

DEC 17 1952

Massachusetts General Hospital

Boston 14

IN BOSTON
GENERAL HOSPITAL
BAKER MEMORIAL
PHILLIPS HOUSE

BURNHAM MEMORIAL FOR CHILDREN
MALL-HERCER HOSPITAL
MUNTINGTON MEMORIAL HOSPITAL
VINCENT MEMORIAL HOSPITAL

DIAN A. CLARK, M.D.
GENERAL DIRECTOR

IN WAVERLEY
MCLEAN HOSPITAL
W. FRANKLIN WOOD, M.D.
DIRECTOR

IN LINCOLN
STORROW HOUSE
(CONVALESCENTS)

December 11, 1952

DEC 24 1952

PLAINTIFF'S
EXHIBIT

ACS-80

Mr. Laurence Locke
c/o Samuel B. Horvitz
8 Beacon Street
Boston, Massachusetts

Dear Mr. Locke:

We have been able to study the postmortem tissues in the case of Mr. Richard Rothwell in part. It will be some time before the final studies are complete. However, we are at this point able to demonstrate the so-called asbestos bodies in the lung indicating exposure and reaction to exposure. It is our opinion at this time that Mr. Rothwell's illness and death were directly related to his exposure to asbestos in his work.

Sincerely yours,

Harriet L. Hardy

Harriet L. Hardy, M.D., Associate Physician
Occupational Medical Clinic

HLH:jma

EX # 1101

Rothwell (dec'd)

REPORT OF EVIDENCE

All the material evidence is reported herewith:

The Utica Mutual Casualty Insurance Company is designated as the First Insurer and the Travelers Insurance Company is designated as the Second Insurer.

HELEN V. ROTHWELL, the claimant, questioned by her attorney, testified she is now 40 years of age, and is the widow of Richard J. Rothwell, they were married December 25, 1930 at Star of the Sea Church, East Boston. There are five children of this marriage under the age of 18 at present. Joyce was born January 13, 1938, Mildred was born May 31, 1939, James was born on August 8, 1941, Harold was born December 25, 1942 and Theresa was born July 6, 1948. Her husband's last employer was the Armstrong Cork Company. She has not got the dates he worked for the Armstrong Cork Company. (IT WAS AGREED he worked there from March 20, 1952 to April 25, 1952.) Asked if at any time while working for this company her husband told her the nature of his work, witness replied, yes. He told her he was a pipe cutter and heat and frost insulator and asbestos worker - it was known under all those names. Prior to working for this employer he worked for A.W. Bancroft Company. She knows he worked there over a year. (IT WAS AGREED he worked for this concern from December 17, 1950 to March 19, 1952.) Asked, did your husband tell you at any time that he worked for the A. W. Bancroft Company what the nature or title of his occupation was (objection noted by counsel for Utica, question allowed in, insurer's exception is saved) witness replied, yes. Asked, what was the nature of his occupation there according to what he told you, witness replied, just a pipe cutter, the same work he always did. He had done that type of work before he worked for the A.W. Bancroft Company. Asked, for how many years before had he done it, witness replied, practically all the time we were married except during the depression; we were married 22 years; about 16 years. Asked, did he describe any of the details or conditions of his work during the time that he worked for the A. W. Bancroft Company (objection noted by Utica, exception saved) witness replied, yes. Asked, will you tell us what your husband told you about the nature of his work that he did while in the employ of the A.W. Bancroft Company (objection noted by Utica - counsel for Utica stated he is making a general objection to cover anything which the decedent told witness as to his employment while employed by A.W. Bancroft Company - his exception is saved) witness replied, I know that sometimes the asbestos came around a cylinder form, they have to cut it, and sometimes it came loose and they have to sort of make what he called mud and pack it on a boiler and cover it with canvas and do the pipes. Asked, did he tell you anything at all about the condition or conditions under which he worked, witness replied, sometimes had to climb heights and stairs, sometimes he worked under the ceilings, sometimes on the floor. sometimes he worked in what he called tight corners. Asked, when he cut the asbestos tubing did he ever tell you what it was like when he cut it, witness replied, he brought home some one time and I could see what it was like - it was hard on the top, soft in the center and soft of powdery when you cut it. Witness always did the family wash. She did observe the condition of his work clothes when he came home from work. Asked to tell what she observed about the condition of his work clothes while working for the A. W. Bancroft Company, witness replied, the same as always. Asked to tell what that was, witness replied, I just had to take his overalls before I washed them and had to take them outdoors and shake them hard and get all the stuff out of them in his pockets. She had to shake loose little feathery stuff, this was in the pockets and in the cuffs and just all over. The work shirts would be covered also, it clung to everything. Asked, what was the condition of your husband's face and hands when he came home from work, was it clean or what, witness replied, just clean. The first physical

change she noted in her husband's condition was he got out of breath. She first noticed that around January 1952. Asked, and had you noticed a change in his physical condition before January 1952 from the condition that he was in when you first got married, witness replied, yes, definitely. She noticed that he started to lose weight. He started to lose weight before Christmas 1951. She had not noticed any change in his physical condition prior to that. Asked, nothing at all, witness replied, except in that morning he had to clear his throat, he had a dryness in his throat. Asked to tell when she first noticed this clearing of the throat and dryness of the throat on awakening in the morning, witness replied, about a year or so. That was a year or so before December 1951. Her testimony is that the first physical change or symptom she noted in her husband was this clearing of his throat on awakening in the morning and the dryness in his throat, the second thing she noticed was the weight loss and the third thing was that he got short of breath and this was in January 1952. She knows where her husband was working in January 1952; it was at Fort Kent, Maine. She was not with him at that time. He came home for Washington's Birthday which was in February. Prior to that he was at Fort Kent and came home for Christmas. She saw him at Christmas and then over Washington Birthday weekend. Asked, at the time you saw him over Washington's Birthday did he tell you anything about the condition of his health between those two dates, witness replied, (objection noted by Utica, exception is saved) yes. Her husband had called her up. He always called her - he called her every week on Thursday. Asked, did he tell you anything about his health in these telephone conversations before Christmas and Washington's Birthday of 1952 (general objection noted by Utica to the conversations, exception is saved) witness replied, he said he was not feeling well. Asked, did he tell you in what way he was not feeling well, witness replied, not too much. Asked, when he came home and saw you over Washington's Birthday did he tell you anything about the condition of his health during those two months before (objection noted by counsel for Utica and Travelers, their exceptions are saved) witness replied, he was sick at Fort Kent, he had been very sick. Asked, when he told you he had been sick at Fort Kent, did he describe to you how he had felt and what he had felt when he was sick, witness replied, I can't remember clearly. Asked, do you know from what your husband told you the reason he left the Bancroft Company, (objection noted by Utica and Travelers, exceptions are saved for both) witness replied, he told me that there was about four inches of water where he was supposed to be working, he said he told Mr. Bancroft that he was sick and just could not work there, so he just left. He then obtained this job with the Armstrong Cork Company. Asked, did your husband, while he was working for the Armstrong Cork Company, at sometime before any illness was brought in this case, did he tell you then what was the type of work he was doing in the employ of the Armstrong Cork Company, witness replied, yes. Asked, and what did he tell you, witness replied, he was an asbestos worker. Asked, and did he tell you anything about the circumstances or nature or details of that work for this particular company, witness replied, he did tell me he had a lot of stairs to climb on this job. Asked, did he tell you anything else, witness replied, it was a new housing project. This was located in Roslindale. Her husband was doing the insulating in this project. She does not know what the insulating was. Asked if he told her what insulating material he was working with, witness replied, no, I don't know the material he was working with at that time. While working for the Armstrong Cork Company she also washed his work clothes and shirts and slacks. Asked, and did you have occasion while he worked for the Armstrong Cork Company to observe anything about the condition of these work clothes as to dust, witness replied, I don't remember. Her husband left the employ of Armstrong Cork Company on April 25, 1952. During the time he worked for the Armstrong Cork Company he lived at home. Asked, tell the condition of his health as you observed it during the period from March 20th to April 25th while he worked for the Armstrong Cork Company, witness replied, seemed to get weaker, not better. Asked to tell what symptoms she observed about him during the period he worked for Armstrong Cork Company, witness replied, he was

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starting to get irritable and he never was irritable, that was a change, and he was tired and was not eating good, he just did not look good, that is all I can tell you (objection noted by Travelers to the statement 'he just did not look good', exception is saved). When he came home from Fort Kent they were living in Wilmington and her husband went to Dr. Gerald Fagan of Clark Street, Wilmington. They were not living in Dorchester when he worked for the Armstrong Cork Company. Her husband saw the doctor either on the 22nd of February or the day before, it was in that vicinity. Asked if Dr. Fagan continued to be her husband's doctor until the time he went to the Massachusetts General Hospital, witness replied, not in entirety, no. At some time he saw Dr. Edward Hogan of 6 Lyndhurst Street, Dorchester. He saw him in May. Asked, had he been under the care of Dr. Fagan from February until May, witness replied, more or less, I mean the doctor came a couple of times to the house and he went to the office a couple of times. Asked, do you know why your husband left the employ of the Armstrong Cork Company (objection noted by Travelers, exception is saved) witness replied, yes. Asked, at some time before your husband stopped work at the Armstrong Cork Company did he have a consultation in your presence with some physician, witness replied, yes. That was with Dr. Hogan. Following that consultation with Dr. Hogan her husband stopped work at the Armstrong Cork Company. Then at some time he went under the care of the Massachusetts General Hospital. A friend, George Baylan, Jr., referred him to the Massachusetts General Hospital. She believes he first went to the Massachusetts General Hospital on June 23, 1952.

Counsel for the claimant offered the record of Massachusetts General Hospital for this record. Counsel for the Travelers objected to its admission in its entirety, specifically objecting to the history and any diagnosis based on the history, his exception is saved; counsel for Ulica objected to the admission of this record, his exception is saved. The record of Massachusetts General Hospital - Unit #728205 - is made part of this record by reference and may be found in the Board file. Counsel for Travelers requested his exception be saved to his request for some part of this record to be deleted.

TO COUNSEL FOR THE ULICA: She did say her husband was up in Maine during December 1951, January and February 1952. Her husband came home Washington's Birthday and she is not sure whether he then returned to Fort Kent. Asked, you think he came home on Washington's Birthday and then did not return to Fort Kent, witness replied, I don't think so. Her husband did come home for Christmas and the next time after that was on or about Washington's Birthday, which was in February. Of her own knowledge she does not know what his condition was in January 1952. Asked, and when you told us a little while ago that you noticed he got short of breath in January 1952 that was not as result of any personal observations which you had made, witness replied, I was not there in January. Asked, that as what you told us, witness replied, the only time I would have seen him was when he left after New Years. If she said previously that she first noticed he was getting out of breath in January 1952 that is not as as she did not see him then. Asked, and your memory now is that you have no clear recollection as to when you first noticed him getting out of breath so to speak, witness replied, that is correct. Her husband came home in December 1951 a few days before Christmas. She would not say he started to lose weight in December 1951. She did testify that clearing of the throat started in December 1950. Asked if that seemed to get progressively worse as time went on or remained the same, witness replied, got worse. Before her husband worked for the A.W. Bancroft Company he worked for the New England Insulation Company. He was doing the same type of work there. That is the work she has described here. She thinks he worked at the New England Insulation Company quite a while. It must have been over two years. Her husband went to work for the A.W. Bancroft Company directly after leaving his employment at New England Insulation Company. There was no layoff period or anything of that nature. He went to work for the Bancroft Company within a week after his leaving the New England Insulation Company. Asked, can you recall for whom he worked before he worked for the New England

Estabrook (rebuttal)

Insulation Company, witness replied there was a whole list of them, I could not give them in order, I don't know if I could give them all. Before he worked for the New England Insulation Company he worked for the Insulation Company of New Jersey. There he did the same type of work that he did for New England Insulation Company, A. W. Bancroft Company and Armstrong Company. He may have worked for the Insulation Company of New Jersey about a year.

During her husband's lifetime he did the same type of work as she has described here this morning; that was his trade, in other words. He had been engaged steadily at that trade during their married life except during the depression. During the depression he was out of work six years. They were married December 26, 1930. Her husband was working at that time. Sometime in the early Thirties he was out of a job. In the late Thirties he resumed working again at the type of work she has described. She read in the paper that the Mr. Bancroft for whom her husband worked had died. She understood that the Mr. Bancroft for whom her husband worked had a small shop. Her recollection is that the day her husband stopped working for the A. W. Bancroft Company he then started to work for the Armstrong Company the next day. She did not have occasion to wash his clothes while he was up Fort Kent. Her husband did not send them home. Asked, and you don't know of your own knowledge under what conditions he worked while at Fort Kent, witness replied, just what he told me. When she told this morning about the conditions under which her husband worked that was something her husband told her? She did not follow him around.

TO COUNSEL FOR THE TRAVELERS: Her husband brought his overalls home every two weeks for her to wash. She is positive of that. He used to leave the overalls in his tool kit when he did not bring them home. Asked, so when you testified this morning as to the condition of his overalls, you only saw those overalls once every two weeks, more or less, witness replied, yes. After her husband saw the doctor on February 21st or 22nd he went back to work for the Bancroft Company. He continued to work for this company until March 19, 1952. The next day he went to work for the Armstrong Cork Company. From the time he saw the doctor in February 1952 up until he saw the doctor in April 1952 when he stopped working, she observed that he was different, he was irritable, at times he was not eating good, he was not sleeping good. Asked, anything else, witness replied, just was not feeling good, he was not himself. Asked, was he complaining to you about anything during the period from February 21 or 22, 1952, witness replied, he complained of his chest. Asked, what did he complain about in his chest, witness replied, one morning he got up and went to the bathroom and came back holding his chest tightly, he said 'I can't breathe, can't breathe'. Asked, you testified he started to get out of breath in January 1952, witness replied, I meant he found it harder to breathe. Asked, what did you observe about him during that period from February 21 to April 25th, anything else, witness replied, I don't know. Asked, but that is the condition you observed him to be in from February 1952 until April 25, 1952, witness replied, yes. Prior to that she had not seen him for substantially two months. Asked, and you're sure this was the condition he was in from February 22nd to April 25, witness replied, yes. Asked, no question about it at all, witness replied, no.

