

Railroad Documents Index

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20	April 27, 1938	Armstrong Chinn to H.B. Voorhees
21	May 6, 1938	Armstrong Chinn to H.B. Voorhees

SCF-ALLF-00195

SC-ALL-00545

MEMORANDUM OF ITEMS INVESTIGATED ON THE ALTON RAILROAD IN
CONNECTION WITH THE ILLINOIS OCCUPATIONAL DISEASES ACT.

Bloomington Shops

Locomotive shop

Portable grinding wheels

Driving box gang	-	1 used 6 hrs. per day.
Rod gang	-	1 used 3 hrs. per day.
Air brake dept.	-	1 used 1 hr. per day.
Truck gang	-	1 used 3 hrs. per day.
Shoe and wedge gang	-	1 used 4 hrs. per day.
Boiler shop	-	1 used for grindin patches etc.

Men using these grinders are instructed to use type A dust respirators. Operations should be confined to places where dust will not affect other workmen. This item should be given particular attention in the case of H. Gehle's dept. where a great deal of grinding and polishing is done on motion work.

Sand blasting

Babbitting dept - Now equipped with a closed sand blast cabinet with induced draft through stack to outside of building. Sand blasting hood and mask not needed but dust respirator should be furnished.

Sand blast room - All sand blasters now wear approved hose masks and in engine house. hoods.

Boiler shop - Wet sand blasting boiler man has only been wearing hood but will be furnished with approved combined mask and hood which was formerly used by babbitt dept. sand blasting. One extra hose mask will be required for this purpose.

Spray painting

Locomotives are spray painted in west end of locomotive shop. Dust and dirt are blown off the engine with air hose before painting creating an asbestos dust hazard. While spray painting the engine, the west end of the shop is filled with paint fumes and fine spray. Although this work is done at night when the least number of men are working, those in the shop complain of the dust and paint fumes. The painters of course wear approved respirators but is not consistent to put these respirators on all workmen in the part of the shop involved. It was recommended that an enclosed stall for spray painting locomotives be constructed on track 18 of Bloom-enginehouse and equipped with positive air blowers to remove the paint fumes and the large volumes of dust which arise when the engine is cleaned preparatory to painting. This room would have to be equipped with good light and sufficient heat to dry the paint rapidly. This would probably delay locomotives being outshopped from 24 to 36 hrs. but is undoubtedly the only way this lead and asbestos poisoning hazard can be eliminated.

PROCEEDINGS
OF THE
TWELFTH ANNUAL MEETING
OF THE
American Railway Association
MEDICAL AND SURGICAL SECTION

HELD AT
PENNSYLVANIA HOTEL, NEW YORK CITY
JUNE 13, 14, 1932

EASTERN PUBLISHING CORPORATION
NEW YORK, N. Y.
1932

1932

1933

PROCEEDINGS
OF THE
THIRTEENTH ANNUAL MEETING
OF THE
American Railway Association
MEDICAL AND SURGICAL SECTION



HELD AT
STEVENS HOTEL, CHICAGO, ILL.
JUNE 26, 27, 1933

Glendon Printing Corporation
New York, N. Y.
1933

Cardinal *John J. M...*

Vol 25 #1

April 1979
St. Mary's in Rhine
Railroad

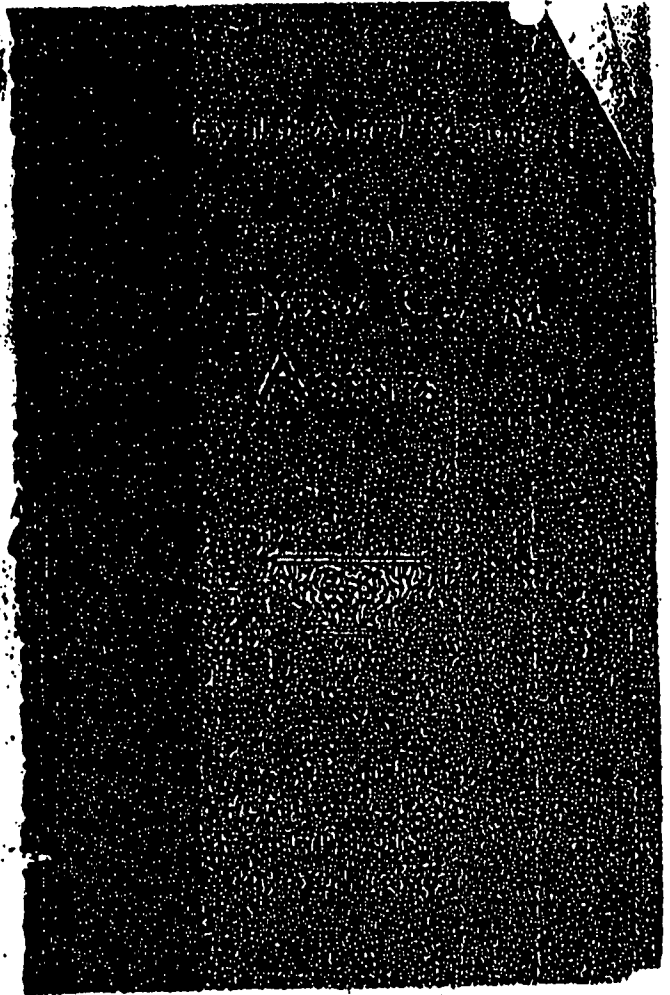
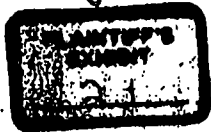
John

Ref

W. L.

B. G. Jones

F. H. Jones



PROCEEDINGS
OF THE
FIFTEENTH ANNUAL MEETING
OF THE
Association of American Railroads
MEDICAL AND SURGICAL SECTION



HELD AT
CHALFONTE-HADDON HALL, ATLANTIC CITY, N. J.
JUNE 10, 11, 1935

EASTMAN PRINTING CORPORATION
New York, N. Y.
1935

1935

C O P Y

November 28th, 1938

Messrs.

J. P. Morris, Division Master Mechanic,
Atchison, Topeka & Santa Fe Railway Co.,
80 E. Jackson Boulevard,
Chicago, Illinois.

E. B. Hall,
General Superintendent Motive Power & Machinery,
Chicago & North Western Railway Company,
Kauler Avenue and Kinzie Street,
Chicago, Illinois.

Dr. D. B. Moss, Chief Medical Officer,
Chicago, Burlington & Quincy R. R. Co.,
547 W. Jackson Boulevard,
Chicago, Illinois.

C. L. Emerson, Division Master Mechanic,
Chicago, Milwaukee, St. Paul & Pacific R. R. Co.,
Union Station,
Chicago, Illinois.

R. A. Mason, Shop Engineer,
Illinois Central System,
Room 810,
138 E. 11th Place,
Chicago, Illinois.

T. P. Ball, Master Mechanic,
New York Central Railroad Company,
634 LaSalle Street Station,
Chicago, Illinois.

Gentlemen:

At the first meeting of the Railroad Engineering and Shop
Committee, held on November 25th, the following were present:

J. P. Morris, Division Master Mechanic, Santa Fe
L. H. Cots, Asst. to Mechanical Supt., Santa Fe
T. P. Powers, Asst. Supt. Motive Power & Machinery, C. & N.W.
J. G. Stump, Asst. Supt. Motive Power & Machinery, C. & N.W.
D. B. Moss, Chief Medical Officer, C. B. & Q.
C. L. Emerson, Division Master Mechanic, C.M.St.P. & P.
R. A. Mason, Shop Engineer, I.C.
T. P. Ball, Master Mechanic, N.Y.C.
J. W. Freels, Local Attorney, I.C.
Armstrong Chinn, Chief Engineer, Alton.

REVISED RECOMMENDATIONS COVERING RULES AND INSTRUCTIONS FOR
PREVENTION OF ASBESTOSIS. THESE RULES TO SUPERSEDE THOSE
ADOPTED BY THE SHOP AND ENGINEERING COMMITTEE ON JAN. 18, 1937.

1. Respirators should be furnished by the Company and they should be worn at all times by employees handling asbestos. Attention is called to some of the specific instances where respirators are required:

Loading or unloading shipments of asbestos.
Mixing asbestos.
Removing lagging from boilers.
Removing lagging from pipes.
Breaking up or grinding asbestos.

