

1 Report which was done by the United States
2 Public Health Service. It is the January to
3 June, 1935 volume, and specifically from that
4 is an article which carries the date January
5 4, 1935 entitled, "Effects of the
6 Infiltration of Asbestos Dust on the Lungs of
7 Asbestos Workers." It is signed by Dr. A.J.
8 Lanza. Now, one thing that I would show Mr.
9 Houghton and ask him to read is the
10 introduction or the introductory paragraphs
11 on this article to see if that has any
12 meaning to him.

13 MR. SHANNON: You're asking him whether he knew that
14 in 1929 the Metropolitan Life Insurance
15 Company was approached?

16 MR. GLASSER: I'm asking him basically does he have
17 any familiarity with Dr. Lanza's 1935 study,
18 and what I'm showing him which might tie in
19 with what we've discussed on the record is
20 whether or not the Metropolitan Life
21 Insurance Company was the plant that studied
22 Manville. The reference is made that this
23 report emanated out of Manville studies, and

1 I believe also Raybestos-Manhattan studies.

2 A Well, this was not brought to my attention while I was
3 at Johns-Manville. It was not brought to my attention
4 at Garlock. It may be that most -- some of these
5 information were not -- That didn't excite people yet.

6 Q Let me ask was it known while you were at Manville in
7 the 1927-1939 time frame that if you and I went out for
8 the first time today and breathed asbestos, that it
9 would not hurt us or show up on our x-ray tomorrow or
10 next month or even next year but that it took time for
11 the injury which may result from asbestos to show up?

12 MR. SHANNON: Wait, Mr. Houghton. I object to that
13 question. I don't quite understand it, and
14 are you asking whether he knew in the 1930's
15 that there was a lag, that your question?

16 MR. GLASSER: I'll be happy to re --

17 Q Do you understand my question?

18 A I think so, and I don't think that then consciousness
19 of the industry had become too much aware of the
20 seriousness of it, and they weren't preaching to us who
21 were working in the factory you must get going on
22 this. It wasn't the same awareness that you have now
23 was not then.

1 Q I understand, but to clarify my question, were you
2 aware that the hazard of breathing asbestos fibers in
3 the 1930's was that over a period of time, it could
4 cause problems?

5 A No. We knew that some folks were sent to be checked by
6 x-ray, but it was not the same plantwide type of study
7 that was undertaken at Garlock. We were sent every two
8 years to Clifton Springs, all of us, for an x-ray
9 check.

10 Q Why?

11 A For an x-ray check.

12 Q Was there --

13 A There was no discussion to the individual why.

14 Q Did you understand why they were taking periodic chest
15 x-rays?

16 A I did, yes.

17 Q What was your understanding, Mr. Houghton?

18 A Well, the reports came back only to those that might be
19 cautioned you'd better move to another department.

20 Q And the reports would reflect that there were some
21 change on your x-ray that related to your breathing
22 asbestos dust?

23 A Not described as such, but we might assume that.

1 Q Let me show you still a third report that I will share
2 with your attorney.

3 MR. GLASSER: This is a report, for the record, from
4 the U.S. Treasury Department Public Health
5 Service, Public Health Bulletin No. 241,
6 dated August 1938, and this was a "Study of
7 Asbestosis in the Asbestos Textile Industry,"
8 and the primary author is Waldemar C.
9 Dreesen.

10 A Now, this bulletin did not come to my hand. It was
11 dated --

12 Q 1938.

13 A --'38.

14 Q Were you aware that the U.S. Public Health Service had
15 evaluated and reviewed four textile plants?

16 A We were aware that the insurance companies would make
17 periodic checks.

18 Q And the standard that you and I have described that
19 limited the quantity of asbestos dust, was that
20 developed, according to your understanding, by the
21 insurance company investigations?

22 A Well, there was a U.S. Bureau of -- I don't know
23 whether it's the Bureau of Safety or something that

1 issued their requirements. I'm not sure of the wording
2 of the department, but there was a Safety Department in
3 the U.S. Government that issued these health notices,
4 and that's the one that -- well, Public Health Service,
5 right in front of me. I don't think it was all from
6 the insurance company. I think the federal government
7 did it maybe because of the insurance company, but I
8 was not in on that kind of a discussion at all.

9 Q I understand. Let me try to find one thing in this
10 report. I'm reading on page 117, and I just wanted to
11 refer in line 3 to the wording where it says "Less than
12 5 million particles per cubic foot." Do you see that?

13 A Yes.

14 Q Was that standard 5 million particles per cubic foot?

15 A That was the top limit.

16 Q And that was the top limit, and if I understand, beyond
17 that limit, there was a recognized hazard to people
18 breathing asbestos?

19 A That was where you were supposed to use respirators.

20 Q And that --

21 A And it was our problem, to keep it below that.

22 Q And am I correct that it did not make any difference
23 where the person worked but if the air that he was

1 breathing had asbestos in it and the measurement was
2 greater than 5 million particles of total dust per
3 cubic foot, there was need for protection, regardless
4 of what his job was?

5 A That's true.

6 (Whereupon a brief recess was taken.)

7

8 BY MR. GLASSER: (Continued)

9 Q You mentioned earlier, Mr. Houghton, the Asbestos
10 Textile Institute. What was the Asbestos Textile
11 Institute?

12 A It was a membership of all asbestos manufacturing
13 companies as well as the different mining companies in
14 Canada. I guess you have one mining company in
15 Vermont, but it was made up of the manufacturing
16 companies as well as the mines.

17 Q And was it an organization formed to render service to
18 buyers and users and makers of asbestos textiles?

19 A Not so much for the users as the producers. I think it
20 was mainly for the manufactures to discuss problems.
21 Each might come up or bring to the organizations some
22 of their thoughts.

23 Q And it was also an organization where you could share

1 advancements, engineering advancements on matters like
2 dust control?

3 A Yes, you could share.

4 Q Now, you mentioned George L. Abbott as being a
5 president of the Garlock Packing Company.

6 A He was president.

7 Q Was he also the representative to the Asbestos Textile
8 Institute in the 1946 time frame for Garlock?

9 A He may have been brought in on some of their
10 organization's side of it, but mostly it would be maybe
11 a purchasing agent, or some other one of the group
12 would be sent to these meetings and I would be usually
13 the one.