DR. HARRIET L. HARDY, called and questioned by counsel for claimant, testified her professional address is Massachusetts General Hospital, Medical Department of M.I.T. in Cambridge. She is a physician and licensed to practice medicine in the Commonwealth of Massachusetts. Asked if she has a particular speciality in the field of medicine, witness replied she makes a special study of occupational disease. Asked if she holds any position with regard to that speciality, witness replied, yes, I have charge of the occupational medical clinic and at M.I.T. I am assistant medical director in charge of the occupational medical service. Asked if in that field her work is primarily one of treating patients or primarily one of research, witness replied, it's a combination of both those features. In connection with her speciality she deals with diseases of the chest. The decedent in this case was a patient of hers at Massachusetts General Hospital. She first saw him on June 23, 1952 at her office. At that time she received a history from him. Asked to tell the history she received, witness replied, he gave me a history of gradual onset of coughing in the morning causing him to vomit in January 1952 without other symptoms. In answer to counsel for Travelers witness stated this history is one in her

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personal records), he kept working for three weeks in spite of this cough. he was told to stay home by his family physician who said he had the grippe, then began to have severe pain in the left shoulder blade - worse in the morning, better when he moved around, much worse at night, there was increase in cough and about this time he began to be aware of increasing shortness of breath, he dated that as about March 1, 1952, it was so troublesome that he had to do something about it, about April 1, 1952 he went to his physician in Dorchester, Dr. Edward Hogan, and she has talked with him. She got her history from the patient. She got the history and then did the physical and then talked with Dr. Hogan. The patient gave her the history of Dr. Hogan telling him after his x-rays that his lung had collapsed (counsel for Travelers objected to this being admitted, his exception is saved - counsel for Utica also objected to this being admitted and his exception is saved.) Her history continues that from this period of time in April 1952 the patient had been taking penicillin and iron and sulphur drugs, he had some constipation and a burning sensation in the left armpit, he reported a weight loss of 16 pounds since January, a shortness of breath that he noted beginning in March and was getting worse when he was indoors, his appetite was fair, the medical history that he gave insofar as it was important was that he had bronchitis 8 years ago, he had had slight sinus infection with some coughing but nothing severe enough to keep him out of his work, he had x-rays taken from time to time in community surveys and he was never told there was anything wrong, his father was thought to have tuberculosis, that diagnosis was not clear, the patient gave it to witnesses and she put down a question mark after it, the man smoked both pipe and cigarettes, averaging about a pack a day until his present illness, his occupational history was that he began working in a store as a clerk while still at school and he did errands at Boston Floating Hospital for two years while still at school and during the summers he was a shipper at Pilgrim Press Company, he stated that about 29 years ago, when he was about 17, he worked off and on, sometimes with his grandfather and with a number of companies, at what he called a heat and front insulator man. His description of that job was that he received asbestos boards, its source depending on the company with which he was working (in answer to counsel for Travelers' question as to what period of development she is now talking about witnesses she is talking about the history he gave her covering 29 years.) He gave no description of any specific boards, asbestos boards, he gave a description of his trade of heat and front insulator. His particular job was to cut and saw the asbestos boards to fit pipes and boilers and needed for insulation. Witnesses did a physical examination at the time asked if she followed him while he was in the hospital during his various admissions, witness replied, with the exception of his admission in July when I was away on my holiday, she followed him in June and her associate kept in touch with him. When he returned to the hospital after that she followed him. After his death an autopsy was performed. She had a chance to read the autopsy protocol and the different autopsy material. Having in mind her contact with this case she presently has an opinion as to what the diagnosis of this man's illness was. She did testify that she followed this man throughout his entire period of hospitalization, that she reviewed the autopsy protocol and saw some of the pathological material in connection with the autopsy. In addition she is familiar with the hospital record itself.

TO THE COMMISSIONER: She did examine this man. Her first examination was on June 23, 1952 when she discovered the man had a complete collapse of his left lower lung, he obviously had lost weight, following he had chest x-rays which she viewed with the roentgenologist and discovered that he not only had the collapse of his left lower lung but he had evidence of density by x-rays in the right lung. On the basis of these findings she recommended his hospitalization for diagnostic studies. He was hospitalized. These were made by her colleagues in the hospital at her suggestion, she was not there. Asked if she participated in some of them, witness replied, only to the extent of suggesting them. Her holiday came during this period and when she came back they went over the material together. Asked if she supervised or controlled these studies or

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were they just merely a suggestion on her part, witness replied I supervised them to the extent of being the senior officer who is doing the recommending, there were other doctors around. The results of those studies were made available to her. Based on the history she received, the physical examination she conducted, the diagnostic material which was made available to her, she arrived at a diagnosis in this case. Her diagnosis was carcinoma of the lung and asbestosis.

TO COUNSEL FOR THE CLAIMANT: Asked after she reached the diagnosis she has just testified to, did she have any further contact with the man during his period of hospitalization, witness replied, yes, I did. This further contact was that she went to see him very often while he was in the hospital, consulted with other physicians about the course of treatment once the diagnosis was made and followed him case to the time of his death, she was not a witness at the autopsy but followed out very carefully what those findings were. She herself personally viewed some of the autopsy material. She personally viewed a slide of the lung. In the course of her medical training she has had occasion to receive training in the field of pathology. Asked to tell what that training was, witness replied, she had the usual amount of pathology as an undergraduate, meaning she took lectures and so on, then when she was house officer at Philadelphia General Hospital she had intensive training in pathology which involved doing a great amount of autopsies, then she took one semester in the department of pathology in Cornell University making an intensive study of certain pathological problems, since that time it's been her privilege to associate with Dr. Tracy Mallory in pathological studies of occupational diseases. Asked, do you feel that you are qualified to view these pathological slides of Mr. Rothwell's lung tissue (objection noted by counsel for Travelers and Utica, their exception is noted) witness replied, yes. Asked to tell what the slides revealed (objection noted and exception saved for counsel for Travelers and Utica), witness replied, showed what is known as pulmonary fibrosis, meaning scar tissue and reaction around the bronchial tubes, large ~~granular bodies~~ are usually associated with the presence of foreign material, I saw what are known as asbestos bodies and I saw cells of malignancy (counsel for Travelers objected to the testimony about the asbestos bodies and his exception is saved). Asked to describe the asbestos bodies for the purpose of the record, witness replied, the asbestos bodies as seen in this man's lungs are club-shaped bodies that take an iron stain which means they look yellowish under the microscope, they vary in length and contour and are unique with the inhalation of certain varieties of which asbestos is one (counsel for Travelers objected to this testimony being admitted, his exception is saved) these asbestos bodies are bits of asbestos fibers surrounded with blood pigment which have clung to the asbestos bodies during their long presence in the small bronchioles which is the small part of the bronchial tree, their shape varies, depending on the length of the asbestos fibers and the length of time it's been in the bronchial tree. Asked, do you now have an opinion, based upon the contact you had with this case as you have testified, as to what the diagnosis is in the case, witness replied, yes (objection noted for counsel for Travelers and Utica and their exception is saved). Her present opinion is that this man died of bronchogenic carcinoma, secondary to asbestosis. Asked, have you an opinion as to the relationship of the asbestosis and his work as pipe coverer (objection noted by counsel for Utica and Travelers, question allowed, their exception is saved) witness replied, I said 'yes' I had an opinion, my answer is based on the length of time that this patient worked in the industry involving exposure to fine asbestos fibers during the cutting and sawing of asbestos boards, the length of time I would like to emphasize, and the discovery of asbestos bodies in the lungs definitely prove the relationship between exposure and the diseased process, it's my opinion these two things fall in together - his work as pipe coverer and the disease that resulted in his death. Asked, did this man give to you at any time during the period that you saw him any specific information

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tion as to his work for the A. W. Bancroft Company between December 17, 1950 and March 19, 1952, witness replied, he described to me his work with the Bancroft Company as we worked backwards into his early life history and he told me that his work at the Bancroft Company was precisely the same trade as I have earlier described to you. Asked, did he give you any information with regard to dust conditions in his work for the Bancroft Company, witness replied, nothing above the grinding and sawing which I have stated previously. He did not produce any asbestos material to show how he conducted his work. Asked if she got any information from him as to whether or not the cutting and sawing of asbestos pipe covering produced any dust, witness replied, yes. He told witness that when he was cutting and sawing material that he had to fit on the pipe he often did it dry and had to use a grinding wheel of one sort or another or mechanical type of saw that he pumped with his foot or had some electrical equipment if it was a bigger company and at that time there was a good deal of dust flying around about the air, that was the kind of history she was trying to draw out of him; counsel for Travelers objected, stating the question was asked with regard to his work at Bancroft Company and if the answer is not confined to it then he would like it taken out. Asked if she got any specific information with regard to the work at the Bancroft Company, witness replied, he talked about this at great length because except for this very brief employment at the Armstrong Company that was his most recent job, and in the discussion of the operations it was obviously the Bancroft Company he was talking about, we talked about the character of the job and he told about the times that he did not do the job wet, sometimes this job was done wet. He did describe to her the operation of mixing the asbestos powder into a mix. Asked, did he describe that operation as having been performed while working between December 17, 1950 and March 19, 1952, witness replied, I have no such note. Asked, did he tell you about his work for the Armstrong Cork Company between March 28, 1952 and April 25, 1952, did he give you any specific information with regard to the character of that work, witness replied, the only note I have is that the most recent work was similar to his earlier work but I don't have the precise description of his work at the Armstrong Company being different from that of the Bancroft Company. Asked, do you have an opinion as to whether or not this employee's disease and death were causally related to his work at the Bancroft Company as you have described it in your previous answer while in the employ of the Bancroft Company between December 17, 1950 and March 19, 1952, witness replied, no. Asked, do you have an opinion as to whether it was related to his exposure to the same type of work that you have mentioned in your answer to the previous question while in the employ of the Armstrong Company between March 28, 1952 and April 25, 1952, witness replied, you're making it tough for me, no. Asked, in your previous answer you told us that you felt that his disease and death were related to the length of time that he was exposed in his work as pipe coverer, witness replied, yes. Asked, do you have an opinion as to whether or not he received any additional injury to his lungs while performing his work for the Bancroft Company between December 17, 1950 and March 19, 1952 according to information that you received and to which you have testified to here today, witness replied, yes, this is a medically sound observation, I do have such an opinion. Asked, do you have an opinion as to whether he received any additional injury to his lungs while working for the Armstrong Cork Company doing his work as you have testified to between March 28, 1952 and April 25, 1952, witness replied, yes, I have an opinion. Asked to give her opinion in regard to this additional injury to his lungs while working for the Bancroft Company, witness replied (objection noted by counsel for the Utica, stating there was no specific information as to what he did for this company, counsel's exception is saved) the history from way back up until and including the Bancroft Company gives substantial evidence of exposure to very fine asbestos dust because of the nature of the operations and the preparing of the asbestos board for use as insulating material (objection noted by counsel for Utica and Travelers and their exception is saved), the study of the case very clearly indicates a long-standing process, depending on the presence of asbestos fibers of varying sizes in the small bronchioles with resultant reaction around these bronchioles and what amounts to little patches of pneumonia, when these little patches of pneumonia take place bits of the lung become incompetent, they are no longer of any use, now during the exposure at the Bancroft Company he inhaled more asbestos dust of a fine enough caliber to reach the small bronchioles, he plugged the small bronchioles

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which resulted in reaction (counsel for Utica objected to the description of 'small caliber of asbestos' while working for his company, question and answer admitted de bene.) Asked, in answer to the previous question about this man's exposure while in the employ of the Bancroft Company, that is to say for his employer between December 17, 1950 and March 19, 1952, you did not tell us anything as to the size or caliber of the particular asbestos fibers to which he was exposed, did you obtain any information from him as to that, witness replied, no. Asked, what do you base your statement to your previous answer with reference to the caliber and size of the asbestos bodies to which he was exposed while in the employ of the Bancroft Company, witness replied, the answer is very simple - because of the finding of the asbestos in the lung, it had to be small enough to get there, there could be any number of them arriving at one exact moment, but because of the quantity of them and the character of them which I have described to you earlier as evidence of the asbestos bodies it seems reasonable, and certainly an extra number of fibers reaching that lung set up a reaction during the period. I have just been describing to me, meaning 3 years prior to his death (counsel for Utica objected to the question and answer and they are admitted de bene.) Asked, did you receive enough information from this man to form an opinion as to whether or not he had sustained any additional injury to his lungs during the period from March 20, 1952 to April 25, 1952, witness replied, no, I have no such thing. She does not have enough information on that. Asked, in a previous answer you testified that the bronchogenic carcinoma secondary to asbestosis, will you give us your reasons for that statement, witness replied, my reasons are based on experience and study, experience of other cases of individuals who have asbestosis and have died of bronchogenic carcinoma, precisely with the same clinical facts and pathological study as Mr. Rothwell and when I speak of study I refer to my knowledge of literature plus travelling in Europe and being at Saranac symposium in October 1952 at which time the whole subject of asbestosis and cancer of the lung was reviewed. She has had experience with individual cases of asbestosis and bronchogenic carcinoma other than that of Mr. Rothwell. Asked to tell what her experience has been in these other cases, witness replied, precisely the same - a long history of exposure to asbestos. Asked, do you have an opinion as to the mechanism whereby the asbestosis is causally related to the bronchogenic carcinoma, witness replied, yes. In her opinion the asbestos fiber which is small enough to reach the bronchioles is not big enough to really plug it and what happens is that during inspiration and expiration the asbestos fiber swings back and forth and acts as a mechanical irritant and we know other mechanical irritants that have produced malignancy, that is the basis for the opinion that the asbestosis caused the bronchogenic carcinoma.

