestos?

22 A No.

23 Q Can you recall what specifically Hill and
24 Knowlton advised Manville to do with respect to the
25 problem of asbestos and health?

1 A Well, the basic position was that to solve the
2 problem and to at the same time put it in perspective
3 where it had gotten a little bit out of whack.

4 Q When you say that, what do you mean by
5 that?

6 A That it was the belief of all of us working at
7 Manville that asbestos could be used safely and that
8 the exposures could be controlled to an extent where
9 there would not be, you know, additional disease in the
10 future. And so the effort was to, obviously to explain
11 that to whoever needed to understand it.

12 Q When you say could be used safely, what do
13 you mean by that?

14 A Meaning that you could manufacture asbestos
15 products, you could use asbestos-containing products,
16 you can mine asbestos without endangering the health of
17 the people who were handling that.

18 Q What precautions would have to be taken in
19 the opinion of Manville at the time to accomplish that
20 objective?

21 A Well, obviously huge air cleaning equipment in
22 plants and factories and mines, which they already had
23 in place basically. But to, you know, to make sure
24 that you had state-of-the-art air cleaning equipment in
25 all operations. I can remember basically, you know,

1 sort of research projects to try and find ways, for
2 example, to open bags of asbestos in a fashion that the
3 dust would not be created. They had these things where
4 you'd stick your hands in, almost like in an operating
5 room, and then open the bags that way. And eventually
6 I think they developed mechanical bag openers, and that
7 sort of stuff. A lot of technical type of efforts to
8 do that sort of thing.

9 Q Was it Manville's believe at the time that
10 opening a bag of asbestos would release asbestos
11 containing particles?

12 A Of course it would. A bag of asbestos, and you
13 open it you get a puff up, you get an exposure.

14 Q Did that include asbestos cement as well?

15 A I don't recall stuff on asbestos cement, to be
16 honest with you. Because they were really basically
17 involved in the finish asbestos cement products. So I
18 don't think they sold asbestos cement in bags, as I
19 recall.

20 Q Okay.

21 A So it would not be something that technically
22 they'd pay attention to.

23 Q Were you ever involved in any discussions
24 on labeling of Manville products?

25 A Not that I recall.

8

1 Q Now, when you say that the issue in
2 Manville's mind got out of perspective, I want to
3 explore that. What do you mean by that specifically?

4 A Well, there was perfect --.

5 MS. FIGUEREDO: You mean in greater detail
6 than he has already explained to you?

7 MR. PLACITELLA: I haven't heard about
8 perspective. He just told me about ways to make
9 use of the product safe, I believe.

10 A Uh-huh.

11 Q And I want to know what you mean when you
12 say it got out of perspective.

13 A I think there was a feeling in the, you know, in
14 the popular press that any exposure to any level of
15 asbestos was automatically going to give people
16 disease. And that simply was not supported by what was
17 in the, in any of the literature, or by any of the
18 research that had been done. So that was part of the
19 reason for, for, you know, doing some of those
20 background papers. It could be used with the press or
21 whatever to explain, yes, it's a problem but it's, it
22 can be, you know, dealt with.

23 Q Okay. At that time were you familiar with
24 Dr. Irving Selikoff?

25 A Oh, yes.

1 Q How were you familiar with him?

2 A Dr. Selikoff and the Environmental Sciences
3 Laboratory at Mount Sinai and Johns-Manville entered
4 into a research project sometime in the late '60s to
5 address the issue of the safe handling of asbestos
6 insulation in the field, not in the production of it in
7 a factory, but in the field.

8 Q Why why was that?

9 A Because Dr. Selikoff had done a lot of research
10 on insulation workers, really asbestos insulation
11 workers. And they had an exceedingly high incidence of
12 asbestos-related diseases.

13 Q Is that something that was known to
14 Manville at the time?

15 A Oh, of course.

16 Q Okay. Go ahead.

17 A So the question was how can you develop or
18 change work practices. Can you get portable air hoods
19 to work with what needs to be done to protect these
20 people in the way that they either apply or tear out
21 asbestos insulations.

22 Q Do you know whether John Manville and Hill
23 and Knowlton ever established any type of public
24 relations campaign to counteract the adverse publicity
25 that Selikoff's studies were generating in the press?

1 A No, not really. I mean, they were basically
2 working together with the man at that time.

3 Q Were you familiar with an article that
4 appeared in the literature at the time called The Magic
5 Mineral?

6 A I remember the name, but not the article.

7 Q Did you ever have any discussions with
8 Hill and Knowlton or in Manville itself concerning how
9 best to present the asbestos and health picture to the
10 labor unions?

11 A No. The only -- my only recollection of labor
12 unions is they were also involved in that project that
13 I had mentioned before with Manville and Mount Sinai
14 and Selikoff. A fellow from there was a member -- the
15 president of the union was a member of the board of
16 this thing, which I can't even recall the name of
17 anymore.

18 Q Let me just move on for a second and I'll
19 come back. You had this particular job until you said
20 about what time?

21 A The end of 1971.

22 Q Prior -- let's discuss the AIA of North
23 America.

24 A Okay.

25 Q When was that established?

1 A I believe in late 1970.

2 Q And was that patterned after any other
3 organization, to your knowledge?

4 A Yes, an Asbestos Information Association type of
5 a group in England.

6 Q Do you know whether Hill and Knowlton had
7 advised the AIA in England prior to that time?

8 A Yes, they had.

9 Q Do you recall in the 1970s what companies
10 founded the AIA of North America?

11 A I could name a couple. It's in some of the
12 material I passed on for the deposition before.
13 Certain-Teed, of course Manville, Raybestos-Manhattan,
14 National Gypsum. It seems to me there were seven or
15 eight. GAF, that's all I can remember of the initial.

16 Q Was Owens-Corning a member?

17 A I don't believe so.

18 Q What about Baldwin, Ehret, Hill, do you
19 recall that, or Keene Company?

20 A No.

21 Q Celotex or Philip Carey?

22 A Philip Carey I think may have come in in the
23 second group much later. They expanded it from the
24 original seven or eight up until about 22 or 23. And I
25 can't, again, I also can't remember too many of them,

1 you know.

2 Q When it was established in 1970, did you
3 have any role within the organization?

4 A Yeah, I -- Manville basically for the first year
5 provided, for all intents and purposes, the staff to
6 this group. And from the public relations standpoint
7 that was myself and this fellow Bill Raines.

8 Q Did you have a title?

9 A I don't believe so. At least not initially I
10 don't recall that I did, in any case.

11 Q What was the purpose of the AIA of North
12 America.

13 A Well, it was essentially to get the entire
14 industry into the effort that Manville had basically
15 been carrying on its own, which was to basically
16 address the health issues from an informational
17 standpoint with regard to asbestos and its various
18 health problems. They had technical committees, for
19 example, to put together, you know, safe use, safe
20 practice books on various types of asbestos useage, you
21 know, that sort of thing.

22 Q Okay. You started officially full-time
23 with the AIA when?

24 A Beginning in 1972.

25 Q What was your position?

1 A Executive secretary.

2 Q What were your job responsibilities there?

3 A Basically it was really a continuation of my
4 Manville job, just with a different title.

5 Q And were there any other officers within
6 the organization at that time?

7 A No, I was -- myself and a secretary were the
8 sole paid employees.

9 Q What were your job responsibilities, the
10 same as you had with Manville?

11 A Same really as we had with Manville.

12 Q Only at that point in time you were doing
13 it on behalf of not just Manville but other member
14 companies?

15 A Other member companies, that's correct.

16 Q Did you ever, in that capacity, go around
17 to any trade organizations to give speeches or anything
18 like that?

19 A Not really. Basically the asbestos people, to
20 my recollection, didn't have too many trade
21 associations. And this one, as I said, was dedicated
22 pretty much to the asbestos and health issue. And they
23 had most of the major companies involved in it. So --.

24 MS. FIGUEREDO: Excuse me.

25 (Witness and Counsel confer).

1 Q Do you recall ever giving a presentation
2 to The Asbestos Textile Institute?

3 A No.

4 Q Do you recall speaking before them on June
5 7, 1973?

6 A I really don't.

7 Q Okay.

8 MR. PLACITELLA: Can I have this marked as
9 P-1?

10 (The above-mentioned document is marked as
11 P-1 for Identification.)

12 Q I am going to show you what's been marked
13 P-1 for Identification, which I represent to you is a
14 transcript of a presentation that you gave on 6/7/73 to
15 The Asbestos Textile Institute according to one of the
16 asbestos companies that was present at that.

17 MS. FIGUEREDO: That is an imperuim
18 (phonetic) document?

19 MR. PLACITELLA: What?

20 MS. FIGUEREDO: I'm asking you is his name
21 in the document?

22 MR. PLACITELLA: Yes, right on top.

23 Q I ask you to review at least the first
24 couple pages of that and see if that helps refresh your
25 memory.

1 A Sure.

2 (Witness reviews).

3 A Yeah, it's possible.

4 MS. FIGUEREDO: Are you going to ask him
5 specific questions on this document?

6 Q Yes, I am.

7 MS. FIGUEREDO: I would like him to read
8 the whole thing.

9 MR. PLACITELLA: We will go through it.

10 Q Does that help refresh your memory?

11 A Yeah. I don't recall the occasion.

12 Q Do you recall at one time speaking before
13 The Asbestos Textile Institute?

14 A I do not.

15 Q Does this refresh your memory as to
16 whether you had ever given presentations to asbestos
17 industry trade organizations?

18 A If that is an accurate document, then I
19 obviously did to that group. But I, the fact of the
20 matter is, I don't even remember giving that.

21 MS. FIGUEREDO: His question is, does it
22 refresh your recollection? If it doesn't, you
23 can say no.

24 A No, it does not.

25 Q Will you tell me if this statement in this

1 document is true to the best of your knowledge? It
2 says, "In our original concept the Association would
3 limit its activities to providing accurate, unbiased
4 information on asbestos and health to the press, to the
5 public and to interested politicians and other
6 government officials."

7 A Yes, that's true.

8 Q That's true. You recall making such a
9 statement?

10 A No.

11 MS. FIGUEREDO: Do you have another
12 copy of that he can look at at the same time
13 you're reading things from it?

14 MR. PLACITELLA: I am sorry, I don't.

15 Q Was the following statement true at the
16 time; "It must be remembered that at this particular
17 time the enormous problems that would later develop
18 with regard to OSHA and other federal regulatory
19 agencies were as yet on the distant horizon and
20 basically unrecognized by the industry"?

21 A Yes, that's true.

22 Q Okay.

23 MS. FIGUEREDO: Can I interrupt? If
24 you're going to ask a lot of things like, can we
25 make a copy of the document so he can have it in

1 front of him to look at in conjunction --.

2 MR. PLACITELLA: Sure.

3 MS. FIGUEREDO: Is there a machine?

4 THE WITNESS: Sure.

5 Q Can you recall making the following --.

6 MS. FIGUEREDO: I asked if we can have a
7 copy.

8 MR. PLACITELLA: Fine. As soon as I am
9 done you can have a copy.

10 MS. FIGUEREDO: I want him to have a
11 copy in front of him. I don't think it's
12 that unfair to ask for him to have a copy of a
13 document if you are going to be reading
14 statements from it.

15 MR. PLACITELLA: As soon as I finish this
16 paragraph you can make a copy.

17 Q Do you recall making the following
18 statement: "Fortunately and properly the Association
19 has had the wisdom to alter its original limited
20 concept of its proper functions, and now endeavors to
21 assume whatever activities and responsibilities it
22 deems necessary to protect the interests of the
23 asbestos manufacturing industry in the United States
24 vis-a-vis asbestos and health"?

25 A I don't remember making that statement. But --.

1 Q Do you dispute that it was made by you?

2 A I just don't recall.

3 Q What I'd like to have you do right now is
4 to read it. We will take two minutes out and you can
5 read this statement and see if it refreshes your memory
6 and see whether it refreshes your recollection.

7 MS. FIGUEREDO: Are you going to be
8 reading him other direct passages?

9 MR. PLACITELLA: I will let him read that.
10 Do you want to make a copy?

11 MS. FIGUEREDO: Yes.

12 (Recess.)

13 MR. PLACITELLA: I can go on while we are
14 waiting for copies.

15 Can we mark these?

16 (Documents are marked as
17 P-2 and P-3 for Identification.)

18 Q In 1973 was there anyone authorized to
19 speak on behalf of the AIA of North America other than
20 yourself?

21 A Oh, sure, the president.

22 Q Who was that?

23 A 1973, probably John Marsh.

24 Q Now, you told me that around 1970 when the
25 organization was established both you and Mr. Raines

1 were the only executives or principals within the
2 organization; is that correct?

3 A No, no. I said that we were on the staff.

4 Q Oh, okay. Did you have other staff within
5 the organization at that time?

6 A Yes, from the member companies.

7 Q Okay. Can you recall who else was on the
8 staff in 1970?

9 A I can only remember one man, and that was a
10 fellow named Ed Fenner from Johns-Manville who was in
11 charge of environmental affairs.

12 Q Did it have a president at that time?

13 A Yes.

14 Q Who was that?

15 A I can't remember.

16 Q At some point in time you recall John
17 Marsh taking over --

18 A Yes.

19 Q -- as president?

20 A Yes.

21 Q When was that?

22 A Probably in late '72.

23 Q All right. Was he with an asbestos
24 company?

25 A Yes.

1 Q Which company?

2 A Raybestos-Manhattan.

3 Q Do you recall how long John Marsh was
4 president?

5 A No.

6 Q How long did you remain executive
7 secretary?

8 A I left in August of '73.

9 Q And where did you go after that?

10 A To Hill and Knowlton.

11 Q I am going to ask you to look at P-2 and
12 P-3, and ask if you have ever seen these before, or
13 copies of them?

14 (Witness reviews).

15 A I've seen that one.

16 MS. FIGUEREDO: He is referring to P-2.

17 MR. PLACITELLA: Correct.

18 A No, I've never seen this one.

19 Q Can you tell me what P-2 is?

20 A I had nothing to do with the preparation of
21 this. I'd be assuming what its purpose was, because I
22 don't know. I've just seen copies of it.

23 Q Where did you see copies of it.

24 A Probably Bob Marinas sent me a copy when it was
25 put together.

1 Q Who is Bob Marinas?

2 A He succeeded me as running the trade association
3 when I left in '73.

4 Q How long did he keep that job?

5 A I don't know. I know he's gone.

6 Q To your knowledge, was that booklet P-2
7 put together after you left?

8 A Yes.

9 Q Now, your attorney has asked me to make
10 you a copy of P-1 so we can go through it together.
11 And in June of 1973, who else was authorized to speak
12 on behalf of the Asbestos Information Association of
13 North America to industry trade organizations other
14 than yourself?

15 A Well, the president obviously. And, of course,
16 the people who would be in charge of the environmental
17 sections of it.

18 Q And who was the one who had the
19 responsibility of making presentations to various
20 industry organizations?

21 A No one.

22 Q Can we turn to page 3?

23 I'd like to refer you to the first full
24 paragraph.

25 A Uh-huh.

11

1 Q On page 3 the sentence says; "First, there
2 is no doubt that the inhalation of substantial amounts
3 of asbestos being lead to increased rates of various
4 types of lung disease, including two forms of cancer.
5 These are facts which cannot be denied, even if they do
6 not apply in all circumstances and under all
7 conditions." Is that a statement that you believe was
8 true in 1973?

9 A Yes.

10 Q Do you believe that the members of the
11 organization ascribed to that statement?

12 A Yes.

13 Q All right. I'd like to read you the next
14 sentence: "The medical literature is full of solid
15 evidence linking asbestos to disease. In my office I
16 have on file more than 2,000 medical papers dealing
17 with the health risk of asbestos, and hundreds more are
18 published every year." At that time in 1973 did you
19 have at least 2,000 papers in your office --

20 A Sure.

21 Q -- on asbestos disease?

22 A Probably was more.

23 Q Can you recall ever making that statement?

24 A Yes. I mean --.

25 Q Okay. Let me just go on to the next

1 sentence: "Secondly, the spreading of alarm over the
2 health risks of asbestos has as its prime spokesman one
3 of the most talented medical publicists of the age, Dr.
4 Irving Selikoff of New York City Mount Sinai Hospital."
5 Did you believe that at the time?

6 A Uh-huh.

7 Q Do you recall stating that?

8 A I don't recall stating it.

9 Q I ask you to turn to page four.

10 The first full paragraph says: "While Dr. Selikoff has,
11 in his zeal, unquestionably painted a far darker
12 pictures than the facts warrant, we should always
13 remember in his defense that the insulation workers he
14 has been studying for far more than a decade were and
15 still are dying from asbestos-related disease at an
16 appalling rate." Do you believe that statement to be
17 true in 1973?

18 A Yes.

19 Q Did the members of the organization in
20 1973, to your knowledge, ascribe to that statement as
21 well?

22 A I would think so.

23 MS. FIGUEREDO: One second.

24 (Witness and Counsel confer).

25 Q I'd ask you to look at page 7.

1 The first full paragraph says: "In those years
2 industry efforts to combat the spate of negative press
3 articles on asbestos were carried on primarily by the
4 Johns-Manville Corporation, which set up a task force
5 of specialists in various fields to do what it could to
6 portray the problem in its proper perspective." Were
7 you part of that task force.

8 A Basically I was -- not really. I didn't go to
9 those task force meetings.

10 Q Who went to those task force meetings?

11 A People much higher up the ladder in the company
12 than myself.

13 Q All right. Do you know the names of any
14 of them?

15 A Well, Jack Solon would have been, the president
16 of Manville.

17 Q Who was that?

18 A Clint Burnett was his name. Dr. Wright was part
19 of that task force. People representing the
20 environmental control side of the company. I can't
21 remember specifically who. That's about -- I mean,
22 there were many more, but I can't remember.

23 Q Okay. And the next sentence says: "While
24 some minor successes were achieved, it was found that
25 no one could acting independently could adequately or

1 effectively represent an entire industry in dealing
2 with the press and with government officials." Do you
3 believe that to be true at the time?

4 A Yes.

5 Q I read this paragraph to you before, and
6 I'd like to give you the opportunity to address it.

7 The second paragraph on Page 8. It says:

8 "Fortunately, and properly the Association has had the
9 wisdom to alter its original limited concept of its
10 proper functions, and now endeavors to assume whatever
11 activities and responsibilities it deems necessary to
12 protect the interests of the asbestos manufacturing
13 industry in the United States vis-a-vis asbestos and
14 health." Did you believe that to be true at the time?

15 A Yes.

16 Q And was that the position of the various
17 members of the Asbestos Information Association at the
18 time?

19 A I would have to assume so.

20 Q The next page discusses the nine fields
21 of endeavor for the Asbestos Information Association.
22 And it lists medical affairs, legal affairs, government
23 affairs, environmental control, publicity and public
24 relations, customer relations, employee relations and
25 inter-industry relations. Was that true at the time?

1 A I assume it was.

2 Q To the best of your recollection?

3 A Yes, best of my recollection.

4 Q Am I correct that part of the function of
5 the Asbestos Information Association was to send
6 medical people around the World to attend various
7 medical seminars and meetings?

8 A Yes.

9 Q And what was the purpose of sending those
10 people there?

11 A Well, two purposes. One, obviously, to gain the
12 most up-to-date information on what research was being
13 done on asbestos and health. And secondly, in some
14 cases people in the industry were actually doing
15 research of their own of various types, and they would
16 go and present their information.

17 Q Do you recall attending a meeting in 1972
18 in Lyon, France sponsored by the World Health
19 Organization along with John Marsh?

20 A Yes.

21 Q I'd ask you to look at page 10 and read
22 the first three paragraphs where it starts "To take our
23 activities."

24 A Uh-huh. Yes.

25 Q Now, I ask you to look at the third full

1 paragraph where it says "Both John Marsh the president
2 of the AIA and I attended the conference on behalf of
3 the Association." Is the "I" referring to you, Matthew
4 Swetonic?

5 A Yes.

6 Q Are you aware of a study sponsored by the
7 Asbestos Information Association conducted at the
8 Somerset Hospital in New Jersey?

9 A Yes.

10 Q Okay. What is your knowledge of that
11 study and the AIA's role in that study?

12 A A doctor out there believed that he had
13 developed some sort of a treatment for mesothelioma
14 using electricity or some such thing, and so he had
15 come to the Association looking for money to try the
16 treatment, continue the treatment. That's my
17 recollection of it.

18 Q Do you recall the Association retaining
19 the services of Clifford Scheckler?

20 A I don't recall it on a pay basis.

21 Q I'll ask you to look at page 13, the last
22 paragraph. It says: "In the customer relations area
23 the total effect of negative press publicity and
24 government relations on industry customers is still
25 today rather poorly defined. Some members of the

1 Association have reported serious problems in this
2 area, while others have experienced few or no
3 difficulties thus far." Can you recall what problems
4 you were referring to?

5 A I believe to the point that people, customers
6 didn't want products of any type with asbestos in it,
7 no matter, you know, what.

8 Q Can you recall the Asbestos Information
9 Association preparing slide presentations concerning
10 the facts about asbestos and health?

11 A Gee, not really.

12 Q I ask you to look at page 18.
13 It says, the first paragraph: "I personally believe
14 that the employee relations aspect of the asbestos
15 health problem is one that has been sorely neglected by
16 most companies within the industry." Did you believe
17 that at the time?

18 A I assume.

19 Q It says: "I feel that this could develop
20 into a major problem area in the near future, and that
21 steps should be taken now to deal with it. We know
22 that Dr. Selikoff and various organized labor groups
23 are planning a full-scale campaign to bring their
24 interpretation of the asbestos health problem to the
25 attention of asbestos industry employees throughout the

1 Nation." How did you find that out, do you remember?

2 A No.

3 Q The next sentence says: "If the industry
4 permits this interpretation to be disseminated
5 unchallenged, the consequences could be grave indeed."
6 Could you explain that to me what you meant by that?

7 MS. FIGUEREDO: If you recall now what you
8 meant by that.

9 A No, I really can't.

10 Q You don't remember what you mean by that?

11 A No, I really don't, to be honest with you.

12 Q I ask you to look at page 23. The first
13 full paragraph talks about the public relations
14 campaign concerning asbestos and health. See that?

15 A Uh-huh.

16 Q Okay. The second full paragraph contains
17 the following statement: "In any case, we also from
18 time to time put out press releases on various subjects
19 relating to asbestos-health. A few weeks ago we issued
20 a release on the report of the advisory committee on
21 asbestos cancers of the World Health Organization. In
22 brief, the report concluded that the general public is
23 not in danger from asbestos in the environment." Do
24 you recall that?

25 A No, I do not.

13

1 Q Did you in 1973 have a file, about a half
2 dozen files in your possession concerning important
3 medical papers and photographs illustrating the
4 benefits of asbestos?

5 A Yes, of course.

6 Q And when you left Hill and Knowlton -- I
7 mean the AIA, do you believe those files were left with
8 the AIA?

9 A All the files that I had went down to the
10 Washington office of the AIA.

11 Q Okay. And do you know who was in
12 possession of those files?

13 A Bob Marinas. He would have been the fellow who
14 replaced me.

15 Q Do you know today who is in charge of
16 keeping such files?

17 A The head of the -- I would assume the head of
18 the AIA.

19 Q What is his name?

20 A Pigg, P-i-g-g, is his last name. I can't
21 remember his first name.

22 Q Did you deal with him on behalf of Hill
23 and Knowlton ever?

24 A No.

25 Q Do you still deal with the Asbestos

1 Information Association?

2 A No.

3 Q When is the last time --.

4 MS. FIGUEREDO: Wait, I'm sorry.

5 (Witness and Counsel confer).

6 Q When is the last time that Hill and
7 Knowlton dealt with the Asbestos Information
8 Association, to your knowledge?

9 A Late -- probably late '74.

10 Q Okay. I'd like you to look at the bottom
11 of page 25. It says: "And now having heard the bad
12 side of the public relations problem, it's time for the
13 good news. And the good news is, despite all the
14 negative articles on asbestos-health that have appeared
15 in the press over the past half-dozen years, very few
16 people have been paying attention." Can you recall
17 making that statement?

