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4/19/79

ANNUAL REPORT

of the

INDUSTRIAL HEALTH SECTION

1936

W. J. McConnell, M.D.
Assistant Medical Director

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PERSONNEL OF STAFF

Dr. W. J. McConnell, Assistant Medical Director, Director, Industrial Health Section
Miss Eleanor Rantoul, Research Assistant
Miss Anne Reilly, Secretary to Dr. McConnell
Miss Anne Conway, Stenographer

Mr. J. Wm. Fehnel, Chemist-in-Charge of Industrial Hygiene Laboratory
Mr. Peter Petrick, Technician
Mr. John J. Ferry, Assistant Chemist
Mr. Austin Long, Assistant Chemist
Mr. John Milesnick, Porter in the laboratory

MAJOR SURVEY

The survey of the asbestos plants and mines started in 1934 has been concluded during 1936. This included a recheck survey of some of the plants to determine what improvements, if any, have been effected by the inatallation of certain equipment designed to control the dust, as well as a number of new plants, particularly on the Pacific Coast. Plants studied in 1936 were:

Johns-Manville
Redwood City, Cal.
Pittsburg, Cal.
Los Angeles, Cal.
Lompoc, Cal.

General Asbestos & Rubber Division of Raybestos-Manhattan, Inc.
North Charleston, S.C.

X-rays of the chests of exposed workers were sent in to the Home Office for diagnosis. In 1936 - 2570 X-rays were interpreted. Over, 3,200 X-rays of asbestos workers have been read in connection with the second asbestos study.

X-RAY INTERPRETATIONS

In addition to the 2570 X-rays of asbestos workers interpreted during 1936 the American Car and Foundry Company has been continuing to send in for diagnosis X-rays of their foundry employees. During 1936, X-rays of 177 of their workers were interpreted. We have also been asked to diagnose X-rays from other Group policyholders sent to us by the Group Claim Section in connection with claims.

SPECIAL RESEARCH

A study was made to determine a method of entrapping mercury and a chemical method of estimation of mercury in the air of a storage battery plant. This was necessary due to the fact that all available methods dealt with the determination of mercury in either the metallic state or in the forms of a

chloride or nitrate but not in the state of the oxide. Therefore, in order to determine the presence and concentration of mercuric oxide in the atmosphere of the plant in question a method giving concordant results was developed.

The presence of the oxides of nitrogen and their concentration in the fumes given off in acetylene welding were studied and a chemical method adapted which gave a true index.

Settled dusts of typical industries were studied and measured to determine the percentages of the various sizes present that might be considered pathogenic.

Various new atmospheric dust sampling devices were tried out under controlled conditions to determine their efficiency and comparison with the accepted standard method.

Methods for the determination of mixtures of acid fumes and solvent vapors are in process of study and development.

SPECIAL SERVICES

A great variety of requests for information or assistance on industrial hygiene subjects are received in this division. These are divided as follows:

Reports (Those requests requiring time and research to answer)	
Group policyholders	64
Non-policyholders and prospects	58
Met. Life Ins. Co. and H.O.	13
	135

Special Inquiries (Those requests for which information was supplied but not considered as reports)	
Group policyholders	97
Non-policyholders and prospects	180
Met. Life Ins. Co. and H.O.	55
	332

LABORATORY SURVEYS

Included in the above number of special services are 42 surveys made by the Industrial Hygiene Laboratory. In analyzing the samples of atmospheric dusts, fumes and gases collected in the plants studied, 819 analyses were made in the laboratory. The classes of materials analyzed were:

silica and silicates
metals (lead, zinc, copper, tin, mercury, etc.)
fumes (lead, zinc, mercury, solvents such as amyl acetate, methyl alcohol, dichlorbenzine, tricresylphosphate, etc.)
gases (carbon monoxide, sulphur dioxide, nitrous fumes, etc.)

The companies studied by the laboratory represent a wide variety of industrial processes. Included are:

floor coverings, pipe insulation and fire brick manufacture
grey and malleable castings foundry
asbestos fabricating plants
public utilities
heat resistant glass manufacture
gas and combination range manufacture
stainless steel and regular steel products such as open hearth, etc.
glass manufacturing
automobile radiators and car heaters
paint manufacture
railroad car specialties
Alloy steel manufacture
alkaline type storage battery manufacture
china ware - hotel supply
printing ink manufacture
decalcomania
bookkeeping book manufacture
asbestos pipe insulation and magnesia blocks
mining and milling diatomaceous earth
gold mine
oil well equipment

These 42 surveys represent 8 more than were made by the Industrial Hygiene Department of Connecticut during 1936.

FIELD VISITS

During the year there were 85 field visits, exclusive of visits for laboratory survey. Included in this figure are 75 interviews in the Home Office.

ADDRESSES AND MEETINGS

Dr. McConnell and other members of the division attended 17 meetings of medical and safety organizations and made addresses at 7 of these meetings. Forty-eight newspapers and other publications gave press notices to these addresses in 505 column inches.

EXHIBITS

The Industrial Hygiene Laboratory held an exhibit at the American Medical Association meeting in Kansas City, Mo. In addition to a display of dust sampling equipment, 24 X-rays of chests of cases of first and second stages of silicosis and asbestosis, fungus infection, pneumoconiosis caused by exposure to amorphous silica were displayed.

An exhibit was also held of these X-rays at the Graduate Fortnight of the New York Academy of Medicine.

Dr. Philip Pierson, Clinical Professor of Medicine at Stanford University School of Medicine exhibited this collection of X-rays at an exhibit held in California.

PUBLICATIONS

Three booklets of the Industrial Health Section were completely revised and printed during the year. These are:

Physical Examinations in Industry
Industrial Dental Service
Protection of Workers in Welding Processes

LITERATURE

During the year 1936, 11,557 copies of publications were sent to Group policyholders and non-policyholders. Of these 9,409 were sent by Welfare Division order but the letter was sent from this section.

LETTERS

Incoming letters numbered 1,798; outgoing, 1,511.

HOME OFFICE CONDITIONS

In addition to field surveys of the Industrial Hygiene Laboratory, the Industrial Health Section has been of assistance to a number of divisions in the Home Office Buildings in studying their lighting and ventilating problems. In

connection with the use of carbon tetrachloride in certain divisions in the Home Office to clean type a study was made of the concentration of fumes escaping and recommendations were made of safe methods of handling this solvent. We have also assisted the Physician in Charge of our Sanatorium in analyzing for toxicity the paint used in some of the rooms at the Sanatorium.

GROUP ACTUARIAL HEALTH CLAIMS

We are continuing to assist the Group Actuarial Division in analyzing the experience of Groups whose claim experience has been unfavorable in order to ascertain the cause. In a number of instances, where the claims would indicate a potential health hazard, we have found it necessary to visit these plants and make an inspection or survey. Reports of findings and recommendations of ways of controlling these hazards were submitted to the Actuarial Division in order to assist them in arriving at a decision regarding rates.

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In connection with the practice of having Group policyholders defray incidental expenses of surveys, these have amounted in 1936 to $3,406.20. $509.53 of this amount has been incurred but not yet billed. This is a credit against our travel account.

J. V. McConnell
Assistant Medical Director

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-: M E M O R A N D U M :- 4/13/79

The week following Dr. Wheatley's, Mr. Sabourin's and my visit to Thetford Mines, I returned to make studies of the dust conditions in:

1. Mill and Mine of the Johnson Company
2. Mill of the Bell Company
3. Mill of the Asbestos Corporation

I started these studies on Monday, October 23 and finished Thursday, October 26.

On Friday, October 27 and Saturday, October 28, I studied the mill and factory of the Johns-Manville Company at Asbestos.

On October 30 and 31 I studied operations in the plant of the R.C.A. Victor Company and the plant of Charles E. Frosst Company on November 1, 1944.

On Thursday, November 2, 1944 I visited the plant of the General Steel Wares, Ltd., a Group prospect, in Montreal, with Supervisors Frank Roe of Montreal and Roy Campbell of Toronto.

I made some observations and tests in this plant and will give the report to Mr. Perry for delivery to the Group prospect.

J. Wm. Fehnel

J. Wm. Fehnel, Chemist
Industrial Hygiene Laboratory

November 24, 1944.

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ANNUAL REPORT FOR 1941

of

THE INDUSTRIAL HEALTH SECTION

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PLANT SURVEYS

During the year 1941, 30 different industrial plants employing approximately 15,706 employees, were studied. Firms engaged in manufacturing heavy metals and printing plants comprise most of the firms studied this year. The industries studied may be classified as follows:

Metals	40.0%
Printing	40.0%
Chemicals	13.4%
Ceramics	3.3%
Textiles	3.3%

The samples collected necessitated making 1,112 separate analyses in the laboratory. A number of different substances which affect unfavorably the health of exposed workers was detected, such as dusts (silica, lead, arsenic, zinc, ganister, manganese); carbon monoxide; benzol, methyl alcohol, carbon tetrachloride, etc.

It has always been believed that employees in isolated locations in the plants, as for instance crane operators, were not exposed to gases and fumes, at least to concentrations not as high as the workers at the breathing level of the operation. However, we found that on certain operations where gas is given off that the crane operator has a higher exposure than those on the floor level, especially in connection with the lighter gases which tend to

rise to ceiling height. This was particularly evident in crane operator's cabs over the gas-fired soaking pits in steel mills and over galvanizing pipe operations where the men were exposed to excessive concentrations of zinc and lead fumes.

In addition to the above, the plants of three Group policyholders were visited and advice given regarding hazards or medical service.

