ETHYL CORPORATION
100 PARK AVENUE BUILDING AT 41ST STREET
NEW YORK 17, N. Y.

October 26, 1955

Dr. R. A. Kehoe
Kettering Laboratory of Applied Physiology
College of Medicine
University of Cincinnati - Eden Avenue
Cincinnati 19, Ohio

Subject: Published Items

Dear Dr. Kehoe:

We are attaching herewith two items which have been sent to us from the Central Region. One from Mr. Hornbeck is an article entitled, "Lead is Dangerous" and appeared in the June 1955 issue of Greater Minneapolis, official organ of the Minneapolis Chamber of Commerce.

The second is a list showing concentrations of material in the air, which is being distributed by Mine Safety Appliances Company.

We are reasonably sure there is nothing new in these articles of which you are not familiar but thought you might care to have them for your files.

Very truly yours,

J. T. Beckwith

JTB:ll
Attach. 2

Medical Memo

Lead is Dangerous!

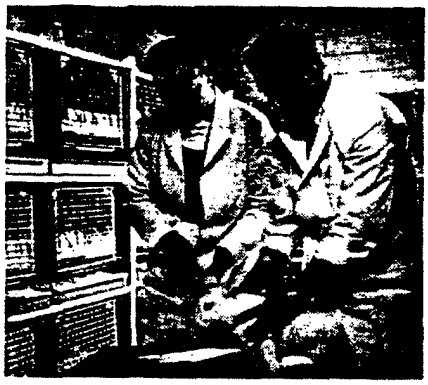
The accompanying article is one of a series written by three Minneapolis physicians under sponsorship and approval of the Hennepin County Medical Society. Readers seeking additional information pertaining to the contents of these articles or those wishing to get in touch with the author of a specific article are asked to call the Hennepin County Medical Society, FI. 1141.

Lead is one of the oldest metals known to man and it has long been recognized as a cause of disease. It gives a clinical picture which may resemble other things but which physicians have learned to identify as lead poisoning.

To acquire lead poisoning the lead must enter the body and be absorbed in sufficient quantity to cause the disease. The skin is a very efficient protective barrier to many things and among them are most of the lead compounds. This makes it possible for men to work with the metal and its compounds without developing lead poisoning. Just because a man works with lead is no justification for assuming that when he is ill that he is suffering from lead poisoning. Even when a workman is excreting lead in his urine he may not be suffering from lead poisoning. It may only indicate that he is absorbing lead and getting rid of it at a similar rate without causing any damage.

The chances of exposure to lead both inside and outside of industry are numerous. The soft metal lead is familiar to everyone. It is derived from an ore called galena where the lead is in the form of lead sulphide. In the process of smelting and refining and in many industrial processes heat is applied. Whenever lead is raised to a high enough temperature some of it "boils off" in the form of a vapor. As this lead vapor cools it recrystalizes into very fine particles which float in the air as a lead fume. Lead fumes are readily breathed into the lungs and are easily dissolved and absorbed. This is why lead poisoning is always a danger where lead is melted.

The danger of poisoning from hot lead is not limited to processes where heat is deliberately applied. For instance, in shooting galleries, where lead bullets are stopped by a metal plate, the heat generated by the impact may vaporize enough lead to poison the attendant who is exposed for many hours. Even soft soldering if it is prolonged and done in a confined space may create a lead hazard.



U. of M. scientists, Dr. William G. Kubicek (right), professor of physical medicine, and Dr. Alan P. Thal, research assistant in surgery, examine a rabbit in a pancreatitis experiment. Photo taken at the new Mayo Memorial Hospital.

In industry one of the common sources of lead poisoning is the lead oxide powder used in the manufacture of storage batteries. The powder is fine and unless it is handled carefully throughout all stages a dusty atmosphere is created. Workmen inhaling the dust may readily absorb the lead through the lungs.

Even your old storage battery after it has served its purpose in your car may again create a lead hazard during its break up for salvage of the lead. Furthermore, battery cases burn well and have been tried by some low income families for fuel. Lead poisoning of the whole family has resulted.

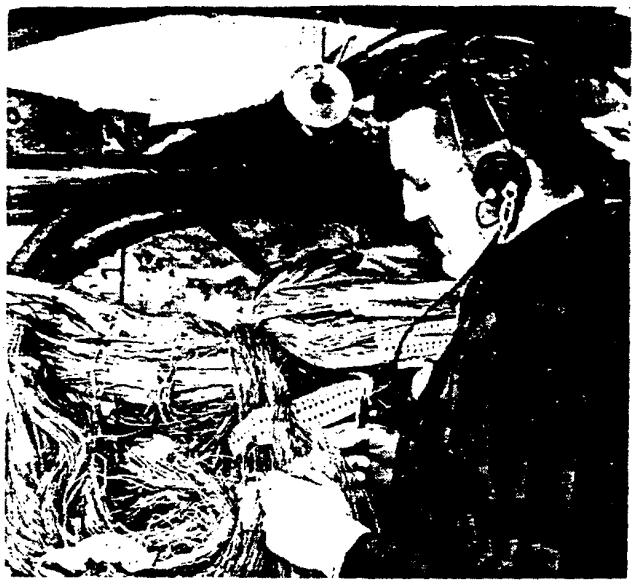
Tetraethyl lead differs from most lead compounds in that it is readily absorbed through the skin. This constituent of ordinary gasoline makes it dangerous to put your hand in motor gasoline. Two years ago in Minneapolis it was discovered that tetraethyl lead can cause lead poisoning even after the gasoline is burned. In the course of removing carbon from automobiles, by a new process, a workman developed lead poisoning from inhaling the carbon dust. An analysis of the carbon removed showed that it was nearly 50% lead by weight. Demonstration of the hazard resulted in redesigning of the machine by the manufacturer so that the process is now safe for workmen throughout the United States.