18 A No.

19 Q Did you believe that statement to be true
20 in 1973?

21 A I think I'd have to read further to find out in
22 what context it was said.

23 Q Please do so. And let me just --.

24 A Now I understand what it's in context.

25 Q Did you recall in February of 1973 the

1 Association undertaking an interview --

2 A Yes.

3 Q -- survey of the American public to
4 determine its attitude toward asbestos, its awareness
5 of the health issue?

6 A Yes.

7 Q And that survey was conducted by who?

8 A Opinion Research Corporation, as it states.

9 Q And did Hill and Knowlton have anything to
10 do with that survey?

11 A No.

12 Q What was the results of that survey?

13 MS. FIGUEREDO: Are you asking him of his
14 independent recollection, or what's --.

15 Q Right, what you member.

16 MS. FIGUEREDO: Do you recall anything?

17 A No, not specifics.

18 Q Tell me what the results of the survey
19 were from looking at this document.

20 MS. FIGUEREDO: You can say what it
21 states.

22 A Well it says, "comment from summary." Since I
23 don't have the summary I can't comment from it. So I
24 don't, there's no way I possibly could.

25 Q Okay. Does the text surrounding the first

1 paragraph on 26 give any meaning to that paragraph to
2 you, that very few people have been paying attention?

3 A I think the context is, yes, the context is that
4 basically the vast majority of people according to this
5 survey were neither aware of nor particularly concerned
6 about asbestos health in their personal lives.

7 Q Did that survey also include industrial
8 workers?

9 A I have no recollection.

10 Q Okay. Can you recall if that survey was
11 done at the request of the Asbestos Information
12 Association?

13 A Yes.

14 Q All right. And it was the position of the
15 members of the Asbestos Information Association at that
16 time that very few people were still aware of the
17 asbestos problem; is that correct?

18 A No. I would assume, to my recollection, the
19 reason the survey was conducted is because the industry
20 thought everybody was aware of it.

21 Q And the conclusion was what?

22 A That very few people were aware.

23 Q Thank you. That was the good news, right?

24 A That's right.

25 Q Did you believe at the time that

1 Dr. Selikoff and his supporters dramatized and
2 exaggerated the seriousness of the asbestos health
3 problem?

4 A Yes.

5 Q Did you ever communicate that to
6 Dr. Selikoff?

7 A Not me personally.

8 Q Did anybody at the Asbestos Information
9 Association ever communicate that to Dr. Selikoff?

10 A I don't know.

11 Q Did the Asbestos Information Association
12 or any entity on its behalf or its members ever do
13 anything to try to counteract the positions taken by
14 Dr. Selikoff in terms of dramatizing and exaggerating
15 the seriousness of the problem?

16 A Only to the point of trying to state what the
17 facts were as they were known to the industry at the
18 time.

19 Q Which was that?

20 A Basically that --.

21 MS. FIGUEREDO: You want him to summarize
22 all the facts that they were aware of?

23 MR. PLACITELLA: I want to know what his
24 basic understanding was. I'm not asking to cite
25 me chapter and verse. I want to know what his

1 basic understanding was.

2 A Basically the statement, things that I've said
3 before, and that is in essence that asbestos products
4 company basically be used safely if the appropriate
5 controls were, you know, were done.

14 6 Q Let me ask you before you go on. Did
7 Dr. Selikoff take a position contrary to that, that if
8 you use the proper safety precautions the products
9 could be used safely?

10 A Basically that was the, that was the purpose of
11 the whole program that Manville and Dr. Selikoff
12 undertook to find ways to do that specifically for the
13 insulation workers.

14 Q What I'm trying to understand is why --

15 A What's --.

16 Q -- the Asbestos Information Association
17 believed that Dr. Selikoff was exaggerating the
18 seriousness of the problem?

19 A Because Dr. Selikoff took the single example
20 from a health standpoint of the workers in the
21 insulation trades, which was an extremely dusty trade,
22 and tried to apply those numbers to everybody who
23 worked with asbestos worldwide. And there was plenty
24 of epidemiological data that said that just wasn't the
25 truth, that's not the facts, people who work in other

1 ways with asbestos where they're not exposed to huge
2 amounts of asbestos dust the way the insulation trade
3 were will not develop diseases at this sort of levels
4 that Selikoff had in his study.

5 Q Well, did you have a conclusion at the
6 time that they would develop diseases at lower levels?

7 A In some areas yes, and in some areas no.

8 Q What do you mean by that?

9 A In other words, if you looked at the textile
10 mills, for example, they had problems not as serious as
11 Selikoff's, but problems particularly with asbestosis.
12 If you looked at asbestos cement pipe, before they got
13 the crocidolite out you had some mesothelioma problems
14 there. Most other asbestos cement situations there
15 didn't seem to be any problems at all. The mining
16 situation, for whatever reason, did not seem to be bad
17 except in South Africa. So it was a mixed bag of
18 things.

19 Q Well, how long was it known that high
20 levels of fibers were generated by asbestos insulation
21 workers?

22 A I don't know. I can't say.

23 Q Okay. You did believe prior to 1973,
24 however, did you not, that individuals who were family
25 members were at risk of developing asbestos disease?

1 MS. FIGUEREDO: Family members of whom?

2 Q Asbestos insulation workers, okay, factory
3 workers.

4 A Only from the, from a study in England.

5 Q And did you ever see anything that refuted
6 that study?

7 A I don't believe so.

8 Q So was it that Dr. Selikoff was doing
9 specifically in terms of what trade or exposed
10 population that you say over dramatized or exaggerated
11 the asbestos health problem, that's what I'm trying to
12 determine?

13 A Well, let me see, to try and put this into
14 perspective. I can't remember how many people he had
15 in that insulation workers study. But he would apply
16 the percentages of deaths from asbestos to asbestosis,
17 lung cancer, mesothelioma. As I said before, to
18 everybody who worked in the asbestos industry, whether
19 they had exposure to any significant quantities of
20 asbestos at all, and despite the fact that there were
21 lots of epidemiological studies around that said that
22 basically those numbers do not apply to this, to the
23 people who work in this industry taken as a whole.

24 Q Okay. That's what I'm trying to
25 understand.

1 A Yes.

2 Q You said that there was demonstration that
3 people who worked with asbestos cement pipe could get
4 sick, correct?

5 A Dating back before controls were put into place.

6 Q All right. And when was that, '40s?

7 A Yeah, probably.

8 Q '50s?

9 A I don't know, before my time.

10 Q You say that there was evidence that
11 people who worked in the asbestos textile factories
12 could get sick, correct?

13 A Yes, many studies.

14 Q All right. There was evidence that people
15 who worked in the asbestos insulation industry could
16 get sick, correct?

17 A Not in the manufacturing side.

18 Q That I don't understand. What do you
19 mean?

20 A In other words, the people -- I mean, to the
21 best of my recollection, I don't think that there were
22 any studies that indicated the people who made the pipe
23 insulation had a problem. It was only the people who
24 installed it and ripped it out that had the problem.
25 But I may be wrong. But that's my recollection.

1 Q Is that because there were adequate
2 controls put into the various factories --

3 A Right.

4 Q -- where the products were made?

5 A That's correct.

6 Q Okay. All right. What other populations
7 other than the factory workers who made the products
8 did you think that Dr. Selikoff was exaggerating his
9 findings concerning a specific population; that's what
10 I'm trying to understand?

11 MS. FIGUEREDO: I think you are
12 misconstruing what he said. Before he said he
13 was applying the rate for insulation workers to
14 everyone else. You want him to name everyone
15 that's not an insulatin worker?

16 Q Are there any other trades that were
17 exposed that you think the numbers were unfairly
18 applied to?

19 A The insulation workers from the outside. In
20 other words, people outside of the industry, the
21 insulation workers were the only ones to my
22 recollection that had any real serious problems.

23 Q Okay. During the time that you were with
24 the AIA of North America, did you ever participate in
25 any lobbying activities specifically with respect to

1 the passing of OSHA standards?

2 A I testified at the OSHA hearing on asbestos and
3 discussions with their technical people during the
4 course of it with regard to certain aspects of the
5 proposed standard.

6 Q You testified on behalf of who?

7 A Asbestos Information Association.

8 Q And its members?

9 A Yes.

10 Q What was the substance of your testimony?

11 A Basically that the industry felt that the
12 standard should be set for -- they didn't basically
13 object to the proposed standard, which I believe was
14 two fibers per cubic centimeter. But they needed a
15 couple of years to come into compliance. They said,
16 can we do five or two years and then go down to the
17 two. And there were, you know, nix and things in the
18 workplace section, a compliance section that they
19 wanted to change. I don't remember what they were
20 anymore.

21 Q Did the industry take, or the AIA take a
22 position with respect to labeling of asbestos products?

23 A I don't remember. I don't.

24 Q Did you ever do any lobbying activities in
25 front of NIOSH?

1 A No, I don't believe so.

2 Q How about the EPA?

3 A Again, when the EPA was going through the
4 process of their standard, there was testimony given by
5 the Asbestos Association and by a lot of member
6 companies as well, for that matter.

7 Q And what was the substance of the
8 testimony before the EPA by the Asbestos Information
9 Association?

10 A I really don't recall.

11 Q Did you personally testify?

12 A No.

13 Q Do you know who did testify?

14 A I believe a man named Frank Zimmerman.

15 Q Where is he, from National Gypsum?

16 A National Gypsum.

17 Q Do you remember what his testimony was
18 about?

19 A Well, he was an environmental engineer, so the
20 substance of his testimony, as I recall it, was to --
21 again they had proposed, as I recall, proposed a
22 standard and, you know, to certain little modifications
23 about what is practical and what was not practical, as
24 I recall.

25 Q Can you tell me what the structure of the

1 AIA was in terms of when you first went there in the
2 early 1970s? Did they have various technical
3 committees, how it was broken down?

4 A Do you want it right at the beginning 1970 or --

5 Q Right.

6 A -- or beginning 1971?

7 It primarily really didn't change. It was --
8 there would be a president and a vice-president, and
9 then they would have primarily committees to deal with
10 the environmental control part. That was the important
11 part to them at that time.

12 Q What do you mean by that?

13 A To develop this sort of thing. This was --.

14 Q You're referring to P-3?

15 A Yeah, referring to P-3. I know they put out a
16 whole bunch of these things, and that was an endless
17 process that Cliff Scheckler was involved in, that you
18 mentioned him before.

19 Q Did they have a special committee on
20 asbestos and health where the views member doctors met
21 to discuss the issues?

22 A I don't recall.

23 Q Did they have --.

24 A I don't really recall.

25 Q Were there official meetings that took

1 place on a somewhat regular businesses at the AIA?

2 A Oh, yes.

3 Q How often did those meetings take place?

4 A I have no recollection.

5 Q Where would they take place?

6 A They would normally take place in the, when I
7 was there, in the offices in New York.

8 Q And were minutes kept of those meetings?

9 A They had legal counsel.

10 Q Who was that?

11 A Fellow named Bradley Walls.

12 Q Do you know whether actual minutes were
13 kept?

14 A I really don't recall.

15 Q Do you know whether any written summary of
16 the meetings were ever put together and sent to the
17 various members?

18 A I really do not recall.

19 Q Were notes taken at the meeting?

20 A I would assume so. I mean, I would take notes
21 at the meeting.

22 Q To your knowledge, has the Asbestos
23 Information Association ever had a policy of destroying
24 its old files concerning asbestos and health?

25 A I have no knowledge of that. Not in my time.

1 Q Do you want to take a break?

2 A Yeah, sure.

3 (Recess.)

4 Q You told me around 1973 you left the AIA,
5 correct?

6 A That's right.

7 Q And you went to Hill and Knowlton?

8 A That's correct.

9 Q What was your job in 1973 at Hill and
10 Knowlton?

11 A I was an account executive in Hill and Knowlton.

12 Q And what were your jobs as account
13 executive?

14 A To assist clients who had problems with health,
15 health related issues.

16 Q And can you remember any of the clients
17 that you had at that time?

18 A Just the Asbestos Information Association.

19 Q Can you remember specifically the member
20 companies that you dealt with?

21 A Well, of course, Manville and Raybestos,
22 National Gypsum. Those were the ones we were closest
23 with.

24 Q What specifically did you do when you took
25 on this job at Hill and Knowlton?

1 A My job basically was to serve in a transitional
2 stage while this person who replaced me was learning
3 the issues about asbestos.

4 Q And who was that again?

5 A Bob Marinas.

6 Q And did you have a title when you -- you
7 were account executive?

8 A Yes.

9 Q How long did you have that title?

10 A For about, about a year.

11 Q Until sometime in 1974?

12 A Yes.

13 Q What was the next job you had?

14 A Well the title -- I was made a vice-president in
15 1974 sometime.

16 Q And what were your duties as
17 vice-president?

18 A It's -- it was just a reward.

19 Q You had the same clients?

20 A Same clients.

21 Q Did you have any clients outside of the
22 asbestos industry?

23 A Yes.

24 Q Who was that?

25 A Society of the Plastics Industry.

1 Q And how long did you have the job as
2 vice-president?

3 A Until 1980.

4 Q And then what job did you have?

5 A I was named a senior vice-president in 1980.

6 Q Did your job responsibilities change?

7 A At approximately that same time I was -- no, it
8 was earlier than that -- I was named deputy director of
9 the division that I currently run.

10 Q Which is what?

11 A It's titled today, Scientific Technical and
12 Environmental Affairs.

13 Q That's the job you have now?

14 A That's correct.

15 Q What does that division do?

16 A It counsels clients involved in health related
17 issues.

18 Q Does that include also members of the
19 asbestos industry, or former members?

20 A Not today.

21 Q When is the last time that Hill and
22 Knowlton counseled a member of the asbestos industry?

23 A I can't speak for Hill and Knowlton. I can only
24 speak for my division.

25 Q What about your division?

1 A I don't know what other companies do. In about
2 five or six years ago I would guess.

3 Q And why was it, did that relationship
4 cease at that time?

5 A No, this was -- this was just a project that
6 somebody wanted our advice on something.

7 Q What project was that?

8 A It was U.S. Gypsum. And they asked whether it
9 would be possible to put together a background paper on
10 the use of asbestos in schools.

11 Q And what happened with respect to that?

12 A Their lawyers decided that that would probably
13 not be a wise thing to do, so the project was never
14 completed.

15 Q Why not?

16 A I don't know.

17 Q When you say background paper, what do you
18 mean by that?

19 A Similar to the papers, types of papers I
20 described before.

21 Q The history of, knowledge of diseases,
22 that type of thing?

23 A In this particular case to assess whether there
24 was any real significant risk to children from asbestos
25 in schools.

1 Q And that particular project was abandoned?

2 A That's correct.

3 Q And you said that was around when?

4 A It's got to be five or six years ago.

5 Q On the advice of USG's lawyers?

6 A As I understand it.

7 Q Did you actually have discussions with any
8 of their attorneys?

9 A No.

10 Q The division that you man, do you have
11 doctors and technical people working in that division
12 with you?

13 A No.

14 Q How is that structured, that division?

15 A I am the director of the division. There is a
16 deputy director and then eight other professional
17 staff, meaning and secretaries.

18 Q That's what I am -- what do they do?

19 A As I said before, they counsel clients who have,
20 you know, issues that involve environment, product
21 safety and health, FDA related matters.

22 Q Do they actually do research for the
23 clients like opinion surveys, medical research? That's
24 what I'm trying to understand.

25 A No, we wouldn't do medical research. We're a

1 public relations firm.

2 Q Would you do research of medical articles?

3 A Yes.

4 Q Do you know whether Hill and Knowlton has
5 ever represented the Asbestosis Research Council?

6 A I don't know.

7 Q Do you know whether they've ever
8 represented or had an association with Turner & Newall?

9 A I don't know.

10 Q What about a member of the tobacco
11 industry?

12 A Yes.

13 Q What is the association between Hill and
14 Knowlton and the tobacco industry?

15 A We have clients who are in the tobacco industry.

16 Q Does your division have anything to do
17 with the tobacco industry?

18 A Yes.

19 Q In what sense?

20 A It's proprietary. I really can't discuss it.

21 Q When you say "proprietary," what do you
22 mean by that?

23 MS. FIGUEREDO: The agency has certain
24 agreements with certain clients that aren't
25 public knowledge that Hill and Knowlton is doing

1 work for them is confidential and they can't
2 disclose that information. There are signed
3 agreements to that effect.

4 Q Do you know if Hill and Knowlton has ever
5 been associated with or represented Owens-Corning
6 Fiberglas?

7 A I -- I don't know. I never have been involved
8 with Owens-Corning.

9 Q Never in terms of --.

10 A On behalf of Hill and Knowlton.

11 Q Any involvement with respect to
12 Owens-Corning Fiberglas and the hazards of fiberglass?

13 A Not to the best of my knowledge.

14 Q What about Pittsburgh Plate Glass, has
15 Hill and Knowlton ever represented them or been
16 associated with them?

17 A Yes.

18 Q What about the Safe Buildings Alliance,
19 have you ever heard of them?

20 A No.

21 Q What about the Asbestos Textile Institute?

22 A Not to the best of my knowledge.

23 Q United States Rubber?

24 A I don't know of it.

25 Q Any other members of the asbestos industry

1 that you know of that Hill and Knowlton had associated
2 with or represented in the past?

3 A The only one that comes to mind is, is now
4 Raymark Corporation or formerly Raybestos-Manhattan.

5 Q Do you know anything about Hill and
6 Knowlton's association with the Asbestos Information
7 Association in Great Britain?

8 A No, I know it no longer exists, I mean the
9 relationship. But I -- I don't know whether it didn't
10 or anything.

11 Q Does Hill and Knowlton still represent
12 Johns-Manville?

13 A I believe so.

14 Q Do you have anything to do with that
15 account?

16 A No.

17 Q Does Hill and Knowlton still represent
18 Pittsburgh Plate Glass?

19 A I believe so.

20 Q Do you have anything to do with that
21 account?

22 A I have in the past had something to do with
23 them, but not in recent years.

24 Q Have you ever represented Pittsburgh Plate
25 Glass on the subject of asbestos and health?

1 A No.

2 Q Does your particular division maintain
3 files on asbestos and health?

4 A Yes.

5 Q Okay. And who is the custodian of those
6 files?

7 A I suppose I am.

8 Q Did you have a personal file on that?

9 A No. What we have is just a lot of, you know,
10 books, published articles on asbestos and health of one
11 type or another.

12 Q Do you have a file concerning
13 correspondence or memoranda concerning your
14 representation of present or former members of the
15 asbestos industry?

16 A Not anymore.

17 Q What happened to that file?

18 A In the normal course of destroying files they
19 were put in a transcript file when we no longer had
20 worked for the Association, and they've long since been
21 destroyed.

22 Q Have you ever -- when I said you I mean
23 Hill and Knowlton -- give any advice to any member of
24 the asbestos industry on the placement of warnings on
25 asbestos products?

1 A Not me personally. And I don't, I can't answer
2 for anybody else.

3 Q Have you ever prepared press releases on
4 behalf of any member of the asbestos industry or
5 organization, to your knowledge?

6 A I would assume that when we were working for the
7 Asbestos Information Association in '73 and '74 that we
8 did that, but I have no recollection of what they might
9 have been about.

10 Q Do you know a Don Ferguson?

11 A No.

12 Q What about Holly Spence?

13 A No.

14 Q Do you know Mr. Moster, M-o-s-t-e-r?

15 A No.

16 Q How about Tabolt, T-a-b-o-l-t?

17 A No.

18 Q Burke, B-u-r-k-e?

19 A No.

20 Q Okay. What about a Mr. Smedley?

21 A Smedley? I believe he's in our Chicago office.

22 MR. PLACITELLA: Can we have this marked

23 P-4?

24 (The above-mentioned document is marked as
25 P-4 for Identification.)

1 Q Looking at a document which I'll show you
2 which is marked P-4 dated June 10, 1987, which has been
3 produced to me by Hill and Knowlton in response to my
4 subpoena the last time we were here, do you recall
5 discussing in Chicago the formation of a science
6 advisory board concerning the health aspects of
7 fiberglass?

8 A Vaguely. I don't remember the nature of the
9 discussion, to be honest with you.

10 Q Are you familiar with the medical studies
11 done by Dr. Enterline?

12 A Just from what I've read in the newspapers.

13 Q What have you read?

14 A I don't recall anymore. Fiberglass is not a
15 field that I know very much about.

16 Q Okay. I'm going read to you a paragraph
17 from this document. Just tell me if this is true or
18 not. It says: "We have discussed the formation of a
19 science advisory board in Chicago as well as with Mat
20 Swetonic of Hill and Knowlton/New York City, who is
21 well aware of Dr. Enterline and his research, the
22 creation of science advisory boards, and is completely
23 familiar with the asbestos as well as fiberglass
24 issues." Is that a true statement?

25 A Asbestos, yes. Fiberglass, no. And as I said,

1 my only information on Phil's study is what I've read
2 in the Times and other places, Wall Street Journal,
3 whatever.

4 Q Have you ever met Dr. Enterline?

5 A Yes.

6 Q In what context?

7 A He was doing research for, I can't remember who,
8 probably Manville on asbestos in terms of the, the
9 maintenance people in asbestos factories who seem to
10 have a higher rate of disease than normal workers. He
11 did some work on that for, I believe for
12 Johns-Manville.

13 Q Did you ever discuss with him his studies
14 concerning the health aspects of fiberglass?

15 A No.

16 Q Are you familiar with an organization
17 known as TIMA?

18 A Yes.

19 Q What is your familiarity with TIMA?

20 A Johns-Manville had been a member of it when I
21 was at the company. And I just -- and I knew the
22 executive director. In fact, he lived in my hometown
23 where I live now.

24 Q Who is that?

25 A Jack Barnhardt. Its the same organization I'm

1 thinking of.

2 Q Can you recall expressing "that a panel
3 separate from TIMA would lend more credibility than an
4 industry group trying to repudiate Enterline's findings
5 or offer commentary on any future research findings"?

6 A I don't recall making a statement like that.

7 Q Let me read this paragraph to you and see
8 if this refreshes your memory.

9 A This is something I wrote?

10 Q This is a memo that Hill and Knowlton gave
11 me --

12 A I see.

13 Q -- from the Hill and Knowlton files.

14 MS. FIGUEREDO: Can we make a copy of
15 this, too?

16 MR. PLACITELLA: I mean, you gave me the
17 original.

18 MS. FIGUEREDO: I realize that, but we
19 don't have it in front of me.

20 MR. PLACITELLA: Well, sure, make a copy.
21 I'll ask a couple questions in the
22 meantime.

23 Q Have you ever heard of a man named Jerry
24 Blizin?

25 A Jerry Blizin.

1 Q Who is he?

2 A Yes.

3 Q Who is he?

4 A He was a Hill and Knowlton employee in your
5 Washington office.

6 Q And what was his job?

7 A He was a senior vice-president down there.

8 Q Did he have anything to do with the
9 asbestos and/or fiberglass industry, to your knowledge?

10 A He, he worked on an asbestos account down there
11 a couple years ago I know.

12 Q Do you know what account that was?

13 A It was, I believe, a Canadian asbestos coalition
14 of some type.

15 Q What about Gary Nash, do you know who he
16 is?

17 A I don't believe so.

18 Q The same doesn't sound familiar to you?

19 A Gary Nash?

20 Q Right.

21 A No.

22 Q I am going to ask you to look at the
23 second full paragraph. It says: "Swetonic worked for
24 fifteen years in this area and knows the players in the
25 asbestos battle as well as the fiberglass issue.

1 Swetonic said, and we agree, that a panel separate from
2 TIMA would lend more credibility than an industry group
3 trying to repudiate Enterline's findings or offer
4 commentary on any future research findings." Do you
5 recall that?

6 A This is not an accurate reflection of anything
7 that I might have said.

8 Q Well, what did you say?

9 A To my recollection, you know, in and this does
10 refresh it somewhat, that -- in the first place, I
11 never told her that I was an expert on fiberglass.

12 Q Who?

13 A This person Holly Spence. I assume she works in
14 our Chicago office, is all I can gather from this. And
15 as I recall, the discussion that what, what I had
16 suggested to her is that they get some outside experts,
17 medical doctors and that sort of thing, to form an
18 advisory panel to, to whoever, I guess to TIMA, yeah,
19 to advise them on how to, how to react to these things.
20 But never, I would not have said "repudiate Enterline's
21 findings" or anything like that. She's putting words
22 in my mouth that I don't recall ever saying.

23 Q That's Holly Spence's characterization?

24 A That's correct.

25 Q Did you discuss the role and mission of

1 that particular advisory board with her?

2 A I don't recall. I don't recall.

3 Q Do you recall saying to her that the
4 "mission statements would include a concern for general
5 health and safety and stress the group's interest in
6 maintaining a totally independent body for review of
7 all research methodology"?