14 Q Look with me, please, at the exhibit that I have passed
15 to you and, for the record, it is some minutes of the
16 Asbestos Textile Institute taken at the general meeting
17 held on June 19, 1946 at the Warwick Hotel in
18 Philadelphia, Pennsylvania. Have you seen minutes from
19 the Asbestos Textile Institute?

20 A Some. Those that I attended I would see them.

21 Q Is this in the general form of the minutes that you
22 attended?

23 A I don't remember Harris McKinney. This is back right

1 in the beginning stages, and so I recognize some of
2 these names like George Fabel.

3 Q And he was with Southern Asbestos Company?

4 A Yes.

5 Q And do you recognize any of the other names?

6 A Well, I think I remember Dillon of Johns-Manville.

7 Q What about Mr. Weaver of Raybestos Manhattan?

8 A I may have remembered him. Wakem, I remember, of
9 Johns-Manville.

10 Q That's Mr. Wakem, W-a-k-e-m, Frank J. Wakem?

11 A Yes.

12 Q What about Mr. Widmayer of Keasbey & Mattison?

13 A I don't remember him. I never really got closely
14 attached to --

15 Q What about Mr. J. A. Bettles of Raybestos-Manhattan?

16 A No, I don't remember him.

17 Q If you will, turn with me to page 4 of these minutes
18 that Mr. George L. Abbott attended for Garlock.

19 There's reference to a definition of the Institute, and
20 do these words, in your opinion, reflect the purposes
21 of the Asbestos Textile Institute? "The Asbestos
22 Textile Institute is a voluntary, non-profit
23 organization formed to render service to buyers and

1 users of asbestos textiles."

2 A They're saying users, then they plan to send out
3 bulletins to customers. I was not in on that.

4 Q I understand.

5 MR. GLASSER: I'm going to ask the court reporter if
6 she'd be kind enough to just mark this as
7 Houghton Exhibit Number 2.

8 (WHEREUPON HOUGHTON EXHIBIT 2 - Asbes-
9 tos Textile Institute minutes of June 19,
10 1946 meeting - WAS MARKED FOR
11 IDENTIFICATION.)

12 Q Are you aware as to whether or not some time during
13 1946 or maybe prior to 1946 a report from the Garlock
14 Packing Company relative to their dust control system
15 was prepared?

16 MR. SHANNON: What are you referring to there?

17 MR. GLASSER: Let me give you a copy. For the
18 record, I am looking at the reference to
19 appearance, and I have a copy for Mr.
20 Houghton, also, in the minutes of the dust
21 control committee meeting held on Wednesday,
22 March 13, 1946 at the Engineers Club in
23 Philadelphia, Pennsylvania of the Asbestos

1 Textile Institute.

2 Q On page 2 under paragraph numbered Number 5, there is a
3 statement that "The problem of reduction of dust at the
4 carding engines was then discussed. Mr. McKinney
5 presented a report from the Garlock Packing Company
6 relative to their dust control system." Did you see
7 where I read that?

8 A That's number 5?

9 Q Yes, sir.

10 MR. SHANNON: Your question is does Mr. Houghton
11 remember that report?

12 Q Do you remember a report prepared?

13 A No. There's a fair chance that I may have been asked
14 to prepare the report, but '46, I was there and nobody
15 else was working in a supervisory state in the textile
16 department but me, so I don't remember any report.

17 Q If a report had been prepared as this copy of the
18 minutes indicates, do you know whether a copy of the
19 report would still be available at Garlock?

20 A Well, they had copious storage of reports, but I don't
21 know anyone now over there that is responsible for such
22 a thing, but, you know, it might be the thing to do
23 would be to ask -- I don't know who over there, but

1 what's his name?

2 Q Is this the current management at Garlock?

3 A The current management and the manager -- president was
4 not closely connected with it at that time. We've had
5 several changes in the top. Dick Watson would probably
6 be able to dig in to whoever might be having knowledge
7 of times. The one in charge of files is dead. She was
8 a pretty good person to go to, but I think this would
9 have to be brought up to Dick. He would be a much
10 better one to go after than me.

11 MR. GLASSER: Let me make a request to the attorneys
12 that are here. I would request that you ask
13 Mr. Watson whether or not he knows of and can
14 produce a copy of the report from Garlock
15 Packing Company relative to their dust
16 control system that was presented to Mr.
17 McKinney, who is Harris D. McKinney, the
18 Institute Manager of the Asbestos Textile
19 Institute and discussed in these minutes of
20 March 14, 1946, and I have no reluctance, as
21 stated on the record, I have very high regard
22 for Jim Shannon, and if that inquiry can be
23 made, if you think it's more appropriate that

1 we file it with a more formal notice to
2 produce, I will do so, but I'm trying to
3 accomplish that more informally right now,
4 and if that's permissible to make that
5 request --

6 MR. SHANNON: We'll note your request and make your
7 request to Mr. Watson.

8 A This paragraph 2 refers to a Bausch & Lomb dust
9 counter, and we purchased a Bausch & Lomb dust
10 counter. That was in effect when you saw that 5
11 million particles reference. Well, that's when we were
12 using it, and we used it here. It was a device in
13 which there was a combination of a magnified device and
14 a cylinder with a plunger that would suck in a cardium
15 of air and impinge that against a glass plate. We used
16 a piece of paper that we would moisten to give humidity
17 and we put that in the chamber, and when you pulled
18 that plunger, the air was slightly moistened and
19 particles would be lodged on that glass plate. Then
20 you simply pick the thing up and you -- the plate was a
21 disc and that sample would be a little band and you had
22 about 12 positions on that glass plate, so you could
23 make samplings at different places.

1 Q Looking through a microscope?

2 A Right, and then we would -- we had a numbering so we
3 had a record of where we had taken our samples and then
4 I would plug it into the -- There was a light on it and
5 you would count. It was a little grid. It was a two
6 bars and some vertical marks, and in that area was the
7 equivalent of a reading of a cubic foot.

8 Q And you could determine, therefore, what the dust was
9 by making this counting and make a very good educated
10 guess as to what the dust concentration was in the
11 area?