Our policyholders have continued to send in for analyses, mostly for free and total silica, materials constantly used in the plant, as, for instance, bricks used in blast furnaces, pre-heating furnaces in steel and iron foundries, as well as abrasive powders used in the plants. We have also during the year analyzed materials used in our Home Office buildings.

Requests for plant surveys and information were received from Group policyholders and others in all lines of industry. Some of the more important firms which we have served are:

Allis-Chalmers Mfg. Co.
Milwaukee, Wis.

Combustion Engineering Co. Inc.
New York City

Idaho-Maryland Mines Co.
Grass Valley, Calif.

Johns-Manville Co.
New York City

Sears-Roebuck & Co.
Chicago, Ill.

Standard Oil Co. of N.J.
New York City

Armstrong Cork Co.
Lancaster, Pa.

Otis Elevator Co.
Yonkers, N.Y.

Union Carbide & Carbon Co.
New York City

United States Leather Co.
New York City

Electro-Metallurgical Co.
Alloy, W. Va.

Rochester Gas & Electric Co.
Rochester, N.Y.

Congoleum-Nairn, Inc.
Kearny, N.J.

Electric Storage Battery Co.
Philadelphia, Pa.

Clearwater Mfg. Co.
Clearwater, S.C.

Continental Baking Co.
New York City

Caterpillar Tractor Co.
Peoria, Ill.

Chrysler Corp.
Detroit, Mich.

Monsanto Chemical Co.
St. Louis, Mo.

Ralston Purina Co.
St. Louis, Mo.

General Electric Co.
New York City

Colgate-Palmolive-Peet Co.
Jersey City, N.J.

St. Joseph Lead Co.
New York City

Carnegie-Illinois-Steel Corp.
Pittsburgh, Pa.

Curtis-Wright Corp.
Caldwell, N.J.

Certain-Teed Products Co.
New York City

General Motors Corp.
Detroit, Mich.

New York Employing Printers Assoc. Inc.
New York City

Requests for assistance were received from thirty-two states of the United States, three provinces of Canada, from China, Santiago, Chile, and from Honolulu, Hawaii.

TRAVEL CREDIT

Although our budgetary allowance for travel during the year 1941 amounted to $4,000, our actual expenses for travel amounted to $239.67. Our gross expense for travel amounted to $3,366.85, but credits received from Group policyholders for incidental expenses incurred while in the field amounted to $3,127.18, making an actual expenditure of $239.67.

RESEARCH STUDIES

A method for the determination of aniline was developed in order to determine the exposure of employees in a dye house at a cotton mill insured under a Metropolitan Group plan.

One of the large Groups engaged in the manufacture of steel uses bricks of a high amorphous silica content for furnace linings. Methods for the determination of crystalline free silica are fairly well defined, but the

determination of amorphous free silica in combination with combined silica, presents a very difficult problem. A fairly accurate procedure was developed.

Acrolein, a substance very irritating to the respiratory tract, is given off on the heating of animal and vegetable fats. As the binder used in core making contains high percentages of linseed oil, acrolein is present around core ovens and in the atmosphere of the foundry after pouring the moulds. A method for the sampling and determination of acrolein was developed.

Investigations of unsanitary conditions and possible sources of contamination were made of the plumbing system and in the Commissary Department of the Home Office.

Portable equipment was built for air sampling, using higher voltages for use in field surveys. Equipment for use on 25 cycle alternating current was perfected.

Studies are in progress of methods for decontamination in case of air raid gas attacks and for the control and protection of refrigerating equipment.

SPECIAL INQUIRIES

Six hundred seventy-four (674) special inquiries were receuved during the year. The information requested covered a wide range of subjects, such as the inauguration of a system of pre-employment and periodic physical examinations, installation of a medical department, toxicity of certain solvents, gases, and fumes. Many were occasioned by cases of illness among policyholders and certificateholders, usually chronic and severe, and are pleas for information as to where skilled and honest diagnosis can be obtained. All these queries are carefully considered and the effort is always made to put the individual in touch with the nearest competent medical treatment.

X-RAY INTERPRETATIONS

We have been continuing to read and interpret X-rays of the chests of employees of our Group policyholders. Five hundred twenty-five (525) were received during 1941.

MEETINGS AND ADDRESSES

During the year Dr. McConnell and Mr. Fehnel attended 28 meetings in different sections of the country. Some of the papers presented included the following:

"Mobilization of Industrial Hygiene for National Defense" - Chairman's address of the Industrial Hygiene Section of the American Public Health Association.

"Respiratory Diseases and Air Conditioning" - Second Symposium on Industrial Health held at the Medical College of Virginia.

"Medical Service in Industry" - Address before meeting of the Pharmaceutical Advertising Directors Club of N.Y.

"The Potential Hazards of Some of the Newer Solvents" - presented before meeting of the Medical Society of the State of New York.

Lecture on volatile solvents before a class of Navy medical officers at the College of Physicians and Surgeons.

Dr. McConnell addressed Dr. Flinn's class at Columbia University on "Ventilation and Air Conditioning". This class is composed of graduate students in industrial hygiene.

Dr. McConnell addressed a group of 96 foremen from the two Camden plants and the Philadelphia plant of the Armstrong Cork Company.

Due to Dr. McConnell's appointment as Consultant to the Division of Industrial Hygiene of the United States Public Health Service, it was necessary to decline the following speaking engagements:

1. Annual meeting of the National Safety Council - paper on Health Hazards and Their Correction in the Leather Industry.

Mr. Herbert L. Clover, Industrial Relations Dept. of the International Shoe Company also asked that Dr. McConnell give a paper on the leather industry at this meeting.

2. Home Office Underwriters meeting - paper on the leather industry.

3. American Conference on Industrial Health - paper on Health Service in Small Groups.

4. Massachusetts Safety Council - dinner meeting with industrial key safety people.

5. Invitation to act as Chairman of Cold Committee of the American Association of Industrial Physicians and Surgeons.

6. Discussion of paper "Health of Executives", Association of Industrial Physicians and Surgeons and American Association of Industrial Hygienists at Cincinnati, Ohio.

LITERATURE

During 1941, 23,855 publications were sent on request. Of these, 20,189 were sent out through Welfare Division order, although a letter of transmittal was sent from this office.

CORRESPONDENCE

The incoming letters to the section during the year amounted to 1,980 and the outgoing numbered 1,190.

COMMITTEES

In addition to serving on a number of committees which have been active during the year, Dr. McConnell and others have been asked to serve on several new committees and reappointed to others in the year 1941.

New Committees

Mr. Fehnel has been appointed a member of the Constitutional Committee of the American Industrial Hygiene Association.

Mr. Ferry has been appointed a member of a committee to draft a constitution and by-laws for the Greater New York Section of the American Industrial Hygiene Association.

Re-appointments

Dr. McConnell has been reappointed a member of the following committees:

American Society Heating and Ventilating Engineers - Technical Committee on Air Conditioning in Industry.

American Society of Refrigerating Engineers, Committee #2 Biology.

American Society Heating and Ventilating Engineers - Technical Advisory Committee on Sensations of Comfort.

American Public Health Association - Committee on Ventilation and Atmospheric Pollution.

American Public Health Association - Committee on Standard Methods for the Examination of Air.

Mr. Fehnel has been reappointed a member of the membership committee of the local section of the American Industrial Hygiene Association.

Miss Rantoul has been reappointed a member of the Committee on

Standard Practices in the Problem of Compensation of Occupational Diseases for the year 1941.

HOME OFFICE CONDITIONS

Our assistance has been requested with increasing frequency by the different departments of the Home Office building charged with maintenance. These include queries regarding illumination, ventilation, health hazards of different operations, etc. We are also assisting with plans for air raids, especially in connection with decontamination procedure in case of a gas attack.

An idea of the range of these activities will be seen from the following:

Analyzed cleaner materials used in the Home Office; made 103 analyses.

Inspected exhaust hood. Recommended new type respirators.

Inspected complaint of cyanide cleaning bath in typewriter repair room.

Investigated use of carbon tetrachloride in Transcription Division.

Visited the Employment Section of the Personnel Division and the office of Mr. Wilson and Mr. Cunningham. Made recommendations re illumination.

Analyzed materials which were reported to have been used by a porter suffering from dermatitis.

Inspected illumination in new private dining room for executives.

Inspected complaints of ammonia in water supplies of Main Building.

Tested two sections of pipe from Printing Plant to determine cause of pipe failure. Tested also for corrosion pipe from Unit No. 6 pantry, warming cabinet and steam return line.

Visited a section where multigraphing machines are operating. A solvent (consisting of 90% ethyl alcohol and 10% acetone) is fed to a wick of these machines.

GROUP HEALTH CLAIMS

We have continued to cooperate with the Group Actuarial Division in an attempt to ascertain the cause of the poor claim experience of a number of Groups.

PUBLICATIONS

The booklet "First Aid Service in Small Industrial Plants" has been revised.

The leaflet "Hygiene for Working Women" has been revised.

Dr. McConnell prepared a paper on "The Industrial Health Service" for the Metropolitan Underwriter.

Reviewed proposed revision of American Welding Society welding handbook.

Reviewed article on Tuberculosis.

Reviewed revision of booklet "Industrial Safety Education in Schools".

Reviewed outline of Mrs. Bigler's handbook on nursing.

Reviewed and suggested changes in paper for Executive Service Bulletin on control of hazards in defense industries for the Policyholders' Service Bureau.

Reviewed revised edition of "First Aid".

Reviewed first draft of the "Report of the Workshop on Camp Standards" of the American Camping Association.

Continued to review articles for Health Bulletins for Teachers for the School Bureau.

TESTIMONIALS

There are attached several letters which express appreciation for our service.