2. Before removing lagging from a boiler, either locomotive or stationary, asbestos must be sprayed with water sufficiently to lay the dust.
3. Removal of lagging from locomotive boilers should be done when there is the least number of men working in the vicinity, and all such men should be protected by wearing approved respirators.
4. Grinding asbestos causes excessive dust. Where such operations are performed and facilities are equipped with exhaust systems, employees should also be required to wear approved respirators. When exhaust systems are not provided, employees so engaged should be required to wear air masks or helmets with clean dry air furnished from an outside source.
5. Each employee required to wear a respirator should be furnished one for his individual use or one that has been sterilized if previously used by any other person.
6. To insure maximum protection from respirators, only those that have the approval of the U. S. Bureau of Mines should be furnished.
7. Foremen should make periodical checks to see that respirators fit properly, and to note that they are in good condition.
8. Foremen should be held responsible for seeing that respirators are worn in accordance with instructions.
9. It is suggested that the above recommendations be communicated directly to the foremen involved. Publicity on the above might suggest the making of claims.

GENERAL MANAGERS' ASSOCIATION OF CHICAGO

ROOM 402, UNION STATION BUILDING

H. B. VOORHEES.
CHAIRMAN
G. H. SCHNEIDER.
SECRETARY

Chicago, January 21, 1937.

Mr. H. B. Voorhees - 34007

File #1541

CIRCULAR NO. GMA-2603.

ALL MEMBER LINES--GENERAL MANAGERS' ASSOCIATION OF CHICAGO
and
NON-MEMBER LINES--IN THE STATE OF ILLINOIS.

Gentlemen:

Referring to previous circulars in connection with the Illinois Occupational Diseases Act. I am quoting letter dated January 19, 1937 from Mr. Armstrong Chinn, Chairman of the Engineering and Shop Committee:

"Please be referred to my report of the meeting of the Railroad Engineering and Shop Committee held on January 18th.

"On Page 2 of that report I outline a further survey of Railroad Shops and Roundhouses in Illinois that the Committee would like to have made. As pointed out, the purpose of this survey is to collect information that will show that conditions in railroad shops and roundhouses are very different from those in the usual manufacturing establishments, and for that reason railroads should have modified and less expensive rules than industry generally.

"Will you please have the railroads send this information in within a reasonable time?"

That part of the report referred to by Mr. Chinn is quoted below:

"Conditions in railroad shops have been found to be so different from those in the usual manufacturing establishment that it is felt the railroads should be exempted from many of the restrictions rules that will, no doubt, apply to industry generally. To support this view, the General Managers' Association will be asked to have a further survey made of railroad shops in Illinois showing the following information, which the Committee should receive in triplicate:

"1. Blueprint or sketch of each shop and roundhouse building in Illinois, showing plan of each building, and layout or location of each grinding, buffing and polishing machine.

"2. Number of hours each grinding, buffing and polishing machine works in each eight (8) hour shift.

"3. Number of employees in each room on each shift.

"4. Air volume or cubical content in each building or room. Where the building is not divided by partitions, the air volume or cubical content should be shown for the building as a whole. Where the building is divided into rooms by partitions, the air volume or cubical content should be shown for each room.

Chicago, February 15, 1937

Messrs: F.K.Moses,
O.S.Branch,
Jos.Schneeberger,
W.A.Bendor,
O.W.Knight:

Referring further to the Occupational Disease Act, State of Illinois, effective October 1, 1936:

I now wish to bring to your attention, and in addition am sending you herewith several copies of two sheets entitled -

- (1) Recommendations covering rules and instructions for the prevention of Silicosis.
- (2) Recommendations covering rules and instructions to be observed by employees handling asbestos.

With respect to the sheet setting forth recommendations covering rules and instructions for the prevention of Silicosis, I am also sending a copy thereof to all enginehouse and car foremen and others concerned receiving a copy of this letter for their information and guidance.

It must be understood, however, that these recommendations are not to be posted or given out but are for the information of the supervision exclusively, and they will be expected to see that all of our employees involved in the particular work that might cause Silicosis be properly instructed and supervised so that none of our employees assigned to the work enumerated will develop Silicosis.

Likewise, I am sending each of the foremen addressed a copy of the sheet setting forth recommendations covering rules and instructions to be observed by employees handling asbestos, and similarly this sheet is not to be posted or given out but is for the information of the supervision who will see that the employees wear respirators while performing the work enumerated therein and in accordance with instructions contained therein.

These are two very important subjects, namely - prevention of Silicosis and prevention of injurious effects from handling asbestos, and I will expect you gentlemen to personally handle the matter with your supervision while visiting the various terminals to know that they thoroughly understand the instructions and recommendations and that they see to it that the employees are properly supervised while performing the work enumerated in both of these recommendations.

C.M. HOUSE

CMH

cc-Messrs: C Rosenberg E H Eckstroth G Woltemade O Libbt J H Wright
R Elder L F Welsh F Salmon H Harris M R Vasconcellos M Magill
S R Richards F McGalloway O Ashworth A A Wood J L Shaw C D Huffines
C B Ruyle C W Ray S T Yowell L B Larson M C Comstock
H A Lockhart H O Wolfe R Seniff C W Esch

bloomington, illinois
february 18, 1937

Mr. C. M. House-PERSONAL

Referring to your mimeographed letter of February 17 th, to Mr. Moses and others with a copie to various foremen referring to the Occupational Disease Act, State of Illinois with attached sheets containing recommendations covering rules and instructions for prevention of silicosis and asbestosis.

On the sheet referring to the prevention of silicosis Item #2 states "air furnished for these masks must be clean and dry". A serious question arises in my mind as to whether our sand-blast masks deliver air which is satisfactorily free from sand and dust. I think the committee should advise us just what type of sand-blast mask is considered suitable and perhaps we in addition should make checks to determine if the type mask being used here is entirely effective as outlined in the recommendations covering the rules and instructions for the prevention of silicosis.

This for your consideration.

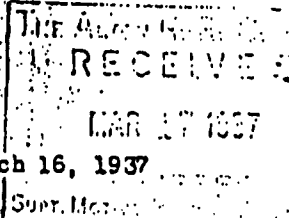
S:C

Yours truly,

R. W. Seniff
R. W. Seniff

*Saw
ask Chum to
handle stores
for you*

429 - Protective Devices for Respiratory organs -



Chicago, March 16, 1937

Mr. C. M. House -

Referring to your letter of February 15th relative to the Illinois Occupational Disease Act, effective October 1, 1936 and your letter of June 12, 1936 concerning Baltimore CMP&E Shop Bulletin 152. We arranged at that time to comply with this SB-152 and take care of the situation at Lincoln St, Glenn and East Chicago,

To comply we should have four respirators at Glenn due to the handling of asbestos and the flue boring, Lincoln Street three and one at East Chicago.

There is considerable difference in these respirators and we have made somewhat of a standard of them on the Terminal- I can place requisition for the three for Lincoln St. and one for East Chicago, and you will please advise what I might say to Mr. Woltemade on placing four for Glenn to comply with this law, as I feel we are liable to have a Factory Inspector call on us at any time.

*Dem
see me
3/17*

387



P. M. GATCH
President
Association of Railway Claim Agents

MINUTES
OF THE
Forty-eighth Annual Meeting
OF THE
**ASSOCIATION OF RAILWAY
CLAIM AGENTS**

ORGANIZED 1890

HELD AT THE
HOTEL NETHERLAND PLAZA
Cincinnati, Ohio
May 26, 27, and 28, 1937

Printed by
H. L. JOHNSON, Secretary
Cincinnati, O.

THE ALTON RAILROAD COMPANY

ENGINEERING DEPARTMENT
340 WEST HARRISON STREET
CHICAGO

ARMSTRONG CHINN,
CHIEF ENGINEER
J. R. HOAGLAND,
VALUATION ENGINEER

RECEIVED
MAY 28 1937
W. F. RECH,
BRIDGE AND BUILDING ENGINEER
J. M. F. GREEN,
REAL ESTATE AND TAX AGENT

May 27th, 1937

Messrs. J. P. Morris,
C. E. Longman,
D. B. Moss,
O. L. Emerson,
T. P. Jall,
R. A. Macch,

Gentlemen:

At the meeting of the Committee
on May 24th the following were present.

