FILE NAME: Engineering (ENG)

DATE: 1934 May

DOC#: ENG011

DOCUMENT DESCRIPTION: Trade Journal Article - Occupational Diseases: Their Prevalence and Relative Importance

ACCIDENT PREVENTION HEALTH CONSERVATION FIRE PREVENTION

SAFETY ENGINEERING

THE MAGAZINE OF SAFETY

(*with which has been combined* Protection Engineering, Conservation *and* Fire Prevention.)

ARTHUR C. CARRUTHERS, Editor HENRY W. ALEXANDER, Associate Editor

HARRY deG. ARMAND, Business Manager

IN THIS ISSUE:

EDITORIAL OBSERVATIONS:

ACCIDENT:

SPECIAL FEATURES

Requirements in goggles of the impact type are discussed on page 187 by W. P. Elstun of the Bell Company.

Sprinklers and other fire extinguishing appliances are described by C. B. Langdon—Page 201.

FIRE:

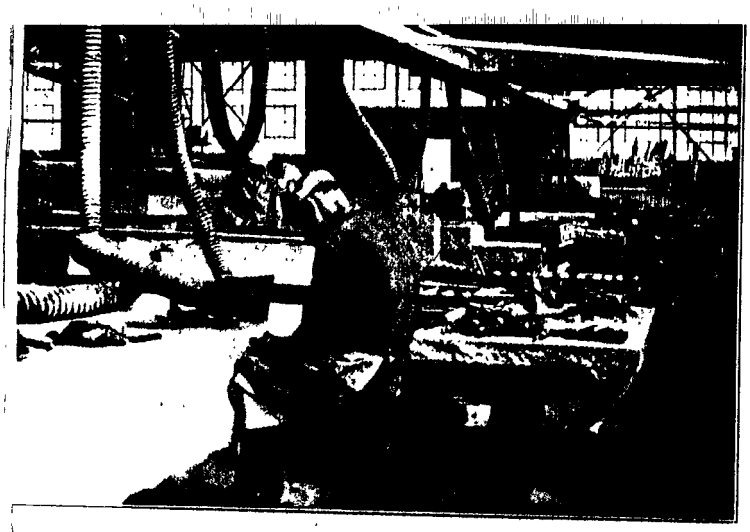
HEALTH:

VOLUME LXVII MAY, 1934 NUMBER V

THIRTY-FOURTH YEAR: THE PIONEER PUBLICATION IN ITS FIELD

Published monthly by Safety Magazine Publishing Corporation; Arthur C. Carruthers, President; Austin F. Hancock, Vice-President; Harry deG. Armand, Secretary. Editorial and General Offices—45 John Street, New York, N. Y.; Publication offices—34 North Crystal Street, East Stroudsburg, Pa.

Previous issues of SAFETY ENGINEERING can be found in the Industrial Arts Index in your library. Entered as second class matter January 7, 1930, at the East Stroudsburg, Pa., Post Office, under the Act of March 3, 1879. **Subscriptions: $3.00 a year; Canada, $4.00; foreign, $4.50. Single Copies, 25c.**



EXHAUST FOR
PNEUMATIC HAND-TOOL

hood, the air ducts, the fan or exhauster, and the dust separator and collector. It is necessary, of course, that this apparatus be properly designed and located.*

The Commission also discusses certain types of respirators, and describes the need for comfort and efficiency in their manufacture. Sandblast helmets, bag respirators and filter respirators are described.**

Legislative and Administrative Recommendations

In the way of legislation, the Commission recommends that preventive regulations be prepared and issued by the State Department of Labor and Industries; that a certificate of compliance with such regulations be required of every employer in an industry where the hazards exist; that employers be made to provide insurance; that insurers carry certificated risks; that entrance physical examinations be compulsory to all workers in dusty trades; that annual physical examinations of these workers be required; that compensation for pulmonary disability be restricted; that all exposed persons be subject to preventive regulations; that a Division of Occupational Hygiene be established in the Department of Labor and Industries, and that a medical board of review be provided for, which shall review cases of compensation claims for occupational diseases.

* The article, "Controlling Dusts in the Drilling of Rock," by R. A. Brackett in the March, 1934, issue of SAFETY ENGINEERING, will prove valuable to those interested in learning further details of this dust control method. [Editor.]

** Those interested in further details of any protective equipment against silicosis in particular and the dust hazard in general may write to the Service Department of SAFETY ENGINEERING for such information. [Editor.]

The illustrations used in this article and throughout the Health section of this issue of SAFETY ENGINEERING are by the courtesy of the Massachusetts Special Industrial Disease Commission, of which Mr. Manfred Bowditch is secretary.

OCCUPATIONAL DISEASES: THEIR PREVALENCE and RELATIVE IMPORTANCE

by A. J. LANZA, M.D.
Assistant Medical Director
Metropolitan Life Insurance Co.