12 A As you were counting maybe 40 particles on that little
13 plate, the 40 particles times a thousand would be forty
14 thousand. I'm talking a little bit out of the top of
15 my head, but --

16 MR. SHANNON: Mr. Houghton, excuse me, but don't
17 talk out of the top of your head. Wait for
18 Mr. Glasser to ask you a question and answer
19 what he asks you. If he wants to get more
20 information about this mechanism, I know he
21 will ask. Don't discuss, Mr. Houghton,
22 please do not discuss things he doesn't ask
23 you about.

1 Q But I'm very interested and I take it from your
2 statements that you did some of the counting yourself.

3 A (No verbal response.)

4 Q You're nodding your head yes?

5 A Yes.

6 Q These countings were done at Garlock in the 1946 time
7 frame or earlier?

8 A The year we bought it I can't give you, but we had it.

9 MR. GLASSER: I'm going to ask please that this be
10 marked as Houghton Number 3, and specifically
11 they are the minutes of the dust control
12 committee meeting held March 13, 1946.

13 (WHEREUPON HOUGHTON EXHIBIT 3 - March
14 13, 1946 dust control meeting minutes - WAS
15 MARKED FOR IDENTIFICATION.)

16 Q I'm going to go back to what is marked Houghton Exhibit
17 Number 2, and this is the minutes of June 19, 1946
18 where Mr. George Abbott, George L. Abbott, attended for
19 Garlock. On paragraph Number 2, it states that one of
20 the activities that had been done during the last
21 quarter included the "notification to members and
22 nonmembers on O.P.A removal of ceiling prices." That
23 was one thing they did. Another thing was the

1 "distribution of the Garlock Dust Control System
2 report," and that's the report that I've asked you did
3 you specifically recall.

4 A I do not recall it.

5 Q Do you know whether it was the practice of the ATI to
6 keep not only members advised of what was going on but
7 also keeping nonmember companies informed of Institute
8 activities?

9 MR. SHANNON: Mr. Glasser, please, if you're going
10 to ask him a question, if he knows, ask him,
11 but I think the record should reflect you're
12 pointing out something on that document which
13 evidentially indicates what you've just
14 asked.

15 MR. GLASSER: I'm happy to confirm what I was
16 showing him when I asked the question is
17 paragraph number 3. In fact, let me read it
18 to the record, and I'm reading from Houghton
19 Exhibit Number 2, the minutes of general
20 meeting of June 19, 1946.

21 Q Was it your understanding that this was a regular
22 practice, namely, "The president brought up the matter
23 of keeping nonmember companies informed on Institute

1 activities." Do you know whether the Asbestos Textile
2 Institue not only tried to serve its members concerning
3 asbestos matters but also nonmembers?

4 A I don't know that.

5 Q Going back, Mr. Houghton, to the 1946 time frame,
6 again, the mid 40's, were you familiar with the
7 Industrial Health Foundation, the IHF?

8 A No, I was not kept up to date on that, no.

9 Q Do you recall whether or not a study was made of the
10 Garlock Packing Company's plant by a Mr. W.C.L. Hemeon
11 who was a chief engineer for the Industrial Health
12 Foundation in the 1947 time frame? Do you remember
13 people coming or Mr. Hemeon coming to the plant to
14 study and evaluate what you do with regard to dust
15 control?

16 A I can't give you an answer. No, I'd say no.

17 Q I will share some papers with you that may or may not
18 help let me ask this question first. Are you aware
19 that the Asbestos Textile Institute at its meeting as
20 reflected by the minutes of the subcommittee meeting on
21 dust control committee held June 13, 1946 at the
22 Engineers' Club in Philadelphia, was concerned and I'm
23 reading in paragraph 1A of those minutes, of the

1 "Importance of dust control problem to all member
2 companies and the need for immediate cooperative
3 action." My question: Were you aware that the
4 Asbestos Textile Institute was discussing the need to
5 gather information, facts, on dust determination and
6 control procedures in the various plants of its
7 members?

8 A I do not remember any report of that action.

9 Q Were you aware of any services that were available by
10 the Mellon Institute in Pittsburgh?

11 A I'm not aware now. No, I can't say I was aware.

12 Q And I might have asked this, but were you aware that
13 the Industrial Health Foundation operated out of
14 Pittsburgh and offered industrial hygiene, engineering
15 and medical advice to industry where it was sought?

16 A No.

17 MR. GLASSER: For the record, I will ask that this
18 be marked as Houghton Number 4.

19 (WHEREUPON HOUGHTON EXHIBIT 4 - June
20 13, 1946 Dust Control Committee minutes - WAS
21 MARKED FOR IDENTIFICATION.)

22 MR. GLASSER: Off the record.

23 (Whereupon a discussion was held off the record.)

1 Q I'm going to show you a thick document, and though it's
2 all one document, the copy that I give you is divided
3 by some loose pages and then there's a paperclipped
4 portion and then some more loose pages. I'm going to
5 ask the court reporter to mark this entire exhibit as
6 Houghton Number 5, and for the record, I will read it
7 with Mr. Houghton. This is a report of the Industrial
8 Hygiene Foundation of America, Incorporated out of
9 Pittsburgh. It is a "Report of the Preliminary Dust
10 Investigation for the Asbestos Textile Institute,"
11 dated June, 1947 by W.C.L. Hemeon, head engineer;
12 specifically, it's dated June 13? I think June 13,
13 1947. I'd like you to take a moment or as much time as
14 you need and look at that, and I don't want to speed
15 your taking the time. You take your time, but also let
16 me pull out for you the paperclipped portion, and the
17 paperclipped portion is dated July 11, 1947 and it's a
18 "Memorandum on the Plant of the Garlock Packing Company
19 Supplementing the General Report," and the general
20 report is the document that you have, and it identifies
21 that as the "Preliminary Dust Investigation For
22 Asbestos Textile Institute of June, 1947," and you
23 might look specifically at this three-page report to

1 see whether it has any effect on your memory concerning
2 a study that was done by Dr. Hemeon on the Garlock
3 Packing Company plant.

4 A "We rate this as average."

5 MR. SHANNON: Don't read out loud. She'll write it
6 down. Just read it to yourself.

7 MR. GLASSER: Off the record.

8 (Whereupon a discussion was held off the record.)

