

BOARD OF DIRECTORS MEETING

New York, N.Y.

March 10, 1950

A meeting of the Board of Directors of the Lead Industries Association was held on Friday, March 10, 1950, at 12:30 P.M., at the Bankers Club, New York City.

PRESENT

Norman Hickman
S. D. Strauss
Clarence Glass
J. M. Bowlby
E. L. Newnouse, Jr.

J. A. Martino
F. E. Wormser
George Mixer

REPRESENTING

American Metal Co. Ltd.
American Smelting & Refining Co.
Anaconda Sales Co.
Eagle-Picher Co.
Federated Metals Division of
American Smelting & Refining Co.
National Lead Co.
St. Joseph Lead Co.
United States Smelting Refining
& Mining Co. Inc.

OTHERS

D. A. Merson
Andrew Fletcher
G. H. LeFevre

M. R. Taylor

National Lead Co.
St. Joseph Lead Co.
United States Smelting Refining &
Mining Co.
United States Smelting Refining &
Mining Co.

Robert L. Ziegfeld, Secretary-Treasurer.

Mr. Felix E. Wormser occupied the chair.

The minutes of the previous Board meeting of December 9, 1949 were approved.

MEMBERSHIP

Philipp Brothers, Inc. - A letter from Philipp Brothers, Inc., inquiring about membership in the Association was considered, attached as Exhibit "A". It was felt that Philipp Brothers were not eligible for either regular or associate membership in the Association, as they are not bona fide producers of lead or lead products. The eligibility of Philipp Brothers' foreign principals, however, was not quite clear and the Board wished to give the matter further study. The secretary was asked to determine the State Department's attitude toward membership of a foreign Government-owned-company, such as Trepca in Yugoslavia.

The secretary was instructed to advise Philipp Brothers, Inc. of their ineligibility and that the eligibility of their foreign principals was being given further consideration.

Day Mines, Inc. - A letter from Day Mines, Inc., attached as Exhibit "B", tendering its resignation as a member of the Lead Industries Association was considered. All members of the Board present expressed regret at the decision of Day Mines and felt that considerable effort should be made to have it reconsider membership because of its importance as an independent lead producer. The secretary explained that he had written Day Mines in reply to its letter, asking reconsideration, and giving reasons, and that he had also talked with an officer and director of that Company by telephone. He had hoped to see Mr. Day, or Wray Farmin, the director, at the recent A. I. M. E. annual meeting as they had planned to attend, but this had been impossible as their plans had changed and neither of them had been present.

The secretary was instructed to reply to Day Mines that the Board had considered its resignation and were loathe to accept it and were, therefore, keeping the matter open.

It was felt that as soon as possible some one who knew Mr. Henry Day well should take the matter up with him and Mr. F. H. Brownell was suggested for this. Mr. Newhouse agreed to take this up with Mr. Brownell upon his return to the city.

Chief Consolidated Mining Co. - A letter from the Chief Consolidated Mining Co., attached as Exhibit "C", resigning from the Association was next considered. The Board regretted the decision of that Company but recognized the circumstances under which the resignation was submitted.

The resignation was accepted and the secretary was instructed to advise Chief Consolidated Mining Co. accordingly and to express the hope that when conditions permit they will again become members of the Association.

Kahn Bros. - The secretary explained that he had had a telephone call from Mr. Adler of Kahn Bros., stating that the value of the Association to his Company was not worth \$200 per year minimum subscription now required by the By-Laws of the Association. Mr. Adler said that he would like to continue membership in the Association at the old minimum rate of \$100 per year as he felt he should be part of the industry organization but that that was the limit of the value which he felt his Company derived from membership.

The secretary was instructed to advise Mr. Adler that it did not feel that it could make a change in the By-Laws at this time and that it was not within its power to make an exception.

TAX LEGISLATION

The question of whether the Association should take an active part in connection with pending or future tax legislation affecting the industry was considered.