W. P. MacConnell
Assistant Medical Director

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ANNUAL REPORT FOR 1942
of
THE INDUSTRIAL HEALTH SECTION

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PLANT SURVEYS

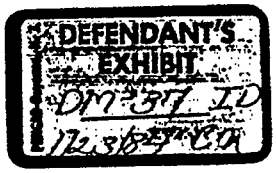
During the year 1942, nearly twice as many surveys were conducted as in 1941. The number of different industrial plants studied in 1942 was 58, as compared to 30 in 1941. As in 1941, firms engaged in manufacturing heavy metals comprise the major part of the studies, with ore mines second. The industries studied may be classified as follows:

Metals	62.1%
Ore mines	15.5
Coal mines	8.6
Asbestos plants	8.6
Chemicals	1.8
Quarries	1.7
Wood	1.7
	100.0%

The samples collected in the plants necessitated making 1,536 separate analyses in the laboratory. Analyses have also been made, as in the past, of materials shipped to the laboratory from plants of our Group policyholders. These tests were mostly for free and total silica. A number of materials used in our Home Office buildings has also been analyzed.

In addition to the above surveys, the plants or offices of three policyholders were visited and advice given regarding hazards or medical service.

Requests for plant surveys and information were received from Group policyholders and others in all lines of industry. To give an idea of the variety



of firms which request this service, the following are some of the more important firms which we have served:

Armstrong Cork Company
Consolidated Gas Electric Light & Power Co.
Pennsylvania Greyhound Lines
American Viscose Corp.
Idaho Maryland Gold Mines Corp.
American Rolling Mill Co.
Standard Oil Co.
Union Carbide Co.
American Seating Co.
Humble Oil & Refining Co.
Tennessee, Coal, Iron & R.R. Co.
Blackwell Zinc Co.
Republic Steel Corp.
Kohler Co.
Marshall Field & Co.
Vickers, Inc.
National Enameling & Stamping Co.
Montgomery Ward Co.
Bethlehem Steel Co.
Pendelton Ship Yards
Norfolk & Western Railroad
General American Transportation Co.
Kimball Piano Co.
General Motors Corp.
Ruberoid Co.
Continental Baking Co.
Higgins Corp.
Atlas Powder Co.
N.Y. Telephone Co.
International Business Machine Corp.
Braden Copper Co.
Florida Power & Light Co.
Lewisburg Chair and Furniture Co.
Norton Company
U.S. Leather Co.
Virginia Electric & Power
Caterpillar Tractor Co.
Johns-Manville Corp.
Baker & Taylor Co.
Bell Telephone Laboratorie
A.P. Green Fire Brick Co.
N.Y. Employing Printers Assoc. Inc.
General Electric Co.
Monarch Machine Tool Co.
Asbestos Textile Corp.

RESEARCH STUDIES

Due to the increased number of requests for plant surveys resulting from the speed up in production, due to industry's victory effort, more routine work has been loaded upon the laboratory. This additional work has left little time for research problems. The laboratory staff did design and construct a new type of centrifugal pump which could operate on A.C. or D.C. current of 110-220 volts.

TRAVEL CREDIT

The amount of money expended for travel in the Industrial Health Section during 1942 amounted to $4507.57. However, of this amount $4047.63 was paid to us by the Group policyholders for expenses incurred by our men in the field while conducting plant surveys. Therefore, our total expenditure for travel for the year amounted to $459.94.

SPECIAL INQUIRIES

Nine hundred thirty-seven (937) special inquiries were received during the year for information covering a wide range of subjects. This is an increase of 39% over 1941.

X-RAY INTERPRETATIONS

Before Dr. McConnell left for the Service, he had read and interpreted 158 X-rays received from our Group policyholders.

MEETINGS AND ADDRESSES

Dr. McConnell and other members of the staff attended 38 meetings during the year 1942. The following addresses were made:

Dr. McConnell made an address over Radio Station WABC on "Heat Stroke and Other Effects of Health".

Dr. McConnell gave a series of lectures to Naval medical officers at a training course in industrial medicine and surgery at the College of Physicians and Surgeons, Columbia University. He also addressed the Industrial Hygiene class at Columbia University and demonstrated our apparatus for collecting and sampling air.

Dr. McConnell continued during the spring semester a class in industrial hygiene at New York University. He had to secure a substitute for the fall semester due to his induction into the Army. Mr. Fehnel gave a lecture to this class on "The Conservation of Man Power".

Mr. Fehnel gave a paper entitled "Health Hazards in Steel Mills" at the joint annual meeting of the American Association of Industrial Physicians and Surgeons and the American Industrial Hygiene Association.

Miss Rantoul attended a meeting in Washington of the Committee on Standards for Maternity Care and Employment of Mothers in Industry.

LITERATURE

During 1942, 76,405 publications were sent on request, an increase of 31% over 1941.

CORRESPONDENCE

The incoming letters to the section during the year amounted to 2,242, and the outgoing numbered 1,368.

COMMITTEES

Members of the section have continued to serve on a number of committees which have been active during the year and attended a number of meetings. The following are new committees and others to which members have been reappointed during 1942.

New committees

A committee has been formed among Home Office building men entitled War Emergency Committee, to devise ways and means of equipping the Metropolitan Home Office buildings with protective devices in case of air raids. Dr. McConnell and Mr. Ferry are members of this committee and attended a number of meetings and rendered advice and assistance.

Dr. McConnell has been appointed a member of an advisory committee to prepare proposed industrial code rules relating to the revision of the Code on the Removal of Dusts, Gases, and Fumes at the New York State Department of Labor.

Dr. McConnell has been appointed a member of the advisory committee with Dr. Wittmer and Dr. Watson on intensive post-graduate instruction in industrial health by industrial physicians and the Faculty of the Long Island College of Medicine.

Reappointments

Dr. McConnell has been asked to serve on the Technical Advisory Committee on Sensations of Comfort of the American Society of Heating and Ventilating Engineers.

Dr. McConnell has been asked to serve again on the National Association of Manufacturers' Industrial Relations Committee.

He was also reappointed to the following committees:

American Society of Refrigerating Engineers Committee on Biology Research Technical Advisory Committee on Air Conditioning in Industry of the American Society of Heating and Ventilating Engineers

Committee on Ventilation and Atmospheric Pollution of the
American Public Health Association
Committee on Standard Methods for the Examination of Air of
American Public Health Association

HOME OFFICE SERVICES

As in the past, our assistance has been requested on frequent occasions by the different departments charged with the maintenance of the Home Office buildings. These requests covered advice regarding illumination, ventilation, health hazards of different operations and materials used, etc. In addition, our office has been represented on the War Emergency Committee, a committee charged with the responsibility of plans for air raids in Home Office buildings. This entailed a number of conferences and testing of various materials to be used for protection. Dr. McConnell was in charge of decontamination procedure in case of gas attack. He gave a number of lectures on poisonous gases, methods of detection, physiological action, first aid treatment, etc. to members of the decontamination squads.

A few of the requests follow:

Information regarding inflammable solvents in use and methods of storage in laboratories.

Shatterproof tests on electric light bulbs covered with garinol were made to test its efficiency.

Information regarding control of refrigerants in case of a bombing raid.

Analyzed food from Home Office cafeterias.

Advice regarding elimination of faulty plumbing.

Analyzed specimens of urine of claimants for permanent disability.

Reviewed proposals regarding defouling stations on the Pacific Coast sent in by Dr. Shepard.

Inspected the Typewriter Repair Room to see if they had carried

out our recommendations regarding the use of sodium cyanide.

Information regarding a fire-proofing compound which is effective in preventing cloth from igniting and bursting into flame.

Analyzed sample of the lacquer cleaner which is to substituted for Utility Wash.

Analyzed sample of Protecto-Kote thinner.

Information regarding the formula for making "supertropical" bleach used to decontaminate floors, walls, etc. in case of a gas raid.

Temperature and humidity readings of eight of most congested air raid shelter areas in Home Office buildings.

Information regarding the composition of bottled gas.

Information regarding toxicity of fumes from creosote sprayed on wood in connection with a double indemnity death claim.

Recommended use of G-M-E 1 mask to be used by the attendant in the Sanatorium laundry to prevent inhalation of formaldehyde and ammonia fumes.

PUBLICATIONS

Report of the survey of the leather industry entitled "Health Hazards of the Leather Industry" was completed and appeared in the May issue of the Journal of Industrial Hygiene and Toxicology. Copies of this reprint were sent to industrial hygienists and those particularly interested.

Dr. Fred O'Flaherty of the Department of Leather Research of the University of Cincinnati arranged for the report of the leather survey to be reprinted in the trade journal "Hide and Leather".

Dr. McConnell rewrote his chapter in "A Textbook of Medicine by American Authors", edited by Dr. Russell Cecil.

Dr. Joseph E. Zbar, Editor of Philosophical Library requested permission to use Dr. McConnell's article on "Mobilization of Industrial Hygiene for National Defense" (which appeared in the American Journal of Public Health" as a chapter in a book on "Public Health in War Time".

Dr. McConnell prepared a "Memorandum on Protective Measures Against Common Implements of Warfare". This has been given a good deal of publicity and reprinted in the New York State Journal of Medicine. A digest of the article was published in "The Digest of Treatment" by J. B. Lippincott Company. The demand for this memorandum has been very great and it has created a good deal of interest.

Dr. McConnell wrote a paper on "Indoor Environmental Atmosphere and Its Control" for Medical Clinics of North America. Copies of this paper were sent to state industrial hygienists and to a selected mailing list.

Reviewed two articles by Dr. Victor G. Heiser of the National Manufacturers Association on "Defense Workers' Lunch Box" and "Pack a Lunch a Man Can Work On".