9
10 MR. GLASSER: While we were off the record, Mr.
11 Houghton had just a matter of several minutes
12 to look at the document, which is a rather
13 large document. We decided we're going to go
14 to lunch. I have told Mr. Houghton in the
15 presence of his counsel that when we return
16 from lunch, I will ask you him whether or not
17 the document has any effect on his memory,
18 whether or not he recalls this study being
19 made; specifically, whether he remembers or
20 recalls a study being made of the Garlock
21 facility, which is included in this report,
22 but in any event, we'll resume those
23 questions following the lunch hour.

1 (Whereupon a recess was taken at 12:50 p.m. and the
2 deposition reconvened at 1:50 p.m.)
3

4 MR. GLASSER: We have had a lunch break since
5 approximately an hour ago, and when we
6 returned, Mr. Houghton had not had an
7 opportunity to review the document that we
8 left with him, namely the Hemoen document
9 which we marked as Houghton Exhibit Number
10 5. Since we've been back ten minutes or so,
11 he has had time --

12 MR. SHANNON: Five.
13

14 BY MR. GLASSER: (Continued)

15 Q You've had some time, Mr. Houghton, to review the
16 large document and the three-page paperclipped
17 portion?

18 A I've gone in deatail on the one Garlock.

19 Q Do you have any recollection of an examination or
20 evaluation having been made by the representatives of
21 the Industrial Hygiene Foundation of America around the
22 1947 time frame as a part of an investigation of
23 approximately ten plants that the Asbestos Textile

1 Institute was overseeing?

2 A I can recall making studies myself and insurance
3 companies have also examined it, but as for tying it to
4 a definite report, I cannot accurately say. I know
5 that.

6 Q As I understand your testimony, were there reports or
7 evaluations made of the Palmyra plant in the mid
8 1940's?

9 A Since you say in the area of the 40's, yes.

10 Q What you don't have any specific recollection of Dr.
11 Hemeon coming through and reviewing your plant and
12 writing this report.

13 A No.

14 Q Did Garlock have a rather unusual interplant heating
15 system where extra heat from one plant was carried over
16 to another plant?

17 A Heating?

18 Q Heating or excess hot air removal.

19 A Each plant had its own heating system from the power
20 plant's supply of steam. Our own thermostat would take
21 care of our unit. Each building was a unit, but there
22 was no pumping of air around. It was steam heated by
23 independent heating units.

1 Q Staying with the period around the date of this report,
2 namely, July 1947, were you aware that there was
3 concern in the Asbestos Textile Industry to try to
4 determine or verify whether the 5 million level was in
5 fact a safe or sure level?

6 A No.

7 Q Were you aware that there were efforts among the
8 various asbestos textile manufacturers through the
9 Asbestos Textile Institute to exchange information on
10 how to improve things?

11 A I think it was an independent effort to improve your
12 particular unit. We weren't -- I was not concerned
13 with other units.

14 Q But if you had good information, you were willing to
15 share it through the Asbestos Textile Institute with
16 others?

17 A Willing. I was always willing but there was not a
18 constant feeding from one to another.

19 Q Was it your understanding in the mid 1940's that the 5
20 million particle standard that we have discussed was
21 not positive insurance that no disease would occur, it
22 was more of a goal to strive for, is that correct?

23 A It was more as a goal, yes, that's -- I was not in the

1 health department.

2 Q As an engineer, were you aware that there was the
3 electron microscope was in existence in the 1946-1947
4 time frame?

5 A To answer that question, I couldn't say -- no, I was
6 not aware that it was available for our use.

7 Q But were you aware that it had been invented?

8 A Oh, I think I may have heard that they had developed
9 the microscope.

10 Q The electron microscope?

11 A The electron microscope, yes.

12 Q Am I correct that the electron microscope had an
13 ability to see things at a far greater magnification
14 than a regular light microscope?

15 A Yes, I've heard that.

16 Q Were you aware that there was concern expressed in the
17 1947 time frame that the light microscope was not a
18 good device for counting very small asbestos fibers?

19 A No, I didn't hear that.

20 Q Did you know the difference between a fiber and a
21 particle?

22 A I think the definition was a fiber was of some 5
23 microns or over; a particle was a spot.

1 Q Would it be fair to say that a fiber was three times
2 longer than it was wide and a particle was more of a
3 rounded shape.

4 MR. SHANNON: I object to that.

5 A No, I can't say that.

6 MR. SHANNON: He hasn't testified to anything like
7 that.

8 A I can't say that.

9 Q I'm showing you a page that comes out of the Hemeon
10 report, Houghton Number 5, that has a copy of what
11 purports to be a photomicrograph. Do you see where I
12 show that?

13 A Yes.

14 Q Have you ever seen in the 1947 time frame pictures or
15 studies of asbestos that were produced under an
16 electron microscope?

17 A No.

18 MR. GLASSER: I am going to request the court
19 reporter to confirm that this has been marked
20 as Houghton Number 5 and pursuant to my off-
21 the-record discussion with Jim Shannon, I am
22 going to give you today the cover sheet of
23 that exhibit, and I'll discuss it on the

1 recors. My notations were basically my own
2 cues that give me an abbreviated portion of
3 the text. I really don't have an objection
4 to that being filed. I think it would be
5 nicer to have a nice clean copy, but rather
6 than run the risk I'm going to leave her this
7 copy and then if I can supply her with a
8 clean copy, then it will be substituted. The
9 copy of the text is identical.

10 MR. SHANNON: I don't have any objection of what-
11 ever you want to do. If you want to supply
12 her with a clean copy at a later time, that's
13 perfectly all right.

14 MR. GLASSER: Pusuant to that I'm going to add to
15 page one the rest of this bulk.

16 MR. SHANNON: Off the record.

17 (Whereupon a discussion was held off the record.)

18 (WHEREUPON HOUGHTON EXHIBIT 5 - 85
19 pages; first document being "Report of
20 Preliminary Dust Investigation For Asbestos
21 Textile Institute, June 1947 - WAS MARKED FOR
22 IDENTIFICATION.)

23 Q Mr. Houghton, did you have any occasion, sir, in the

1 1940's to attend any of the meetings of the Asbestos
2 Textile Institute?

