I will venture to say that the greatest reduction in the incidence of occupational disease and of accidents in the foundry will be brought about by good housekeeping. It is almost a complete answer to the question: "What can I do about industrial hygiene?" and yet it is often so ignored. If a plant manager walked into the treasurer's office and found twenty-dollar bills lying on the floor, in the waste basket, on the window ledges, he'd be scandalized. Yet, in his own plant, equipment and material—all of which represent dollars—are strewn about in the same careless manner.

A certain foundry decided to put a new concrete floor in the core room. When the contractor arrived to set the forms, he found a perfectly good concrete floor about a foot below the dirt. That is a true story!

It has been shown by Hatch that occupational disease is directly proportional to crowding.

A study of 43 foundries in New York State revealed the following startling relationships between housekeeping and the incidence of silicosis.

Housekeeping	Number of Plants	Silicosis Incidence (Percent) Median	Maximum	Minimum
Fair	5	1.9	2.8	1.0
Poor	18	4.4	15.4	1.0
Bad	22	5.4	13.8	0.8

Note that no foundries were classified as having good housekeeping; only 5 were fair, 18 poor, but most of them bad. Note also the sharp reduction in the incidence of silicosis between plants with bad housekeeping and those with fair. What would the difference be if the comparison were made between plants having bad and very good housekeeping?

In one of our own brass foundries we had approximately 14 cases of lead poisoning a month. With little change in the ventilating system but by reason of an excellent regimen of good housekeeping alone, we have not had a single case in over five years.

I know of a foundry that removed 60 tons of dust from the superstructures. Such material finally exceeds the angle of repose, and dust from the superstructures is constantly set air-borne by building vibration. Particles of physiologically significant size will remain suspended in *still* air for very long periods thus contaminating the atmosphere long after the dust-producing operation has ceased. A spherical particle having the same density as quartz will fall 0.016 foot per minute or 1 foot per hour in still air. This important fact has not been fully appreciated by the foundry industry.

I have found high dust concentrations in foundries with very good ventilating systems because the floors and rafters were seldom if ever cleaned. For this reason, I have been strongly in favor of central built-in vacuum cleaning systems capable of maintaining a vacuum of 12 inches of mercury at six outlets simultaneously. Such systems are not expensive. In fact, I believe a built-in vacuum cleaning system is as important as a good ventilating installation if we are to have good industrial hygiene in the foundry.

3. The third important control factor is education. I have found unsafe conditions in the foundry because the supervision was ignorant of the toxic effects of the materials they used or of the hazards involved in a given process.

For example, one foundry was blissfully engaged in the production of beryllium copper, totally unaware of the reported extreme toxicity of beryllium; and the material was handled and processed with the same indifference as phosphor-copper.

Another plant making copper castings was surprised when the workmen contracted lead poisoning because the copper contained less than 2 per cent lead. They forgot about the vapor pressure of lead at the melting temperature of copper and, as a result, there was a high concentration of lead-in-air around the unexhausted furnaces.

A third plant did not know that fumes from welding and burning steel and gray iron castings is principally iron oxide. In the concentrations produced by those operations, iron oxide will cause a lung condition known as siderosis. Siderosis consists of a pigmentation of the lungs due to deposits of iron throughout the lung fields. It is nondisabling and is harmless much as a tatoo mark on the skin is harmless though undesirable. However, the iron deposits are radio-opaque and their shadows seen on a roentgenogram are very similar in appearance to those caused by fibrosis due to free silica. As a result, a diagnosis of silicosis is frequently made and compensation for a non-existent disability results.

Now foundrymen are not toxicologists or industrial hygienists and, therefore, cannot be expected to know the hazards involved in founding. But the United States Department of Health, branches of which are set up in each state, is at their service at no charge. This is a fact-finding organization without coercive or police powers; and, therefore, no plant should fear to call on them for assistance if the plant really wants technical advice.

The foregoing three factors then: (1) Conviction on the part of top management that good industrial hygiene is good business; (2) Good housekeeping; and (3) Education, are prerequisites in any foundry hygiene program. Without them, it is foolish to discuss safe practices or to install expensive ventilating systems.

Presentation of Awards

By GROVER C. BROWN
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The metals industry was one of the first to be recognized as a separate and distinct section of the National Safety Council. Metals, together with nine other industries was organized as a separate section in 1915. The first safety contest for this section was held 14 years later in 1929. Today we are celebrating its 22nd consecutive safety contest.

Only 34 units were entered in that first contest, all under one general classification but divided into groups A and B according to size. Through the years this section has grown until it now encompasses nine separate classifications, each divided into three groups, A, B, and C according to size. As you know, these nine classifications are: steel mills, iron and steel rolling mills, non-ferrous metals and products, foundries, machine shops with foundries, heavy fabricating, light fabricating, heavy machinery and light machinery. Included within these nine classifications are 2,315 separate operating units scattered geographically from Canada to the Gulf of Mexico and from the Atlantic to the Pacific coast. All are eligible to compete in this Metals Section's Safety Contest.

A "Unit" may be a single plant or department or a group of plants or departments, a part or the whole of a company. These 2,315 operating units have combined payrolls of more than a million employees, all potential players on the many scores of safety teams eligible to compete in this contest.

This year 706 units have satisfied all requirements and completed the contest. This is equivalent approximately to one out of every three units eligible to compete. (A few additional units participated through part or all of the contest period but for some reason have failed to fulfill all requirements to the end and are not now included in this total.) To build up this total of 706 competing units, the heavy fabricating and light fabricating divisions each supplied 128. Light machinery supplied 103 units, foundries—96, and heavy machinery—90. Sixty-nine units came from steel mills and 32 from non-ferrous metals and products. Iron and steel rolling mills and machine shops with foundries contributed the remainder with 30 each. One hundred and sixty-six of these units are in Group A, 239 in Group B, and 301 in Group C.

Ninety-six of these units have emerged from this contest as 1st place winners. This is equivalent to an average of approximately one for every seven units which satisfactorily completed the contest. (A winner is a unit with a perfect score or with the lowest score in its respective group.) Group A, of largest units, is credited with 9 winners; Group B, of medium sized units, has 13 winners; and Group C, of smallest units has come through with 74 winners. The ratios of number of 1st place winners to number of contestants is therefore—

For Group A—1 for every 18.4 units
For Group B—1 for every 18.4 units
For Group C—1 for every 4.1 units