It was felt that it was not possible to generalize on this subject and that each tax measure would have to be considered on its own merits. The secretary was directed, however, to advise the members of the House of Representatives Ways and Means Committee that the Lead Industries Association endorses the stand of the American Mining Congress on taxation at this time.

INTERNATIONAL TRADE ORGANIZATION

The question of whether the Association should take a position with respect to House Joint Resolution 236 to provide for United States membership in the International Trade Organization was discussed and it was decided that the Association should take no action for the present.

L. I. A. ANNUAL MEETING

A number of questions in connection with the forthcoming annual meeting of the Association was considered and it was decided:

(1) that instead of printing the Proceedings of the meeting as last year, which involves considerable expense, and which Proceedings rapidly go out of date due to the current nature of most of the talks presented, a mimeographed digest of the meeting should be provided all members and members be informed that more detailed information would be provided, if required,

(2) that representatives of the press be admitted to the meeting but that they not be formally invited,

(3) that a registration fee of \$15 per person be charged to cover all activities at the meeting, and

(4) That inasmuch as all the activities of the Association should be open to the scrutiny of all members, any member should have the privilege of attending Division meetings whether they are members of the particular Division or not, provided, of course, that non-members of the Division should have no vote in the Division's proceedings.

REQUEST FROM MUNITIONS BOARD

In response to a request from the Munitions Board for aid in compiling a small list of reserve officers from the lead industry who could serve as key men in the Board in case of mobilization, the secretary was directed to offer full cooperation to the Munitions Board and to provide the Board with a list of members of the Association with the suggestion that the Board circularize the members for the information required. It was felt that such a request coming from the Munitions Board would receive greater attention from the membership than if it were circulated by the Association.

VACANCY ON BOARD OF DIRECTORS

As a matter of information to the Board the secretary reported that Mr. L. E. Hanley, president of the Hecla Mining Co., had

requested to be relieved as a director of the Association at the annual meeting this year, which would also leave a vacancy on the Executive Committee.

He also reported that the resignation of Tintic Standard Mining Co., as of the end of 1949 had created another vacancy on the Board.

PROPOSED RESEARCH AT JOHNS HOPKINS UNIVERSITY

The secretary reported that Johns Hopkins University had accepted in principle the grant of \$6,000 for research on childhood lead poisoning, approved by the Board on December 9, 1949, but that further study by the University had revealed that an adequate program could not be financed for less than \$10,000 to \$12,000. He also stated that Johns Hopkins, with the Association's approval, would look to other sources for the remaining funds. The Board gave its approval to this procedure.

REQUEST FROM N. Y. ACADEMY OF MEDICINE

The secretary informed the Board he had received a request from the New York Academy of Medicine for a contribution to support its activities, and particularly its library. He pointed out that the Association had made frequent use of the Library of the New York Academy of Medicine and had found it of great assistance. Nevertheless, it was decided as against the policy of the Association to make such contributions and the secretary was instructed to advise the New York Academy of Medicine accordingly.

PROPOSED RESEARCH AT INDUSTRIAL HYGIENE FOUNDATION

The proposed study of "The Influence of Particle Size and Solubility Upon Dosage Rate and Toxicity of Lead" by the Industrial Hygiene Foundation, attached as Exhibit "D", was considered and the Board decided that it had no funds for this purpose at the present time.

It was brought out in the discussion that even more extensive plans for a similar study were now under consideration at the Kettering Laboratory by the University of Cincinnati.

REPORT ON CABLE SHEATHING

The secretary informed the Board that he could give a preliminary report on his investigation of substitution for lead in cable sheathing at this time but that since the study was not fully completed he could defer making the report until a later meeting if the Board so desired. The matter was thereupon tabled.

