

MINISTRY OF LABOUR AND NATIONAL SERVICE.
 FACTORIES. Annual Report of the Chief Inspector
 of Factories for the Year 1947 (BARNETT, G. P.).
 Cmd. 7821. 127 pp., 11 figs. 1949. London:
 H.M.S.O.

In the drive for increased industrial production new methods are being introduced, and in particular mechanized handling systems and automatic systems of feeding and charging machines are being much more widely adopted. In the brick industry the installation of mechanized handling and transporting appliances has obviated much heavy manual work. Mechanization in the construction of buildings saves manpower and tends to reduce the number of the less serious accidents, but it creates other and serious risks, e.g. easily transportable hoists have been devised without proper regard to safety. In iron-founding, also, mechanization is increasing, and this will probably reduce the dust-hazard. But the increase in mechanization is not wholly beneficial. The use of mechanical moulding machines in foundries, and the increasing use of hydraulically and pneumatically operated devices on machine tools and in the wood-working industry, involve new risks of trapping and crushing. Likewise the use of electronic apparatus brings its risks—electric shock, high-frequency burns, and dangers arising from the failure of a component and the consequent loss of control of machinery.

The number of notifiable accidents at premises covered by the Factories Act was 9.2 per cent smaller in 1947 than in 1946. Fatal accidents were 1.6 per cent more numerous in 1947. The Factories Act requires the notification of accidents from premises other than those commonly regarded as factories. These include docks and warehouses, and building sites and works of engineering construction. The accident risks at such places are not the same as in factories, and since the work of building and engineering construction is subject to irregular fluctuation the method of comparing the totals of accidents from year to year does not give a true picture of the position in factories. Accordingly, tables and graphs are given which set out for the eleven years, 1937 to 1947, the separate accident statistics for factories, docks and warehouses, building operations, and works of engineering construction.

For factories only, the number of accidents per 1,000 persons employed rose from a minimum of twenty-eight in 1939 to a maximum of forty-three in 1942. Thereafter it declined, and in the last three years the rates were thirty-seven, thirty-four, and twenty-nine. Except in the last two years of the period reviewed, the accident rate for boys was higher than that for men, but in 1947 the boys' rate was thirty-three per 1,000 employed, and that for men thirty-eight.

In the last two years of the period 29 per cent of the accidents were caused by handling goods, 16 to 17 per cent were due to power-driven machinery. Persons falling, being struck by falling bodies, or stepping or striking against objects were each responsible for between 7 and 12 per cent of the total

accidents, and the use of hand tools accounted for 10 per cent. Molten metal or other hot or corrosive substances caused about 4 per cent of the accidents.

There are striking differences in the proportions of fatal accidents in the different kinds of premises which are covered by the Factories Act. In building operations and works of engineering construction one accident in thirty-nine proved fatal, at docks and warehouses the proportion was one in 113, and in factories it was one in 360.

A slight increase in the number of accidents due to carbon monoxide is reported, and it is remarked that a fuller realization of the insidious dangers of the gas is necessary on the part of both managements and workers. Sulphuretted hydrogen is also underrated in industry. It caused fourteen accidents, with seven fatalities, in the year under review.

Amongst ten cases of gassing by nitrous fumes there was one fatality. The victim was a former collier known to have silicosis. He and another man, while repairing a leak, were exposed to the fumes which were evolved for about a minute. Although his companion finished the task, the victim stopped work. He appeared to have recovered without visiting the works surgery, and he finished the shift, but next morning he was very ill and died from pulmonary oedema. Silicosis was confirmed at the post-mortem examination. The exposure which killed the silicotic subject was easily tolerated by his fellow worker.

The section of the report which deals with industrial diseases includes a review of notifications of lead-poisoning from 1900 to 1946. The total numbers of cases notified during the first four decades of this period were 6,638, 4,139, 3,028, and 1,053. In the final seven-year period of 1940 to 1946 the number was 418, which is at the rate of 597 cases per ten years. In October, 1947, the Pottery (Health) Special Regulations were gazetted. One object of this code is to prohibit the use of other than low-solubility or leadless glazes after specified dates. Hence, it is appropriate that this report should include an interesting note on the historical background of this embargo.