Reviewed Chapter II of the 1942 Guide of the American Society of Heating and Ventilating Engineers and gave suggestions for rewriting it.

Reviewed paper entitled "Physiological Reactions of Workers in Hot Industries with Atmospheric Conditions of Various Relative Humidities", published by the Research Committee of the American Society of Heating and Ventilating Engineers.

Reviewed pamphlet on "Health of the Workers".

Reviewed article for Nursing Bureau on "Communicable Disease Technique".

Reviewed revised edition of First Aid booklet.

Reviewed instructions to be sent to our nurses regarding their participation in air raid emergencies.

Reviewed and offered comments for revision of Rabies booklet.

Revised our booklet "Air Conditions and the Comfort of Workers".

Reviewed article on "Showers" to be issued by the Policyholders' Service Bureau.

Commented on paragraph on "Health Hazards in War Production Areas" which appeared in November 1942 Service Digest of Policyholders' Service Bureau.

Commented on new book issued by U.S. Department of Labor, Division of Labor Standards entitled "Arranging Shifts for Maximum Production".

Reviewed the revised edition of Conquest of Typhoid Fever booklet.

Prepared an article on "Rocky Mountain Spotted Fever" to be sent to an agent who is in Army.

Reviewed Health Bulletins for Teachers for the School Bureau.

Reviewed and offered criticisms on articles prepared by the Policyholders' Service Bureau and members of the Welfare Division on health hazards of industrial processes.

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THE INDUSTRIAL HEALTH SECTION AND THE WAR

Since the outbreak of the war and before, there has been a great increase in requests from industrial firms for information regarding the hazards of processes and the toxicity of solvents and materials newly introduced in the plants in connection with the war effort. The following requests were received from firms and individuals so engaged.

Surveys

Ruberoid Co. (survey of four plants) - make asbestos roofing for government projects.

Republic Steel Corp. (recheck surveys of all plants and mines) - make shells and all kinds of steel

Blackwell Zinc Co. (survey of two plants) - supply zinc for war projects.

Geo. D. Roper Co. - make shells

General American Transportation Co. - make P.T. boats

Sundstrand Machine Tool Co. - make machine tools

Maremont Automotive Products (make springs and mufflers for tanks)

Asbestos Textile Corp. - make cloth and brake linings for government

Union Carbide Co. - (requested surveys of seven plants) - alloys for making steel

Kimball Piano Co. - make desks for the government

Armored Force, Fort Knox - study of armored tanks and army trucks

Armstrong Cork Co. - shells, insulation, linoleum for battleships, etc.

Walter Kidde & Co. - fire extinguishers

In addition to complete surveys, eighty nine requests for assistance were received from the above and other firms and individuals and from Navy and Army bases. These requests covered such subjects as adjustment of workers to changing shifts; relative hazards from electric shock from the use of alternating and direct current in welding; toxicity of emulsifying or wetting agents, chlorinated paraffins, and barium peroxide and other compounds; information regarding a twin chemical cartridge mask; hazards of explosives manufacture; hazards of handling TNT; substitutes for tetrachlorethane in airplane factories; recommendations as to how to handle an epileptic and fit him into industry; information regarding hospital-bed requirements in city to take care of increased personnel due to war work.

There has been a very increased demand for our booklets on welding, first aid service in small plants and the first aid booklet. The requests for assistance on methods of maintaining the health of personnel have also increased.

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In 1941 Dr. McConnell was appointed a consultant of the United States Public Health Service to make a survey of the medical facilities available in industrial plants. This work necessitated consulting with the Directors of State Industrial Hygiene Divisions and visiting plants in Philadelphia, Pittsburgh, Jersey City, Tenton, Bayonne, Baltimore, Harrisburg, Lancaster, Lansing, Chicago, Louisville, Indianapolis, and Boston. In localities where these representatives of the Industrial Hygiene Divisions were to make the visits themselves, Dr. McConnell discussed with them the survey form to be used, methods of presenting the survey, etc. He personally made visits to 49 plants in different sections of the country.

Dr. McConnell reported for active service with the War Department on August 28, 1942.

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TESTIMONIALS

Attached are copies of several letters which express appreciation for our service.

PNL 480

SUMMARY FOR 1946 OF WORK OF INDUSTRIAL HEALTH SECTION

Surveys conducted by Industrial Hygiene Laboratory	40
Analyses made in Laboratory	2,494
Home Office Inspections	62
Travel Credit	$2,405.26
Special inquiries handled by mail or conference (An increase of approximately 125% over 1945)	675
Literature sent (Industrial Health Series)	3,684
Publications completely revised	2
Publications slightly revised	1
Leaflets revised	2
Other publications written and published	3
Conferences in Home Office	80
Field visits to Groups	14
Other field visits	36
Meetings attended by staff	61

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Dr. Lanza has been made a member of the Board of Trustees of the Trudeau Sanatorium and Foundation.

A ventilation engineer is now available in the Laboratory of Industrial Hygiene for consultation in planning new ventilation and exhaust systems and necessary revisions of those in use.

We have secured the services of another chemist in the Laboratory.

The following are a few of the more outstanding research jobs conducted by the Laboratory.

The Rochester Gas and Electric Company was visited by Mr. Fehnel to outline and supervise a program for the study of atmospheric dusts and gas pollution. The company is planning to erect a new steam electric generating plant which will take about two years to build. The Metropolitan is to make studies each season of the year of the normal dust counts and supervise the study of the dust fall and sulfur dioxide concentrations in the City of Rochester before the erection of the plant. After completion of the plant and when it is in production, we are to supervise check studies to see if the plant causes any pollution of the air which will be detrimental to the health of people living in the vicinity of the plant. The Metropolitan was asked to do this work by the Rochester Gas Company on the advice of the Republic Steel Corporation for whom similar work has been done.

A study was made of the possible exposure of employees to hydrogen fluoride generated by the addition of sodium fluoride to molten steel when pouring rim heat. The study was made over a prolonged period to determine the extent of the exposure of employees before this method of making steel was put into operation. Recently a strike was called at the Ford Motor Company due to complaints of employees who had been exposed to the irritating fumes of hydrogen fluoride generated at a similar process. It is interesting to note that before any new process is developed or any new materials are used in the plants of the Republic Steel Corporation, the company requests the Metropolitan to make a study to determine the existence of any possible health hazards.

Tests were conducted on certain days of the week for three consecutive weeks in the carding room of the Manville, New Jersey plant of the Johns-

Manville Corporation to determine the dust pollution that could be expected when carding, and spinning four different mixtures of asbestos and cotton. This is another example of tests being made by the Industrial Hygiene Laboratory of contemplated processes in the plants of our Group policyholders before being put in production to eliminate any potential health hazards.

Triethylene Glycol Study

In certain areas in the new building (Unit 1) the air supplied to the sections is treated with triethylene glycol as a method of air sterilization. We have taken air samples in the sections with the impingers and absorption tubes and made quantitative triethylene glycol determinations. Considerable work was done in checking and adapting the analytical method used. By adapting a special filter, we were able to use our Electrophotometer in the analytical work in these determinations.

The results of our study to date indicate that the concentration of triethylene glycol vapors in the atmosphere is not at the optimum quantity and, therefore, no positive results are indicated nor can they be expected until the triethylene glycol concentration is increased until it reaches the bactericidal or killing range.

Johns-Manville
CORPORATION

JM

TEL. SOM-1300

MANVILLE, NEW JERSEY

October 3, 1947

W. J. McConnell, M.D.
Ass't. Medical Director, Industrial Health Section
Metropolitan Life Insurance Co.
1 Madison Avenue
New York 10, New York

Industrial Health Survey
Your letter Sept. 22, 1947

We here at Manville are very well satisfied with the way the survey was conducted at our Manville Plant and the careful manner in which the records were prepared for our Industrial Health Program.

Governed by the findings of your Mr. Petrick and Mr. Dieringer, we are carrying on a program of improvement and expect from time to time to call upon your offices for recheck surveys of improved areas.

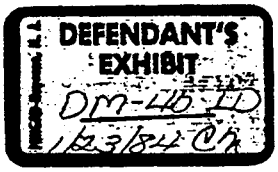
Very truly yours,

Benj. F. Stanton

Benj. F. Stanton
Safety Engineer

BFS/dg

Enc.



INDUSTRIAL HYGIENE SURVEYS
May 1948 - April 1950

Company	Location
Republic Steel Corporation Truscon Steel Company	Youngstown, Ohio
Rochester Gas and Electric Company	Rochester, N.Y.
Mutual Chemical Company	Baltimore, Maryland
Republic Steel Corporation Union Drawn Steel Company	Hartford, Conn.
Republic Steel Corporation Union Drawn Steel Company	East Hartford, Conn.
Diamond Alkali Company	Painesville, Ohio
Republic Steel Corporation Truscon Steel Company	Cleveland, Ohio
Republic Steel Corporation	Cleveland
Republic Steel Corporation River Terminal Railway	Cleveland, Ohio
Republic Steel Corporation Upson Nut and Bolt Division	Cleveland, Ohio
Republic Steel Corporation Steel and Tubes Division	Cleveland, Ohio
Republic Steel Corporation Dillworth-Porter Steel Division	Pittsburgh, Pa.
Republic Steel Corporation Union Drawn Steel	Massillon, Ohio
General Electric Company	Pittsfield, Mass.
General Electric Company	Lynn, Mass.
Armstrong Cork Company	Pittsburgh, Pa.
Republic Steel Corporation Dillworth-Porter Steel Division	Pittsburgh, Pa.
Armstrong Cork Company	Beaver Falls, Pa.
Republic Steel Corporation Union Drawn Steel Division	Beaver Falls, Pa.