TO COUNSEL FOR THE UTICA: Asked, you don't want to tell us you know what causes cancer, witness replied, in some instances I would be glad to, we have a pretty clear evidence in regard to pipe smokers, etc. Asked, people found that there may be a greater incidence of cancer among pipe smokers but that is just one of the factors which you have found in your studies, witness replied, yes, but if he did not smoke the pipe he would not get the cancer, that is all. Asked, is it true that you also find cancer of the lung among people who don't smoke at all, witness replied, yes. Asked, it's also true you find cancer of the lung among people for whom you did not discover in the history of their occupation or background or anything else that the lung had been irritated in any way whatsoever, witness replied, because we can't find it does not mean it does not exist. They have found cancer of the lung in such cases. It is true that her theory that irritants produce malignancy does not follow through in all cases. At the time of this man's first admission to the hospital she did not form the opinion that he had asbestosis. She was on vacation during July of that year. On June 23rd he was in her office as an outpatient, he was not confined to bed then. At that time she received the history she has stated. Mr. Rothwell was still in the hospital when she returned from her vacation in July. Asked if she made an examination of him or assisted or supervised the making of an examination of him at that time, witness replied, yes. On that particular admission he was dis-

charged on July 18, 1952. She did not prepare a discharge diagnosis at that time. Asked, was there one prepared and as part of the hospital record, witness replied, there must be. Asked, weren't you in charge of his case, witness replied, do you want to understand the administrative mechanism, that would be helpful, I am in charge of the occupational medical clinic, I recommend these cases for admission for diagnostic study and treatment but they go on the ward as a regular patient and I don't 'boss' the job, I go around and help work the case out but it's not my ultimate responsibility about what is written on the chart and what is done to the patient, that is just the mechanism of the hospital. She saw the man in her office on June 23. He was later admitted to the hospital. He was admitted to the hospital with a tentative diagnosis, that is the way it is done, she sees on the record that it states 'asbestosis' with a question mark. She has the original of the hospital record. Asked, and do you find in the original record this notation under July 2nd which reads 'first Massachusetts General Hospital record of this 46-year old white male who enters with diagnosis of "possible carcinoma of lung", witness replied, yes. The question mark stands for possible, questionable. Asked, at the time of his admission to the hospital, is there any reference in the hospital record of any asbestosis that you can see, witness replied, on July 3, 1952 it says history is compatible with a diagnosis of asbestosis - these are not my notes. Asked, what I'm trying to get is this, who would put that first questionable diagnosis that was inserted there upon admission, would that be something that would come from your record as result of your examining and studying him on June 23rd, witness replied, no, I just explained to you, the administration has nothing to do with me, that is important, there are technicians, researchers and x-ray men, I don't dictate opinions to them. Asked, so if I understand you you're not responsible for any of the opinions expressed in the record itself, witness replied, I certainly am not. She studied the record carefully. Asked if there is any part of the record she disagrees with, witness replied it would be awfully queer if there were not but I don't see that enters into my opinion. She has reviewed the record. There is no treatment for the disease of asbestosis. It is a progressive disease without any treatment known to date. Asked, what would be the effect of numerous xrays on an individual's chest with reference to this condition of asbestosis, would it aggravate it, witness replied, you're talking about the diagnosis or therapeutic radiation. The therapeutic radiation was given in this case for the treatment of cancer. The record shows this man did receive therapeutic radiation. He received quite a number of these. She thinks he began to have this on his second admission - he had a lot of xrays taken at the outpatient department. Asked, it's a fact, is it not, that therapeutic xray treatment would be detrimental to him insofar as the asbestosis condition is concerned, witness replied, no, I don't think one can draw any such conclusion. She does not believe that, in fact counsel gave her an idea in that shrinkage of the tissue might do some good. The therapeutic xraying was done to 'knock' out the cancer cells, shrink the tissue and make the man more comfortable but no one has the slightest idea of treating with the idea of curing him, it was simply a case of putting off his day of death. Asked, so if the record itself indicates that the hospital was treating this man for cancer from the day of his first admission that is so, witness replied, as soon as the diagnosis was made. Asked, that was made on the first admission, witness replied, I think that was made about July 10th. Asked, wouldn't therapeutic xrays cause an increased fibrosis of the lung, witness replied, that would depend on how much of the lung was exposed to the radiation, usually this is fairly localized treatment, care being taken not to give general radiation, I could talk it over with the radiation man if you want me to. She does know if one gets enough radiation on the lung as a whole you can get pulmonary fibrosis. She doesn't feel qualified to express an opinion in this regard in this case. Asked if in the treatment of asbestosis where the bronchial tubes are reduced in size in order to alleviate that condition do they not administer a dilating drug for this, witness replied, we use it but have not been able to produce any good results with asbestosis. They did not do it in this case because there was too much carcinoma. Asked, and that was apparent to you from the outset on the first day you examined him with the collapse of the lung, witness replied, there was no question but that is what this was.

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Asked, you have notes with you with reference to the history that you received from him as to the employment over the years, witness replied, I don't think these are satisfactory;; they are my writtenscribbled notes. She has no dates in that, she was trying to get a description of his work as heat and frost insulator. Asked if she wrote down all she got, witness replied, one does not do all that, there are a good many things that a man like this tells me that are not written down, precisely I have not got down here the exact days when he worked for this company, that company. Asked, when you first examined this man you were not interested in fixing liability on a particular individual inasmuch as you were in making a diagnosis, witness replied, yes. Asked, and it would be important in making a diagnosis to determine how long the individual had been employed at this particular job, witness replied, it does not seem relevant when you have a history that is so long in time of exposure. She has noted that he worked in a store after school in his early youth. Then while still in school he worked for two years for the Boston Floating Hospital. He worked at Pilgrim Press as shipper also. He worked there about a year. Her next notation is that he worked at Waverly Heating for one year. Following that he did mason work, he worked off and on with his grandfather in this cement work. He then started at what he called heat and frost insulating and did it off and on for about 30 years, he cut and sawed asbestos board to fit pipes, boilers, etc. She was interested in this 30 years' employment in this particular trade. Asked insofar as what he did while working for a period of 15 months for one employer or two years for another employer at the particular time when you received this history you were not too interested in finding out the details of that, witness replied, that's right. Asked, and nowhere in the record does it indicate how much asbestos he came in contact with while in the employ of the Bancroft Company and nowhere in the record does it indicate the caliber of the asbestos while working for the Bancroft Company, witness replied, yes. Working with asbestos requires one to have proper ventilation or the wearing of a mask and then it can be done. Insofar as her records are concerned she doesn't know whether while working for the Bancroft Company he was out in the open or in a confined space, what the situation was with reference to ventilation. She saw this patient during his last admission to the hospital - the last part of November and first part of December. She was not the so-called attending physician at that time; the man was on the ward. She had nothing to do with the preparation of the death certificate; that was done by the house officer. She had nothing to do with the preparation of the final diagnosis. The diagnosis of asbestosis throughout the hospital record was questionable but that antedated the postmortem. That is true insofar as the hospital record is concerned.

TO COUNSEL FOR TRAVELERS: On looking at the slides following autopsy she observed some club-shaped, brown-colored bits of fibers and because of their length and contour and duration in the bronchial tree of the lung she concluded they were asbestos fibers. Asked if she had an opinion as to whether they had been there a year or ten years, witness replied, no. Asked, they had certainly had been there longer than a year in your opinion, witness replied, I don't think I give you an opinion on time. Asked, the fibers that caused the cancer which produced the death had been there much longer than a year, that is a fair statement, witness replied, that seems certainly more than likely. Asked if in her opinion that is true, witness replied, I wish I could be awfully flat-footed but I'm certainly willing to go along with you on that.

TO COUNSEL FOR THE CLAIMANT: Asked, the diagnosis of asbestosis which was placed on the hospital record on at least several occasions as being a possible diagnosis, was that confirmed by the postmortem, witness replied, yes.

TO COUNSEL FOR THE UTICA: Asked, is it a fair statement to say that you have no opinion as to how long the asbestos fibers which you viewed on the slides had been in his system, witness replied, yes. Asked, and of course those would be the fibers which produced the cancer which caused his death, in your opinion, witness replied, no, you can't bring that into what I have said because the asbestos fibers move around. Asked, while they move around they will not leave the system, witness replied, yes, they will. Some of them might leave the system; they might leave at any time. She has no opinion as to how long the fibers which she saw under the slide were in the system.

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Counsel for Utica renewed his request that the questions and answers admitted de bene be stricken from the record and Commissioner rule they be allowed in until the entire record had been submitted.

At the continued hearing held in this case in Boston on Friday, July 31, 1953, the following evidences was reported:

APPEARANCES: L. Locks, Esquire, for Claimant.
A.J. McLaughlin, Esquire, for Utica Mutual Insurance Company.
R. Plunkett, Esquire, for Travelers Insurance Company

HELEN V. ROTHWELL, the claimant, questioned by her counsel, testified she recognizes the memorandum book which counsel has in his hand. She found that in the pocket of the coat her husband wore to work. Asked to look at the handwriting in that book and tell if she recognizes it, witness replied, yes. It is her husband's.

Counsel for claimant offered this Memorandum Book for this record as an Exhibit, stating it is a work record kept by the decedent from Monday, October 28, 1951 through February 19, 1952, that in it the employee listed from day to day the work that he did, that it is apparent this man had some sort of supervisory capacity on this job; counsel for Utica objected to the admission of this Memorandum Book; Commissioner ruled the Memorandum Book was to be admitted as an Exhibit and exception is saved for counsel for Utica.

JOHN J. HUGHES, called and questioned by counsel for claimant, testified he presently lives on Barry Street, Dorchester. His occupation is that of asbestos worker. He is a member of the Heat and Frost Insulation Workers' Union. He has worked as asbestos worker about 35 years. (Counsel for claimant stated he was offering this man as an expert witness on the trade of a heat and frost insulator.) During this 35 years he has worked as insulator on boilers, pipes, smoke flues and stacks. In doing this work he only had to mix up the asbestos with water - that was the only mixing he did. He has done that work himself. In that trade he had occasion to cut cylinders of prepared insulating materials. He has done that work himself. He has blocked boilers, flues and smoke stacks himself. (Counsel for claimant again stated he offers this man as an expert witness on the trade of asbestos worker and heat and frost insulation man.) Blocking a flue was part of the insulating job. The same material was not always used to block a flue. There are a certain limited number of materials used for blocking a flue. Asked, what are the materials used for blocking a flue, witness replied, 85 per cent Magnesia would be one; air cell board would be another - this is just an asbestos paper; and application of magnesia cement alone without blocking. Asked, in any of these three insulating materials that you have just mentioned is asbestos used, witness replied, yes. It is used in the magnesia. Each of the materials was used specifically in insulating, for heat saving. They also used an asbestos cement. Asked if a particular type of flue required a particular one of those four insulating materials, witness replied, yes. Asked, what would be the circumstances under which you would use the asbestos cement, witness replied, in 90 per cent of the cases you used the asbestos cement for finishing. Asked, how is that asbestos cement prepared, witness replied, it comes right from the mines. They get it in bags and drop it into a mixing box and apply water. Asked, is it the custom of the

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trade of a heat and frost insulating man and asbestos worker, is it the custom of that trade that the men on the job mix this asbestos cement as they need it (objection by counsel for Utica as being immaterial, question allowed) witness replied, yes. He has done that himself.

TO THE COMMISSIONER: Asked to tell what he actually observed when this cement was mixed, witness replied, the dust naturally raises up when the cement strikes the box.

TO COUNSEL FOR THE CLAIMANT: Blocking a boiler just means applying the insulation. That is done in the same manner as blocking a flue. When blocking a boiler you generally used the insulation directly in contact with the boiler because no air space was called for but in a flue they used an air space lath to give air space when blocking it. The army used the air space. Asked, you said in answer to a previous question that 90 per cent of the time the material used in blocking a flue was this asbestos cement, would that same figure apply in blocking a boiler or would it be a different proportion, witness replied, no, it's the same thing. He would say that 90 per cent of the time they used this asbestos cement to finish; in other cases they used the asbestos cement to stick the blocking to the boiler but that was not a general practice with every person. Asked to tell how he would go about covering a steam pipe, witness replied, a steam pipe up to ten inches is generally stuck on with paste. The insulating material is generally magnesia. Asked, is it loose material or does it come in the form of a cylinder, witness replied, no, it's a molded material. Asked to tell what he means by that, witness replied, it comes in a molded form up to approximately ten inches and then molded in segmental form from ten inches on. He means it comes pre-shaped. They do have to cut it to fit. Asked, on the material that you used is there any label or other tag stating what the material is composed of (objection noted by counsel for Utica, question allowed and exception is waived) witness replied, yes. He only knows of four companies who manufacture this material - they are Bishop & Materson, Johns-Manville, Phillip Carey, Everett Asbestos. Asked, is your memory sufficiently strong today so you could tell us today what appears on the labels of the molded pipe-covering produced by any of those four manufacturers (objection noted by counsel for Utica, question allowed) witness replied, 85 per cent magnesia and that is all. Asked, does it say anything there about what the other 15 per cent is there, witness replied, never stated to my knowledge. Asked, what does the phrase 'cementing a boiler' refer to, witness replied, that is simply finishing up the work. Asked, what is the substance that is used in that operation, witness replied, asbestos cement. Asked, what is the phrase 'finishing fittings' mean, witness replied, putting on the asbestos cement and canvassing.