T. P. Jall,	Master Mechanic, N. Y. C.
L. H. Cots,	Asst. to Mechanical Supt., A.T. & S.F.
O. L. Emerson,	Master Mechanic, C.M. & St. P.
J. W. Freels,	Local Attorney, I. C.
C. E. Longman,	Asst. to V. P. & Gen. Mgr. C. & N. W.
D. B. Moss,	Chief Medical Officer, C. B. & Q.
A. Chinn,	Chief Engineer, Alton

The sub-committee appointed at the previous meeting to prepare a bulletin covering rules and instructions to be followed for the prevention of Anthracosis-Silicosis (Miner's Asthma) presented their bulletin which was checked and accepted by the committee as a whole. A copy of the bulletin is attached. It was recommended that, as in the past, the General Managers' Association send a copy of this bulletin to all railroads in Illinois.

The bulletin on Anthracosis-Silicosis which is being sent out with this letter is the fourth to be issued. These bulletins cover the four major hazards on the railroads, namely, Silicosis, Asbestosis, Lead Poisoning and Anthracosis-Silicosis, and will be all that will be issued for the present. There are other hazards, such as Arsenic Poisoning, Carbon-Monoxide Poisoning, Skin Diseases, etc., but these are minor hazards compared to the first four. Later, if it is found desirable, bulletins will be issued on these lesser hazards.

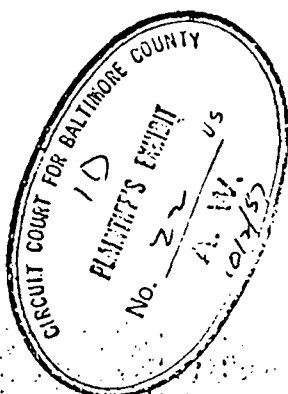
It was suggested that a review be made of all bulletins issued so far to determine if any revisions are in order. For instance, it has been stated

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Association of American Railroads

PROCEEDINGS
OF THE
SEVENTEENTH ANNUAL MEETING
OF THE
MEDICAL AND SURGICAL SECTION



HOTEL TRAYMORE
ATLANTIC CITY, N. J.
JUNE 7, 8, 1937

PROCEEDINGS
OF THE
SEVENTEENTH ANNUAL MEETING
OF THE
Association of American Railroads
MEDICAL AND SURGICAL SECTION



HELD AT
HOTEL TRAYMORE, ATLANTIC CITY, N. J.
JUNE 7, 8, 1937

EASTERN PRINTING CORPORATION
NEW YORK, N. Y.
1937

1937

MONDAY MORNING SESSION

June 7, 1937

The Seventeenth Annual Meeting of the Medical and Surgical Section of the Association of American Railroads convened at the Traymore Hotel, Atlantic City, New Jersey, at nine thirty o'clock, Dr. D. B. Moss, Chairman, presiding.

THE CHAIRMAN: Gentlemen, we will now begin our Seventeenth Annual Meeting.

The first item on the program is "announcements" which will be presented by the Secretary.

. Announcements

THE SECRETARY: A few days ago I received the following wire from Dr. McCombe, of the Canadian National Railways, dated "Toronto": "Greatly regret owing to continued ill health impossible for me to attend annual meeting of Section Regards." Signed "John McCombe."

DR. G. G. DOWDALL (Illinois Central System): I move that the Secretary be requested to wire Dr. McCombe and convey our extreme regrets at his unavoidable absence, and our hope for his early recovery, with lots of love.

. The motion was seconded, was put to a vote and unanimously carried The Secretary then wired Dr. McCombe as follows: "Medical and Surgical Section in convention assembled extremely regrets that illness prevents you from being present today. Best wishes from all for a speedy recovery."

THE CHAIRMAN: The next number on the program is an address by the Chairman. I haven't an address, but I have a few remarks to make on a subject which I think will become of increasing interest to us as time goes by; that is, occupational diseases, and I want to refer particularly to the Illinois law which was passed last year.

OCCUPATIONAL DISEASES - THE ILLINOIS LAW

By

D. B. Moss, M. D.

The subject of occupational diseases has become a matter of great importance in the last two years, and is of concern to the employer, the employee, and the public as well, because the livelihood of so many citizens of the state depends upon the continuing good health of employees working in these recognized hazardous occupations. I have chosen this subject for discussion for the reason that for the past year I have been a member of a committee known as the Railway Engineering and Shop Committee. This committee was appointed by the

General Managers' Association of Chicago to make a survey of present practices and equipment of the railroads operating within the state of Illinois and submit recommendations which would serve to bring these railroads into substantial compliance with the requirements of this new law. There are 31 Class I railroads operating within the state, and considering short lines, there are 78 railroad corporations more or less interested in the subject of occupational disease. This investigation and the reports which will be issued will be of the greatest importance to these roads, and may serve the interests of railroads in other states, because the indications are that such legislation by other states will not be long delayed.

From time to time, this committee has issued bulletins recommending procedures designed to minimize the risk of exposure in occupations known to carry a hazard and which are of immediate concern to the railroads. Forty-six states now have Workmen's Compensation Acts which provide for compensation for accidental injury causing disability or death. Recognition of the principle of compensation for occupational diseases has been slow, and even now only 16 states have any provisions for compensation for disability or death due to an occupational disease. Many of these states do not provide for complete coverage. The Illinois Occupational Diseases Act was approved March 16, 1936, to take effect October 1, 1936. Accompanying this Act were two others—the Health and Safety Act, and the Grinding, Polishing and Buffing Act. This latter is a temporary measure bridging over the period until the Industrial Commission establishes rules having the effect of law to replace all previous legislation in certain fields.

Section 6 of the Health and Safety Act provides that the Industrial Commission may appoint an advisory committee to suggest rules or changes in existing rules. Representation on this committee must be equally divided between employer and employees. It is under this provision that the Railway Engineering and Shop Committee acts in assisting the railway member of the committee.

Section 2 provides that this Act shall apply to all employers engaged in any occupation, business, or enterprise in the state of Illinois, and their employees, the only exemption being the agricultural class.

Section 3 provides that it shall be the duty of every employer under this Act to provide reasonable protection to the lives, health, and safety of all persons employed by such employer. The Industrial Commission shall from time to time make, promulgate, and publish such reasonable rules as will effectuate such purposes.

Section 4 provides that to effectuate the purposes stated in Section 3, the Industrial Commission shall make rules for (a) Proper sanitation and ventilation of all places of employment to guard against personal injuries and diseases. (b) The arrangement and guarding of machinery and the storage and placing of personal property to guard against personal injuries and diseases. (c) The prevention of personal injuries and diseases by contact with any poisonous or deleterious dusts, vapors, gases, or fumes. (d) The prevention of personal injuries or diseases caused by exposure to artificial atmospheric pressure.

It is this that our test. The employee with the limited to the under the amount here trial of the e provided and expressly or, in whole or a tion of the r employer.

The prima Workmen's t family when purpose of th to comply w, or take such be it unders under the e Health and t time of not a less than \$50 offence.

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Prevention and loss expa has develop opposes the that the mun an employe require the n tion.

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It is this law for the prevention of disease or injury which urgently demands our best thought. The Workmen's Occupational Diseases Act is optional. The employer may elect to operate under its provision by simply filing notice with the Industrial Commission to that effect, in which case his liability is limited to the provisions of the Act. The employer who chooses to remain under the common law takes no action. His liability is limited only by the amount fixed by the jury after weighing all of the evidence presented in the trial of the case, except that for death the maximum is \$10,000. It is further provided under the common law that it shall not be a defense that the employee expressly or implicitly assumed the risk or that the disease or death was caused in whole or in part by the negligence of a fellow servant. Also, that any violation of the rules of the Health and Safety Act shall constitute negligence of the employer.

The primary purpose of the Workmen's Occupational Diseases Act, like the Workmen's Compensation Act, is to provide security to the employee and his family when he is overtaken by the tragedy of disability or death. The primary purpose of the Health and Safety Act, through the penalties provided for failure to comply with its provisions, is to compel the employer to install safety devices or take such other action as will protect the employee from accident or disease. It is understood that no employer, whether under the compensation act or under the common law, is relieved of the necessity of complying with the Health and Safety Act. The penalty for the first failure upon conviction is a fine of not less than \$25 and not more than \$100, and subsequent failures not less than \$50 nor more than \$200. Each day of failure constitutes a separate offense.