Epitheliomatous ulceration accounted for 203 cases with three deaths—forty-two cases fewer than in 1946. With 296 cases, chrome ulceration showed a very large increase. Two hundred and twelve of these occurred at one factory where aluminium houses were prefabricated by the process known as "pyluminizing." This is a non-electrolytic chrome process to which no code of Special Regulations applies. Appropriate precautions have now been instituted.

Deaths from silicosis and asbestosis were about as numerous as in 1946. The number of deaths from the pneumoconiosis of coal miners reported was 230, as compared with seventy-eight in 1946.

In twenty-three years, from 1924 to 1946, 205 deaths from asbestosis came to the notice of the Factory Department. Cancer of the lung was a complication in thirty-one (15.2 per cent) of these cases. Lung cancer was more frequent in the higher age groups. Thus at ages 25 to 31 and 35 to 44,

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PERIODICAL REPORTS RELATED TO PNEUMOCONIOSIS

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4.3 and 5.6 per cent of the cases of asbestosis had cancer as a complication, while in the next two decades of age, and in the group aged 65 and over, the respective percentages of cases with cancer were 15.9, 23.6 and 23.5.

On the whole, the health of luminizers, who work with radio-active materials, is good. All were examined clinically and haematologically at least once, and in no case could any disturbance of health observed be attributed to the occupation of luminizing. Skin lesions have shown a remarkable decrease. Blood examinations of twenty-eight men engaged in extracting uranium from its ore gave results which indicated some hyper-stimulation of the haematopoietic system.

The fuel crisis at the beginning of the year forced attention to the need for the thermal insulation of buildings. An example is given of the saving achieved by applying roof insulation and also arranging for the thermostatic control of the heating system. Floor heating is being used more widely, as is also radiant heating.

New factories are generally designed with good artificial lighting, but in older factories there is still much room for improvement.

Increased interest in the design of machinery and equipment is reported, but there is need for much improvement in the adaptation of machinery to suit the needs and capacity of the operator.

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MINISTRY OF LABOUR AND NATIONAL SERVICE.
Factories. Annual Report of the Chief Inspector of Factories for the Year 1948 (BARNETT, G. P.). Cmd. 7539. pp. iv + 158. 1949. London: H.M.S.O.

During recent years there has been a considerable growth of the advisory side of the Factory Inspector's work. It is becoming the practice of factory occupiers, for example, to invite suggestions from the Department on designs for factories or plants before they begin construction.

Much work is done within the Department on the sampling and examination of industrial dusts. An example of the value of dust surveys is given. A serious case of bagassosis arose in the shredding department of a factory handling bagasse. Dust counts showed high concentrations of fine dust, as well as many yeast-type organisms. The results pointed the way for safeguarding the workers by using a hydraulic vortex method of opening and breaking up the bagasse bales under water.

Microscopic examinations have been used in a variety of investigations: the tracking of the source of pollution of the air in an atomic energy factory; haematological studies of blood smears from luminizers; examination of the dust contents of lung sections from the first case of hepatocarcinoma reported in Great Britain; a similar study of a case of talc poisoning.

Radiological hazards in industry grow rapidly in importance. In the handling of radio-active materials there are often present in combination dangers of radiation and dangerous dust or gas. Then the gas or dust-risk is met by the usual methods of total enclosure or local exhaust ventilation, and suitable screens are arranged to deal with the radiation risks. Much ingenuity is being shown in the designing of such plant.

Attention is again drawn to the dangers arising from the use of mechanical-handling appliances. Improved methods of production have their effects on safety. By using automatic feeding devices, jigs and fixtures, much better fencing can be secured.

Owing to present building difficulties many firms have not been able to get the new buildings they want, and have perforce carried on in old and unsuitable buildings. In some urban areas the position is acute. In one London borough there are 2,714 registered factories nearly all of which are in "old" premises, and most of these built as houses. In three other London boroughs there are at least 357 underground factories or parts of factories.

