IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF PENNSYLVANIA

In Re:

ASBESTOS PRODUCTS LIABILITY LITIGATION (No. VI)

Civil Action No. MDL 875

UNITED STATES DISTRICT COURT
FIFTH DIVISION
DISTRICT OF MINNESOTA

CONWED CORPORATION,

Plaintiff,

Case No. 5-92-88

-against-

UNION CARBIDE CHEMICALS AND PLASTICS COMPANY, INC., (f/k/a UNION CARBIDE CORPORATION),

Defendant,

-and-

UNION CARBIDE CHEMICALS AND PLASTICS COMPANY, INC., (f/k/a UNION CARBIDE CORPORATION),

Third-Party Plaintiffs,

-against-

OWENS-CORNING FIBERGLAS CORPORATION, WALKER JAMAR COMPANY, A.W. KUETTEL, SONS, INC., API, INC. and MacARTHUR COMPANY,

Third-Party Defendants.

February 15, 1994
HILTON C. LEWINSOHN

February 15, 1994
9:50 a.m.

Deposition of Center for Occupational and Environmental Health at Exeter Hospitals, Inc., by HILTON C. LEWINSOHN, taken by Plaintiff, pursuant to notice at the offices of Kelley, Drye & Warren, Esqs., 101 Park Avenue, New York, New York, before Marianne D'Amico, a Shorthand Reporter and Notary Public within and for the State of New York.

* * *

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Also Present:

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* * *

IT IS HEREBY STIPULATED AND AGREED by and among the attorneys for the respective parties hereto, that all rights provided by the C.P.L.R., including the right to object to any question except as to the form, or to move to strike any testimony at this examination, are reserved; in addition, the failure to object to any question or to move to strike testimony at this examination shall not be a bar or waiver to make such motion at, and is reserved for, the trial of this action.

IT IS FURTHER STIPULATED AND AGREED that the within examination may be sworn to by the witness being examined before a Notary Public other than the Notary Public before whom this examination was begun, but the failure to do so or to return the original of this examination to counsel shall not be deemed a waiver of the rights provided by Rules 3116 and 3117 of the C.P.L.R., and shall be controlled thereby.

IT IS FURTHER STIPULATED AND AGREED that the filing and sealing of the original of this examination are waived.

* * *

H I L T O N C. L E W I N S O H N,

having been first duly sworn by a Notary Public of the State of New York (Marianne D'Amico), was examined and testified as follows:

EXAMINATION BY

MR. BROWNSON:

Q. Dr. Lewinsohn, my name is Bob Brownson, as I told you, and I represent a company called Conwed Corporation, which is the plaintiff in the lawsuit against Union Carbide out in Minnesota, which is now out in Philadelphia, if you can understand that progression.

We are here today to take your deposition in connection with that case, and as I'm sure Trevor has told you, or as you probably already know, at the deposition, you've got to answer out loud and audibly. You can't shake your head or mumble or say "uh-huh," because then we have a hard time transcribing it.

And, secondly, if you don't understand a question or the question is not clear to you, make sure you tell me that before you answer it, so that we get a record of answers and

and responses to questions that you understood.

Is that fine?

A. Yes.

Q. And finally, try not to talk when I talk, and I'll try not to talk when you talk, so she just has one person talking at a time.

A. Okay.

Q. Dr. Lewinsohn, first of all, are you presently employed?

A. Yes, I am.

Q. Where are you employed?

A. The Center for Occupational and Environmental Health abbreviated, COEH, at Exeter Hospital.

The address is P.O. Box 1050 and the street address is 108 High Street, in Exeter, New Hampshire.

MR. WILL: Off the record.

(Discussion off the record)

MR. WILL: Back on the record.

Q. Do you have a curriculum vitae or resume that we can have?

MR. WILL: I'm having it photocopied.

MR. BROWNSON: So maybe we can dispense of it.

MR. GERSON: It will be here in two minutes.

Q. Your full name is Dr. Hilton Lewinsohn?

A. Hilton, middle initial is C, for Cecil, Lewinsohn.

Q. How long have you been at the Center for Occupational Environmental Health at Exeter, New Hampshire?

A. Since November 1992.

Q. What sort of institution is that? Is that a teaching hospital or --

A. No, the hospital is a community hospital, about 100 beds.

And the Center for Occupational Environment Health is a department of the hospital.

Q. And how is it that a hundred-bed hospital in Exeter, New Hampshire has a Center for Occupational Health?

Is there some plant in the area? How did that come about?

A. The center has been there for about eight years, I believe.

It started off actually with a nursing program that was set up by a very energetic occupational health nurse in the area, to provide nursing services to local employers in the industry. And it was very successful. They grew.

They then got a medical director, and enlarged eventually to get an industrial hygiene services as well, employer assistance program, and it developed into a comprehensive hospital-based occupational health program.

It isn't an industrial area per se, but there are some medium sized companies in the area and some subsidiaries of large companies.

And we provide on-site medical direction to some of those companies. We provide on-site nursing.

We have a clinic where we would see injured employees to preplacement, physical exams, urinal examination for drug screening, that kind of thing.

Q. Does the Center for Occupational and

Environmental Health do research as well?

A. Oh, no.

Q. Or is it treating of patients?

A. It's hospital based. It has basically a clinical function.

Q. Are you currently doing any research of your own, or have you since you've joined that center?

A. No.

Q. At the present time, or since 1992, let me put it that way, since 1992, have you been following any group of patients, or have you been continuing any research of any kind that you had done in the past?

A. No.

Q. And as I understand it, you left Union Carbide in July of 1992, is that correct?

A. That is correct.

Q. Did you retire at that point?

A. It was a retirement, you know, retirement package that I was given at the time, as a result of a downsizing that was taking place at Union Carbide.

Q. And I should ask you this. What is

your current age?

A. 65.

Q. What happened then, as you retired from Union Carbide at, I guess, at the age of about 63? Would that be correct?

A. Yes.

Q. That was as a result of some corporate downsizing?

A. That is correct.

Q. Where they were giving early retirement packages to people?

You're shaking your head?

MR. WILL: You need to say "yes."

A. Yes, I'm sorry.

THE WITNESS: I thought it was a rhetorical question.

MR. WILL: I thought so, too.

Q. Let me just ask you one more thing about your current position.

Are you seeing any patients or doing any work in the area of pneumoconiosis or asbestosis in particular, or pneumoconiosis in general?

A. No.

Q. We've been given a copy here of your curriculum vitae, and I'll just have the reporter mark this as Exhibit 1.

(Curriculum vitae marked as Lewinsohn Exhibit 1 for identification, as of this date.)

Q. I'll show you now what has been marked as Lewinsohn Exhibit 1, and ask you if that is a copy of your current curriculum vitae?

A. Yes, it is.

Q. And is that complete and up to date as far as you know?

A. Yes, as far as I know.

Q. It indicates that you're originally from South Africa, is that correct?

A. That's correct.

Q. You went to university at Witwatersrand Medical School?

A. Well, the correct -- Witwatersrand.

Q. I was close.

And what was the degree that you obtained?

A. The degree is MB, BCh. It's the Latin for bachelor of medicine and bachelor of

surgery, which is comparable to the M.D. degree in the United States.

Q. And you obtained that in 1952?

A. Correct.

Q. And when did you move from South Africa to England?

A. 1956.

Q. You then obtained this diploma in industrial health in 1968?

A. Correct.

Q. What did you do when you moved to England in '56?

Did you have employment or were you in school, or what were you doing?

A. No, I worked for a year in a hospital in Kent, Farnborough, Kent, in the chest medicine unit there.

And then I went to the London Chest Hospital. And I was at the London Chest Hospital, I believe, as a registrar, which is, I suppose, equivalent to a resident.

And then I was a senior registrar and the resident medical officer as the country resident, medical resident assistant physician, I

forget what the title was.

May I just look at this?

MR. WILL: Sure.

A. Resident assistant physician at the London Chest Hospital, Country Branch.

And then I left in '61 to come to the United States.

Q. Now, at some point along the way, you were a medical officer at Turner Brothers Asbestos.

A. Yes, that wasn't until 1966.

Q. So did you go back to Britain then?

A. I went to Britain in '63, after being here from '61 to '63, at Albert Einstein College of Medicine.

Q. In New York City?

A. In New York City.

And then from '63 to --

MR. WILL: Wait for him to ask you another question.

THE WITNESS: Sorry.

Q. What did you do in 1963?

A. That's when I went to the pneumoconioses medical panel in Manchester, in

England.

Q. And that is listed on your CV as "Pneumoconiosis Medical Officer, Ministry of Pensions and National Insurance?

A. That's correct.

Q. In Manchester?

A. That's correct.

Q. Did you that from '63 to '66?

A. Yes.

Q. And then in 1966, you came to Turner Brothers?

A. That's correct.

Q. Is that correct?

A. Yes, that's correct.

Q. Let me back up and go back to your time in South Africa.

You obtained your medical degree in '52, correct?

A. Yes.

Q. And while you were in medical school, in other words, up until 1952, did you see any patients who had been exposed to asbestos?

A. I don't remember.

Q. And when you obtained that medical

degree in 1952, was that what we would call a general medical degree, or had, at that point, you specialized in some area?

A. No, that was my general medical qualification.

Q. From 1952 until you came to England in 1956, what were you doing?

A. I had to do a year as an intern in South Africa. That meant you had to do six months internal medicine and six months in surgery.

To fulfill that, six months, a house physician at the Chamber of Mines Springkell Sanatorium, which was near Johannesburg, and did six months orthopedics at the Addington Hospital in Durban.

I then stayed on at Addington for a further six months as a senior house physician to do some further internal medicine training.

And then went back to Johannesburg and worked at a casualty officer in the Johannesburg General Hospital of my teaching hospital for six months.

And then, by that time, I felt that I would like to pursue further studies in chest

diseases, and went back to the Chamber of Mines Springkell Center Sanatorium as a resident medical officer for a year.

Q. Where was that located?

A. That was near Johannesburg.

Q. And following your year's work there, is that when you went to England?

A. Then I went to England, yes.

Q. Let me ask you then, during the period 1952 to 1956, after you obtained your medical degree, but before you left for England, during that time period, did you see patients with any asbestos-related disease of one sort or another?

A. I don't remember seeing any.

Q. Let me just go through the different things you did one year as an intern.

You did six months as intern in medicine, and six months in surgery.

In the internal medicine portion of that, what sort of patients would you see?

Were they just general patients that would come into the hospital?

A. Yes. I suppose mostly patients with

cardiovascular lesions, neurological conditions, you know, the run of the mill general internal medicine patients.

Q. Did you see any miners during that period of time?

A. Let me just correct something.

Are we talking about 1953 now?

Q. Yes. I'm talking about your first year as an intern.

A. Okay, I'm sorry, let me just correct that.

The first year when I was at the six months that I spent at Springkell Sanatorium, that was run by the Chamber of Mines, and in order for a patient to be admitted to that sanatorium, that patient would have to be a miner.

Now, these in Johannesburg were gold miners, basically. I don't believe I saw any other miners.

During that period of time, I saw many cases of silicosis as a result of mining exposure, and many of those also were complicated with TB.

Q. So what you were seeing as an intern

then was gold miners?

A. Gold miner.

Q. Among those gold miners, you saw some silicosis?

A. Yes.

Q. Other than the silicosis, were there any other pulmonary conditions caused by the gold mining that you treated or that you saw?

A. I don't know of any other conditions besides silicosis, as I said, complicated by TB.

Q. Did you have any understanding at that time, or any knowledge at that time, that there was any cancer among these gold miners of one sort or another that was related to their work in the mines?

A. Silicosis was not considered a carcinogen.

Q. Were you seeing any lung cancer?

A. Yes, I saw lung cancer. But I would -- yes, I saw lung cancer.

Q. Let's go to your next stint, and that would be in Addington, where you were a senior house physician for six months?

A. I was a -- you skipped the

orthopedic.

Q. I skipped the orthopedic?

A. Senior house physician, again, that was a general run of the mill internal medicine ward with heart cases, emphysema, bronchitis, neurological cases, run of the mill stuff.

Q. Did you see any pneumoconiosis among patients at that hospital?

A. I don't remember seeing any.

Q. Were there any miners seen?

A. No, not at Addington.

Also, unless, of course, somebody had been a miner, but it wasn't specifically set up to see miners.

Q. Next you were at Johannesburg as a casualty officer. Would that be an emergency-type situation?

A. That's correct.

Q. In that situation, you would see anyone who would come in with injury or disease?

A. Yes.

Q. Following that time, you went to back to the Chamber of Mines, 1955.

That was in '55?

A. I went back to the Chamber of Mines Springkell Sanatorium.

Q. That is where you had been earlier?

A. That is where I had done six months as a house physician in 1953.

Q. Was it at that point in 1955 that you decided to concentrate or specialize in chest diseases?

A. I believe it was.

Q. What was it if you can recall that far back that brought you into that specialty?

Why was it that you decided to specialize there?

A. I think that my six months in 1953 had interested me in the subject, and that once I had completed my, you know, the further training that I felt I wanted to do, I went back to it.

I went back to it and the training process in the British system is somewhat different from here, where you graduate from medical school and then go into an internship and residency program, which turns you out as one form of specialist or another at the end.

And whereas, in the British system,

you, I suppose, gravitate to eventually what your interest is, but the early years of training are sort of nonspecific.

And that is how I -- so in 1955, I had decided that I would like to continue to learn more about chest diseases.

Q. So if we could summarize your medical training up until 1955, it would be general medical training nonspecific to any specialty, and 1955 was when you focused on chest diseases?

Is that fair to say?

A. That is fair to say, I think, yes.

Q. And again, going back to the Chamber of Mines, describe for us exactly what that was.

Was this a sanatorium or a hospital which just treated the gold miners or what was that?

A. Yes. It's a long time ago, so you must forgive me. I don't remember all about it but --

Q. As best you recall.

A. It was owned by the Chamber of Mines, as I told you previously.

It treated, it admitted patients who

either were gold miners or had been gold miners and were in receipt of a pension from the Chamber of Mines, and treated them for chest diseases.

It specialized in chest diseases. The name implies it started off as a sanatorium for the treatment of TB, because one of the major complications of silicosis is pulmonary TB.

By 1953, when I went to work there, it was admitting patients with TB, was being treated with the new antibiotics and chemotherapy and was being brought under control and was treatable.

People weren't spending three, four, five years of their lives in sanatoriums while on bed rest getting well. They were being treated with drugs and getting out and being discharged.

So the bed they had been occupying were available for other sorts of chest cases. So the sanatorium also admitted some cases with heart disease that were operable, and it admitted other chest cases with other types of chest conditions for investigation and treatment that were not necessarily silicosis.

Q. So you still saw silicosis, I take

it, but you were also seeing other things at that time?

A. Yes, we were.

Q. Maybe you told us this -- I guess you were there for maybe one year, is that right, or was it more than that?

A. In 1953, it was six months, and then 1955, '56, was one year.

Q. During the time that you were in South Africa until you left for England, you told us earlier, I think, that you hadn't seen any patients during that time who were suffering from any asbestos-related disease.

Is that fair to say?

A. I don't remember having seen any.

Q. And during that period of time, during the entire course of that training going back to your medical degree and then up through '56, had you studied or learned anything about asbestos or other asbestos-related conditions as part of your medical training?

A. As part of my medical training, I had heard and been told and taught about asbestos.

But I don't recollect having

personally seen a case.

Q. And was it your understanding, again, taking you back into those years up until 1956, if you recall, if you don't, just tell me so, in those years, was it your understanding that there was any asbestos occurring or that had occurred in South Africa, or was this something that you studied about occurring in Britain?

A. I don't remember, quite honestly, whether I was aware at that time of South Africa as a country with a problem related to asbestos.

Q. Let me ask you this: You were aware, of course, that there were various asbestos mines and pits in South Africa, I take it?

A. Not necessarily aware of it.

Q. Well, then let me rephrase it

Until 1956, were you aware of the fact that there was asbestos mining activity in South Africa?

A. I can't say I was.

Q. But I take it, you never saw any of the workers from those mines during that time?

A. I did not.

Q. And were you familiar with Dr.

Wagner, Chris Wagner, before you left South Africa?

A. I think I had met Dr. Wagner before I left South Africa.

Q. And again, I --

A. South Africa. Sorry, let me just say, yes, I had met Dr. Wagner in South Africa.

Q. So that would be before 1956 at some point?

A. Yes.

Q. Do you recall in what context you met him in South Africa?

A. Yes, I met him while I was at Springkell Sanatorium, and Dr. Wagner was one of the pathologists that used to do autopsies.

Q. And again, before you left South Africa, had you heard of the conditions of mesothelioma?

A. No.

Q. And going back to this meeting or meetings with Dr. Wagner when he was doing pathology for you, did he mention, if you can recall, at any of those meetings that he was looking, or that he was seeing any mesotheliomas

in patients?

A. Not that I recall.

Q. Do you recall when the first time was that you heard of Dr. Wagner's findings or reports of mesothelioma among South African miners?

A. I believe that it was when I was at the London Chest Hospital between 1957 and 1958, that period of time. Maybe even '57 to '59. I can't be precise on the date.

When the pathologist at the London Chest Hospital, whose name was Dr. Hinson, told me that he had a meeting with a fellow South African, Dr. Wagner, who had been over to see him to discuss his findings of cases of mesothelioma in asbestos workers in South Africa.

Q. Let's just see if I've got this straight.

At some point when you were at the London Chest Hospital from '57 to '59, your pathologist, Dr. Hinson, had spoken to Dr. Wagner?

Is that correct?

A. That is correct.

Dr. Hinson was a world-renowned pulmonary pathologist.

Q. So you didn't speak to Dr. Wagner directly during this period?

A. I did not speak to Dr. Wagner directly.

Q. Do you recall what it was that Dr. Hinson reported to you about Dr. Wagner's findings?

A. I don't -- no, I don't recall.

Except that, you know, I think he told me about his meetings as a matter of interest, because we were both South Africans.

Q. Did you understand from those understandings with Dr. Hinson that Dr. Wagner had found mesothelioma among asbestos miners, or were these factory workers, or do you have any recollection of that?

A. No.

Q. What you do recall is simply the report to Dr. Hinson that Dr. Wagner had seen mesotheliomas?

Would that be fair to say?

A. Yes, Dr. Wagner was over to discuss these cases with Dr. Hinson, Dr. Hinson being an authority on pulmonary pathology.

Q. And this, of course, would be before Dr. Wagner published those cases.

Would that be fair to say?

A. Yes, I don't think the cases were published until 1959.

Q. When they were published, did you read Dr. Wagner's paper about the cases?

Do you recall that?

A. I don't recall reading those cases at that point in time.

Q. Do you recall when the first time was that you did read those cases in the published literature?

A. I would say, probably not until just either before or at the time just before I left to go back to England in '63, or after getting back to England in '63, and joining the pneumoconiosis medical panel did I do any reading about mesothelioma and Dr. Wagner's cases.

Q. Now we're jumping ahead a little bit here.

But at the time that you did read about those, can you remember the context?

In other words, was this in

connection with some research you were doing, or a meeting you were attending, or did you just happen to read about them, or how did that come about?

A. No, I was at -- I believe it would be when I joined the Pneumoconiosis Medical Panel in Manchester.

And I obviously had to be familiar with, and up to date with all of the latest developments in occupational lung diseases.

So, at that time, I read in greater depth about mesothelioma.

Q. And that would be just generally in connection with bringing yourself up to date on the various diseases in connection with your work at the pneumoconiosis unit?

A. Yes, because part of my role there was diagnosing occupational diseases.

Q. Let me now go back to, I think we were in 1956, you left South Africa.

You went to England and you spent one year in the hospital at Kent, is that correct?

A. That's correct.

Q. And while you were at that hospital, I'm just trying to find it here in your CV, let's

see here.

Let's go back a little further.

Senior house officer, Department of Medicine at Farnborough, Kent. It said, you were attached to the chest unit, is that correct?

A. That is correct.

Q. And what sort of conditions were you seeing or treating during that year in Kent?

A. This was a TB ward, basically.

Q. Were you seeing any pneumoconiosis of any sort at that time?

A. Not that I can recollect.

Q. Were there any, you have to pardon my geography of England, but was there any coal mining around Kent?

A. No.

Q. So that wasn't the coal mining area?

A. No.

Q. So you weren't seeing any coal miners?

A. No.

Q. Any mining of any kind that you were seeing, of any kind?

A. No.

Q. Then you went from '57, or in '57, you went to the Pinewood Hospital in Wokingham in Berkshire, correct?

A. Correct.

Q. What sort of work were you doing there?

A. That was a two-month stint as a local tenant.

Q. As a what?

A. Locum Tenens, just like a temporary job. And that was a TB sanatorium.

Q. And did you see any pneumoconiosis there?

A. No, I did not.

Q. Then you went to the London Chest Hospital in '57, from '57 to '58 as a medical registrar.

What did that involve?

A. That's equivalent to a resident in the American system.

And the London Chest Hospital admitted cases from basically the east end of London, mostly chronic obstructive pulmonary disease, bronchitis, emphysema.

There was still quite a lot of TB around, lots of cases of lung cancers, and we also did cardiovascular surgery at the London Chest Hospital, so there were various heart diseases there for the treatment.

Q. And then during the next year, from '59 to '60, you were the senior registrar at the London Chest Hospital.

I take it, that was the same place?