WE are not concerned, in this discussion, with medical questions as to the nature of occupational diseases; we are not concerned with questions of their diagnosis; we are concerned with the subject of what to do about them.

Perhaps it might not be amiss to endeavor to define what is an occupational disease. When we talk of occupational diseases, we mean diseases that arise wholly out of the nature of an industrial process; that is, a specific occupational disease, and that is what the law had in mind when it adopted the British scheme of defining in a schedule what were compensable diseases arising out of occupations.

We are not concerned so much, in this series of discussions, with incidental diseases of occupations, but we are concerned with the true, specific occupational disease. That is a distinction that is readily comprehensible. If a man, working on a bridge as a bridge builder, falls into the water, and, as a result of his immersion, contracts pneumonia, in one sense of the word he has contracted a disease arising out of his occupation, but this is not what we mean by an occupational disease.

Compensable Diseases Are Usually Specified

The majority of states—the industrial states—compensate these occupational diseases on a schedule in which is outlined what is to be compensated, such as poisoning by lead, mercury, arsenic, benzol, and so on. The important exceptions are Massachusetts, Connecticut, Wisconsin, and California which have enacted so-called blanket laws, which laws simply state that the state will pay compensation for a disease arising out of and in the course of employment, and, in the main, the diseases compensated in these states have been restricted to the specific occupational diseases.

It is, perhaps, worthy of note that the one disease which is absolutely and strictly occupational in its nature, which never occurs, to the best of my knowledge, as a non-occupational disease, and which is one of the most prevalent of all occupational diseases, is the one which no schedules cover, and that is silicosis. It is possible, and medical records bear out, that lead poisoning and other diseases covered in the schedules may be contracted outside of industrial processes.

The Prevalence of Occupational Diseases

When it comes to the prevalence of occupational diseases, we have very little information. In the specific sense, when you talk about the prevalence of a disease, you imply "the rate," but obviously one cannot establish a rate if one does not know what the exposure is—how many people are exposed to lead poisoning, etc. Furthermore, another avenue of inquiry which theoretically is open to us is of little practical value—the reporting of

occupational diseases. The law requires, in a number of states, that physicians report occupational diseases to the State Department of Labor and Industry, or to the State Department of Health. To the best of my belief, the law is rarely observed. Two or three years ago, I had occasion to visit a community in which was a well known industry. The hazard was lead; the plant was full of lead poisoning; the State Department had made a thorough study of the plant; employees were drawing compensation for lead poisoning; insurance companies were paying benefits to those same employees for lead poisoning; and at no time then or since had a single case of lead poisoning been reported by any physician in that community in compliance with the basic requirements of the law.

No Two States Use Same System

There is left to us, then, to try to estimate, from the number of cases of occupational diseases compensated and the relationship which these bear to the total number of cases of compensation, some idea of the prevalence of these occupational diseases. That is simple on the face of it. State Boards of Labor and Industry publish annually, for the most part, reports in which are tabulated, at great length and with considerable detail, data as to compensation paid, number of cases, number of days lost, amount of money paid, etc. The trouble is that no two states apparently use the same system, and the system according to which they are tabulated in the compensation reports does not bear too close a relationship to the compensation schedule. You look at the compensation schedule, note the diseases listed, and try to identify them in the annual reports and find it difficult, if not impossible, to do so.

The data, then, that we have to deal with are extremely faulty. Since it would be utterly impracticable to attempt to bring together figures for all the states, I have chosen to limit my analysis to the reports of two large industrial states which have occupational disease schedules—New York and New Jersey, and to two states which cover occupational diseases under a blanket law—Massachusetts and Wisconsin.

New York and New Jersey

Compensated cases of occupational diseases closed in New York State in the years 1927 through 1929, amounted to 0.3 per cent of the total number of compensated claims. In 1930, the number had risen to 0.4 per cent but dropped again in 1931 to 0.3 per cent. This is an extraordinarily small figure. There were 306 cases of occupational disease compensated in 1931, and of that number, 132 were cases of lead poisoning. However, these figures do not include a large number of cases of skin disease which were classified elsewhere. Dr. Schwartz of the United States Public Health Service, in an article published in 1933, estimated that one-half of all claims paid in the United States for occupational diseases were for skin disease. Possibly in New York, the proportion might not be so high. It is safe to conclude, however, that to the 306 occupational disease cases reported in 1931 should be added well over one hundred cases of skin disease. In New Jersey, the proportion of occupational disease claims was 0.4 per cent in 1927, about the same as in New York, but since that time, it has steadily mounted to 1.5 per cent in 1932. There were 303 cases of occupational disease reported in the last year of the series, of which 180 were lead poisoning. A large but unknown number of skin disease cases must also be added to the total figure for New Jersey.