8 A Probably some of these are my ideas, but I
9 cannot remember which ones, to be totally honest with
10 you.

11 Q Do you know a Dr. Anderson?

12 A Where Dr. Anderson? Oh, I see. No, I have no
13 idea who he is.

14 Q Do you know if Dr. Anderson is currently
15 the medical director for Johns-Manville Corporation?

16 A I don't know.

17 Q You ever hear of a Dr. Dobban of
18 Owens-Corning Fiberglas?

19 A No.

20 Q Do you know of any videotape made by Drs.
21 Dobban, Anderson, and Hill and Knowlton to express the
22 fiberglass industry's views on the health aspects of
23 fiberglass?

24 A No.

25 Q Who at Hill and Knowlton would have that

1 kind of knowledge?

2 A I don't know.

3 Q Who is in charge today, to your knowledge,
4 of Certain-Teed, Johns-Manville, and Owens-Corning
5 fiberglass in terms of the fiberglass industry at Hill
6 and Knowlton?

7 A I just -- I don't know.

8 Q Who would know that?

9 A I believe -- like I said, Manville is the only
10 one I know we work for. And I think Bob Stone, who
11 you've already deposed, works for them.

12 Q You ever hear of a woman Dottie Wackerman?

13 A No.

14 Q Well, your division handles issues of and
15 advises on health to various industry members, correct?

16 A That is correct.

17 Q What other division of Hill and Knowlton
18 is involved in that?

19 A Well, you have to understand that each office
20 will, to a large extent, attempt to do it's own
21 consulting in this area if they can get away with it.
22 Meaning that it's good for their, for their bottom line
23 for their division. So Chicago will do some of it,
24 Washington will do some of it. We just have no
25 knowledge of it up here in New York.

1 Q You have a counterpart to your department
2 in Chicago and Washington?

3 A Not a counterpart. But just people who will
4 call us in when they're faced with these sorts of
5 issues.

6 Q Are you aware as to whether the Chicago
7 office is an advisor to TIMA?

8 A I have no knowledge of that.

9 MS. FIGUERO: What does TIMA stand for?

10 THE WITNESS: Thermal Manufacturers
11 Insulation Association.

12 Q Am I correct that you have no knowledge
13 concerning Hill and Knowlton's representation of the
14 fiberglass, anyone in the fiberglass industry?

15 A That's correct.

16 Q Are you aware of any presentations made by
17 members of the fiberglass industry in conjunction with
18 Hill and Knowlton comparing the hazard of asbestos to
19 fiberglass?

20 A No.

21 Q Is it the practice of Hill and Knowlton
22 to, when dealing with a subject for presentation to the
23 public, to make videotapes practicing the presentation
24 on behalf of the speaker?

25 A That would be -- not necessarily standard, but

1 it would be frequently done.

2 Q Do you know whether that was ever done by
3 any member of the asbestos industry with the
4 assistance of Hill and Knowlton?

5 A Not to my knowledge.

6 Q Well, you know that Hill and Knowlton has
7 done that with respect to Johns-Manville and it's
8 approach to the bankruptcy, correct?

9 A Yes.

10 Q You've seen those videotapes?

11 A I've not seen the videotapes.

12 Q You know that that was videotaped?

13 A I knew that was going on, yes.

14 Q And that you in fact had knowledge of
15 Johns-Manville formulating a public relations campaign
16 for employees and the public in terms of bankruptcy and
17 the issues related thereto; is that correct?

18 A I was not involved in it.

19 Q Who was involved in it?

20 A Basically it was our Chicago office.

21 Q So does your Chicago office also represent
22 Johns-Manville and do work independent of the New York
23 office?

24 A To the best of my knowledge.

25 Q What is the division of labor or

1 responsibility in terms of the representation of
2 Manville between the New York and Chicago office?

3 A I don't really know. Bob Stone who handles
4 Manville used to be in our Chicago office. So that's
5 basically where it started.

6 Q Do you know who is in charge of the
7 Manville account out of the Chicago office now?

8 A No, I do not.

9 Q Do you recall ever having spoken to a
10 Holly Spence?

11 A Yeah, having seen this now I do.

12 Q Who is she?

13 A She must work in our Chicago office, is all I
14 can say.

15 Q When did you speak to her?

16 A Well, just on the basis of this, it would appear
17 to be June of last year.

18 MS. FIGUEREDO: Do you have any
19 independent recollection other than from this
20 document?

21 THE WITNESS: No, not really. I mean,
22 just very vague.

23 Q Did you ever suggest that research
24 concerning the health aspects of fiberglass have been
25 conducted through the cancer research institute?

20

1 A I don't recall making such a recommendation.

2 Q Can you recall any instances in the past
3 where Hill and Knowlton advised any member of the
4 insulation industry to set up research foundations or
5 medical research to help assist it on the asbestos and
6 health issues

7 A Only the, only going back to the establishment
8 of that joint program with Selikoff back in the late
9 '60s.

10 Q Other than that, you can't think of any?

11 A No, I cannot think of any.

12 Q In your capacity at the Asbestos
13 Information Association, had you ever discussed the
14 hazards of asbestos specifically with any industry
15 member representatives other than Johns-Manville?

16 MS. FIGUEREDO: Can you repeat the
17 question?

18 (Read back.)

19 A Well, that was the purpose of the trade
20 association. So, sure, with all the other member
21 companies when they would come to meetings or whatever.

22 Q I'm reading from P-2, the statement that
23 says; "Most finished asbestos-containing products when
24 correctly used will not produce dust levels high enough
25 to be a hazard to workers." Do you know what is meant

1 by the term "correctly used"?

2 A No. As I said, I had nothing to do with
3 preparing that document.

4 Q Can you tell me what publications your
5 division reviews on a regular basis on behalf of its
6 clients to determine whether there were any articles
7 concerning health hazards in industry in general?

8 A Our division, as opposed to Hill and Knowlton
9 research which would, you know, look at newspapers and
10 regular magazines, we have subscriptions to about 120
11 or 130 separate medical publications of one type or
12 another.

13 Q And do you have a list of that?

14 A No. I mean --.

15 Q You don't maintain a list of that?

16 A No, I really don't.

17 Q During the time that Hill and Knowlton
18 represented Johns-Manville and the AIA Association of
19 North America, can you tell me what industry
20 publications and medical journals that Hill and
21 Knowlton reviewed on a regular basis for its clients?

22 A No, not really. It's, you know, the standard
23 New England Journal of Medicine. Journal of American
24 Cancer Society, you know, the usual stuff.

25 Q Am I correct that there is a staff at Hill

1 and Knowlton that actually, that's part of their job
2 responsibilities?

3 A That's correct.

4 Q Where does that staff work out of?

5 A Out of my division.

6 Q And who heads that staff?

7 A Marie Overfors.

8 Q How long has she had that job?

9 A Just a year.

10 Q Prior to that was there some staff still
11 in place to do that job?

12 A Just normally one person.

13 Q Do you know if an article, for instance,
14 was found on asbestos and health, what would you do
15 with that article in terms of your clients?

16 A Well, right now basically nothing because we
17 don't have any clients in the asbestos area.

18 Q But at the time that Hill and Knowlton
19 represented the asbestos industry in terms of
20 Johns-Manville and the AIA.

21 A That function, that research function didn't
22 exist in this division at that time.

23 Q Did it exist somewhere else within Hill
24 and Knowlton?

25 A I don't really recall.

1 Q Did there come a time when Hill and
2 Knowlton stopped representing Johns-Manville?

3 A To the best of my knowledge they represent them
4 today.

5 Q When is the last time that you know Hill
6 and Knowlton represented Johns-Manville concerning the
7 issues of asbestos and health?

8 A I have no knowledge of anything that we have
9 done for Manville, personal knowledge.

10 Q When is the last time that Hill and
11 Knowlton represented the Asbestos Information
12 Association?

13 A I believe the end of 1974. Somewhere in that
14 ballpark.

15 Q What why was that relationship terminated?

16 A As I said before, we were retained, specifically
17 me, to bring Bob Marinas who replaced me up to speed.
18 When they felt that that had been accomplished, then we
19 were let go.

20 Q What did you do to bring Bob Marinas up to
21 speed?

22 A He just, you know, he had to learn all about
23 asbestos and health. He knew nothing about it, nothing
24 about any of the issues. And that was just a process
25 that went on for a period of time.

1 Q Who was the individual or individuals who
2 taught him about that issue?

3 A Well, taught is probably too strong a word. But
4 basically me and the other people in the industry.

5 Q Such as?

6 A Well, it would be the people from the member
7 companies.

8 Q Any particular doctors instruct him or
9 give him advice, to your knowledge?

10 A I can't recall.

11 Q Did the Asbestos Information Association
12 at the time Hill and Knowlton represented them have
13 medical advisors?

14 A Did the Association have medical advisors?

15 Q Right.

16 A I believe only through the member companies.

17 Q Well, that's what I'm trying to
18 understand. Did the member companies each have a
19 medical director or a medical person on a board or
20 something at it AIA?

21 A Not all of the companies had medical directors
22 or outside consultants that worked with them. Those,
23 some of them did and they would, there was a committee
24 as I recall of those doctors.

25 Q And would they review any publications or

1 presentations made by the AIA on behalf of the industry
2 members?

3 A Yes, I believe they would, as I recall.

4 Q Can you tell me specifically which doctors
5 you can recall dealing with from those companies?

6 A I believe George Wright. I believe around that
7 time Manville had retained Dr. Paul Kotin as well.
8 There was a doctor from Raybestos, but I cannot
9 remember his name, I believe. And those are the only
10 ones that frankly come to mind.

11 Q Did any member of the insurance industry
12 ever have any relationship with Hill and Knowlton in
13 terms of the issues of asbestos and health?

14 A Not to my knowledge.

15 Q Now, was there a policy within the
16 Asbestos Information Association that nothing could be
17 released unless it was approved by the member
18 companies, and that no statement should be made without
19 the approval of the member companies?

20 A Well, there was -- there was an approval
21 process. I cannot specifically say what it was. I
22 know that not everybody had to approve a statement that
23 needed to be made in a short period of time. But I
24 don't remember what the approval process was.

25 Q But generally there was approval on behalf

1 of the industry members --

2 A Yes.

3 Q -- of anything that was published or
4 presented?

5 A That's correct.

6 Q So, for instance, were you made a
7 presentation to Congress, the substance of that
8 presentation would have to be approved by the member
9 companies or members of it?

10 A That's correct, although I've never made a
11 presentation to Congress or any Congressional
12 committee.

13 Q For instance, when you testified before
14 OSHA --

15 A Yes.

16 Q -- was the substance of your testimony
17 first reviewed by the member companies?

18 A Yes.

19 Q Before any of these pamphlets are sent out
20 are they all approved by the member companies?

21 A If the pamphlets were produced when I was there,
22 yes. What happens today, I have no idea.

23 Q Am I correct that you as you sit here
24 today you don't have a recollection of a specific
25 approval procedure?

1 A I have no idea.

2 Q Do you know whether Hill and Knowlton
3 every gave advice to Manville or any member of the AIA
4 on product packaging?

5 A Product packaging? Not to the best of my
6 recollection.

7 Q Do you know whether Hill and Knowlton ever
8 prepared any press releases or publications in response
9 to the passing of OSHA regulations on behalf of its
10 clients?

11 A With regard to asbestos?

12 Q Right.

13 A I don't think Hill and Knowlton did.

14 Q Do you know whether the AIA ever prepared
15 presentations or publications in response to the
16 passing of OSHA regulations on behalf of its member
17 companies?

18 A It is my recollection that when I was at the AIA
19 that I prepared a press release when the OSHA standards
20 were issued in June of 1973, I believe. June of '73?
21 '72, sorry.

22 Q What was the substance of the press
23 release?

24 A Just simply, I believe, that the, as I recalled
25 it was very short, that the industry found the OSHA

1 standard to be acceptable, and that we believe that
2 they would be protective of workers in the asbestos
3 industry. Something to that effect, very simple.

4 Q Did you ever prepare, that is Hill and
5 Knowlton, help prepare any statements or press releases
6 in response to any court case involving asbestos in the
7 industry?

8 A Not to the best of my knowledge.

9 Q How about the Asbestos Information
10 Association?

11 A Not that I have been involved with, no.

12 MR. PLACITELLA: I don't think I have much
13 more. Why don't we take a couple minutes and
14 I'll look at everything rather than do lunch.

15 (Recess.)

16 Q I only have a couple more questions.

17 A Sure.

18 Q In your capacity with the AIA or with Hill
19 and Knowlton, have you ever dealt with a Dr. Hilton
20 Lewinsohn?

21 A I know him.

22 Q How do you know him?

23 A He was originally -- when I first met him he was
24 working for one of the British asbestos companies. I
25 can't remember which one. And then he came to the

1 States and had a job with Raybestos. That's how I know
2 him.

3 Q Can you recall the last time you had any
4 contact with him?

5 A Oh, gosh, probably fifteen years ago would be my
6 best guess.

7 Q Was the company that Lewinsohn worked for
8 in Great Britain and a member of the Great Britain AIA?

9 A Yes.

10 Q Is that the context in which you met him?

11 A Yes.

12 Q What is the relationship between the AIA
13 and Great Britain and in the United States --

14 A No formal relationship.

15 Q -- at the time?

16 A I'm talking fifteen, sixteen years ago.

17 Q Right.

18 A There was no formal relationship. We did not
19 have joint meetings or anything. But when their people
20 were in the States that he would meet with our people
21 on various aspects of environmental control or
22 whatever.

23 Q You would exchange information?

24 A Yes.

25 Q Now, did the AIA in Great Britain have any

1 medical advisors to your knowledge?

2 A Yes, they did. Whether they were member company
3 people or outside consultants, I'm not totally sure.
4 Lewinsohn, for example, he was a doctor. My impression
5 was he worked for the company. He might have been an
6 outside consultant.

7 Q Do you know when the AIA of Great Britain
8 was established?

9 A Prior to the one in the United States is about
10 the best I can tell you.

11 Q Is my understanding correct that Hill and
12 Knowlton at no time employed medical advisors
13 concerning the issue of asbestos and health?

14 A That's correct.

15 Q They simply took advantage of whatever
16 their clients' medical people --.

17 A That's correct.

18 Q And lastly, is my understanding correct
19 that the AIA of North America still exists today, to
20 your knowledge?

21 A Yes, because we get their newsletters.

22 Q How often do you get their newsletter?

23 A I really don't know. I don't know what the
24 frequency of that is.

25 Q Do you know where the AIA is located?

1 A Near Washington somewhere.

2 Q What is contained in the newsletter?

3 A As I recall, and I, you know, don't go through
4 the thing very frequently just simply because we don't
5 have any clients, reports on new health studies new
6 regulations, you know, that sort of stuff.

7 Q I don't think I have any other questions
8 at this time. I don't know. Thank you very much.

9 MR. CATINO: I have no questions.

10 MR. CONNELL: I have no questions.

11 MR. LEE: No questions.

12 MR. BOYLAN: No questions.

13 EXAMINATION BY MR. PLACITELLA:

14 Q Have you ever had any dealings with Dr.
15 Ray Murphy?

16 A No.

17 Q How about Margaret Becklake?

18 A I'm familiar with the name.

19 Q How about Hans Weil?

20 A Yes.

21 Q What is your connection with Dr. Hans
22 Weil, or how did you know him?

23 A He was, when I knew him he was a professor of
24 epidemiology or some such thing at University of Tulane
25 Medical School. And yeah, okay. I have to change

1 something I said before. I believe that the AIA did
2 hire him as a consultant on the EPA because I believe
3 he testified on our behalf at an EPA hearing. I
4 believe.

5 Q Did he advise the AIA on issues of
6 asbestos and health from time to time?

7 A Yes. Yeah, he did.

8 Q How was he compensated?

9 A I really don't recall.

10 Q Do you know if he was paid by the hour or
11 per project?

12 A I really don't remember.

13 Q Have you ever heard of a Dr. Roger
14 Mitchell?

15 A No.

16 Q How about Stuart Brooks?

17 A No.

18 Q Ed Gaensler?

19 A The name is familiar, but I don't have a
20 context.

21 Q How about Mark Urtell?

22 A No, I am not familiar with the name.

23 Q This struck me, I wanted to ask you this
24 question before. Why is it that you have nothing to do
25 with Johns-Manville anymore if you knew them so

1 intimately and worked there?

2 A Well, two things. Our Chicago office wanted the
3 business, because as you know Manville is in Denver.
4 And so they, for their own basic financial benefit as
5 an office, they kept me out of it.

6 And the second part is, is that they as I
7 understand it, we were primarily hired to deal with
8 their financial situation, which I know nothing, you
9 know, that's not part of my best -- I don't know
10 anything about that sort of stuff. So that's really
11 the answer.

12 Q When you first went to work at the AIA and
13 after leaving Manville --

14 A Yes.

15 Q -- who was paying you?

16 A The AIA.

17 Q How was the AIA financed?

18 A By the contributions of member companies.

19 Q Was it an annual contribution? How does
20 it work?

21 A I don't really recall the law firm that handled
22 how the billings were done.

23 Q What law firms?

24 A This one, this fellow before, that I mentioned
25 before. I don't remember the name of the firm.

1 Q Now, you said in your professional
2 capacity you've had no contact with the AIA since 1974;
3 is that correct?

4 A That's correct. We have not done any work for
5 them since then.

6 Q Have you had any personal contact with the
7 AIA?

8 A Yes, I made a speech to them about five years or
9 six years ago, for which we were not compensated.

10 Q Concerning what?

11 A Advising them that basically they ought to do
12 more public relations, trying to get business.

13 Q A business promotion?

14 A That's right, exactly.

15 Q Anything else other than that?

16 A No.

17 MR. PLACITELLA: Okay, thank you very
18 much. I don't have any other questions.

19 (Adjourned 1:01 p.m.)
20
21
22
23
24
25

C E R T I F I C A T E

I, DIANA L. R. SENATORE, Notary Public and
Certified Shorthand Reporter, do hereby certify that
prior to the commencement of the examination

MATTHEW M. SWETONIC

was duly sworn by me to testify the truth, the whole
truth and nothing but the truth.

I DO FURTHER CERTIFY that the foregoing is
a true and accurate transcript of the testimony as
taken stenographically by and before me at the time,
place and on the date hereinbefore set forth.

I DO FURTHER CERTIFY that I am neither a
relative of nor employee nor attorney nor counsel for
any of the parties to this action and that I am neither
a relative nor employee of such attorney or counsel,
and that I am not financially interested in the action.

Diana L. R. Senatore
DIANA L. R. SENATORE, CSR
XI01397

PRESENTATION
6/7/73
ASBESTOS TEXTILE
INSTITUTE

P-000112

For Mr. J. D.

I am sure that many of you have asked yourselves, as I have asked myself, why has the asbestos industry seemingly been singled out as the prime target for so many assaults by government, labor, the press, certain segments of the medical profession, and by various environmental and consumer activist groups?

Why us? Can asbestos really be all that bad? Are the products we produce truly going to kill millions of Americans as some experts have predicted? Or is there some sort of nefarious conspiracy afoot to destroy the asbestos industry?

The answer to the question of "why us" is both complex and simple. Complex because it is a combination of three interrelated but separate factors. Simple because each of the factors is, when considered by itself, quite obvious.

The three factors are (1) asbestos causes disease, (2) a spokesman arose to champion the need for asbestos control,

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and (3) a cornucopia of new government agencies were set up to control things that cause disease. Let us look at each of these factors in turn.

First, there is no doubt that the inhalation of substantial amounts of asbestos can lead to increased rates of various types of lung disease, including two forms of cancer. These are facts which cannot be denied, even if they do not apply in all circumstances and under all conditions. The medical literature is full of solid evidence linking asbestos to disease. In my office, I have on file more than 2,000 medical papers dealing with the health risks of asbestos and hundreds more are published every year.

Secondly, the spreading of alarm over the health risks of asbestos has as its prime spokesman one of the most talented medical publicists of the age --- Dr. Irving J. Selikoff of New York's Mount Sinai Hospital. Not only is Dr. Selikoff

capable of arousing the ire and moral indignation of the most conservative reporter or politician with his graphic descriptions and predictions of the ravages of asbestos, but he has also surrounded himself with a group of similarly talented public-conscious associates who have carried the Mount Sinai message to the far corners of the nation.

While Dr. Selikoff has, in his zeal, unquestionably painted a far darker picture than the facts warrant, we should always remember in his defense that the insulation workers he has been studying for more than a decade were and still are dying from asbestos related disease at an appalling rate. This would be enough to cloud any man's thinking.

Finally, in the past decade there has been a tremendous growth in public and governmental interest in environmental and occupational health matters. This interest has been translated into a series of far-reaching laws affecting industry

in a manner hitherto unknown in this or any other country. I believe it is accurate to say that these new laws, such as the Occupational Safety and Health Act, the Clean Air Act, the Consumer Protection Act, and others, have forever altered the concept of the free enterprise system as it was known in this country for a hundred and fifty years.

Thus, in combination, these three factors created a situation in which a cadre of freshly created federal agencies with strong statutory authority, were prodded into assigning priority status to asbestos by Dr. Selikoff and his followers, who used and in some cases misused the great wealth of negative asbestos-health data contained in the medical literature to achieve these ends.

In short, the asbestos industry was singled out because it was vulnerable to attack, because there was someone willing, almost anxious, to lead that attack, and because Congress had graciously provided the vehicles for such an assault.

How much of what Dr. Salikoff says about asbestos is true, and the manner in which he has abused the available data in order to blow up an essentially occupational problem into a national calamity are topics which we shall examine bit later.

The background of industry efforts to deal with the asbestos-health problem as a national issue goes back nearly a decade, to Dr. Salikoff's now famous 1964 seminar on asbestos disease at the New York Academy of Sciences. While this seminar did much to prick the industry's conscience about asbestos and health, the problem still remained one of limited public and press interest until around 1967, when the media began beating the medical bushes searching for stories that would graphically portray American industry's supposed complete disregard for the environment and for the health and safety of its workmen and the American public. The asbestos-health problem was found

to be tailor-made for such stories and Dr. Selikoff was not hesitant in catering to the sensationalist whims of the press. As a result, starting with Paul Brodeur's infamous New Yorker article of March 1968, asbestos has since grown into an item of major press interest.

In those years, industry efforts to combat the spate of negative press articles on asbestos were carried on primarily by the Johns-Manville Corporation, which set up a task force of specialists in various fields to do what it could to portray the problem in its proper perspective. While some minor successes were achieved, it was found that no one company acting independently could adequately or effectively represent an entire industry in dealing with the press and with government officials.

As a result, in late 1970, eight companies gathered in New York City to launch the Asbestos Information Association of North America, which was frankly patterned after the British

Asbestos Information Committee, which had been established some three years earlier.

In our original concept, the Association would limit its activities to providing accurate, unbiased information on asbestos and health to the press, to the public and to interest politicians and other government officials. It must be remembered that at this particular time, the enormous problems that would later develop with regard to OSHA and other Federal regulatory agencies were as yet on the distant horizon and basically unrecognized by the industry.

Fortunately --- and properly --- the Association has had the wisdom to alter its original limited concept of its proper functions, and now endeavors to assume whatever activities and responsibilities it deems necessary to protect the interests of the asbestos manufacturing industry in the United States vis-a-vis asbestos-health.

From our rather narrow initial public relations effort the Association has grown in the last two years into an organization with priorities in eight major fields of endeavor.

These are:

Medical Affairs

Legal Affairs

Government Affairs

Environmental Control

Publicity and Public Relations

Customer Relations

Employee Relations, and

Inter-industry Relations

In briefly discussing AIA activities in each of these fields, I will leave government affairs for last, not because it has a low priority within the Association --- in fact it is currently the most important --- but because it is the most complicated and requires the most discussion.

To take our activities one at a time then
medical affairs.

It is an obvious fact that if an organization is to speak authoritatively on a medical matter, it must not only be steeped in the literature of that particular medical subject, but it must also keep itself constantly informed of new discoveries and developments. This we have accomplished in a number of ways. For example, by sending representatives to important medical meetings, such as the 1972 international conference on the biological effects of asbestos held at Lyon in France, which was sponsored by World Health Organization.

Both John Marsh, the President of the AIA, and I attended that conference on behalf of the Association.

We also meet on an irregular basis with various medical experts in the field, both from the United States and abroad, to review and discuss recent developments and discoveries.

Our literature research is eased considerably by receiving the monthly medical paper distribution of the Institute of Occupational and Environmental Health in Montreal, which is funded by the Quebec Asbestos Mining Association.

This year, for the first time, the AIA has elected to sponsor medical research of its own. Currently underway is a completely AIA/NA funded study of chest sounds, which is being conducted by Dr. Raymond Murphy of the Harvard School of Public Health. The purpose of the study is to find a new method of determining an individual's potential susceptibility to asbestos disease.

The Association has also recently decided to contribute to some very exciting research into a possible cure for mesothelioma through electrocutive treatment. This study is being conducted at Somerset Hospital in New Jersey.