STATISTICS ON SECONDARY LEAD

The secretary explained that statistics on primary lead production and imports each month were relatively prompt and, therefore, currently valuable but that the secondary lead statistics published by the U. S. Bureau of Mines, while complete, were so late in publication

as to be largely useless for current purposes. He stated that some members were desirous of obtaining a more prompt picture of the secondary lead situation. He suggested that it might be possible to obtain from a small group of the larger secondary producers, who account for perhaps 30 percent of the secondary lead business reports to the Association of the amount of lead scrap received by the secondary smelters each month. Since this would involve the reporting of only one figure and since this figure is also reported to the Bureau of Mines, practically no additional accounting on the part of members would be required and it should be possible to report the figure and publish the report quite promptly after the end of the period covered by each report. This would provide a prompt sample of secondary lead receipts from a large enough segment of the industry to be valuable in determining current trends.

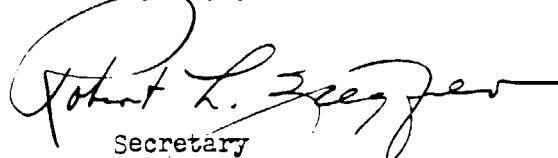
The secretary was instructed to request members to cooperate in this manner.

TIN STATISTICS

Mr. Erwin Vogelsang, chief, Tin and Antimony Division, Office of Materials Distribution, U. S. Department of Commerce, by invitation of the chairman, then entered the meeting and explained that after June 30, 1950 the Department of Commerce would no longer have the power to collect mandatory tin statistics. He stated that he felt that the statistics had value and that they should be continued somehow and he was looking for some means of continuing them. He thought that the Lead Industries Association, because of the interest of many members in alloys containing tin, might undertake the work.

The Board felt that since the Lead Industries Association only represented a segment of the tin consuming industry of the United States, it would be impractical for the Association to gather such statistics and that the Department of Commerce should attempt to carry on the tin statistics even if it were on a voluntary basis.

The meeting adjourned at 2:50 P.M.


Secretary

Board of Directors
Meeting Minutes

Exhibit "A"
March 10, 1950

C O P Y

PHILIPP BROTHERS, INC.
70 PINE STREET
NEW YORK 5, N. Y.

January 24, 1950

Lead Industries Association
420 Lexington Avenue
New York, N.Y.

Gentlemen:

Attention Mr. Ziegfeld

Confirming our telephone conversation of yesterday, we have been considering the advisability of joining your institute as members or having our foreign principals join as associate members.

As you are aware, we are regularly distributing increasing tonnages of Trepca lead in this market, and we are also interested as producers and importers of lead ore.

If you will kindly let us know the conditions of membership the matter will receive our further consideration.

Very truly yours,

PHILIPP BROTHERS, INC.

/s/ E. L. Frank

E. L. Frank

ELF:rmh

LIA00392

N 614.01

Board of Directors
Meeting Minutes

Exhibit "B"
March 10, 1950

C O P Y

DAY MINES, INC.
WALLACE, IDAHO

December 29, 1949

Mr. Robert L. Ziegfeld, Secretary
Lead Industries Association
420 Lexington Avenue
New York 17, N.Y.

Dear Mr. Ziegfeld:

At a recent meeting of the directors of Day Mines, Inc., I was instructed to inform you that our company is resigning from the Lead Industries Association as of December 31, 1949. Our principal reasons are:

1. It is felt that the interests of the producing lead mines in the United States, (a) distinctly differ from those of the domestic lead-consuming and lead-manufacturing concerns, (b) are diametrically opposed to United States corporations having interests in foreign lead producers, and to those of foreign producers themselves, and (c) in many instances vary perceptibly from the policies of domestic smelters and refiners.

2. We differ on the attitude of the Lead Industries Association as expressed to Congressional committees on the broad aspects of federal incentives for American mining.

3. We feel that a large fraction of our annual dues must go for the expense of gathering extensive statistics concerning lead. These are intrinsically excellent, but as miners of the metal we have very little use for the figures.

We realize that the Association has done a grand job in certain directions which are beneficial to the miner, such as the promotion of lead consumption, research on lead poisoning, etc. However, after carefully weighing pros and cons, the conclusion is reached that we do not care longer to participate in the activities of the Association.

Yours very truly,

/s/ Henry L. Day.

cc: Mr. F. E. Wormser

Air Mail.