TO COUNSEL FOR TRAVELERS: He didn't know Mr. Rothwell very well. He was on the same job with him but never worked directly with him. He never worked directly with him so he never saw what work he had been doing. Asked, there are a lot of the duties on this job that are not dusty, witness replied, I would not say a lot, it's really a dusty job. Asked, you mean the mixing is dusty, witness replied, even the application is dusty. Asked, after you have mixed the water with the material that is in this bag, then when you apply it it's wet and there is no dust, is that right, witness replied, no, there is dust when you apply it. Asked, when you wet it, witness replied, you're not apply^{ing} this wet stuff to the boiler or flue, when you apply it to the magnesia block it's dusty. They put this bag material in a pail or tub and pour water on it. Then it's wet. The mixing can be done in a few minutes. Then the men who are going to use that take some on a mortar board or pail. They use a trowel. These men take some in a bucket and then apply it with a trowel. One man can mix enough for 100 men. On an average job there would be ten men. One man, in one hour, could mix enough cement for all the men for the day. So the other nine men could go to the tub and get a pail or bucket full of this material and take it to where they were working and apply it with a trowel. That is the usual way it is done.

TO COUNSEL FOR UTICA: He was not working up in Fort Kent, Maine with Mr. Rothwell; he was not on that job. He worked with him at the Lynn Housing. That may have been two years ago. It was sometime in 1951.

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There are different means of applying insulation to a boiler. There are also different types of insulation used. Asked, and whether or not in any given period of time Mr. Rothwell was using asbestos to your knowledge you don't know, witness replied, no.

TO COUNSEL FOR THE CLAIMANT: When one is applying this wet cement you're going against the dry surface and when you apply wet stuff on the dry surface you ring back the dirt. He did state the asbestos cement was used as the finishing coat. As a general rule it was used as a finishing coat on top of something else. Asked, what is the usual material that is put on before the asbestos cement, witness replied, that is 85 per cent magnesia. Asked, is that in the form of a pre-molded segment or section or is it also in the form of a wet base, witness replied, 90 per cent of the case it's in molded form. Besides the mixing of the cement which is dusty, the cutting of the material is dusty, when you're sawing it, it's dusty. Asked, and would it make any difference where you were installing these molded segments as to the extent of the dust that would get on you, would some places be more dusty than others, witness replied, yes, on open construction there would be more wind. That would make it more dusty. Asked, how about installing insulation on pipes that are in the ceiling, between one ceiling and the floor above (objection noted by counsel for Utica, question admitted de bene) witness replied, I don't think that question is put correctly as far as we are concerned because between a ceiling is not so, you're not between a ceiling when you're applying that, you're open without it's between the ceiling when the job is completed, you're in the open when you apply it. The floor above is in place. Asked, you're working above against a floor, witness replied, yes. Asked, is that work more dusty than other work or less dusty, witness replied, I think the answer would be just about the same.

TO COUNSEL FOR THE UTICA: That depends on the conditions on the job.

TO COUNSEL FOR THE CLAIMANT: Asked, so if I understand your answers, there are three parts of the work that are dusty, one of it is mixing of the asbestos cement, the second is when you place the asbestos cement against the magnesium block and the third is when you cut the molded segments to put on pipes, is there any other part of the work that is dusty, witness replied, as far as dusty, now as I understand that question to be is the work dusty, yes, it's dusty but I won't say it's dusty for all materials.

TO THE COMMISSIONER: The work was dusty when he used their material in mixing or cutting or applying.

TO COUNSEL FOR TRAVELERS: Asked, on these jobs where you were applying or this material that you were cutting, there was a considerable dust that was not as result of your materials, is that true, witness replied, that is true, I said yes. Asked, in other words on boilers that you might be working on there may be a thick coat of ordinary house or building dust, so-called, is that right, witness replied, yes. Asked, and on pipes that you were covering or repairing there might likewise be thick coating of house or building dust, witness replied, yes. Asked, and when you say the job was dusty you mean in your operations you disturbed and knocked loose a lot of this dust in around there, witness replied, no, in my statement... Asked, I say is that the procedure when you apply material either to a boiler or to these pipes you might disturb the dust that was on these pipes, witness replied, the answer would be 'yes'. That would fly around. Asked, when you explained that the job was dusty you meant that dust as well as other, witness replied, no, I did not in the question which was asked. As he was working there this other dust was flying around. He did say 90 per cent of the material is molded. Some of the molded material comes with cloth wrapped around the outside of it. All of it does not come that way. Asked, but all your pipe material comes that way, with cloth on the outside, witness replied, no, up to approximately ten inches, yes. Asked, would you say 90 per cent of your work involved the use of material up to ten inches or what percentage would you say, witness replied, I would have to withhold from the percentages, I would not know that answer. Asked, would you say a big

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majority involved material up to ten inches, witness replied, on the work I followed it has been without cloth, most of the work I have been doing has been larger work. He wouldn't know whether Mr. Rothwell worked with the larger work or with work up to ten inches. Asked, but if he did work with material up to ten inches it would be covered with cloth, witness replied, it would be. This wet cement was applied to a boiler or other object with a trowel. When that was done, it was applied only a section at a time. That answer does not apply when it is applied to the insulation on the boiler. They apply the insulation on the boiler first and then finish with the cement. Asked, on the stuff you apply directly to the boiler you put that on directly with a trowel and that is wet, witness replied, no. Asked, you put that on with blocks, witness replied, yes. After he puts the blocks on, then he puts on the wet cement. The wet cement is handled in a trowel. Then they put on one part at a time. Asked, so the only part of the boiler that you touch when you put on the wet cement with the trowel is that part which becomes wet, you don't touch any other part, witness replied, the wet cement hits one part of the boiler and invariably disturbs the rest that is on there. They cut these molded forms with a saw. Asked, and when you cut them with a saw do you usually put them down on something and saw down on them, witness replied, I would say 'no' to that question. That is usually done by laying it down on a flat surface and cutting across it. It is done like on a table and cut across. It cuts easily. Asked, and the material that you cut is usually covered with cloth, up to ten inches, witness replied, yes. Asked, you don't know whether Mr. Rothwell used any material over ten inches or not, witness replied, not definitely.

DR. JAMES STEWART ROONEY, called and questioned by counsel for claimant, testified (Qualifications admitted as pathologist) he has had the opportunity to review the record of Massachusetts General Hospital and the autopsy record of the Massachusetts General Hospital, pathology department. He has formed an opinion as to the cause of death in this case. In his opinion this man's death was caused by adenocarcinoma of the lungs - that was the immediate cause of death - with extension to the heart, pleura, diaphragm, retroperitoneal tissue on the left, adrenals, kidneys and the lymph nodes. Asked, was there any other pathological condition this man had which was a contributing factor in his death (objection noted by counsel for Utica, his exception is saved) witness replied, there were other contributing factors. Asked, what were they in order of importance, witness replied, this man had asbestosis with pulmonary fibrosis, congestion of the liver, inflammation of the external surface of his heart, inflammation of his right lung, externally, and he had approximately a quarter of fluid in his right chest. Asked to tell what there is in the hospital record which leads him to the opinion this man had asbestosis, witness replied, in the microscopic examination of his lung tissue the characteristic nodular shaped bodies that one sees in asbestosis were present, these are diagnostic of asbestosis. Asked if he has an opinion as to whether or not there is any causal relationship between the asbestosis and the cancer from which this man died, witness replied he has. His opinion is that due to the longstanding chronic irritation, as result of the inhalation of asbestos fibers, that this is an adequate cause for the development of his cancer which led to his death. Asked, did the asbestosis itself, apart from its effect in producing the cancer, did the asbestosis itself play any part in his death at the time that he died, witness replied, I don't think so, no. Asked, I want you to assume that this employee worked for A. W. Bancroft Company between December 17, 1950 and March 19, 1952, that during that time he performed the regular duties of a heat and frost insulation worker or asbestos worker as it is ordinarily described, that this work, and specifically during the period from October 28, 1952 and February 19, 1952 included days in which he covered steam pipes with insulation material, in which he blocked flues, days in which he blocked boilers, days in which he covered pipes, days in which he finished fittings, that in these operations he used insulating materials, included among which would be asbestos cement, he used molded insulation material and molded segments, that in connection of covering of pipes he had to cut and saw the asbestos board, that he had to cut it to fit around pipes and fittings that came with the pipes that he was covering,

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that this work was dusty, that the dust included dust from the insulation materials as well as building dust which was present in a construction job, that the widow testified as fact that he coughed, that the clothes she washed contained dust particles and I want you to assume further that in January 1952 he developed the onset of a harsh, hacking cough which was worse in the morning and productive of a small amount of brownish sputum, that shortly thereafter he noticed that on exertion he was short of breath and had a sharp boring pain below the angle of his left shoulder blade, that he was out of work from February 21 to February 29, 1952 and returned home from the job which he was doing away from home and was treated for what the doctor told him was grippe, that he then returned to work for a few weeks and finally ceased work for the Bancroft Company on March 19, 1952 and went to work for the Armstrong Company from March 20, 1952 to April 25, 1952, that he continued to do the work of a heat and frost insulation worker for the Armstrong Company, that he finally stopped work in April 1952 following consultation with a physician because of these symptoms described before, namely, shortness of breath, on exertion, pain below his left shoulder and cough, now, assuming those facts to be true as to his work history and the history of the onset of his symptoms, do you have an opinion as to whether or not the work this man was doing while in the employ of the A. W. Bancroft company, that would be December 17, 1950 to March 19, 1952, was an aggravating factor in producing the asbestosis and bronchogenic carcinoma which he died, witness replied, (counsel for Utica objected, question admitted as bona fide exceptions are saved) I do. It is his opinion that sometime during 1951 this man developed a malignancy of his lung as secondary to his asbestosis, the asbestosis was a factor in causing the malignancy to start, that is as far as he can go. Asked, do you have an opinion as to whether the inhalation of dust from insulating materials in his work during 1951 was a factor, aggravating or precipitating factor, in the asbestosis and thereby of the cancer (objection noted by counsel for Utica, his exception is saved) witness replied, if he inhaled dust containing asbestos during the period of time it would aggravate his condition. Asked, do you have an opinion as to whether or not his work from March 20, 1952 up to April 25, 1952, for the Armstrong Cork Company, assuming that he inhaled dust from insulating materials at his work, including asbestos, was a factor in the asbestosis and cancer from which he died, witness replied, I have an opinion. It is his opinion that it did not play any role. Asked to give his reason for that opinion, witness replied, because he had carcinoma prior to the time and carcinoma was the cause of the death. Asked, didn't the further inhalation of the asbestos dust during the last six weeks play any part in the aggravating or worsening his condition witness replied, no, I don't think so. Asked, did it play any part in producing the death at the time that he died, witness replied, I don't think so.

TO COUNSEL FOR THE UTICA: Asked, you say that there was a long-standing chronic irritation due to the inhaling of fibers which you say was an adequate cause for the cancer, witness replied, that is correct. Asked, when you say longstanding chronic irritation, can you tell us how long, witness replied, I don't think anybody can tell you that; we do know that one of the causative factors in the production of malignancy is a chronic irritating process, when that begins I don't think anybody can narrow it down as to a week or a month, we know that cancer takes a certain length of time to develop, once it starts it depends on the location, it depends on whether it can be removed or not, this man's cancer was too advanced to remove, they took him to the Massachusetts General and attempted to remove it and found they could not because of the advanced stage, when his cancer began I can't tell you because the line of demarcation between normal and abnormal no one ever sees, I don't think anyone can tell. Asked, so you can't say whether or not the cancer had its inception prior to March 20, 1952 or subsequent to that date, witness replied, it had its inception prior to 1952 because it was far advanced when they opened him up at the General. He cannot give a definite date on the inception of cancer in 1952. He cannot give a definite date on that for 1951. He thinks it began subsequent to 1950. Asked, so that you say that sometime in 1950 on, witness replied, either that - I would say probably 1951 from the description of the cancer. It could have been 1950. He has seen the autopsy report. Asked, this man, according to that report, had a history of having worked 29 years in the asbestosis business, have you an opinion as to when the asbestosis first commenced, witness replied, I would say the asbestosis had been present for many years. That is so because of the appearance of the lungs. Asked,

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assume that this man worked at the same job subsequent to March 20, 1952 up to April 25, 1952, doing the same sort of thing that he had done between the period of December 1950 to March 20, 1952, do you have an opinion as to whether or not the work subsequent to March 20, 1952 would be detrimental to him, having in mind the facts that it was your opinion at that time he had, first, asbestosis and, second, cancer (counsel for Travelers stated that the doctor has already answered the question) witness replied, here's a man who by 1952 was doomed to death from his malignancy, his malignancy was then far advanced, I doubt the inhalation of anything further accelerated the growth of his malignancy. Asked, do you have an opinion as to whether or not working during that period of time was detrimental to him (objection noted by counsel for Travelers, doctor allowed to answer the question) witness replied, there are certain patients with malignancy that you advise continuing their job and working until the day they die, there are other patients who completely collapse once you tell them they have malignancy and never return to work, I don't think the work factor plays much of a role in the advancement of malignant disease. Asked, the malignant disease was aggravated was it not, by the inhalation of asbestos after the malignant disease had started in his system, was it aggravated by the asbestos dust, in your opinion, witness replied, I think that once his malignancy began, that for a period of possibly four or five or six months following the beginning of his malignancy he might have accelerated the growth a little bit by inhaling more of the factor that was one of the causative agents in his malignant condition, the malignancy once it started was not aggravated too much by the further inhalation of asbestos, that is in and of itself, in substance it's not known to cause death per se. Asked, asbestosis, witness replied, yes. Asked, but your answer was that it was not aggravated very much, witness replied, I don't think it was aggravated very much by his work after his malignancy started. Asked, but it might have been aggravated somewhat, witness replied, slightly.

TO COUNSEL FOR TRAVELERS: Asked, did I understand you to say in your opinion the man's work from March 20th until the date he finally stopped work, such as asbestos as he might have inhaled, if any, played no part in either the aggravation or acceleration of the disease nor did it bring about his death sooner than it otherwise would have occurred, is that a correct statement, witness replied, that is correct.

Counsel for Travelers made a motion the claim against them be dismissed. The motion was taken under advisement.