In the legal affairs area, the Association participated in an amicus curiae capacity in the law suit brought by the

Industrial Union Department of the AFL/CIO against the Occupational Safety and Health Administration on the asbestos standards. In our brief, which was considered by the Justice Department to be the best one filed, the Association supported OSHA against the IUD, somewhat of a unique position for an industry to find itself in vis-a-vis a governmental regulatory agency. Oral argument on the case was held April 4 in Washington. While a decision has yet to be handed down by the Court of Appeals, we are confident that the case will be decided in our favor.

The Association has retained the services of C. L. Sheckler, with whom many of you are familiar, as our special consultant on environmental control affairs. At the present time, Cliff is working with the AIA/NA Environmental Control Sub-Committee on the development of a series of five Association compliance manuals on the OSHA standards. We expect to have these manuals available within a short period of time.

Last year, because of the well established unreliability of the membrane filter method as a monitoring tool in the asbestos industry, the AIA undertook the sponsorship of a study at a research laboratory in California to determine the effect of certain variables on the overall accuracy of the method. The results of the study showed an error factor of plus or minus 50 per cent under the most favorable of measuring conditions. These results were sent to both OSHA and to the National Institute for Occupational Safety and Health. A number of the recommendations contained in the study for improving the accuracy of the method have been incorporated into a soon-to-be-released revised NIOSH operations manual on fiber counting.

In the customer relations area, the total effect of negative press publicity and government regulations on industry customers is still today rather poorly defined. Some members of the Association have reported serious problems in this area, while others have experienced few or no difficulties thus far.

Where customer problems do exist, they normally fall into one of five categories.

First, the customer has thoroughly investigated his situation and has found that he can no longer afford to continue using asbestos or asbestos-containing products, either because the cost of control is too high or because he would have to raise the price of his product to a level that would make it non-competitive with non-asbestos containing substitutes.

Second, the customer has not thoroughly investigated his situation and only thinks that he can no longer afford to continue using asbestos.

Third, the customer has read one or more negative articles on asbestos in the public press and has made the snap decision that "we ought to get that dangerous stuff out of our plants." Often, decisions of this nature are forced on top management by ill-informed medical advisors or safety and health directors.

Four, the customer has neither a control problem nor is he particularly afraid of using asbestos in his own plant. However, he is fearful that those of his competitors whose finished products do not contain asbestos will stress the adverse health effects of asbestos in trying to take business away from him. Customer fears of this nature are essentially "gut" reactions and hence extremely difficult to deal with. And ...

Five, the customer has none of these problems or fears but he has been advised by a government official or inspector that he would be better off if he quit using asbestos or asbestos-containing products in his plant. While this problem does not appear to be widespread, we have learned of a number of situations where it has occurred. Actions of this nature by government officials are totally uncalled for and should be dealt with promptly and decisively. The best solution is to obtain complete details on the incident and then to register a formal complaint

with the offending official's immediate superior or with the government agency involved.

The Association's first reaction to the overall customer relations problem was to approve funds for a series of four regional seminars at which industry customers would be given a number of basic presentations on the various aspects of the asbestos-health problem. The seminars were tentatively scheduled for the Spring of this year.

However, the experiences of a number of our member companies showed that general catchall type seminars of the type originally contemplated would not be effective in dealing with the majority of customer relations problems. In order to do the job properly, it was found that customer presentations have to be tailored to the needs and problems of the individual customer.

As a result, the Association cancelled its scheduled series of seminars and instead elected to develop

a number of packaged slide presentations on such topics as "The Facts About Asbestos and Health," and "Understanding the OSHA Regulations," which could be used by member companies as part of a tailored presentation to individual customers. These slide presentations are still in the works, but should be available shortly.

As with customer relations, the Association feels that employee relations is a problem best handled by the individual member companies. Thus far, the AIA's sole contribution in this area of industry concern has been to prepare the draft of an Employee Safety and Health Guide on Asbestos-Health. The draft was made available to the member companies for their own use and at least one, Raybestos-Manhattan, has produced it in booklet form for distribution to all its employees.

I personally believe that the employee relations aspect of the asbestos-health problem is one that has been sorely neglected by most companies within the industry. I feel that this could develop into a major problem area in the near future and that steps should be taken now to deal with it. We know that Dr. Selikoff and various organized labor groups are planning a full scale campaign to bring their interpretation of the asbestos-health problem to the attention of asbestos industry employees throughout the nation. If the industry permits this interpretation to be disseminated unchallenged, the consequences could be grave indeed.

Inter-industry relations are best defined as keeping the industry informed about important new developments on the governmental, medical and press relations fronts that affect asbestos. This is accomplished within the AIA by periodic distributions of documents and information to the member companies and to others on our mailing list.

The value of this activity can be gauged by the fact that our overall mailing list increased from approximately a dozen names in 1971 to more than 60 a year later. While we have had to trim the list somewhat this year for logistical

reasons, we assume from the frequent requests we still receive to be placed on the list that the material we send out is being read and is of considerable value to those receiving it.

Next to government affairs, our public relations and publicity activities constitute the single largest consumer of time, effort and money within the Association. Those of you who are familiar with the treatment that asbestos has been receiving in the public press over the years can readily understand why this activity ranks so high on our priority list.

What you may not understand are the reasons why our extensive efforts in dealing with the nation's press have been so unsuccessful to date in producing the theoretical "balanced" or "positive" story on asbestos and health.

The simple fact is that from the standpoint of today's young activist reporter, industry is the bad guy, and nothing we do, say or achieve can ever change this impression. If we spend \$100 million dollars on environmental control, the press either says we ought to have done it ten years ago or that we should have spent 200 million. If we sponsor medical research, they say we are trying to buy favorable results. If we are opposed to ridiculously stringent standards, they say we are in favor of letting our employees die.

A television executive in Minneapolis described this new breed of reporter as being "so intent on demolishing the establishment that they would blindly destroy the credibility of the media in the bargain." Another TV executive, this time in Chicago, stated "they want to make moral and political and social judgments on their assignments and then take sides. Never mind getting the facts straight."

As a result of this "industry is a monster" philosophy asbestos will remain a hot news item only so long as the news is bad. The "good" that asbestos does in protecting lives and property is of no concern to the press. Likewise, industry efforts to protect workmen and the general public from asbestos exposure will always be given minimal coverage, since such information is directly contrary to the portrait of an irresponsible industry producing a "killer" product that is the sole element of news worthiness in the asbestos story.

The press relations battle will ultimately be won, not when the media starts to print positive or balanced articles about asbestos, but when the press ceases to print anything about asbestos at all. As long as negative news on asbestos-health continues to be generated, the media will continue to eat it up. The media will only cease to carry such stories when the generation of negative news ceases ...

it is as simple as that. Positive or balanced stories are a chimera, since they are, by definition, not newsworthy.

Let me give you a very specific example of this last principle in action. As most of you already know, the Association is currently engaged in an extensive campaign to interest the trade press in articles on the benefits of asbestos and on industry accomplishments in the environmental control area. The trade press, unlike the national or public media, is much more receptive to articles of this nature and we expect to be seeing a number of positive stories in the trade press in the next few months.

In any case, we also from time to time put out press releases on various subjects relating to asbestos-health. A few weeks ago, we issued a release on the report of the advisory committee on asbestos cancers of the World Health Organization. In brief, the report concluded that the general public is not in danger from asbestos in the environment. Thus far, we have

received nearly two dozen press clippings from trade publications that carried the story. To the best of our knowledge, not a newspaper, news magazine, radio or TV station, or any other segment of the public media ran the story, with the single exception of a French language paper in Toronto. As I said before, if the news is good, the press ain't interested.

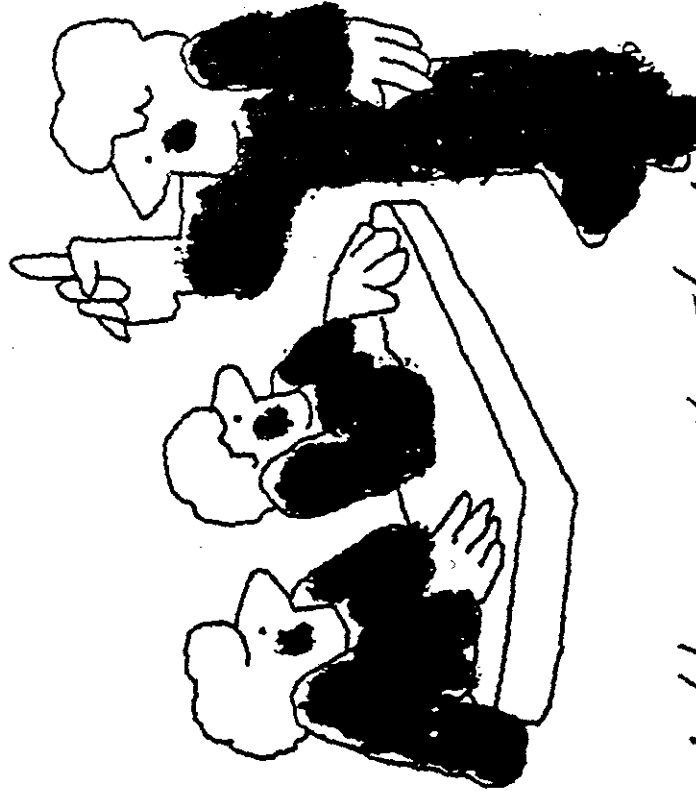
Nonetheless, the Association has no intention of abandoning our efforts vis-a-vis the national media. We will continue to issue appropriate press releases, cooperate with feature writers doing stories on asbestos, write scathing letters to the editor when those stories appear, and in short, do all we can to present the press with a balanced view of the asbestos-health situation.

Our most recent effort in this regard has been the preparation and printing of an Asbestos and Health Information File, which we have mailed to some 3,000 newspapers, magazines,

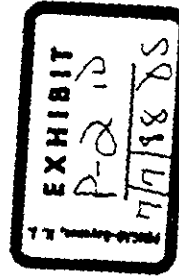
Should Know About Asbestos And Health



ASBESTOS INFORMATION ASSOCIATION
1745 Jefferson Davis Highway,
Arlington, Virginia 22202



Robert here news #2 5/24/79 1/3

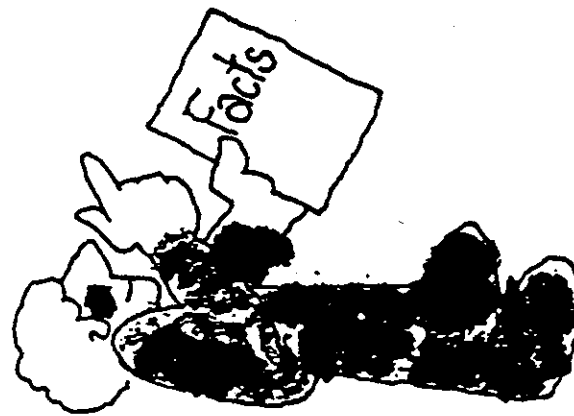


Frankly Speaking

You certainly are important to your family and loved ones, and you are important to the company. It makes good sense for the company to do everything possible to protect you in your working environment, and for you to take every precaution to avoid possible hazards to your health.

If your work involves the use of asbestos or asbestos-containing products, you should be aware of:

- What the health hazards can be.
- What obligations your employer has to protect you.
- What you can do as an individual to protect your own health and that of your fellow employees.



These are the Facts

Exposure to asbestos fiber can increase the risk of developing certain diseases over a period of years. The four diseases associated with inhalation of asbestos fiber are: asbestosis — a non-malignant scarring lung condition; cancer of the lung, and to a lesser degree, cancer of the digestive tract; and mesothelioma — a rare cancer of the lining of the chest or abdominal cavities.

Reduction of asbestos dust exposure is at present the only known method of preventing disease among asbestos industry workers. Experience has shown that when dust levels are low, the risk to the worker and the incidence of asbestos-related disease is low.

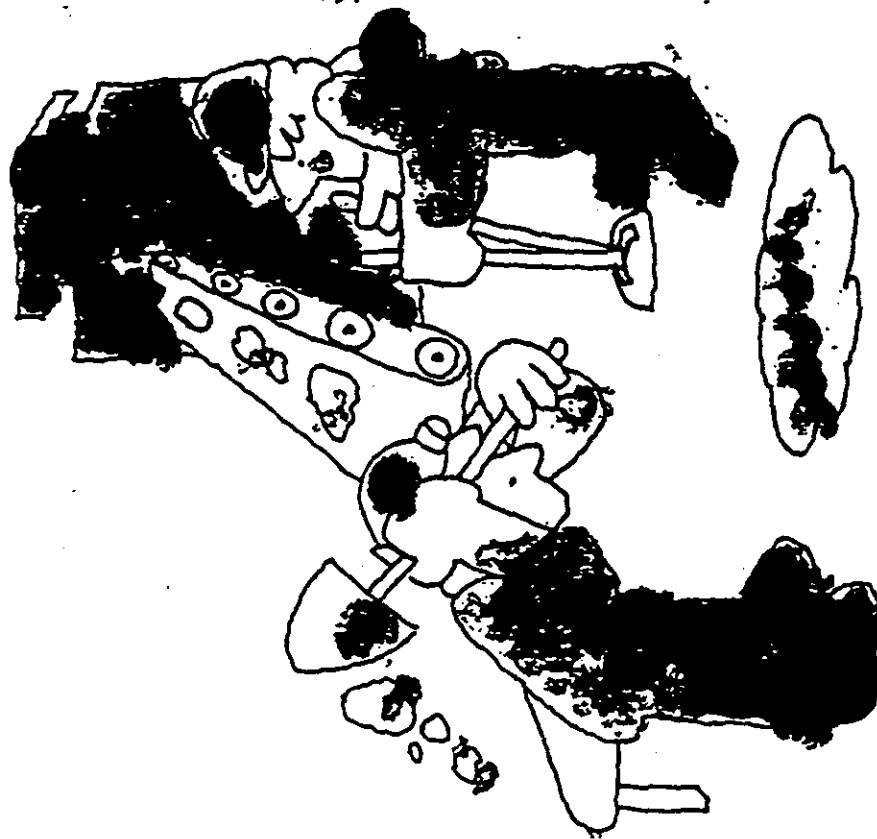
Now . . . About Smoking

It has been established that cigarette smoking greatly increases the risk of developing lung cancer in persons exposed to asbestos. On the other hand, asbestos industry workers who do not smoke cigarettes — and who never have smoked regularly — have shown no greater frequency of lung cancer than the average person who does not smoke.



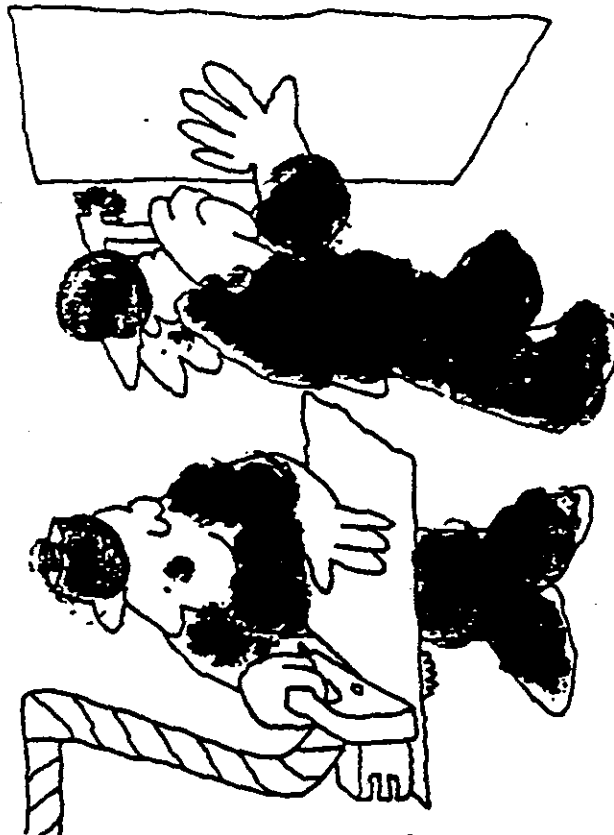
If You Work in a Plant or Mine

Employees in asbestos mines, mills, or product manufacturing plants will be exposed to airborne asbestos fiber. But, when dust levels in mines, mills and factories are properly controlled, the asbestos content of the air will be low and within safe levels, and will not be a hazard to workers.



You Work in Field Operations

Most finished asbestos-containing products, when correctly used, will not produce dust levels high enough to be a hazard to workers. In more than 90% of the asbestos-containing products made in the United States, the asbestos fibers are "locked in" the product by means of cement, plastic or other binders. Consequently, the fibers are not easily released into the air, except during sawing or certain other machining operations. The tear-out, removal or demolition of old asbestos-containing insulations also can release fibers. Such operations must be carried out with approved methods of dust suppression and control.



Regulations to Protect You

To insure the safety of all, occupational standards for exposure to asbestos dust have been established by the Occupational Safety and Health Administration (OSHA) of the U.S. Department of Labor. These standards are designed to protect you from exposure to potentially hazardous amounts of asbestos dust and are being carefully observed by the company.

Here is what these standards provide:

1 A SAFE WORKPLACE

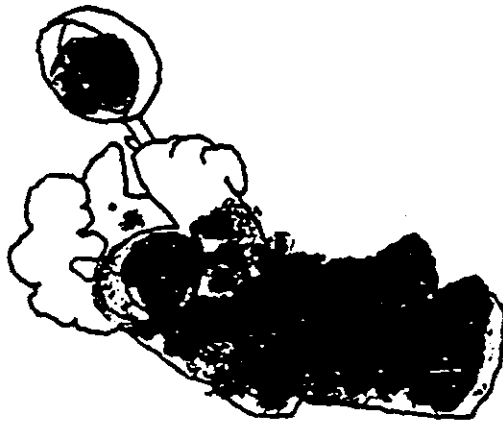
Your employer is required to make sure that no employee is exposed to more asbestos dust than permitted by the government standard. Your company will exert every effort to keep levels not only below permissible limits, but as low as possible.

2 IN CASE OF RISK

If exposure limits are exceeded, the employee will be notified by his employer, and will be informed of the corrective measures being undertaken to reduce his exposure to permitted levels.

3 CORRECTIVE ACTION

Engineering controls and safe work practices will be the approved methods of correction.



4 IN THE MEANTIME

While corrective measures are being taken, the employee will be protected by other means, which may include the wearing of an approved respirator provided by his employer, or by shift rotation.

5 TEMPORARY MEASURES

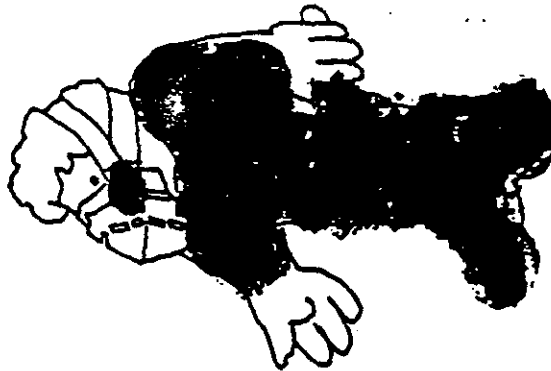
The use of respirators or shift rotation to achieve proper dust control will be permitted only (a) during the time necessary to install engineering controls or to institute safe work practices, (b) in situations where such controls or practices are not technically feasible, or (c) in emergencies.

6 AND ONLY IF YOU PASS THE MEDICAL

No employee will be assigned to a task requiring the use of a respirator if his most recent yearly medical examination indicates that he would not be able to function properly while wearing one, or if the wearing of the respirator would create a hazard to the employee's health or safety.

7 SPECIAL PROTECTION WHEN NEEDED

Protective clothing, change rooms, and separate clothes lockers will be provided for employees in situations where exposure standards are exceeded.



8 CHECKING THE AIR

Monitoring of workplace air will be conducted by the employer to assure that government standards are being met. Employees may review results of the monitoring in their particular job areas.

9 SIGNS TO GUIDE YOU

Caution signs will be posted in work areas where airborne levels of asbestos may be in excess of the exposure limits, and where respiratory protection and special handling precautions are required. Employees should obey these signs at all times.

10 CAUTIONS ON PRODUCTS, TOO

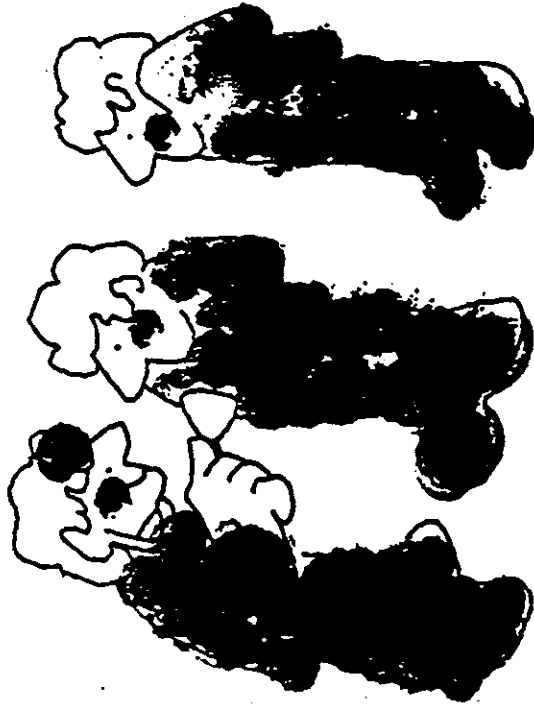
Caution labels will be placed on asbestos-containing products which, during any reasonably foreseeable use, handling, application, machining or disposal may release asbestos fiber into the air in concentrations that exceed the exposure limits.

11 ANNUAL CHECK-UPS

The employer, at no cost to the employee, will provide yearly medical examinations for employees exposed to asbestos dust. Pre-employment and termination medical exams also are provided.

12 COUNSELING AND RESULTS AVAILABLE

Results of each employee's medical examination will be reviewed with him by a physician, and, at the worker's request, his own medical exam records will be made available to his family physician.



Another Most Important . . .

Another word about smoking. First, an assurance. If you don't smoke cigarettes now and never have smoked them regularly, statistical studies show you have no greater chance of getting lung cancer than a nonsmoker who has never worked with asbestos.

But, on the advice of medical specialists: If you work with asbestos and you do smoke cigarettes, quit smoking! If you work with asbestos and do not smoke, don't start!

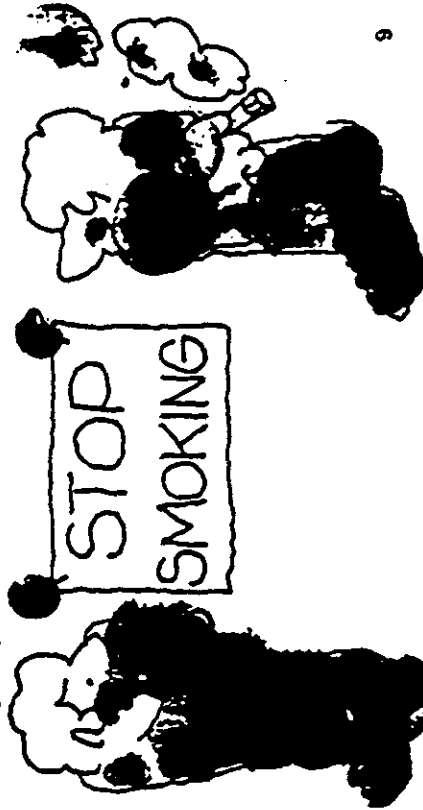
Your family and the company need you and your special abilities. Guard your health in every way, but particularly where cigarette smoking is concerned.

After You Leave Work

You also should take precautions to prevent taking asbestos home on any work clothes or other materials in order to protect members of your family from possible exposure to asbestos dust.

To reduce the possibility of carrying asbestos fibers home on your person and clothing, facilities for showering and changing from work to regular clothes may be provided by your employer. Work clothing taken home for laundering should be carried in a closed bag or container and then washed separately from other family clothing.