Referring again to the provisions of the Occupational Diseases Act, Section 5 provides that under the Act the employer shall be liable for compensation on account of an occupational disease which occurs within one year after the last day of the last exposure to a hazard, except in cases of silicosis and asbestosis, where the liability extends to three years. Section 3 provides that the employer under the common law is liable for three years after the last day of the last exposure to the hazards of the disease, and that every such action for damages in case of death shall be commenced within one year after the death of such employee, and within five years after the last day of the last exposure to the hazards of the disease. It is quite evident from these provisions that the employer is not immediately quit of an employee who resigns or who leaves the service from any other cause.

Prevention of occupational disease is of greater importance, more humane and less expensive, than the palliative of paying compensation after the disease has developed. The principle of this law is sound, and I believe that no person opposes the idea of compensation for disability or death whenever it is clear that the immediate cause can be attributed to a hazard which is associated with an employment. The proper application of the law will be difficult, and will require the intelligent cooperation of every agency concerned in its administration.

One of the dangers lurking in the Workmen's Occupational Diseases Act is the propaganda in the educational program of the State Department of Labor.

When this Act was approved a year ago, thousands of pamphlets were printed and distributed throughout the state describing in a fragmentary way the symptoms of various occupational diseases and the kinds of work which may cause them. The only purpose served will be to create a fear complex, and every employe who becomes ill will imagine that he has an occupational disease, or the one discharged or relieved will imagine or mangle many of the symptoms of some occupational disease and a claim will result. I believe this is more apt to occur under the Act than under the common law.

In the agitation which has led to legislation in the last two years, silicosis has been emphasized almost to the exclusion of other diseases which may have an occupational origin. We may accept as axiomatic that dust from whatever source, if in an excessive amount, is injurious. A recent comment in the *Journal of the A.M.A.* states that only silica is capable of inducing silicosis, but that other mineral dusts under prolonged and gross exposure may cause some increase in pulmonary fibrosis. If the relative potential harm of silica is rated as 100, then other non-toxic mineral dusts may be rated only on the order of 5 or 10. Dusts in industry are formed by processes of abrasion, grinding, polishing, blasting, and the like. Such dusts are not altered in any way, but maintain the same chemical composition as the material from which they come, the only difference being the particle size. The smaller these particles are and the harder and less soluble they are, the more apt they are to cause permanent changes in the pulmonary tissue. There are two schools of thought in regard to the method by which silica causes silicosis, one being that the hard particles of silica cause an irritation, producing a defensive fibrosis, and the other that the silica in the body undergoes a chemical change and becomes a cellular poison. The evidence appears to favor the first view.

Silica, asbestos, and lead are the principal substances generating toxic dusts to which railway employes may be exposed. To these we may perhaps add coal dust generated in handling coal from cars to coal chutes or other enclosed places, because this is excessively dusty work. A recent preliminary report was issued by the U. S. Public Health Service in a study of health conditions, including physical examination of 2711 men, in three representative anthracite coal mines in Pennsylvania. The presence of anthracosis-silicosis among the group was 23%. Among a control group of hard-coal mining employes where dust exposure was less than 5 million particles per cu. ft., no cases of anthracosis-silicosis were found. Among men employed more than 25 years in dust containing 5 million to 30 million particles per cu. ft. with less than 5% silica, 7% developed anthracosis-silicosis. Where the dust contained 100 million to 199 million particles per cu. ft., 54% of the employes developed anthracosis-silicosis, and with the dust containing in excess of 300 million particles per cu. ft., 89% of the employes exposed developed anthracosis-silicosis. Analysis of the data for the purpose of determining safe limits of dust exposure indicates that employment in an atmosphere containing less than 50 million particles per cu. ft. would produce a negligible number of cases of anthracosis-silicosis when the quartz content of the dust was less than 5%. Where the silica content was about 13%, a safe limit appeared to be 10 million to 15 million particles per cu. ft. It is obvious that avoidance of great exposure to toxic dusts and other poisonous substances

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used in or generated by manufacturing processes and of unfavorable working conditions, is the first essential in preventing and controlling occupational diseases.

A large part of the problems which will arise will relate to the question of disability, and will be medical problems, consequently the medical profession, particularly those who are interested in the industrial phases of medicine, must solve them. The problems which will arise in the application of the Health and Safety Act and the prevention and control of occupational disease will be engineering; none the less, it is important that the medical man be familiar with the engineering features in order to assess the proper value between cause and effect. It is apparent, therefore, that prevention and control demand the co-operative efforts of the engineer and the medical professions. It is these professions that industry and labor alike must look for resolution of the problems which will arise.

Medical control consists of a careful pre-employment occupational history extending over a period of five years at least, and supplementing a satisfactory present physical history, a careful physical examination, paying particular attention to any signs indicating diseases of the heart or lungs, aided by any laboratory investigation which the physical findings may suggest. The environment in which an employee may be required to work makes necessary this inquiry into the personal and occupational history, to ascertain that there is no history of previous exposure which may have caused impairments and no condition present which may be made worse by the occupation.

It is important, also, that careful inquiry be made into the history of employees who come for aid, if a correct diagnosis is to be made and a proper balance struck between diseases which are unfavorably influenced by occupation and other diseases in which occupation has no bearing. Therefore periodic physical examination of all employees, in so far as that is possible, is important. In occupations in which known hazards exist, such as where workers are exposed to lead or in sandblasting, examination should be made semi-annually, or more frequently whenever there appears to be indications for doing so, with transfer of employees who are becoming impaired, to less hazardous work.

Engineering is concerned in investigating the occupational environment, estimating the hazards scientifically and instituting the proper methods for control, and thereafter supervision to make certain that the safeguards which have been installed are adequate and their performance effective. Whether the matter is removal of silica dust, coal dust, or the dust or fumes of lead or zinc, the basic principle remains unchanged—ventilation by a method best adapted to meeting the condition to be solved. We have for consideration: (1) The use of mechanical devices, such as exhaust ventilating systems applied to the room or to the plant as a whole, or local exhausts through a suction hood applied close to the point of dust generation. (2) Changing the process: Substituting non-poisonous materials for those known to be poisonous; substituting wet grinding for dry grinding; or changing from natural sandstone grinding wheels to artificial abrasive wheels which are harder and contain but little or no free silica. (3) Personal protection: Control of hazard by means of protective equipment furnished the individual employee, provided the device

is effective and the employe can be depended upon to wear it continuously while at work. Thereafter it is a matter of good housekeeping—knowing that the atmosphere is maintained in a state which is not a hazard to the workmen. All dusts and all poisonous fumes may not be completely eradicated, but they may be controlled and reduced to a degree which is recognized by sanitarians and by experience to be non-hazardous. This can be accomplished by frequent dust counts of the air at a point where dust is generated, or chemical examination of air samples where lead or other poisonous materials are used. Sandblasting is perhaps the most dangerous dust producing agency to which employes may be exposed, because the sand used is a pure silica which produces a veritable dust flood. Sandblasting has come into extensive use on railroads in recent years. In the shops it is used for cleaning and polishing small articles. It is also used in removing paint from cars, buildings, and steel water tanks, preparatory to repainting. Used indoors it is imperative that all employes be protected, consequently a dust-proof cabinet or room, fitted with a local exhaust system, will be required. Only the air pressure mask is safe for the employe engaged in sand-blasting cars or buildings, and this work should be done only when other employes are not required to work in the vicinity. The air hose should be long enough to bring the air from outside the dust zone, or the air should be washed by being forced through a water bath.

A respirator is a filtering device for removing particulate impurities from the air and is not effective against gaseous impurities. Special masks for this purpose are manufactured. The essentials of a respirator are a close fitting and dust-proof face piece covering mouth and nose, with a minimum of dead space to prevent accumulation of carbon monoxide, the inhalation and exhalation valves must not cause effort in breathing and must be dust-proof, the filtering device should have an exposed surface area large enough to permit free breathing, the filter discs should be easily removable for replacement, and the respirator should fit comfortably and not obstruct vision, and should permit of wearing spectacles or goggles. There are various types of respirators which may be used for non-toxic dusts or for short exposure to toxic dusts. I would recommend that only respirators and gas masks which are approved by the U. S. Bureau of Mines be furnished to employes.