3 A I have no record that I know of of my attending in the
4 40's. I think my start was in the 50's.

5 Q Was it Mr. Abbott who attended ATI for Garlock in the
6 1940's?

7 A He probably did. When I attended, he did not.

8 Q When he attended in the 40's, did he ever report to you
9 what had been discussed?

10 A I cannot recall any reports from him.

11 Q Do you know to whom he would ordinarily report in the
12 1940's?

13 A It might have been through the various different
14 factory managers, Cecil Hubbard for a number of years,
15 and my memory is poor, but there were probably a period
16 of not more than five or six years of any one of the
17 various managers when something took place and they
18 would change or they died.

19 Q Mr. Hubbard, you told me, is no longer available?

20 A He's dead. I guess he's been dead for 20 years.

21 Q Do you know whether any of the managers of any of the
22 asbestos-producing Garlock plants from the 1940's are
23 still alive and available?

1 A I don't think so. Mullen is dead and oh, fella that
2 lived down here, he's dead. No, there aren't many of
3 them alive. All along the line, they've dropped off,
4 and they didn't work in the asbestos plant.

5 Q We have talked about various dust counting techniques
6 that were used within the plant on the carding and
7 other dust-producing operations. To your knowledge,
8 did Garlock ever run tests to determine the dust count
9 of how the product would act when it was being used by
10 the user?

11 A Not that I know of, no.

12 Q To your knowledge, did Garlock ever publish any booklet
13 or put down in a report for its customers what
14 precautions should be taken when people, users, were
15 using asbestos containing products from Garlock?
16 (Whereupon a discussion was held off the record.)

17 Q Were you shaking your head before we went off the
18 record?

19 A I can't give you any positive answer, no.

20 Q To your knowledge, at any time while you were with
21 Garlock, did they ever place a warning on their
22 asbestos-containing materials to warn people of any
23 hazard that might be associated with the use of the

1 products?

2 A It was not my job. I don't know of anyone doing that,
3 but I can't give you an answer.

4 Q How long did you remain in the employ of Garlock?

5 A Thirty-one years on salary there, nine years as a
6 consultant after retirement.

7 Q And if my mathematics is correct, then, you would have
8 worked for Garlock from 1939 until 1970?

9 A That's right.

10 Q On salary?

11 A On salary.

12 Q And then, are served in a consultant capacity from
13 1970 to 1979?

14 A Yes.

15 Q And your answer about never having seen any warnings
16 on any of the asbestos-containing products --

17 A No.

18 Q -- that would be true from 1939 to 1979?

19 MR. SHANNON: That also assumes that he would have
20 had an opportunity to observe. You didn't
21 ask him where he might have served as a
22 consultant. My father is a consultant now in
23 his old firm, and he hasn't been in the firm

1 for years.

2 Q Am I correct that you never from 1939 to 1979 saw any
3 warning on the asbestos-containing materials
4 manufactured by Garlock?

5 A No.

6 Q What was the nature of your consultant work from 1970
7 to 1979 for Garlock?

8 A Some was development work in the factory. Mainly
9 concerned with graphite, yarn and Teflon. Some of it
10 has been in foreign countries. I was sent to set up
11 braiding plant and instruct the weavers -- the
12 operators on making braided packings, both in France
13 and in the Philippines. For one period, I examined a
14 textile plant reporting back conditions I found in that
15 plant in Spain.

16 Q Were these all Garlock plants?

17 A All Garlock plants.

18 Q Has Palmyra always been its primary manufacturing site
19 for gaskets and textiles?

20 A Its primary, yes.

21 Q Did Garlock, to your knowledge, ever share any of the
22 information it had about the importance of reducing
23 dust where asbestos dust was being generated? Did it

1 share that information with any of the users or
2 purchasers of its product?

3 A I was not in on any of that, no. As for Garlock doing
4 it, I can't give you an answer.

5 Q When did you first become aware of any association
6 between the infiltration of asbestos fibers and any
7 form of cancer?

8 A You say when? That I can't give you a good answer.

9 Q I have a paper that I will be discussing with you in a
10 matter of moments from March of 1956 where the records
11 indicate you attended an ATI meeting, but I want to ask
12 some leading questions first. When did you first start
13 attending ATI meetings?

14 A Probably about 1960.

15 Q But if a record indicates that you had attended
16 earlier, could you have attended as early as March of
17 1956?

18 A Basing on memory, possibly. In Philadelphia.

19 Q That's correct, that's correct. Did you know the name
20 in the 1950's of the Saranac Laboratories in Saranac,
21 New York?

22 A I think I'll have to say no.

23 Q Did you know the name as best you can recall, Mr.

1 Houghton, of Dr. Garrett Sceepers?

2 A No.

3 Q Did you know the name of Dr. Wilhelm Hueper?

4 A I'll have to say no.

5 Q Let me show you the document that I had reference to
6 and I'm going to show you and your attorneys two
7 different documents which I am going to mark numbers
8 Houghton Number 6 and Houghton Number 7. Houghton
9 Number 6 will be the minutes of the general meeting of
10 the Asbestos Textile Institute held March 8, 1956 in
11 Philadelphia, Pennsylvania, and Houghton Number 7,
12 though inconsistent chronologically, will be the
13 minutes of the meeting of the Board of Governors of the
14 Asbestos Textile Institute held on March 7, 1956 in
15 Philadelphia, and let me give a copy of these to
16 counsel.

17 (WHEREUPON HOUGHTON EXHIBITS 6 and 7 -
18 Minutes of March 8, 1956 and March 7, 1956
19 meetings of the Asbestos Textile Institute,
20 respectively - WERE MARKED FOR
21 IDENTIFICATION.)

22 Q Mr. Houghton, I'm turning to now what the court
23 reporter has marked as Houghton Number 6, and in terms

1 of the general form, can you identify this form as
2 being what you recall the Asbestos Textile Institute
3 minutes generally to look like?

4 A Well, it looks like the type of report that we
5 received.

6 Q And do you see your name on page 1?

7 A Right here, there and here. (Indicating.)

8 Q And so that the record is clear, the two places that
9 you referred to, number one was on the list of those in
10 attendance over on the right-hand side of the page in
11 the middle, in all caps it says, "Garlock Packing
12 Company," and it says G. E. Houghton, that's you, is
13 that correct, sir?