Counsel for claimant requested the Autopsy Report of December 4, 1952 - Unit Number 778205 - be made part of this record. This is done by reference and may be found in the Board file. The anatomic diagnoses reported thereon are: Bronchogenic adenocarcinoma, left lower lobe with extension to left upper lobe, heart, pleura, diaphragm, and retroperitoneal tissue on left and metastases to right lung, adrenals, kidneys, and hilar, mediastinal, left supraclavicular and para-aortic lymph nodes; Asbestosis with moderate pulmonary fibrosis; Hepatic congestion, moderate; Pericarditis, fibrinous, Pleuritis, right; Pleura effusion, right (800 cc.); (Pulmonary osteoarthropathy fingers, mild).

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REPORT OF EVIDENCE

All the material evidence is reported herewith:

The Utica Mutual Casualty Insurance Company is designated as the First Insurer and the Travelers Insurance Company is designated as the Second Insurer.

HELEN V. ROTHWELL, the claimant, questioned by her attorney, testified she is now 40 years of age, she is the widow of Richard J. Rothwell, they were married December 25, 1930 at Star of the Sea Church, East Boston. There are five children of this marriage under the age of 18 at present. Joyce was born January 13, 1938, Mildred was born May 31, 1939, James was born on August 8, 1941, Harold was born December 25, 1942 and Theresa was born July 6, 1948. Her husband's last employer was the Armstrong Cork Company. She has not got the dates he worked for the Armstrong Cork Company. (IT WAS AGREED he worked there from March 20, 1952 to April 25, 1952.) Asked if at any time while working for this company her husband told her the nature of his work, witness replied, yes. He told her he was a pipe cutter and heat and frost insulator and asbestos worker - it was known under all those names. Prior to working for this employer he worked for A.W. Bancroft Company. She knows he worked there over a year. (IT WAS AGREED he worked for this concern from December 17, 1950 to March 19, 1952.) Asked, did your husband tell you at any time that he worked for the A. W. Bancroft Company what the nature or title of his occupation was (objection noted by counsel for Utica, question allowed in, insurer's exception is saved) witness replied, yes. Asked, what was the nature of his occupation there according to what he told you, witness replied, just a pipe cutter, the same work he always did. He had done that type of work before he worked for the A.W. Bancroft Company. Asked, for how many years before had he done it, witness replied, practically all the time we were married except during the depression; we were married 22 years; about 16 years. Asked, did he describe any of the details or conditions of his work during the time that he worked for the A. W. Bancroft Company (objection noted by Utica, exception saved) witness replied, yes. Asked, will you tell us what your husband told you about the nature of his work that he did while in the employ of the A.W. Bancroft Company (objection noted by Utica - counsel for Utica stated he is making a general objection to cover anything which the decedent told witness as to his employment while employed by A.W. Bancroft Company - his exception is saved) witness replied, I know that sometimes the asbestos came around a cylinder form, they have to cut it, and sometimes it came loose and they have to sort of make what he called mud and pack it on a boiler and cover it with canvas and do the pipes. Asked, did he tell you anything at all about the condition or conditions under which he worked, witness replied, sometimes had to climb heights and stairs, sometimes he worked under the ceilings, sometimes on the floor, sometimes he worked in what he called tight corners. Asked, when he cut the asbestos tubing did he ever tell you what it was like when he cut it, witness replied, he brought home some one time and I could see what it was like - it was hard on the top, soft in the center and soft of powdery when you cut it. Witness always did the family wash. She did observe the condition of his work clothes when he came home from work. Asked to tell what she observed about the condition of his work clothes while working for the A. W. Bancroft Company, witness replied, the same as always. Asked to tell what that was, witness replied, I just had to take his overalls, before I washed them and had to take them outdoors and shake them hard and get all the stuff out of them in his pockets. She had to shake loose little feathery stuff, this was in the pockets and in the cuffs and just all over. The work shirts would be covered also, it clung to everything. Asked, what was the condition of your husband's face and hands when he came home from work, was it clean or what, witness replied, just clean. The first physical

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change she noted in her husband's condition was he got out of breath. She first noticed that around January 1952. Asked, and had you noticed a change in his physical condition before January 1952 from the condition he was in when you first got married, witness replied, yes, definitely. She noticed that he started to lose weight. He started to lose weight before Christmas 1951. She had not noticed any change in his physical condition prior to that. Asked, nothing at all, witness replied, except in that morning he had to clear his throat, he had a dryness in his throat. Asked to tell when she first noticed this clearing of the throat and dryness of the throat on awakening in the morning, witness replied, about a year or so. That was a year or so before December 1951. Her testimony is that the first physical change or symptom she noted in her husband was this clearing of his throat on awakening in the morning and the dryness in his throat, the second thing she noticed was the weight loss and the third thing was that he got short of breath and this was in January 1952. She knows where her husband was working in January 1952; it was at Fort Kent, Maine. She was not with him at that time. He came home for Washington's Birthday which was in February. Prior to that he was at Fort Kent and came home for Christmas. She saw him at Christmas and then over Washington Birthday weekend. Asked, at the time you saw him over Washington's Birthday did he tell you anything about the condition of his health between those two dates, witness replied, (objection noted by Utica, exception is saved) yes. Her husband had called her up. He always called her - he called her every week on Thursday. Asked, did he tell you anything about his health in these telephone conversations before Christmas and Washington's Birthday of 1952 (general objection noted by Utica to the conversations, exception is saved) witness replied, he said he was not feeling well. Asked, did he tell you in what way he was not feeling well, witness replied, not too much. Asked, when he came home and saw you over Washington's Birthday did he tell you anything about the condition of his health during those two months before (objection noted by counsel for Utica and Travelers, their exceptions are saved) witness replied, he was sick at Fort Kent, he had been very sick. Asked, when he told you he had been sick at Fort Kent, did he describe to you how he had felt and what he had felt when he was sick, witness replied, I can't remember clearly. Asked, do you know from what your husband told you the reason he left the Bancroft Company, (objection noted by Utica and Travelers, exceptions are saved for both) witness replied, he told me that there was about four inches of water where he was supposed to be working, he said he told Mr. Bancroft that he was sick and just could not work there, so he just left. He then obtained this job with the Armstrong Cork Company. Asked, did your husband, while he was working for the Armstrong Cork Company, at sometime before any claim was brought in this case, did he tell you then what was the type of work he was doing in the employ of the Armstrong Cork Company, witness replied, yes. Asked, and what did he tell you, witness replied, he was an asbestos worker. Asked, and did he tell you anything about the circumstances or nature or details of that work for this particular company, witness replied, he did tell me he had a lot of stairs to climb on this job. Asked, did he tell you anything else, witness replied, it was a new housing project. This was located in Roslindale. Her husband was doing the insulating in this project. She does not know what the insulating was. Asked if he told her what insulating material he was working with, witness replied, no, I don't know the material he was working with at that time. While working for the Armstrong Cork Company she also washed his work clothes and shirts and slacks. Asked, and did you have occasion while he worked for the Armstrong Cork Company to observe anything about the condition of these work clothes as to dust, witness replied, I don't remember. Her husband left the employ of Armstrong Cork Company on April 25, 1952. During the time he worked for the Armstrong Cork Company he lived at home. Asked, tell the condition of his health as you observed it during the period from March 20th to April 25th while he worked for the Armstrong Cork Company, witness replied, seemed to get weaker, not better. Asked to tell what symptoms she observed about him during the period he worked for Armstrong Cork Company, witness replied, he was

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starting to get irritable and he never was irritable, that was a change, and he was tired and was not eating good, he just did not look good, that is all I can tell you (objection noted by Travelers to the statement 'he just did not look good', exception is saved). When he came home from Fort Kent they were living in Wilmington and her husband went to Dr. Gerald Fagan of Clark Street, Wilmington. They were not living in Dorchester when he worked for the Armstrong Cork Company. Her husband saw the doctor either on the 22nd of February or the day before, it was in that vicinity. Asked if Dr. Fagan continued to be her husband's doctor until the time he went to the Massachusetts General Hospital, witness replied, not in entirety, no. At some time he saw Dr. Edward Hogan of 6 Lyndhurst Street, Dorchester. He saw him in May. Asked, had he been under the care of Dr. Fagan from February until May, witness replied, more or less, I mean the doctor came a couple of times to the house and he went to the office a couple of times. Asked, do you know why your husband left the employ of the Armstrong Cork Company (objection noted by Travelers, exception is saved) witness replied, yes. Asked, at some time before your husband stopped work at the Armstrong Cork Company did he have a consultation in your presence with some physician, witness replied, yes. That was with Dr. Hogan. Following that consultation with Dr. Hogan her husband stopped work at the Armstrong Cork Company. Then at some time he went under the care of the Massachusetts General Hospital. A friend, George Baylan, Jr., referred him to the Massachusetts General Hospital. She believes he first went to the Massachusetts General Hospital on June 23, 1952.

Counsel for the claimant offered the record of Massachusetts General Hospital for this record. Counsel for the Travelers objected to its admission in its entirety, specifically objecting to the history and any diagnosis based on the history, his exception is saved; counsel for Utica objected to the admission of this record, his exception is saved. The record of Massachusetts General Hospital - Unit #778205 - is made part of this record by reference and may be found in the Board file. Counsel for Travelers requested his exception be saved to his request for some part of this record to be deleted.

TO COUNSEL FOR THE UTICA: She did say her husband was up in Maine during December 1951, January and February 1952. Her husband came home Washington's Birthday and she is not sure whether he then returned to Fort Kent. Asked, you think he came home on Washington's Birthday and then did not return to Fort Kent, witness replied, I don't think so. Her husband did come home for Christmas and the next time after that was on or about Washington's Birthday, which was in February. Of her own knowledge she does not know what his condition was in January 1952. Asked, and when you told us a little while ago that you noticed he got short of breath in January 1952 that was not as result of any personal observations which you had made, witness replied, I was not there in January. Asked, that is what you told us, witness replied, the only time I would have seen him was when he left after New Years. If she said previously that she first noticed he was getting out of breath in January 1952 that is not so as she did not see him then. Asked, and your memory now is that you have no clear recollection as to when you first noticed him getting out of breath so to speak, witness replied, that is correct. Her husband came home in December 1951 a few days before Christmas. She would not say he started to lose weight in December 1951. She did testify that clearing of the throat started in December 1950. Asked if that seemed to get progressively worse as time went on or remained the same, witness replied, got worse. Before her husband worked for the A.W. Bancroft Company he worked for the New England Insulation Company. He was doing the same type of work there. That is the work she has described here. She thinks he worked at the New England Insulation Company quite a while. It must have been over two years. Her husband went to work for the A.W. Bancroft Company directly after leaving his employment at New England Insulation Company. There was no layoff period or anything of that nature. He went to work for the Bancroft Company within a week after his leaving the New England Insulation Company. Asked, can you recall for whom he worked before he worked for the New England

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Insulation Company, witness replied there was a whole list of them, I could not give them in order, I don't know if I could give them all. Before he worked for the New England Insulation Company he worked for the Insulation Company of New Jersey. There he did the same type of work that he did for New England Insulation Company, A. W. Bancroft Company and Armstrong Company. He may have worked for the Insulation Company of New Jersey about a year. During her husband's lifetime he did the same type of work as she has described here this morning; that was his trade, in other words. He had been engaged steadily at that trade during their married life except during the depression. During the depression he was out of work six years. They were married December 25, 1930. Her husband was working at that time. Sometime in the early Thirties he was out of a job. In the late Thirties he resumed working again at the type of work she has described. She read in the paper that the Mr. Bancroft for whom her husband worked had died. She understood that the Mr. Bancroft for whom her husband worked had a small shop. Her recollection is that the day her husband stopped working for the A. W. Bancroft Company he then started to work for the Armstrong Company the next day. She did not have occasion to wash his clothes while he was up Fort Kent. Her husband did not send them home. Asked, and you don't know of your own knowledge under what conditions he worked while at Fort Kent, witness replied, just what he told me. When she told this morning about the conditions under which her husband worked that was something her husband told her. She did not follow him around.

TO COUNSEL FOR THE TRAVELERS: Her husband brought his overalls home every two weeks for her to wash. She is positive of that. He used to leave the overalls in his tool kit when he did not bring them home. Asked, so when you testified this morning as to the condition of his overalls, you only saw those overalls once every two weeks, more or less, witness replied, yes. After her husband saw the doctor on February 21st or 22nd he went back to work for the Bancroft Company. He continued to work for this company until March 19, 1952. The next day he went to work for the Armstrong Gear Company. From the time he saw the doctor in February 1952 up until he saw the doctor in April 1952 when he stopped working, she observed that he was different, he was irritable, at times he was not eating good, he was not sleeping good. Asked, anything else, witness replied, just was not feeling good, he was not himself. Asked, was he complaining to you about anything during the period from February 21 or 22, 1952, witness replied, he complained of his chest. Asked, what did he complain about in his chest, witness replied, one morning he got up and went to the bathroom and came back holding his chest tightly, he said 'I can't breathe, can't breathe'. Asked, you testified he started to get out of breath in January 1952, witness replied, I meant he found it harder to breathe. Asked, what did you observe about him during that period from February 21 to April 25th, anything else, witness replied, I don't know. Asked, but that is the condition you observed him to be in from February 1952 until April 25, 1952, witness replied, yes. Prior to that she had not seen him for substantially two months. Asked, and you're sure this was the condition he was in from February 22nd to April 25, witness replied, yes. Asked, no question about it at all, witness replied, no.