Silicosis and asbestosis are strictly dust diseases, and can be contracted only by breathing silica or asbestos dust. Lead poisoning is most frequently contracted by breathing the dust or fumes of lead, rarely by ingesting lead. Prevention and control, therefore, consists of protecting the employe against exposure by the means best adapted to preventing the generation and dispersion of these harmful dusts.

THE CHAIRMAN: We have received the following wire from Mr. J. M. Symes, Vice-President, Association of American Railroads, same having been addressed to Dr. Bartle as Chairman of the Program Committee:

"WASHINGTON, D. C., June 5, 1937.

Dr. Harvey Bartle:

Your letter June second. Because of some pressing matters of unexpected development here in Washington it will be impossible for me to

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The Chairman
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(Circular M. & S. 190)

ASSOCIATION OF AMERICAN RAILROADS

MEDICAL AND SURGICAL SECTION

REPORT OF COMMITTEE ON DISABILITY AND REHABILITATION

Dr. J. D. Collins (Chairman), Chief Surgeon, Seaboard Air Line Railway.
 Dr. W. J. Lancaster, Superintendent & Medical Director, Relief Department, Atlantic Coast Line Railroad.
 Dr. T. L. Hensley, Chief Surgeon, Chicago, Rock Island & Pacific Railway.
 Dr. John McCulloch, Chief Medical Officer, Canadian National Railways.
 Representative from Committee of Intercity.
 Dr. J. E. Garner, Chief Surgeon, Western Railway of Alabama.

New York, N. Y., May 6, 1937.

TO THE MEDICAL AND SURGICAL SECTION:

Your Committee regrets that it is unable to offer much new material in this report. An endeavor has been made to review some of the previously discussed subjects and bring them up to date. We feel that in the future this Committee should undertake more research work in the rehabilitation of employees who are disabled on account of injuries and diseases. The Committee will welcome any helpful suggestions in this connection.

The Use of Sodium Chloride by Workmen Exposed to High Temperatures

During the past thirty years numerous articles have been written on the use of sodium chloride by workmen exposed to high temperatures, following investigations by physiologists and various medical officers of industrial concerns. It was noted by these investigators that exposure of human beings to extreme heat causes both heat cramp and heat exhaustion. These two conditions are essentially different as regards symptoms, treatment and prognosis.

In heat cramps the etiological factor is a disturbance of the water salt metabolism, whereas in heat prostration the cause lies in a disturbance of the thermoregulating system. In heat prostration the complaints are of weakness, headache and vertigo, all of which develop so suddenly that often the victim collapses at work. In cases of heat prostration the workman is usually fit to return to work within two days, whilst in cases of heat cramp, it takes four or five days for restoration of body weight and of normal blood picture as far as haemoglobin and salt are concerned.

Heat cramps are also often called "Miners' Cramps," "Muscle Cramps" and sometimes wrongly called "The Bends." The condition consists in painful tonic spasms of any of the skeletal muscles, but usually of those most actively in use.

Except in quite young employes the danger of dementia praecox is slight. In any event if the employe begins to get schisive, abstracted, inattentive, slovenly, has occasional temper explosions, and has fanciful ideas he should be investigated with the possibility of dementia praecox in mind. On the other hand if his change of personality is such that he is suspicious, accusatory, feels that he is persecuted, will not listen to argument, and wants to carry his difficulties to some high authority, a trend toward the development of paranoia may be suspected.

There are other forms of nervous and mental states which might be discussed, leaving out mention of the dangers of alcoholism, acute, periodic, or chronic, there is another danger of which we should be on the outlook and that is the mental state brought on by drug taking. Morphinism fortunately is rare among railroad and other hard working men. But what we do wish to mention is the habit of taking all sorts of the easily obtainable depression drugs of the barbital and similar groups. An employe who is found to use these drugs habitually in any excess should at first be examined and cautioned and then if he persists in their frequent use he should be removed from any potentially dangerous position.

In the handling of mental cases it is advisable to secure the assistance of a psychiatrist and also members of mental institutions in order to provide proper care and rehabilitation.

We know that we have not adequately discussed the occurrence and handling of mental conditions in railroad employes, but two things we feel certain of and on firm ground; first that we can attack these problems, with any hope of beneficial effect, only at the price of eternal vigilance; and second that we must be firm in seeing that the suspected individual is immediately withdrawn from a responsible position and put under neuro-psychiatric care.

Pneumoconiosis

Pneumoconiosis is the reaction of the lungs to the presence of any kind of dust. Silicosis is the reaction of the body, especially the lungs, to the presence of silicon dioxide, or silica, in a finely divided state. It is widespread fibrosis.

During the last few years silicosis has come to hold a prominent place in the industrial world because of legislative action. Silicosis is an old disease. Collis gives a very complete report on the literature from the time of Hippocrates up to the present. Little was written on the subject until 1717 when Ramazzini wrote his famous book "Diseases of Tradesmen."

The Committee on Pneumoconiosis of the Industrial Hygiene Section of the American Public Health Association, defined silicosis as "a disease due to breathing air containing silica (SiO₂), characterized anatomically by general fibrotic changes and the development of milium nodulation in both lungs, and clinically by shortness of breath, decreased chest expansion, lessened capacity for work, absence of fever, increased susceptibility to tuberculosis (some or all of which symptoms may be present), and by characteristic X-ray findings."

There are at least two distinct types—acute and chronic. Acute—reported as early as 1713, may develop in two years, or even less. Chronic—or most common type, takes from 10 to 15 years or more to develop.

Etiology

The primary cause of silicosis is the inhalation of dust. It has been shown that the lung tissue, most, in fact, is dust penetrating a dust invisible technique of dust standardized by measured in terms.

The probable cause of silicosis is that the harmful to its quartz content is that range particles readily of dust. Second, precisely, as there is also a factor. Service, it was found of allowance of air for worker limit would put physical character (1) Length of the U. S. Public Health, heaviest dust, the and by four years of the year.

Pathology

According to the description of the disease, up the respiratory system, the reaction is a fibrotic reaction, and the disease is characterized by the development of nodules in the lungs. The disease is characterized by an increase in size of the nodules and by the development of fibrosis.

Symptoms

The disease is characterized by shortness of breath, decreased chest expansion, lessened capacity for work, absence of fever, increased susceptibility to tuberculosis (some or all of which symptoms may be present), and by characteristic X-ray findings.

First stage: The disease is characterized by an increase in size of the nodules and by the development of fibrosis. The disease is characterized by an increase in size of the nodules and by the development of fibrosis.

Etiology:

The primary cause of silicosis then, is free silica, inhaled in the form of dust. It has been demonstrated that this dust, in order to achieve its harmful effects on the lung tissue, must be in a fine state of subdivision, that the dust particles must, in fact, be less than 10 microns in their greatest diameter. Most of the dust penetrating the alveoli is less than 5 microns in diameter. It is, therefore, a dust invisible to the naked eye, and its estimation depends on a definite technique of dust sampling and counting. This technique has been defined and standardized by the U. S. Public Health Service. Dust concentrations are measured in terms of million particles per cubic foot.

The probability of one acquiring silicosis depends upon: (1) Nature of silica dust; depends upon the mineral composition of the dust. Knopf states that the harmfulness of a quartz-containing dust usually is in direct proportion to its quartz content. (2) Size of particles of dust; probably the most dangerous is that ranging from 2 to 5 microns, or smaller, because these impalpable particles readily remain in suspension in the air for a long time. (3) Quantity of dust. According to Loring the quantity of dust necessary cannot be given precisely, as there is more or less individual susceptibility. Rate of respiration is also a factor. From the results of a study made by the U. S. Public Health Service, it was found practicable to suggest a tentative standard for the upper limit of allowable dustiness between 10 and 20 million particles per cubic foot of air for workers exposed to dust resulting from granite cutting. The same limit would presumably be applicable in the case of other dusts with the same physical characteristics, particularly with a quartz content of 35 per cent. (4) Length of dust exposure. In an investigation of the granite industry the U. S. Public Health Service found that in a group of workers exposed to the heaviest dust, the first case of silicosis appeared after approximately two years, and by four years all in this group seemed to have developed at least an early case of silicosis.