A. No, this was at the Country Branch Arlesey, Beds. That -- I was actually the senior physician on the house staff there, and in charge of this hospital, which was again largely TB, where the TB cases from London were sent.

The ones that were going to take longer to get better were sent out to the country for, you know, to be treated long term, and also did some surgery out there.

Q. During this stint in Britain from '56 to '60, did you learn anything further about asbestosis, other than the knowledge you had gained back in South Africa?

A. That's a difficult question to answer, because I don't know how I can say what I

specifically learned at what time.

Q. Let me do this,

Taking yourself up to the time you left for New York, the period of time you were in England the first time, you say you can't specifically recall if you learned anything further about asbestosis.

Would that be fair to say?

A. I didn't exactly say that I didn't learn anything further.

I said that I couldn't place it within a time frame.

Q. Okay.

A. It's difficult to do that.

I know that I knew more about asbestosis by the time I left to come to the United States than I had known when I probably -- when I started to work in England.

The reason I say that, to answer your question, is that I -- and you'll see that in my resume -- I had a course in advanced medicine at the London Hospital in January '61 to March '61.

Q. Let's see, I'm trying to find that.

Yes, here it is.

A. And I obviously knew something about asbestosis then because I can remember seeing a case, being shown a case in the wards to discuss and being able to discuss.

Q. So during your course in advanced medicine in '61, when you say you saw a case, there actually was a patient there with asbestosis or was it --

A. It was a demonstration case by one of the teachers of the course and, you know, the way they teach in medicine is to pull some poor student out the crowd and ask him or her to examine the case and venture a diagnosis.

And I was that poor student, so that's how I remember it so well.

Q. How was the diagnosis made in that case?

Was it on x-ray or was it pathologic?

A. It was a clinical diagnosis and then, obviously, history, asking questions, then being -- then being prompted by the teacher, what else would you like to know, and asking for an x-ray, et cetera.

Q. Since you were the student who was

pulled out of the crowd for that case, do you recall what the clinical history was that was being given by the patient?

A. No, I honestly don't recall that.

Q. Do you recall if that patient was a worker in a British asbestos factory?

A. No, I don't recall the occupational history.

Q. Do you recall what the diagnosis was?

A. The diagnosis was asbestosis.

And I believe that man also had lung cancer, but I really am taxing my memory.

Q. I understand that. We're going back a long ways.

If you don't understand any of this, tell me so, but I am trying to get what you do recall.

A. I do remember that case.

Q. Let me stop you there then, as long as we're on the topic of that case.

By that point in time, 1961, had you come to learn or understand that there was some relation between asbestos exposure or asbestosis and lung cancer?

A. Yes, I had.

Q. And do you recall where you had gained that knowledge?

A. I suppose primarily, from the literature.

Q. Did you know Dr. Gerrit Schepers at that point?

A. No, I never met Dr. Schepers.

Q. I take it, you've heard of him in recent years, but I'm wondering, back in those years, had you ever heard of him?

A. I heard of Dr. Schepers when I was at Springkell Sanatorium.

I believe Dr. Schepers was somehow or other connected with the Chamber of Mines and had some administrative responsibilities for the miners that we admitted to the sanatorium for the administration of their benefits and that sort of thing.

Q. Let me take you back to the patient with the asbestosis which you were plucked out of the crowd to discuss in 1961.

Was it you who that made the diagnosis of asbestosis, or had that diagnosis

previously been made by someone else and they were testing you to see if you could get it correct?

A. This was a documented case of asbestosis that was probably admitted for that day and paid to come in, just to be a case for the students to examine and talk about.

Q. And did the patient have lung cancer at the time that this discussion took place on the date when he came in?

A. I believe he did.

Q. And did you have any understanding at that point that that patient's lung cancer was related to his asbestos exposure?

A. I knew at that time that there was an association between lung cancer and the disease asbestosis.

Q. And did you understand at that time that if a person had asbestosis, that there was an increased risk or increased probability that he could get lung cancer as a result of that?

A. I think that's what I just said.

Q. Was it also your understanding at that time that an asbestos-exposed individual needed to have clinical asbestosis before there

was an increased probability risk of him getting lung cancer, if you recall?

MR. GERSON: Could you repeat the question?

A. I think you're asking --

MR. BROWNSON: I better ask her to repeat it, so I can get it accurately.

(Record read)

MR. WILL: I think you need to rephrase it.

A. I think you need to rephrase it.

MR. BROWNSON: If you want to take a break at any time, just tell me and we'll do so.

Let me rephrase that question.

Q. What I was getting at is, taking yourself back to that case in 1961, at that point in time, if you recall, did you have any understanding that an asbestos-induced or an asbestos-related lung cancer could be found in a patient who did not have asbestosis?

A. At that time, I believe it was generally held that it was a prerequisite for asbestosis to be present in order for the lung

cancer to be considered related.

Q. And if you can recall, what was the clinical definition of asbestosis at that time?

A. I can't recall.

Q. Let me ask you this: Was the diagnosis of asbestosis at that time, in 1961, made based upon an x-ray?

A. The diagnosis of asbestosis, as far as I'm concerned, is never made on the basis of any single finding.

Q. What were the diagnostic criteria at that time, if you can recall?

A. The clinical criteria were symptoms of breathlessness, shortness of breath, aggressive shortness of breath, the presence of fine crepitant rales, usually at the lung base and extending up to the aveoli which did not disappear on coughing, mainly the inspiratory phase of respiration, with or without the presence of clubbing of the fingers and toes.

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And with radiological appearances which, in those days, one referred to as -- I'm trying to think of the term --

Q. Shadows?

A. No, I'm trying to think of the terminology, it's gone for the moment, a shaggy heart border on the x-ray, and lower zone infiltrates.

I guess that is as close as I can get.

That, I would say, would be the diagnosis was made on those clinical criteria.

Q. And the lower zone infiltrates on the x-ray, that would be some actual visible fibrosis on the x-ray?

A. Yes, I didn't call it fibrosis, but that is what it would be, yes.

Q. Was it required at that time, as part of the diagnostic criteria, that this lower zone infiltrates or fibrosis be bilateral?

A. Oh, yes. Usually bilateral.

Q. And let me ask you this: Was the rales a required part of the criteria; in other words, if that was not present, the diagnosis could not be made, or how did that work?

A. Well, for a clinician to make a diagnosis of pulmonary fibrosis, which is what asbestosis is, in those days, when the stethoscope

was still very much respected as a diagnostic instrument, the presence of bilateral found crepitant rales was one of the essentials of making a diagnosis.

Q. Clubbing was not, in other words, clubbing was something that was looked for, but not essential?

A. Clubbing was the not a pathopneumonic of asbestosis, but it often was found in conjunction with it.

Q. And do you remember if this particular individual had any clubbing of the fingers?

A. Yes, this particular individual did have clubbing of the fingers.

Q. Was this the first actual case of asbestosis you had seen, as you think back on it?

A. Probably. That is probably why I remember it so clearly.

Q. At least it sticks out in your mind because you were plucked from the crowd to discuss it?

A. It does.

Q. Again, let me take you back to that

time, 1961.

You mentioned that you were familiar with the association of the lung cancer and asbestosis at that time.

Do you remember what literature or reports you had read up to that time on that topic of lung cancer and asbestosis?

A. I think the report that I that I knew about was the work of Richard Doll, which had been published in 1955, in fact, where he showed increased incidents in excess of lung cancer in asbestos textile work as had been exposed for a long period of time and eventually asbestosis.

A. I need to take a break.

Q. Sure.

(Recess taken.)

BY MR. BROWNSON:

Q. Dr. Lewinsohn, we were talking about 1961 in this asbestosis case that you were reviewing in London.

And I think the last question and answer was that this was, as you recalled it, the first asbestosis case that you had seen, as you sit here today and think back on it.

Would that be fair to say?

A. That's fair to say, yes.

Q. Now at the time you saw this case in 1961, as I understand it, you were aware of the work of Dr. Wagner and the mesothelioma, at least from your conversations with the pathologist, is it Hinson?

A. Hinson, yes.

Q. Right.

But as I understand it, you had not actually read Dr. Wagner's paper at that time.

Would that the be fair to say?

A. Not that I can remember.

Q. But you had read Sir Richard Doll's paper about the asbestos textile workers and lung cancers?

A. I was aware of that, yes. I had read it.

Q. That's what I wasn't clear on, if you had actually read his paper at that time, or had just heard about it?

A. That's difficult to say whether I read about it or heard about it, but -- I knew about it.

Q. You, of course, were familiar with Dr. Richard Doll, knew who he was and such?

A. Yes, knew who Richard Doll was because of his work on smoking and cancer.

Q. I shouldn't say "Dr."

A. He was, at that time, Dr. Richard Doll. He wasn't knighted until later.

Q. Before the "Sir."

A. Right.

Q. Would it be fair to say that, by 1961, when you saw this asbestosis patient, it was commonly held in, at least where you sat in England, that lung cancer could be related to asbestosis?

A. Could you just repeat that? Sorry.

Q. As of 1961, when you saw this asbestosis patient, would it be fair to say that it was commonly held in the medical community that lung cancer could be related to asbestosis?

MR. WILL: Bob, I don't know if you have established that he has a basis for all of this, but he can go ahead, subject to that objection.

MR. BROWNSON: That's why I am

asking.

A. My answer to that would be that asbestosis was probably not a very common disease which most of the medical community would have been familiar with.

But that those people specializing in chest diseases would have known about.

Q. When you say it was not a common disease, in the year 1961, would that be because -- strike that.

Would it be fair to say that asbestosis was never a common disease in England?

A. I suppose that if you put asbestosis in relationship to something like bronchitis and emphysema, that which would have been the common chest disease in England, it was a relatively -- it was a relatively small proportion of cases that chest physicians would see.

Q. And as of 1961, did you have any understanding, or had you gained any understanding of the latency period between exposure to asbestos and any onset of lung cancer?

A. No, because in 1961, you know, I really wasn't studying in any great depth the

diseases of occupations, although I was interested in them.

Q. Did you have any understanding, in 1961, that with the -- how would I put this -- with the demise of TB and with the factory regulations in England, that there was an increase of the tumors or cancer seen among asbestos-exposed individuals because they were living longer?

A. That is a formative period in my career, and I was probably learning about things.

And where at this moment in time, I can't recollect what my precise knowledge was, I can't answer that question.

Q. Did there come a time when you gained an understanding along those lines?

A. Did there come a time?

Q. Right.

A. When I gained an understanding that?

Q. Well, I don't want to rephrase that whole question, but the point I'm trying to get at was, did you gain an understanding at some point in time that tumors or cancers were showing up among asbestos-exposed individuals in large part

because the serious pulmonary diseases had been taken care of to some extent, so these patients were living longer and tumors were starting to be seen at later points in their life?

A. I don't know where you get that information from, but that's never been part of my thinking.

Q. Well, I get it from reading some of the early literature in England where statements are made to the effect that, in the early days, particularly before the British factory regulations in 1931 and such, and even after that, that there were the heavy exposures and people were getting serious pulmonary diseases and dying of these diseases.

And in the later years, as those things were brought more under control, these people were living longer and they were starting to see the cancers appear.

A. Okay.

I think what threw me in your question was your general terminology of people.

What I would say is that --

Q. What I mean to say is asbestos

workers.

A. If you were to say asbestos workers, then, yes, I believe there came a point in time when it was my feeling that as the severity of asbestosis decreased and, in fact, the incidents of asbestosis declined, there was a greater opportunity for the development subsequently of tumors in those individuals who had survived beyond the time span that they would have survived in the earlier days.

Q. That's the point I was trying to make.

Do you remember when you gained that understanding?

A. I would say that some time in between joining the Pneumoconiosis Medical Panel and going to work at Turner Brothers Asbestos in Rochdale.

Q. Again, among people in the field, that would be people, I guess chest physicians who dealt with occupational diseases, was this a view that was held in the field during those years, early sixties up until the time you started with Turner Brothers in, I guess, '66?

A. I don't think that the run of the

mill physician in the field was terribly concerned with those issues, particularly clinicians.

I think that these were issues that were being considered by the epidemiologists, people doing research into the manifestation, incidents and development of disease.

Q. And among the people doing the research at that time, in the early or by the early sixties, was certainly Sir Richard Doll was involved in that field?

Would that be fair to say?

A. I would say Sir Richard Doll was certainly involved in that field.

Q. Who else in England, during those times, early 1960s, were involved in that field?

A. Well, I think there were people in government, in the --

Q. Factory inspector?

A. The factory inspector.

I believe that people at the Medical Research Council in Penart, in Wales, could have been -- were involved, like Dr. Gilson.

I think that Dr. Wagner was, by that time, working in England as well.

So those were some of the people that I could think of.

Q. How about Dr. Timbrell, was he involved in that?

A. Well, I can't speak for Dr. Timbrell. I don't know when he became involved.

Q. How about Dr. Robert Murray, do you know if he was involved with the factory inspectorate in those years, in the early sixties?

A. Again, I didn't know Dr. Robert Murray in that period of time, in 1961.

In fact, I did not meet Dr. Robert Murray until I went to Turner Brothers, which was my first meeting with him.

I would say that anybody working for the factory inspectorate suddenly was aware of the asbestos-related diseases and of the epidemiology, because they would acquire that knowledge as part of their job.

Q. Would it also be fair to say that, as of the early 1960s, before you went to Turner Brothers, that anyone dealing within the area of pneumoconiosis would be familiar with the work of Sir Richard Doll and the work of the factory

inspectorate, Dr. Meriwether?

MR. WILL: Can you be a little more specific as to what time you are talking about?

Are you talking about in the United States, at Albert Einstein?

MR. BROWNSON: Let me back up.

Q. Let me take you back to 1961, when we were talking a little while ago about that asbestosis.

Did you understand that there was a factory inspectorate at that time?

A. I knew there was a factory inspectorate, yes.

Q. Were you familiar with the literature coming out of the factory inspectorate by that time, 1961, dealing with the asbestos textile factories in England?

A. No.

Q. When was the first time that you became familiar with that literature?

A. Probably not until the period of time that I was either with the Pneumoconiosis Medical Panel, or shortly after I went to Turner Brothers.

Q. Just so we can put a date on it, when had you started at the Pneumoconiosis Panel, in '63?

A. Correct.

Q. So at that point, in the 1963 to '66 time period, you became familiar with that work?

A. Well, '63 and onwards, even maybe after '66, when I went to Turner Brothers, but I can't place a --

Q. Let me ask you this: When you began in the Pneumoconiosis Panel, you told us that it was at that point that you read, for example, Dr. Wagner's paper about the mesotheliomas.

Is that correct?

A. When I went to the Pneumoconiosis Medical Panel, I had to familiarize myself with mesothelioma and other occupational lung diseases.

Q. Of course, you already knew about asbestosis at that time?

A. I knew about asbestosis.

Q. Do you recall if, at that time when you started at the Pneumoconiosis Panel, that you read, for instance, the papers by Dr. Meriwether dealing with the asbestos workers?

A. No, I did not read Dr. Meriwether's paper at the time I was with the Pneumoconiosis Medical Panel.

Q. When you began at the Pneumoconiosis Medical Panel in 1963, did you -- strike that.

As I understand it, the purpose of that panel was to -- I don't know what the proper word was -- was to qualify or rate people for pensions?

Is that fair to say? Disability pensions.

A. The Pneumoconiosis Medical Panel had a number of functions, one of which was to medically evaluate persons claiming industrial injuries benefits for pneumoconiosis, and to make a diagnosis.

And after making a diagnosis, to give an estimate of the degree of impairment, so that these people would then receive a pension based upon that medical opinion.

Q. Okay.

A. That was one of our functions.

Q. When you were on the panel from '63 to '66, were you actually engaged as a physician

during that work, or were you on some sort of administrative task?

A. No, that was my role.

Q. And there --

A. There were five of us doing that.

Q. And the five of you who did that, was that just in the Manchester office or would that be throughout the country?

A. No, we worked in the region that the office covered.

It was a regional office and it took us into most of Lancashire, work parts of Yorkshire-Bersk Bershire, and parts of Northern Ireland.

Q. So there were five of these medical officers on the regional panel, and you were one of the five?

A. And one of whom was the, I guess, the senior medical officer who had responsibility for the administration of the medical aspects of the panel's work.

Q. During those three years that you were a medical officer in the Pneumoconiosis Panel, I assume you saw, for instance, coal

miners?

A. Yes.

Q. And did you also see any asbestos workers during that three-year period?

A. Yes.

Q. Were these asbestos workers who you saw out of some particular plant or facilities, or were they just kind of a helter-skelter group of people?

Let me put it another way.

Within your region, were there certain asbestos plants or facilities out of which you saw workers making claims for benefits?

A. Yes, there were.

Q. What were those plants or facilities that were in your region?

A. There was the Turner Brothers Asbestos Company Limited, which had two plants.

There was another Turner York Company.

Turner Asbestos Cement, which had, if I recall correctly, two plants.

There was a company called Small & Parkes, which made brake linings. I think they

were a Cape Asbestos subsidiary.

There was, in addition, a shipyard in a town called Barrow-In-Furnass, up in Bedfordshire, where we used to see cases.

That's probably enough. There were some others.

Q. Let me, before we get into that, let's back up a minute.

When you went to the United States, as I understand it, from '62 to '63, you were in the United States?

A. '61 to '63.

Q. '61 to '63?

A. Yes.

Q. And were you at Albert Einstein College for that two-year period?

A. I did a residency at the Bronx Municipal Hospital Center, which is the teaching center for Albert Einstein. I was on a residency in pulmonary diseases.

Then I had a fellowship in cardiopulmonary physiology at Albert Einstein.

Q. During that time period, did you see any asbestos-related disease in the Bronx or at

Einstein?

A. I don't remember seeing that.

Q. I suppose I should ask you, although I think I know the answer to this, did you ever meet Dr. Selikoff during those years?

A. 1961 to '63?

Q. To '63.

A. No, I did not.

Q. Let's go back when you were on the Pneumoconiosis Panel from '63 to '66.

You mentioned that you saw workers from Turner Brothers and, as I understand it, Turner Brothers had two plants in your region?

A. Two plants, yes.

Q. And which two plants were those?

A. There was the Rochdale factory and there was one at a factory called Hindley Green near Wigan in Lancashire.

Q. Was the Rochdale factory still in operation during those years?

A. Oh, yes.

Q. When had that factory begun, as you had understood it?

A. Well, it had started its life as a

cotton mill, and I believe after the turn of the century, the first asbestos was brought to Rochdale.

Q. Do you know -- again, I don't want to dwell on these early years, but in the early years of the Rochdale plant, what it it was using the asbestos for?

A. It was using it for textile. It was a textile plants.

Q. Was it a textile plant throughout the year, or did they get into other products?

A. Well, it was always a textile plant, but they did have other products there as well.

Q. So let's go up through the year 1963, when you were on the Pneumoconiosis Panel.

Were they still making asbestos textiles at Rochdale?

A. Yes, they were.

Q. And in addition to that, by 1963, were they making any other products, other than the textiles at Rochdale?

A. Yes, they were.

Q. What was that?

A. They had various rubber composite

products that they were making.

Q. What would these be like sheet goods?

A. Rubber sheeting, Hindley Green -- I'm sorry, Rochdale, sheeting.

I don't remember precisely, but there was a rubber department.

Q. And during the time you were on the Pneumoconiosis Panel from '61 to '63, did you ever visit the Rochdale plant?

A. No. When I was on the panel?

Q. When you were on the panel.

A. Yes, it was part of my job.

Q. During that time period '61 to '63, did you see or did you examine workers from the Rochdale plant as part of your duties on this Pneumoconiosis Panel?

A. Yes. Part of our duties on the panel was to do initial and periodic examinations of workers in certain industries to qualify them medically for working in those industries.

And then, you know, so we could see them initially, and then follow them periodically to see that they were still qualified over the time that they were getting ill.

Q. So I had asked you initially about this business of seeing patients for purposes of determining medical pensions.

But in addition to that, as I understand it, you also gave them qualifying scales and periodic scales?

A. That was a statutory requirement.

Q. When you would do that for the workers at Turner Brothers and Rochdale, would you go to Rochdale and do it at the plant or was there a hospital there?

A. Yes.

The regulations require that the employer make available the necessary accommodation, and Rochdale had a very well equipped medical facility on-site.

Q. Right at the plant?

A. At the plant.

Q. As I understand the physical exams that you would do for the workers at Rochdale from '61 to '63, if a new worker was hired, they had to have a qualifying exam before they began.

Is that correct?

A. It had to be done within, I believe,

three months of hire.

Q. What did that exam consist of, this qualifying exam?

A. It was a physical -- a history, usual medical and occupational history, and then a physical examination.

Q. And was there anything in a person's medical history that would disqualify them for work at Rochdale during those years?

A. I believe we had certain criteria. I can't remember exactly what they were.

For example, active TB, presence of preexisting pneumoconiosis, some of these people had been coal miners, worked in other industries, but preexisting pneumoconiosis, severe chronic lung disease.

Q. I'm curious. Were you still seeing active TB in '61 to '63?

A. Certainly.

MR. WILL: I think he misspoke. I think you meant '63 to '66?

MR. BROWNSON: '63 to '66 is what I meant to say.

THE WITNESS: Yes.

A. Not frequently but yes.

Q. So would it be fair to say that the British factory regulations from '63 to '66 required the qualifying exam to work in an asbestos textile plant?

A. The silicosis and asbestosis medical arrangement scheme of 1931 required that the Pneumoconiosis Medical Panel examine workers in certain industries to determine their suitability for employment in those industries.