Lead compounds have for many years been used in the manufacture of paint. In recent years most of the paints intended for application to furniture and inside walls of houses do not contain lead. For outside painting, however, and for application to metal structures exposed to the weather, lead paints last better. Such paints continue to create a lead hazard after they are applied. In the hot riveting of steel bridges or repair of painted hulls of boats the application of heat may release lead fumes from the paint and endanger the workmen. In parts of the country where small children sometimes do not get a well-balanced diet, babies have died of lead poisoning after gnawing the lead paint off the furniture or outside of the house.

Even in the manufacture of such beautiful things as glazed pottery, dishes, and stained glass windows, workmen have to contend with the hazard of lead. The frit, which when heated becomes the glaze on dishes, contain a significant proportion of lead. The gray paint which provides the shading on stained glass windows contains a lot of lead and has been known to cause lead poisoning during its application.

Years ago lead poisoning occurred because lead was sometimes used in faucets of beer kegs. Not so long ago cases of lead poisoning were traced to flour ground by a certain mill. It was discovered that the millstone had broken and been repaired with lead. In another instance several roofing men developed lead poisoning from roofing nails which they held in their mouths. Investigation showed that the manufacturer had run out of zinc to coat the nails and had substituted lead.

Animals, too, sometimes become poisoned by lead. Ducks sometimes eat too many lead pellets picked up from the bottom of ponds where a lot of shooting has taken place. Cows have been poisoned by eating lead bullets picked up on a rifle range during pasturing. It is reported that at one time a whole group of race horses developed lead poisoning from racing on a dusty dirt track which had formerly been the dumping ground for a lead smelter.



Cable splicer must be able to identify each pair of wires in a cable, match them up and then splice them in a water-tight joint. Some telephone cables in Minneapolis contain as many as 3,636 pairs of wires.

Does the Northwestern Bell Telephone Company have any employe benefit or pension arrangements?

Yes. Northwestern Bell employes have had a Benefit and Pension Plan for 42 years. It protects against loss of pay due to sickness and accidents, aids an employe's dependents in case of death, and provides for a retirement income.

All costs of maintaining the Plan are paid by the company. Service pensions are paid from a trust fund administered by the Bankers Trust Company of New York. This Plan has been considered to be a major help in attracting skilled and dependable people into the telephone business and encouraging them to make a career of telephone work.

Does Northwestern Bell have any means of conveying information to employes?

Yes. This activity is considered to be most productive and important. The Northwestern Bell magazine, a monthly publication, is mailed to each employe's home. It gives employes information on matters of current interest in the company and over the Bell System as a whole. In addition to the magazine, the company uses motion picture training films, bulletin board announcements, discussions between supervisors and their force groups, and other audio and visual means of communication. The employe information program is a joint responsibility of the operating, personnel and public relations departments.

What is the philosophy of the company as it pertains to the customer, the employe, and the stockholder?