DR. HARRIET L. HARDY, called and questioned by counsel for claimant, testified her professional address is Massachusetts General Hospital, Medical Department of M.I.T. in Cambridge. She is a physician and licensed to practice medicine in the Commonwealth of Massachusetts. Asked if she has a particular speciality in the field of medicine, witness replied she makes a special study of occupational diseases. Asked if she holds any position with regard to that speciality, witness replied, yes, I have charge of the occupational medical clinic and at M.I.T. I am assistant medical director in charge of the occupational medical service. Asked if in that field her work is primarily one of treating patients or primarily one of research, witness replied, it's a combination of both those features. In connection with her speciality she deals with diseases of the chest. The decedent in this case was a patient of hers at Massachusetts General Hospital. She first saw him on June 23, 1952 at her office. At that time she received a history from him. Asked to tell the history she received, witness replied, he gave me a history of gradual onset of coughing in the morning causing him to vomit in January 1952 without other symptoms (in answer to counsel for Travelers witness stated this history is one in her

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personal records), he kept working for three weeks in spite of this cough, he was told to stay home by his family physician who said he had the gripe, then began to have severe pain in the left shoulder blade - worse in the morning, better when he moved around, much worse at night, there was increase in cough and about this time he began to be aware of increasing shortness of breath, he dated that as about March 1, 1952, it was so troublesome that he had to do something about it, about April 1, 1952 he went to his physician in Dorchester, Dr. Edward Hogan, and she has talked with him. She got her history from the patient. She got the history and then did the physical and then talked with Dr. Hogan. The patient gave her the history of Dr. Hogan telling him after his xrays that his lung had collapsed (counsel for Travelers objected to this being admitted, his exception is saved - counsel for Utica also objected to this being admitted and his exception is saved.) Her history continues that from this period of time in April 1952 the patient had been taking penicillin and iron and sulphur drugs, he had some constipation and a burning sensation in the left armpit, he reported a weight loss of 16 pounds since January, a shortness of breath that he noted beginning in March and was getting worse when seen in June, his appetite was fair, the medical history that he gave insofar as it was important was that he had bronchitis 8 years ago, he had had slight sinus infection with some coughing but nothing severe enough to keep him out of his work, he had xrays taken from time to time in community surveys and he was never told there was anything wrong, his father was thought to have tuberculosis, that diagnosis was not clear, the patient gave it to witness and she put down a question mark after it, the man smoked both pipe and cigarettes, averaging about a pack a day until his present illness, his occupational history was that he began working in a store as a clerk while still at school and he did errands at Boston Floating Hospital for two years while still at school and during the summers he was a shipper at Pilgrim Press Company, he stated that about 29 years ago, when he was about 17, he worked off and on, sometimes with his grandfather and with a number of companies, at what he called a heat and frost insulator and his description of that job was that he received asbestos boards, its source depending on the company with which he was working (in answer to counsel for Travelers' question as to what period of development she is now talking about witness she is talking about the history he gave her covering 29 years.) He gave no description of any specific boards, asbestos boards, he gave a description of his trade of heat and frost insulator. His particular job was to cut and saw the asbestos boards to fit pipes and boilers and needed for insulation. Witness did a physical examination at the time asked if she followed him while he was in the hospital during his various admissions, witness replied, with the exception of his admission in July when I was away on my holiday, she followed him in June and her associate kept in touch with her, when he returned to the hospital after that she followed him. After his death an autopsy was performed. She had a chance to read the autopsy protocol and the different autopsy material. Having in mind her contact with this case, she presently has an opinion as to what the diagnosis of this man's illness was. She did testify that she followed this man throughout his entire period of hospitalization, that she reviewed the autopsy protocol and saw some of the pathological material in connection with the autopsy. In addition she is familiar with the hospital record itself.

TO THE COMMISSIONER: She did examine this man. Her first examination was on June 23, 1952 when she discovered the man had a complete collapse of his left lower lung, he obviously had lost weight, following he had chest xrays which she viewed with the roentgenologist and discovered that he not only had the collapse of his left lower lung but he had evidence of density by xrays in the right lung. On the basis of these findings she recommended his hospitalization for diagnostic studies. He was hospitalized. These were made by her colleagues in the hospital at her suggestion, she was not there. Asked if she participated in some of them, witness replied, only to the extent of suggesting them. Her holiday came during this period and when she came back they went over the material together. Asked if she supervised or controlled these studies or

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were they just merely a suggestion on her part, witness replied I supervised them to the extent of being the senior officer who is doing the recommending, there were other doctors around. The results of those studies were made available to her. Based on the history she received, the physical examination she conducted, the diagnostic material which was made available to her, she arrived at a diagnosis in this case. Her diagnosis was carcinoma of the lung and asbestosis.

TO COUNSEL FOR THE CLAIMANT: Asked after she reached the diagnosis she has just testified to, did she have any further contact with the man during his period of hospitalization, witness replied, yes, I did. This further contact was that she went to see him very often while he was in the hospital, consulted with other physicians about the course of treatment once the diagnosis was made and followed him case to the time of his death, she was not a witness at the autopsy but followed out very carefully what those findings were. She herself personally viewed some of the autopsy material. She personally viewed a slide of the lung. In the course of her medical training she has had occasion to receive training in the field of pathology. Asked to tell what that training was, witness replied, she had the usual amount of pathology as an undergraduate, meaning she took lectures and so on, then when she was house officer at Philadelphia General Hospital she had intensive training in pathology which involved doing a great amount of autopsies, then she took one semester in the department of pathology in Cornell University making an intensive study of certain pathological problems, since that time it's been her privilege to associate with Dr. Tracy Mallory in pathological studies of occupational diseases. Asked, do you feel that you are qualified to view these pathological slides of Mr. Rothwell's lung tissue (objection noted by counsel for Travelers and Utica, their exception is noted) witness replied, yes. Asked to tell what the slides revealed (objection noted and exception saved for counsel for Travelers and Utica), witness replied, showed what is known as pulmonary fibrosis, meaning scar tissue and reaction around the bronchial tubes, large ~~granular~~ ~~nodules~~ are usually associated with the presence of foreign material, I saw what are known as asbestos bodies and I saw cells of malignancy (counsel for Travelers objected to the testimony about the asbestos bodies and his exception is saved). Asked to describe the asbestos bodies for the purpose of the record, witness replied, the asbestos bodies as seen in this man's lungs are club-shaped bodies that take an iron stain which means they look yellowish under the microscope, they vary in length and contour and are unique with the inhalation of certain varieties of which asbestos is one (counsel for Travelers objected to this testimony being admitted, his exception is saved) these asbestos bodies are bits of asbestos fibers surrounded with blood pigment which have clung to the asbestos bodies during their long presence in the small bronchioles which is the small part of the bronchial tree, their shape varies, depending on the length of the asbestos fibers and the length of time it's been in the bronchial tree. Asked, do you now have an opinion, based upon the contact you had with this case as you have testified, as to what the diagnosis is in the case, witness replied, yes (objection noted for counsel for Travelers and Utica and their exception is saved). Her present opinion is that this man died of bronchogenic carcinoma, secondary to asbestosis. Asked, have you an opinion as to the relationship of the asbestosis and his work as pipe coverer (objection noted by counsel for Utica and Travelers, question allowed, their exception is saved) witness replied, I said 'yes' I had an opinion, my answer is based on the length of time that this patient worked in the industry involving exposure to fine asbestos fibers during the cutting and sawing of asbestos boards, the length of time I would like to emphasize, and the discovery of asbestos bodies in the lungs definitely prove the relationship between exposure and the diseased process, it's my opinion these two things fall in together - his work as pipe coverer and the disease that resulted in his death. Asked, did this man give to you at any time during the period that you saw him any specific information

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tion as to his work for the A. W. Baneroff Company between December 17, 1950 and March 19, 1952, witness replied, he described to me his work with the Baneroff Company as we worked backwards into his early life history and he told me that his work at the Baneroff Company was precisely the same trade as I have earlier described to you. Asked, did he give you any information with regard to dust conditions in his work for the Baneroff Company, witness replied, nothing above the grinding and sawing which I have stated previously. He did not produce any asbestos material to show how he conducted his work. Asked if she got any information from him as to whether or not the cutting and sawing of asbestos pipe covering produced any dust, witness replied, yes. He told witness that when he was cutting and sawing material that he had to fit on the pipe he often did it dry and had to use a grinding wheel of one sort or another or mechanical type of saw that he pumped with his foot or had some electrical equipment if it was a bigger company and at that time there was a good deal of dust, flying around about the air, that was the kind of history she was trying to draw out of him counsel for Travelers objected, stating the question was asked with regard to his work at Baneroff Company and if the answer is not confined to it then he would like it taken out.) Asked if she got any specific information with regard to the work at the Baneroff Company, witness replied, he talked about this at great length because except for this very brief employment at the Armstrong Company that was his most recent job, and in the discussion of the operations it was obviously the Baneroff Company he was talking about, we talked about the character of the job and he told about the times that he did not do the job, sometimes this job was done wet. He did describe to her the operation of mixing the asbestos powder into a mud. Asked, did he describe that operation as having been performed while working between December 17, 1950 and March 19, 1952, witness replied, I have no such note. Asked, did he tell you about his work for the Armstrong Cork Company between March 20, 1952 and April 25, 1952, did he give you any specific information with regard to the character of that work, witness replied, the only note I have is that the most recent work was similar to his earlier work but I don't have the precise description of his work at the Armstrong Company being different from that of the Baneroff Company. Asked, do you have an opinion as to whether or not this employee's disease and death were causally related to his work at the Baneroff Company, witness replied, I have described it in your previous answer while in the employ of the Baneroff Company between December 17, 1950 and March 19, 1952, witness replied, no. Asked, do you have an opinion as to whether it was related to his exposure to the same type of work that you have mentioned in your answer to the previous question while in the employ of the Armstrong Company between March 20, 1952 and April 25, 1952, witness replied, you're making it tough for me, no. Asked, in your previous answer you told us that you felt that his disease and death were related to the length of time that he was exposed in his work as pipe coverer, witness replied, yes. Asked, do you have an opinion as to whether or not he received any additional injury to his lungs while performing his work for the Baneroff Company between December 17, 1950 and March 19, 1952 see arising to information that you received and to which you have testified to here today, witness replied, yes, this is a medically sound observation, I do have such an opinion. Asked, do you have an opinion as to whether he received any additional injury to his lungs while working for the Armstrong Cork Company doing his work as you have testified to between March 20, 1952 and April 25, 1952, witness replied, yes, I have an opinion. Asked to give her opinion in regard to this additional injury to his lungs while working for the Baneroff Company, witness replied (objection noted by counsel for the Utica, stating there was no specific information as to what he did for this company, counsel's exception is saved) the history from way back up until and including the Baneroff Company gives substantial evidence of exposure to very fine asbestos dust because of the nature of the operations and the preparing of the asbestos board for use as insulating material (objection noted by counsel for Utica and Travelers and their exception is saved), the study of the use very clearly indicates a long-standing process, depending on the presence of asbestos fibers of varying sizes in the small bronchioles with resultant reaction around these bronchioles and what amounts to little patches of pneumonia, when these little patches of pneumonia take place bits of the lung become incompetent, they are no longer of any use, now during the exposure at the Baneroff Company he inhaled more asbestos dust of a fine enough caliber to reach the small bronchioles, he plugged the small bronchioles

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which resulted in reaction (counsel for Utica objected to the description of 'small caliber of asbestos' while working for his company, question and answer admitted de bene.) Asked, in answer to the previous question about this man's exposure while in the employ of the Bancroft Company, that is to say for his employer between December 17, 1950 and March 19, 1952, you did not tell us anything as to the size or caliber of the particular asbestos fibers to which he was exposed, did you obtain any information from him as to that, witness replied, no. Asked, what do you base your statement to your previous answer with reference to the caliber and size of the asbestos bodies to which he was exposed while in the employ of the Bancroft Company, witness replied, the answer is very simple - because of the finding of the asbestos in the lung, it had to be small enough to get there, there could be any number of them arriving at one exact moment, but because of the quantity of them and the character of them which I have described to you earlier as evidence of the asbestos bodies it seems reasonable, and certainly an extra number of fibers reaching that lung set up a reaction during the period I have just been describing to me, meaning 3 years prior to his death (counsel for Utica objected to the question and answer and they are admitted de bene.) Asked, did you receive enough information from this man to form an opinion as to whether or not he had sustained any additional injury to his lungs during the period from March 20, 1952 to April 25, 1952, witness replied, no, I have no such thing. She does not have enough information on that. Asked, in a previous answer you testified that the bronchogenic carcinoma secondary to asbestosis, will you give me your reasons for that statement, witness replied, my reasons are based on experience and study, experience of other cases of individuals who have asbestosis and have died of bronchogenic carcinoma, precisely with the same clinical facts and pathological study as Mr. Rothwell and when I speak of study I refer to my knowledge of literature plus travelling in Europe and being at Saranac symposium in October 1952 at which time the whole subject of asbestosis and cancer of the lung was reviewed. She has had experience with individual cases of asbestosis and bronchogenic carcinoma other than that of Mr. Rothwell. Asked to tell what her experience has been in these other cases, witness replied, precisely the same - a long history of exposure to asbestos. Asked, do you have an opinion as to the mechanism whereby the asbestosis is causally related to the bronchogenic carcinoma, witness replied, yes. In her opinion the asbestos fiber which is small enough to reach the bronchioles is not big enough to really plug it and what happens is that during inspiration and expiration the asbestos fiber swings back and forth and acts as a mechanical irritant and we know other mechanical irritants that have produced malignancy, that is the basis for the opinion that the asbestosis caused the bronchogenic carcinoma.