Q. And one of those industries would be asbestos textile?

A. As best -- well --

Q. Or asbestos generally?

A. Well, it was -- there were the regulations for asbestos were the asbestos industry regulations of 1931, and there were certain criteria established under those regulations to determine where they were applicable.

And wherever those regulations were applicable, the panels were required to provide these examinations.

Q. So as of '63 to '66, it was the 1931

regulations that were still in effect?

A. That is correct.

Q. And those regulations applied to the Turner Brothers Rochdale textile plants?

A. They did.

Q. And did they apply because asbestos was being used there, or did they apply for other reasons as well?

A. No, the asbestos regulations industry applied because of the use of asbestos.

Q. Were there other pneumoconiosis-producing dusts or regulated dusts in that plant from '63 to '66 other than asbestos?

A. No.

Q. You mentioned that, early on, that had started its life as a cotton mill.

When did that end? Do you know?

A. Oh, I would say, probably before the first World War, maybe earlier.

Q. So from 1931, at the time the factory regulations went into effect, up until 1966, when you joined Turner Brothers, would the regulated dust or the pneumoconiosis-producing dust at Rochdale have been asbestos?

A. Yes, it would have.

Q. Were there any other, than the asbestos, during those years?

A. No.

Q. In addition to this initial qualifying exam, if I can call it that, were periodic scales also required of the men at Rochdale when you were on the Pneumoconiosis Panel from '63 to '66?

A. Men and women, yes.

Q. What was the requirement for the periodic exams?

A. The statutory requirement was that they had to be conducted periodically at least every two years.

Q. And again, would that be the same sort of examination or clinical pulmonary examination?

A. Yes, it was basically limited to an examination of the heart and lungs of the chest and a history.

Q. And would that include x-rays?

A. X-ray was not a requirement, but if the examining physician wanted an x-ray, he could

ask for one.

Q. And during the years you were on the Pneumoconiosis Panel, from '63 to '66, did you ask for x-rays for any of the Rochdale workers?

A. I didn't have to, because at Rochdale, they had their own medical surveillance medical program running concurrently, and their physician would examine their employees every two years as well.

So that they would examine in the intercurrent years between the two years required by the panel and then the company's requirements.

And they were all x-rayed, and when we went out as representing the panel to do these exams, we were provided with their x-rays.

Q. So --

A. So at that particular facility, we did not have to request x-rays. They were given to us.

Q. So at the Rochdale plant for Turner Brothers, Turner Brothers would do medical exams every two years and they would take an x-ray as part of that exam?

A. Right.

Q. And then you would come in on the odd year?

A. That's correct.

Q. And do your own exam, correct?

A. Yes.

Q. So these men and woman actually were seen once a year, one year by you and the next year by Turner Brothers?

A. That's correct, unless either the panel or the Turner Brothers physician wanted that frequency increased.

Q. And did the frequency of exams have anything to do with the type of work that the workers were doing, or did it apply equally to all of the workers in the plant?

A. It applied equally to all of the employees who were in what we would call the scheduled areas. Those were the areas where the asbestos industry regulations of 1931 apply.

Q. And the x-rays that were taken then of the Rochdale workers were taken by the Turner Brothers medical staff, and then when you would come in for your bi-annual reviews on the Pneumoconiosis Panel, you would request the most

recent x-ray for the workers, is that correct?

A. We were given the package.

Q. So this would --

A. We didn't have to request at Rochdale.

Q. Would the package then include all of the x-rays that had been taken?

A. All of the serial x-rays that had been taken.

Q. And what was it, or what criteria were there on these periodic exams that you did on the Pneumoconiosis Panel that could disqualify a worker from working in the plants?

A. Well, some, I already mentioned to you.

The presence of TB or development of other chest diseases, et cetera, that, in our opinion, made these people appear to be more susceptible to the development of asbestosis, or perhaps if not more susceptible, because they were already compromised more severely should they develop any of these diseases.

We were also looking for the clinical findings that were associated with asbestosis.

And we took the finding of the basal crepitant rales as being extremely significant, even in the absence of clear-cut radiological findings.

Q. So would it be fair to say that during those years, from '63 to '66, when you were on the Pneumoconiosis Panel, that when you were looking at workers from the Turner Brothers Rochdale plant, a determinant factor in determining whether that worker had asbestosis was whether there was basal crepitant rales?

A. That was a significant factor, yes, not the only one, but a significant one.

Q. And in the absence of basal crepitant rales during those years from '63 to '66, could you make or did you make a diagnosis of asbestosis?

A. We would probably have been reluctant to do so.

Q. Do you recall ever making a diagnosis of asbestosis during those years for any of the Rochdale workers who did not have basal crepitant rales?

A. I don't recollect.

Q. Let me ask you this: Was the

presence of basal crepitant rales a criteria for disqualifying a worker from working in the scheduled areas from '63 to '66?

A. Not just -- I think I said earlier on, one criteria would not have been sufficient.

The Pneumoconiosis Panel looked for a number of criteria and a combination of any two would have been sufficient.

And those included basal rales, radiological appearances, an occupational history of exposure, adequate occupational history of exposure.

Q. So if you had any two of those three criteria, that would disqualify you from working?

A. That would usually be sufficient to consider a diagnosis of asbestosis.

And if you had made a diagnosis of asbestosis, then we had the right to suspend an employee from further employment in that particular occupation where he was considered to be -- where he continued to be exposed.

Q. From '63 to '66, when you were on the pneumoconiosis unit, did you, Dr. Lewinsohn, suspend or ask that any workers be suspended at

the Rochdale plant because of a diagnosis of asbestosis?

A. To the best of my recollection, I did.

That was usually a decision made by two physicians, not simply by one.

Q. Two physicians on the Pneumoconiosis Panel?

A. Yes.

Q. Would all five of you on the panel, from '63 to '66, go to Rochdale, or were there just certain ones who would?

A. No, we all rotated through Rochdale.

Q. And in the three years that you were on the panel, from '63 to '66, can you tell me how many workers the Pneumoconiosis Panel suspended from work at Rochdale because of asbestosis?

A. No, I can't tell you that. I don't remember.

Q. But do you recall at least personally doing that on one or more than one occasions?

A. I do, yes.

Q. And if you had to estimate the number of workers who were suspended by the

Pneumoconiosis Panel from '63 to '66, can you give me any ballpark estimate of how many that would be?

MR. WILL: Excuse me, Bob.

He would know how many he participated in, but not necessarily if some other panel went to the plant and he wasn't involved.

MR. BROWNSON: Let me rephrase the question.

Q. Do you know how many workers, can you estimate for us how many workers you suspended, or a panel that you were a part of suspended from the Rochdale plants from '63 to '66?

A. Probably not more than one or two.

Q. And do you know if there were other workers suspended during those years by other members of the Pneumoconiosis Panel at Rochdale?

A. I can't say that I know that.

I can say that there probably were.

Q. Let me talk about these workers that you do recall suspending from the work in the scheduled areas from Rochdale when you were on the Pneumoconiosis Panel.

I take it that these workers were suspended because a diagnosis of asbestosis was made in those workers, is that right?

A. I can't get into that depth of, you know, reasoning.

I just don't know, at this moment in time, why they were suspended, but there were a number of reasons why they could have been suspended, and that's the best answer I can give you.

Either they may have had asbestosis or been -- had criteria consistent with the diagnosis of asbestosis.

They may have been suspended for other reasons. In other words, other physical reasons which we considered made them more susceptible.

Q. During the years '63 to '66 that you were on the panel, do you recall seeing any new cases of asbestosis diagnosed at Rochdale?

A. Do I recall? I'm thinking very hard and I'm sure there were.

But I, in my own mind, can't picture them, if you know what I mean.

Q. Let me ask you this: Would it be fair to state that there were cases of asbestosis diagnosed at Rochdale that occurred as a result of asbestos exposure after 1931?

A. Definitely.

Q. And do you know of any patients who died of asbestosis from exposure at Rochdale after 1931?

A. Yes.

Q. And how many such patients are you aware who died of asbestosis from exposure that they sustained at Rochdale after 1931?

MR. WILL: Excuse me.

Do you mean was he aware of when he was on the panel or is he aware of now?

MR. BROWNSON: That's a good point.

Q. Let me ask you this, that you're aware of now.

A. How many?

Q. Yes.

A. Without going back to statistics, I wouldn't like to hazard a guess.

Q. Do you know if there were more than three workers who have died from asbestosis as a

result of exposure incurred after 1931 at Rochdale?

A. Do I know of more than three?

Q. Right.

A. There were obviously more than three, because otherwise, Richard Doll's epidemiological studies would not have been done, and other mortality studies could not have been done at Rochdale.

Q. During the time you were on the Pneumoconiosis Panel from '63 to '66, are you aware of any asbestos death that occurred during that period of time from workers at Rochdale?

A. I'm aware there were deaths, yes.

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Q. During the years you were on the Pneumoconiosis Panel from '63 to '66, did you see lung cancers among workers at Rochdale that you considered to be related to asbestosis?

A. That's such a small corridor of time.

Q. Right.

A. And I subsequently went to work for 10 years at Rochdale, that to separate --

Q. I know you did.

A. -- what I saw on the panel from what

I saw when I worked in the company, I find virtually impossible.

Q. I'm going to talk in a minute about what you saw during the years that you worked at Turner Brothers. Maybe we'll expand those questions.

But let me ask you this: Did you see any, during the years you were on the Pneumoconiosis Panel, did you see any cases of mesothelioma from workers at Rochdale?

A. At Rochdale?

Q. Yes.

A. I can say no.

Q. How about from other asbestos plants?

A. I can answer yes to that.

Q. And what cases of mesothelioma did you see arising among workers in asbestos plants when you were on the Pneumoconiosis Panel from '63 to '66?

A. I can recollect seeing my very first case of pleural mesothelioma in that period.

And, as far as I'm aware, I probably saw personally at least one other case.

Q. Was this a pleural or a peritoneal

mesothelioma?

A. I believe they were probably both pleural.

Q. And do you know what work history the two workers had who had the pleural mesotheliomas that you saw when you were on the panel from '63 to '66?

A. I can't tell you about the other one, if there were any others, I can't tell you about those.

But I do certainly know about the first one, because again, that was my first and I'll always remember that case.

And --

Q. What do you recall about that case?

A. He was a very unusual case because he worked at Perodo, which was a brake lining manufacturing or friction materials company, perhaps, I should call it, also belonging to the Turner and Newall organization.

And this particular man had worked there for a long time and was the first case of mesothelioma, or I believe almost, of asbestos-related disease, that had occurred from

that particular plant.

Q. You mentioned earlier that there were these three diagnostic criteria for asbestosis that you used from '63 to '66 when you were on the panel.

And as I understand them, they were a crepitant rales, number one, number two was findings on x-ray, and number three was a history, occupational history of asbestos.

And I am --

A. I don't remember whether we, at that time, also looked at lung pulmonary function to see whether there were changes of -- restricted changes in pulmonary function, but we certainly did in some cases, do have pulmonary function tests done.

Q. So you recall, during the year '63 to '66, you were doing pulmonary function tests on asbestos-exposed workers?

A. Only if indicated.

Q. What were you looking for at that time, restrictive?

A. Restrictive changes and a reduction in the diffusing capacity.

Q. And what would indicate to you that a pulmonary function test was in order during those years?

A. I guess if there was any doubt about the diagnostic criteria; in other words, if we felt that the radiological changes were minimal, were absent and yet some of the other criteria were present, we may have wanted to do some pulmonary function test, just to give us another method of assessing the individual's impairment, basically.

Q. Do you remember suspending any workers from Rochdale while you were on the panel from '63 to '66 as a result of a result of pulmonary function deficit?

A. No.

Q. Do you remember any workers from Rochdale during those years --

A. I beg your pardon?

Q. Okay.

A. Let me give you -- I think, you know, let me explain something to you.

People who were suspended, the individual did not necessarily have to stop

working.

Q. No, I understand that.

As I understand it, he was suspended from working in a scheduled area, is that right?

A. But he could refuse, he could go on working if he refused to be suspended.

Q. Oh, okay.

A. It wasn't an absolute suspension. That is one thing, however, and in those people who we suspended, we always advised them to put in a claim for asbestosis.

And in order to get asbestosis, they had to appear before a Pneumoconiosis Medical Board consisting of two members of the panel.

And when they were boarded, when they came -- and they weren't boarded at Rochdale, they were brought into Manchester for boarding.

When they had the board, at that time, we would do a spirometry on them. We would also x-ray them again.

So when they were seen in Manchester, they had a more thorough examination and that included a test of lung function.

And what we were looking for there in

an asbestosis case was restrictive defect.

However, we were also looking for any other pulmonary defect, because under our regulations, somebody who had an aggravating factor, had asbestosis, but also had some other aggravating factor that contributed to the disablement, and wouldn't have done so had they not had the asbestosis.

That was added on as a supplementary rating, and that was often based upon the finding of lung function of concomitant construction.

Q. Let me see if I have got this straight. You'll have to bear with me.

As a member of the Pneumoconiosis Panel from '63 to '66, you could recommend suspension of a worker from a scheduled area at Rochdale, and that worker could choose to accept that or not?

A. Correct.

Q. But you would also recommend, if one of you recommended suspension, that the worker put in a claim for compensation?

A. Correct.

Q. And in your experience, when you

recommended suspension of a worker at Rochdale for asbestosis, did those workers then make claims for compensation?

A. Some did and some did not.

Q. And of those who did, they then would have to go to Manchester and appear before two members of the Pneumoconiosis Panel?

A. Who constituted a board.

Q. Who constituted a board.

And that is what you called being boarded?

A. Right.

Q. And at that time the worker appeared before the two members of the panel on this board, and he would again be examined?

A. Correct.

And the two members of the board examining that person would probably not be the same, not have -- one of the persons that originally suspended them and seen them would not be a member of that board.

It would be two other members of the panel.

Q. Do you recall being a member of one

of those board panels at Manchester for the Rochdale workers?

A. Oh, yes.

Q. And on occasions, when you were a member of that board panel, or a board panel from '63 to '66, do you recall doing spirometry or pulmonary function testing on some of the Rochdale workers in connection with their compensation claim?

A. That is where I have difficulty.

I can't answer that, other than the spirometry that was done when they were boarded.

Q. So you recall that spirometry was done when they were boarded; you just can't recall whether you did it or not yourself?

A. No, I'm saying, I can't recall going on and doing a whole battery of lung function test. Spirometry was going on.

Q. You recall doing the spirometry?

A. Yes, we did not have facilities for doing any more than that.

Q. Okay, now I'm clear.

Do you recall recommending or granting, whatever your powers were, compensation

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF PENNSYLVANIA

IN RE: ASBESTOS PRODUCTS LIABILITY LITIGATION (NO. VI) — Civil MDL 875

This Document Relates to:
UNITED STATES DISTRICT COURT
FIFTH DIVISION
DISTRICT OF MINNESOTA

CONWED CORPORATION,

Plaintiff, — 5-92-88

-against-

UNION CARBIDE CHEMICALS AND PLASTICS COMPANY, INC., (f/k/a Union Carbide Corporation),

Defendant,

-and-

UNION CARBIDE CHEMICALS AND PLASTICS COMPANY, INC. (f/k/a Union Carbide Corporation),

-against-

OWENS-CORNING FIBERGLAS CORPORATION, et al., WALKER JAMAR COMPANY, A.W. KUETTEL & SONS, INC., API, INC., and MacARTHUR COMPANY,

Third-Party Defendants.

October 18, 1994
HILTON C. LEWINSOHN (Cont'd)

Q. Let me put the question to you then, and I'll ask you to explain it to me, which would be better.

How would this compensation for aggravation of a pulmonary condition work when you sat on that board from '63 to '66?

A. It's a long time ago. But from my recollection, if somebody had asbestosis, and as a result of the examination that we conducted, and the findings on the spirometry, and whatever else we considered, we decided, for example, that the disability was 20 percent, but that he also had evidence of chronic bronchitis, and that the presence of the chronic bronchitis would increase his disability to 30 percent, then he would be given something for that bronchitis as an aggravating factor because it was making his asbestosis worse.

Q. I follow you.

And this was a function of the Pneumoconiosis Board --

A. Right.

Q. Can you give me some examples that you can recall, other than bronchitis, that would

cause aggravation of an asbestosis case that you saw as a member of that board?

A. Well, it could work the other way around as well.

If somebody had asbestosis, but also was found to have, say, a heart condition, the development of the pulmonary fibrosis would aggravate that heart condition.

Q. And would then that worker get some --

A. That worker could possibly get some additional benefits because he was worse than he would have been had he not had the asbestosis.

Q. So would it be fair to say that, as long as the asbestosis caused a portion of a worker's disability, that other aggravating circumstances could --

A. Were taken into account.

Q. -- circumstances be aggravated by the asbestosis would increase the disability?

A. Yes.

Q. And ones you can recall then would be, for example, bronchitis and heart condition?

A. Heart conditions.

Q. Anything else that you can recall?

A. Well, yes, things like asthma, any preexisting pneumoconiosis.

Say, the man had been a coal miner and there was evidence of a mixed pneumoconiosis. I can't remember too exact.

Q. As a general proposition, would it be fair to say that, by the time you were on the Pneumoconiosis Panel from 1963 to 1966, you recognized that asbestosis caused by asbestos exposure could aggravate a number of other pulmonary problems?

A. Yes. I would say, that's a reasonable statement.

Q. And would it also be fair to say that by the time you were on the Pneumoconiosis Panel in 1963 to 1966, you recognized that it was good practice that men working in the asbestos plant needed to have these qualifying exams before they should be working in that plant?

A. Oh, yes, that was recognized in 1931.

Q. And that they should have periodic exams during the course of their work in the scheduled areas of the plants?

A. That was established practice.

Q. Let me just make sure I'm clear on what the schedules there were.

As I understand it, the factory regulations of 1931 established what these scheduled areas were?

A. Well, I don't think they called them scheduled areas, but they sort of established the conditions under which these regulations, to which these regulations apply.

Q. Let's take the Turner Brothers Rochdale plant as an example.

From 1963 to '66, when you were on the Pneumoconiosis Panel, I take it, there were certain scheduled areas within that plant where the regulations apply.

Correct?

A. Well, they applied throughout the textile plant because it was where asbestos was being handled in the raw state.

It was being opened. It was being braided. It was being woven, spun.

All of those were criteria.

Q. So would it be fair to say that the

regulations applied wherever the asbestos was being used in the plant?

A. In that plant, yes.

Q. Right.

And would they apply, for example, to the men who were unloading the asbestos as it arrived at the plant?

A. Yes.

Q. And let's stop there and talk about that a little bit.

How would the asbestos arrive at the Rochdale plant?

A. When?

Q. From '63 to '66, when you were on the Pneumoconiosis Panel.

A. At that time, the fiber was shipped in burlap bags, Hessian bags, as we called them.

And they would officially, all asbestos was imported -- Rochdale used largely chrysotile from Rhodesia, some chrysotile from Canada, but most of the chrysotile from Rhodesia.

This would come in these bags which were handled at the docks. They were just loose bags.

Apparently, in those days, they were useful as ballasts, so that when ships were latent to bring the asbestos fibers from whichever country was exporting them, they could -- the bags could be placed all over the ship's hull as ballasts.

They were handled on the docks with men by hooks. They would plunge their hooks into the bags and then sling them onto the ships.

And they would plunge the hooks onto the bags and unload them from the ships.

And then they would pluck their hooks into the bags and put them on trucks or whatever, rail cars, and they would arrive at the plant with holes in them, and with fiber spilling out of them.

And they really weren't a pretty sight at that period in time.

Q. So I'm trying to stick in this period 1963 to 1966, and I realize it's hard for you to distinguish that period.

A. Well, I'm talking about that period.

Q. So during that period of time, from 1963 to 1966, the asbestos would arrive at the

Rochdale plant by truck or rail?

A. Yes.

Q. And first of all, was it a truck or was it rail?

A. I don't remember.

Q. So a truck or rail, it would arrive at the plant, and it would be packed in these burlap Hessian bags.

And what were they, about 100 pound bags?

A. I don't know what they weighed. I can't tell you. I don't remember.

Q. So the fiber would be packed in these bags and arrive at Rochdale, and Rochdale workers would have to unload the bags of asbestos fiber out of the truck or rail car, I take it, and bring them into the plant?

A. Yes, there was a big hoist in the plant, and at one time, the trucks actually used to drive into the hoist.

This wasn't in 1963 to 1966. This was 1963 to '66.

I'm not sure how they got the bags into the plants, because I wasn't working at that

time there, but I saw the bags there.

Q. In any event, workers at Rochdale would have to unload the bags off the truck or the train in some physical fashion?

A. Yes.

Q. Are you telling us that the asbestos regulations applied to the workers doing that unloading?

A. Yes.

Q. And in your experience, from what you saw, those bags they had these holes in them, and you say they were not a pretty sight.

Why is that, because they were broken open?

A. They were often damaged and finer fiber would be coming out of them.

Q. And did you observe the damaged bags being unloaded?

A. Not in that period of time.

Q. Let me jump ahead to a later period of time, after you began working for Turner Brothers.

Would you observe the bags, damaged bags at Turner Brothers being unloaded?

A. Well, I'm trying to think. And I think, by the time I started working for Turner Brothers, they were -- you know, I think there were still bags coming in.

Whether I actually saw them being unloaded myself, I don't remember.