Company	Location
McCrory Stores	New York City
General Electric Company	Elmira, New York
Johns Manville Products Corporation	Waukegan, Illinois ✓
Republic Steel Company Central Alloy District Canton Plant	Canton, Ohio
Flintkote Company	New Orleans, La.
Armstrong Cork Company	Jackson, Miss.
Johns Manville Company	Manville, N.J. ✓
Republic Steel Corporation Plants and Mines	Birmingham, Ala.
Republic Steel Corporation Vance Iron and Steel Company	Chattanooga, Tenn.
Republic Steel Corporation Steel and Tubes Plant	Elyria, Ohio
Republic Steel Corporation Niles Steel Products	Niles, Ohio
Republic Steel Corporation South Chicago Plant	Chicago, Illinois
Allied Industrial Products	Van Wert, Ohio
Corning Glass Works	Charleroi, Pa.
Republic Steel Corporation Union Drawn Steel Plant	Gary, Indiana
Universal Foundry	Oshkosh, Wisc.
Four Wheel Drive Company	Appleton, Wisconsin
Grede Foundries	Milwaukee, Wisconsin
Grede Foundries	Waukesha, Wisconsin
Harnishfeger Foundry	Milwaukee, Wisc.
Rundle Manufacturing Company	Milwaukee, Wisc.
Eagle Manufacturing Company	Appleton, Wisc.

Company	Location
Ladish Company	Milwaukee, Wisc.
Bucyrus Erie Company	Milwaukee, Wisc.
J. I. Case Company	Racine, Wisc.
Republic Steel Corporation Moline Plant	Moline, Ill.
Bucyrus Erie Company	Evansville, Indiana
Bucyrus Erie Company	Erie, Pa.
Republic Steel Corporation	Detroit, Mich.
Republic Steel Corporation Buffalo Plant	Buffalo, N. Y.
Eastern Tool and Manufacturing Company	Belleville, N.J.
Republic Steel Corporation Canton Plant	Canton, Ohio
Republic Steel Corporation Stark Plant	Canton, Ohio
Republic Steel Corporation South Plant	Canton, Ohio
Republic Steel Corporation Massillon Plant	Massillon, Ohio
Republic Steel Corporation Massillon #1 and #2	Massillon, Ohio
Republic Steel Corporation Berger Mfg. Co. #1 and 2	Canton, Ohio
Republic Steel Corporation Culvert Mfg. Co. #1 and 2	Canton, Ohio
Republic Steel Corporation Truscon Steel Company	Cleveland, Ohio
Grede Foundries, Inc. Smith Steel Division	Milwaukee, Wisc.
Grede Foundries, Inc. Liberty Foundry Division	Wauwatosa, Wisc.
Jones and Laughlin Steel Corp. Benson Mine	Star Lake, N.Y.

Company	Location
Otis Elevator Corp.	Yonkers, New York
Johns Manville, Corp.	Nashua, N.H.
Johns Manville Corp.	North Billerica, Mass.
Evening Bulletin	Philadelphia, Pa.
Congoleum Narin	Kearney, N.J.
Columbian Rope Company	Auburn, N.Y.
Otis Elevator Company	Harrison, N.J.
Johns Manville Corp. Manville Plant	Manville, N.J.
Johns Manville Corp. Research Division	Manville, N.J. ✓
Eagle Pencil Company	New York, N.Y.
Hickok Manufacturing Company	Rochester, N.Y.
Bausch and Lomb Optical Company	Rochester, N.Y.
Republic Steel Corporation	Brooklyn, N.Y.
Republic Steel Corporation Sayreton #1 Coal Mine	Birmingham, Ala.
Sayreton #2 Coal Mine	Birmingham, Ala.
Virginia Coal Mine	Birmingham, Ala.
Sayre Coal Mine	Birmingham, Ala.
Spaulding Ore Mines	Birmingham, Ala.
Edwards Ore Mines	Birmingham, Ala.
Spaulding Stripping Operations	Birmingham, Ala.
Alabama City Plant	Alabama City, Ala.
Thomas Plant	Birmingham, Ala
Pikesville Coal Mine	Pikesville, Ky.
Armstrong Cork Company Floor Covering Closure Plants	Lancaster, Pa.

Company	Location
Republic Steel Corporation Youngstown Plant - Open Hearth Dept.	Youngstown, Ohio
Otis Elevator Company	Harrison, N.J.
Universal Foundry	Oshkosh, Wisc.
Universal Rundle Corp.	Milwaukee, Wisc.
Four Wheel Drive	Clintonville, Wisc.

In addition to the firms listed above, the Waukegan, Illinois Plant of the Johns Manville Products Corp. sends in dust samples periodically and they are analyzed by our Laboratory.

We also have been conducting a survey of the atmospheric conditions in the City of Cleveland for the Republic Steel Corporation, and in the City of Rochester for the Rochester Gas and Electric Corporation.

SURVEYS PENDING
May 1, 1950

Otis Elevator Company
Hamilton Works, Ontario, Canada

Corning Glass Works
Corning, N.Y.

Armstrong Cork Company
Closure Plant - Metal Cap

Johns Manville Corp.

National Lead Company
Titanium Alloy Mfg. Div.
Niagara Falls, N.Y.

Mathieson Chemical Corp.

Metropolitan Life Insurance Co.
Niagara Falls District Office
Niagara Falls, Canada

American Can Company

Tydol Oil Company

Industrial Hygiene Surveys of Insureds

M E M O R A N D U M

August 24, 1950

MR. FRED ULMER, MANAGER
GROUP DIVISION

I am attaching a list of the Groups whose plants were surveyed within the past two years together with a list of surveys pending which we expect to complete some time during the year. Of this group, arrangements have been made to contact Republic Steel Corporation, Corning Glass, and Jones and Laughlin. It will not be necessary to contact General Electric as they are now conducting their own surveys and will not use our service.

The following organizations should be notified:

Johns Manville Products Corporation
Armstrong Cork Corporation
Otis Elevator Corporation
Greda Foundries
Bucyrus Erie
Rochester Gas and Electric
Mutual Chemical Corporation
Universal Foundry
Four Wheel Drive
Harnishfeger Foundry
Rundle Manufacturing Company
Eagle Manufacturing Company
Ladish Company
Evening Bulletin
Columbian Rope Company
Hickok Manufacturing Company
Universal Rundle Corporation

The remaining companies have either used or services very sparingly or the type of service given did not include field surveys.

W. J. McConnell, M.D.
Assistant Medical Director
Director, Industrial Health Bureau

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INDUSTRIAL HYGIENE SURVEYS
May 1948 - August 1950

Republic Steel Corporation:
Truscon Steel Company - Youngstown, Ohio
Union Drawn Steel Company - Hartford, Conn.
Union Drawn Steel Company - East Hartford, Conn.
Truscon Steel Company - Cleveland, Ohio
Cleveland Plant - Cleveland, Ohio
River Terminal Railway - Cleveland, Ohio
Upson Nut and Bolt Division - Cleveland, Ohio
Steel and Tubes Division - Cleveland, Ohio
Dillworth-Porter Steel Division - Pittsburgh, Pa.
Union Drawn Steel - Massillon, Ohio
Union Drawn Steel Division - Beaver Falls, Pa.
Central Alloy District Canton Plant - Canton, Ohio
Vance Iron and Steel Company - Chattanooga, Tenn.
Steel and Tubes Plant - Elyria, Ohio
Niles Steel Products - Niles, Ohio
South Chicago Plant - Chicago, Illinois
Union Drawn Steel Plant - Gary, Indiana
Moline Plant - Moline, Illinois
Detroit Plant - Detroit, Mich.
Buffalo Plant - Buffalo, N.Y.
Canton Plant - Canton, Ohio
Stark Plant - Canton, Ohio
South Plant - Canton, Ohio
Massillon Plant - Massillon, Ohio
Massillon #1 and #2 - Massillon, Ohio
Berger Mfg. Co. #1 and 2 - Canton, Ohio
Culvert Mfg. Co. #1 and 2 - Canton, Ohio
Brooklyn Plant - Brooklyn, N.Y.
Sayerton #1 and #2 Coal Mines - Birmingham, Alabama
Virginia Coal Mine - Birmingham, Alabama
Sayre Coal Mine - Birmingham, Alabama
Spaulding Ore Mines - Birmingham, Alabama
Spaulding Stripping Operations - Birmingham, Alabama
Edwards Ore Mine - Birmingham, Alabama
Alabama City Plant - Alabama City, Ala.
Thomas Plant - Birmingham, Alabama
Pikesville Coal Mine - Pikesville, Kentucky
Youngstown Plant - Open Hearth Department - Youngstown, Ohio
Chateaugay Plant - Lyon Mountain, N.Y.
Old Bed and Harmony Mines - Mineville, N.Y.
Troy Plant - Troy, N.Y.
Penokee Ore Mine - Ironwood, Michigan
Tobin Ore Mine - Crystal Falls, Michigan
Susquehanna Ore Mine - Hibbing, Minnesota
St. Paul Ore Mine - Hibbing, Minnesota
Stevenson Ore Mine - Hibbing, Minnesota

General Electric Company
Pittsfield Plant - Pittsfield, Mass.
Lynn Plant - Lynn, Mass.
Elmira Foundries - Elmira, N.Y.

Armstrong Cork Company:
Lancaster Plant - Lancaster, Pa.
Beaver Falls Plant - Beaver Falls, Pa.
Jackson Plant - Jackson, Miss.
Pittsburg Plant - Pittsburgh, Pa.