TO COUNSEL FOR THE UTICA: Asked, you don't want to tell us you know what causes cancer, witness replied, in some instances I would be glad to, we have a pretty clear evidence in regard to pipe smokers, etc. Asked, people found that there is a greater incidence of cancer among pipe smokers but that is just one of the factors which you have found in your studies, witness replied, yes, but if he did not smoke the pipe he would not get the cancer, that is all. Asked, is it true that you also find cancer of the lung among people who don't smoke at all, witness replied, yes. Asked, it's also true you find cancer of the lung among people for whom you did not discover in the history of their occupation or background or anything else that the lung had been irritated in any way whatsoever, witness replied, because we can't find it does not mean it does not exist. They have found cancer of the lung in such cases. It is true that her theory that irritants produce malignancy does not follow through in all cases. At the time of this man's first admission to the hospital she did not form the opinion that he had asbestosis. She was on vacation during July of that year. On June 23rd he was in her office as an outpatient, he was not confined to bed then. At that time she received the history she has stated. Mr. Rothwell was still in the hospital when she returned from her vacation in July. Asked if she made an examination of him or assisted or supervised the making of an examination of him at that time, witness replied, yes. On that particular admission he was dis-

charged on July 18, 1952. She did not prepare a discharge diagnosis at that time. Asked, was there one prepared and as part of the hospital record, witness replied, there must be. Asked, weren't you in charge of his case, witness replied, do you want to understand the administrative mechanism, that would be helpful, I am in charge of the occupational medical clinic, I recommend these cases for admission for diagnostic study and treatment but they go on the ward as a regular patient and I don't 'boss' the job, I go around and help work the case out but it's not my ultimate responsibility about what is written on the chart and what is done to the patient, that is just the mechanism of the hospital. She saw the man in her office on June 23. He was later admitted to the hospital. He was admitted to the hospital with a tentative diagnosis, that is the way it is done, she sees on the record that it states 'asbestosis' with a question mark. She has the original of the hospital record. Asked, and do you find in the original record this notation under July 2nd which reads 'first Massachusetts General Hospital record of this 46-year old white male who enters with diagnosis of "possible carcinoma of lung", witness replied, yes. The question mark stands for possible, questionable. Asked, at the time of his admission to the hospital, is there any reference in the hospital record of any asbestosis that you can see, witness replied, on July 3, 1952 it says history is compatible with a diagnosis of asbestosis - these are not my notes. Asked, what I'm trying to get is this, who would put that first questionable diagnosis that was inserted there upon admission, would that be something that would come from your record as result of your examining and studying him on June 23rd, witness replied, no, I just explained to you, the administration has nothing to do with me, that is important, there are technicians, researchers and x-ray men, I don't dictate opinions to them. Asked, so if I understand you you're not responsible for any of the opinions expressed in the record itself, witness replied, I certainly am not. She studied the record carefully. Asked if there is any part of the record she disagrees with, witness replied it would be awfully queer if there were not but I don't see that enters into my opinion. She has reviewed the record. There is no treatment for the disease of asbestosis. It is a progressive disease without any treatment known to her. Asked, what would be the effect of numerous x-rays on an individual's chest with reference to this condition of asbestosis, would it aggravate it, witness replied, you're talking about the diagnosis or therapeutic radiation. The therapeutic radiation was given in this case for the treatment of cancer. The record shows this man did receive therapeutic radiation. He received quite a number of these. She thinks he began to have this on his second admission - he had a lot of x-rays taken at the outpatient department. Asked, it's a fact, is it not, that therapeutic x-ray treatment would be detrimental to him insofar as the asbestosis condition is concerned, witness replied, no, I don't think one can draw any such conclusion. She does not believe that, in fact counsel gave her an idea in that shrinkage of the tissue might do some good. The therapeutic xraying was done to 'knock' out the cancer cells, shrink the tissue and make the man more comfortable but no one has the slightest idea of treating with the idea of curing him, it was simply a case of putting off his day of death. Asked, so if the record itself indicates that the hospital was treating this man for cancer from the day of his first admission that is so, witness replied, as soon as the diagnosis was made. Asked, that was made on the first admission, witness replied, I think that was made about July 10th. Asked, wouldn't therapeutic x-rays cause an increased fibrosis of the lung, witness replied, that would depend on how much of the lung was exposed to the radiation, usually this is fairly localized treatment, care being taken not to give general radiation, I could talk it over with the radiation man if you want me to. She does know if one gets enough radiation on the lung as a whole you can get pulmonary fibrosis. She doesn't feel qualified to express an opinion in this regard in this case. Asked if in the treatment of asbestosis where the bronchial tubes are reduced in size in order to alleviate that condition do they not administer a dilating drug for this, witness replied, we use it but have not been able to produce any good results with asbestosis. They did not do it in this case because there was too much carcinoma. Asked, and that was apparent to you from the outset on the first day you examined him with the collapse of the lung, witness replied, there was no question but that is what this was.

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Asked, you have notes with you with reference to the history that you received from him as to the employment over the years, witness replied, I don't think these are satisfactory;; they are my written scribbled notes. She has no dates in that, she was trying to get a description of his work as heat and frost insulator. Asked if she wrote down all she got, witness replied, one does not do all that, there are a good many things that a man like this tells me that are not written down, precisely I have not got down here the exact days when he worked for this company, that company. Asked, when you first examined this man you were not interested in fixing liability on a particular individual inasmuch as you were in making a diagnosis, witness replied, yes. Asked, and it would be important in making a diagnosis to determine how long the individual had been employed at this particular job, witness replied, it does not seem relevant when you have a history that is so long in time of exposure. She has noted that he worked in a store after school in his early youth. Then while still in school he worked for two years for the Boston Floating Hospital. He worked at Pilgrim Press as skipper also. He worked there about a year. Her next notation is that he worked at Waverly Heating for one year. Following that he did mason work, he worked off and on with his grandfather in this cement work. He then started at what he called heat and frost insulating and did it off and on for about 30 years, he cut and sawed asbestos board to fit pipes, boilers, etc. She was interested in this 30 years' employment in this particular trade. Asked insofar as what he did while working for a period of 15 months for one employer or two years for another employer at the particular time when you received this history you were not too interested in finding out the details of that, witness replied, that's right. Asked, and nowhere in the record does it indicate how much asbestos he came in contact with while in the employ of the Bancroft Company and nowhere in the record does it indicate the caliber of the asbestos while working for the Bancroft Company, witness replied, yes. Working with asbestos requires one to have proper ventilation or the wearing of a mask and then it can be done safely. Insofar as her records are concerned she doesn't know whether while working for the Bancroft Company he was out in the open or in a confined space, what the situation was with reference to ventilation. She saw this patient during his last admission to the hospital - the last part of November and first part of December. She was not the so-called attending physician at that time; the man was on the ward. She had nothing to do with the preparation of the death certificate; that was done by the house officer. She had nothing to do with the preparation of the final diagnosis. The diagnosis of asbestosis throughout the hospital record was questionable but that antedated the postmortem. That is true insofar as the hospital record is concerned.

TO COUNSEL FOR TRAVELERS: On looking at the slides following autopsy she observed some club-shaped, brown-colored bits of fibers and because of their length and contour and duration in the bronchial tree of the lung she concluded they were asbestos fibers. Asked if she had an opinion as to whether they had been there a year or ten years, witness replied, no. Asked, they had certainly had been there longer than a year in your opinion, witness replied, I don't think I give you an opinion on time. Asked, the fibers that caused the cancer which produced the death had been there much longer than a year, that is a fair statement, witness replied, that seems certainly more than likely. Asked if in her opinion that is true, witness replied, I wish I could be awfully flat-footed but I'm certainly willing to go along with you on that.

TO COUNSEL FOR THE CLAIMANT: Asked, the diagnosis of asbestosis which was placed on the hospital record on at least several occasions as being a possible diagnosis, was that confirmed by the postmortem, witness replied, yes.

TO COUNSEL FOR THE UTICA: Asked, is it a fair statement to say that you have no opinion as to how long the asbestos fibers which you viewed on the slides had been in his system, witness replied, yes. Asked, and of course those would be the fibers which produced the cancer which caused his death, in your opinion, witness replied, no, you can't bring that into what I have said because the asbestos fibers move around. Asked, while they move around they will not leave the system, witness replied, yes, they will. Some of them might leave the system; they might leave at any time. She has no opinion as to how long the fibers which she saw under the slide were in the system.

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Counsel for Utica renewed his request that the questions and answers admitted de bene be stricken from the record and Commissioner rule they be allowed in until the entire record had been submitted.

At the continued hearing held in this case in Boston on Friday, July 31, 1953, the following evidence was reported:

APPEARANCES: L. Locke, Esquire, for Claimant.
A.J. McLaughlin, Esquire, for Utica Mutual Insurance Company.
R. Plunkett, Esquire, for Travelers Insurance Company

HELEN V. ROTHWELL, the claimant, questioned by her counsel, testified she recognizes the memorandum book which counsel has in his hand. She found that in the pocket of the coat her husband wore to work. Asked to look at the handwriting in that book and tell if she recognizes it, witness replied, yes. It is her husband's.

Counsel for claimant offered this Memorandum Book for this record as an Exhibit, stating it is a work record kept by the decedent from Monday, October 28, 1951 through February 19, 1952, that in it the employee listed from day to day the work that he did, that it is apparent this man had some sort of supervisory capacity on this job; counsel for Utica objected to the admission of this Memorandum Book; Commissioner ruled the Memorandum Book was to be admitted as an Exhibit and exception is saved for counsel for Utica.

JOHN J. HUGHES, called and questioned by counsel for claimant, testified he presently lives on Barry Street, Dorchester. His occupation is that of asbestos worker. He is a member of the Heat and Frost Insulation Workers' Union. He has worked as asbestos worker about 35 years. (Counsel for claimant stated he was offering this man as an expert witness on the trade of a heat and frost insulator.) During this 35 years he has worked as insulator on boilers, pipes, smoke flues and stacks. In doing this work he only had to mix up the asbestos with water - that was the only mixing he did. He has done that work himself. In that trade he had occasion to cut cylinders of prepared insulating materials. He has done that work himself. He has blocked boilers, flues and smoke stacks himself. (Counsel for claimant again stated he offers this man as an expert witness on the trade of asbestos worker and heat and frost insulation man.) Blocking a flue was part of the insulating job. The same material was not always used to block a flue. There are a certain limited number of materials used for blocking a flue. Asked, what are the materials used for blocking a flue, witness replied, 85 per cent Magnesia would be one; air cell board would be another - this is just an asbestos paper; and application of magnesia cement alone without blocking. Asked, in any of these three insulating materials that you have just mentioned is asbestos used, witness replied, yes. It is used in the magnesia. Each of the materials was used specifically in insulating, for heat saving. They also used an asbestos cement. Asked if a particular type of flue required a particular one of those four insulating materials, witness replied, yes. Asked, what would be the circumstances under which you would use the asbestos cement, witness replied, in 90 per cent of the cases you used the asbestos cement for finishing. Asked, how is that asbestos cement prepared, witness replied, it comes right from the mines. They get it in bags and drop it into a mixing box and apply water. Asked, is it the custom of the

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trade of a heat and frost insulating man and asbestos worker, is it the custom of that trade that the men on the job mix this asbestos cement as they need it (objection by counsel for Utica as being immaterial, question allowed) witness replied, yes. He has done that himself.

TO THE COMMISSIONER: Asked to tell what he actually observed when this cement was mixed, witness replied, the dust naturally raises up when the cement strikes the box.

TO COUNSEL FOR THE CLAIMANT: Blocking a boiler just means applying the insulation. That is done in the same manner as blocking a flue. When blocking a boiler you generally used the insulation directly in contact with the boiler because no air space was called for but in a flue they used an air space lath to give air space when blocking it. The army used the air space. Asked, you said in answer to a previous question that 90 per cent of the time the material used in blocking a flue was this asbestos cement, would that same figure apply in blocking a boiler or would it be a different proportion, witness replied, no, it's the same thing. He would say that 90 per cent of the time they used this asbestos cement to finish; in other cases they used the asbestos cement to stick the blocking to the boiler but that was not a general practice with every person. Asked to tell how he would go about covering a steam pipe, witness replied, a steam pipe up to ten inches is generally stuck on with paste. The insulating material is generally magnesia. Asked, is it loose material or does it come in the form of a cylinder, witness replied, no, it's a molded material. Asked to tell what he means by that, witness replied, it comes in a molded form up to approximately ten inches and then molded in segmental form from ten inches on. He means it comes pre-shaped. They do have to cut it to fit. Asked, on the material that you used is there any label or other tag stating what the material is composed of (objection noted by counsel for Utica, question allowed and exception is moved) witness replied, yes. He only knows of four companies who manufacture this material - they are Bishop & Materson, Johns-Manville, Phillip Carey, Everett Asbestos. Asked, is your memory sufficiently strong today so you could tell us today what appears on the labels of the molded pipe-covering produced by any of those four manufacturers (objection noted by counsel for Utica, question allowed) witness replied, 85 per cent magnesia and that is all. Asked, does it say anything there about what the other 15 per cent is there, witness replied, never stated to my knowledge. Asked, what does the phrase 'cementing a boiler' refer to, witness replied, that is simply finishing up the work. Asked, what is the substance that is used in that operation, witness replied, asbestos cement. Asked, what is the phrase 'finishing fittings' mean, witness replied, putting on the asbestos cement and canvassing.

TO COUNSEL FOR TRAVELERS: He didn't know Mr. Rothwell very well. He was on the same job with him but never worked directly with him. He never worked directly with him so he never saw what work he had been doing. Asked, there are a lot of the duties on this job that are not dusty, witness replied, I would not say a lot, it's really a dusty job. Asked, you mean the mixing is dusty, witness replied, even the application is dusty. Asked, after you have mixed the water with the material that is in this bag, then when you apply it it's wet and there is no dust, is that right, witness replied, no, there is dust when you apply it. Asked, when you wet it, witness replied, you're not applying this wet stuff to the boiler or flue, when you apply it to the magnesia block it's dusty. They put this bag material in a pail or tub and pour water on it. Then it's wet. The mixing can be done in a few minutes. Then the men who are going to use that take some on a mortar board or pail. They use a trowel. These men take some in a bucket and then apply it with a trowel. One man can mix enough for 100 men. On an average job there would be ten men. One man, in one hour, could mix enough cement for all the men for the day. So the other nine men could go to the tub and get a pail or bucket full of this material and take it to where they were working and apply it with a trowel. That is the usual way it is done.