Q. Let me ask you this.

At the time you were on the Pneumoconiosis Panel, from '63 to '66, did you recognize that handling, that workers handling damaged bags of asbestos coming into the plant, could be exposed to asbestos?

A. Yes, those workers the were handling. They were covered under those regulations. They were handling the raw material.

Q. Do you know if the regulations, during that time period, '63 to '66, would have covered those workers if the bags were not damaged; in other words, if they were just unloading undamaged bags?

A. I guess, as with all regulations, there is always some room for interpretation.

As far as I'm aware, at Rochdale, they would have been brought into the scheme for

medical examination and been seen by the panel.

I can only speak for that.

Q. Are you aware of any, and I'll broaden this question to any time from '63 up after '66, when you worked at Turner Brothers.

From 1966, until you left Turner Brothers, are you aware of any air measurements of asbestos fiber levels at the Rochdale plant in the area where bags were being unloaded?

A. The air measurements were made throughout the plant at all areas where fiber was being -- where fiber could be generated to the air.

Q. Do you know when those measurements began?

A. Oh, dear. I did know precisely, but sitting here like this, without anything in front of me, I can't tell you.

Except to say that they certainly began a long time before I ever went there.

Q. And they also began before 1963?

A. Yes. What would have changed possibly is the method of counting because measurements may go back in time.

In fact, they had described in lots of the literature about Rochdale.

Q. And at the time, let's take the time you began at Turner Brothers, 1963-'66, '59, that time.

I take it, air measurements were being made at the plant in Rochdale?

A. They were.

Q. Correct?

A. Yes.

Q. And do you know if they were being made at that time in the area where workers were unloading bags of asbestos off the trucks or the train cars?

A. To the best of my recollection, yes.

Q. And who was taking the air measurements at that time in 1966?

A. We had a -- in 1966?

Q. Right.

A. There was a department known as the Health Physics Department, under the supervision of Dr. Holmes, Steve Holmes.

And his technicians would be taking the measurements.

Q. Is Dr. Holmes of Turner Brothers?

A. Dr. Holmes of Turner Brothers, Ph.D.

Q. Do you know, as of that time, 1966, let's take that time, because maybe it will stick out in your mind, because that's when you began working for Turner Brothers.

As of 1966, do you know what the unit of measurement was that was used for those air measurements?

A. By 1966, they were doing fiber counts.

Q. Were they doing --

A. Fibers per millimeter.

Q. What fibers were they counting, PCC? Do you know?

A. You mean --

Q. Let me ask you this: How was the fiber defined?

A. A fiber was defined as having a 3 to 1 length to diameter aspect ratio.

Q. And did it have to be greater than any certain length or diameter?

A. That I don't remember. I don't remember.

Q. You remember the 3 to 1 length aspect ratio?

A. Right.

Q. What technique was used in '66, do you recall, to count the fibers?

A. It was a microscopic technique.

Q. Do you recall if they used the membrane filter at that time, or the membrane impinger?

A. They were using membrane filters.

Q. And --

A. The membrane filter technique was very much developed at Rochdale.

Q. And would it be fair to say that Dr. Holmes was in charge of that?

A. Yes.

Q. Do you know when he developed or when he began using the membrane filter technique to count asbestos fibers at Rochdale?

A. I could only say in the early to mid-sixties.

I don't know. That's my guess. I wouldn't like to guess.

Q. As far as you recall, by the time you

began work at Turner Brothers in 1966, was that technique in use for counting asbestos fibers at Rochdale?

A. It was in use at Rochdale, yes.

Q. And then they were analyzed microscopically, I take it?

A. Yes.

Q. And again, did Dr. Holmes do this?

A. He was in charge of it.

Q. Do you know the microscopy technique that was used?

A. There were always discussions about that.

I believe that they used a grid counting method, if that is what you want to know.

Q. They used a grid counting method.

Do you know what magnification was used?

A. No, I'm not an industrial hydrogenist.

If I did know, I don't remember.

Q. Do you have any recollection, as you sit here today, what the asbestos fiber levels were at or about 1966 in areas where the asbestos

was unloaded into the plant?

A. Well, that probably would not have been -- again, I doubt it would have been reported as unloading.

It would have been grouped under a heading in all that took place in what is known as the fiberizing area and, you know, the bags would -- or in the warehouse.

Q. Let me ask you this: What I am trying to get at is -- I don't mean to cut you off.

I'm trying to determine if you recall what the fiber levels were at or about 1966 in that time period.

A. Where?

Q. Before the asbestos was fiberized, in other words, up to the point it was fiberized.

A. Not specifically, no.

Q. Do you recall generally what the levels were within a range in that area, before they were fiberized?

A. No.

Q. Do you recall them being less than 10 fibers per cubic centimeter?

A. I don't recall.

Q. Let me ask you this: I said I'd ask you one more question, let me just finish this train of thought.

At or about 1966, air measurements, fiber level air measurements, were taken at Rochdale, as you understand it, throughout the process, correct?

A. Yes.

Q. Do you have any recollection, as you sit here today, of any of those measurements at any step along the line?

A. Yes.

Q. Which ones do you recall?

A. I can probably -- I can recall that, in the carting department areas, there would be levels which ranged between 10 fibers per cc up to 20 or 30 fibers per cc on occasion.

Q. That would be in the carting department?

A. Right.

Q. And you'll have to forgive me. I don't know what the terms are for the process.

But I understand the asbestos was

brought into the plant and was fiberized by some method.

What was the original method used?

A. The fibers were dumped into a hasher.

By the time I went there, in '66, this was done with exhaust ventilation over the hopper, and it was dumped into a big drum, which was totally enclosed, where it was just rumbled around inside the drum.

I think they added some sort of a mineral oil to it at one time, just to help to get the fibers to break up.

Depending upon how much they wanted the fibers opened, so they would regulate the speed and the length of time that the drum resolved.

And it would then go from the drum, after having been preliminarily opened into-- I forget what they called the machines -- but other machines that -- like hammer mills.

Q. Hammer mills?

A. Right, which opened them further.

Then once they were opened to the full extent that they wanted them open, they were

rebagged.

At that time, the bags that we used for internal use were polypropane bags with nylon impregnated, and they had nylon zip fasteners, so that they were, for all intents and purposes, impervious.

These bags were then taken to the back of the carting engine, and then again, were manually opened and the material dumped into the back of the cart.

Q. And the carting engine is, generally speaking, what sort of machine?

A. Well, the carting engine takes the partially opened fibers, and then parses it through rollers, two rollers, which are moving in opposite directions.

One is going that way, and the other is going that way, and they have got needles on them.

And it teases the fibers and layers all of the fibers in one direction.

Q. Okay.

A. And sometimes there would be more than one set of these rollers, depending upon how

much they wanted to open and fluff up this fiber.

And then it came off at the end of the car as a fleece, which is called a -- I forget what they call the fleece.

And then it could be parsed through dividers and wound onto spools in thin strips, called sliver.

Q. At or around the time you began at Turner Brothers, were these operations done under ventilation?

In other words, was there ventilation equipment at the point of operation?

A. Yes, there was ventilation equipment there.

But that was constantly being improved upon, because it was recognized that this was a difficult process from the dust control point of view.

So all of the time that I was there, almost weekly, something different was added to try to improve the ventilation.

Q. So during the time that you were at Turner Brothers, and quickly, what time period is that, '66 to what?

A. '76.

Q. There was constant updating and improvement of the ventilation equipment in the dusty areas?

A. All the time.

Q. And do you know if are you familiar with a type of equipment known as a cyclone?

A. Yes, I've heard of a cyclone.

Q. Do you know if those were used at Turner Brothers?

A. I think those are more useful for ambient air and environmental type measurements than for uses in a plant environment.

MR. GERSON: Could we just take a break?

(Luncheon recess 12:55 p.m.)

(Afternoon Session: 1:30 p.m.)

BY MR. BROWNSON:

Q. Let me take you back, Doctor, to at or about 1966, when you began at Turner Brothers.

And in the Rochdale plant, you had mentioned that air measurements, air fiber measurements that you recall were in the 20 to 50 fiber cubic centimeter range, and those were in the carting room, as you recall it?

A. I think I said they ranged from 8 to 10 up to 20 to 30.

I can recall seeing figures like that.

Q. Do you recall if you mentioned that was in the carting room or at the carting machine?

A. In the cart room by the cart -- well, they tested by the carting engines where the people worked.

Q. And do you know if the ventilation was in operation at the time they were doing those tests?

A. It should have been.

Q. And do you know if those air fiber level measurements were attempted to approximate

the fiber level in the air that the workers would breathe?

A. These were personal samples.

Q. And by personal samples, you mean they actually put a sample on the man's lapel?

A. Correct.

Q. And so it was an effort to get the sample at or near the man's breathing zone?

A. Correct.

Q. Do you remember if, over time, over the 10 years you were at Turner Brothers from '66 to '76, if these air fiber measurements were done continuously over that period of time?

A. Yes, there was an ongoing monitoring program.

Q. Do you know, was this required by law in Britain at that time, or was it something that Turner Brothers did on their own?

A. No, it wasn't required by law.

Q. Again, taking the area of the carting machine, do you know how those air fiber measurements progressed over time?

In other words, did they always stay at about the same level, or were improvements made

and they decreased over time?

A. Oh, they came down over time. Over the 10 years I was there, they came down.

Q. Let's go up to, at or around 1976, when you left Turner Brothers, at that point in time, do you recall what those levels would have been?

A. By that time, at Rochdale, I would say, on most of the carting engines, they got the levels down to below 5.

Sometimes -- when I say below 5, I can't tell you how much lower, but below 5.

Q. Do you know if 5 fibers per cc was a standard in Britain for asbestos in air?

A. There was never any promulgated standard in Britain.

Q. Was there any sort of recommended level?

A. At what point in time?

Q. Let's take 1966.

A. In 1966, as far as I remember, the factory inspectorates were using the American Conference of Governmental Industrial Hygiene Standard, which was expressed in mills of

particles per cubic foot.

And I think, in 1966, that was 12 mill particles per cubic foot as measured by the impinger technique.

Q. But at the same time, as I understand it, Turner Brothers were doing their own measurements using the membrane filter, and 5 percent per cc, as opposed to mills of particles per cubic foot?

A. That's correct.

Q. And who was it who adopted or used the ACGIH standard in Britain in 1966?

A. The factory inspectorate.

Q. And do you know, was the factory inspectorate doing their own air measurement in asbestos plants at or around 1966?

A. I don't know. I assume. This is an assumption.

MR. WILL: Don't assume.

A. I assume, but I don't know.

MR. WILL: Don't guess.

Q. When you were with the Pneumoconiosis Panel in 1963 to '66, do you recall there being industrial hygenists employed by the factory

inspectorate employed by the asbestos plants?

A. The factory inspectorate had an industrial hydrogen branch.

I don't recollect them -- what period of time are you talking about now?

Q. '63 to '66.

A. I wouldn't know where they went, but there was an industrial hygiene branch.

Q. Let me now move ahead to the time period of 1966 to 19'76, when you were with Turner Brothers Asbestos Company.

When you began with them, what was your position with the company?

A. My title was medical officer.

Q. Were you the chief or head medical officer for Turner Brothers --

A. Well, I was the only full-time medical officer, but I didn't have the title of chief medical officer at that time.

Q. So were you the de facto chief, but without the title?

A. If you like.

Q. At that time, what facilities did Turner Brothers have that you were concerned with

in your duties as medical officer?

A. You mean what type of facilities?

Q. Let me rephrase the question.

In 1966, I assume Turner Brothers had more than one factory or facility, correct?

A. Using facility as factory?

Q. Right. Let's start with that.

What factories did Turner Brothers have in '66?

A. They were the two factories I've already mentioned to you, Rochdale and Hindley Green.

There was a glass fiber plant in northern Ireland in Dungannon, in Northern Ireland.

Essentially that was it -- sorry, there was a small cotton mill in a town called Leigh.

Q. As medical officer, were you concerned with, or did your duties require you to have activities in all four of the plants?

A. Yes.

Q. And very briefly, on the cotton mill in Leigh, did you see, during the time you were

with Turner Brothers from '66 to '76, did you see any sort of pneumoconiosis, byssinosis or anything coming out of that cotton mill?

A. As far as I'm aware, there was no byssinosis diagnosed at that mill during the period I was there.

Q. Do you know had there been in prior years?

A. I don't know.

Q. And this glass plant in Northern Ireland, was there any sort of pneumoconiosis or fibrosis among those workers during the years you were at Turner Brothers?

A. No.

Q. Was there any asbestos used at that plant?

A. No.

Q. That takes us to the two asbestos factories that Turner Brothers had.

Were both of those factories in operation during that 10-year period from '66 to '76?

A. Yes.

Q. And did you oversee the medical

condition, if I can use that term, of the workers in those two plants for those 10 years?

A. Yes.

Q. And was the British factory inspectorate also doing the sorts of duties that you told us that you were doing from '63 to '66?

A. The Pneumoconiosis Medical Panel?

Q. Right.

Did that continue after you became medical director of Turner Brothers?

A. Oh, yes.

Q. So would it be fair say today that, from '66 to '76, the workers at the Turner Brothers Asbestos plants had the Turner Brothers examinations every other year, and they also had the Pneumoconiosis Panel examinations every alternate year?

A. That's correct.

Q. And I don't want to go through this all again, but were those the same that they had been during the '63 to '66 time period, in terms of what was being done and what was being looked for, or did that change?

A. It changed at Rochdale, basically.

Q. What was the change at Rochdale?

A. The x-rays used to be taken by a mobile van that came and took them.

And when I came to Rochdale, we purchased our own equipment, so we took our x-rays on-site with our own equipment.

In fact, this was also portable equipment. We tried to take it to Hindley Green. It didn't work out very well.

The other thing at Rochdale was that I established a pulmonary function lab on-site that was capable of doing more than just spirometry.

Q. What sort of pulmonary function work could you do at that lab?

A. We could do lung volumes, and we could do the carbon monoxide diffusing capacity.

We also measured the carbon dioxide tension by an indirect method.

Q. Over the course of time from '66 to '76, as far as you knew, did the British Pneumoconiosis Panel criteria change for awarding compensation in asbestosis cases, or was it the same as what you told us about earlier?

A. '66 to '76?

Q. Right.

A. I think it stayed essentially the same.

Q. As far as you were concerned, from the time period '66 to '76, were the diagnostic criteria for determining whether a man should be suspended or not, or recommended that he be suspended or not, the same or did those change?

A. I think those stayed essentially the same as well.

Q. At the Rochdale plant, from '66 to '76, did Turner Brothers continue to use the Rhodesia and the Canadian chrysotile?

A. Well, as you know, Rhodesia proclaimed the unilateral declaration of independence and there was a trade embargo and sanctions imposed on Rhodesia.

And so the Rhodesian fiber was no longer available after about '66 or '67, whenever that occurred.

So that the amount of fiber that then came from Canada increased after the inventory of Rhodesia fiber was used up.

Q. Would it be fair to say that, at the time of the boycott on trade with Rhodesia, or after that time, the fiber that was used at Rochdale all came from Canada?

A. Some of it. Not all from Canada. Some of it, I believe, came from Swasea. But the majority was from Canada.

Q. Let's take the time period at or around 1966, when you began with Turner Brothers.

What was the volume of asbestos that was being used at the Rochdale plants, in rough figures?

A. I don't know.

Q. Did that pretty much stay the same over years or did it increase or go down in the years that you were there up until '76?

A. It's difficult to answer that because it obviously fluctuated with economic cycles.

Q. And where did the chrysotile come from that was used at Rochdale?

A. I guess some of it came from Casio. Some may have come from the Bell mines or they may have come from other companies, but most of them, I think, were Casio or Bell mines.

Q. Weren't the Bell mines owned by Turner and Newall at that time?

A. Yes.

Q. But the Rochdale plant didn't necessarily have to buy all of their chrysotile from Bell, they could buy from other places?

A. Sure.

Q. Do you know if the Rochdale plant ever used Union Carbide asbestos during the years you were there?

A. Never saw it.

Q. Let me ask you this. I'm jumping ahead a little bit here, but when was the first time you heard of Calidria asbestos?

A. That's again a difficult question to answer. But with certainty, when I joined Union Carbide in '82. I can't tell you with certainty whether I heard of it before then.

Q. Let me go back to the time that you were medical officer at Turner and Newall from '66 to '76.

During that period of time, what portion of your work or your time would be taken up with asbestos-related disease work?

A. Most of my time.

Q. In other words, I'm just curious, were there other things you did, let's say if a worker had an injury or got his finger caught in a machine?

A. We had a dispensary, first aid department, where they treated those things. They would call me in if they needed my business but most of our injuries were sent off to the local hospital right away, which was only a mile down the road, so we didn't do anything major on our premises.

But to answer your question, I was involved in all sorts of things that an occupational physician gets involved in, giving advice about noise and hearing loss.

We had a glass fiber division at Hindley Green where, as you know, glass fiber was prone to cause itching and dermatitis. So I was involved in all of the fields of occupational medicine that a medical officer becomes involved in.

However, our major hazard was asbestos. And I suspect most of the largest

proportion of my time involved with matters pertaining to asbestos.

Q. What did the medical department at Turner Brothers consist of during those years '66 to '76 in addition to yourself? Were there others or was it just you?

A. Well, when I went there, there was a Dr. John Knox was still around as a consultant to Turner and Newall, and he used to come in periodically just to chat, talk about things. He didn't do any work in the department.

And after I guess a few years, I'm not sure how long it was, I was -- I had an assistant for a short period of time. First full time, then part time, then he quit and went into practice in the area. So most of the time I was single-handed.

There was a nursing sister, registered nurse in charge of the medical department in Rochdale and one at Hindley Green. And at Rochdale, I believe there was another registered nurse and then there were first aid attendants. And I had a x-ray technician and a lung function technician.

Q. Was there also a medical library of any sort there?

A. There was not a medical library. The company had on the site its research and development department, and in the research and development department there was a scientific library. And in the scientific library they used to review the literature, scientific and medical literature, and provide me with reprints, et cetera, from that literature.

Q. And do you know if they subscribed to medical journals at that library during the years that you were there?

A. To the best of my recollection, they subscribed to some medical journals.

Q. Do you know if one of the journals that they subscribed to was the British Medical Journal?

A. I really don't know because I would have got the British Medical Journal myself.

Q. At the time you began as medical officer at Turner Brothers Asbestos in 1966, did you make any effort to go back and review prior cases of asbestosis or other diseases that had

arisen at Turner Brothers to familiarize yourself with the situation?

A. You mean case by case?

Q. Well, I'm not sure how you might have done it. In any sense.

A. When I went to Turner Brothers, Dr. Knox brought me up to date with the work of Richard Doll and the cohorts that had been established and reported in the literature, and explained to me how those had been -- how the cohorts had been developed and what the findings were.

Q. Did you become familiar at that time with some of the old cases of asbestosis with Turner Brothers, such as -- I've gone through the literature and I've pulled out this case with this Mrs. Kershaw back in the 20's that was reported by Dr. Cook.

A. Well, I knew about Cook's case.

Q. That was Nellie Kershaw?

A. Well, I discovered eventually that that was Nellie Kershaw. I don't remember all of the details. If you have anything there that describes it --

Q. Actually, I went and pulled the paper, which was a paper in the British Medical Journal in 1924 called "Fibroses of the Lungs Due to the Inhalation of Asbestos Dust," by W.E. Cooke, and now you've got it there.

I'm just curious if as part of your your work or investigation or whatever you want to call it after you became medical director, if you went back and reviewed some of this old material arising out of the Turner Brothers works.

A. No, I didn't actually go back and do case reviews.

Q. Do you remember when this particular case came to your attention?

A. I'm trying to remember where I read about it, but I read a review, and I'm not sure who had published it either, in which they recounted the history of the development of the recognition of asbestosis. And in that review, which was shortly after I joined the company, I read about these various cases, the Montgomery and Cooke and Selher's cases, which were the early cases described.

I never went back personally and

researched those cases.

Q. As I understand it -- let me back up and just ask you this.

Is it fair to say that at least when you began as medical officer at Turner Brothers in 1966, you did make some investigation into the background of cases at the plant?

And I understand you didn't go case by case and look at them all, but you did do some checking, you spoke to Dr. Knox?

A. Yes. I brought myself up to date and learned what was going on.

MR. BROWNSON: I suppose for the record, let's just mark that since we've been looking at it.

We'll mark this as Lewinsohn 2.

(Whereupon, medical case from Dr. Cooke marked Lewisohn Exhibit 2 for identification as of this date.)

MR. BROWNSON: Just for the record, I had the reporter mark as Lewinsohn deposition Exhibit 2, the medical case from Dr. Cooke we were just looking at in July 26, 1924.

Q. Now, as I understand it, shortly after you began at Turner Brothers in 1966, there was a study done of workers of the plant for asbestosis; is that correct?

A. Well, as I told you, these cohorts had been established for follow-up, and a study had been published I believe in 1964 in the annals of the New York Academy of Sciences. That was the most recent one that I was aware of.

Q. The cohort presented at the New York Conference in 1964, was this a cohort of Turner workers?

A. Well, the cohorts have been presented the paper that was given I believe by Knox, Holmes, Doll and Hill, was a follow-up of the cohorts that had been established by Dr. Doll in 1955.

Q. This was a cohort from Rochdale?

A. Yes.

Q. And what was being presented in 1964 at the conference of the New York Academy of Sciences was a follow-up of that same cohort that Doll had looked at, or was this new additional people involved?