Johns Manville Products Corporation :
Waukegan Plant - Waukegan, Illinois
Manville Plant and Research Division - Manville, N.J.
Nashua Plant - Nashua, New Hampshire
North Billerica Plant - North Billerica, Mass.

Otis Elevator Corporation:
Yonkers Plant - Yonkers, N.Y.
Harrison Plant - Harrison, N.J.

Jones and Laughlin Steel Corporation:
Benson Mine - Star Lake, N.Y.

Grede Foundries:
Milwaukee Steel Division - Milwaukee, Wisconsin
Smith Steel Division - Milwaukee, Wisconsin
Spring City Division Waukesha, Wisconsin
Liberty Foundry Division - Wauwatosa, Wisc.

Bucyrus Erie Company:
South Milwaukee Plant - South Milwaukee, Wisconsin
Evansville Plant - Evansville, Indiana
Erie Plant - Erie, Pa.

Ford Instrument Company - Long Island City, N.Y.

Rochester Gas and Electric Company - Rochester, N.Y.

Mutual Chemical Company - Baltimore, Maryland

Diamond Alkali Company - Painesville, Ohio

McCrory Stores - New York City

Flintkote Company - New Orleans, La.

Allied Industrial Products - Van Wert, Ohio

Corning Glass Works - Charleroi, Pa.
Corning, N.Y.

Universal Foundry - Oshkosh, Wisc.

Four Wheel Drive Company - Appleton, Wisc.

Harnishfeger Foundry - Milwaukee, Wisc.

Rundle Manufacturing Company - Milwaukee, Wisc.

Eagle Manufacturing Company, Appleton, Wisc.

Ladish Company - Milwaukee, Wisc.

Eastern Tool and Manufacturing Company - Belleville, N.J.

Evening Bulletin - Philadelphia, Pa.

Congoleum Nairn Company - Kearney, N.J.

Columbian Rope Company - Auburn, N.Y.

Eagle Pencil Company - New York, N.Y.

Hickok Manufacturing Company - Rochester, N.Y.

Bausch and Lomb Optical Company - Rochester, N.Y.

Universal Rundle Corp. - Milwaukee, Wisc.

Four Wheel Drive - Clintonville, Wisc.

Greyhound Bus Company - San Francisco, Calif.

Tydol Oil Company - San Francisco, Calif.

American Can Company - San Francisco, Calif.

North American Aviation Company - Burbank, Calif.

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In addition to the firms listed above the Waukegan Illinois Plant of the Johns-Manville Products Corp. sends in dust samples periodically and they are analyzed by our Laboratory.

We have also been conducting a survey of the atmospheric conditions in the City of Cleveland for Republic Steel Corporation and in the City of Rochester for Rochester Gas and Electric Company.

SURVEYS PENDING
August 24, 1950

Otis Elevator Company
Hamilton Works, Ontario, Canada

Johns Manville Corporation
Asbestos and Munro Mines, Canada

National Lead Company
Titanium Alloy Mfg. Div.
Niagara Falls, N.Y.

Metropolitan Life Insurance Company
Niagara Falls District Office
Niagara Falls, Canada

Armstrong Cork Company
Dunkirk Plant
Dunkirk, Indiana

INDUSTRIAL HYGIENE SURVEYS COMPLETED DURING 1948

Company	Location	Date
Armstrong Cork Company		
Manowell Department	Beaver Falls, Pa.	February 6, 1948
Closure Plant	Lancaster, Pa.	April 5-7, 1948
Floor Division	Lancaster, Pa.	March 17-April 7, 1948
Beaver Falls Plant	Beaver Falls, Pa.	August 3-6, 1948
Pittsburgh Plant	Pittsburgh, Pa.	August 9-11, 1948
Diamond Alkali Company	Painesville, Ohio	January 12-22, 1948
The Evening Bulletin	Philadelphia, Pa.	March 15-16, 1948
General Electric Company	Schenectady, N. Y.	April 19-23, 1948
River Works (which includes the Everetts Steel Foundry and the Everett Aircraft Turbine Company)	Lynn, Mass.	June 23-July 16, 1948
West Lynn Plant	West Lynn, Mass.	July 19-23, 1948
Pittsfield Plant	Pittsfield, Mass.	July 26-Aug.5, 1948
Elmira Plant	Elmira, New York	Week of Sept. 27, 1948
McCrory Stores Corporation (We are conducting special tests for this concern)	New York, N. Y.	July 1948
Otis Elevator Company	Harrison, N. J.	Aug. 30-Sept. 7, 1948
Republic Steel Corporation Study of Sodium Fluoride with representatives of the U. S. Public Health Service. (In connection with this study, Mr. Fehnel visited the Cleveland, Warren, Youngstown, and Canton, Ohio plants. He also made several trips to Washington, D. C.)		Dec. 10, 1947 to February 19, 1948

Company	Location	Date
Republic Steel Corporation (Continued)		
Union Drawn Steel Co.	Hartford, Conn.	June 16, 1948
Union Drawn Steel Corp.	E. Hartford, Conn.	June 17, 1948
Brooklyn Plant	Brooklyn, N. Y.	February 3, 1948
Ideal Foundry & Machinery Co.	Newton Falls, O.	Feb. 4-5, 1948
Niles Steel Products Div.	Niles, Ohio	February 3, 1948
Warren & Niles Plant	Warren-Niles, Ohio	Jan. 20-Feb. 6, 1948
Truscon Steel Company	Youngstown, Ohio	April 26-May 3, 1948
Truscon Steel Company Dept. E and E Annex	Youngstown, Ohio	April 28-29, 1948
Corrigan-McKinney Company	Cleveland, Ohio	July 13-18, 1948
Truscon Steel Company	Cleveland, Ohio	July 27-28, 1948
Upson Nut & Bolt Company	Cleveland, Ohio	July 23-26, 1948
Steel & Tubes Division	Cleveland, Ohio	July 22, 1948
Union Drawn Steel Division	Beaver Falls, Pa.	August 2, 1948
River Terminal Railway	Cleveland, Ohio	August 20, 1948
Dillworth-Porter Division	Pittsburgh, Pa.	August 11, 1948
Rochester Gas & Electric Company	Rochester, N. Y.	Jan. 26-Feb. 6, 1948
(Study of atmospheric conditions in the City of Rochester, N. Y.)		May 24-June 12, 1948
Teleregister Company	East Orange, N. J.	February 18, 1948
Diamond Alkali Company	Painesville, Ohio	July 30, 1948

Company	Location	Date
Prudential Insurance Company (Determination of solvent vapors at Multigraph Units)	Newark, N. J.	January 9, 1948
Prudential Insurance Company (Determination of solvent vapors at Multigraph Units)	Newark, N. J.	April 9, 1948
Prudential Insurance Company (Discussed feasibility of noise elimination in I.B.M. Machines)	Newark, N. J.	August 10, 1948
Metropolitan Home Office Services (Conducted noise determinations in the Home Office Buildings)	August 10,11, 12 and 13. and Sept. 9th.	

INDUSTRIAL HYGIENE SURVEYS COMPLETED DURING 1948

Company	Location	Date
Armstrong Cork Company		
Manowell Department	Beaver Falls, Pa.	February 6, 1948
Closure Plant	Lancaster, Pa.	April 5-7, 1948
Floor Division	Lancaster, Pa.	March 17-April 7, 1948
Beaver Falls Plant	Beaver Falls, Pa.	August 3-6, 1948
Pittsburgh Plant	Pittsburgh, Pa.	August 9-11, 1948
Diamond Alkali Company	Painesville, Ohio	January 12-22, 1948
The Evening Bulletin	Philadelphia, Pa.	March 15-16, 1948
General Electric Company	Schenectady, N. Y.	April 19-23, 1948
River Works (which includes the Everetts Steel Foundry and the Everett Aircraft Turbine Company)	Lynn, Mass.	June 23-July 16, 1948
West Lynn Plant	West Lynn, Mass.	July 19-23, 1948
Pittsfield Plant	Pittsfield, Mass.	July 26-Aug.5, 1948
Elmira Plant	Elmira, New York	Week of Sept. 27, 1948
McCrory Stores Corporation (We are conducting special tests for this concern)	New York, N. Y.	July 1948
Otis Elevator Company	Harrison, N. J.	Aug. 30-Sept. 7, 1948
Republic Steel Corporation Study of Sodium Fluoride with representatives of the U. S. Public Health Service. (In connection with this study, Mr. Fehnel visited the Cleveland, Warren, Youngstown, and Canton, Ohio plants. He also made several trips to Washington, D. C.)		Dec. 10, 1947 to February 19, 1948

Company	Location	Date
Republic Steel Corporation (Continued)		
Union Drawn Steel Co.	Hartford, Conn.	June 16, 1948
Union Drawn Steel Corp.	E. Hartford, Conn.	June 17, 1948
Brooklyn Plant	Brooklyn, N. Y.	February 3, 1948
Ideal Foundry & Machinery Co.	Newton Falls, O.	Feb. 4-5, 1948
Niles Steel Products Div.	Niles, Ohio	February 3, 1948
Warren & Niles Plant	Warren-Niles, Ohio	Jan. 29-Feb. 6, 1948
Truscon Steel Company	Youngstown, Ohio	April 26-May 3, 1948
Truscon Steel Company Dept. E and E Annex	Youngstown, Ohio	April 28-29, 1948
Corrigan-McKinney Company	Cleveland, Ohio	July 13-18, 1948
Truscon Steel Company	Cleveland, Ohio	July 27-28, 1948
Upson Nut & Bolt Company	Cleveland, Ohio	July 23-26, 1948
Steel & Tubes Division	Cleveland, Ohio	July 22, 1948
Union Drawn Steel Division	Beaver Falls, Pa.	August 2, 1948
River Terminal Railway	Cleveland, Ohio	August 20, 1948
Dillworth-Porter Division	Pittsburgh, Pa.	August 11, 1948
Rochester Gas & Electric Company	Rochester, N. Y.	Jan. 26-Feb. 6, 1948
(Study of atmospheric conditions in the City of Rochester, N. Y.)		May 24-June 12, 1948
Teleregister Company	East Orange, N. J.	February 18, 1948
Diamond Alkali Company	Painesville, Ohio	July 30, 1948

Company	Location	Date
Prudential Insurance Company (Determination of solvent vapors at Multigraph Units)	Newark, N. J.	January 9, 1948
Prudential Insurance Company (Determination of solvent vapors at Multigraph Units)	Newark, N. J.	April 9, 1948
Prudential Insurance Company (Discussed feasibility of noise elimination in I.B.M. Machines)	Newark, N. J.	August 10, 1948
Metropolitan Home Office Services (Conducted noise determinations in the Home Office Buildings)	August 10,11, 12 and 13. and Sept. 9th.	