Pathology:

According to Gardner, silica particles smaller than 10 microns are inhaled into the alveoli and are taken up by phagocytes which carry them immediately up the lymphatic channels from one node to another towards the hilum. The special irritation of silica particles seems to enhance this movement. After locating in various nodes the irritation continues and the same type of cellular reaction occurs that is seen in tubercle formation, except the tubercle becomes caseous. The exact cause of formation of this fibrotic nodule is still in doubt. Degenerative changes then take place in these foci and the hyalin nodules increase in size by extension of their periphery, and coalescence of adjacent nodules takes place and brings about involvement of further areas of the lung.

Symptoms:

The disease is divided arbitrarily into three stages for convenience of description and possible compensation purposes.

First stage: Symptoms of uncomplicated first stage are few and often indefinite. Man apparently well, but has slight shortness of breath, dry cough, often with recurrent colds, are most usual symptoms. Earliest specific indica-

tion is the X-ray appearance, consisting of generalized arborization throughout both lung fields with more or less discrete mottling. This characteristic mottling is due to shadows cast by the discrete individual nodules of fibrous tissue in the lungs, and is essential to the diagnosis of silicosis; without this finding the diagnosis of silicosis is not sustained except by autopsy.

Second stage: Definite shortness of breath on exertion, pain in chest, dry morning cough, sometimes with vomiting and recurrent colds more frequent, dyspneic on exertion, and chest expansion noticeably decreased.

X-ray appearance—A generalized medium sized mottling throughout both lungs. Shadows of the individual nodules are discrete and well defined on a background of fibrous arborization, but there may be some larger but limited opacities due to irregular pleural thickening or aggregation of nodules.

Third stage: Shortness of breath marked and distressing even on slight exertion. Cough is more frequent; expectoration is in most cases slight, but may be copious. Individual's capacity for work becomes seriously and permanently impaired; chest expansion is greatly decreased; loses flesh; pulse rate increased and heart may become dilated.

X-ray appearance further accentuated, mottling more intense, nodules larger, and take on conglomerate form so that large shadows are shown corresponding to areas of dense fibrosis.

Diagnosis:

For diagnosis a thorough and chronological occupational history is extremely valuable. Evidence of exposure to silica dust, or lack of such evidence, must be of significance.

The cardinal symptom of silicosis is shortness of breath, and the cardinal sign is decreased chest expansion; the earliest specific indication is the characteristic X-ray appearance. The diagnosis, however, should be made only by the correlation of all the facts, symptoms, signs, occupational history, and laboratory and X-ray observations.

In autopsy, according to McNally, any lung containing over 2 mg. of silicon dioxide per gram of dried tissue, indicates undue exposure to a dusty atmosphere.

Prognosis:

Silicosis is an incurable disease, but the prognosis in the early stages is good if the patient can be removed and placed in the open; but with the advance of the disease the prognosis becomes less favorable, principally on account of the liability of tuberculous infection.

Treatment:

Change of occupation to open air work; high, dry, warm climate best.

Prevention:

The use of various mechanical means of elimination of dust, both the formation and its removal.

Employees entering service should be questioned carefully in order to obtain complete history, especially of any exposure to silica dust; also a careful

physical examination of the lungs for signs of disease.

In old employees and if symptoms are present.

The State of California has an effective law. The highlights are as follows:

It defines "the same work" as work in other occupations.

No compensation within one year of disease, except a benefit of one day of the last day of the last year.

"Occupation" of the employee, exposed to dust and disease.

A disease is apparent to it, direct cause of the disease, and it is as a natural consequence of the disease.

As the patient is now, it would be a must be made relation of any of expected in risk connected with the disease.

Amounts paid of from \$1,000.

Amounts paid of from \$1,000.

Amounts paid of from \$1,000.

In all other cases, and surgical treatment, but cure from the disease has been.

(b) Temporarily disabled, \$7.50, maximum 30 days.

physical examination should be made, including X-ray film of chest for lung tissue for diagnosis and future record.

In old employees working in dust, periodical examinations should be made, and if symptoms are present, change in occupation.

The State of Illinois has passed a Workmen's Occupational Diseases Act, effective October 1, 1936, for disabilities resulting from occupational diseases. The highlights of the Act, especially as it has reference to silicosis and asbestosis, are as follows:

It defines "Disablement" as meaning disabled from earning full wages at the same work which caused the disease and with the same employer or equal wages in other employment.

No compensation payable for occupational disease unless disablement occurs within one year after the last day of the last exposure to the hazards of the disease, except in occupational disease caused by inhalation of silica dust or asbestos dust where the time limit for disablement is three years after the last day of the last exposure.

"Occupational Disease" is defined as a disease arising out of and in the course of the employment. Ordinary diseases of life to which the general public is exposed outside of the employment shall not be compensable, except where the said diseases follow as an incident of an occupational disease as defined.

A disease shall be deemed to arise out of the employment, only if there is apparent to the rational mind upon consideration of all the circumstances, a direct causal connection between the conditions under which the work is performed and the occupational disease, and which can be seen to have followed as a natural incident of the work as a result of the exposure occasioned by the nature of the employment and which can be fairly traced to the employment as the proximate cause, and which does not come from a hazard to which workmen would have been equally exposed outside of the employment. The disease must be incidental to the character of the business and not independent of the relation of employer and employee. The disease need not to have been foreseen or expected but after its contraction it must appear to have had its origin in a risk connected with the employment and to have flowed from that source as a rational consequence.

Amounts payable in case of death are: minimum \$1,000.00, and a maximum of from \$1,000.00 to \$5,500.00.

Amounts payable for disability: (a) In silicosis or asbestosis or either complicated with tuberculosis, employer must provide first aid, medical and surgical and hospital services to cure or relieve the diseases, but not exceeding six months from date of disablement.

In all other cases, the employer shall provide the necessary first aid, medical and surgical services, and all necessary medical, surgical and hospital services thereafter, limited, however to that which is reasonably required to effect a cure from the effects of the disease. The employee may in any case elect to secure his own physician, surgeon and hospital services at his own expense.

(b) Temporary total disability—after six days, compensation (minimum \$7.50, maximum \$15.00 weekly) to be paid, and retroactive to first day after 30 days.

(c) In case of total and permanent disability the maximum compensation will be the death benefit plus a pension of 8 per cent, or in certain cases 12 per cent thereafter annually for life, payable monthly.

On petition the Commission may order an autopsy by competent pathologist, where death may have been due to silica or asbestos dust. Pathologist to make complete report (including laboratory findings), but offer no conclusions.

Employees making claims for compensation must submit to physical examination, if required by employer. Employee is entitled to copy of report if he desires. If employee refuses to submit to examination, compensation ceases until such examination is made.

Employees with silicosis or asbestosis but not disabled prior to October 1, 1930, may file with industrial commission within 60 days after effective date of this act, a request to waive full compensation for disability or death from silicosis or asbestosis, or any direct result thereof, supported by satisfactory medical evidence. If the industrial commission approves such waiver the compensation payable after further exposure and resulting death or disability shall be 50 per cent of what it otherwise would have been.

Notice of disablement must be given the employer as soon as practicable. Claims for compensation must be made within six months after disablement, and applications to industrial commission for compensation within one year.

Any length of time however short is sufficient exposure to support a claim, if employee was engaged in an occupation or process in which the hazard of the disease exists—except in cases of silicosis or asbestosis where the exposure must be 60 days or more.

The employer liable shall be that one in whose employment the employee was last exposed to the hazards of the disease claimed, except for silicosis or asbestosis.

No employer shall be liable for compensation or damages under this Act in any case in which the disablement on which claim is predicated shall have occurred prior to October 1, 1930.

Chronic Arthritis

When referring to chronic arthritis we usually mean either of the two great types of chronic non-specific arthritis. In the language of the lay we speak of this as chronic rheumatism. We must not forget, however, that there are definite clinical groups of chronic arthritides of known etiology, namely lues and tubercular. These latter are specific diseases easily recognized as a rule and if treated in the early stages of the disease processes are amenable to treatment. Numbers are cured permanently and the end results in reference to disability are not clouded by the sinister threats of the crippling, agonizingly painful and deforming onslaughts of the chronic non-specific arthritides, rheumatoid arthritis and hypertrophic arthritis.