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N 614.02

Board of Directors
Meeting Minutes

Exhibit "C"
March 10, 1950

C O P Y

CHIEF CONSOLIDATED MINING CO.

EUREKA, UTAH

January 28, 1950

Lead Industries Association
420 Lexington Avenue
New York 17, N.Y.

Gentlemen:

We are in receipt of your bill
for the year 1950, but wish to advise
you that we wish to discontinue this
service for economic reasons.

Yours very truly,

/s/ Cecil Fitch

President

CF:BLC

LIA00394

N 614.03

INDUSTRIAL HYGIENE FOUNDATION OF AMERICA, INC.

4400 Fifth Avenue
Pittsburgh 13, Pa.

January 5, 1950

Mr. Andrew Fletcher, President
St. Joseph Lead Company
250 Park Avenue
New York 17, New York

Dear Mr. Fletcher:

Herewith is a proposal for a laboratory study of lead which we have had in mind for some time and one for which our laboratory is, I believe, particularly well fitted.

In view of the extensive researches on the toxicology of lead over so many years and by such outstanding investigators, it may seem a little brash to suggest that we can make a new and useful contribution at this late date. The answer to this is that our proposal is not directed to the study of lead toxicity itself, but rather to the determination of a more elementary relationship between the character and quantity of lead in the air and the resultant effective dosage rate in exposed workers. That is, for a given atmospheric concentration, how much lead actually penetrates to the deep lungs where it dissolves and so gets into the circulating blood, and how much is trapped in the upper respiratory tract to be rather quickly excreted by coughing and swallowing? How does this vary with the size and other characteristics of the dust? Clearly, these questions require answers to give a firm base for the fixing of tolerable atmospheric lead concentrations. No distinction is made at present between relatively coarse dust and fine lead fume, yet for the same weight concentration there is a marked difference in the proportion of inhaled material which is deposited in the lungs. This is what we mean by determining the "effective dosage rate."

As you know, we are now engaged in a study of lung penetration and retention of dust versus particle size. A copy of our paper describing this work is enclosed. The principles of this study are just as applicable to lead as to any other particulate matter. This experience provides a proper base, therefore, for the proposed study. Because of this background, I am submitting the outline to you for suggestions and advice as to possible arrangements by the lead industry for financing the study. Our proposal is based upon a full-time program for one year during which, I feel certain, some much needed information can be secured.

We shall appreciate very much your comments and advice.

Sincerely yours,

/s/ THEODORE F. HATCH

Theodore F. Hatch
Laboratory Director

N 614.04

C O P Y

INDUSTRIAL HYGIENE FOUNDATION OF AMERICA, INC.

4400 Fifth Avenue

Pittsburgh 13, Pa.

January 6, 1949

PROPOSED STUDY OF THE INFLUENCE OF PARTICLE

SIZE AND SOLUBILITY UPON DOSAGE

RATE AND TOXICITY OF LEAD

1. The Problem

Among the many so-called "maximum allowable concentrations" for toxic substances encountered in industry, that for lead (0.15 mg./m^3) is one of the most highly regarded. It is derived from rather extensive systematic field studies and has proved to be a standard of real practical value as a guide in the control of this industrial hazard. It was, however, derived from somewhat limited industrial experience in respect to significant differences in the character of exposures, namely, variations in the lead compound and in the particle size of the dust. Hence, within the experience upon which it is based, there is no absolute proof that it applies with the same meaning to all forms of lead exposure encountered in industry. On the contrary, there is increasing evidence that it does not. Several reports have indicated that certain types of exposures above 0.15 mg./m^3 have not produced the expected evidence of lead intoxication. If this is so, what are the reasons? Because of the widespread dependence upon the present tolerance level, some of these studies are looked upon with doubt. Further research is required to provide a more complete basis upon which to appraise lead exposures.