14 A Yes.

15 MR. SHANNON: Attending as a guest.

16 MR. GLASSER: Attending as a guest, that's right.

17 Q And the second place where your name is listed is in
18 paragraph number one where it states in the next to
19 last line of that paragraph that Mr. G. E. Houghton,
20 Garlock Packing Company, and Frank Gatke, Asbestos
21 Textile Company were in attendance at the meeting and
22 also were in attendance at the Air Hygiene meeting on
23 March 7th, okay?

1 A All right.

2 Q If if you turn over to pages 2, in paragraph number 6,
3 it indicates that at the meeting on March 7th, the day
4 before, that one of the matters that was fully
5 discussed were the comments of Dr. Smith, that's
6 Kenneth Wallace Smith of the Johns-Manville
7 Corporation, which related to the report issued by Dr.
8 Hueper, who was with the National Cancer Institute, on
9 a subject relating asbestosis with lung and heart
10 disease was discussed at great length. Do you see
11 where I'm reading that?

12 A I see where you're reading it, yes, but I was not at
13 that earlier meeting. This was an earlier meeting,
14 wasn't it?

15 Q I understand but if you will turn back with me and see
16 whether this refreshes your recollection. In paragraph
17 number 1 it states, and I'll read it in its entirety
18 and you read with me, "The meeting was called to order
19 by President Wakem and an address of welcome extended to
20 all of the members present. Recognition and welcome
21 was also extended to representatives of two former
22 member companies who attended the meeting of the Air
23 Hygiene Committee on March 7 and were also in

1 attendance at this meeting, namely, G. E. Houghton,
2 Garlock Packing Company, and Mr. Frank Gatke, Asbestos
3 Textile Company." Do you see where I've read that?

4 A This apparently my first meeting with the ATI.

5 Q But the question is raised concerning the meeting on
6 March 7th, and for that I would ask that we turn to
7 the other exhibit that I gave you which you now have in
8 front of you, and this is the one for March 7th, and do
9 you see -- and I'd like you to look at paragraph 2A,
10 and take a moment. It's difficult to read. I'll be
11 happy to read it with you. Can you read it? Sir,
12 while you're flipping on the light to see better, do
13 you remember Dr. Kenneth Wallace Smith from the
14 Johns-Manville Corporation?

15 A I cannot give any accurate remembrance of this man.

16 Q Are you able to read it, Mr. Houghton?

17 A Most of the words I can understand.

18 MR. SHANNON: Off the record.

19 (Whereupon a discussion was held off the record.)

20 Q You and I will read it together. I'm going to read it
21 and she'll take it down so the record is clear.
22 Starting on A, it says, "The Air Hygiene Committee
23 report was presented by two representatives from that

1 committee, Dr. Kenneth Smith and Mr. D.R. Holmes,
2 chairman of the committee. Dr. Smith addressed the
3 meeting first with remarks directing attention to a
4 report issued by Dr. Hueper titled 'Public Health
5 Monograph #36, A quest into the environmental causes of
6 cancer of the lung.' Much of the information set forth
7 in this report is unsubstantiated and is in variance
8 with established understanding and knowledge of
9 informed men in the medical profession; however, this
10 article is apparently assumed to be the only authentic
11 treatise today available which may be used as a
12 reference for court action involving asbestosis and its
13 relationship to heart disease and lung cancer. Dr.
14 Smith strongly recommended that the Institute initiate
15 a program of investigation and publicity to counteract
16 the unfavorable publicity presently directed to the
17 asbestos industries as a result of the work of Dr.
18 Hueper. It was recommended that the Industrial Air
19 Hygiene Foundation be engaged to collect the necessary
20 information to publicize the results so obtained." Did
21 I read that correctly?

22 A Yes.

23 Q Do you recall the presentation by Dr. Kenneth Smith

1 concerning the article that had been written by Dr.
2 Hueper associating asbestosis and lung cancer?

3 A If I had seen that, it would have been from a report
4 because I wasn't at that meeting.

5 Q If you will turn back with me to Houghton Number 6, do
6 you recall being at the meeting on March 8, 1956?

7 A Yes.

8 Q Do you recall at that meeting as is reflected by Number
9 6 of those minutes that the report concerning Dr.
10 Hueper's article was discussed at the meeting that you
11 were in attendance at on March 8, 1956? Do you
12 remember any discussion such as is reflected by Number
13 6 of the minutes?

14 A To recall? No.

15 Q Do these minutes, and take your time and review them,
16 and see whether any of the matter the discussed help to
17 serve or refresh your recollection.

18 MR. GLASSER: Off the record.

19 (Whereupon a discussion was held off the record.)

20 MR. GLASSER: Jim Shannon has pointed out to me
21 that in Houghton Number 6, the minutes from
22 March 8, 1956 that there is a very obvious
23 deletion of four or five inches or so in the

1 middle of page 2 of those minutes. There is
2 a partially visible 5 in the left-hand margin
3 apparently marking paragraph 5 which has been
4 blocked out. My best knowledge is that this
5 is a copy of what we have in our office
6 expressly, so that no question is raised, it
7 is nothing that we have blocked out, and yet
8 I leave open the fact that should anyone be
9 able to produce a bonified copy of the
10 minutes of this meeting, that we will be
11 happy to receive that as an exhibit or
12 perhaps a supplemental exhibit which we could
13 mark 6A for whatever value that is. My copy
14 does not reflect paragraph 5, and I have no
15 information as to what it is or how it got
16 blocked out.

17 A I remember being at this meeting, but then you asked me
18 do I recall these various items. My answer would be
19 no.

20 Q My concern, Mr. Houghton, is to determine do you
21 recall any mention associating asbestos or asbestosis
22 with lung cancer from the meeting?

23 A Oh, I think I've absorbed that over the years.

1 Q What about in the time frame around March of 1956? Do
2 you recall having looked at this, and I don't mean to
3 try to ask do you remember everything, but I'm trying
4 to determine do you have any recollection as to whether
5 you had heard anything concerning the association of
6 asbestosis and lung cancer in the 1956 time frame?