Rheumatoid arthritis must be entirely separated from the acute disease of rheumatic fever; known also as chronic infectious arthritis, atrophic arthritis, arthritis deformans, rheumatoid arthritis is the most prevalent of these two disabling diseases. In a Cornell Clinic series of 812 cases two-thirds were of the chronic infectious, or rheumatoid arthritis type. It is most often seen in

females, in a way usually characteristic, but is frequently

Etiology: Hereditary factors may bear up connection with the disease. Clinical of sore throats, at disease will usually rheumatism.

Cornell's experience known to all. His and positive joint movements by workers claimed rheumatism we are likely to find

Several workers in the joints and others have noted 15 per cent. Four co-workers; there none what ever game were isolated similar to Cornell's. Hospital in New York for rheumatism workers also state. Some found steps were met with no result. In other cases

The onset of the latter, and the pain. Gradually the joint then in the morning membrane, and in time over the joint and the tissues are partial or complete the disease a heavy in the long bones at a gradual in onset, if disease are swelling ankylosis and deform. the disease may also, fingers present the

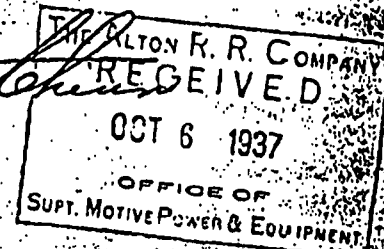
Chicago, October 5th, 1937

Mr. C. M. House:

In connection with the Illinois Occupational Diseases Act, the New York Central developed a soaking vat for block lagging, which they have used at their Gibson Locomotive Shop with considerable success. The purpose of this is to reduce the asbestos dust hazard.

I attach one blueprint of the tank used on the New York Central.

Armstrong
Chief Engineer



AO/JW

Chicago, Ill., September 21, 1937.
1-832

Mr. C. M. House:

Please see my letter of July 14th, and tracer of August 31st, concerning report of the committee appointed by the General Managers' Association of Chicago, dealing with prevention of asbestosis, silicosis and lead poisoning, in connection with the Illinois Occupational Diseases Act.

I presume you have now studied the report and I shall be glad to receive your comments.

H. B. Voorhees.

B.

Chicago, October 15th, 1937

Mr. H. B. Voorhees:

Referring to your two letters dated Sept. 21st, file 1-838, having reference to your previous letters of July 14th and August 28th:

Your letter of August 23rd handing me GMA Circular 2680 covers the same subject as the report you sent me with yours of July 14th except that the report contained in GMA Circular 2680 embodies the latest revisions of recommendations in connection with the Illinois Occupational Diseases Act with respect to rules and instructions for the prevention of asbestosis, silicosis and lead poisoning respectively.

For ready reference I attach copy of my joint letter dated February 15th addressed to all concerned on the B&OCT and Alton, with copy to the supervision, concerning this subject and handed them a copy of two sheets setting forth recommendations covering rules and instructions to be observed for the prevention of silicosis and asbestosis, from which you will note they were handed those addressed for their personal information and were not to be posted or given out but those addressed were to see that the employees are properly protected while performing the various classifications of work enumerated therein.

Within the next week we will have completed a survey of all engine-houses, shops and car departments on the B&OCT and Alton from which we have drawn a floor plan of each enginehouse, shop, etc., indicating thereon the exact location of each machine, such as emery wheels, furnaces, whether coke, oil or gas-fired, babbitt furnaces, wood working machines, etc., also paint spraying facilities, sandblasting facilities, etc., from which prints will be made and a complete set furnished Mr. Chinn, chairman of the Railway Engineers and Shop Committee, as requested in GMA circular 2603. Will send you a set of these prints for your information and file.

When a complete set of these prints is available I will then delegate one man, preferably chemical engineer Saniff, to visit each engine-house, shop and car department and thoroughly familiarize the supervision and each employee performing the work that might involve asbestosis, silicosis or lead poisoning, after which I will give you my final report and recommendations in the event it is found that we should do something more in the way of providing additional protection for the employees performing the various classes of work which subject them to the hazards of silica, asbestos or lead dust, and expect to have the entire matter completed within the next thirty days.

C. J. House

CME

Chicago, Nov. 6, 1937

Mr. H. B. Voorhees -

Supplementing my letter of Oct. 19th in reply to your two letters of Sept. 21st, file 1-832, having reference to your previous letters of July 14th and August 28th relative to requirements of the Illinois Occupational Diseases Act:

Herewith one complete set of prints made up in accordance with requests contained in General Managers' Association of Chicago Circular GMA 2603 for your information and file. I also return herewith copy of GMA circular 2603 which you sent me with your letter of January 28th addressed to Mr. Chinn, copy to me.

Mr. Chinn has been furnished with two complete sets of these prints for his further handling as he is chairman of the Railroad Engineering and Shop Committee.

As advised in mine of Oct. 19th I have now delegated Mr. Seniff, chemical engineer, to visit each enginehouse, shop and car department and thoroughly familiarize the supervision and each employee performing the work that might involve asbestosis, silicosis or lead poisoning, and in the course of 30 days I will give you my final report and recommendations in the event it is found that we should do something more in the way of providing additional protection for the employees performing various classes of work which subject them to the hazards of silica, asbestos or lead dust.

C.M. House

CMH

cc-Mr. R.W. Seniff: Herewith copy of my previous letter of Oct. 19th to Mr. Voorhees for your ready reference and which outlines what I now desire you to take care of. I also attach one complete set of the prints referred to together with copy of circular GMA 2603. Also attach one copy of revised recommendations to be followed in the prevention of asbestosis, silicosis and lead poisoning.

Will you please personally visit each enginehouse, shop and car department and thoroughly familiarize the supervision and each employee performing the work that might involve asbestosis, silicosis or lead poisoning; instruct and see that they thoroughly understand how the work should be performed to avoid the hazards involved. We have certain coal chutes under our jurisdiction at enginehouses such as at Glenn, Venice and Roodhouse in the State of Illinois, and you should determine if our employees are properly protected from coal dust. In this connection believe Mr. Chinn has ordered certain type of mask or respirator for coal chute attendants at outlying coal chutes, and you should investigate and determine just how many we would require to equip our employees at our coal chutes. Would like to have you handle so the entire matter will be taken care of.

260

COPY

Chicago, November 16, 1937

Mr. H. B. Voorhees:

Last week Mr. C. L. Brockett of the Rock Island called me and said that the Rock Island had received a request from Dr. M. H. Kronenberg of the Illinois Department of Health for permission for his representative to go through the roundhouses and shops of the Rock Island to make an inspection relating to health conditions. He wanted to know if I, as chairman of the railroads committee handling matters relating to the proposed Occupational Diseases Act, knew anything about Dr. Kronenberg and what he proposed to do with the information he was seeking. At the time I was unable to give him any information as I thought all matters relating to sanitation and health were being handled by the Division of Factory Inspection.

Yesterday I met with the employers' Group of the advisory committee to the Illinois Industrial Commission, of which Mr. O. E. Mount of the American Steel Foundries is chairman. Mr. Mount advised me that Dr. Kronenberg is head of a unit of the Illinois Department of Health that is working at the University of Illinois in conjunction with the Department of Labor, and is endeavoring to develop information relating to health conditions in manufacturing and other plants in Illinois. He stated that the Illinois Manufacturers Assn. had been approached by Dr. Kronenberg for permission for he and his representatives to inspect all factories and other plants in Illinois. Mr. Mount stated that the manufacturers would be agreeable to granting this permission provided Dr. Kronenberg would agree that all information he assembled would be held strictly confidential so that it could not be used against any employer in the event an employee brought suit, claiming loss of health or disability resulting from an occupational disease contracted in the employer's plant. Dr. Kronenberg, so far, has not given that assurance and Mr. Mount is of the opinion that the information that will be collected will be assembled in pamphlet or other form and distributed so that it would be available to any lawyer who might handle a suit for an employee. For that reason he feels that it would be inadvisable to allow Dr. Kronenberg or his representatives to make the inspections they wish to. However, because of their connection with the Illinois Department of Health, and relation with the Department of Labor, he did not think it would be advisable to give them a definite refusal. If the request should be made, we should ask Dr. Kronenberg who he represents, what authority he has and what he proposes to do with the information he intends to collect, and when and if that information is furnished we should then say we will take the matter up and see what can be done. In other words, Mr. Mount thinks we should not tell Dr. Kronenberg no, neither should we tell him yes, but carry him along until his interest becomes centered elsewhere.