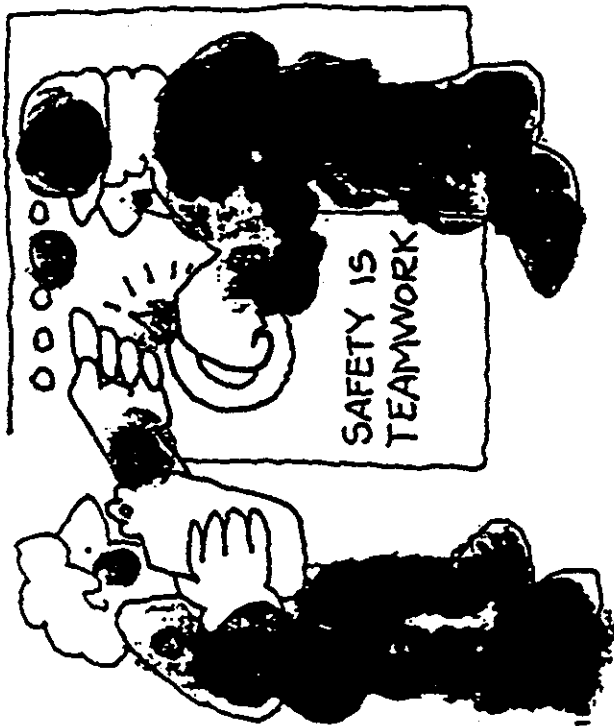
Never take loose fiber home. Your family should not be needlessly exposed to asbestos dust through any carelessness on your part.



What Can You Do?

Industrial safety and health can never be the responsibility of only one person. Both you and your employer must work together to provide a safe and healthy environment.

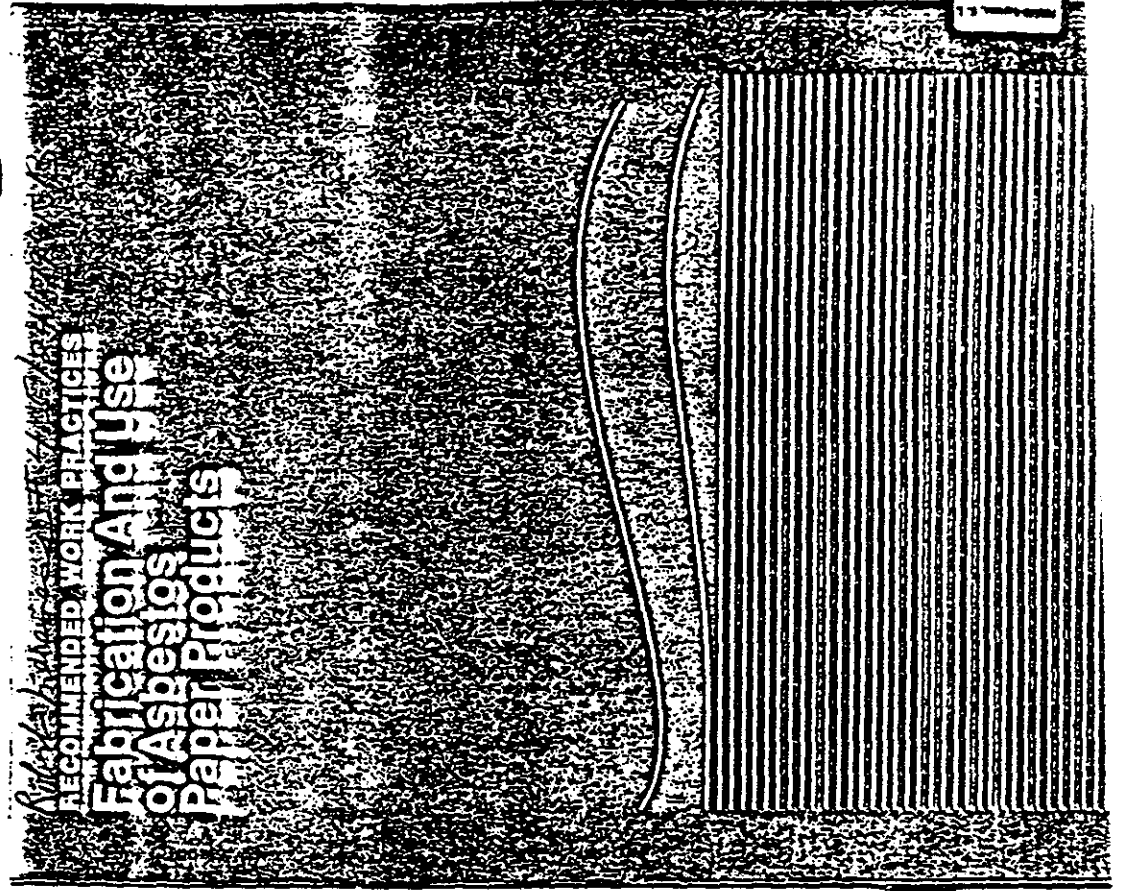
- For safety in specialized areas, detailed work practices must be instituted to make sure we are complying with government regulations. As an employee, it is your duty to follow these work practices at all times. Never take shortcuts that may endanger your health and that of others.
- If you see a possible hazard that your employer may have overlooked, bring it to his attention.
- If you can suggest more efficient and safer work practices, do so. If you are not sure how to handle a material or perform an operation without creating dust, talk with your supervisor first.



REMEMBER

- Asbestos fiber may be hazardous to your health, and exposure to it, over a period of time, may increase your risk of developing asbestosis, cancer of the lung or digestive tract, or mesothelioma.
- Every precaution should be taken by you and your employer to keep dust levels low and to avoid unnecessary exposure.
- The asbestos industry is working hard to control dust exposure and to alert every worker to proper safety precautions. Government and company regulations designed to protect you and other workers against exposure to asbestos dust should be strictly followed by everyone.
- The vast majority of the thousands of finished asbestos products are not hazardous when properly handled or used, but workers who are engaged in their manufacture, fabrication or installation should be aware of possible dangers. Don't be careless — urge your fellow workers not to be.
- Asbestos is used in some 3,000 products daily throughout the world . . . products that help prevent and control fire in our homes, schools, factories, offices, hospitals and theaters . . . products that help stop our cars and trucks . . . products that save fuel and energy in this important time of conservation. If we are to continue making these much-needed products, it is important that you and your employer cooperate in maintaining the highest standards of safety and health on the job.

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Additional copies of this booklet
are available.

AIAA
North America

ASBESTOS INFORMATION ASSOCIATION

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Introduction

The Occupational Safety and Health Act was signed into law on December 29, 1970 and became effective on April 28, 1971. The Act has the stated objective of assuring every American worker a safe and healthy workplace.

On December 7, 1971 the Secretary of Labor issued an emergency temporary standard for exposure to asbestos dust. As required by the Act, a permanent standard for asbestos exposure was promulgated six months later, on June 7, 1972. The present OSHA Asbestos Standard, discussed in this booklet, became effective July 7, 1972. Thorough understanding of the standard is important to management of any company utilizing asbestos in its manufacturing or processing operations.

The work practices on the following pages have been prepared by the Standards and Technical Committee of the Asbestos Information Association/North America. They are intended as general guidance for safe and clean workplace conditions in keeping with the spirit and intent of the OSHA Standard for Occupational Exposure to Asbestos Dust.

These practices have been developed through careful study and consultation and are recommended as good procedure. It is recognized that manufacturing conditions vary. Implementation of the practices contained herein cannot be considered as a guarantee of OSHA compliance. Where there may be a question of compliance, OSHA personnel should be consulted.

A proposed revision to the OSHA Asbestos Standard was published in the *Federal Register* on October 9, 1975. This work practice booklet will be revised, as necessary, to reflect any approved changes to the standard.

Products and Operations

The types of asbestos paper covered by these work practice recommendations are:

Gasketing	Cushion
Millboard	Sound deadening
Commercial grades	Saturation grades
Electrical insulating	

Operations to which these work practices may apply are:

Die cutting	Combing
Shearing	Coaling
Sheeting	Saturating

Summary of OSHA Asbestos Standard

General Comments

OSHA published a "Standard for Exposure to Asbestos Dust" in the *Federal Register*, Vol. 37, No. 110, dated June 7, 1972. The standard was recodified from 1910.93a to 1910.1001 in the *Federal Register*, Vol. 40, No. 103, dated May 28, 1975. The standard is reproduced as Appendix A. The standard applies to any manufacturing, fabricating or handling process or operation utilizing asbestos fiber or materials containing asbestos fiber.

The standard is divided into eight major sections:

1. 1910.1001 (b)—Permissible Exposure Limits
2. 1910.1001 (c)—Methods of Compliance
3. 1910.1001 (d)—Personal Protective Equipment
4. 1910.1001 (e)—Method of Measurement
5. 1910.1001 (f)—Monitoring
6. 1910.1001 (g)—Housekeeping
7. 1910.1001 (h)—Signs and Labels

States when caution signs and labels are required, and wording to be used.

States results to be obtained from housekeeping and methods of waste disposal.

recordkeeping. States requirements for employee notification of monitoring results if exposure is in excess of permissible exposure limits and of corrective action being taken.

8. 1910.1001 (i)—Medical Examinations

Details requirements for medical examinations and duration of medical record-keeping.

Specific Comments

1. Exposure Limits (1910.1001 (b))

It is the employer's responsibility to assure that exposure of employees to airborne concentrations of asbestos fibers does not exceed the limits prescribed by the standard.

The OSHA standard maximum permissible exposure limits of asbestos fiber in the workplace air are:

- a. Eight-hour time-weighted average:
 - (1) At present: 5 fibers, longer than 5 micrometers, per cubic centimeter.
 - (2) Effective July 1, 1976: 2 fibers, longer than 5 micrometers, per cubic centimeter.

b. Ceiling concentration:

- (1) At present: 10 fibers, longer than 5 micrometers, per cubic centimeter.
- (2) Effective July 1, 1976: No change.

2. Methods of Compliance (1910.1001 (c))

a. Engineering Methods

Engineering controls such as isolation, enclosure, exhaust ventilation and dust collection shall be used to meet the prescribed permissible exposure limits.

All hand operated and power operated tools which may produce airborne asbestos fibers in excess of permissible exposure limits shall be equipped with a dust collection system.

• Wet Methods

When practicable, asbestos products shall be handled in a wet state sufficient to prevent the emission of dust to the atmosphere. This procedure is not required where the usefulness of the product might be diminished by wetting. The applicability of wet methods is limited. In most situations, engineering controls provide more efficient procedure.

3. Personal Protective Equipment and Clothing (1910.1001 (d))

• Respiratory Protection

Respiratory protection is required whenever the airborne concentrations of asbestos fibers exceed either the permissible time weighted average level or permissible ceiling concentration. The type of respirator to be used is determined by the fiber concentration in the workplace.

- Fiber concentrations up to, but not exceeding, 10 times the allowable limit: Air purifying respirator — reusable or single use.
- Fiber concentrations up to, but not exceeding, 100 times the allowable limit: Powered air purifying respirator.
- Fiber concentrations exceeding 100 times the allowable limit: Type "C" supplied air respirator.

• Protective Clothing

Whenever airborne fiber concentrations exceed the prescribed ceiling level, the employer shall provide and require the use of special clothing, such as coveralls or similar whole body clothing, head coverings, gloves, and foot coverings. When the employer provides and requires the use of special clothing, he shall also provide for the laundering or disposal of the special clothing.

Whenever airborne fiber concentrations exceed either the permissible time-weighted average concentration or permissible ceiling

employee so separated or isolated as to prevent contamination of the employee's street clothes from his work clothes.

4. Measurement and Monitoring (1910.1001 (e) (i))

The standard requires that all workplaces where asbestos fiber may be released shall be monitored to determine exposure levels. After initial determination of airborne concentrations, monitoring shall be of such frequency and pattern as to represent with reasonable accuracy the levels of exposure. Monitoring must be repeated at no less than six-month intervals where exposure to asbestos dust may reasonably be foreseen to exceed permissible exposure limits.

All monitoring shall be done by the membrane filter method. Appendix B provides a description of this procedure.

Affected employees or their representatives shall be given a reasonable opportunity to observe any required monitoring and shall have access to the monitoring records.

Any employee found to have been exposed at any time to airborne concentrations of asbestos fibers in excess of the prescribed limits shall be notified in writing of the exposure as soon as practicable but not later than five days of the finding.

5. Caution Signs and Labels (1910.1001 (g))

Caution signs shall be displayed at each workplace where asbestos fiber concentrations exceed permissible exposure limits. Caution labels shall be applied to all materials and products which during any reasonably foreseeable use might release concentrations of asbestos fibers in excess of permissible exposure limits.

Signs and labels are described in detail in Appendix A.

6. Housekeeping (1910.1001 (h))

All external surfaces, machinery and equipment shall be maintained free of asbestos

For recommendations on housekeeping procedures, see "Housekeeping" section under General Recommendations.

7. Recordkeeping (1910.1001 (i))

Every employer shall maintain records of personal and environmental monitoring required by the standard. Records shall be maintained for a period of at least three years.

8. Medical Examinations (1910.1001 (j))
Preplacement, annual, and termination medical examinations must be provided or made available by the employer for any employee engaged in occupations exposed to airborne concentrations of asbestos fibers. These medical records must be kept for 20 years and are available to the employee's physician.

General Recommendations

Exhaust and Dust Collection Systems

The OSHA Asbestos Standard requires that exhaust and dust collection systems be designed and maintained in accordance with American National Standard, "Fundamentals Governing the Design and Operation of Local Exhaust Systems," ANSI Z92-1971. This publication is available from:

American National Standards Institute
1430 Broadway
New York, N.Y. 10018

The National Emissions Standards for Hazardous Air Pollutants (NESHAPS), as published by the Environmental Protection Agency in the Federal Register, Vol. 38, No. 86, dated April 6, 1973, and amended October 14, 1975, state that there must be no visible emissions to the outside air from asbestos mills or from buildings in which commercial asbestos is used in the manufacture of:

textile materials
cement products
fireproofing and insulating materials
friction products
paper, millboard and felt
floor tile

asphalt concrete
paints, coatings, caulks,
adhesive and sealants

Visible emissions are defined as emissions which contain asbestos and which are visually detectable without the aid of instruments. Rather than meet the no-visible-emission requirement, air cleaning procedures using a fabric filter collector may be employed. When the use of fabric filters creates a fire or explosion hazard, use of a high energy wet collector may be authorized by EPA.

For small and intermittent production and fabrication operations, major dust collection systems of the high volume, low velocity type design described in the references above may not be necessary. Instead, systems of the low volume, high velocity type utilizing as their exhaust air source a high efficiency vacuum cleaner could be suitable. For design information on these systems, attention is invited to the AIA/NA booklet, "Recommended Work Practices on Shop and Field Fabrication of Asbestos Sheet Products." This booklet is available on request to AIA/NA.

functioning. For continuous operations, it is recommended that the system operation and the interior of the baghouse be checked daily. A scheduled maintenance program that includes bag replacement should be prepared and followed.

Wherever possible, operations involving asbestos-containing materials should be isolated from other work areas by partitions, curtains or other means. If central exhaust systems are utilized, the work areas should be maintained under a slight negative pressure.

Housekeeping

Housekeeping is an essential part of any manufacturing operation. It is even more essential in an asbestos-using plant because airborne dust created by lack of good housekeeping has the potential for harm to employees.

The OSHA Asbestos Standard stipulates that "all external surfaces in any place of employment shall be maintained free of accumulations of asbestos fiber if, with their dispersion, there would be excessive concentration."

Surface cleaning should be accomplished by a vacuum process. Portable vacuum cleaning units should be equipped with internal filtration and disposable dust bags. Single or multi-hose stationary vacuum cleaning systems designed for use with asbestos-containing dusts are available. Vacuum cleaning stations can be added to existing dust collection systems as shown in Appendix C.

Loose material should never be dry swept. Water or other dust suppressants should be applied in those circumstances where brooms are used.

Information and Training

Employees assigned to a work area where exposure to airborne concentrations of as-

bestos dust. It is important that both new employees and employees with tenure have information concerning the safe use of asbestos brought to their attention at periodic intervals. Each employee should be informed of:

- Operations which could result in exposure to excessive asbestos fibers;
- Engineering controls and workplace practices for employee protection;
- Purpose and proper use of respiratory equipment;
- Medical examination requirements; and
- Provisions of the OSHA asbestos standard.

A copy of the OSHA Asbestos Standard should be available to employees. The AIA/NA pamphlet, "What Every Employee Should Know About Asbestos and Health," is recommended for distribution to employees. The pamphlet is available at minimal cost from the Association. Posters may be effectively used to inform. A series of asbestos health hint posters designed for this purpose are also available from AIA/NA.

A record of employee training should be kept. The record may appropriately include for each employee, name, social security number and job title, along with the date and description of training including materials distributed.

Waste Disposal

Generators of asbestos wastes resulting from manufacturing, fabrication, demolition, renovation and spraying operations are responsible for ensuring that the waste is disposed of in a properly operated disposal site as described in the NESHAP8 amendment dated October 14, 1975. The OSHA Asbestos Standard requires that asbestos waste, which when handled or transported could generate airborne fibers in excess of

and sealed in a labeled, leak-tight container and deposited at a disposal site or they may be formed into non-friable forms and deposited at a disposal site.

No visible emissions to the outside air may result from collection, processing, packaging, transporting or deposition of any asbestos-containing waste material. Alternatively, wastes may be mixed with water

Specific Recommendations

Asbestos paper products should be mechanically cut. Tearing should be avoided. Slicers employing either shear slitting or score slitting are recommended. Heavy-duty scissors can be used for short duration cutting.

Tables and other work surfaces where asbestos papers are handled should be kept smooth and clean.

Rolled asbestos papers should be unwound gently from mandrel supports. Avoid pulling from a free-standing roll or jerking the material during unwinding.

Dust should be removed from the surfaces of cut and fabricated materials before packing and shipping. Dust removal procedures should not cause workplace contamination. See "Housekeeping" under General Recommendations.

Fabricating operations other than unwinding, slitting and shearing frequently will require the use of dust control systems to prevent airborne fiber concentrations from exceeding permissible exposure limits.

Personal Hygiene

In the preparation of asbestos-containing products, unless good procedures are followed, dust conditions can result. Employees must be aware that inhalation of asbestos dust may be a serious risk to health. Every effort should be made to eliminate dust conditions and avoid exposure to dust.

Good personal hygiene practices are important in every working situation. When working with asbestos, workers are urged to observe the following personal hygiene practices for their own health protection, their families, and those with whom they work:

- Do not smoke
- Wash before eating

- Shower after work
- Respirators and special clothing are provided for worker protection under certain excessive dust level conditions. These items of personal protective equipment deserve the highest respect of the worker and should be worn properly, when required.
- Change to work clothes upon arrival at work and change from work clothes at conclusion of work. Use change rooms for this purpose.
- If work clothing is taken home, carry in a bag impermeable to asbestos fibers and wash separately from other clothing. Never shake dusty clothing. Use a washing machine.

Appendix A

RULES AND REGULATIONS

Title 29—LABOR

Chapter XVII—Occupational Safety and Health Administration, Department of Labor

PART 1910—OCCUPATIONAL SAFETY AND HEALTH STANDARDS

Standard for Exposure to Asbestos Dust

On December 7, 1971, an emergency temporary standard concerning exposure to asbestos fibers was published in the Federal Register (36 F.R. 23207). In accordance with section 6(c) (3) of the Williams-Steiger Occupational Safety and Health Act of 1970, a notice of proposed rulemaking regarding a permanent standard for exposure to asbestos fibers was published in the Federal Register on January 12, 1972 (37 F.R. 468). The notice invited interested persons to submit both orally and in writing, data, views, and arguments concerning the proposal.

On or about January 24, 1972, the Advisory Committee on Asbestos Dust was established and requested to make written recommendations with regard to the proposed standard on asbestos. On or about February 1, 1972, the Department of Health, Education, and Welfare transmitted to the Secretary of Labor a criteria document containing recommendations for an Occupational Exposure Standard for Asbestos by the National Institute for Occupational Safety and Health (NIOSH). Public notice was given of the receipt of the recommendations and their availability for inspection and copying. On or about February 23, 1972, the Advisory Committee on Asbestos Dust submitted its written recommendations to the Assistant Secretary of Labor for Occupational Safety and Health.

Note: Federal Register, Vol. 40, No. 103, May 26, 1975, p. 23072, announced that the OSHA standard for Exposure to Asbestos Dust was recodified from 1910.93a to 1910.1001

Pursuant to the notice of rule making, a hearing was held on March 14 through 17, 1972, for the purpose of receiving oral data, views, and arguments concerning the proposed standard. On or about March 31, 1972, the presiding hearing examiner certified to the Assistant Secretary of Labor for Occupational Safety and Health the record of the proceeding. The record includes unrevised written comments, a transcript of the oral presentations made at the hearing, and numerous exhibits received during the course of the hearing or within the period allowed after the close of the hearing.

The proposed standard dealt with (1) permissible concentrations of asbestos fibers; (2) methods of compliance; (3) warning signs; (4) monitoring; (5) medical examinations; and (6) recordkeeping. Each of these major proposals elicited comments, arguments, objections, and counterproposals. They all have been examined and considered.

1. Acceptable concentrations of asbestos for dust. The proposed standard would limit occupational exposure to 8-hour time-weighted average (TWA) airborne concentrations of asbestos dust not exceeding five fibers longer than five micrometers per milliliter. Concentrations above five fibers but not to exceed 10 fibers (ceiling concentration) would be permitted up to 15 minutes in an hour, but for not more than 3 hours in any one 8-hour day.

NIOSH in effect has recommended that the five-fiber TWA and 10-fiber peak concentrations be permitted only for 2 years; thereafter, TWA concentrations should be not more than 3 fibers per cubic centimeter (cm.) of air, and peak concentrations should not exceed 10 fibers/cm., with no time restriction. Numerous objections and counterproposals have been made, with regard to both the limits of asbestos fiber concentrations and the time periods to comply with them. Some, for example, have recommended return to a 12-fiber standard of an earlier day; i.e., a level adopted under the Walsh-Healey Public Contracts Act in 1948. Others have recommended a two-fiber standard to become effective in 6 months, then a one-fiber standard for 2 years, and finally a zero-fiber standard after 3 years. Their rec-

No one has disputed that exposure to asbestos of high enough intensity and long enough duration is causally related to asbestosis and cancer. The dispute is as to the determination of a specific level below which exposure is safe. Various studies attempting to establish qualitative relations between specific levels of exposure to asbestos fibers and the appearance of adverse biological manifestations, such as asbestosis, lung cancer, and mesothelioma, have given rise to controversy as to the validity of the measuring techniques used and the reliability of the relations attempted to be established. Because of the long lapse of time between onset of exposure and evidence of the consequences of exposure, but we do not have, in general, accurate measures of the levels of exposure occurring 20 or 30 years ago, which have given rise to these consequences. There are also controversies concerning the relative toxicity of the various kinds of asbestos, and varying hazards in different workplaces.

It is fair to say that the controversy has centered in the area between a two-fiber TWA concentration and five-fiber TWA concentration, with variations on the time needed for compliance. Many employers support a five-fiber TWA. Most medical opinion is divided between a two-fiber standard and a five-fiber standard.

In view of the undisputed grave consequences from exposure to asbestos fibers, it is essential that the exposure be regulated now on the basis of the best evidence available now, even though it may not be as good as scientifically desirable. An asbestos standard can be re-evaluated in the light of the results of ongoing studies and future studies but cannot wait for them. Lives of employees are at stake.

It is concluded that there should be one minimum standard of exposure to asbestos applicable to all workers exposed to any kind or mixture of kinds of asbestos. Because of practical administration problems, a variety of standards for different kinds of asbestos of workplaces. Also, while the evidence tends to show that chrysotile, for example, is more harmful than crocidolite, there is not sufficient reliable evidence to warrant separate standards for different kinds of asbestos.

Because there must be one standard governing exposure to all varieties of

some present employees with regular exposure to asbestos have probably already accumulated great doses of asbestos fibers, due to higher levels of exposure in the past; because it appears that levels of exposure which may be safe with regard to asbestosis are not safe with regard to mesothelioma; because the statute requires the protection of every employee, even of one who may have regular exposure to asbestos during a working life which may reach, or even exceed, 40 years; and because of several other considerations which have been urged and are reflected in the record of the proceeding, the conflict in the medical evidence is resolved in favor of the health of employees. As of July 1, 1976, TWA concentrations of asbestos fibers longer than 5 micrometers will not be allowed to exceed two fibers/cc., with a ceiling value of 10 fibers/cc. The current TWA concentrations of five fibers, and ceiling concentrations of five fibers, will be permitted until July 1, 1976, during what will be a transitional period deemed necessary to allow employers to make the needed changes for coming into compliance with the more stringent standard.

The record shows that the many work operations subject to the asbestos standard (textile manufacturing, industrial and marine maintenance, etc.) will meet varying degrees of difficulty in complying with the standard in some plants, extensive redesign and replacement of equipment may be needed. It appears, however, that the delay in the effective date of the two-fiber standard will provide all employers a reasonable time to comply. At the same time, so long as the ceiling limit is complied with, no harm is reasonably expected to result from exposure during the transitional period.