7 MR. SHANNON: I object to the question because it's
8 been asked an answered at least two or three
9 times now, and the continued repetition of it
10 is beginning to suggest an answer to him.

11 MR. GLASSER: I don't mean for it to do so.

12 MR. SHANNON: I know you don't mean it. It's going
13 to have that effect if you keep asking it of
14 him.

15 Q Do you understand my question?

16 A I understand do I have that knowledge, but not -- I
17 don't recall when I got the knowledge.

18 Q Do you recall whether or not you would have received a
19 copy of the minutes of the meeting that you attended?
20 Wasn't that generally the practice of --

21 A The practice would be about a month after the meeting.

22 Q And was it your personal practice with regard to
23 meetings that you had attended to read or review the

1 minutes that were sent to you?

2 A Yes.

3 Q And is it not more likely than not that you would have
4 received a copy of these minutes, and I'm referring to
5 Houghton Number 6 which has your name mentioned?

6 MR. SHANNON: I object. That calls for complete
7 speculation. He's he told you that he
8 remembers being at the meeting, but he can't
9 remember the specific topics. Now you're
10 asking if he remembers receiving the
11 document.

12 Q That's a different question, but do you recall
13 receiving a copy of these minutes?

14 A I recall receiving copies of minutes, yes. This
15 particular one, I can give you a positive answer.

16 Q Customarily when you did receive minutes, you would
17 review them?

18 A Yes. Years have go by.

19 Q I understand that, I really do, Mr. Houghton, and I
20 know that the question is tough. You never had
21 occasion in reading minutes that you received from
22 ATI meetings to say well, that's wrong, that didn't
23 happen or make any correction to any minutes?

- 1 A No.
- 2 Q Going to a different topic, Mr. Houghton, are you aware
3 that in 1957 on November 14, 1957 a Worker's
4 Compensation claim was filed by a lady by the name of
5 Grace Baylord claiming that she had either pulmonary
6 fibrosis or pulmonary asbestosis and her job or work
7 place was the textile department where she had been
8 employed intermitently for 22 years during the 1923 to
9 1957 time frame? Do you remember or know Grace
10 Baylord?
- 11 A Yes. That was her married name.
- 12 Q Was she a worker under your supervision?
- 13 A Yes.
- 14 Q Were you aware that in 1957 she filed a Worker's Com-
15 pensation claim against Garlock for pulmonary
16 asbestosis?
- 17 A I think my answer would be yes.
- 18 Q And you're aware that she was paid funds then?
- 19 A I don't recall seeing that report, but I know she
20 filed a claim.
- 21 Q Was she the first claim for asbestosis that you are
22 aware of at Garlock or were there ones earlier than
23 1957?

1 A I can't answer that.

2 Q You don't recall any before 1957?

3 A No, I don't recall any.

4 Q Do you know what her job was in the textile department?

5 A I think she was a twister operator. Twister means a
6 machine that combines two or more threads together and
7 twists it. She was a twister operator.

8 Q Did the twister have a local exhaust ventilation
9 system?

10 A No. The yarn is spun so it doesn't produce much dust,
11 so the twister is relatively a clean machine. The
12 spinning frame produced dust. That's the one I put
13 machine dust recovery equipment on.

14 MR. GLASSER: Off the record.

15 (Whereupon a discussion was held off the record.)

16 Q What period of time did you attend the ATI meetings
17 yourself?

18 A Most of the meetings from that date there.

19 Q From 1956?

20 A '56. Most of time I attended up to 1970. I think that
21 there were not many that -- I didn't attend one.
22 There's one I did not attend was down in South
23 Carolina. It was at a Hilton Head.

1 Q They had approximately how many meetings a year?

2 A It was two, sometimes three.

3 Q Did you serve on any committees?

4 A Oh, yes, we would break up into committees, but I
5 haven't clear-cut records of committees I served on,
6 but we would have a general meeting, then we would meet
7 in groups, probably mostly reflecting that sections we
8 were involved in.

9 Q Did anyone else attend meetings with you from Garlock?

10 A Yes.

11 Q Who generally would attend with you or in addition to
12 you?

13 A It was not always the same one. I can't give you
14 those names. I'd have to work on my memory, which
15 isn't very good. I can't give you a list of names. I
16 know that Sedella Dixon went with me in the latter part
17 because he came with us in 1967.

18 MR. SHANNON: Off the record.

19 (Whereupon a discussion was held off the record.)

20 Q I understood your testimony that starting with 1956 and
21 continuing through 1970 that you attended many of the
22 meetings yourself and you rarely missed any.

23 A Yes.

1 Q The one that you missed was in Hilton Head, that your
2 aware of?

3 A That's the only one that stands out in my mind.

4 Q And in addition to your attending, there were other
5 people who would, on occasion, attend from Garlock?

6 A Yes, there would be frequently there would be one
7 other.

8 Q Mr. Kuzmuk?

9 A Kuzmuk.

10 Q Did Al Dayton ever go?

11 A I don't think I remember Al Dayton being with me. He
12 was on the safety committee.

13 Q Did you go to any meetings of the ATI after 1970?

14 A I think not.

15 Q When you went to meetings of the ATI between 1956 and
16 1970 and returned to Palmyra, to whom would you report
17 what had happened at the meeting?

18 A It would only be the factory manager. Factory manager
19 sometimes was the vice president, but it would be the
20 factory manager that I would directly report to.

21 Q And your position, Mr. Houghton, when you came in, you
22 were initially, I believe you told us, a superintendent
23 in the textile department?

1 A Up until 1958 and then they wanted me to go in the new
2 missile department, so I was moved over to the
3 engineering department from then on, I worked in the
4 missile department and then he worked on development
5 for Chevron and other products, probably mainly
6 Chevron.

7 Q Did you continue to have contact with those plants
8 that were making asbestos-containing materials?

9 A When an Asbestos Textile meeting would take place,
10 they'd ask me if I could go.

11 Q And you would attend for the company?

12 A Yes. I was the -- up until -- now, that was -- yes,
13 1970. From then on, I didn't attend, but that was 1960
14 that I started working on engineering, but I was still
15 more or less related to the textile departments, more
16 or less consultant for textile problems.