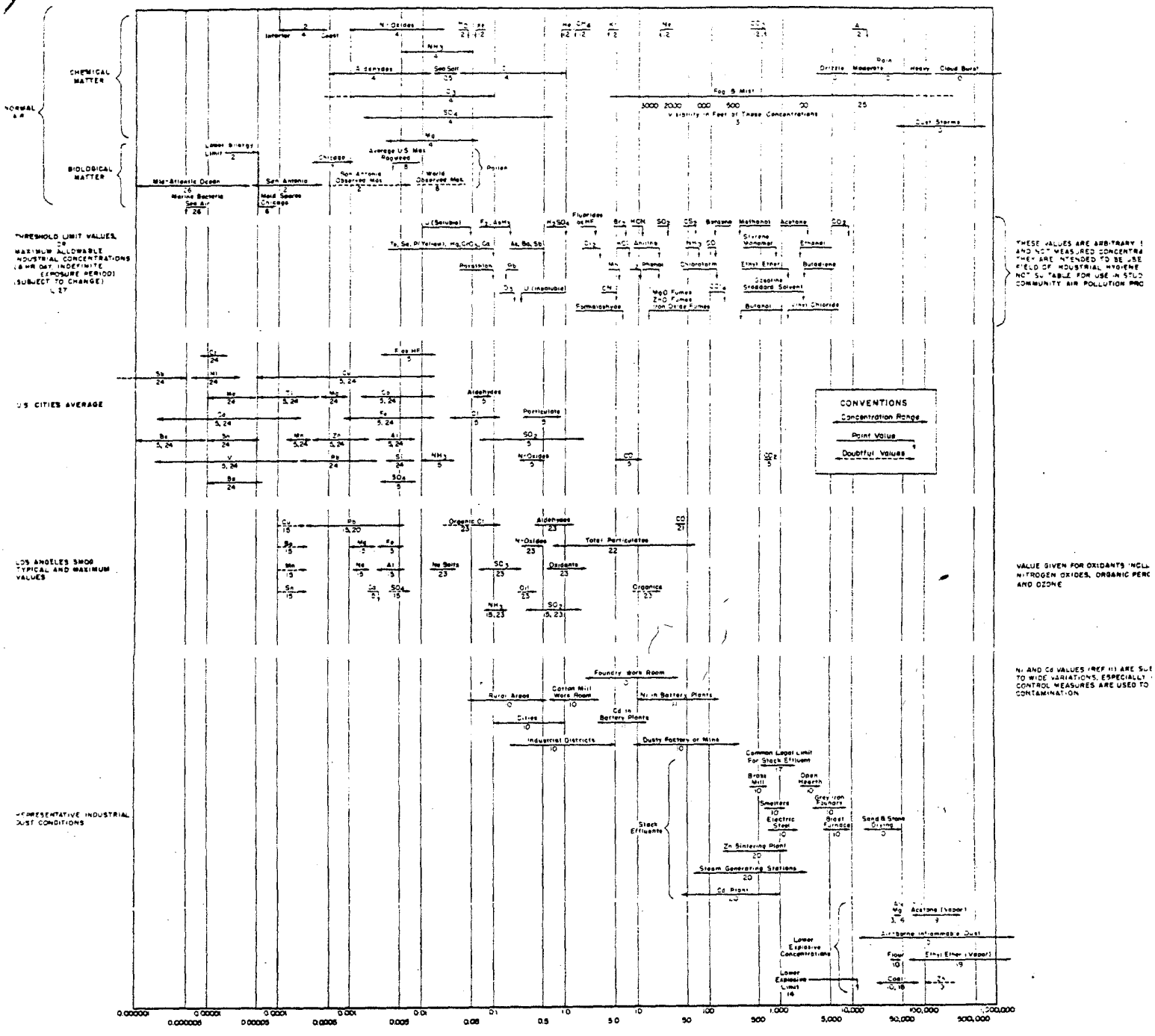
The policy of the company as a part of the Bell System is to provide the best possible telephone service, at the least cost to the public, consistent with fair treatment of employes and the financial safety of the business.

Information operator has access to numbers arranged both alphabetically and numerically by street address. Information operators in Minneapolis handle more than 50,000 requests for information each day.

As long ago as 1927, it was expressed this way at a national meeting of Public Utility and Railroad Commissioners: "This company believes that earnings that are less than adequate must result in telephone selvice • that is something less than the best possible. Earnings in excess of these requirements must either be spent for the enlargement and the improvement of the service furnished, or the rates charged for the service must be reduced. This is fundamental in the policy of the management."

Work crew forces cable into conduit in expanded service plan.

THE CONCENTRATIONS OF MATERIALS IN THE AIR



CONCENTRATIONS - Mg/cu. M.

Issued as a public service by Mine Safety Appliances Co.
201 N. Braddock Ave., Pittsburgh 8, Pa.
Prepared by Southwest Research Institute

Note: The numbers represent bibliography references which can be furnished upon request.

Chart No. 1500-1

MINE SAFETY APPLIANCES COMPANY

201 NORTH BRADDOCK AVENUE

PHONE CHURCHILL 1-5900 **PITTSBURGH 8, PA.** CABLE "MINSAF" PITTSBURGH

October 6, 1955

HERE'S A HANDY CHART

ON AIR POLLUTION

YOU'LL WANT TO KEEP!

Useful and compact, the enclosed chart indicates the relative concentrations of materials in air. Scaled to milligrams per cubic meter, the chart gives data on the chemical and biological matter present in normal air.

This up-to-date scientific information was compiled and prepared by Southwest Research Institute and is presented as a public service by M-S-A to aid in the evaluation of air pollution*. Note that the small numbers below the convention arrows refer to bibliography references which can be furnished upon request.

Because we believe this chart will prove of value to everyone concerned with air contamination problems, we are offering additional copies free for distribution to interested groups.

To order your supply just indicate your requirements on the convenient reply card and mail it today.

Sincerely yours,

MINE SAFETY APPLIANCES COMPANY

J. B. Davies, Manager
Industrial Department

JBD:mb
Enclosures

* It is the first in a short series of convenient data on this subject to be distributed in this manner.

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