A. Well, you know, a cohort, the cohort is a living thing, and it wasn't one cohort. There were different cohorts being followed.

And what they were looking at was to see whether there were differences in the instance or in the causes of death. These were mortality studies. The incidents in the causes of death between people who had entered and worked in that factory at different periods of time.

So there was the one cohort that consisted of people who had worked more than 10 years prior to 1931; people who had worked for more than 10 years after 1931. That type of comparison, to show that the incidents of asbestosis had declined. And in the 1964 paper, I believe, the inference was that the incidents of lung cancer in persons first exposed after 1931 had declined to the extent where it was no greater than for the general population.

Q. Let me ask you this: Just to summarize this, at the 1964 conference sponsored by the New York Academy of Sciences here in New York City where we're sitting today, there was a paper presented concerning a cohort or group of

workers from the Turner Brothers Rochdale plant, correct?

A. Correct.

Q. And that conference, of course, was the conference that was chaired by Dr. Irving Selikoff and which was then published in the proceedings of New York Academy of Sciences or the proceedings of which were published in the annals of New York Academy of Sciences, correct?

A. As a supplement.

Q. As I understand it, though, the British Occupational Hygiene Society reviewed clinical and x-ray data on certain Turner Brothers employees who were employed in 1966.

And my question is was this a different group or is that the same workers?

A. Different. And it may have included some of the same workers, but this was not a mortality. The British Occupational Hygiene Society did not do a mortality, they did a morbidity study.

Q. So they were just looking at the workers employed, a group of the workers employed at the factory at Rochdale at the time in 1966?

A. Yes. What they did was -- yes, they were looking at a group of workers that met certain selection criteria with regard to exposure, and that were I guess not necessarily currently employed, but whose records were available for examination.

Q. And as I understand it, at the time you began as medical officer in 1966 you did some follow-up surveillance of this group of workers, would that be correct?

A. No.

Q. Let me work backwards.

I've got a paper here that you authored, entitled "The Medical Surveillance of Asbestos Workers," and it has even got a nice photo of you on the front here.

MR. BROWNSON: We'll mark that as Exhibit 3 and we'll work from there.

(Whereupon, paper entitled "Medical Surveillance of Asbestos Workers" marked Lewisohn Exhibit 3 for identification as of this date.)

MR. BROWNSON: We've now marked as Exhibit 3 this paper entitled "Medical

Surveillance of Asbestos Workers.

Q. You're familiar with that paper, I take it?

A. Yes, I am.

Q. It lists you as chief medical officer, Turner Brothers Asbestos Company Limited, Rochdale. And this was published in what journal?

A. I believe in the Journal of the Royal Society of Health. Public Health.

Q. And --

A. Royal Society of Public Health.

Q. It was published in 1972?

A. 1972.

Q. What I am trying to figure out, and I guess this is what I was trying to ask you before, what group of workers are being reported upon in this paper?

A. The people being reported upon in this paper were current employees of Turner Brothers Asbestos Company in Rochdale at that time, which was in 1972.

If I may just take one minute.

Q. Sure take a look.

A. Let me just take a look and see.

A. I would say that the report had reported on here were those that had passed through the medical department from May 1967 through -- I can't give you a definite end date, but 1972 sometime. Because that's what I am inferring from the information on page -- I can't see the page number, if there is one. Page 73 up in the top left-hand corner where the staple is.

On page 73, in 1967 the company purchased its own x-ray unit, and since then all new employees have been x-rayed during the first week of employment, working in asbestos areas are now x-rayed annually, and it goes on to describe what is done.

So therefore, in 1966 the company decided to equip a lung function lab which was operating by May '67, and I believe that this now, that the number reported on here are the numbers of people that were seen in that period of time.

Q. '67 to '72?

A. Yes. On the next page it says "preliminary results." Figures 2 and 3 illustrate the incidents of radiological changes in 10 years exposure groups, in 970 males and 317 females

exposed to asbestos.

So these were current employees.

Q. Right.

A. They could well have included some of the people that were studied in the BOHS group of people, but they weren't necessarily the same group of people.

Q. That's what I was trying to ask you before.

A. There was an overlap.

Q. Right. I'm sorry you had to go that long way around, but I had to make that clear to you.

The British Occupational Hygiene Society studied a group of workers who were employed, as I understand it, as of 1966, is that correct?

A. Again, without looking at the BOHS report to see what their criteria were, I can't say yes or no; all I can answer is that I was not involved in that particular study. Dr. Holmes, Dr. Knox and Dr. Holmes did it. But the records that were reviewed by Dr. Knox were from the medical department at Rochdale and the review was

done in 1966.

Q. And then your study of workers which are reported in this paper on 1972 may or may not have included some of those people, but what it did include was the people who had been seen in your medical department from about May of '67 to 1972?

A. Yes. And this is not a good paper. It isn't clear in its description of the population that was studied. That's the clearest I can give you based upon what I'm looking at now.

Q. I am just looking for your own recollection --

A. Yes.

Q. -- of the people who are included in this paper.

A. I think that's a fair recollection.

Q. As I understand it, Great Britain adopted an asbestos standard in 1970 which for chrysotile was two fibers per cc.

Is that correct?

A. Not entirely. Britian adopted new regulations in 1969, but there was no standard. The standards that the factory inspectorate would

uphold -- would enforce were published in the separate document which was I believe called Notes for the Guidance.

And they didn't carry the force of law. But bearing in mind their origin, the factory inspectorate probably would have been -- What's the word I'm looking for?

Q. Strongly encouraged.

A. Strongly enforced by a court of law or upheld by a court of law.

Q. And --

A. And those notes for guidance adopted the British Occupation of Hygiene Society's standard, in effect.

There was some gray areas.

Q. Let me ask you this: The British Occupation Hygiene Society standard that was adopted, as I understand it, had a standard or had a limit or standard or whatever you want to call it, for chrysotile asbestos, is that correct?

A. The British Occupational Hygiene published a recommended hygiene standard for chrysotile asbestos in 1968, I think it was, or '69.

Q. Do you remember what that standard was?

A. That standard was 105 fibers per cc, which meant when interpreted, that if you worked for 50 years, you could work at 25 fibers per cc to get up to 100 fibers per cc. It was a cumulative dose.

Q. Would that also mean if you worked for 10 years, you could have 10 fibers per cc?

A. Yes. I mean, that is the way you could interpret it.

Q. I'm wondering, did people interpret it that way?

A. No, not really.

Q. Because I guess the ultimate extension of that is that if you worked for one year you could be exposed to 100 fibers per cc, and certainly nobody considered that reasonable, did they?

A. No, that didn't make sense. Basically 50 years was considered a working lifetime.

Some people thought that that was too long. Very few people worked in the same job for

50 years. But nevertheless, 50 years, a working lifetime, two fibers per cc, 100 fibers per cc.

Q. What I am trying to do is take you back, and if you can recall this, please tell us. If you don't, please tell us.

I am trying to take you back to the time when you were medical officer at Turner Brothers Asbestos. Take the year '69, '70, when this standard was in effect.

Was that generally considered at that time to be a practical or de facto or some sort of standard of two fibers per cc, or was it considered something else?

MR. WILL: Excuse me. What do you mean by "generally considered"? Did he consider it?

MR. BROWNSON: That's a good point.

Q. Let me ask you this.

You've told us that the standard by the British Occupational Hygiene Society was 100 fibers per cc, which equates to two fibers per cc over a 50-year working lifetime.

A. Yes.

Q. And is that the way you understood it

at the time?

A. Well, that's the way it was.

Q. And my point is since you've told us that people really by and large weren't working 50 year lifetimes and people weren't exposed to 100 fibers per cc, what I am wondering is what did you consider to be the effect of that standard in terms of a limit that the workers should be at?

Did you just use two fibers per cc or did you use something else?

A. I thought that -- you're talking about my personal opinion?

Q. Yes, back in those years. I thought that two fibers per cc was an achievable standard for most of the industry.

And that based upon experience at Rochdale, which to some extent was not scientifically documented experience but based upon experience at Rochdale, wherein those departments where the levels had always been below two fibers per cc, the incidents of asbestos-related diseases had been, I would say negligible, if not entirely absent. And that was somewhat like the weaving shed.

So it appeared to me to be a reasonable standard and certainly a lot better than anything that we had officially accepted before.

But I did have, and I expressed some doubts at the time, I did have some doubts on the completeness of the study that had been done in terms of the identification of the population and the criteria which were used to determine what was significant evidence of early disease, to relate back to the dust levels that were available and to correlate with those dust levels.

So it was the best available at the time.

Q. Let's do this.

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Let's look at the tables that you just referred to in your paper, Exhibit 3. I am looking at figures 2 and 3.

They are discussed under the heading of preliminary results in your paper, and what you've done is you've grouped these workers in 10-year exposure groups.

A. This is since first exposure.

Q. You've got one group of workers zero

to nine, under years since first exposure second group with 10 to 19 years, then 20 to 29 and 30 to 39 and 40 to 49, right?

A. Yes.

Q. Now, what I'm wondering is what is the difference between tables 2 and 3?

A. Table 2 is males and table 3 is women.

Q. So all other things are equal, in other words?

A. Exposure is the common denominator.

Q. That is what I was wondering. The workers come from difference parts of the plants, or that sort of thing?

A. Well, this isn't divided up by occupation; it's simply by exposure. In fact, an exposure meaning having worked there.

Q. Did you use time of employment as your measurement of exposure in preparing these?

A. I used years since first exposure. That doesn't mean to say that somebody who worked, who had the years since first exposure had been exposed for nine years, they could have been exposed for one year. But at the time that this

data was collected, it was nine years since that first exposure.

They had survived nine years since first exposure.

Q. Now I'm confused.

Let's take the category of workers in zero to nine years since first exposure.

A. Let me explain it to you.

Q. I am confused about that.

A. If you start Rochdale and you had work of nine years, you had nine years of total exposure and nine years since that total exposure first occurred.

But if you worked at Rochdale and you start the same time as someone else who starts at the same time as you on the same date but only works for one year, is only exposed for one year, nine years later is nine years since first exposure.

Q. Okay.

A. Okay. But not total exposure.

Total exposure was one year.

Q. So --

A. It's in a way a measure of latency

rather than a measure of exposure.

Q. Let's take your first category of workers, and we will look at figure 2 which is I guess the men.

A. That's the men.

Q. Let's look at figure 2.

The men in the first group there of zero to nine years since first exposure. Some of those men might literally have had zero time since first exposure and some might have had nine years; is that the way we'd read that?

A. That is the way you've read that.

Q. Could we also read that as meaning there is an average exposure length of 4.5, or is it more to the 9 year end or the zero end?

A. That I can't tell you because I don't think I did that.

Q. Nobody really knows?

A. Nobody really knows.

Q. Let's look at the five bar graphs shown in that group, figure 2, men zero to nine years since first exposure. The first bar graph we see is normal x-rays?

A. Correct.

Q. 90 percent of the men had normal x-rays, is that what that says?

A. That is what that says.

Q. How come it goes up to 140 percent instead of 100?

A. Because there may have been some that would have been read more than once.

Q. Some x-rays read more than once?

A. Right. The number of findings exceeds the number of subjects, resulting in large percentage figures.

Q. That is what I am wondering. If we look at that first bar graph of normal x-rays, when it indicates 90 percent, that doesn't necessarily mean that 90 percent of the men had normal x-rays?

A. It means 90 percent of the x-rays read were normal.

Q. Were normal. My question is what criteria were you using at that time to determine if an x-ray was normal?

A. I was using UICC Cincinnati classification of the radiographic appearances of pneumoconioses.

Q. Do you recall what that classification was --

A. That is very simple.

Q. -- in those years?

A. That is very similar now to the current IOL classification. It was the early days of that classification.

Q. If pleural thickening was seen on an x-ray under that classification, would that be classified as a normal or abnormal x-ray?

A. Pleural thickening was actually -- there were three categories of pleural thickening. Inconsistent with abestos exposure, consistent with asbestos exposure. There were two categories. They are barred separately in the graph. There are separate bars for pleural thickening.

Q. See, here is what I can't figure out. I am looking at the key here to the table to the bar graphs here. The first one in the graph is normal x-rays and the second one is abnormal x-rays. Then under that there are two types of pleural thickening, pleural inconsistent and pleural consistent. And I understand pleural

consistent is consistent with asbestos exposure, and pleural inconsistent would be something else?

A. Yes.

MR. WILL: Broken ribs?

THE WITNESS: TB, something like that.

MR. BROWNSON: Okay.

Q. But what I am trying to find out is those are charted out as separate categories and they are not included either in normal x-rays or abnormal x-rays. They seem to be somewhere else. And what I am wondering is would that be considered --

Let me ask you the question this way: If you saw pleural thickening consistent with asbestos exposure, would that be read as a normal x-ray or abnormal x-ray at that time?

A. I don't know the answer to that, as I've charted it here, and it's a long time ago. It was a very crude descriptive statistical exercise.

The best I can say is that pleural thickening was looked at separately.

Q. Let me ask it this way if you know.

If we look at this first bar of normal x-rays which is approximately 90 percent of x-rays read, would those x-rays include any pleural thickening?

A. I don't know.

Q. So then the second bar in the first category of zero to nine years since first exposure among the men is abnormal x-rays; is that right?

A. That's correct.

Q. And that indicates that approximately 10 percent of the x-rays in those men were abnormal?

A. Correct.

Q. And I guess if we had approximately 90 percent of normal x-rays and approximately 10 percent of abnormal x-rays, those first two bars seem to cover all of the x-rays, would that be fair to say?

A. They cover 100 percent.

Q. But that might not be all of them?

A. It might not be all of the x-rays, because as you can see, there is 140 percent.

Q. But in any event, approximately 10

percent of all of the x-rays read were abnormal in that category, zero to nine years first exposure?

A. Yes.

Q. Let's skip the third bar.

The fourth bar is pleural thickening consistent with asbestos exposure. Is that what that is?

A. If I'm going by the key, yes.

Q. And that seems to indicate about a 35 percent, 30-some percent, let's say 35 of x-rays. Is that right?

A. That looks as though you're right.

Q. So could I then add approximately 35 percent of x-rays as having pleural thickening consistent with asbestos exposure and approximately 10 percent of x-rays being abnormal, and conclude that approximately 45 percent had some sort of change related to asbestos on them?

A. Not necessarily.

Q. Why can't I do that?

A. Because there might be an overlap, as you already pointed out yourself.

Q. There might or might not be?

A. There might or might not be an

overlap.

Q. You can't tell?

A. I don't know.

Q. What we do know for sure is practically 35 percent show up having pleural thickening consistent with asbestos, and approximately 10 percent show up as having abnormal x-rays, right?

A. Yes.

Q. And other than that, we can't draw further conclusions?

A. Probably not.

Q. Now --

A. Also, I think something you have to recognize is that, and I don't know whether this is so or not, but it's possible that there was exposure at somewhere else other than Turner Brothers Rochdale, that hasn't been counted.

Q. In these men?

A. In these men.

Q. But do you have any information that that is so among the men --

A. No.

Q. -- on this paper?

A. No. I don't know at this point in time whether that is so or not.

Q. In 1966, when you began as medical officer at Rochdale, do you have an idea of what the average exposure to asbestos in the Rochdale plant was?

A. The average exposure?

Q. The average asbestos level in the air.

MR. WILL: You mean just anywhere in the plant?

MR. BROWNSON: I assume it would vary.

A. It varied by department.

Q. You told us earlier that in the carting area it ranged from 8 to 10 fibers per cc, up to 20 or 30?

A. At one point in time.

Q. At one point in time.

And that that decreased over the years?

A. Correct.

Q. Now, is that the highest level of airborne asbestos in the plant that you can

recall, or were there areas that were higher than that?

A. I don't recall anything much higher than that.

Q. So would it be fair to say that as a general proposition, that was at the high end of the level and then it went down from there?

A. I think so.

Q. And would it also be fair to say that over time that high end exposure level also decreased?

A. Yes.

Q. The ventilation got better and such?

A. Correct. But then of course there was also low end.

Q. Do you remember what the low end was?

A. Well, the weaving shed was the area that was a prime example and --

Q. Do you remember what the air levels were?

A. The levels, they were below two fibers per cc.

Q. So if we take the year 1972 as an example, could we say that at the Rochdale plant

the low level of exposure was something below two fibers per cc and the high end was where?

A. The low end I think was consistently below two levels per cc; the high end could fluctuate between 8 and 10 to 20 to 30.

Q. Let me just go back to figure 2 here, men who had, as of 1972, who had 10 to 19 years since their first exposure were showing approximately 35 percent abnormal x-rays, is that right?

A. Yes. On this graph.

Q. As reported on the graph in figure 2 of your paper?

A. Yes.

Q. And men who had pleural thickening consistent with asbestos exposure were approximately 60 percent of x-rays?

A. That is correct.

Q. And that is in the group of 10 to 19 years since first exposure?

A. Yes.

Q. And then if we go to 20 to 29 years since first exposure, those men had approximately, I don't know, 50 to 55 percent of normal x-rays?

A. Approximately.

Q. And in fact, in that group of men 20 to 29 group since first exposure, there are more abnormal x-rays than normal x-rays?

A. Yes.

Q. Also in that group of 20 to 29 years since first exposure, I see that we have about 90 percent of x-rays with pleural thickening consistent with asbestos exposure.

A. Yes.

Q. Are you aware that in --

A. But can I just remind you that 100 percent is not the maximum here.

Q. Right, I understand that.

Did you present these data at any scientific meetings before you published these papers?

A. These data were presented at a meeting in Rochdale at the local hospital, at a provincial meeting of the Royal Society of Health.

Q. And do you recall after these data were published by the Royal Society of Health in 1972, of speaking about them with Dr. Selikoff or speaking to Dr. Selikoff about these data?

A. I corresponded with Dr. Selikoff about these data.

Q. So would it be fair to say that at some point shortly after these data were published in 1972 at least, Dr. Selikoff was aware of them?

A. Well, it was '72 or '73, I don't know. But Dr. Selikoff was made aware of them, yes.

Q. And for the record, Dr. Selikoff would be Dr. Irving J. Selikoff at the Mount Sinai School of Medicine in New York City?

A. That's correct.

Q. Are you aware of the fact that these data as published in Exhibit 3, your 1972 paper, were used by other than the Occupational Health and Safety Administration here in the U.S. when they were setting their asbestos standards?

A. They were used by other than in the United States when they proposed an amendment to their asbestos standard in I believe 1972. Or it may have been later than that, I have got the time frames -- I am -- the time frames are not quite clear in my mind at the moment.

Q. In any event, OSHA did -- maybe I can

help jog your memory -- permanently adopt its asbestos at 5 fibers per cc in June of 1972.

Do you know if these data were used at that time or were they used for later revisions?

A. They were not used at that time.

Q. In 1975 OSHA proposed lowering its asbestos standard to .5 fibers per cc. Do you know if it was that revision where these data were used?

A. I believe it was that revision.

Q. I'm taking you back in time here, but as you understood it, do you recall that Dr. Selikoff was somewhat alarmed at the data presented in your paper here that we just saw summarized in tables 2 and 3, and he went to OSHA at that time and said, "Look at what Dr. Lewinsohn is reporting over in England. You ought to take this data into account"?

A. That is my understanding.

Q. So again, if we can summarize, at least that data was in the possession of Dr. Selikoff by '72 or '73, and had been presented to OSHA at some point shortly thereafter here in the

United States?

A. By Dr. Selikoff.

Q. Right. And in addition to Dr. Selikoff, do you recall corresponding or meeting or talking with any other American researchers or physicians about the data that we've just been reviewing in your '72 paper?

A. Yes, yes.

Q. Who was that, can you recall?

A. I met with Dr. Paul Kotin who was medical -- I don't know what his title was, medical advisor to Johns Manville.

Q. C-o-t-i-n?

A. K-o-t-i-n. And Dr. George Wright, who was a consultant to Johns Manville.

Q. Is that the Dr. George Wright who is in Cleveland?

A. Yes. And Dr. Hans Weil, who was in Tulane University.

Q. Tulane?

A. Yes.

I think those were the people I met.

Q. And you met with these American doctors where?

A. I met with them, at their request, in Denver.

Q. In Denver at?

A. At Johns Manville headquarters.

Q. And how was it that this meeting came about? Were you contacted by these people or did you contact them or --

A. No, I was contacted by them.

Q. And do you recall who it was who contacted you?

A. That I'm not sure of.

Q. But in any event, somebody contacted you and there was a meeting at the Johns Manville headquarters in Denver when?

A. It must have been about the time that OSHA published its intent to revise the standard down. Whether that would have been '74 or '75, I don't remember.

Q. And the meeting took place in Denver, and for the record, Johns Manville was an American asbestos company, right?

A. Are you asking me?

Q. Yes. I'm asking you.

A. Yes, yes.

Q. It had various asbestos products manufacturing plants and also had asbestos mining interests; were you aware of that at the time?

A. Yes.

Q. Were you aware at that time that one of Johns Manville's mines was near King City, California, in the Coalingo deposit?

A. I had heard of the Coalingo deposit. I didn't necessarily know it was a Johns Manville mine.

Q. In any event, this meeting was venued in the Johns Manville headquarters in Denver, and present was this Dr. Kolin from Johns Manville?