A primary assumption upon which any standard of tolerable atmospheric concentration is based is that the quantity measured in the air is directly related to and therefore measures the effective dosage rate in an exposed individual; that is, the amount that gets into the deep lungs. In the case of lead, the important route of intake is through the respiratory tract and the only effective lead is that deposited in the alveoli. Deposition in the upper respiratory tract is of little concern since the particles deposited here will be rather quickly spit out or swallowed with minimum absorption by solution. Further, it is known that the intestinal route is of little practical importance in the causation of industrial lead poisoning.

Thus, one factor of primary importance in determining the tolerable atmospheric concentrations is the particle size of the air-borne dust which determines how much gets into the lungs. In contrast to a lead fume, it is easily possible to have a lead dust exposure including such large particles (above 2-3 microns perhaps) that (to give the same effective lung dosage), would require an atmospheric concentration many times greater. For example, one 5 micron particle, which would not get into the lungs to be absorbed, weighs as much as 1000 half-micron particles, about one-half of which would be deposited in the deep lung (alveoli) during inhalation.

The second factor of importance is the solubility rate of the lead from the lungs. For a given rate of inhalation, this determines the rate at which the lead gets into the blood circulation, a necessary first step before systemic poisoning can occur. This factor, on which considerable research has been done, is recognized in the current assumption of a lower toxicity of lead sulphide and lead silicate, for example, compared with more soluble lead compounds. It is also markedly related to particle size and it is entirely possible that there is an upper limit of size, even for the more soluble compounds, above which the solubility rate will be so low that the effective dosage rate for a given atmospheric concentration will be of relatively little significance.

These points are widely recognized, but at present there is no adequate quantitative basis upon which to allow for them in the interpretation of lead exposures in industry--hence the rigid adherence to the present limit.

2. Proposed Studies

Systematic research on the toxicity of lead has been extensive, more so than for most other toxic particulate substances encountered in industry. To realize full benefit from the past research, we believe that further studies of relatively modest magnitude and duration, should be undertaken. These will be for the express purpose of demonstrating on a quantitative basis in experimental animals the influence of particle size and solubility, upon the ratio between effective dosage rate and atmospheric concentration.

Such relationships in respect to other materials are under current investigation in the Foundation's research laboratory, and techniques for quantitative study along these lines have been developed. **These facilities are** offered for investigation of the lead problem. Specifically, it is proposed to set up a series of nine parallel test clouds for exposure of experimental animals, all with the same atmospheric weight concentration. Three different lead compounds will be employed, varying in respect to solubility from high to low. For each compound, three different sizes will be studied, to give significant differences in degree of lung penetration. Current work on lung retention in relation to particle size gives us a reasonable basis for selecting a range of sizes for study.

The rate of lead absorption will be measured in terms of urinary output and analysis of lung and other organs of sacrificed animals. The three compounds will be investigated in progression, but for each the three different test clouds, in respect to size, would be studied simultaneously. A quantitative comparison of relative amounts of lead absorbed and excreted will give a direct measure of the variation in effective dosage rate for the same atmospheric concentration.

3. Equipment, Personnel and Cost

(a) Equipment - Three exposure chambers (duplicates of others now in use) will be required together with constant feed dust generators, electric precipitators and other accessory apparatus for controlled exposures. Analytical apparatus and special services by other Institute laboratories will be required but no unusual or expensive analytical apparatus.

Proposed Study of the Influence of Particle Size and Solubility
upon Dosage Rate and Toxicity of Lead.

3.

(b) Personnel - The work will be under the supervision of the Laboratory Director and the Research Biochemist. In addition, two full-time technicians and a half-time animal caretaker will be required. Special laboratory services from the Mellon Institute will be charged separately.

(c) Costs - It is estimated that a useful study can be completed in one year; three months preparing the test materials and perfecting experimental and analytical techniques, and three months of exposure and analysis on each of the three compounds. On this basis, the costs would be as follows:

1. Equipment and supplies.....	\$ 4,166.00
2. Personnel; supervisory & direct.....	12,500.00
3. Overhead (20%).....	<u>3,333.00</u>
	\$20,000.00

Theodore F. Hatch
Laboratory Director

TFH:R

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