

FOR RELEASE NOT EARLIER THAN  
12:00 NOON, MONDAY, APRIL 29, 1963

THE EXPANDED RESEARCH PROGRAM  
OF THE  
LEAD INDUSTRIES ASSOCIATION, INC.

By

Schrode F. Redtke  
Director of Research  
Lead Industries Association  
292 Madison Avenue  
New York 17, N.Y.

Lead has been a boon to man from the dawn of history to the space age. In a separate paper, we discussed how lead is playing a vital role in key applications in space technology. Yet, four years ago when I first spoke to you about our research program, there were many who undoubtedly felt there was little to learn about lead, that our research would naturally repeat much of what was already known.

To the contrary, our research has substantiated my claim that lead is a modern metal, that the future is bright, that the goal of market growth will be achieved, but, only through effective marketing and promotion of our research results. Much has been accomplished, but more remains to be done.

Automotive Market

Research in the field of fiber metallurgy has yielded a solder tape and solder form with promising automotive applications. This use of lead should extend to appliances, plumbing, and maintenance usage. Improved automotive and appliance bearings will also result from this work. In addition, evaluation of fiber metallurgy bearings for railroad usage has indicated a life extension of 50 to 75% over existing babbitt-type bearings and at the same time minimization of the risk of catastrophic failure from faulty lubrication.

(IM-9, page 6)

(Presented at the annual meeting of the  
Lead Industries Association, Chicago, Ill.  
April 29, 1963)

-2-

With the transition from linseed oil based ferrous metal primer paints to water reducible systems for many applications, particularly in the automotive field, existing lead pigments stood to lose ground because of the new vehicle systems. We have developed through our research, an effective baking type water reducible primer compatible with several new lead pigments. These new systems are far more efficient than available primers. Promotion of this development is now under way.

#### Electrical Industry

The research to permit continuous extrusion of the high strength lead cable sheathing alloys, initiated by Lead Industries Association and continued by the Expanded Research Program, has contributed markedly to the expanded usage of continuous presses and renewed interest in the continuous extrusion of the stronger lead alloys. Since our research was completed, over 61 of these presses have been sold. (DA-15, Report #4, page 12)

The idea of interference hardened lead alloys, initiated by the Expanded Research Program, has led to new alloy systems hitherto unknown. These developments have also led to the concept of direct conversion of particulate lead to wrought forms, i.e., sheet and extrusions. Important commercial applications appear probable for these new alloys in the electrical industry, particularly for the lead acid storage battery and for cable sheathing. As one cable manufacturer reported after study long lengths of sheathing produced on commercial presses, "these new alloys offer virtually the strength of aluminum, can be produced on conventional equipment with only minor modification, BUT THEY HAVE THE CORROSION RESISTANCE OF LEAD".

This development is of particular importance to the cable sheathing industry abroad where lead is only just beginning to feel the competitive threat of other materials, particularly plastics and aluminum. This is a most serious threat when one considers that one-third of the lead consumed in Europe

is for cable sheathing. (D4-3, page 5, D4-45, page 13)

Architectural and Construction Market

The newest technical advance for lead is its application for sound attenuation in building construction. Although the potential is great, it will not be an easy market to exploit. Lead must be sold on the basis of performance--attenuation/weight ratio, attenuation/space ratio--as a function of its price in place. Australia has moved ahead rapidly in this field. The rest must follow suit. (D4-16, page 7)

Inexpensive lead sheet is a requisite of this market, and the continuous sheet casting process is a vital factor in expanding lead's usage in the acoustics field as well as for roofing, damp courses and flashing. Continued technical developments in this area have stimulated widespread interest. (D4-67, page 17)

The lead-asbestos anti-vibration pad has been used historically to isolate buildings from ground transmitted vibration (from railroad sources principally) or to prevent the transmission of vibration from heavy equipment to buildings and adjacent equipment. Research is under way to provide the architect and designer with engineering data to extend the application of this product to new equipment areas. (D4-7, page 5)

Continued research by the Expanded Research Program in lead pigments for exterior and interior application in the building trades should enable us to halt the decline in sales here. Emphasis is on compatibility with water reducible vehicle systems. (LC-50, page 22)

Our ceramics research effort has contributed much to the steady growth of lead usage in the ceramics and porcelain markets. Through this effort we are developing lead-based porcelain enamels compatible with special grades of galvanized steel for building and appliance usage. (Ceramic Fellowship Program, page 19)

The new high-speed, extremely low-porosity lead plating system for ferrous substrates offers an improved lead-coated steel principally for architectural, automotive and container applications. (LB-36, page 34)

#### Chemical Industry

Research on the synthesis of new lead organometallic compounds had led to materials with significant activity as biocides, fungicides, miticides, rodent and moth repellants, stabilizers for plastics, anti-fouling agents, and lubricant additives. (LC-13, page 19, and LC-26, page 20) In the latter case, one of the newly synthesized compounds has shown activity ten times better than the best commercial additive. Development of a commercial lubricant system employing this additive is under way. (LC-49, page 22)

Soon we will announce availability of samples of these new compounds for testing by chemical companies throughout the world. Samples as well as technical data will be provided to stimulate interest in and permit evaluation of our new lead chemicals. With the growth of the chemical and polymer industries, we are concentrating a considerable part of our effort to develop a substantial new growth market for lead compounds.

#### Summary

Our research has shown and will continue to show that lead, despite its age, is a new and modern metal, that improvements can be made to meet competitive threats, that much remains to be learned about it through our technical reports, abstracts, our Research Digest, and via meetings with consumer industry people, lead is receiving technical and scientific recognition.

In cooperation with our own Lead Industries Association as well as with the lead trade associations abroad, consuming industries are being made aware of the progress of our research.

Beyond the stimulation of scientific interest are the solid commercial

goals being achieved in sound and vibration attenuation, alloy development for the electrical industry, and new chemical uses for lead. For these achievements alone, we believe your research funds have been well spent.