

LEAD INDUSTRIES ASSOCIATION

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LEAD HYGIENE AND SAFETY

BULLETIN NO. 87

Subject: THREE ITEMS OF INTEREST

To Members of the Lead Industries Associations

Each of the three enclosures herewith seems of sufficient interest to bring to the attention of our members with the following brief commentary:

Mr. Frank A. Patty, head of the Industrial Hygiene Department of the Research Laboratories Division of General Motors Corporation, Detroit, spoke on the values to industry of industrial hygiene programs at the last annual meeting of the American Public Health Association. An abstract of Mr. Patty's remarks, which appeared with the title "Industrial Hygiene Dividends" in the February issue of Safety Maintenance & Production, is submitted as the most concise and authoritative summation of this subject yet seen.

Mr. Herbert J. Weber, industrial hygienist of the American Brake Shoe Company, Chicago, whose contribution to the Hygiene Conference held by our Association in March, 1943 will be recalled by our members, participated importantly in the National Safety Congress in Chicago last October. A selection has been made from a series of interrogations to and responses by Mr. Weber on that occasion just published by the National Safety Council.

Quite belatedly, and with an imprint explaining the delay as "caused by the London printers' dispute," the October 1950 issue of the British Journal of Industrial Medicine has come across the water and is found to contain the review of the Proceedings of the Association's 1943 Lead Hygiene Conference published early last year partially reproduced herewith. Dr. Ronald E. Lane is professor of industrial hygiene at the University of Manchester, England.

Manfred Powditch

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Director of Health and Safety



Industrial Hygiene Dividends

Sound industrial hygiene programs yield both financial and goodwill dividends to plant managements, Frank A. Patty of General Motors Research Laboratories told a meeting of the American Public Health Association's Industrial Hygiene Section. Industrial hygiene's key mission, he emphasized, is to protect plant employees and reduce occupational disease to the point of rarity, and the effectiveness of any industrial hygiene department depends almost entirely on management policy.

"First," he said, "the industrial hygiene department should have ready access to some policy forming executives on the managerial staff as well as to all plant managers, plant engineers, personnel directors, physicians and safety engineers."

Reporting on a survey of industrial hygiene costs, Mr. Patty said they varied from less than 50 cents to \$2.50 per employee per year. Such figures, he emphasized, could not be considered standards because cost of industrial hygiene programs depends entirely on the nature of the industry—some are hazardous and others are safe.

"These figures represent a very modest sum when compared to medical costs of \$6 to \$30 and safety costs of \$4.50 to \$66 per employee per year in the group of industries surveyed," he said.

The speaker admitted it would be very difficult to place tangible or cash value on the advantages of an industrial hygiene program. However, some of the more obvious benefits of such a program he listed as follows:

1. It provides facts about plant environment and recommendations which, if followed, will prevent occupational diseases or at least reduce them to a minimum.
2. It saves a substantial amount of money that otherwise would be spent as compensation for occupational diseases.
3. It builds goodwill among employees and in a community by making working environment safe and preventing pollution of the air around an industrial plant.
4. It demonstrates a company's personal interest in health and welfare of employees and improves personnel relations when employees find management willing to investigate and study complaints.
5. It gives facts to key personnel for educating employees in safe work methods on both routine and special production processes.
6. It offers opportunities in development of new industrial processes for study of pilot plant operations so control and safe working procedures can be introduced when a new process goes into full production.
7. It gives an industry with its own hygiene service a chance to plan and coordinate its production and hygiene programs without depending on outside sources for help. Outside sources, such as consultants and official agencies, he said, are sometimes understaffed and overworked.
8. It can serve as a clinical diagnostic aid for plant physicians through results of its environment studies and analyses of biological specimens.

"The cost to industry for its own industrial hygiene service is nominal and fractional compared to the values received," Mr. Patty concluded.

Mr. Weber Answers Some Basic Questions

Q: Do you believe in transferring men from job to job to avoid prolonged exposure to some toxic substance?

A: Not as a routine procedure. I believe that bad conditions should be corrected so that it will not be necessary to make job transfers. I believe in transferring men from job to job as a temporary measure until a hazard can be controlled.