TO COUNSEL FOR UTICA: He was not working up in Fort Kent, Maine with Mr. Rothwell; he was not on that job. He worked with him at the Lynn Housing. That may have been two years ago. It was sometime in 1951.

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There are different means of applying insulation to a boiler. There are also different types of insulation used. Asked, and whether or not in any given period of time Mr. Rothwell was using asbestos to your knowledge you don't know, witness replied, no.

TO COUNSEL FOR THE CLAIMANT: When one is applying this wet cement you're going against the dry surface and when you apply wet stuff on the dry surface you bring back the dirt. He did state the asbestos cement was used as the finishing coat. As a general rule it was used as a finishing coat on top of something else. Asked, what is the usual material that is put on before the asbestos cement, witness replied, that is 85 per cent magnesia. Asked, is that in the form of a pre-molded segment or section or is it also in the form of a wet base, witness replied, 90 per cent of the case it's in molded form. Besides the mixing of the cement which is dusty, the cutting of the material is dusty; when you're sawing it, it's dusty. Asked, and would it make any difference where you were installing these molded segments as to the extent of the dust that would get on you, would some places be more dusty than others, witness replied, yes, on open construction there would be more wind. That would make it more dusty. Asked, how about installing insulation on pipes that are in the ceiling, between one ceiling and the floor above (objection noted by counsel for Utica, question admitted de bene) witness replied, I don't think that question is put correctly as far as we are concerned because between a ceiling is not so, you're not between a ceiling when you're applying that, you're open although it's between the ceiling, when the job is completed, you're in the open when you apply it. The floor above is in place. Asked, you're working above against a floor, witness replied, yes. Asked, is that work more dusty than other work or less dusty, witness replied, I think the answer would be just about the same.

TO COUNSEL FOR THE UTICA: That depends on the conditions on the job.

TO COUNSEL FOR THE CLAIMANT: Asked, so if I understand your answers, there are three parts of the work that are dusty, one of it is mixing of the asbestos cement, the second is when you place the asbestos cement against the magnesian block and the third is when you cut the molded segments to put on pipes, is there any other part of the work that is dusty, witness replied, as far as dusty, now as I understand that question to be is the work dusty, yes, it's dusty but I won't say it's dusty for all materials.

TO THE COMMISSIONER: The work was dusty when he used their material in mixing or cutting or applying.

TO COUNSEL FOR TRAVELERS: Asked, on these jobs where you were applying or this material that you were cutting, there was a considerable dust that was not as result of your materials, is that true, witness replied, that is true, I said yes. Asked, in other words on boilers that you might be working on there may be a thick coat of ordinary house or building dust, so-called, is that right, witness replied, yes. Asked, and on pipes that you were covering or repairing there might likewise be thick coating of house or building dust, witness replied, yes. Asked, and when you say the job was dusty you mean in your operations you disturbed and knocked loose a lot of this dust in around there, witness replied, no, in my statement... Asked, I say is that the procedure when you apply material either to a boiler or to these pipes you might disturb the dust that was on these pipes, witness replied, the answer would be 'yes'. That would fly around. Asked, when you explained that the job was dusty you meant that dust as well as other witness replied, no, I did not in the question which was asked. As he was working there this other dust was flying around. He did say 90 per cent of the material is molded. Some of the molded material comes with cloth wrapped around the outside of it. All of it does not come that way. Asked, but all your pipe material comes that way, with cloth on the outside, witness replied, no, up to approximately ten inches, yes. Asked, would you say 90 per cent of your work involved the use of material up to ten inches or what percentage would you say, witness replied, I would have to withhold from the percentages, I would not know that answer. Asked, would you say a big

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majority involved material up to ten inches, witness replied, on the work I followed it has been without cloth, most of the work I have been doing has been larger work. He wouldn't know whether Mr. Rothwell worked with the larger work or with work up to ten inches. Asked, but if he did work with material up to ten inches it would be covered with cloth, witness replied, it would be. This wet cement was applied to a boiler or other object with a trowel. When that was done, it was applied only a section at a time. That answer does not apply when it is applied to the insulation on the boiler. They apply the insulation on the boiler first and then finish with the cement. Asked, on the stuff you apply directly to the boiler you put that on directly with a trowel and that is wet, witness replied, no. Asked, you put that on with blocks, witness replied, yes. After he puts the blocks on, then he puts on the wet cement. The wet cement is handled in a trowel. Then they put on one part at a time. Asked, so the only part of the boiler that you touch when you put on the wet cement with the trowel is that part which becomes wet, you don't touch any other part, witness replied, the wet cement hits one part of the boiler and invariably disturbs the dust that is on there. They cut these molded forms with a saw. Asked, and when you cut them with a saw do you usually put them down on something and saw down on them, witness replied, I would say 'no' to that question. That is usually done by laying it down on a flat surface and cutting across it. It is done like on a table and cut across. It cuts easily. Asked, and the material that you cut is usually covered with cloth, up to ten inches, witness replied, yes. Asked, you don't know whether Mr. Rothwell used any material over ten inches or not, witness replied, not definitely.

DR. JAMES STEWART ROONEY, called and questioned by counsel for claimant, testified (Qualifications admitted as pathologist) he has had the opportunity to review the record of Massachusetts General Hospital and the autopsy record of the Massachusetts General Hospital, pathology department. He has formed an opinion as to the cause of death in this case. In his opinion this man's death was caused by adenocarcinoma of the lungs - that was the immediate cause of death - with extension to the heart, pleura, diaphragm, retroperitoneal tissue on the left, adrenals, kidneys and the lymph nodes. Asked, was there any other pathological condition this man had which was a contributing factor in his death (objection noted by counsel for Utica, his exception is saved) witness replied, there were other contributing factors. Asked, what were they in order of importance, witness replied, this man had asbestosis with pulmonary fibrosis, congestion of the liver, inflammation of the external surface of his heart, inflammation of his right lung, externally, and he had approximately a quarter of fluid in his right chest. Asked to tell what there is in the hospital record which leads him to the opinion this man had asbestosis, witness replied, in the microscopic examination of his lung tissue the characteristic nodular shaped bodies that one sees in asbestosis were present, these are diagnostic of asbestosis. Asked if he has an opinion as to whether or not there is any causal relationship between the asbestosis and the cancer from which this man died, witness replied he has. His opinion is that due to the longstanding chronic irritation, as result of the inhalation of asbestos fibers, that this is an adequate cause for the development of his cancer which led to his death. Asked, did the asbestosis itself, apart from its effect in producing the cancer, did the asbestosis itself play any part in his death at the time that he died, witness replied, I don't think so, no. Asked, I want you to assume that this employee worked for A. W. Bancroft Company between December 17, 1950 and March 19, 1952, that during that time he performed the regular duties of a heat and frost insulation worker or asbestos worker as it is ordinarily described, that this work, and specifically during the period from October 28, 1952 and February 19, 1952 included days in which he covered steam pipes with insulation material, in which he blocked flues, days in which he blocked boilers, days in which he covered pipes, days in which he finished fittings, that in these operations he used insulating materials, included among which would be asbestos cement, he used molded insulation material and molded segments, that in connection of covering of pipes he had to cut and saw the asbestos board, that he had to cut it to fit around pipes and fittings that came with the pipes that he was covering,

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that this work was dusty, that the dust included dust from the insulation materials as well as building dust which was present in a construction job, that the widow testified as fact that he coughed, that the clothes she washed contained dust particles and I want you to assume further that in January 1952 he developed the onset of a harsh, hacking cough which was worse in the morning and productive of a small amount of brownish sputum, that shortly thereafter he noticed that on exertion he was short of breath and had a sharp boring pain below the angle of his left shoulder blade, that he was out of work from February 21 to February 29, 1952 and returned home from the job which he was doing away from home and was treated for what the doctor told him was gripe, that he then returned to work for a few weeks and finally ceased work for the Bancroft Company on March 19, 1952 and went to work for the Armstrong Company from March 20, 1952 to April 25, 1952, that he continued to do the work of a heat and frost insulation worker for the Armstrong Company, that he finally stopped work in April 1952 following consultation with a physician because of these symptoms described before, namely, shortness of breath, on exertion, pain below his left shoulder and cough, now, assuming those facts to be true as to his work history and the history of the onset of his symptoms, do you have an opinion as to whether or not the work this man was doing while in the employ of the A. W. Bancroft company, that would be December 17, 1950 to March 19, 1952, was an important factor in producing the asbestosis and bronchogenic carcinoma which he died, witness replied, (counsel for Utica objected, questions admitted as bona fide exceptions are saved) I do. It is his opinion that sometime during 1951 this man developed a malignancy of his lung as secondary to his asbestosis, the asbestosis was a factor in causing the malignancy to start, that is as far as he can go. Asked, do you have an opinion as to whether the inhalation of dust from insulating materials in his work during 1951 was a factor, aggravating or precipitating factor, in the asbestosis and thereby of the cancer (objection noted by counsel for Utica, his exception is saved) witness replied, if he inhaled dust containing asbestos during the period of time it would aggravate his condition. Asked, do you have an opinion as to whether or not his work from March 20, 1952 up to April 25, 1952, for the Armstrong Cork Company, assuming that he inhaled dust from insulating materials at his work, including asbestos, was a factor in the asbestosis and cancer from which he died, witness replied, I have an opinion. It is his opinion that it did not play any role. Asked to give his reason for that opinion, witness replied, because he had carcinoma prior to the time and carcinoma was the cause of the death. Asked, didn't the further inhalation of the asbestos dust during the last six weeks play any part in the aggravating or worsening his condition witness replied, no, I don't think so. Asked, did it play any part in producing the death at the time that he died, witness replied, I don't think so.

TO COUNSEL FOR THE UTICA: Asked, you say that there was a long-standing chronic irritation due to the inhaling of fibers which you say was an adequate cause for the cancer, witness replied, that is correct. Asked, when you say longstanding chronic irritation, can you tell us how long, witness replied, I don't think anybody can tell you that; we do know that one of the causative factors in the production of malignancy is a chronic irritating process, when that begins I don't think anybody can narrow it down as to a week or a month, we know that cancer takes a certain length of time to develop, once it starts it depends on the location, it depends on whether it can be removed or not, this man's cancer was too advanced to remove, they took him to the Massachusetts General and attempted to remove it and found they could not because of the advanced stage, when his cancer began I can't tell you because the line of demarcation between normal and abnormal no one ever sees, I don't think anyone can tell. Asked, so you can't say whether or not the cancer had its inception prior to March 19, 1952 or subsequent to that date, witness replied, it had its inception prior to 1952 because it was far advanced when they opened him up at the general. He cannot give a definite date on the inception of cancer in 1952. He cannot give a definite date on that for 1951. He thinks it began subsequent to 1950. Asked, so that you say that sometime in 1950 on, witness replied, either that - I would say probably 1951 from the description of the cancer. It could have been 1950. He has seen the autopsy report. Asked, this man, according to that report, had a history of having worked 29 years in the asbestosis business, have you an opinion as to when the asbestosis first commenced, witness replied, I would say the asbestosis had been present for many years. That is so because of the appearance of the lungs. Asked,

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assume that this man worked at the same job subsequent to March 20, 1952 up to April 25, 1952, doing the same sort of thing that he had done between the period of December 1950 to March 20, 1952, do you have an opinion as to whether or not the work subsequent to March 20, 1952 would be detrimental to him, having in mind the facts that it was your opinion at that time he had, first, asbestosis and, second, cancer (counsel for Travelers stated that the doctor has already answered the question) witness replied, here's a man who by 1952 was doomed to death from his malignancy, his malignancy was then far advanced, I doubt the inhalation of anything further accelerated the growth of his malignancy. Asked, do you have an opinion as to whether or not working during that period of time was detrimental to him (objection noted by counsel for Travelers, doctor allowed to answer the question) witness replied, there are certain patients with malignancy that you advise continuing their job and working until the day they die, there are other patients who completely collapse once you tell them they have malignancy and never return to work, I don't think the work factor plays much of a role in the advancement of malignant disease. Asked, the malignant disease was aggravated was it not, by the inhalation of asbestos after the malignant disease had started in his system, was it aggravated by the asbestos dust, in your opinion, witness replied, I think that once his malignancy began, that for a period of possibly four or five or six months following the beginning of his malignancy he might have accelerated the growth a little bit by inhaling more of the factor that was one of the causative agents in his malignant condition, the malignancy once it started was not aggravated too much by the further inhalation of asbestos, that is in and of itself, in substance it's not known to cause death per se. Asked, asbestosis, witness replied, yes. Asked, but your answer was that it was not aggravated very much, witness replied, I don't think it was aggravated very much by his work after his malignancy started. Asked, but it might have been aggravated somewhat, witness replied, slightly.

TO COUNSEL FOR TRAVELERS: Asked, did I understand you to say in your opinion the man's work from March 20th until the date he finally stopped work, such as asbestos as he might have inhaled, if any, played no part in either the aggravation or acceleration of the disease nor did it bring about his death sooner than it otherwise would have occurred, is that a correct statement, witness replied, that is correct.

Counsel for Travelers made a motion the claim against them be dismissed. The motion was taken under advisement.

Counsel for claimant requested the Autopsy Report of December 4, 1952 - Unit Number 778205 - be made part of this record. This is done by reference and may be found in the Board file. The anatomic diagnoses reported thereon are: Bronchogenic adenocarcinoma, left lower lobe with extension to left upper lobe, heart, pleura, diaphragm, and retroperitoneal tissue on left and metastases to right lung, adrenals, kidneys, and hilar, mediastinal, left supraclavicular and para-aortic lymph nodes; Asbestosis with moderate pulmonary fibrosis; Hepatic congestion, moderate; Pericarditis, fibrinous, Pleuritis, right; Pleura effusion, right (800 cc.); (Pulmonary osteoarthropathy fingers, mild).