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Health Hazards in the Foundry

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The speaker said in part: Over and over again it seems necessary to restate in many guises such well established foundry fundamentals as the following:

1. Excessive heat is a hazard common to all foundries.

2. Excessive heat means high loss of valuable chlorides from the body and calls for replacement. The use of salinized drinking water is now better established as desirable than ever before. Here rather than less salt is advocated for the normal foundry worker exposed to high temperatures.

3. Molten metal emits chemical rays at times harmful to the eyes. Goggles fitted with glass barring these rays prove their worth to the workmen in many plants.

4. Metal fume fever fortunately is fleeting in its known effects, but no less is real. It is more often found where zinc enters the metal mix.

5. Sudden and extreme variations in temperature may be the lot of foundry workers—notably so in winter. The body makes adjustments to these quick changes with admirable facility. No less, these burdens are conducive to respiratory diseases, including pneumonia. Pneumonia reaches highest frequency among foundry men.

6. Lead poisoning is far from rare in the foundry.

7. Carbon monoxide may be found in harmful quantities.

8. Antimony, nickel, cadmium, manganese, phosphorus, arsenic, and sulphur may on occasion find their way into the crucible and thus make possible the development of ill health traceable to such causes.

9. In core making, many binders have led to skin diseases.

10. If metal grinding, polishing and buffing constitute a part of the foundry's activities, a long list of additional hazards may be cited, ranging from the action of chrome polishig materials to tenovitis from the drag of the buffing wheel.

11. Last, but foremost, is the hazard of dust. At the present moment concern over health hazards in the foundry may be divided in the ratio of 99 per cent for dusty lung diseases and 1 per cent for all others combined. While this disproportion may not be warranted, it appears desirable that I devote the major portion of my comments to selected items related to dusts and the diseases produced by dusts.

Confronted with any new and outstanding hazard in industry, the tendency is to exaggerate the requirements for control. This notably was true when benzol first came into wide industrial application. Now the conditions under which benzol may with safety be used are so well delineated that where these conditions are provided benzol poisoning is unknown. A similar course is predictable for the silica hazard in foundries.

As the major problems connected with dusty lung diseases and their causations become harnessed by the specialist, opportunity is provided for the consideration of many secondary aspects of dust and dusty lung diseases. I propose now to comment on five of these slightly less significant matters—important in my opinion to the employment manager, the safety engineer, and the plant physician.

1. How shall the foundry operator protect himself against cases of dusty lung diseases originating in other plants?

Many foundry operators are faced with suits or other forms of claims that undoubtedly are related to previous employment in other foundries or other dusty trades. Since silicosis may require and usually does require many years for its development to the point of disability, it naturally follows, by way of example, that 16 years of previous foundry exposure is more blamable in the causation of silicosis than two years of similar exposure in present employment. Yet the present employer is likely to find himself saddled with full responsibility.

Lately I have had opportunity to examine well made film negatives of applicants for work, without admitted previous exposure in industry. These persons were found to live and drive on dusty country roads made of flint. Approximately 50 per cent of these young adults presented sufficient involvement in their films to be rated as "suspicious" in relation to pneumoconiosis. Given a few months exposure in a foundry anyone might hold himself eligible for claims against his employer alleging dusty lung disease.

The answer to the problem is definite. Every prospective employee for any dusty portion of a foundry should be x-rayed by a competent maker and interpreter of chest films. For the good of the prospective workman and for the good of the operator, any applicant exhibiting any x-ray evidences of any degree of involvement resulting from the action of dusts or the presence of other pulmonary pathology in well established degree, should be denied employment in any dusty exposure. Expensive as x-rays may be, they are likely to prove one of the most economic steps that may be taken in these days of wholesale litigation, synthetic testimony, unskilled physicians, and plaintiff-prone juries.