17 Q And still attending the Asbestos Textile Institute
18 meetings?

19 A Yes.

20 Q Is it fair to state that one of the topics that was
21 discussed at many meetings was the health effect
22 associated with exposure to asbestos and ways to
23 control it dust?

- 1 A Some, not all.
- 2 Q It was discussed at some meetings but not all meeting.
- 3 Did there come a time where you heard any discussion at
- 4 the Asbestos Textile Institute about the need to place
- 5 warnings on asbestos-containing products?
- 6 A I recall no discussion on warnings.
- 7 Q After 1970, when you were no longer on the payroll but
- 8 were serving as a consultant to Garlock, were you
- 9 kept abreast as to dust counts that were going on at
- 10 the plant and what the asbestos levels were in those
- 11 dust counts?
- 12 A Only in discussions. We had developed a new plant and
- 13 I was following that, Out in Sherbrook. I was aware of
- 14 what was happening there.
- 15 Q Did you know who Mr. H.R. Hughes was?
- 16 A Hughes? That's not clear in my mind.
- 17 Q Do you know who Mr. L.A. Green was?
- 18 A Green?
- 19 Q Yes, sir.
- 20 A No.
- 21 Q Are you aware as to whether or not Garlock was cited
- 22 for any occupational safety and health violations in
- 23 the 1972 time frame under the new OSHA law?

- 1 A I didn't hear of it.
- 2 Q In your experience as an engineer, did you ever have
3 occasion to use yourself or to hear of anyone else who
4 used a tindle-beam lamp to help visual observation of
5 dust movements, and what I'm showing Mr. Houghton as I
6 speak is a letter dated August 18, 1972 from Turner
7 Brothers Asbestos Company Limited to a Mr. D.J. Kamel,
8 Vice president International Operations, Garlock Inc.,
9 1250 Midtown Tower, Rochester, which has a Garlock
10 "received" stamp on it of August 31, 1972 with the
11 notation "vice president engineering." You see the
12 reference on page 2 of this letter?
- 13 A I do not remember hearing of that. I knew that Kamel
14 was president, but I did not hear of that.
- 15 Q You never had occasion in evaluating any dust to use a
16 tindle light --
- 17 A No.
- 18 Q -- to help you to see the dust or the fibers?
- 19 A Only this Bausch & Lomb.
- 20 Q The Bausch & Lomb counter that you described?
- 21 A That one.
- 22 Q Mr. Houghton, when you were with Garlock, even in the
23 very late 1930's and 1940's, were you aware that the

1 Garlock asbestos-containing products were going to be
2 used by various mechanics, asbestos workers, insulators
3 as a part of their day-to-day jobs?

4 A The products we made were not of the insulation type.
5 We made packing rings, gaskets.

6 Q But you were aware that Garlock gaskets, for example,
7 would be used on ships to work with flanges and valve
8 covers?

9 A Yes.

10 Q Were you aware that Garlock gasket materials were being
11 sold to the government for use aboard ships?

12 A When you way you were aware, I was not connected with
13 the sales department. I knew gaskets were being made.

14 Q And did you know that gaskets were or some of the
15 gaskets would be used aboard ships?

16 A Well, just in conversation I would say I would assume
17 they would be, but I was not connected with sales.

18 Q Were you also aware that other materials, perhaps from
19 your days at Manville, were being used to go on pipes
20 and boilers, turbines and heat-generating equipment?

21 A That type of product was made by Johns-Manville.

22 Q I understand.

23 A I knew that that was being made for boilers and

1 turbines.

2 Q And did you also know that some of the gaskets that
3 were being made by Garlock would also end up being used
4 on boilers and turbines?

5 A Not then. I didn't even know who Garlock was.

6 Q Let me clarify. Once you came to work for Garlock and
7 you knew that they were making compressed gasket
8 sheeting and gaskets, you were aware that some of the
9 Garlock gaskets would be used on boiler and turbine
10 couplings and on pipes leading off of boilers and
11 turbines?

12 A List of names did not come to me in the textile
13 department, but I knew Garlock was making gaskets. It
14 was up to the sales department where they were to go
15 to.

16 Q And you knew that the Garlock gasket materials
17 foreseeably could be used on all of these hot machine
18 processes?

19 A My answer is yes.

20 Q You also knew, did you not, that the gasket materials
21 that Garlock was making, though new at the time that
22 you manufactured them, ultimately had a limited life
23 span when they were subjected to the high temperature

1 heats for which they were intended? They would not
2 last forever.

3 A Oh, I know that replacements are needed.

4 Q You would be out of business if they didn't need
5 some replacements.

6 A I was not a maintenance man.

7 Q I understand, but you knew that the materials
8 ultimately to be replaced with new ones.

9 A That's almost an axiom.

10 Q I agree, and you knew that where there were boilers or
11 turbines that were insulated that not only would the
12 insulation have to be replaced but that the gasket
13 fittings would also have to be replaced.

14 A Nobody ever discussed that with me.

15 Q But you are aware of that?

16 A No, I wasn't aware of it. I wasn't even thinking about
17 it. How could I be aware of it when I didn't know
18 where it was being used?

19 Q What I'm trying to clarify is that you knew that the
20 products, the gasket materials that Garlock was making
21 ultimately would have to be replaced.

22 A Well, you said those words.

23 Q Do you agree with me that --

1 A I agree that generally things have to be replaced.

2 There's nothing that we make that's permanent.

3 Q Are you aware that once a gasket had been subjected to
4 the intense heat of a boiler --

5 A What is intense heat?

6 Q I can use a number of 600 pounds pressure upwards.

7 A What is the temperature?

8 Q 600 degrees upwards.

9 A The asbestos would stand that, maybe not the rubber.

10 Q Well, that's helpful. Once your gasket material that
11 Garlock made the asbestos containing gaskets, whether
12 it was rubber coated or however it was coated, once it
13 had been subjected to high temperature, there would be
14 some deterioration of the carrier product, am I
15 correct?

16 A Probably.

17 Q Are you aware as to how mechanics in the field would
18 remove a worn out or burnt out or gasket that needed to
19 be replaced? Are you aware that they would use knives?

20 MR. SHANNON: I object now. Richard, you asked him
21 a question, now you're trying to go back and
22 give him the answer.

23 MR. GLASSER: I have a right to ask questions as I