3. Methods of compliance. It has been pointed out by many persons that protection against asbestos fibers is best obtained by controlling the generation of fibers first, and secondly, by controlling the dispersion of released fibers into the ambient air of the workplaces. Therefore, the standard requires feasible technological controls and appropriate work practices as the primary means of compliance. Rotation of employees as a way of meeting the TWA concentration requirement is allowed only in stated exceptional circumstances, because, as a general rule, it would be difficult to implement. Personal protective equipment such as respirators cannot be relied

may be so uncomfortable as to be burdensome, except for short periods of time. Therefore, it is expected that respirators and shift rotation will be used during the period necessary to install engineering controls and to train employees in sound work practices, but, after technological compliance has been achieved, their use must be limited to special shift situations and emergencies. Where both are practicable, shift rotation is required.

3. Labeling. The proposed standard adopted short of requiring labeling asbestos and asbestos-containing products. The proposed standard would have required only warning signs at locations where asbestos hazards are present. However, labeling, rather than warning signs, has proved to be a point of controversy. Both NIOSH and the Advisory Committee on Asbestos Dust recommended labels for asbestos products and containers, and these recommendations became very controversial in the course of the proceeding. Many counterproposals have been made as to the language of the warning as well as to the products to be subject to the labeling requirements. Employers, in general, strongly contend that (1) finished products which effectively entrap asbestos fibers, so that these would not be released in the normal use of the products, should not be required to be labeled; and (2) words such as "danger" and "cancer" are unacceptably alarming.

Both contentions have merit, and the standard has been changed accordingly. **4. Monitoring.** The proposed standard would have required personal monitoring and environmental monitoring. Many issues have been raised concerning the availability and reliability of measuring instruments, frequency of monitoring, and conditions in which monitoring should be required. The adopted standard takes the objections into consideration. It requires periodic monitoring at intervals no longer than 6 months, thus allowing considerable time and discretion, and prescribes the use of the membrane filter method, which is an acceptable method for determination of asbestos fibers.

It has also been recommended that employees or their representatives should have an opportunity to observe the monitoring. The recommendation has been accepted.

5. Medical examinations. The proposed standard would have

also many helpful comments. The recommendations of NIOSH and of the Advisory Committee on Asbestos Dust were much more specific with respect to both frequency and type of medical examinations to be required. The comments vary as to the class of employees to be examined and as to the frequency of the examinations.

The adopted standard requires medical examinations both at the beginning and the termination of employment exposed to concentrations of asbestos fibers, and also requires annual medical examinations of every employee exposed to airborne concentrations of asbestos. It has been pointed out that in certain industries, such as construction, an employee may work for several employers during the same year. Accordingly, the standard does not require either preemployment, or termination, or periodic examination of any employee who has been examined in accordance with the standard within the past year.

One question which has been raised goes to whether the employer or the employee should be allowed to choose the examining physician. The standard gives the option to the employer. Since some employers already have a medical examination program in operation, and, also, have medical departments with some expertise in the diagnosis of asbestos-related diseases, it seems more reasonable to permit them to utilize the present programs and expertise, than to permit an employee to choose a private general practitioner.

6. Records. The standard, as proposed and as adopted, requires maintenance of records of monitoring and of medical examinations. Most of the controversy in this area has revolved around the question whether an employer should be allowed to have access to the results of the required medical examinations. The apprehension of those who have argued against employer access is based on the expectation that some employers will use the medical examinations as a means of screening employment applicants and workers as grounds for discharging current employees who show signs of being affected by exposure to asbestos. Since the purpose of the medical examinations is to monitor the health of employees exposed to the hazards of asbestos, employers cannot in reason be granted the privilege of refusing to disclose to their employers results of occupational exam-

ceiling level prescribed in paragraph (b) of this section.

(4) Change rooms: (i) At any fixed place of employment exposed to airborne concentrations of asbestos fibers in excess of the exposure limits prescribed in paragraph (b) of this section, the employer shall provide change rooms for employees working regularly at the place.

(ii) Clothes lockers: The employer shall provide two separate lockers or containers for each employee, so separated or isolated as to prevent contamination of the employee's street clothes from his work clothes.

(iii) Laundering: (a) Laundering of asbestos contaminated clothing shall be done so as to prevent the release of airborne asbestos fibers in excess of the exposure limits prescribed in paragraph (b) of this section.

(b) Any employer who gives asbestos-contaminated clothing to another person for laundering shall inform such person of the requirement in (a) of this subdivision to effectively prevent the release of airborne asbestos fibers in excess of the exposure limits prescribed in paragraph (b) of this section.

(c) Contaminated clothing shall be transported in sealed impermeable bags or other closed, impermeable containers, and labeled in accordance with paragraph (g) of this section.

(d) Method of measurement: All determinations of airborne concentrations of asbestos fibers shall be made by the membrane filter method at 400-450 X (magnification) (4 millimeter objective) with phase contrast illumination.

(f) Monitoring—(1) Initial determination. Within 6 months of the publication of this section, every employer shall cause every place of employment where asbestos fibers are released to be monitored in such a way as to determine whether every employee's exposure to asbestos fibers is below the limits prescribed in paragraph (b) of this section. If the limits are exceeded, the employer shall immediately undertake a compliance program in accordance with paragraph (c) of this section.

(2) Personal monitoring—(i) Samples shall be collected from within the breathing zone of the employee, on membrane filters of 0.8 micrometer porosity mounted in an open-face filter holder. Samples shall be taken for the determination of the 8-hour time-weighted average airborne concentrations and of the ceiling concentrations

by subparagraph (1) of this paragraph, samples shall be of such frequency and pattern as to represent with reasonable accuracy the levels of exposure of employees. In no case shall the sampling be done at intervals greater than 8 minutes for employees whose exposure to asbestos may reasonably be foreseen to exceed the limits prescribed by paragraph (b) of this section.

(3) Environmental monitoring—(i) Samples shall be collected from areas of a work environment which are representative of the airborne concentration of asbestos fibers which may reach the breathing zone of employees. Samples shall be collected on a membrane filter of 0.8 micrometer porosity mounted in an open-face filter holder. Samples shall be taken for the determination of the 8-hour time-weighted average airborne concentrations and of the ceiling concentrations of asbestos fibers.

(ii) Sampling frequency and pattern: After the initial determinations required by subparagraph (1) of this paragraph, samples shall be of such frequency and pattern as to represent with reasonable accuracy the levels of exposure of the employees. In no case shall sampling be at intervals greater than 8 months for employees whose exposure to asbestos may reasonably be foreseen to exceed the exposure limits prescribed in paragraph (b) of this section.

(4) Employee observation of monitoring: Affected employees, or their representatives, shall be given a reasonable opportunity to observe any monitoring required by this paragraph and shall have access to the records thereof.

(g) Caution signs and labels. (1) Caution signs. (i) Posting. Caution signs shall be provided and displayed at each location where airborne concentrations of asbestos fibers may be in excess of the exposure limits prescribed in paragraph (b) of this section. Signs shall be posted at such a distance from such a location so that an employee may read the signs and take necessary protective steps before entering the area marked by the signs. Signs shall be posted at all approaches to areas containing excessive concentrations of airborne asbestos fibers.

(ii) Sign specifications. The warning signs required by subdivision (i) of this subparagraph shall conform to the requirements of 29" x 35" vertical format signs specified in § 1910.16(d)(6), and to this subdivision. The signs shall display the following legend in the lower

Legend
Asbestos ----- 3" Sand Belt, Galkite or Asbest.
Dust Hazard ----- 1/2" Oathite or Black.
Avoid Breathing Dust... 1/2" Oathite.
Wear Assigned Protective Equipment.
Do Not Remove In Area 1/2" Oathite.
Breathing Asbestos Dust Is Fatal.
May Be Resistant To Your Mask.

Spacing between lines shall be at least equal to the height of the upper of any two lines.

(2) Caution labels—(i) Labeling. Caution labels shall be affixed to all raw materials, mixtures, scrap, waste, debris, and other products containing asbestos fibers, or to their containers, except that no label is required where asbestos fibers have been modified by a bonding agent, coating, binder, or other material so that during any reasonably foreseeable use, handling, storage, disposal, processing, or transportation, no airborne concentrations of asbestos fibers in excess of the exposure limits prescribed in paragraph (b) of this section will be released.

(ii) Label specifications. The caution labels required by subdivision (i) of this subparagraph shall be printed in letters of sufficient size and contrast as to be readily visible and legible. The label shall state:

Caution
Contains Asbestos Fibers
Avoid Creating Dust
Breathing Asbestos Dust May Cause Serious Body Injury

(3) Housekeeping—(i) Cleaning. All external surfaces in any place of employment shall be maintained free of accumulations of asbestos fibers if, with their dispersion, there would be an excessive concentration.

(2) Waste disposal. Asbestos waste, scrap, debris, bags, containers, equipment, and asbestos-contaminated clothing, consigned for disposal, which may produce in any reasonably foreseeable use, handling, storage, processing, disposal, or transportation airborne concentrations of asbestos fibers in excess of the exposure limits prescribed in paragraph (b) of this section shall be collected and disposed of in sealed impermeable bags, or other closed, impermeable containers.

(3) Recordkeeping—(i) Exposure records

monitoring required by this section Records shall be maintained for a period of at least 3 years and shall be made available upon request to the Assistant Secretary of Labor for Occupational Safety and Health, the Director of the National Institute for Occupational Safety and Health, and to authorized representatives of either.

(2) Employee access. Every employee and former employee shall have reasonable access to any record required to be maintained by subparagraph (1) of this paragraph, which indicates the employee's own exposure to asbestos fibers.

(3) Employee notification. Any employee found to have been exposed at any time to airborne concentrations of asbestos fibers in excess of the limits prescribed in paragraph (b) of this section shall be notified in writing of the exposure as soon as practicable but not later than 5 days of the finding. The employee shall also be timely notified of the corrective action being taken.

(4) Medical examinations—(i) General. The employer shall provide or make available at his cost, medical examinations relative to exposure to asbestos related by this paragraph.

(2) Preplacement. The employer shall provide or make available to each of his employees, within 30 calendar days following his first employment in an occupation exposed to airborne concentrations of asbestos fibers, a comprehensive medical examination, which shall include, as a minimum, a chest roentgenogram (posterior-anterior 14 x 17 inches). A history to elicit symptomatology of respiratory disease, and pulmonary function tests to include forced vital capacity (FVC) and forced expiratory volume at 1 second (FEV₁).

(3) Annual examinations. On or before January 31, 1973, and at least annually thereafter, every employer shall provide, or make available, comprehensive medical examinations to each of his employees engaged in occupations exposed to airborne concentrations of asbestos fibers. Such annual examination shall include, as a minimum, a chest roentgenogram (posterior-anterior 14 x 17 inches), a history to elicit symptomatology of respiratory disease, and pulmonary function tests to include forced vital capacity (FVC) and forced expiratory volume at 1 second (FEV₁).

(4) Termination of employment. The employer shall provide, or make available, within 30 calendar days before or

Appendix B USPHS/NIOSH Membrane Filter Method For Evaluating Airborne Asbestos Fibers

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November 1975

medical examination required by this paragraph shall furnish to the employer of the examined employee all the information specifically required by this paragraph, and any other medical information related to occupational exposure to asbestos fibers.

§ 1910.19 Special provisions for air contaminants.

(a) *Asbestos dust.* Section 1910.1001 shall apply to the exposure of every employee to asbestos dust in every employment and place of employment covered by § 1910.12, § 1910.13, § 1910.14, § 1910.15, or § 1910.16, in lieu of any different standard on exposure to asbestos dust which would otherwise be applicable by virtue of any of those sections.

Note: Following defines additional occupational areas affected by section 1910.19 above:

§ 1910.13 — Construction Work (construction, alteration, and/or repair, including painting and decorating)
§ 1910.14 — Ship Repairing
§ 1910.15 — Shipbuilding
§ 1910.16 — Shipbreaking

asbestos fibers, a comprehensive medical examination which shall include, as a minimum, a chest roentgenogram (posterior-anterior 14 x 17 inches), a history to elicit symptomatology of respiratory disease, and pulmonary function tests to include forced vital capacity (FVC) and forced expiratory volume at 1 second (FEV₁).

(5) *Recent examinations.* No medical examination is required of any employee, if adequate records show that the employee has been examined in accordance with this paragraph within the past 1-year period.

(6) *Medical records.*—(i) *Maintenance.* Employers of employees examined pursuant to this paragraph shall cause to be maintained complete and accurate records of all such medical examinations. Records shall be retained by employers for at least 20 years.

(ii) *Access.* The contents of the records of the medical examinations required by this paragraph shall be made available, for inspection and copying, to the Assistant Secretary of Labor for Occupational Safety and Health, the Director of NIOSH, to authorized physicians and medical consultants at either of them, and, upon the request of an employee or former employee, to his physician. Any physician who conducts a

This report describes the equipment and procedures for collecting, mounting, sizing, and counting asbestos fibers on cellulose ester membrane filters for the evaluation of breathing zone samples of airborne asbestos fibers. The purpose of the method presented is to determine an employee's exposure to airborne asbestos fibers. This is the method of test referenced in the Federal standard on occupational exposure to asbestos (29 CFR 1910.1001, formerly 29 CFR 1010.1001).

Preface

It has been almost seven years since the last detailed information was published by NIOSH concerning an asbestos counting method (Edwards and Lynch, 1968). In the interim, this method passed from a recommended status to one required by federal occupational health standard 29 CFR 1910.1001 (formerly 1910.93a).

This report was prepared to expand on the 1968 paper. It incorporates much of the sampling and analytical experience of the last seven years accumulated by counts made by NIOSH laboratories and the OSHA Analytical Services Laboratory. The report attempts to answer many of the practical questions concerning the method. A draft of this report has been used for the last two years by the NIOSH Division of Training in a course on asbestos sampling and analysis.

Recently a report prepared by the Joint AIHA-ACGIH Aerosol Hazards Evaluation Committee was published in the *AIHA Journal* (Recommended Procedures for Sampling and Counting Asbestos Fibers, AIHAJ, 36, pp. 83-90 (1975)). The AIHA-ACGIH report was not submitted for technical review to either NIOSH or OSHA personnel responsible for technical procedures of the USPHS/NIOSH asbestos count method. The AIHA-ACGIH report contains conflicting and possibly confusing guidelines. This NIOSH report contains the NIOSH technical guidelines and procedures referenced in the Federal asbestos standard 29 CFR 1910.1001 (formerly 29 CFR 1910.93a).

The guidelines of this NIOSH report should be carefully and consistently followed by personnel collecting and evaluating asbestos samples in order to yield accurate results.

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I SCOPE

A. This method describes the equipment and procedures for collecting, mounting, sizing, and counting asbestos fibers on cellulose ester membrane filters in the evaluation of breathing zone samples of airborne asbestos fibers. The purpose of the method is to determine an employee's exposure to airborne asbestos fibers. The method is primarily a personal monitoring technique, but can be used for area monitoring.

B. The method has been successfully applied using 37 mm Millipore AA filters and small battery operated personal sampling pumps at a flow rate of 1.0 to 2.5 liters per minute (lpm) for time periods of a few minutes to 150 minutes at concentrations of 1 to 20 fibers (longer than 5 micrometers)/cubic centimeter. Large deviations from these conditions may result in samples with either too few or too many fibers, which will yield air concentration estimates of low statistical precision and accuracy.

C. This method considers only fibers with a length to width ratio of 3 to 1 or greater and a length greater than 5 micrometers.

II SUMMARY OF METHOD

The sample is collected by drawing air through a membrane filter by means of a battery powered personal sampling pump. The filter is transformed from an opaque solid membrane to a transparent, optically homogeneous gel. The fibers are sized and counted by phase-contrast microscope at 400-450X magnification.

III SIGNIFICANCE

This type method was first used by the Abetoss Research Council in Great Britain (1) and later was slightly modified by the U.S. Public Health Service for asbestos dust studies in the United States (2). It has been referenced as the method of test (3) for the Federal standard for asbestos in industrial air (29 CFR Part 1910.1001, formerly 29 CFR 1910.93a), and the MESA air quality standard 30 CFR 55.5-1(b) in the NIOSH Criteria Document on occupational exposure to asbestos (4). In sampling procedures of the Occupational Safety and Health Administration, Department of Labor, (5) it is the method used by NIOSH and taught in the NIOSH Division of Training, Course 582, "Sampling Airborne Asbestos Dust".

IV DEFINITIONS

"Asbestos fibers" means asbestos fibers longer than 5 micrometers. "Asbestos" includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite. For definitions of terms used in this report, refer to ASTM Definitions D 1356, Terms Relating to Atmospheric Sampling and Analysis.

V INTERFERENCES

All particulates with a length to width ratio of 3 to 1 or greater and length greater than 5 micrometers should, in the absence of other information, be considered to be asbestos fibers and counted as such.

VI APPARATUS

A. Sampling Equipment
The personal sampling equipment train consists of: 1) personal sampling pump, 2) tubing, 3) clothing spring clip, 4) tubing-to-field monitor for metal adapter, and 5) field monitor (collecting filter and holder).

1. Personal sampler pump. The pump must be battery powered and weigh less than 2 pounds (0.9 kg). The pump must be capable of sampling at 1.0 to 2.5 lpm against a flow resistance of 7.5 inches of water (1.4 cm H₂O) for 6 continuous hours on a fully charged battery.
2. Tubing. Laboratory tubing such as rubber or plastic with 6 mm bore (1/4 inch) and about 90 cm length (3 feet).
3. Clothing spring clip. This clip attaches the rubber tubing to the lapel or shirt of the individual being monitored. Large spring paperclips will also work.
4. Tubing-to-field monitor adapter. A short adapter with ridges on one end to grip the inside of the tubing. The other end is designed for a pressure fit into the field monitor.
5. Field monitor (collecting filter and holder). The only field monitor currently considered acceptable by NIOSH is manufactured by the Millipore Corporation. The unit consists of: 1) a three-section styrene plastic case designated Millipore aerosol Monitor Case, 2) a 37 mm diameter plain white cellulose ester membrane filter designated Millipore AA (nominal pore size of 0.8 micrometer), 3) a support pad, and 4) two plastic sealing

the plastic cases. Great care must be taken in the cleaning and reassembly process. The outside mating surfaces of the field monitors should be covered with "think-tite" sealing bands to seal the units and provide a writing surface for filter identification.

B. Optical Equipment

1. Microscope body with binocular head.
2. 10X Huygenian eyepieces are recommended. Other eyepieces can be substituted if necessary.
3. Koehler illumination (preferably built in and having provisions for adjusting light intensity).
4. A Porton reticle is recommended. Others such as the Patterson Globe and Circle can be substituted, if necessary.
5. Mechanical stage.
6. Abbe and Zernike condensers fitted with phase ring (for Heine) with a numerical aperture (N.A.) equal to or greater than the N.A. of the objective.
7. 40-45X (N.A. 0.65 to 0.75) positive phase contrast achromatic objective.
8. Phase-ring centering telescope or Bertrand lens.
9. Green filter, if recommended by microscope manufacturer.
10. Stage micrometer with 0.01 mm subdivisions.

For general guidance on microscopes consult Needham (6) and Clark (7) under phase contrast microscopes and accessories.

C. Filter Mounting Equipment

Experience has shown that certain equipment is useful for efficient sample mounting. The following items are recommended for extracting and mounting a portion of the filter onto the microscope.

1. Microscope slides: 2.5 by 7.5 cm (one inch by three inches) glass slides are most commonly used. Sample number, date, initials, etc., can be conveniently written on a frosted end slide.
2. Cover slips: Cover slips are a necessary part of the slide mount and optical system. The shape should be appropriate for the size of the filter wedge. The appropriate cover slip depends upon the objective to be

3. Scalpel: A scalpel is needed to remove a portion of the filter to be examined. A non-barren curved blade scalpel works very well.

4. Tweezers: A pair of fine-tipped tweezers is used to remove the membrane filter slice from the field monitor and place it upon the slide.

5. Lens tissue: To insure cleanliness, use of a lint-free tissue is recommended. This tissue should also be used for wiping mounting tools and for cleaning slides and cover slips.

6. Glass rod or spatula: A spatula or fire-polished glass rod is needed to spread the mounting solution on the slide.

7. Wheaton Beilam bottle: This special glass container has a glass top which prevents contamination of the mounting solution. A glass rod is included for dispensing the solution.

VII REAGENTS

Chemicals should be reagent grade, free from particles and color, conforming to the specifications of the Committee on Analytical Reagents of the American Chemical Society, where such specifications are available. Chemicals required are:

- A. Dimethyl phthalate
- B. Diethyl oxalate

VIII SAFETY PRECAUTIONS

Avoid getting the mounting solution on the skin. Wash skin promptly with soap and water if skin contact occurs.

IX SAMPLING

A. General Information

General guidelines for the monitoring of employee exposures to industrial atmospheres are given in reference (8). The Federal requirements regarding employee exposure monitoring for airborne asbestos are given in 29 CFR 1910.1001.

B. Calibration

The personal sampling pump should be recharged prior to calibration and then calibrated (9) against a bubble meter, wet test meter, spirometer, or similar device at 1.0 to 2.5 lpm. The sampling train used in the calibration (pump, hose, filter) should be the same

C. Mounting the Sampling Pump on the Worker

Fasten the sampling pump to the worker's belt and fasten the field monitor to the lapel or shirt front (as close to the face as is practical). Remove the top cover of the plastic monitor, then invert the monitor making certain the exposed filter is facing downward. Turn on the pump and adjust to the previously calibrated flow rate (1.0 to 2.5 lpm). Immediately record the following information in a logbook.

1. Filter number
 2. Pump start time and date
 3. Flow rate
 4. Subject's name
 5. Type of operation
 6. Ventilation controls and/or if worker is wearing a respirator approved for asbestos.
- The pump should be checked periodically during the sampling period for proper operation and flow rate.

D. Optimum Sampling Times

The requirement for a minimum count of 100 fibers or 20 fields in Section X(O)(3) below was determined to be the optimum choice to achieve low variability of the fiber count (as approximated by the Poisson distribution) and reduced counting times. Another way of looking at this requirement is that the optimum fiber density on the filter should be one to five fibers per microscope counting field. To estimate optimum sampling times one must know in advance the approximate field area of the counting scope and the pump flow rate.

The following equation is used to calculate the range of optimum sampling times which can then be plotted on log-log paper:

$$\text{Minutes} = \frac{(\text{FB}/\text{FL})(\text{ECA}/\text{MFA})}{(\text{FR})(\text{AC})(1000)}$$

where FB/FL = 1 to 5 fibers/field
 ECA = effective collecting area of filter (655 mm² for 37 mm filter)
 MFA = microscope field area (generally 0.003 to 0.006 mm²)
 FR = Pump flow rate (generally 1.0 to 2.5 lpm)
 AC = Air concentration of fibers in fibers/cc

a microscope field area of 0.003 mm². In Figure 2, we see that the sampling times which yield an optimum fiber density on the filter are in the range 40 to 80 minutes for a 1.7 lpm sampling rate and 0.006 mm² field area. Each individual responsible for sampling asbestos should prepare a similar chart for his particular pump flow rate and field area before sampling is performed to avoid filters that are too light for reliable statistics or too heavily loaded to count. However, note that the upper limit on the optimum counting density of 5 fibers/field is an arbitrary one. This upper limit is highly dependent on the background particulate density. Under very light background conditions the upper limit for reliable counts may extend to 25-30 fibers/field.

From Figures 1 and 2, it can be seen that there are certain sampling times which will yield optimum fiber densities on the filter for almost all airborne fiber concentrations from 1 to 10 fibers/cc. These optimum times have been calculated and are presented in Figure 3. Note that the optimum times given by Figure 3 are approximate and can be varied by as much as ± 25 percent. The nomogram is intended as a guide to be used where no prior knowledge of the air concentration is available. If, after sampling for the times recommended by Figure 3, the sample is very heavily loaded (greater than 10 fibers/field), then the air concentration probably greatly exceeded the ceiling standard of 10 fibers/cc. Conversely if the filter fiber density is very low (less than 1 fiber/field) then the air concentration probably was less than the 1976 Federal 8-hour average standard of 2 fibers/cc. (29 CFR 1910.1001(b)(2) effective July 1, 1978). The nomogram gives the sampling times which produce optimum fiber densities on the filter (1 to 5 fibers/field) for air concentrations of 1 to 10 fibers/cc.

E. End of Sampling Period

Remove the field monitor, replace the plastic top cover and the small end caps, and store the monitor. Always shut off the pump when changing monitors to avoid contaminating or damaging the pump. Record the pump shutoff time and flow rate in the logbook.