Sept 25, 1948

PLANTS SCHEDULED FOR SURVEY

REPUBLIC STEEL CORPORATION

Vance Iron & Steel Company, Chattanooga, Tenn.
Gulfsteel Company, Alabama City, Ala.
Thomas Plant, Birmingham, Ala.
Birmingham Coal Mines, Birmingham, Ala.

Steel & Tubes Division - Elyria, Ohio
Niles Steel Products - Elyria, Ohio
Steel & Tubes Division, Ferndale, Ohio

Pennsylvania Coal Mines
- Indianola, Pa.
- Russelton, Pa.
- Crescent #2 Mine
- Clyde Mines #1 and #3
- Brownsville Junction Coal Mines

Chicago District
- South Chicago Plant
- Grand Crossing Plant
- Moline Plant
- Gary Plant

Northern Iron Mines
- Troy Plant, Troy, N. Y.
- Port Henry Plant - N. Y.

L. C. & W. Railroad
- Port Henry, N. Y.
- Minesville, N. Y.
- Lyon Mountain, N. Y.

Youngstown, Ohio Area
- Youngstown Plant
- Lake Erie Limestone Corporation
- Truscon Steel Company, Youngstown, Ohio

Los Angeles, California
- Union Drawn Steel

ARMSTRONG CORK COMPANY

Jackson, Mississippi Plant
South Braintree, Mass. Plant.
Camden, New Jersey Plant
Kankakee, Illinois Plant

FLINTKOTE COMPANY

New Orleans, Louisiana Plant.

ALLIS CHALMERS MANUFACTURING COMPANY

Milwaukee, Wisconsin.

JOHNS MANVILLE CORPORATION

Manville, N. J. - Special Tests.

ROCHESTER GAS & ELECTRIC COMPANY

We are conducting a series of tests to determine atmospheric conditions in the city of Rochester, New York

WESTON BISCUIT COMPANY

Passaic, New Jersey

GENERAL ELECTRIC COMPANY

Mr. Petrick is at the present time conducting special tests at the Elmira, N. Y. plant of the General Electric Company

MUTUAL CHEMICAL COMPANY OF AMERICA

Special consultant service.

MC CROHY STORES CORPORATION

We are conducting a series of special tests.

FOUR WHEEL DRIVE AUTO COMPANY

Clintonville, Wisconsin

UNIVERSAL FOUNDRY COMPANY

Oshkosh, Wisconsin

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Otis Elevator
Yonkers N Y

LIST OF FIRMS FOR WHICH INDUSTRIAL HYGIENE SURVEYS HAVE BEEN MADE

Allied Industrial Products
American Can Co.
American Hard Rubber Co.
American Malleable Castings Co.
American Metals Co.
Armstrong Cork Co.
Asbestos Corp.
Asbestos Manufacturing Co.
Atlantic Refining Corp.
Bakelite Corporation
Bausch and Lomb Optical Co.
Bell Mine
J. C. Brill Company
Brown Company
Bucyrus Erie Company
Carpenter Steel Company
J. I. Case Company
Ciba Pharmaceutical Products, Inc.
Clearwater Manufacturing Co.
Columbian Rope Co.
Congoleum-Nairn Corp.
Corning Glass Works
Diamond Alkali Co.
Eagle Manufacturing Co.
Eagle Pencil Co.
Eastern Tool and Mfg. Co.
Thomas A. Edison, Inc.
Electro-Metallurgical Co.
The Evening Bulletin
The Flintkote Co.
Florence Pipe Foundry and Machine Co.
Four Wheel Drive Co.
French and Hecht Co.
General Aircraft Corp.
General Electric Co.
General American Transportation Co.
Crede Foundries, Inc.
A. P. Green Fire Brick Co.
Harnischfeger Foundry
Harbison-Walker Refractories Co.
Hickok Manufacturing Co.
Independent Lock Co.
Interlake Iron Corp.
Iroquois China Co.
Johns-Manville Corp.
Johnson Company
Jones and Laughlin Steel Corp.
Kennedy Valve Co.
Walter Kidde and Co., Inc.
Laclede Christy Clay Products Co.
Ladish Company
Lancaster Brick Co.
Lancaster Shoe Co.
Libbey-Owens-Ford Glass Co.
Louisville Cement Co.
Mathieson Chemical Corp.
McCrory Stores
Mesta Machine Co.
Missouri Portland Cement Co.
Monsanto Chemical Co.
Mutual Chemical Company of America
National Biscuit Co.
National Lead Co.
Nisset Chemical Co.
Nineteen Hundred Corp.
Olean Tile Co.
Otis Elevator Co.
Penn Steel Castings Co.
Phoenix Glass Co.
RCA Victor Co., Ltd.
Raybestos Manhattan, Inc.
Republic Steel Corp.
Rochester Gas and Electric Co.
George D. Roper Corp.
Will Ross, Inc.
The Ruberoid Co.
Rundle Manufacturing Co.
Scullin Steel Co.
F. A. Smith Co.
Standard Bleachery and Printing Co.
Thomas and Betts Co.
Union Carbide Co.
Universal Foundry Co.
Universal Rundle Co.
Vulcan Detinning Co.

Surveys of Atmospheric Conditions:
City of Rochester, N.Y.
(Rochester Gas and Electric Co.)

City of Cleveland, Ohio
(Republic Steel Corporation)

INDUSTRIAL HYGIENE SURVEYS
May 1948 - April 1950

Company	Location
Republic Steel Corporation Truscon Steel Company	Youngstown, Ohio
Rochester Gas and Electric Company	Rochester, N.Y.
Mutual Chemical Company	Baltimore, Maryland
Republic Steel Corporation Union Drawn Steel Company	Hartford, Conn.
Republic Steel Corporation Union Drawn Steel Company	East Hartford, Conn.
Diamond Alkali Company	Painesville, Ohio
Republic Steel Corporation Truscon Steel Company	Cleveland, Ohio
Republic Steel Corporation	Cleveland
Republic Steel Corporation River Terminal Railway	Cleveland, Ohio
Republic Steel Corporation Upson Nut and Bolt Division	Cleveland, Ohio
Republic Steel Corporation Steel and Tubes Division	Cleveland, Ohio
Republic Steel Corporation Dillworth-Porter Steel Division	Pittsburgh, Pa.
Republic Steel Corporation Union Drawn Steel	Massillon, Ohio
General Electric Company	Pittsfield, Mass.
General Electric Company	Lynn, Mass.
Armstrong Cork Company	Pittsburgh, Pa.
Republic Steel Corporation Dillworth-Porter Steel Division	Pittsburgh, Pa.
Armstrong Cork Company	Beaver Falls, Pa.
Republic Steel Corporation Union Drawn Steel Division	Beaver Falls, Pa.

Company	Location
McCrory Stores	New York City
General Electric Company	Elmira, New York
Johns Manville Products Corporation	Waukegan, Illinois ✓
Republic Steel Company Central Alloy District Canton Plant	Canton, Ohio
Flintkote Company	New Orleans, La.
Armstrong Cork Company	Jackson, Miss.
Johns Manville Company	Manville, N.J. ✓
Republic Steel Corporation Plants and Mines	Birmingham, Ala.
Republic Steel Corporation Vance Iron and Steel Company	Chattanooga, Tenn.
Republic Steel Corporation Steel and Tubes Plant	Elyria, Ohio
Republic Steel Corporation Niles Steel Products	Niles, Ohio
Republic Steel Corporation South Chicago Plant	Chicago, Illinois
Allied Industrial Products	Van Wert, Ohio
Corning Glass Works	Charleroi, Pa.
Republic Steel Corporation Union Drawn Steel Plant	Gary, Indiana
Universal Foundry	Oshkosh, Wisc.
Four Wheel Drive Company	Appleton, Wisconsin
Grede Foundries	Milwaukee, Wisconsin
Grede Foundries	Waukesha, Wisconsin
Harnishfeger Foundry	Milwaukee, Wisc.
Rundle Manufacturing Company	Milwaukee, Wisc.
Eagle Manufacturing Company	Appleton, Wisc.