Proportion of Cases in Massachusetts

The proportion of occupational disease cases in Massachusetts, one of the states having a blanket law, was but little higher, all things considered, than in New Jersey. In 1927, the proportion was 1.3 per cent, from which figure it has steadily increased to 2.3 per cent in 1932. Figures for Massachusetts, it should be kept in mind, include skin diseases and also poisoning by gas. Allowing for this, the figures do not appear to be very far from those for the state of New Jersey. In 1932, the number of cases of occupational disease reported in Massachusetts was 954, and of these, almost two-thirds were skin diseases—a very high proportion. There is this peculiarity in reporting, however, which must be borne in mind: Massachusetts records the number of re-

MANUAL SAND BLASTING
IN CLEANING ROOM

ported cases and not the number of compensated claims. How many of these skin disease cases were of short duration and not compensated, we can not know.

The Experience In Wisconsin

Wisconsin offers some other interesting information. For the ten year period from 1920 to 1929, occupational diseases amounted to 1.5 per cent of the total compensated cases settled. In more recent years, the proportion has been much higher, being respectively 1.8 per cent, 2.1 per cent and 3.0 per cent in the years 1929, 1930, and 1931. The total amount of indemnity paid for all occupational diseases in Wisconsin in 1929 was $97,-864. To this total should be added $25,222 paid for medical aid. By 1932 the total amount of indemnity paid had increased to $207,165, while the cost for medical aid was $22,027. A very large part of this payment, it is interesting to note, went for silicosis. Comparable data on the total cost for occupational diseases and for silicosis separately are not available from published sources, and, therefore, the exact percentage chargeable to silicosis cannot be determined. Some idea of the importance of this disease, however, can be had from a special report published by the Wisconsin Industrial Commission. Between 1929 and 1931, twenty-two cases of silicosis were compensated. Compensation costs in these twenty-two cases approximated $220,000, or an average of $10,-000 per case.

•

There are certain conclusions we can draw from these facts and figures, one of which, and the one which I personally believe, is that a great many, if not the bulk of the occupational diseases are neither diagnosed nor reported. Another thing that is obvious is that the method of tabulation and reporting in the various states is unsatisfactory. Here is a problem whose importance is becoming intensified with each passing year. It does and will cost industry enormous sums of money, and yet it is impossible today, even with the help of trained statisticians, actually to find out what is the extent of occupational disease in any state and the total cost to industry.

The Importance of Occupational Diseases

Coming to the importance of occupational diseases, we have to consider from what angle we wish to consider the question of importance. If we consider it on the basis of numbers, this will be the order:—skin diseases first, silicosis second, and lead poisoning third, with all the others far in the background. If you want to consider them from the standpoint of what they cost industry (in compensation), then we reverse the order and put lead poisoning first; skin disease second; and silicosis hardly figures at all, except in the state of Wisconsin. What the cost of silicosis may be through the common law suit, I do not know, but it is safe to state that there are suits on file to the amount of many millions of dollars. If we consider the importance of these occupational diseases from the viewpoint of the public health and of the health of the employees themselves and of the reflected effect upon the community as a whole, then we reverse the order again, with silicosis first, lead poisoning second. Silicosis is first, not only because of its extraordinary predisposition to tuberculosis but because of the added hazard of infection to the families of silicotics. Lead poisoning is fairly widespread and is mostly of a minor type. Extreme cases of acute lead poisoning are uncommon but much time is lost by industrial workers from mild lead poisoning which manifests itself as stomach or digestive trouble.

It is not possible, I think, to define any other of the occupational diseases as major public health hazards. With respect to arsenic, mercury, benzol, and the other items on the schedule, cases of poisoning from those substances do occur. In the tabulation of compensation claims, they are so few that they can have little weight as far as the general public health is concerned.

The Need for a Competent Medical Board

The whole matter of dealing with the occupational diseases is now in a more or less violent agitation in all the industrial states. Additions to the present laws are contemplated and entirely new laws are being proposed. There is one fact that stands out, and that is, that one of the difficulties that we are laboring under, in trying to decide who is and who is not suffering from occupational disease, is the absence of a competent official medical board. After all, the question of deciding whether a man is sick and, if he is sick, whether he has an occupational disease, and if he has an occupational disease, what is the extent of his disability—those are facts for competent physicians to decide. If industrial workers are to be justly compensated for occupational diseases and if industry is to have the assurance that this complex subject is to be handled fairly and efficiently, provision must be made for cases by making available to the state authorities the advice and guidance of a medical board whose personnel is composed of state officials.

Presented at the Conference on Occupational Disease, under auspices of the N. Y. Tuberculosis and Health Association; the Committee on Public Health Relations of the N. Y. Academy of Medicine; the National Bureau of Casualty and Surety Underwriters, and other organizations, New York City, March 1, 1934.

PNEUMATIC HAND-TOOL OPERATOR: ANOTHER TYPE OF EXHAUST