F. Blanks

With each batch (25 to 50 filters) of samples submit two unexposed filters which have been

except that no air has been drawn through them. Label these as blanks. If the blanks yield fiber counts greater than about 5 fibers/100 of contamination.

Figure 1 — Optimum sampling times for airborne asbestos where microscope field area = 0.003 sq. mm.

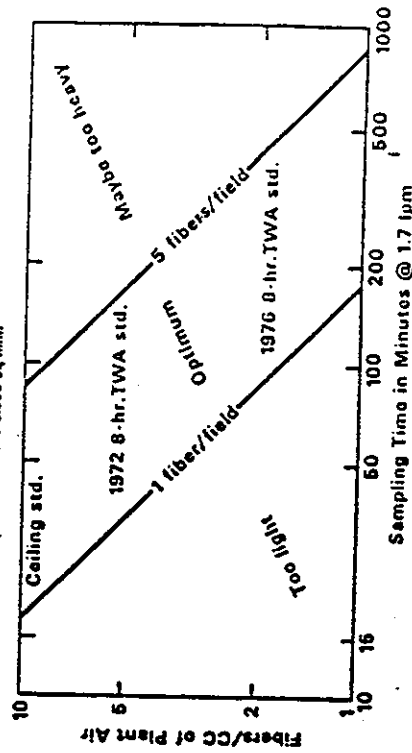


Figure 2 — Optimum sampling times for airborne asbestos where microscope field area = 0.006 sq. mm.

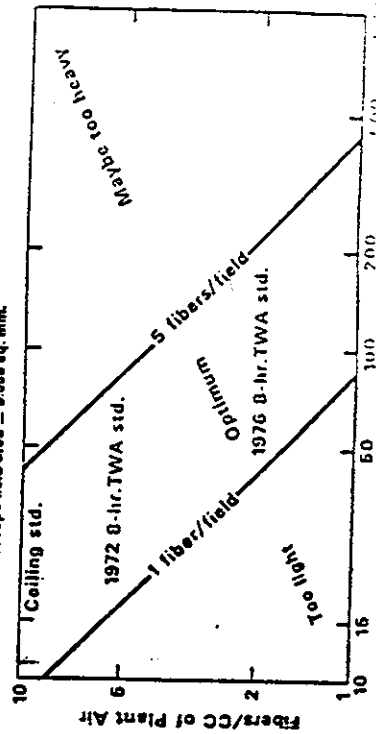
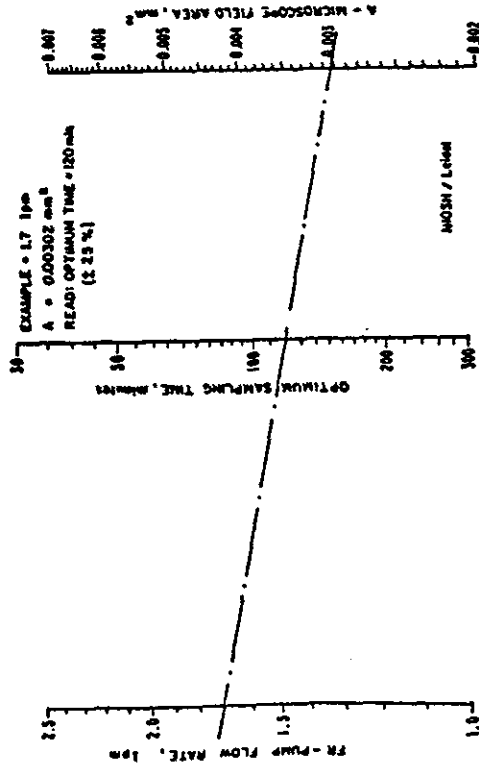


Figure 3 — Nomogram for optimum sampling times for airborne asbestos fibers.



G. Shipping
The field monitors in which the samples are collected should be shipped in a rigid container with sufficient packing material to prevent crushing.

H. Numbers of Samples
When sampling for the ceiling standard (29 CFR 1010.1001(b)(3) effective July 7, 1972) only one sample (15-minute maximum duration) is theoretically necessary. However, several samples should be taken during expected periods of peak air concentrations to allow for detection of gross sampling or counting errors.

When sampling for determination of noncompliance with the 8-hour TWA standard one should continuously sample as large a portion of the work day as is feasible. (29 CFR 1010.1001(b)(1) or (b)(2)) Normally this would mean 8 to 10 consecutive samples on the same man. However, if this is not feasible the 8-hour TWA air concentration can be estimated from fewer

data for the determination on noncompliance. See the NIOSH handbook (9), and Jones and Brief (11) for how to treat data taken for an employee exposure monitoring program.

X. CALIBRATION AND STANDARDIZATION

A. Portion Reticle and the Counting Field
The asbestos fiber count procedure consists of comparing fiber length with calibrated circles, and counting all fibers greater than 5 micrometers in length within a given counting field area. It is recommended that a Portion reticle be used for this purpose. The Portion reticle is a glass plate inscribed with a series of circles and rectangles. The square on the left, divided into six rectangles, is defined as the counting field.

B. Placement in Eyepiece
The Portion reticle is placed inside the Huygenian eyepiece where it rests on the field-limiting diaphragm. The reticle should be kept clean, since dirt on the reticle is in focus and will complicate the counting and sizing procedure.

C. Stage Micrometer
The Portion reticle cannot be used for counting until it has been properly calibrated with a stage micrometer. Most stage micrometer scales are approximately two millimeters long and are divided into units of one-hundredth of a millimeter or ten micrometers.

D. Microscope Adjustment
When adjusting the microscope follow the manufacturer's instructions while observing the following guidelines:

1. The light source image must be in focus and centered on the condenser iris or annular diaphragm.
2. The object for examination must be in focus.
3. The illuminator field iris must be in focus, centered on the sample, and opened only to the point where the field of view is illuminated.
4. The phase rings (annular diaphragm and phase-shifting elements) must be concentric.

E. Portion Reticle Calibration Procedure
Each eyepiece-objective-reticle combination on the microscope must be calibrated. Should any of the three be changed (disassembly, replacement, zoom adjustment, etc.) the combination must be recalibrated. Calibration may change if interpupillary distance is changed. For proper calibration, the following procedure should be followed closely.

With a 10X objective in place, place the stage micrometer on the mechanical stage, focus, and center the image. Change to the 40-45X objective and adjust the first scale division to coincide with the left boundary of the Portion rectangle. Count the number of divisions between the left and right boundaries of the long horizontal dimension of the largest rectangle, estimating any portion of the final division. This measurement represents 200 L units and one divides the measurement by 200 to find "L". The large rectangle is 100 L units long on the short vertical dimension. The calculated "L" is inserted into the formula $D = L(20\%)$ where "D" is the circle diameter (indicated on the reticle) and "L" is the circle diameter. Since the circle diameters vary logarithmically, every other circle doubles in diameter. For example, number three is twice the diameter of number one; number four is twice the diameter of

determined, the counting field area consisting of the left six smaller rectangles can be calculated from the relation 10,000 L. This completes the reticle calibration for this specific objective-eyepiece-reticle combination.

XI. PROCEDURE

A. Preparation of Mounting Solution
A very important part of the sample evaluation is the mounting process. This process involves a special mounting medium of prescribed viscosity. The proper viscosity is important in order to expedite filter cleaning and minimize particle migration. Once the sample has been mounted, an elapsed time of approximately fifteen minutes is needed before the sample is ready for evaluation.

Combine the dimethyl phthalate and diethyl oxalate in one to one ratio by volume and pour into a Wheaton balsam bottle. Add 0.05 gram of new membrane filter per milliliter of solution to reach the necessary viscosity. The mixture must be stirred periodically until the filters have dissolved and a homogeneous mixture is formed. The normal shelf life of the mounting solution is about six months. Twenty milliliters of mounting solution will prepare approximately 300 samples.

B. Sample Mounting

Cleanliness is important! A dirty working area may result in sample contamination and erroneous counts. The following steps should be followed when mounting a sample.

1. Clean the slides and cover slips with lens tissue. Lay the slide down on a clean surface with the frosted end up. It is a good practice to test one edge of the cover slip on the slide and the other edge on the working surface. By doing this, you keep the bottom surface (the one which contacts the filter) from becoming contaminated.
2. Wipe all the mounting tools clean with lens tissue and place them on a clean surface (such as lens tissue). When mounting a series of filters the scalpel should be wiped clean before cutting each sample.
3. Using a glass rod which is supplied with the Wheaton balsam bottle, apply a small drop of mounting solution onto the center of the slide. It may be necessary to adjust the

solution extending only slightly beyond the filter boundary. If the quantity is greater than this, adverse particle migration will occur.

4. With the spatula or a supplemental glass rod, spread the mounding media into a triangular shape. The size of this triangle should coincide with the dimension of the filter wedge.

5. Separate the middle and bottom sections of the field monitor case to expose the filter. Cut a triangular wedge from the center to the edge of the filter using the scalpel. The size of the wedge should approximate one-eighth of the filter surface.

6. Grasp the filter wedge with the tweezers in the outer area of the filter which was clamped between the monitor case sections. Do not touch the filter with your fingers. Place the wedge, sampled side up, upon the mounding medium.

7. Pick up the cover slip with the tweezers and carefully place it on the filter wedge. Once this contact has been made, do not reposition the cover slip.

8. Label the slide with the sample number and current date before proceeding to the next filter.

9. The sample should become transparent after about fifteen minutes. If the filter appears cloudy, it may be necessary to press very lightly on the cover slip. This is rarely necessary.

10. Discard the sample mount after three days if it has not been counted. Crystals which appear similar to asbestos fibers may begin to grow at the mounding media/air interfaces. They seldom present any problems if the slide is examined before three days. In any case, stay away from the filter's edges when counting and sizing.

C. Counting and Sizing
Finding and inspecting counting fields. Place the slide on the mechanical stage and position the center of the wedge under the objective lens and focus upon the sample. Nearly all of the particulates (particles and fibers) will be found in the upper ten to fifteen micrometers of the filter surface. When counting and sizing, continual use of the line focus control is recommended to insure that nothing is missed. Start

(count in either direction from circumference to wedge tip). Random fields are selected, without looking into the eyepieces, by slightly advancing the slide in one direction with the mechanical stage control.

D. Achieving Comparable Results

1. Size only fibers with a length to width ratio greater than or equal to 3:1.
2. Count only fibers greater than 5 micrometers in length. (Be as accurate as possible in accepting or rejecting fibers near this length). Measure curved fibers along the curve to estimate the total length.
3. Count as many fields as necessary to yield a total count of at least 100 fibers. Exceptions: a) count at least 20 fields even if you count more than 100 fibers, and b) stop at 100 fields even if you haven't reached 100 fibers.

4. Select the field of view without looking through the microscope's eyepieces to eliminate unconsciously selecting "heavy" or "light" areas.

5. The fields are selected along the entire length of a radial line running between the outside perimeter and the tip of the wedge.

6. When an agglomerate (mass of material) covers a significant portion of the field of view (approx. 1/8 or greater) reject the field and select another. (Do not include it in the number of fields counted.) However, report the fact as it may have meaning to sampling or medical personnel.

7. Bundles of fibers are counted as one fiber unless both ends of a fiber crossing another can be clearly resolved.

8. For fibers that cross either one or two sides of the counting field, the following procedure is used to obtain a representative count. First, arbitrarily select: a) the left and bottom sides, and b) the upper and lower left corners and vertical direction as "decision sides."

Then count any fiber greater than 5 micrometers in length, but only if the fiber:

- a. lies entirely within the counting area or,
- b. crosses the left or bottom sides, or
- c. crosses the upper or lower left corners, or
- d. crosses both the top and bottom sides.

Reject and do not count all other fibers.

Figure 4. COUNT, fiber crosses both top and bottom sides.

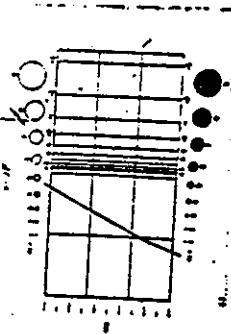


Figure 5. COUNT as one fiber.

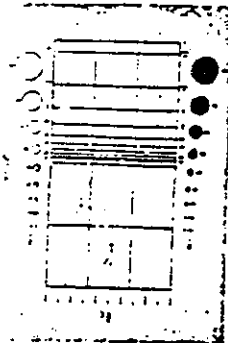


Figure 6. COUNT, fiber crosses left side.

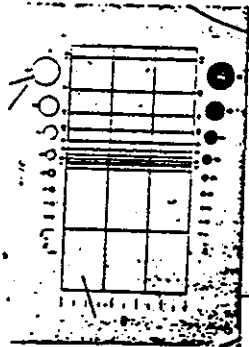


Figure 7. COUNT, fiber crosses bottom side.

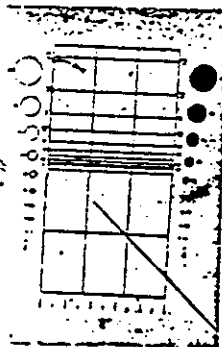


Figure 8. COUNT, fiber crosses lower left corner.

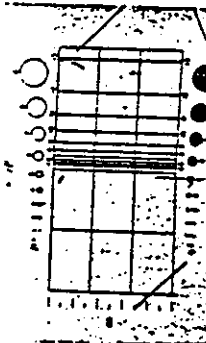


Figure 9. COUNT, fiber crosses upper left corner.



XII CALCULATIONS OF AIRBORNE CONCENTRATIONS

Asbestos fiber airborne concentration may be calculated from the following formula:

$$C = \frac{F - B}{(A)(V)}$$

Where:

C = Airborne fiber concentrations in fibers $> 5 \mu\text{m}/\text{cm}^3$.

F = Average fiber count in fibers $> 5 \mu\text{m}$ field.

B = Average fiber count of blank(s) or control filter(s) in fibers $> 5 \mu\text{m}$ field. (It is subtracted to eliminate the error or background contamination.)

W = 855 mm^2 for 37 mm diameter filter (the portion of the Millipore filter which is exposed when mounted in the field monitor case, i.e., the effective filter area).

A = The area of the counting field of a calibrated reticle expressed in mm^2/field .

V = Total air volume collected through filter expressed in milliliters.

XIII PRECISION AND ACCURACY

A. An accuracy and precision study of the membrane filter counting procedure for asbestos has been conducted by Conway and Holland (12). They conducted an intralaboratory study involving six counters. Three of the counters were experienced while the other three had only a short familiarization with the rules for fiber counting. The conclusions of the study included:

1. The precision of the procedure for filters not containing an abundance of fine fibers can be estimated by a standard deviation of 16.2%. This value includes variation among counters and observed interaction effects.
2. The accuracy of the procedure for similar filters may be estimated for a 100-fiber count by a standard deviation of 21.4%. This assumes that the contribution of the overall variance from the nonuniform fiber distribution is additive.
3. The fiber concentration varies significantly between angular sectors on a given filter. Where approximately 100 fibers are

(n) which is a property of the Poisson distribution, where (n) is the total number of fibers counted.

4. A high percentage of very fine fibers on the filter can significantly affect the standard deviation and confidence limits for counts by different counters. After combining variations in fiber concentrations over the entire filter with those for different counters it was concluded:

a. For filters with a low concentration of the fibers, the standard deviation is estimated at 21% and the 95% confidence interval is $\pm 43\%$.

b. For filters with a high concentration of fine fibers, the standard deviation is estimated at 25% and the 95% confidence interval is $\pm 50\%$.

B. Lynch, Kronovetter, and Leidel (13) have also reported on the precision of the method. Their intralaboratory study utilized the data from a large number of dust counts made by different methods by experienced counters over a period of years in an epidemiologic study of the asbestos products industry. They concluded that the standard deviation of counts of fibers longer than 5 micrometers on membrane filters could be estimated from the relation $\sigma = (n)^{1/2}$. Thus for counts of about 100 fibers, the standard deviation could be estimated at about 10%, and the 95% confidence limits at $\pm 20\%$. These values are lower than the precision values reported by Conway and Holland (12).

C. Systematic inaccuracies can be introduced by the improper choice of microscope or by not checking a particular individual's counts in relation to other counters. Leidel and Busch (14) found that one particular microscope tested yielded counts that were approximately 45% higher on the average than counts from four other microscopes in a phase contrast microscope evaluation. Also, one particular counter produced counts that were 27% higher on the average. Leidel and Busch (14) concluded that a significant difference in asbestos fiber counts can result when the same filters are counted on different makes and models of microscopes. Significant differences can also exist between trained counters. They con-

on membrane filters should be part of an interlaboratory collaborative quality program. This participation will insure that: 1) equipment is properly adjusted and calibrated; 2) counters are properly trained and their counting efficiency is continually evaluated; and 3) comparable results are obtained from each laboratory. This type of quality control program is conducted by NIOSH as the Proficiency Analytical Testing (PAT) program. The PAT program is used by the AIHA as part of their Laboratory Accreditation Program which is partially funded by NIOSH.

XIV REFERENCES

- 1 Asbestos Research Council: "The Measurement of Airborne Asbestos Dust by the Membrane Filter Method: Technical Note." Dr. S. Holmes (Secretary) P.O. Box 40, Rockdale Lancashire, Great Britain (1969).
- 2 Edwards, G. M., and J. R. Lynch: "The Method Used by the U.S. Public Health Service for Enumeration of Asbestos Dust on Membrane Filters." *Annals of Occupational Hygiene*, 17, 1-6 (1969).
- 3 *Federal Register*, 39, 23543-23545 (June 27, 1974).
- 4 U.S. Department of Health, Education, and Welfare, Public Health Service, National Institute for Occupational Safety and Health: "Criteria for a Recommended Standard: Occupational Exposure to Asbestos," HSM 72-10287 (1972).
- 5 U.S. Department of Labor, Occupational Safety and Health Administration, "OSHA Sampling Data Sheet No. 2 - Asbestos," (Unpublished - Jan. 1972).
- 6 Needham, G. H.: "The Practical Use of the Microscope." Charles C. Thomas Publishing Corp., Springfield, Illinois (1958).
- 7 Clark, G. L.: "The Encyclopedia of Microscopy," Reinhold Publishing Corp., N.Y. (1961).
- 8 Handbook for Compliance Determinations of Employee Exposure to Industrial Atmospheres, USPHS, NIOSH Technical Publication (to be published 1975).
- 9 American Conference of Governmental Industrial Hygienists: "Air Sampling Instruments for Evaluation of Atmospheric Contaminants," Fourth Edition, Section K, Air Movers and Samplers, pp K-26 K-31, P.O. Box 1937, Cincinnati, Ohio (1972).
- 10 Leidel, N. A., and K. A. Busch: "Statistical Methods for the Determination of Noncompliance with Occupational Health Standards," NIOSH Technical Publication 75-159 (1975).
- 11 Jones, A. R., and R. S. Drief: "Evaluating Benzene Exposures," *AIHA J.*, 32, 610-613 (1971).
- 12 Conway, R. E., and Holland, W. D.: "Statistical Evaluation of the Procedure for Counting Asbestos Fibers on Membrane Filters," LFE Corporation, Richmond, CA. Prepared for Asbestos Information Assoc./North America, New York, N.Y. (1973).
- 13 Lynch, J. R., K. H. Kronovetter, and N. A. Leidel: "Validity of the Poisson Distribution in Dust Counting," USPHS (NIOSH unpublished in-house report TR-63).
- 14 Leidel, N. A., and K. A. Busch: An Evaluation of Phase Contrast Microscopes for Asbestos Counting, presented at the 1974 American Industrial Hygiene Conference, Miami Beach, Florida, 18 May 1974 (NIOSH unpublished in-house report TR-92).

Notes

A. SOURCES OF PERSONAL SAMPLER PUMPS

- 1 Mine Safety Appliance Company
201 North Braddock Avenue
Pittsburgh, PA 15208
- 2 National Environmental Instruments, Inc.
P.O. Box 590
Warwick, RI 02886
- 3 Willson Products Division
ESB Incorporated
P.O. Box 622
Reading, PA 18603

B. SOURCE OF CLOTHING SPRING CLIP

- Catalog number 1140
John F. McGuire Company
120 Bacon Street
Pawtucket, RI 02860

C. SOURCE OF TUBING-TO-FIELD MONITOR ADAPTOR

- Catalog number LH/L
Beclon, Dickinson, & Company
Rutherford, NJ

D. SOURCE OF FIELD MONITOR

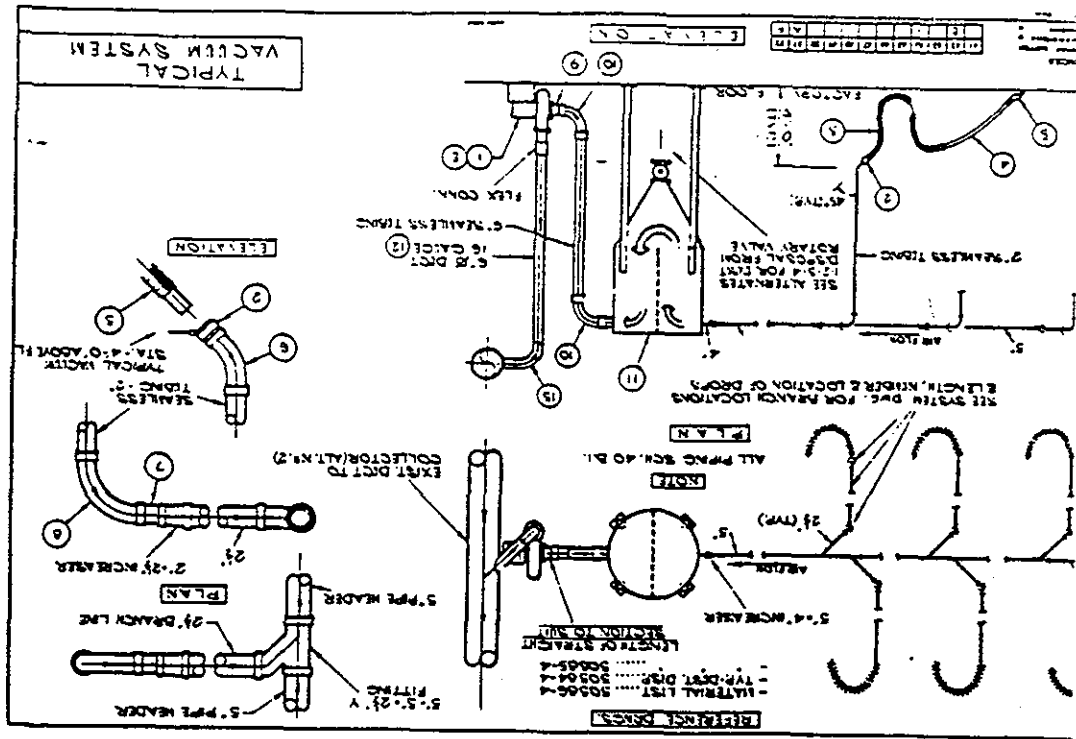
- 1 Complete monitor (plastic case, filter, pad, and caps), catalog number
MAWP 037A0 (50/box).
- 2 Filters and pads only, catalog number
AAWP 03700 (100/box).
- 3 Monitors only, catalog number M0000
37A0 (50/box), from the
Millipore Corporation
Ashby Road
Bedford, MA 01730

E. SOURCE OF SEALING BANDS

- Cellulose bands, white, opaque, 41x25,
#28 (minimum order 2500).
Waller H. Jelly & Company
2822 Birch Street
Franklin Park, IL 60131

It is recognized that equipment and services other than those cited in this report may be available. Mention of company or product names is not to be considered an endorsement by NIOSH.