This information is given you so that you will know how the Employers' Group feels about Dr. Kronenberg's proposed inspection of manufacturing and other plants.

(Signed) Armstrong Chinn
Chief Engineer

AC/JH

Bloomington, Illinois
January 14, 1938

Mr. C.M. House:

Referring to your letter of Nov. 6 in connection with the Illinois Occupational disease act, address to Mr. Voorhees with postscript to me requesting that I instruct all foremen in the mechanical dept concerning possible hazards of asbestosis, silicosis and lead poisoning and recommendations for avoiding them as set forth by the General Managers Association Committee Aug. 14, 1937, File 1541.

I have interviewed all foremen concerned whose names appear below and re: them the instruction of the G.M.A. committee.

✓ F.M. Galloway	-	Venice Eng. House		
✓ C.D. Huffines	-	Roodhouse	"	
✓ F. Salmon	-	Bloomington	"	
✓ H.B. Vasconcellos	-	Hidgely	"	"
✓ L.P. Welsh	-	Joliet	"	"
✓ Geo. Woltemade	-	Glenn	"	"
✓ Geo. Rosenberg	-	Lincoln St.	"	"
✓ H.A. Harris	-	Bloomington Car Dept.	"	"
✓ A.A. Wood	-	Venice	"	"
✓ O.L. Hott	-	Glenn	"	"
✓ E.H. Neekstroth	-	Lincoln St.	"	"
✓ C.B. Huyle	-	Roodhouse	"	"
✓ Mc Gill	-	Hidgely	"	"
Jos. Schneeberger				
A.M. Aldridge				
H. Blum				
G.A. Beyer				
V.C. Erickson				
G. Gehle Jr.				
H. Gehle				
Thos. Grant				
J.W. Holland				
O.D. Jolly				
WM. Ludwig				
J.B. Lyster				
W.H. Melvin				
E.J. McGrath				
L.L. Nelson				
H.B. Osten				
E. Sandstrom				

Chicago, February 23, 1938

Mr. H. B. Voorhees -

Supplementing my letter of November 6th, 1937 having reference to your file 1-332, concerning the requirements of the Illinois Occupational Diseases Act:

With my letter of November 6th I handed you one complete set of blue prints made up in accordance with request contained in General Managers' Association of Chicago circular GMA-2603.

I also advised you that I had delegated Mr. Beniff, chemical engineer, to make a complete survey of each machinehouse, shop and car department on the MCOT and Alton to determine what he would have to do to comply with the Act, and while making the survey he would instruct the supervision and each employee performing work that would involve asbestosis, silicosis or lead poisoning as to the hazards involved and how the work should be performed to avoid the hazards.

Mr. Beniff has now completed his survey and I attach copy of memorandum covering conditions that now subject certain classes of our employees to the hazards of asbestosis, silicosis or lead poisoning, which also sets forth ways and means of correcting these conditions and eliminating these hazards, which is self-explanatory.

Moreover, to provide ventilating hoods over babbitting, melting brass, brazing and such operations at Blue-Island shop will involve considerable expense, and before any action is taken in this direction would recommend that the matter be handled with the General Managers' Association with a view of having them inform us as to the exact minimum requirements for hoods that would be acceptable under the Illinois Occupational Diseases Act. If this is not done, hoods we would construct might either be more elaborate and expensive than necessary, or on the other hand might not meet the approval of the Division of Factory Inspection, Department of Health, or other State department having jurisdiction in the matter. After we receive such information we could then prepare an estimate of the cost to equip the various locations where the above mentioned operations are performed with suitable hoods.

With respect to dry grinders, we are now considering converting all, or nearly all of these to wet grinders, which will avoid the purchase of respirators for employees that now do grinding on dry grinders. However, it will still be necessary to purchase at this time, to provide employees involved, with proper protection approximately the following -

70 type 'A' respirators
27 type 'C' respirators
5 hose masks
1 hood respirator

22.0

Chicago, April 27th, 1933

Mr. H. B. Voorhees:

Your letter of February 25th, file 1-832, and subsequent tracings concerning Mr. House's letter of February 23rd and report made by Chemical Engineer Seniff giving his recommendations as to what we should do to meet the requirements of the Illinois Occupational Diseases Act.

As pointed out before (see my letter to you of May 21st, 1937) furnishing masks, respirators and equipment as recommended in the several bulletins put out by the Railroad Engineering and Shop Committee will not eliminate the railroads' liability under the Occupational Diseases Act to those employees who may, in spite of all precautions, contract industrial diseases. The furnishing of this equipment will, however, greatly reduce the likelihood of employees contracting diseases for which we would be liable under the Occupational Diseases Act, and for that reason we should take all reasonable precautions to reduce our liability. In other words, furnishing this equipment will reduce the likelihood of our employees contracting diseases, but if, in spite of all the precautions we may take, an employee can show that he has contracted an Occupational Disease we will be liable just the same as if no protection had been provided, but when we can show that we have provided all reasonable protection it will be more difficult for our employees to prove that they have contracted industrial diseases.

I have studied Mr. Seniff's report carefully and agree with all of his recommendations with the exception of "Spray Painting" on the first page of his report. Under this heading he recommends that we have a closed stall for cleaning and spray painting locomotives at Bloomington. This, of course, would give the most positive protection; however, it would be expensive. It seems to me that we could get satisfactory results by cleaning and painting locomotives outdoors, which can be done except during inclement weather. Other equipment is painted outdoors, and I see no reason why we could not clean and paint our locomotives outdoors. If this is done the dust and fumes that are created would be carried away in the atmosphere and would not injure other employees. The men doing the work could wear respirators to protect themselves.

Page 3, Car Department, Spray Painting Coaches. I was under the impression that we had a tight spraying compartment in which to paint coaches. This compartment was constructed some years ago and was equipped with steam coils for drying. I understand that at present to make this compartment 100% serviceable exhaust fans, mounted on wall brackets, are required. The

Chicago, May 6th, 1938

Mr. H. D. Voorhees:

Your letter of April 30th, file 1-332, concerning correspondence relating to the Illinois Occupational Diseases Act.

As you know, there are several acts in this category, the one that we are chiefly concerned with in our correspondence is known as "The Workmen's Occupational Diseases Act". This act does not require the railroads to furnish respirators or other devices to protect its employees' health, but it does make the railroad liable in certain amounts to those employees who contract occupational diseases. Furnishing the respirators and other devices will not eliminate or reduce the railroads' liability to those employees who contract occupational diseases, but they will reduce the likelihood of the employees contracting such diseases and will thereby reduce the likelihood of the railroads becoming liable. The situation is just the same as we have with respect to safety devices and guarding machinery. The furnishing of safety devices and guarding machinery does not eliminate the railroad's liability to those employees who become injured, but it does reduce the likelihood of employees becoming injured. For the same reason, I feel that we should furnish the respirators and masks that have been recommended so as to reduce the possibility of our employees contracting occupational diseases for which we would become liable under the act.

Additional rules relating to the removal of dusts, vapors, fumes or gases from grinding, buffing and polishing operations have been drafted and approved. These are set forth in C.B.A. circular 2733, dated February 14th, 1938, U.M.A. file 1541, and referred to in your letter to me of February 16th, file 1-332. These rules will eventually take the place of the old Grinding, Buffing and Polishing Sanitation Act which went out of effect on March 1st, 1938. I do not know just when these new rules will go into effect, but it will probably be about June 15th of this year. In the meantime, there is no law in effect relating to the removal of dusts, vapors, fumes or gases. When the rules do go into effect we will have to provide the hoods and exhaust systems that they require, or else we will be violating the law.

I think we should immediately provide the respirators and masks recommended by the Board at an estimated cost of \$465.00. Their cost is only a fraction of what it might cost us under the occupational diseases act if one of our employees was permanently disabled by silicosis or anthracosis contracted as a result of breathing dusts while in our employ. I feel the installation of ventilating hoods and exhaust systems may