Company	Location
Ladish Company	Milwaukee, Wisc.
Bucyrus Erie Company	Milwaukee, Wisc.
J. I. Case Company	Racine, Wisc.
Republic Steel Corporation Moline Plant	Moline, Ill.
Bucyrus Erie Company	Evansville, Indiana
Bucyrus Erie Company	Erie, Pa.
Republic Steel Corporation	Detroit, Mich.
Republic Steel Corporation Buffalo Plant	Buffalo, N. Y.
Eastern Tool and Manufacturing Company	Belleville, N.J.
Republic Steel Corporation Canton Plant	Canton, Ohio
Republic Steel Corporation Stark Plant	Canton, Ohio
Republic Steel Corporation South Plant	Canton, Ohio
Republic Steel Corporation Massillon Plant	Massillon, Ohio
Republic Steel Corporation Massillon #1 and #2	Massillon, Ohio
Republic Steel Corporation Berger Mfg. Co. #1 and 2	Canton, Ohio
Republic Steel Corporation Culvert Mfg. Co. #1 and 2	Canton, Ohio
Republic Steel Corporation Truscon Steel Company	Cleveland, Ohio
Grede Foundries, Inc. Smith Steel Division	Milwaukee, Wisc.
Grede Foundries, Inc. Liberty Foundry Division	Wauwatosa, Wisc.
Jones and Laughlin Steel Corp. Benson Mine	Star Lake, N.Y.

Company	Location
Otis Elevator Corp.	Yonkers, New York
Johns Manville, Corp.	Nashua, N.H.
Johns Manville Corp.	North Billerica, Mass.
Evening Bulletin	Philadelphia, Pa.
Congoleum Narin	Kearney, N.J.
Columbian Rope Company	Auburn, N.Y.
Otis Elevator Company	Harrison, N.J.
Johns Manville Corp. Manville Plant	Manville, N.J.
Johns Manville Corp. Research Division	Manville, N.J.
Eagle Pencil Company	New York, N.Y.
Hickok Manufacturing Company	Rochester, N.Y.
Bausch and Lomb Optical Company	Rochester, N.Y.
Republic Steel Corporation	Brooklyn, N.Y.
Republic Steel Corporation Sayreton #1 Coal Mine	Birmingham, Ala.
Sayreton #2 Coal Mine	Birmingham, Ala.
Virginia Coal Mine	Birmingham, Ala.
Sayre Coal Mine	Birmingham, Ala.
Spaulding Ore Mines	Birmingham, Ala.
Edwards Ore Mines	Birmingham, Ala.
Spaulding Stripping Operations	Birmingham, Ala.
Alabama City Plant	Alabama City, Ala.
Thomas Plant	Birmingham, Ala
Pikesville Coal Mine	Pikesville, Ky.
Armstrong Cork Company Floor Covering Closure Plants	Lancaster, Pa.

Company	Location
Republic Steel Corporation Youngstown Plant - Open Hearth Dept.	Youngstown, Ohio
Otis Elevator Company	Harrison, N.J.
Universal Foundry	Oshkosh, Wisc.
Universal Rundle Corp.	Milwaukee, Wisc.
Four Wheel Drive	Clintonville, Wisc.

In addition to the firms listed above, the Waukegan, Illinois Plant of the Johns Manville Products Corp. sends in dust samples periodically and they are analyzed by our Laboratory.

We also have been conducting a survey of the atmospheric conditions in the City of Cleveland for the Republic Steel Corporation, and in the City of Rochester for the Rochester Gas and Electric Corporation.

SURVEYS PENDING
May 1, 1950

Otis Elevator Company
Hamilton Works, Ontario, Canada

Corning Glass Works
Corning, N.Y.

Armstrong Cork Company
Closure Plant - Metal Cap

Johns Manville Corp.

National Lead Company
Titanium Alloy Mfg. Div.
Niagara Falls, N.Y.

Mathieson Chemical Corp.

Metropolitan Life Insurance Co.
Niagara Falls District Office
Niagara Falls, Canada

American Can Company

Tydol Oil Company

Rochester Gas and Electric Company
Rochester 4, N.Y.
W. E. Hughes, Manager
Employee Relations Department

Mutual Chemical Company
1348 Block St.
Baltimore 31, Md.
C. F. Tarr
Vice President

Diamond Alkali Company
P. O. Box 430
Painesville, Ohio
Dr. J. M. York
Medical Director

General Electric Company
1 River Road
Schenectady 5, N.Y.
Dr. B. L. Vosburgh
Medical Director

Armstrong Cork Company
Lancaster, Pa.
Mr. A. S. Keen
Safety Director

Flintkote Company
31 Rockefeller Plaza
New York 20, N.Y.
Mr. H. P. Heubner
Insurance Manager

Corning Glass Works
Corning, N.Y.
Dr. John W. Brown
Medical Director

Universal Foundry
Oshkosh, Wisc.
Mr. Carl W. Mueller
Vice-President

Four Wheel Drive Company
Clintonville, Wisc.
Mr. Robert Olin
Works Manager

Grede Foundries
1325 South 1st St.
Milwaukee, Wisc.
Mr. James J. Ewens
Vice President

Harnishfeger Foundry
4400 West National Avenue
Milwaukee 14, Wisc.
Mr. H. O. Menck
Vice President

Rundle Manufacturing Corporation
3305 West Forest Home Avenue
Milwaukee, Wisc.
Mr. R. J. Habermann, Personnel Manager
Enameled Cast Iron Plant

Eagle Manufacturing Company
Appleton, Wisc.
Mr. Desens, President

Ladish Company
5481 S. Packard Avenue
Cudahy, Wisc.
Mr. George Bitters, Jr.
Personnel Manager

Bucyrus Erie Company
South Milwaukee, Wisc.
Mr. C. K. Charlton
Vice President in Charge of Manufacturing

J. I. Case Company
Racine, Wisc.
Mr. W. E. Anderson, Treasurer

Eastern Tool and Manufacturing Company
129-147 Bloomfield Avenue
Bloomfield, N.J.
Miss C. J. Wheelwright

Jones and Laughlin Steel Corporation
3rd Avenue and Ross St.
Pittsburgh 30, Pa.
Mr. F. W. Kelsey
Supervisor of Safety and Welfare

Otis Elevator Company
260 Eleventh Avenue
New York, N.Y.
Mr. William J. Niederauer
Safety Director

Philadelphia Evening Bulletin
Filbert and Juniper Streets
Philadelphia 5, Pa.
Dr. Fred Richardson
Medical Director

Congoleum Nairn Company
Kearny, N.J.
Mr. W. A. Magnus
Insurance Manager

Hikok Manufacturing Company
Rochester, N.Y.
Mr. James Weldon
Director of Industrial Relations

Bausch and Lomb Optical Company
Rochester, N.Y.
Mr. Smith, Safety Supervisor

American Can Company
100 Park Ave.
New York 17, N.Y.
Mr. L. V. Taylor, Supervisor
Health and Safety

COPY

Republic Steel Corporation

✓ Rochester Gas and Electric Company W. E. Hughes, Mgr Emp. Rel. Dept

✓ Mutual Chemical Company C + Davis V.P., 1348 Block St. Cork 4, 2nd Butt 31,

✓ Diamond Alkali Company Dr J. M. York Med Dir. PO Box 430 Painesville O.

✓ General Electric Company B. L. Crosby Med Dir. 1 River Rd. Schen 5

✓ Armstrong Cork Company A. S. Keen Safety Dir. Lancaster Pa

✓ Flintkote Company H. P. Heabner Gen Supr, 30 Rockefeller Pl. NYC

Allied Industrial Products

✓ Corning Glass Works Dr. John W. Brown Med Dir -

✓ Universal Foundry Carl W. Mueller Vice Pres Allentown Pa. ~~30 Rockefeller Pl. NYC~~

✓ Four Wheel Drive Company Robt Hein, Works Mgr. Clintonville Wis,

✓ Grede Foundries James J. Owens VP 1324 So 1st St Milwaukee

✓ Harnishfeger Foundry H. A. Menck VP - 4400 W Nath Ave. Milwaukee

✓ Rundle Manufacturing Company Wm Rundle Pres. R. J. Hakeman Pers. Mgr. 33-50 Ford Hudson Emerald Court Board Plant member corp.

✓ Eagle Manufacturing Company Mr Deems, Pres Appleton Wis.

✓ Ladish Company Geo. Butler Jr. Pers. Mgr. 5481 S. Packard Ave Cudahy Wis.

✓ Bucyrus Erie Company C. K. Chandler, V. Pres. in charge of Mfg. S. Milwaukee

✓ J. I. Case Company W. E. Anderson Pers. Racine Wis.

✓ Eastern Tool and Manufacturing Company Wm J. Wheelwright 179-147 Bloomfield Ave Bloomfield N.J. ~~Pa Transportation Mgr.~~

✓ Jones and Laughlin Steel Corporation J. W. Kelly Supr of Safety + Welf. 3rd Ave + Roosevelt Pitts 30

✓ Otis Elevator Company Wm J. Redmond Safety Dir 260 - 11th Ave

✓ Philadelphia Evening Bulletin Dr Fred Richardson Asst + Surgeon to Staff 5

✓ Congoleum Nairn Company W. A. Magnus Pers. Mgr. Kearny N.J.

✓ Hickok Manufacturing Company James Weldon Dir of Pubs Rd. Lockport NY

✓ Bausch and Lomb Optical Company Mr Smith, Safety Supr. Rochester

✓ American Can Company

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Republic Steel Corporation

Rochester Gas and Electric Company

Mutual Chemical Company

Diamond Alkali Company

General Electric Company

Armstrong Cork Company

Flintkote Company

Allied Industrial Products

Corning Glass Works

Universal Foundry

Four Wheel Drive Company

Grede Foundries

Harnishfeger Foundry

Rundle Manufacturing Company

Eagle Manufacturing Company

Ladish Company

Bucyrus Erie Company

J. I. Case Company

Eastern Tool and Manufacturing Company

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