A. Kotin.

Q. Dr. George Wright from Cleveland, Dr. Hans Weil from Tulane, you, and anyone else who you can recall?

A. There was some people from Johns Manville.

Q. Do you remember, was it Chris Schecter? Was he there?

A. No.

Q. Fred Pundsak?

A. Not at the meeting. I had met Fred

Penjab.

Q. Was there a Mr. Jobe?

A. Not that I remember.

Q. Mr. Ritsea?

A. Yes.

Q. Fred Ritsea?

A. Yes. And a statistician, epidemiologist, statistician that worked for Johns Manville. He worked for Ritsea, I think. I don't remember his name.

Q. Would it be fair to say that these people who worked for Johns Manville were concerned about your data at that time and were questioning you about it?

A. What they had asked me to do was to update them on the history of the development of all of the data at Rochdale. We went back in time. I started with the Meriweather and Price study that had been done in 1929, which was at Rochdale.

The Doll study in 19 -- that was published in 1955, and then its extension into the cohort studies that had been reported by Doll and Knox and others.

And the BOHS study and then the information that was in this paper. And how all of that data had been accumulated and what the distinctions were between the different sets of data.

So we discussed that.

Q. And were they concerned about being updated on all of that data at the time of that meeting because of the fact that it appeared that this data was going to form some basis for the revision of the American Occupational Asbestos Standard?

A. They were, I think, trying to accumulate as much knowledge as they possibly could about the data that OSHA was relying on to justify its proposed reduction increase in the stringency of the standards. The kind of standards.

Q. And of course some of the data that OSHA was relying on at that time to cut the asbestos, the American Asbestos Occupational standard from two fibers per cc down to .5 was your data that we just saw here in Exhibit 3?

A. As presented to OSHA by Dr. Selikoff.

Q. So in any event, by the time that OSHA was considering a revision of the asbestos standard here in the United States, the occupational asbestos standard from two fibers down to .5, OSHA had in its possession your data from Rochdale which we have seen in Exhibit 3?

A. I must add again, as presented to them by Dr. Selikoff.

Q. And the way I understand that OSHA got that data was that Dr. Selikoff presented it to them?

A. With his interpretation.

Q. Do you believe that Dr. Selikoff misinterpreted the date to OSHA when he presented it to them?

A. I wouldn't go that far.

Q. Would you --

A. But I think that Dr. Selikoff presented the data in a manner that suited his purpose.

Q. Let me ask you this: Do you believe that Dr. Selikoff presented your data from Rochdale to OSHA in a manner that was more alarmist than the way you would have presented it?

A. No. I think Dr. Selikoff took my data and reworked it and presented it to OSHA. And it was my contention in my correspondence with Dr. Selikoff that that was, A, unjustified, and B, somewhat unethical due to the fact that he never bothered to consult me about it, and that I had some concerns about my own data that had he talked to me about them, he might have understood my point of view.

Q. And do you know if those concerns that you expressed to Dr. Selikoff ever made their way to OSHA, or did OSHA just get Dr. Selikoff's view of your data?

A. I don't honestly remember if my -- no, I don't know if there was any direct correspondence with OSHA.

Q. And as you recall it, taking yourself back to those years in the early 1970s, at least here in the United States was Dr. Selikoff one of the leading researchers on asbestos and disease?

A. According to Dr. Selikoff, yes.

Q. Was his research widely disseminated in the United States concerning asbestos and disease, by that time?

A. Very widely.

Q. Around the 1970s?

A. Very widely disseminated by television, the lay press and some journalists.

Q. And were his views, whether right or wrong, on asbestos and disease available here in the United States or disseminated here in the United States, at least in the medical literature by the early 1970s?

A. Dr. Selikoff's published scientific documents are impeccable and are authoritative, and probably largely because his co-author, Dr. Cuyler Hammond, was a very brilliant man.

So Dr. Selikoff's published scientific literature I have no quibbles with. And he contributed greatly to the knowledge and understanding of asbestos and health in the United States, and thereby in the world as well.

So I have no axe to grind on that score.

Q. If an American asbestos company in 1973, this time period we are talking about, wanted to know what data OSHA was considering and OSHA had in its possession to revise the American

occupational asbestos standard, would it have had available to it this interpretation that Dr. Selikoff put on your data that you've just told us about?

MR. WILL: Excuse me. Are you asking him could they have called up OSHA and would OSHA have told them what Selikoff told OSHA about Dr. Lewinsohn's data? I don't know if he knows what OSHA would make available.

MR. BROWNSON: My question is not what OSHA would make available, but I'm trying to find out what OSHA had in its possession concerning your data that we saw in Exhibit 3.

Q. You seem to have told us what they had in their possession was not your interpretation of it, but Dr. Selikoff's.

A. Sorry to mislead you. They also must have had a copy of my paper. I had no direct dealings with OSHA. As you know, anything that -- any documentation that OSHA accumulated once the docket was opened was in the public domain.

So it would not be difficult to find

out, I guess, what OSHA had or didn't have, but I didn't -- that was not up to me to do.

Q. If someone checked the OSHA docket at that time to see what data OSHA had in its possession, as I understand what you've told us, they would find Dr. Selikoff's comments concerning your data in addition to your own data itself?

A. That's your assumption.

Q. I thought that is what you told us, but maybe not.

A. I don't know that.

Q. At least we do know that OSHA, that Dr. Selikoff presented to OSHA his own interpretation of your data?

A. Well, again, I don't know that Dr. Selikoff did that.

Q. Well --

A. It may have come from Dr. Selikoff's department, and in Mount Sinai, whether it was actually Dr. Selikoff who presented the data to OSHA or not, I don't know, it could have been Dr. Nicholon or Dr. Lango or anybody who worked for Dr. Selikoff.

Q. But in any event, Dr. Selikoff's

interpretation of your data was presented to OSHA by somebody?

A. Yes.

Q. And would it be fair to say that at that time, that any person or party interested in the new proposed revised OSHA asbestos standard would have found out that it was based, at least partly, on your data from Rochdale?

MR. WILL: I don't think he can know that, Bob.

MR. BROWNSON: Well --

MR. WILL: I mean, you're asking him to assume what you can find by looking in an OSHA docket at some unspecified point in time.

MR. BROWNSON: I don't know if he can know that or not, but I guess --

Q. Do you know that?

A. I don't know. But let me say that, you know, it's accepted scientific practice that if you are going to quote somebody's work, you cite the reference.

Q. So put another way, these data which are shown in Exhibit 3, your paper, which were in

circulation in the United States at the time that OSHA was revising its asbestos downwards?

A. I don't know whether they were in circulation. I know that Dr. Selikoff had them. The Journal of the Royal Society of Health is not one of the household names in medical literature.

And in the United States I don't know how widely that journal would be disseminated, so I can't answer that except to say that I know Dr. Selikoff had it.

Q. Do you know when you got to the meeting at Johns Manville that you just told us about, if people at that meeting had the data in their possession?

A. To the best of my knowledge, they did.

Q. Do you know if they actually had this particular paper, or did they have it in some other form?

A. As far as I know, they had the particular paper.

Q. So at least as of the time you met out in Johns Manville headquarters in Denver to update these people about your work, they had your

paper, Exhibit 3, in their possession?

A. I believe they did.

Q. Do you know who had it in their possession? Was it Dr. Weil or Dr. Wright?

A. I don't know who had it.

Q. Do you know where they got it?

A. No, I don't know where they got it, but it was published in the open literature. They could get it from any number of sources once Dr. Selikoff had revealed its existence.

Q. Would it be fair to say that in those years, early 1970s when Dr. Selikoff revealed the existence of your data, it then would be widely disseminated in asbestos medical circles in the United States?

A. Again, I don't know how widely it was disseminated. I can't answer you, except to say that Dr. Selikoff had it and I know the people I met with at Johns Manville had it. Who else had it, I don't know.

Q. Let me ask you this. If Union Carbide wanted to get it in 1973, is there any reason they couldn't have gotten it?

A. None whatsoever. It's in the open

literature.

Q. And Union Carbide at that time had a medical library at the office of their medical directory in New York City, did they not?

A. I wasn't there, I don't know.

Q. As of 1982 you were there, correct?

A. In Danbury, Connecticut.

Q. Was there a medical librarian in Danbury?

A. No.

Q. Was the medical library in New York City?

A. Not that I know of.

Q. Where was the medical library?

A. I never -- there wasn't a medical library when I was there.

Q. When you started at Union Carbide in 1972, who was the medical director of the company?

A. The corporate medical director of the Union Carbide was Dr. Tom Lincoln.

Q. And do you have any understanding or do you know who the Union Carbide medical director was in 1973?

A. I don't know. I don't remember.

Q. Do you know Dr. D-e-r-n-a-h-l?

A. D-e-r-h-r-a-l.

Q. Do you know Dr. Dernehl?

A. I met Dr. Dernehl once.

Q. Are you aware that he was in the Union Carbide medical department in the early 1970s?

A. I am aware that he was a former Union Carbide medical director. I don't know the dates of his tenure.

Q. Would it be fair to say that Dr. Dernehl would have better information than you as to what medical libraries were available to Union Carbide back in the early '70s?

MR. GERSON: Better information than Dr. Lewinsohn?

MR. BROWNSON: Right.

A. Well, I wasn't there, so he probably would, yes.

(Recess taken.)

MR. BROWNSON: Back on the record.

Q. When we broke at the break here, we had been talking some about Dr. Selikoff.

And when did you first meet Dr.

Selikoff?

A. I think I first met him in 1968 in Dresden.

Q. That was at a meeting?

A. At a conference.

Q. On what?

A. On asbestos.

Q. And I take it you were aware of he, Dr. Selikoff and his work before that time?

A. Yes. I was aware of Dr. Selikoff's work following the publication of the Annals of the New York Academy of Sciences Supplement.

Q. And was that published in December of '65 or after that?

A. I believe it was published in '65.

Q. I think the main proceedings, the big book was published in '65?

A. '65, correct.

Q. And are you saying there was some supplement to that?

A. No. That's the one I'm referring to.

Q. Okay.

A. It is a supplement to Annals, Supplement 132.

Q. In 1965 you were with the pneumoconioses unit that you've told us about earlier?

A. In 1965?

Q. Yes.

A. Yes.

Q. So it was while working for the pneumoconioses unit in England that you learned of the work of Dr. Selikoff?

A. When did I -- I went back to the -- to England in 1963.

At the pneumoconioses medical panel in 1964 we used to have regular meetings. I heard about the New York meeting and Dr. Selikoff's work through Dr. McVide, who was the senior medical officer of the pneumoconioses medical panel who attended that meeting, and in fact presented a paper at that meeting.

And when he came back he distributed his paper and I guess told us about Selikoff's work. So I heard it about in '64. I didn't read his publications until after they came out in the Annals.

Q. They were published in the Annals of

the New York Academy of Science in 1965. Did you then read Dr. Selikoff's papers?

A. I read most of the papers in that book at the time.

Q. And were you aware at that time that -- at the risk of simplifying this -- were you aware at that time that Dr. Selikoff was following a group of insulation workers in New York City and New Jersey?

A. Yes.

Q. And reporting on their experience with asbestos?

A. Yes.

Q. And are you aware that since that initial conference in 1964 that was published in 1965, that Dr. Selikoff has published other papers up through the years concerning that same group of asbestos insulation workers?

A. Yes.

Q. I've got here a number of or a few of these papers, and I just wanted to show you some.

MR. BROWNSON: Let's mark this this one.

(Whereupon, paper entitled "Asbestos

Exposure and Neoplasia," marked Lewinsohn Exhibit 4 for identification as of this date.)

Q. I have shown you Deposition Exhibit No. 4, which is a paper entitled "Asbestos Exposure and Neoplasia," which was published in the Journal of the American Medical Association in April 6, 1964.

Do you know whether you read this paper at any point in time?

MR. WILL: Any point in time?

MR. BROWNSON: I will start with any point in time. And if he says no, we can end it right there.

A. Yes, I read this paper.

Q. My next question is do you know when you first read it?

A. That I can't tell you. It could well have been after its publication in 1964 some time.

Q. Are you familiar with this paper?

A. Well, what makes we believe that I read this paper is this is where Selikoff first indicated the added risk of smoking and working with asbestos.

Q. In this particular paper it indicates that he was investigating the members of the Asbestos Workers Union in the New York Metropolitan area. And then he goes on to describe some of his findings.

Is that correct?

A. Yes. That's what the paper is about.

Q. And I want you to look at the last page of the paper, which is page 26. It has a heading with an italicized clause "Environmental asbestos exposure," and he writes "The recent demonstration by South African and British investigators of pleural and peritoneal neoplasms among individuals who had chance environmental exposure to asbestos many years before raises the very important question of possible widespread carcinogenic air pollution."

Do you know what he is talking about when he talks about the British investigators?

A. Yes.

Q. What's that?

A. I believe he is talking about the British investigator, I believe he is talking about Dr. Newhouse.

Q. And that is Molly Newhouse?

A. Dr. Molly Newhouse, reference number.

Q. He has got McCaughey?

A. McCaughey coffee, Wade and Elmes.

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Q. You're aware, though, of the work of Dr. Newhouse in the mid '60s?

A. Yes.

Q. Then he goes on to write at the end of the article, "A particular variety of environmental exposure may be of even greater concern. Asbestos exposure in industry will not be limited to the particular craft that utilizes the material. The floating fibers do not respect job classifications."

Do you see that?

A. Yes.

Q. What I am wondering is when you were at the pneumoconioses unit, and then after 1966 at Turner Brothers, did you have an understanding that the asbestos fibers, to use Dr. Selikoff's words, do not respect job classifications?

In other words they could float or drift around the work area?

A. Did I have an understanding? It was

Manville mine at Coalinga. California?

A. I have no idea.

Q. How about the Atlas asbestos mines at Coalinga?

A. I don't know anything about those two mines.

Q. Do you have any information about the current activity of the California board of air resources Superfund activity at Coalinga?

A. I've heard something about it, but I'm not familiar with the details.

Q. And when you say you've heard something about it, was that more or less in passing or have you heard it in connection with some work you have been doing?

A. Yes, more or less in passing.

Q. Do you have an understanding that some governmental body in California is attempting to claim that the Supertene department in Coalinga, California poses some sort of health hazard because it's getting into the air or water out there?

A. That's what I've heard.

Q. Other than that do you have any

standing nearby watching, for example?

A. Yes.

Q. In other words, the fibers could drift for some distance.

A. Yes.

Q. I guess that's more or less a matter of common sense, isn't it?

A. Yes. That's I why I call it bystander exposure.

Q. So what Dr. Selikoff is reporting in this paper, Exhibit 4, that I just read, wouldn't have been surprising or shocking to you in those years, would it?

A. Well, it would have been -- he and the others were introducing a new concept to the conventional views of asbestos which had traditionally been regarded as purely an occupational disease limited to certain occupations. And what these people were demonstrating was that there was a potential for exposure to others who hitherto had not been regarded as being exposed.

Q. Look at Exhibit 4, the authors are listed as Dr. Irving J. Selikoff and then

C-h-u-r-g.

Do you know a Dr. Churg?

A. I don't think I know Dr. Churg.

I've seen his name on Selikoff publications, but I don't know him.

Q. And then also listed is Cuyler Hammond. And Dr. Hammond, as I understand it, is not a medical doctor?

A. No, Dr. Cuyler Hammond, as I understand it, is a doctor of Science, that is his degree.

Q. But he was the vice president of the American Cancer Society at that time; were you aware of that?

A. I didn't know what his honors were.

Q. This particular paper, Exhibit 4, was published in a medical journal, JAMA, which is the Journal of the American Medical Association. I take it you're familiar with that journal today?

A. Yes.

Q. Were you familiar with that journal back in 1964?

A. Yes.

Q. Was that journal available over in

England?

A. Yes.

MR. BROWNSON: Let's mark this one.

(Whereupon, paper by Drs. Selikoff, Churg and Hammond, marked Lewinsohn Exhibit 5 for identification as of this date.)

Q. I'm showing you what has been marked as Deposition Exhibit 5. And the copy that you've got doesn't have a date, but I'll tell you this is a paper by Dr. Selikoff, Churg and Hammond that was published in the proceedings of this conference of 1964.

Published in the Annals of the New York Academy of Science in 1965.

Do you recognize this paper as one that you mentioned earlier that you read?

A. Yes.

Q. And this one is called "Neoplasia among Insulation Workers in the United States with Special Reference to Intra-Abdominal Neoplasia."

And its authors are E.C. Hammond -- is that the same Cuyler Hammond that we saw in that other paper?

A. It is.

Q. He is listed as being at the New York Cancer Society in New York. And then Dr. Selikoff and Churg at the Mt. Sinai Hospital in New York.

Is that correct?

A. That's what it says.

Q. And I wanted you to look at a couple of things here.

If you look at the first page, Dr. Selikoff or the authors of this paper have a discussion about malignant neoplasias, and by that they mean cancers, do they not?

A. They mean new growth which are malignant.

Q. In laymen's terms, would that be cancer?

A. It could be cancer, it could be leukemia, it could be lymphoma, but it's a new growth, neoplasm.

Q. But in terms of the asbestos insulation workers being studied by Dr. Selikoff, the neoplasms he is talking about are lung cancers and mesotheliomas, aren't they?

A. I'm sorry, I was looking at the paper, could you repeat that?

Q. In terms of the asbestos insulation workers being studied by Dr. Selikoff that are talked about in this paper, the neoplasms that he was seeing in those workers and reporting about were lung cancers and mesotheliomas, among others?

A. In this paper?

Q. No, among the insulation workers.

A. He is reporting on intra-abdominal neoplasia in this paper.

Q. Okay. And do you understand --

A. In insulation workers.

Q. Do you understand what the intra-abdominal neoplasias are that he is talking about?

A. Well, I would have to read it, but I -- I believe, let's see which he is talking about.

He is got a gastrointestinal carcinoma.

Q. Look at Table 1, which I think might summarize it.

A. Stomach, colon and rectum, so I guess that is what he is calling gastrointestinal carcinoma.

Q. Did you understand that Dr. Selikoff in 1964 and '65, and around the time of this paper, was reporting that these asbestos workers not only had higher rates of lung cancer than expected, but he also was claiming that they had various types of gastrointestinal cancers, stomach cancer, colon cancer, higher than expected?

A. Very interesting, he was the only person finding that.

Q. But that's something that he was reporting back at that time?

A. Yes.

Q. And that is a subject of this particular paper?

A. Yes.

Q. Exhibit 5?

A. Yes.

(Whereupon, paper presented by Dr. Selikoff published in the Annals of New York Academy of Science in 1965 marked Lewinsohn Exhibit number 6 for identification as of this date.)

Q. Next I've got Exhibit 6 and this is another paper presented by Dr. Selikoff that was

published in the Annals of New York Academy of Science in 1965.

Do you recall this as one of those papers that you read?

A. Yes, it is.

Q. And this one is entitled "The Occurrence of Asbestosis Among Insulation Workers in the United States."

Is that correct?

A. That is the title.

Q. And do you recall reading that back in this 1965 time period, the one when it was published?

A. I believe I read this.

Q. And I don't know if I can summarize the contents of this entire paper in a sentence, but I'll try.

Would it be fair to say that what Dr. Selikoff is reporting here is, again, about these asbestos insulation workers, same group of workers he had been talking about in his prior papers, is that right?

A. Well, I think he expanded the numbers; his original papers were 363 insulation

workers and here is he is talking about much larger group.

14,000 total membership examined, he is talking about more than a thousand.

Q. It's, I guess what I meant to say -- I'm sorry?

A. So it's --

Q. It's the same workers, he is just reporting on more of them as time goes on, he is reporting on more and more of these people?

A. Yes, he is actually talking about a larger group of people; whether they include these 365, I don't know.

Q. But again, this larger group is asbestos insulation workers in the United States?

A. Yes, that is what he calls them.

Q. I see on the first page in the second full paragraph he is giving some history of historical references to asbestos disease in textile workers and he mentions the publication of Cooke's case in 1927?

A. Which page is this?

Q. It's on the very first page.

A. Yes, right.

Q. Is that the same Cooke's case we looked at earlier that arose?

A. That is correct.

Q. Out of Turner plant back in the early 1920's?

A. Reference number No. 4 in the paper, "Pulmonary Asbestosis," British Medical Journal, Volume Two, pages 1024 to 1025.

Which is not the same publication -- this also is a British medical journal in 1924.

Yes, I'm sorry, it's the same case, but he has given two different references for it.

Q. In fact, there are actually, I guess that particular case was published two or three different times?

A. Right.

Q. And I've got here a couple of other references from the British Medical Journal in '27, which I won't mark, but I just wanted to make the point that we were talking about that same woman?

A. It would appear so.

Q. And if you look at the section entitled "Results" on page 142 of Dr. Selikoff's

paper here, he reports that, "Among the asbestos insulation workers examined by us, evidence of pulmonary asbestosis was present in almost half of the men examined."

A. Page 142?

Q. 146, I'm sorry.

A. Okay.

Q. Do you see that reference?

A. Yes.

Q. And then he says, "In this evaluation, radiologic change has been used as the sole criteria," right?

A. Yes.

Q. So is he saying there that based on x-rays only, he claims to see pulmonary asbestosis in almost half of the insulation workers that he examined?

A. What he is saying there is that the sole criteria was x-rays. That almost half of the men examined had evidence of asbestosis using that criteria, yes.

And it goes on to say that, "We understand that evaluation of the presence of asbestosis limited only to x-ray findings tends to

result in underestimation."