Special surveys have been made of working conditions in the cotton industry and in iron foundries. In the cotton trade an outstanding question is that of the removal of dust from card-rooms. An extensive investigation has been arranged which will include studies of the air-borne dust, experiments on extraction, and biological work. Besides, the possibilities of oiling the cotton are being considered. Some trials with the application of technical white oil have given dust reductions of about one-half. Very detailed information about the results of the survey of iron foundries is given. It is remarked that only in the mechanized foundries is there any effective control of dust and fumes.

Statistical tables conveying detailed information about industrial accidents are given. There was a slight decrease in the accident frequency rate as compared with the preceding year. Out of a total of nearly 153,000 accidents, about 37,000 were due to power-driven machinery. Examples of some of these are cited.

The number of accidents involving young persons was lower than in the previous year, and the number of young persons employed had also declined, and the accident frequency rate showed a corresponding fall.

Accidents on handling equipment accounted for 10% as compared with 8.7% in 1947. The Department has this year reported that some 2,200 accidents due to power-driven machinery had occurred in the 4,000 premises.

The reported cases of industrial blindness are tabulated. There were four cases in 1948, compared with three in 1947. The Department is continuing its researches into the causes of industrial blindness, and is also carrying out a series of experiments on the effects of dust on the eyes. The Department is also carrying out a series of experiments on the effects of dust on the eyes.

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TABLE XXXVI

	Males		Females		Total	
	Asbestosis	Asbestosis and carcinoma of lung	Asbestosis	Asbestosis and carcinoma of lung	Asbestosis	Asbestosis and carcinoma of lung
Mean duration of exposure in years	18.5	20.1	7.8	7.6	13.4	15.5
Standard Deviation	15.5	9.9	5.8	4.6	8.7	10.3
Range in years	2-40	6-40	0.5-32	1.5-16	0.5-48	1.5-40

Asbestosis and Carcinoma of Lung compared with Silicosis and Carcinoma of Lung

For the purpose of comparing the above figures of cases of Asbestosis and Carcinoma of the lung with some similar disease the 6,884 cases of silicosis occurring between 1930 and 1946 were analysed.

Ninety-one of these 6,884 cases of silicosis or 1.32% were found to have carcinoma of the lungs or pleura at post mortem.

The average age at death of those dying of silicosis and carcinoma of the lung was 59.4 years.

Summary

Thirty-one cases of carcinoma of lungs and pleura were found at autopsy of 235 cases of Asbestosis. That is 13.2%.

The average age at death of those suffering from carcinoma of lung was 52.1 years compared with 44.2 years for those with asbestosis alone.

The average duration of exposure to asbestos dust was 16.5 years for those cases complicated by carcinoma of lung, compared with 13.4 years for those not so complicated.

Out of 6,884 cases of silicosis at post mortem, 91 (or 1.32%) had carcinoma of the lungs and pleura.

The average age at death of these cases of silicosis and carcinoma of lung was 59.4 years.

Dermatitis in 1947.

There were in 1947, 4,884 voluntarily notified cases of dermatitis. The corresponding figure for 1946 was 6,166. A more satisfactory system of classification of dermatitis is being devised and at present no analysis of the 1947 cases has been made.

At a firm engaged in developing and processing colour films, 10 cases of dermatitis, among about 600 workers, occurred. While metol, a developer, was believed to have given rise to some cases, it was thought possible that a mould, the growth of which coincided with the use of phosphoric acid in some of the dye solutions might have caused some of the skin lesions. The mould thrived on the inside and outside of ducting woodwork and was easily dislodged by cleaning. The part played by this mould in the occurrence of dermatitis has not been proved conclusively but in two of the suspected cases there was an extension of the affected skin areas after work had ceased, while clinically the skin lesions appeared infective in origin. An interesting point was the presence in the mould of mites identified as belonging to the family Anoutidae and probably a species of *Histiogonia Yestro serratum* Mign.

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