In a small plant, you can't transfer skilled men from job to job without wasting talent. For example, you would not use a first-class molder as a grinder in the cleaning room. Thus the answer again is that unhealthful conditions should be eliminated.

Q: Does analysis of urine samples afford a good index of exposure to lead fumes?

A: Yes. Because there is a correlation between the amount of lead in the urine and the severity of exposure. Thus a man becomes, so to speak, his own air sampling device, and gives a true picture of exposure even on intermittent tasks.

A blood specimen is a better index but most men dislike to furnish blood specimens. A urine specimen is much easier to get.

Q: What yardstick can the foundry use to determine whether it is contributing excessively to atmospheric pollution?

A: Presently I know of none. Smog control ordinances are in process of being changed so that the amount of pollution contributed by various industries can be better evaluated. An existing rule now states that no more than .5 grain of particulate matter per cubic foot of effluent may be discharged from a stack. By allowing pollutants to exhaust through several stacks or to leak out of roof louvers a foundry can evade the rule and still contribute its share to atmospheric contamination. Consideration is now being given to basing the limit of contamination on the pounds of metal melted.

Q: Is there a practical air cleaner for cupolas?

A: None that I know of that is cheap. I believe wet scrubbers in series with electrostatic precipitators will enable the foundry to meet any smog control ordinance, but such installations in some cases cost as much as the foundry itself.

Q: Have you had any experience with the use of wetting agents as a means of alloying dust?

A: Yes. By using water treated with Compound-M we were able to reduce the dust from a manual shake-out 85 per cent. Wetting agents are not a universal remedy, but they do have many applications in foundries. Wet water, for example, will penetrate a baked core much faster than will ordinary water.

Q: Will a suction fan 25 feet above a brass furnace take the poisonous gas away from the furnace tender?

A: Yes and no. That question cannot be answered without more information on the conditions involved. Each job has to be studied and exhaust systems must be tailored for each application. Usually local exhaust hoods are to be preferred to general ventilation.

A British Authority Evaluates a L.I.A. Activity

Proceedings of the Lead Hygiene Conference of the Lead Industries Association, 1948.

Conferences convened by industry have considerable educational value. They are attended by those with practical knowledge of industrial medicine, together with a leavening of official and academic representatives. They are not the place to present new work, but rather provide an opportunity for the discussion of some of the older problems such as, in this instance, the relation between toxicity of lead compounds and their solubility; stipple counts or basophilic aggregation as indicators of lead absorption; the place of lead in urine determinations in the prevention of lead poisoning.

A study of this report provides an interesting contrast between the practice of industrial hygiene in the United States and in this country. We are apt to overlook the great advantages we enjoy as a result of the work of our early pioneers. We are inclined to accept the regulations applying to the lead trades without appreciating their value. This is emphasized when we see that in many States of the U.S.A. there is no compulsory routine examination of lead workers, and that the occupier is not obliged to provide such simple provisions as washing and feeding accommodation. It is true that these precautions are carried out voluntarily by most of the large and more progressive firms, but many of the smaller establishments fall far behind in these simple preventive measures. On the other hand we can learn much from the wide application in the United States of the more accurate laboratory methods in use in the control of lead exposure.

It is refreshing to find Dr. Lanahan emphasizing the value of lead in urine estimations, not as a diagnostic measure, but as a means to prevent excessive lead absorption.

The discussion on treatment is of great interest; the consensus of opinion agrees with that of the more experienced workers in this country, that de-leading is bad therapy and that the patient is better left to get rid of his excess lead by himself. Papers were given on the use of BAL in lead poisoning (the conclusion that it has no use in industrial medicine is what one would anticipate), on the value of porphyrin estimations in the control of industrial plumbism, and on lead-in-air standards. The presence of experts on air pollution at this conference is an interesting feature, in that it draws attention to an aspect of industrial hygiene often overlooked by those concerned only with conditions inside the factory.

The proceedings include a report of a speech by an American industrialist. Here the interest for us lies in the fact that the United States is facing some of the same problems we have had to face here; that industrial medicine is something more than a luxury service, and that it has an important part to play in establishing good industrial relations. "The industrialist.....should examine the philosophy of his daily life and the things he does, to see if he is contributing something to reduce the fears and bitterness which beset us."

R. E. Lane