Q. And what do you understand him to mean by that?

A. Well, he means that there may be some cases that have other criteria of diagnosis as I pointed out to you, other criteria for the diagnosis of asbestosis, as I pointed out to you earlier, and that do not necessarily have x-ray changes.

Q. So would it be fair to say that what Dr. Selikoff is reporting is almost half of these asbestos insulation workers in the United States had asbestos on x-ray, but really more of them might have asbestosis if he used these other diagnostic criteria?

A. Well, what Dr. Selikoff is saying is that of 1258 asbestos insulation workers that he examined by his criteria, and he doesn't say what his x-ray reading criteria were, had pulmonary asbestosis in over half.

Q. And I wanted to get at this point of underreporting of cases. Does that mean that if other diagnostic criteria were used, there may be even more asbestosis among that group of workers?

A. That's his conclusion; whether he is right or wrong, I don't know because his reading of the x-rays may be faulty, so he may have overread his films and have more cases if he is using solely radiologic criteria.

Q. Right or wrong, that at least is what he was reporting and publishing in the Annals of the New York Academy of Science in 1965, correct?

A. That was Dr. Selikoff's opinion in 1965.

Q. I think you told us earlier that you considered, and I guess consider now his published work to be authoritative?

A. I do.

Q. Because of the presence with him of Dr. Cuyler Hammond?

A. Right.

Q. And Dr. Cuyler Hammond is a co-author on this paper, isn't he?

A. Sure, but that doesn't mean to say I have to agree with everything that is written.

Q. If I could just summarize this, the papers that we just looked at, Deposition Exhibits 4, 5 and 6, by Dr. Selikoff were all papers which

were presented in 1965 or published in 1964 and 1965 in connection with this conference on asbestos and disease held here in New York City. Would that be fair to say?

A. Yes. The general one was not, of course.

Q. But --

MR. WILL: I'm not trying to be funny, you've got three articles there that were published in '64 and '65.

MR. BROWNSON: Right.

Q. Exhibits 5 and 6 were both papers presented at the asbestos conference in New York City in 1964 and both published in 1965 by the New York Academy of Sciences, right?

A. Right.

Q. And that conference on asbestos in 1964 in New York City received wide publicity, did it not?

A. Yes, Dr. Selikoff saw to that.

Q. He was something of a publicity hound with respect to asbestos?

A. He sure was.

Q. With respect to his work on asbestos

and disease?

A. Yes.

Q. And at that time in 1964 and 1965, didn't Union Carbide have its medical department in New York City?

A. Again, I wasn't with Union Carbide in 1964, '65, but Union Carbide's headquarters were in New York City.

Q. And was its medical director at the headquarters in New York City or someplace else?

A. I don't know. I would think he was, but I don't know.

Q. After you left Turner Brothers in 1976, you went to Raybestos-Manhattan Company?

A. That's correct.

Q. Where were they located?

A. Headquartered in Trumbull, Connecticut.

Q. So at that point in 1976, you left England for the United States?

A. That is true.

Q. Went to work for Raybestos-Manhattan in Trumbull, Connecticut?

A. Yes.

Q. At that time, they were a manufacturer of various asbestos products, were they not?

A. Friction materials, basically.

Q. By friction materials, we mean brakes?

A. Caskets, clutches, yes.

Q. What were your duties with Raybestos-Manhattan when you started with them in 1976?

A. I was asked to come to Raybestos-Manhattan to help them develop their medical surveillance program for asbestos workers. Basically that was my main role.

Q. And how long did you work for Raybestos-Manhattan?

A. I would say about four years, I left there in 1981.

Q. And when you left in 1981, you went to work for Perkin-Elmer Corporation in Norwalk, Connecticut?

A. Right.

Q. You worked there for one year?

A. For one year.

Q. What did you do for them?

A. They had again not had a full-time corporate medical director before and I went to establish a medical program for them.

Q. Did that have anything to do with asbestos workers?

A. Nothing whatever.

Q. Weren't they some kind of an optical company?

A. Electrical optical manufacturing company.

Q. And then in 1982, you went to work for Union Carbide Corporation?

A. That is correct.

Q. At Danbury, Connecticut?

A. Yes.

Q. You stayed at Union Carbide in one capacity or another until your retirement in 1992 that you told us about earlier?

A. That's true.

Q. And at all times that you were with Union Carbide from 1982 to 1992, were you located at Danbury, Connecticut?

A. Yes.

Q. And as I understand, you were attached to different divisions within the company during those years, but were your duties generally the same or did they change over time?

A. They -- I'm not being facetious, but the answer is yes and no. They stayed essentially the same. No, they didn't change. They stayed essentially the same; yes, there was some modifications from time to time in my duties.

Q. Did your duties during that those years from 1982 do 1992 with Union Carbide include the area of asbestos and disease?

MR. GERSON: At any point during that time?

MR. BROWNSON: Right.

A. Between 1982 and 1992?

Q. Right.

A. Very peripherally. You know, it was -- I did not have a functional responsibility of any kind for any of the asbestos division, or you knowm --

Q. Let me ask you this, during those 10 years from 1982 to 1992 with Union Carbide, did your duties include looking at workers in various

Union Carbide plants who may have been exposed to asbestos in the plants?

A. Did I look at the workers?

Q. Right.

A. I never actually examined any workers. I did -- I believe probably shortly before the King City operation was divested or sold off or whatever happened to it, I was asked to review the some of the records of the workers in that facility to see whether there was any evidence of health effects.

Q. I am confining my questions to the moment not to King City workers, but workers in other Union Carbide plants or facilities.

A. No, the answer still is no.

Q. For example, the answer probably will remain the same, but let me try to explain what I am getting at.

Union Carbide had plants in West Virginia where they made chemicals and workers in those plants may or may not have been exposed to asbestos pipe covering, for example. And my question goes to whether you had any duties or did any work with respect to workers of that type who

were in some Union Carbide facilities but may have been exposed to asbestos?

MR. GERSON: You're talking about direct examinations of individuals?

MR. BROWNSON: Yes, let's start with that.

A. Union Carbide had physicians, full-time physicians at its major plants, were responsible for the day-to-day provision of services to the employees.

Q. So you would not have seen such employees to do medical evaluations?

A. My role was essentially an administrative role at headquarters.

MR. WILL: The answer was no. I know you are in a hurry, but when he said did you not see any workers, you can just say no. I know you're in a hurry.

Q. So you didn't permanently see or treat workers in a medical capacity while you at the headquarters in Danbury, Connecticut; you were in more of an administrative capacity?

A. That's true.

Q. And in that capacity at the

headquarters at Danbury, Connecticut, did you do any epidemiological work concerning workers in Union Carbide plants or facilities other than the King City? Put that aside for the moment.

A. Yes, I did at one -- not published work, but purely to assess the value of a computerized medical record-keeping system that had been in use for some time, together with the epidemiologist at Union Carbide, we looked at the data that had been accumulated in that system and we chose asbestos workers; but that was a -- regulated because that was a regulated group of people and they were clear-cut parameters that, we could look for.

But that was not a published work; it was simply a quality assurance type of exercise.

Q. By 1982 when you came to Union Carbide, would it be fair to say that Union Carbide workers in various Union Carbide plants were covered by OSHA asbestos regulations as they may apply to their jobs in the plants?

MR. GERSON: When you say covered by OSHA regulations, what does that mean?

A. I think you have to be more specific.

Q. Union Carbide, for example, and I don't want to dwell on this, but for example, Union Carbide had plants at Institute, West Virginia and West Carlton, West Virginia and in those plants, I guess, because plaintiffs' lawyers now claim this, there were various workers who used pipe covering and insulation and that sort of thing. And what I am wondering is when you came to the company in 1982, if you understood that workers in Union Carbide plants who were using asbestos or working with asbestos would be covered by OSHA regulations?

A. Let me put it this way.

The OSHA standard requires has a permissible exposure level, PEL, and it also as an action level. The action level triggers when medical surveillance is required.

The regulations would apply if the permissible exposure level were exceeded.

It was my understanding that the permissible exposure level was not being exceeded, but that as a purely, what's the word, precautionary measure, all persons who were potentially exposed to asbestos were kept under

surveillance at Union Carbide plants.

Q. And when you came to the company in 1982, were you aware of the fact, of that fact at that point?

A. Was I aware of that fact?

Q. Yes.

A. I soon learned about it,

Q. When you came to Union Carbide, did you make some inquiry to learn those sorts of facts or did that just come to your attention in the course of your work, or how did that happen?

A. Well, I went around all of the sites and was shown the operations and learned what was being done, and saw what the medical departments were doing and looked at their records and asked questions.

I got how many people were exposed to asbestos, how many were exposed to noise, how many were exposed to benzene, whatever the regulations were in effect I was interested in and involved in and gave advice and guidance on.

Q. As part of that education when you toured around to these various facilities, did you learn how long Union Carbide had been doing

surveillance on its workers who were exposed to asbestos?

MR. GERSON: Before Dr. Lewinsohn answers, I want to state for the record, if I understand the questions correctly, they all pertain to plans where Calidria was not used, and these questions are not being restricted specifically to Union Carbide employees who may have been exposed to Calidria but rather to other asbestos. And Union Carbide, in --

MR. BROWNSON: Any asbestos.

MR. GERSON: -- Union Carbide, in past discovery involving interrogatories and production requests, has set forth an objection to the relevancy of expanded inquiries into such areas. So I just want to say we do not waive those objections here at this proceeding by any responses or by allowing the witness to respond for the purposes of expediting discovery.

And in fact we very much maintain objections to inquiries as to conditions in Union Carbide facilities or pertaining to

Union Carbide employees where Calidria was not in use and who were not exposed to Calidria.

In the interest of time, I won't reiterate that objection to each question, but as long as it's understood that the objection stands generally.

MR. BROWNSON: Subject to that objection, do you have the question in mind?

THE WITNESS: I'd have to have the question repeated, please.

MR. BROWNSON: Let me rephrase the question.

And I'll understand that this objection will continue to apply so we don't have to waste time.

MR. WILL: One more preliminary matter. At one point you were asking him to consider everything other than the King City plant and King City operation. Are we still in that mode at this point?

MR. BROWNSON: Yes, let me rephrase the question subject to Mr. Gerson's

objection.

Q. At the time after you started with Union Carbide in 1982, as you became educated about what was going on in the various plants and facilities other than King City, we will go on and talk about that, did you learn how long Union Carbide had been doing medical surveillance on employees in its plants who were exposed to asbestos?

A. In all honesty, I can't say -- I can't say -- I can't say I was interested in that.

Q. So as you sit here today, you don't know how long Union Carbide may or may not have been doing that in its various plants?

A. I don't know exactly for how long they were doing it, I simply know that what I examined was as far back as I could into the computerized medical record keeping system, which I believe started in 1975 or thereabouts.

Q. Do you know if employees at the King City mine and mill were entered into the Union Carbide computerized records system?

A. I don't know.

A. I don't know.

Q. Did you at some point after beginning with Union Carbide in 1982 visit the King City mine and/or mill?

A. I only visited King City on one occasion.

Q. When was that?

A. That was when I was asked to go down there and review the x-rays of the work force just prior to the divestiture of that operation.

Q. Now, I understand that Union Carbide sold the King City asbestos operation, if we can call it that to save time, at some point in the mid 1980s, is that correct?

A. The exact date, I don't remember. I'm sorry.

MR. GERSON: We can stipulate it was sold on June 30, 1985.

Q. June 30, 1985 it was sold to a company called King City Asbestos Company. You know that now that we've been informed by Mr. Gerson?

MR. GERSON: No, no, I didn't inform you of the name to which it was sold, which I actually think it is KCAC.

MR. BROWNSON: KCAC, Inc. I think it is.

A. I now know that, thank you.

Q. Whatever it is, you were asked to go review x-rays of workers at some point just before this sale took place, is that right?

A. That's my recollection.

Q. And do you know who asked you to do that?

A. Yes. It was at the request of Mr. Meyers. He was at that time the plant manager.

Q. John Meyers?

A. John Meyers, I think was his name.

Q. Do you know why John Meyers asked you to do that?

A. I think it was part of the due diligence process.

Q. In connection with the sale?

A. In connection with the sale, one reason.

Q. First of all, Mr. Meyers is one of the people who somehow is affiliated with KCAC and continues to be out there at the present time; is that right?

A. I don't know the business arrangements that were struck after the divestiture.

Q. But in any event, it's your understanding that in connection with the sale, that there needed to be a disclosure, what you call due diligence of certain information about the company, and do you understand that that is one of the reasons you were asked to look at the workers?

A. I think there was a point in time when all of that was happening and one of the points of interest was whether there were any health problems among the workers.

Q. And at that time, did you review the air measurements, asbestos air measurements that had been taken at King City, at the mine or mill?

A. I remember reviewing quite a lot of information from the mine and the mill, but I think -- I must have -- I was shown air measurements, I don't remember what they were and I don't, you know, the actual numerical values, I can't tell you.

Q. Do you remember when you were shown

the air measurements if any of them exceeded the applicable OSHA standard at the time they were taken?

A. I don't believe they did.

Q. And were they air measurements kept in the mill at King City or where were they kept?

MR. GERSON: You're asking about generally where they were kept or where they were kept when he saw them?

MR. BROWNSON: When he saw them.

A. I don't remember.

Q. Do you remember speaking to any of the industry hygienists at Union Carbide in connection with this investigation you did about air levels at King City at either the mine or mill?

MR. WILL: He didn't say he did any investigation of the air levels.

MR. BROWNSON: No, no, and I didn't mean to imply that he investigated the air levels. Let me rephrase the question.

Q. In connection with your investigation in looking at x-rays, that is what I understand you did, right?

A. Yes.

Q. In connection with that work, did you speak to any of the industrial hygienists concerning air levels at the mine or mill in King City?

A. I did not attempt any correlation between my readings and air levels, so I don't believe that I spoke to anybody.

Q. Did you ask to see x-rays of any particular workers or just of all workers or how did that work?

A. Well, it was nearly 10 years ago.

Q. As best as you recall.

A. And I did write a report on my findings. And without that in front of me, at this moment in time, I would have difficulty in recollecting the selection criteria for the group of people whose x-rays I reviewed.

But they were a group that was selected for me, with my collaboration by the physician who did the medical surveillance down there, and the radiology department at the local hospital where the x-rays were taken. And management had provided me with the names.

Q. So there was a doctor or a physician in King City who had been doing surveillance on the workers as I understand it, correct?

A. There was a physician who was a part time, not full time, who did the medical surveillance examinations on the workers.

Q. And the x-rays were taken at the King City hospital?

A. If that is what the hospital was called. It was a local hospital.

Q. Let me ask you this: When you went out there, where were the x-rays? Were they just handed to you or did you have to go down to the hospital or what did you have to do?

A. I believe that ahead of my visit all of the x-rays had been pulled, and I had -- I had a room in the radiology department set aside where I spent a day or two reading the x-rays.

Q. And do you know how many x-rays you read?

A. I think I read approximately a hundred, maybe more.

Q. And do you know how many workers were represented by those x-rays?

A. As I said, without actually having the demographic statistics in front of me, I have difficulty recalling.

Q. So you wrote it up in a report and would you defer to what is written in your report?

A. I would like to.

Q. For the exact data?

A. I'd like to.

Q. Unfortunately, I don't have the report here and --

MR. BROWNSON: In fact, I don't know that I have ever seen that report. Have we seen that, Trevor?

MR. WILL: You got me.

MR. BROWNSON: You probably have, I haven't.

Do you have that report?

MR. WILL: Off the record.

(Discussion off the record)

MR. BROWNSON: Back on the record.

Before we continue, for some reason I don't have his report about the King City workers, but I guess, Alan, I can get that from you.

MR. GERSON: Yes. The reason you don't have it is because I don't think you requested Dr. Lewinsohn's reports, and we will certainly, now that you are requesting it, make it available.

Generally we have already offered to make our entire repository available, but we will now make this specific document available to you.

MR. BROWNSON: Anyway, let's try to forge ahead here.

Q. So we were talking about your review of the x-rays of King City workers and do you know if the x-rays you reviewed -- first of all, you reviewed about 100 x-rays, and we'll defer to the report for the exact numbers, but do you know if they were x-rays for about 100 workers or do you believe there were --

A. I believe I reviewed the first, last and penultimate on each worker, something like that. I didn't review the entire series of every worker. I think I reviewed -- and I think that was my method.

Q. So when you say the first x-ray, I

assume you mean the --

A. The first available.

Q. The last x-ray would be the last available?

A. Yes.

Q. And then what is the penultimate x-ray?

A. One before that.

Q. Second to the last?

A. Second to the last.

Q. So again, we'll defer to the exact numbers in the report, but if you reviewed approximately 100 x-rays are we talking?

A. 100 people of x-rays.

Q. So you reviewed?

A. More than 100 x-rays.

Q. You reviewed the x-rays of approximately 100 people?

A. I believe so.

Q. And that would amount to somewhere in the neighborhood of 300 x-rays?

A. I believe so.

Q. And do you know if when you reviewed those x-rays if you brought some standard IOL

films out with you to compare?

A. I always use the IOL films to compare.

Q. And you'll have to pardon me on this, but how do you do that? Do you just say the IOL film up in the shadow box and put the worker films next to it?

A. What I usually do is put up the IOL normal and the IOL minimal changes 10/1 or 1/0. And then I put up an x-ray either on one side of them, between the two, and I compare and if I need to, then I'll put pull out other film and try to match.

Q. I understand that you at one time have been a NIOSH "B" reader?

A. Yes.

Q. Were you a NIOSH "B" reader at that time?

A. No, I don't think so.

Q. Had you been a NIOSH "B" reader before you read those films or is that something that you got after that time?

A. No, before.

Q. Do you remember when you got that

certification as a NIOSH "B" reader?

A. Not exactly, but I think it was while I was at Raybestos.

Q. But in any event, you had your standard IOL films with you when you went out to King City?

A. And I still have them with me today, yes.

Q. Do you remember as you sit here today whether any of the hundred or so workers whose films you looked at in King City had pulmonary asbestosis?

A. I didn't see any films with pulmonary asbestosis to the best of my recollection.

Q. And --

MR. GERSON: Could we break for 30 seconds?

MR. BROWNSON: Sure.

(Recess taken.)

Q. Before we had our break, we just talked about how in reviewing the x-rays of King City worker, you didn't find any pulmonary asbestosis among those workers, correct?

A. That's my recollection.

Q. When you say -- and again, we'll defer to your report for exact details, but I'm asking as you recall as you sit here today?

A. As I recall, yes.

Q. When you say you didn't find pulmonary asbestosis, what do you mean by pulmonary asbestosis?

A. I didn't find any radiological evidence consistent with the diagnosis of asbestosis if you were to use the UICC -- sorry, IOL classification greater than 1/0.

Q. So you saw no x-rays that you would have read as greater than 1/0 among those workers?

A. As to the best of my recollection, yes.

Q. Did you see any x-rays that showed any sort of changes that could be or any sort of changes that you read as asbestos-related changes that didn't rise to the level of asbestosis?

A. I don't remember, I don't think so but I don't remember.

Q. Do you remember if you saw any pleural thickening on any of those x-rays?

A. I believe I did see some pleural

thickening, but there were other reasons for it.

Q. So in the cases where you recall seeing thickening, you also recall those cases having some other reason for the pleural thickening?

A. Right.

MR. GERSON: Reason other than?

MR. BROWNSON: Asbestos.

A. Other than asbestos.

Q. Do you remember as you sit here today what those other reasons were?

A. No.

Q. Do you remember if you saw any pleural plaques on any of those x-rays?

A. I don't think I did, but I don't remember.

Q. Again, if you would have seen pleural plaques or pleural thickening, would that be indicated on your report?

A. Yes.

Q. First of all, were the x-rays dated, so you could tell when they were taken?

A. Yes.

Q. And at that time, around 1985 when

you were out there, was there some sort of regular x-ray program in place for the King City workers?

A. Yes, they were being kept under surveillance, I recall, as outlined in the asbestos standard, the OSHA standard.

Q. The OSHA standard?

A. Yes.

Q. Do you know if they were kept under surveillance because there were airborne asbestos levels above the OSHA action level?

A. No, they were kept under surveillance because they were working with an asbestos material and asbestos product.

Q. And as you can recall as you sit here today, what were the last x-rays that were taken of these men at the time you looked at them? Were they relatively recent at that time or had they been taken some years before?

A. No, they were current.

Q. And again as you recall, were these men given annual chest x-rays at that time?

A. I think so, but I don't remember.

Q. So all of these questions are in general terms because I understand you don't have

an exact recollection, but would it be fair to say that the last x-rays that you looked at at that point in time were relatively recent, of about a year or so of when you had read them?

A. I believe so.

Q. And then the penultimate x-ray or the next to last would be maybe about a year before that?

A. Probably, yes.

Q. Again, in general terms, when were the first x-rays from, do you recall?

A. I don't recall specifically, but all I can say is they would have been the first available x-ray after hire or at the time of hire.

Q. Do you have any recollection as to the average lengths of service of the men whose x-rays you read?

A. Not really.

Q. Do you know when the King City mill was open?

A. No.

Q. Okay.

A. Again, that is one of the questions I would probably ask about, in the introduction to

my report might have said this has been here since --

Q. Do you recall if there were any men in the group whose x-rays you read who had worked at the mine or mill for more than 10 years?