Appendix C



△ RATINGS

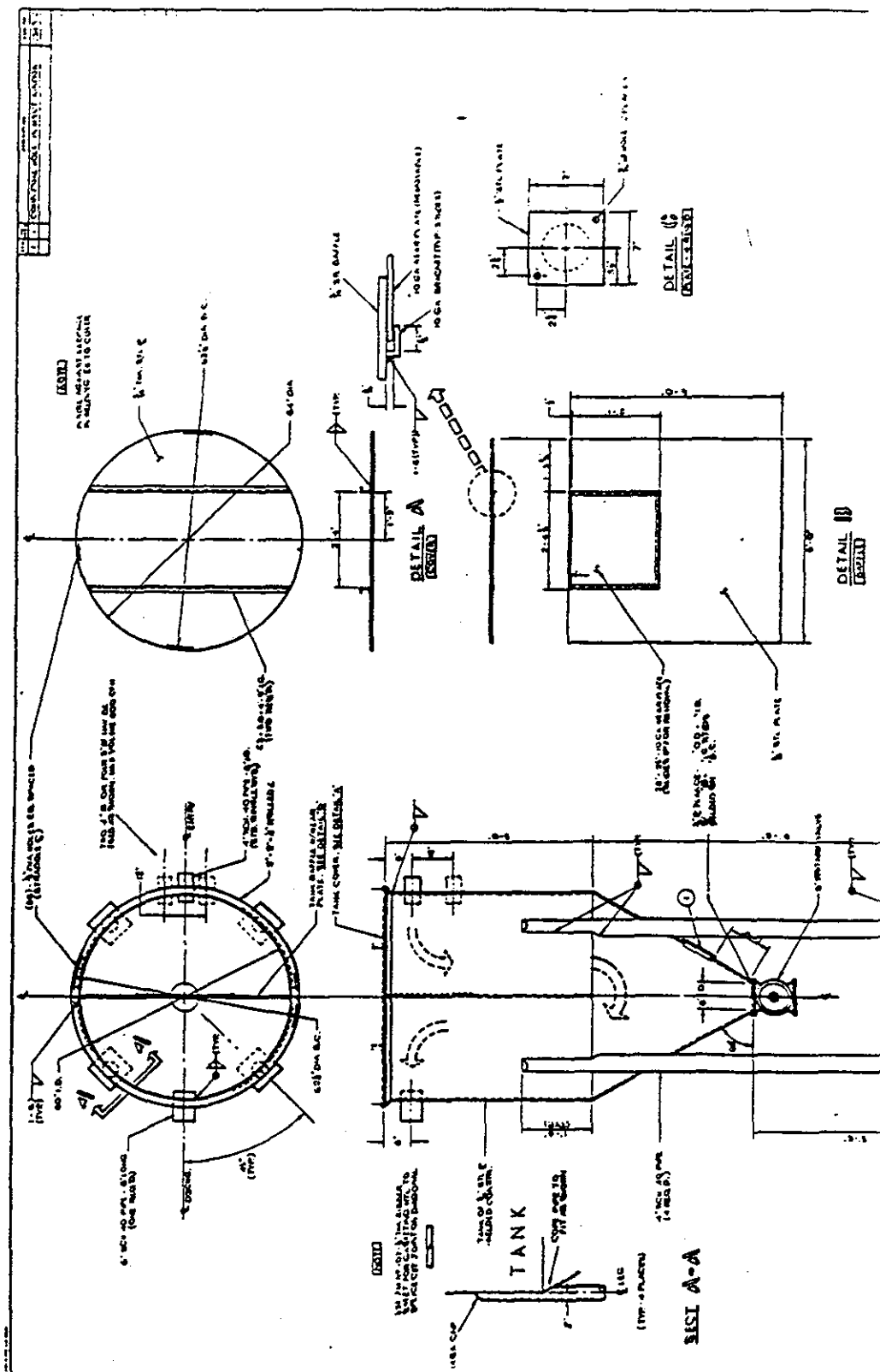
SYSTEM	TYPE	MAX. PRESS.	MAX. FLOW	MAX. DISTANCE	TOTAL PRESS.
STANDARD SYSTEM	T&O	150 FT.	1500 CFM	40"	
0 PARALLEL SYSTEMS	FOUR	150 FT.	600 CFM	40"	
11 " " " "	SIX	150 FT.	900 CFM	40"	
EXTENDED SYSTEM	T&O	150 FT.	1500 CFM	60"	
" " " "	FOUR	150 FT.	600 CFM	60"	
" " " "	SIX	150 FT.	900 CFM	60"	

△ QUANTITIES LEFT OPEN IN MATERIAL LIST
WILL BE DETERMINED TO SUIT SPECIFIC SYSTEMS

ITEM	DESCRIPTION	QTY	UNIT
1	FAN - BUFFALO LAHRON CLARAGE 115 VOLT BLONER OR EQUAL - LON-VOLGE HIGH PRESSURE, DIRECT CONN'D., ARR. NO. 4		
2	INLET VALVE - HOFFMAN NO. 59465 OR EQUAL		
3	NOSE - FLEXIBLE, REINFORCED 1/2" STEEL NIPPLES, 25 FT. LG., HOFFMAN STYLE VP OR EQUAL		
4	FLOOR ROD, CURVED, 2" I.D. FEMALE SLIP- JOINTS, HOFFMAN NO. 59447 OR EQUAL		
5	FLOOR NOZZLE, CO. PER. STYLE 2" O.D. MALE END, HOFFMAN NO. 38410 OR EQUAL		
6	ELBOW, 2" BELL END, 2" FPT, STD. RAD. 45° HOFFMAN NO. 3A-2011 OR EQUAL		
7	ADAPTER, MALE, 2" PIPE THRD., 2" NIPPLE 4" LG., HOFFMAN NO. 3A-202 OR EQUAL		
8	ELBOW, 2" BELL END, STD. RAD. 90° HOFFMAN NO. 3-202 OR EQUAL		
9	FLEXIBLE CONNECTION, 6" B.I.D. FLANGED, NEW YORK BLONER CO. OR EQUAL		
10	ELBOW, 6" BELL END, STD. RAD. 90° HOFFMAN NO. 3-602 OR EQUAL		
11	DEST. TRAP - J-W STD.		
12	DIST. CONSTR. -	DATE AS NOTED	D-201.1
13	ELBOW, RD.,		D-202.3-1
14	DIRECT CONN'D. OPEN DRIP-PROOF MOTOR		

MATERIAL LIST AND
SYSTEM RATINGS

TOLERANCES		1/2"	3/4"	1"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"	4 1/2"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"	30"	36"	42"	48"	60"	72"	84"	96"	108"	120"	144"	168"	192"	216"	240"	264"	288"	312"	336"	360"	384"	408"	432"	456"	480"	504"	528"	552"	576"	600"	624"	648"	672"	696"	720"	744"	768"	792"	816"	840"	864"	888"	912"	936"	960"	984"	1008"	1032"	1056"	1080"	1104"	1128"	1152"	1176"	1200"	1224"	1248"	1272"	1296"	1320"	1344"	1368"	1392"	1416"	1440"	1464"	1488"	1512"	1536"	1560"	1584"	1608"	1632"	1656"	1680"	1704"	1728"	1752"	1776"	1800"	1824"	1848"	1872"	1896"	1920"	1944"	1968"	1992"	2016"	2040"	2064"	2088"	2112"	2136"	2160"	2184"	2208"	2232"	2256"	2280"	2304"	2328"	2352"	2376"	2400"	2424"	2448"	2472"	2496"	2520"	2544"	2568"	2592"	2616"	2640"	2664"	2688"	2712"	2736"	2760"	2784"	2808"	2832"	2856"	2880"	2904"	2928"	2952"	2976"	3000"	3024"	3048"	3072"	3096"	3120"	3144"	3168"	3192"	3216"	3240"	3264"	3288"	3312"	3336"	3360"	3384"	3408"	3432"	3456"	3480"	3504"	3528"	3552"	3576"	3600"	3624"	3648"	3672"	3696"	3720"	3744"	3768"	3792"	3816"	3840"	3864"	3888"	3912"	3936"	3960"	3984"	4008"	4032"	4056"	4080"	4104"	4128"	4152"	4176"	4200"	4224"	4248"	4272"	4296"	4320"	4344"	4368"	4392"	4416"	4440"	4464"	4488"	4512"	4536"	4560"	4584"	4608"	4632"	4656"	4680"	4704"	4728"	4752"	4776"	4800"	4824"	4848"	4872"	4896"	4920"	4944"	4968"	4992"	5016"	5040"	5064"	5088"	5112"	5136"	5160"	5184"	5208"	5232"	5256"	5280"	5304"	5328"	5352"	5376"	5400"	5424"	5448"	5472"	5496"	5520"	5544"	5568"	5592"	5616"	5640"	5664"	5688"	5712"	5736"	5760"	5784"	5808"	5832"	5856"	5880"	5904"	5928"	5952"	5976"	6000"	6024"	6048"	6072"	6096"	6120"	6144"	6168"	6192"	6216"	6240"	6264"	6288"	6312"	6336"	6360"	6384"	6408"	6432"	6456"	6480"	6504"	6528"	6552"	6576"	6600"	6624"	6648"	6672"	6696"	6720"	6744"	6768"	6792"	6816"	6840"	6864"	6888"	6912"	6936"	6960"	6984"	7008"	7032"	7056"	7080"	7104"	7128"	7152"	7176"	7200"	7224"	7248"	7272"	7296"	7320"	7344"	7368"	7392"	7416"	7440"	7464"	7488"	7512"	7536"	7560"	7584"	7608"	7632"	7656"	7680"	7704"	7728"	7752"	7776"	7800"	7824"	7848"	7872"	7896"	7920"	7944"	7968"	7992"	8016"	8040"	8064"	8088"	8112"	8136"	8160"	8184"	8208"	8232"	8256"	8280"	8304"	8328"	8352"	8376"	8400"	8424"	8448"	8472"	8496"	8520"	8544"	8568"	8592"	8616"	8640"	8664"	8688"	8712"	8736"	8760"	8784"	8808"	8832"	8856"	8880"	8904"	8928"	8952"	8976"	9000"	9024"	9048"	9072"	9096"	9120"	9144"	9168"	9192"	9216"	9240"	9264"	9288"	9312"	9336"	9360"	9384"	9408"	9432"	9456"	9480"	9504"	9528"	9552"	9576"	9600"	9624"	9648"	9672"	9696"	9720"	9744"	9768"	9792"	9816"	9840"	9864"	9888"	9912"	9936"	9960"	9984"	10000"
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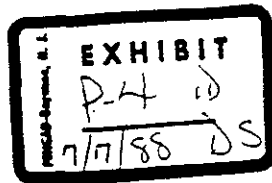
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*Any other suggestions —
The only thing Don is
really interested in is
how Monsanto put
together their board —
Monsanto is gun-shy
about talking to
me because of
manville
connection
Holly*

Don Ferguson

Holly Spence

Science Advisory Board thoughts

June 10, 1987

M. Moster, D. Tabolt, L. Burke, A. Smedley

We have discussed the formation of a science advisory board in Chicago as well as with Matt Swetonic of Hill and Knowlton/NYC who is well aware of Dr. Enterline and his research, the creation of science advisory boards, and is completely familiar with the asbestos as well as fiberglass issues.

Swetonic worked for 15 years in this area and knows the players in the asbestos battle as well as the fiberglass issue. Swetonic said, and we agree, that a panel separate from TIMA would lend more credibility than an industry group trying to repudiate Enterline's findings or offer commentary on any future research findings.

Prior to the formation of the board, its role and mission or objective would be determined. Its mission statement would include a concern for general health and safety and stress the group's interest in maintaining a totally independent body for review of all research methodology.

We suggest a board of perhaps five members from a variety of specialties. A three-year contract would help to ensure the independence of the group. The advisory board budget could be created to allow for the hiring of additional experts if needed. A TIMA representative such as Dr. Anderson could serve in a non-voting, advisory capacity.

We suggest that TIMA might consider establishing a special grant to fund this panel and its work with the administration of the program being handled through a respected third-party/independent agency (such as the Cancer Research Institute).

This group could review, on a regular basis or sporadically, any significant research dealing with the issue of mademad thermal fibers or related issues. This independent team could have a great deal of credibility by virtue of its third party administration.

The agenda for this advisory board could establish a 30-day period in which TIMA could react to and express concerns to the board on its review of each project. After that 30-day period, the advisory board would be free to release its results.

Hill and Knowlton can call upon its research capabilities to reveal many well-known and highly respected individuals in the scientific community who would be potential board candidates. This list would draw upon those with specialities in safety and health, environment, occupational disease, cancer, toxicology, medical, epidemiology, etc.

It is estimated that putting together a carefully selected group could take a month or two. Not only would this involve preparing the list of potential candidates and making contact but there also would be the preparation and distribution of background material.

An alternative approach to the advisory board could be a larger board of specialist/consultants with expertise in a variety of specialties who could be called upon for specific tasks, such as reading specific pieces of research and offering commentary. Individual honoraria would be involved for each task.

trade publications, radio and TV stations, science writers etc. across the United States. I have brought a half-dozen files along with me that you can take a look at after the meeting. Basically, the file contains copies of the five industry position papers which were distributed earlier, as well as a number of important medical papers and a pair of photographs illustrating the benefits of asbestos and industry efforts at environmental control. You may be interested to know that the item chosen to illustrate the benefits of asbestos is a fire-proof asbestos suit.

While we don't expect our information file to change the whole attitude of the press toward asbestos, we are hoping that the media will make use of it to accurately report the industry's position when doing stories on the subject.

And now, having heard the bad side of the public relations problem, it's time for the good news.

And the good news is despite all the negative articles on asbestos-health that have appeared in the press over the past half-dozen years, very few people have been paying attention. Let me explain.

In February, the Association undertook a personal interview research survey of the American public to determine its attitude toward asbestos and its awareness of the health issue. The survey was conducted by the Opinion Research Corporation during March and April. More than 2,000 demographically selected Americans were interviewed. I have here with me sufficient copies for all of you of a summary of the results.

(COMMENT FROM SUMMARY)

Before going on to describe our activities in the government relations area, I think it might be interesting at this point to take a very brief look at the manner in

which Dr. Selikoff and his supporters have used his research results to dramatize and exaggerate the seriousness of the asbestos-health problem. I have two slides which point this out rather conclusively.

SLIDE 1 ---- RESEARCH DATA

The first slide shows the actual results of Dr. Selikoff's four mortality studies of asbestos workers. The numbers in parenthesis beside the figures for total number of workers indicate those who have so far died from all causes. The percentage figures alongside the total number of deaths from asbestosis, lung cancer and mesothelioma are based on the total number of deaths from all causes, not on the number of the workers in the study.

The most important study of the lot is the second from the top, showing the deaths from asbestos-related disease among all members of the insulation workers union, regardless

of length of exposure. You will note that 54 per cent of these workers who have died thus far have died from one of the three asbestos-related diseases.

These, then, are the facts Dr. Selikoff works from. This is what he knows from his own investigations. Now let us take a look at what he has done with these figures in order to dramatize the problem.

SLIDE 2 ---- PROJECTIONS

This slide shows Dr. Selikoff's projections about asbestos-related deaths in the United States. Without going into details, Dr. Selikoff has arrived at his projections by the simple procedure of multiplying the percentage of deaths from asbestos-related disease among his insulation workers by the total number of employees in the entire industry.

You will also note that he has raised his projected death estimate to enormous heights over the past year by simply increasing the base figure of employees exposed, while still retaining the percentage multiplier of 24 per cent being experienced by the insulation workers.

I might point out that this tactic, however improper and deceptive, has been an enormous success since each raising of the estimate has earned Dr. Selikoff correspondingly greater coverage by the media. No finer example exists of the total gullibility of the press than the manner in which Dr. Selikoff manipulated and played on their prejudices to gain publicity. I can readily envision the lot of them up there at Mount Sinai laughing themselves silly over the ease with which they bamboozled the press with these trumped-up predictions.

Please don't get me wrong, gentlemen. I have little doubt that the insulation workers are in fact dying as rapidly as Dr. Selikoff says they are. The problem is he has translated their mortality experience to the rest of the entire industry, which is absolutely ridiculous.

In the first place, the estimated number of employees in the industry is too high --- five times too high to be precise. Even more important, according to an analysis by the Association of more than a dozen mortality studies, including those of Dr. Selikoff, our prediction is that approximately 25,000 past and present employees in the asbestos industry have died or will eventually die of asbestos-related disease. This is less than one-thirteenth of Dr. Selikoff's most recent estimate. In addition, our figures show that 20 of the 25,000 deaths --- or 80 per cent --- will occur among those in the insulation trades.

While these estimates should be reassuring to those of us in the mining and manufacturing areas of the industry, we should not forget that 5,000 of our workmen are still going to die of asbestos-related disease and that, all things considered, there is absolutely nothing that we can do to prevent it. The only thing we can do is to clean up our plants to assure that those entering the industry in the future will not have the same experience.

SLIDE 3 ---- GOVERNMENT AGENCIES

Within the past year and a half, the main thrust of Association effort has shifted to the government affairs front. The principal agencies in Washington with which we have been dealing are, of course, the Occupational Safety and Health Administration; the Environmental Protection Agency; the Food and Drug Administration; the Bureau of Mines; and, to a lesser degree, the National Institute of Occupational Safety and Health.

and the National Institutes of Health, both of which are mainly involved in research efforts.

In addition, a few weeks ago we were contacted by the Federal Trade Commission, which had received a petition from the Center for Science in the Public Interest requesting an investigation of consumer uses of asbestos for the purpose of determining whether certain products ought to be labeled as hazardous and whether warnings should be required on all advertisements for those products. On the basis of my meeting with an investigator from the FTC I would say that we have little to worry about in this particular area.

SLIDE 4 ---- OSHA

The Occupational Safety and Health Administration has been of enormous concern to the industry over the past 18 months. As most of you already know, the Association expended tremendous efforts during the six month period

leading to the promulgation of last June's OSHA standards on asbestos. I think it is a gauge of the effectiveness of the total industry involvement in this most crucial matter that of eleven main requirements in the standards, the industry position was accepted totally by OSHA on nine of the eleven, about fifty percent on a tenth, and totally rejected on only one.

Now, of course, OSHA is planning to redo the standard package and we are working closely with them on this project. The first step will be the formation of a 15 man advisory committee to review the current standards and any additional data and information that has been developed in the year since the standards were promulgated.

Working in cooperation with nine other trade associations, including your own, we have selected four individuals as industry-wide recommendations to OSHA for the four so-called employer

spots on the advisory committee. The four people selected were Guy Gabrielson, President of Nicolet; Ike Weaver of Raybestos-Manhattan; Dr. Fred Fundack, Vice President for Research and Development of Johns-Manville; and Cliff Sheckler.

In discussing the formation of the advisory committee with John O'Neill of the OSHA Standards Development Section, we were asked to add a couple of names to the list so that OSHA would have at least the semblance of a selection. This we have agreed to do.

The committee will be given up to nine months to complete its deliberations and prepare for OSHA a revised standard package. This will be followed by public hearings, approximately a year from now. We do not expect to see a new standard promulgated before the Fall of 1974.

It is of course impossible to determine at this time what the new standards will look like, however, I would venture to say that they will certainly not be less strict than the ones we have today, although they will probably be less confusing and leave less room for employer interpretation. Something will unquestionably be done to improve the current difficulties with the monitoring requirements.

SLIDE 5 ---- NIOSH

These slides, by the way, are merely simplified organization charts of the various agencies with which we deal in Washington.

The main function of the National Institute for Occupational Safety and Health is to conduct research and to prepare so-called Criteria Packages, which are essentially recommendations to OSHA for standards on various materials and chemicals. Such a package on asbestos was prepared

by NIOSH at the time of the OSHA proceedings last year. NIOSH will not be preparing a new or revised criteria package for the upcoming review of the asbestos standards.

I do not believe it would be unfair to say that of all the agencies in Washington dealing with asbestos, Dr. Selikoff has had his greatest influence on the young idealistic scientists and doctors at NIOSH. Consequently, industry influence is weakest in this agency. It was NIOSH, after all, that made the original recommendation for a two fiber standard in the asbestos industry.

SLIDE 6 ---- EPA

Next to OSHA, the Environmental Protection Agency has the greatest potential of any federal agency for adversely affecting the future of the asbestos industry in this country. Not only is the EPA responsible for developing and enforcing air and water pollution standards, but the Toxic Substances

Control Act, now pending in Congress, will also become an EPA function after passage.

For this reason, I am pleased to be able to say that the asbestos industry has an excellent relationship with the EPA. No finer proof of this exists than the fact that there was not a single major industry recommendation or suggestion made to the EPA at the public hearings on the proposed asbestos emission regulations that was not accepted either in toto or in principle in the final standards, which were published in early April of this year.

We are presently working with the EPA on the development of waste water effluent standards for asbestos manufacturing plants. We fully expect that these standards will turn out to be as reasonable as the air pollution regulations. The proposed effluent standards are scheduled to be published in the Federal Register in early July. This will be followed by

public hearings, probably in late July or August, with the final standards being promulgated in the Fall, perhaps as early as October.

We are also planning, in the near future, to meet in Washington with representatives from the standards development and enforcement branches of the EPA to discuss with them questions of interpretation and compliance policy with regard to the new air pollution regulations.

We have already resolved one interpretation question that is of special interest to the asbestos textile industry. Approximately two weeks ago I was asked by a member company of the Association to find out whether the EPA was planning to require the manufacturers of asbestos safety clothing to register as potential emission sources under the law.

In discussing the situation over the phone with EPA compliance officials, I argued that the producers of asbestos safety clothing were not manufacturers as defined in the regulations but were instead only fabrications of an asbestos product, and as such, should not have to register as potential emission sources.

After our phone conversation ended, a brief meeting was held among the EPA compliance people. I was then called back and informed that they agreed with me that the safety clothing producers should not be required to register.

While this rather minor problem took approximately an hour and a half and two or three phone calls to resolve, it is indicative of the type of day-to-day services that the Association provides for its member companies.

SLIDE 7 ----- FOA

Over the past year the Food and Drug Administration has shown an increasing interest in asbestos as a possible hazardous contaminant in various foods, beverages and drugs. Late in 1972 they set up an asbestos task force to review the situation and to propose regulations and guidelines where appropriate.

Thus far they have concentrated their efforts in two areas --- on the use of asbestos-contaminated talc in food packaging and in cosmetics, and secondly, on the use of asbestos cellulose filter pads in the beverage and drug industries.

In our first meeting with the FDA task force last November on the filter problem, they demonstrated an appalling ignorance about the health hazards of asbestos. Since then, they have gotten one heck of a lot smarter, due at least in part to the tremendous amount of data and information which

the Association has been supplying to them. As a consequence the FDA is today less panicky about asbestos and therefore less likely to propose foolish, unsupportable regulations. Spokesmen from the FDA have, in fact, defended the filter against environmentalist attacks in the press and elsewhere in recent months. This is, quite obviously, a healthy sign.

SLIDE 8 ---- INTEREST GROUPS

Since our contacts with the National Institutes of Health have been quite minimal, and since the health and safety section of the Bureau of Mines is presently being reorganized, we can now proceed to take a brief look at the various interest groups that have been in the forefront of the assault on asbestos. These are the groups and organizations that constitute "the other side."

As you can see, there are a lot of them, and between them they can exert powerful pressure on legislators and administrators at all levels of government.

Since time is not available to discuss each of their activities and philosophies in detail, I would like to say that we keep a close watch on all of them and are always prepared to take whatever action is appropriate when they step out of line.

SLIDE PROJECTOR OFF ---- LIGHT ON

Our activities in the area of Congressional relations have been quite minimal to date, although we are preparing for the upcoming struggle in Congress over workmen's compensation reform legislation, at which time asbestos is unquestionably going to be racked over the coals by Dr. Selikoff and his compatriots in organized labor.

Unfortunately, the Association has neither the manpower nor the time to embark on a full-scale legislative information program. We have met on occasion with the legislative and legal assistants to various Senators who have attacked asbestos,

however much more needs to be done in this area and I am afraid individual member companies are going to have to be the prime ball carriers and not the Association.

For essentially the same reason, our government activities at the state and local level have declined to essentially zero over the past year and a half. This has not been too serious a deficiency as most of the authority of the cities and states in asbestos control has been usurped by the various Federal regulatory agencies. Nonetheless, more individual company activity is required at these levels of government.

In conclusion, I think we can all be justifiably pleased with what we have been able to accomplish in the past few years in resolving the cornucopia of interrelated problems that constitutes the asbestos-health situation.

Our plants are cleaner and our workmen better protected.

The general public has been shown to be in no danger from asbestos, if it ever was. While we have been regulated extensively, for the most part the standards that have been developed have not been as bad as we feared they might be, and in some cases they turned out far better than we ever dared hope. In addition, while we are still taking our lumps in the public press, the net effect of all this adverse publicity has been shown to be surprisingly small.

We have sweated a lot and we have groaned a lot, but we are still standing and we are still viable. I sense today within the industry a greater feeling of confidence in the future than at any time in the past few years. But we must not rest contented.

We must remember that Dr. Solikoff has to date been far less successful than our industry has in influencing the decisions of the various governmental regulatory agencies. This will make him try harder. Just last week I saw a speech of his in which he purposely misinterpreted some data by a distinguished British scientist in order to prove that even two fibers is not a sufficiently safe level for occupational exposure to asbestos.

The struggle is far from over. We must not only continue but indeed expand our activities in the various areas of concern if we are to assure the future well-being of the asbestos industry in the United States.

Thank you very much.