A. Quite honestly, I have to say no, I can't recall.

Q. Have you ever read a report by NIOSH concerning asbestos air levels in the King City plant that was done around 1983?

A. By NIOSH?

Q. NIOSH.

A. Again, I don't know.

Q. This report that you issued concerning the x-rays of the King City workers, to whom was that report issued, or to whom was it addressed?

A. I was asked to do it by Mr. Meyers; I would have reported to him.

Q. And as far as you know, is that the only survey of its type of the x-rays of the King City workers or had there been others done by other people?

MR. GERSON: I guess I object to the

ambiguity of its type. If you want to rephrase.

Q. What I am wondering is do you know if anyone other than you ever looked at all of the King City x-rays that you did and surveyed them to --

A. I was told, and I believe this was maybe after I had even left Carbide, I don't know, that the x-rays -- that the x-rays had been looked at in the similar fashion after I had done that by -- I can see that -- Sawyers, Bob Sawyers.

Q. By Sawyers?

A. Dr. Sawyers.

Q. Robert Sawyers?

A. Robert Sawyers.

Q. And do you know when that was done?

A. It was after I did it. And I don't know how he came to it, I know he did.

Q. Have you seen any report that Dr. Sawyers issued?

A. No.

Q. Dr. Sawyers has been listed as an expert by Union Carbide in this case, I think.

MR. BROWNSON: Hasn't he? I think

he was.

Q. Do you know if the survey of King City x-rays that Dr. Sawyers did was in connection with any litigation arising out of exposure to Calidria asbestos?

A. I don't know why Dr. Sawyers was asked to review those cases.

Q. Did you understand that the x-rays that you reviewed were x-rays of all workers who were currently employed at King City at the mine or mill?

A. To the best of my recollection, the x-rays I had reviewed were of current workers.

Q. Do you know if there were x-rays kept at King City of workers who left their employment in earlier years?

A. The OSHA standard requires that x-rays and medical records be retained for the duration of employment plus 30 years, and in the case of asbestos 40 years, so I would sincerely hope that they were.

Q. Do you know where those x-rays are maintained or were maintained at that time?

A. At the local hospital in the

department of radiology, if they were maintained.

Q. And did you make any survey or reading of those x-rays?

A. No, as far as I'm aware.

Q. Do you know if Dr. Sawyers reviewed those x-rays?

A. I don't know exactly what Dr. Sawyers did.

Q. Have you ever looked at x-rays of any workers other than workers at King City who have been exposed to Calidria asbestos?

A. No.

Q. And I'm not talking about just Union Carbide workers; I'm talking about anybody; it could be a Conwed worker?

A. No.

Q. While we are on that topic, have you looked at any of the medical record or x-rays of any Conwed workers?

A. No.

Q. Do you know what Conwed is?

A. Not really.

Q. If I told you it was a company that made ceiling tile up in Cokato, Minnesota, had you

ever heard of that before?

A. No.

Q. Do you know if while you were at Union Carbide from 1982 to 1992, if there was any epidemiological work of any kind done on the workers of Union Carbide customers who used Calidria asbestos?

A. I can't say that I was aware of any.

Q. Are you aware of the fact that over the years Union Carbide industrial hygienists took various air measurements at Union Carbide calidria customers' locations?

A. I was I know that Union Carbide industrial hygienists took samples at many of Union Carbide customers for various purposes.

Q. Have you ever seen any of those?

A. I don't remember seeing any of those, insofar as Calidria is concerned.

Q. Right, Calidria is what I am talking about.

Do you know if anyone has read the x-rays in the manner that you did on the King City workers where you looked at a bunch of x-rays on a number of workers, for workers at the Johns

Manville mine at Coalinga. California?

A. I have no idea.

Q. How about the Atlas asbestos mines at Coalinga?

A. I don't know anything about those two mines.

Q. Do you have any information about the current activity of the California board of air resources Superfund activity at Coalinga?

A. I've heard something about it, but I'm not familiar with the details.

Q. And when you say you've heard something about it, was that more or less in passing or have you heard it in connection with some work you have been doing?

A. Yes, more or less in passing.

Q. Do you have an understanding that some governmental body in California is attempting to claim that the Supertene department in Coalinga, California poses some sort of health hazard because it's getting into the air or water out there?

A. That's what I've heard.

Q. Other than that do you have any

information about that?

A. No.

Q. What do you think of that claim?

A. I'd rather not answer.

Q. Is that because you just have insufficient information?

A. I have insufficient information.

Q. I wanted to show you a --

MR. BROWNSON: I guess I'll have this marked. It has previously been marked as Hall Deposition Exhibit 18 in another case called the Manny Stowe case.

(Whereupon, document titled "Mellon Institute Special Report: The Fibrogenic Potential of Asbestos Products via Intraperitoneal Injection in Guinea Pigs, Rats and Rabbits and by the Intratracheal Route in the Rat" marked Lewinsohn Exhibit 7 for identification as of this date.)

Q. I'm showing you what has been marked as Lewinsohn Exhibit 7 and I'll ask you if have you ever seen that before?

A. I honestly don't know.

Q. And just for the record, it's titled,

"Mellon Institute Special Report: The Fibrogenic Potential of Asbestos Products Via Intraperitoneal Injection in Guinea Pigs, Rats and rabbits, and by the Intratracheal Route in the Rat."

Did I read that correctly?

A. Yes.

Q. And it's dated July 8, 1966?

A. Right.

Q. And why don't you just take a minute and just skim through it there.

A. This obviously is a lot to read here and to digest. I've skimmed it.

Q. First of all, having now skimmed that report which is Deposition Exhibit 7, do you have any recollection of seeing that before today?

A. To be quite honest, no.

Q. First of all, that report seems to be some sort of report concerning intraperitoneal injection of asbestos in these various animals, rats, guinea pigs and rabbits.

Is that right?

A. Correct.

Q. And do you remember when you began work in Union Carbide in 1982, if you had made any

sort of survey or investigation of the Union Carbide materials which would have disclosed some of this old material like this exhibit we're looking at now?

MR. WILL: You mean did he go look through the files to see what documents there were about asbestos?

MR. BROWNSON: Right, right.

A. No, I didn't do that. I -- I restricted my searches to necessity, when I needed something I would see if it was there.

Q. Obviously this thing is dated 1966, and you began with the company in 1982?

A. '82.

Q. So this was done well before you started there?

MR. WILL: Remember, he was not directly responsible for anything having to do with asbestos.

MR. BROWNSON: I understand that. I understand that.

Q. My question is: As you recall it, you didn't make any sort of search of the Union Carbide documents for old asbestos reports or

other reports of this type?

A. No.

Q. And at the time that you started at Union Carbide in 1982, was there somebody else in the medical department who was directly responsible for the asbestos business, the Calidria business?

A. Yes.

Q. Who was that?

A. I believe it was Dr. Fortney.

Q. Fortney?

A. F-o-r-t-n-e-y.

Q. Is he still with the company?

A. No.

Q. Was he at Danbury, Connecticut with you or where was he located?

A. When I first started at Union Carbide, he was located in Indianapolis.

Q. Indianapolis.

Up until the time that Union Carbide sold the asbestos business in 1975, was Dr. Fortney the person in the medical department who was in charge of that?

A. Yes.

Q. When you began with the company in 1982, did you know at that point in time that Union Carbide had this asbestos business with Calidria asbestos with the Coaling mine and the mill?

A. Well, during my orientation process, I learned about the various Carbide businesses. So I had -- I knew of the existence of the King City.

Q. Before you started at Union Carbide in 1982, did you know about it or is that something that you learned after you joined the company?

A. Before I started with Union Carbide, I knew that Union Carbide had an interest in asbestos; I wasn't that much concerned about what it was.

Q. And based upon your own past experience at the pneumoconioses unit at Turner Brothers and at Raybestos-Manhattan, did you yourself have a particular interest in Union Carbide's asbestos business when you began there in 1982?

A. When I began at Union Carbide in

1982, asbestos was the furthest thing from my mind.

Q. Okay.

A. I had no -- I didn't go to Union Carbide because of asbestos if that is your question.

Q. Did you go to Union Carbide to get away from asbestos?

A. No, I went do Union Carbide to earn my living.

Q. At the time that you were with Raybestos-Manhattan, had there been any claims made against that company for personal injuries arising out of asbestos exposure legal claims?

A. Are you talking about workers compensation or are you talking about, you know, --

Q. I am talking about lawsuits.

A. Lawsuits.

A. Yes, Raybestos-Manhattan I believe was involved in litigation.

Q. And as part of your duties at Raybestos-Manhattan, did you work on that litigation or was that outside of your area?

A. Not really on the litigation, no. I would occasionally be asked for an opinion or advice, but I wasn't directly involved.

MR. BROWNSON: Let me do this. We've got a little while here. Let me just change the subject a little bit since I can't finish, but I wanted to ask you about one thing.

Q. You have been listed by Mr. Will as a possible expert witness in this particular case.

Do you have any understanding as you sit here today what opinions you would be asked to offer on behalf of Union Carbide in this case?

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A. As I sit here today, my understanding is that the opinions I would be asked to offer would be in connection with the my practical knowledge and experience of asbestos and health and all of its aspects.

Q. So as far as you know, and again, I suppose this is subject to change, but as far as you know, you will not be asked to give opinions about the medical conditions of particular Conwed workers? At least you haven't been told that so far?

A. As far as I know, that is not what I am being asked to do.

Q. And do you hold an opinion as to the toxicity or biological potential of Calidria asbestos or its ability to cause disease?

A. I hold an opinion, yes.

Q. When was that opinion first formed, if you can recall?

A. Some time during my tenure with Union Carbide as I from time to time was consulted about the health effects of asbestos, and in particular reference to comparison with Calidria, I formed an opinion.

Q. During the 10 years you were with Union Carbide from 1982 to 1992, did people within the company consult you about the health effects of asbestos because of your prior experience and background?

A. Yes.

Q. So even though it was this other doctor -- and I didn't make a note of his name?

A. Fortney.

Q. Fortney, who was in charge of the asbestos business, so to speak, until 1985, people

at Union Carbide would consult you as well on asbestos issues?

A. Yes.

Q. Did Dr. Fortney ever consult with you about the Calidria asbestos?

A. Yes.

Q. Have you ever worked done any work in connection with any lawsuits other than this one in which the issue of health effects from Calidria asbestos were involved?

A. Not that I know of.

Q. What is the opinion that you have about the health effects of Calidria asbestos?

MR. WILL: That's's pretty broad question.

MR. BROWNSON: Well, we have to get at it somehow.

A. It's my opinion that the physical chemical properties of Calidria asbestos are such as to make it extremely unlikely under normal working conditions to produce any significant health effects.

Q. Are you saying by that that it would be impossible to get asbestosis from Calidria

asbestos under any circumstances?

A. I didn't say it was impossible under any circumstances, but I'm saying that under any normal working conditions.

Q. Are you saying that under normal working conditions, it's impossible to get asbestosis or unlikely that you would get asbestosis?

A. I'm saying it's extremely unlikely.

Q. And when you say normal working conditions, what do you mean by that?

A. Where there is not gross overexposure to an overwhelming -- let me rephrase that.

Where there is not gross overexposure to a concentration of fibers that would totally overwhelm the normal body defense mechanisms.

Q. And do you have an opinion as to what fiber level that would be?

A. I have no idea.

MR. BROWNSON: Why don't we continue this. Just a couple of things real quick.

Q. Concerning Dr. Fortney, is he still alive?

A. I hope so.

Q. Do you know where he is?
A. Yes, I do.
Q. Where is that?
A. Oak Ridge. Oak Ridge, Tennessee.
Q. Is is he employed there or is he retired?
A. No, he is retired.
Q. And how old a man is Dr. Fortney?
A. Late '60s.
Q. Young man.
A. Young man.
Q. And what is his first name?
A. His first initial is T, I don't know what it stands for, Guy, G-u-y, T. Guy Fortney.
Q. Do you know if he still maintains his medical license in retirement?
A. He does as far as I know.
Q. Do you know if is he doing any work?
A. He is working.
Q. Working down in Tennessee?
A. Yes.
Q. Does he still do any consulting work for Union Carbide?
A. I believe he does, yes.

Q. Do you know in if he does any work for Union Carbide at the present time concerning Calidria asbestos issues?

A. I don't believe he does.

Q. What periods of time was he responsible for the Calidria asbestos business, do you know?

MR. GERSON: When you say responsible for the Calidria asbestos business, --

MR. WILL: The medical director for that portion of business?

MR. BROWNSON: Right.

Q. You had identified him as the person directly responsible in the medical department, I'm wondering what period of time that was.

A. I don't know the exact period of time but, or during the time I was there, that was one of his divisions that he had responsibility for.

Q. So at least from '82 to '85?

A. At least, yes.

MR. BROWNSON: I guess that's all I got, other than to say I regret we didn't finish the deposition and what else can I

say.

MR. GERSON: You have 10 more minutes to finish?

MR. BROWNSON: We have a big pile of stuff.

(Discussion off the record)

MR. WILL: Back on the record.

MR. BROWNSON: I'll just state that I haven't completed my questioning and we would like to reconvene the deposition at a time and place convenient to all involved, particularly Dr. Lewinsohn, and that we will give the deposition exhibits to the reporter and she can put them with the transcript.

MR. WILL: And I assume that I'll have a chance to ask clarification of questions when we reconvene since I don't have that chance now?

MR. BROWNSON: You can ask whatever you want, but I'll just say I wanted to get a copy of those with my copy of the transcript, too.

MR. WILL: Of the exhibits?

MR. BROWNSON: Yes.

MR. WILL: Yes.

(Time noted: 4:10 p.m.)

Subscribed and sworn to before me

this_____day of _____, 1994.

_____

C E R T I F I C A T E

STATE OF NEW YORK)
) ss.:
COUNTY OF NEW YORK)

I, MARIANNE D'AMICO, a Shorthand Reporter and Notary Public within and for the State of New York, do hereby certify:

That I reported the proceedings in the within entitled matter, and that the within transcript is a true record of such proceedings.

I further certify that I am not related, by blood or marriage, to any of the parties in this matter and that I am in no way interested in the outcome of this matter.

IN WITNESS WHEREOF, I have hereunto set my hand this 22nd day of February, 1994.

Marianne D'Amico
MARIANNE D'AMICO

February 15, 1994

I N D E X

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E X H I B I T S

Lewisohn		For Ident.
1	Curriculum vitae	12
2	Medical case from Dr. Cooke	122
3	Paper entitled "Medical Surveillance of Asbestos Workers"	126
4	Paper entitled "Asbestos Exposure and Neoplasia"	169
5	Paper by Drs. Selikoff, Churg and Hammond	175
6	Paper presented by Dr. Selikoff published in the Annals of New York Academy of Science in 1965	178
7	Document titled "Mellon Institute Special Report (The Fibrogenic Potential of Asbestos Products via Intraperitoneal Injection in Guinea Pigs, Rats and Rabbits and by the Intratracheal Route in the Rat)"	216

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Corrections to Deposition of Hilton C. Lewinsohn on February 15, 1994

I have read the transcript of my deposition on February 15, 1994 and find the contents to be consistent with my recollection of the questions asked and my replies to them. The following is a list of corrections of typographical errors and mis-spelt words.

Page 9: Line 12 :amend "services" to service
:amend "employer" to employee
Line 22: insert a comma after employees and change "to" to do

Page 13: Line 24: change "as" to at and add branch after "country"
Line 25: delete "resident, medical" and insert a period after physician.

Page 15: Line 9: Insert do after "you"

Page 16: Line 12: Insert I was after "months"
Line 21: change "at" to as
Line 22: Insert a comma after "Hospital" and delete "of"
Line 23 Insert a comma after "hospital"

Page 17: Line 3: Delete "Center"
Line 18: Insert a period after "things" and capitalize the y in You

Page 18: Line 13: Insert a comma after "year", delete "when I was at" and substitute during
Line 14: Insert a parenthesis before "that" at the end of the line
Line 15: Insert a parenthesis after "Mines" and delete "and"
Line 18: transpose "these" from after "Now," to after "Johannesburg"

Page 23: Line 10: Insert a period after "TB" then start a new sentence with TB
Line 18: Change "beds" to bed

Page 32: Line 9: Correct spelling from "tenant" to tenens

Page 33: Line 18: Insert we between "and" and "also"

Page 37: Line 24: Delete "that"

Page 40: Line 15: Change "aggressive" to progressive
Line 18: Change "alveoli" to axillae

Page 42: Line 3: change "found" to fine
Line 9: Delete "the" and substitute pathognomonic for "a pathopneumonic"

Page 43: Line 11: Insert an after "showed"
Line 12: Change "incidents" to incidence and insert a comma after it, change the next word "in" to an and insert a comma after "cancer"
Line 13: Change "work" to workers and substitute who for "as"
Line 14: Delete "and eventually" and substitute also had

Page 44: Line 13: Delete "the"

Corrections to Deposition of Hilton C. Lewinsohn on February 15, 1994 (Continued)

Page 50: Line 7: Change "incidents" to incidence
Line 22: Change "Penart" to Penarth

Page 51: Line 17: Change "suddenly" to certainly

Page 52: Line 2: Correct spelling - Merewether

Page 53: Line 24: Correct spelling - Merewether

Page 54: Line 2: Correct spelling - Merewether

Page 55: Line 2: Change "during" to doing
Line 13: Delete "work"
Line 14: Insert a comma after "Yorkshire" and delete "Bersk Bershire" and substitute Derbyshire

Page 56: Lines 20 and 21 do not make sense and should be deleted.

Page 57: Line 4: Correct spelling Furness
Line 5: Delete "Bedfordshire" and insert Lancashire instead

Page 60: Line 11: The word "No" should be deleted
Line 25: Insert and after "time" and not between "were" and "getting"

Page 61: Line 7: Delete "scales" in both places and insert exams in both places instead.

Page 65: Line 8: Delete "scales" and insert exams instead

Page 81: Line 12: Delete "construction" and substitute obstruction for it

Page 90: Line 3: Ballast not "ballasts" and laden not "latent"
Line 7: Ballast not "ballasts"

Page 91: Line 23: Insert before between "was" and "1963"

Page 92: Line 16: Delete "finer"

Page 95: Line 2: Change "had" to have been
Line 5: "'59" does not seem to be correct and perhaps should be deleted. It is possible that the questioner may have said "around that time".

Page 98: Line 21: Change "hydrogenist" to hygienist

Page 100: Lines 17 and 20: Change "carting" to carding

Page 101: Line 5: Change "hasher" to hopper
Line 17: Change "resolved" to revolved

Page 102: Lines 9, 11, 12 and 14: Change "carting" to carding
Line 15: Change "parses" to passes

Corrections to Deposition of Hilton C. Lewinsohn on February 15, 1994 (Continued)

Page 103: Line 6: Change "parsed" to passed

Page 105: Lines 10, 16, and 18: Change "carting" to carding
Line 17: Change "cart" (both times in this line) to card

Page 106: Line 21: Change "carting" to carding

Page 107: Line 10: Change "carting" to carding
Line 25: Change "mills" to millions

Page 108: Line 4: Change "mill" to million

Page 115: Line 7: Change "Swasea" to Swaziland
Lines 22 and Line 25: Change "Casio" to Cassiar

Page 117: Line 9: Change "business" to advice

Page 121: Line 22: Change "Montgomery" to Montague Murray
Line 23: Change "Selher's" to Seiler's

Page 124: Lines 8, 15 and 17: Change "incidents" to incidence

Page 125: Lines 20 and 21: Insert the word study after "mortality" in both these lines

Page 128: Line 10: Insert a period after "73" and change "in" to In
Line 24: Change "incidents" to incidence

Page 131: Line 22: Insert Society after "Hygiene"

Page 132: Line 4: Change "105" to 100 and add years after "cc."
Line 7: Add years after "cc."

Page 133: Lines 3 and 22: Add years after "cc."

Page 134: Line 7: Add years after "cc."
Line 14: Delete "Q"
Line 22: Change "incidents" to incidence
Line 25: Change "somewhat" to somewhere

Page 136: Line 22: Delete "doesn't" and change "mean" to means
Line 23: Change "who had the" to whose
Line 24: delete "exposed for", after "years," add that, and after "have" add actually only . This sentence (Lines 22, 23, 24) should now read:

That means to say that somebody who worked...whose years since first exposure had been nine years....that they could have actually only been exposed for one year.

Page 140: Line 7: Change "IOL" to ILO

Corrections to Deposition of Hilton C. Lewinsohn on February 15, 1994 (Continued)

Page 145: Line 17: Change "carting" to carding

Page 149: Line 16: Delete "other than". (*This phrase doesn't make sense to me.*)
Line 19: "other than" doesn't make sense but OSHA does so I suggest it be inserted instead

Page 154: Line 2: Change "Penjab" to Pundsak
Lines 5, 7, and 10: Change "Ritsea" to Reitze
Line 19: Change "Meriweather" to Merewether

Page 160: Line 23: Change "Nicholon" to Nicholson and "Lango" to Langer

Page 167: Line 16: Change "McVide" to McVitte

Page 172: Line 14: Change "by standard" to bystander

Page 193: Line 5: Change "West Carlton" to South Charleston
Line 16: Change "as" to has

Page 206: Line 25: Change "IOL" to ILO

Page 207: Line 3: Change "IOL" to ILO
Line 10: Change "IOL" to ILO and "10/1" to 0/1

Page 208: Line 6: Change "IOL" to ILO

Page 209: Line 12: Change "IOL" to ILO

Page 218: Line 20: Change "Supertene department" to serpentine deposit

H. C. Lewinsohn
4/17/94