Lead Industries Association, Inc.
292 Madison Avenue • New York, N. Y. 10017 • Telephone: (212) 679-8030

July 25, 1973

SUBJECT: PUBLICITY STATUS REPORT
SECOND QUARTER -- 1973

TO THE MEMBERS OF THE LEAD INDUSTRIES ASSOCIATION, INC.:

We are pleased to send for your review, the second quarterly report for 1973 on LIA publicity activities. Also included are photo copies of many of the articles from our scrapbook.

I would appreciate any comments you might have on this report, and would also be pleased to hear from you if you have suggestions for inclusion in our publicity program.

Very truly yours,

Jerome F. Smith

JFS:lm
Enclosure

Jerome F. Smith
Secretary & General Manager

LEAD INDUSTRIES ASSOCIATION
TRADE PUBLICITY PROGRAM
SECOND-QUARTER REPORT
April - July, 1973

Highlights of current publicity projects discussing lead applications.....in LEAD ACID BATTERIES:

* A feature story on the use of battery-powered special-purpose personnel carriers to replace internal combustion vehicles at Morton Salt Company's Painesville, Ohio mine -- deepest salt mine in U.S., published in SKILLINGS MINING REVIEW.

* Two articles concerning the use of battery-powered buses to help solve the nation's mass transit problems, have been published in AMERICAN METAL MARKET, MACHINE DESIGN, and THE NORTHERN MINER.

* A new 18-ft.-long pleasure boat that is expected to provide quiet for both fishermen and motor sailors. The recently-released article has been featured in THE BATTERY MAN and DESIGN NEWS magazines thus far.

A major release discussed the unique Consolidated Edison Cable Splicing School which specializes in joining, splicing and wiping UNDERGROUND ELECTRICAL CABLES.

* A two-page feature describing the school and highlighting how students are taught to wipe lead-sheathed cable joints was published in the May 1, 1973 issue of ELECTRICAL WORLD.

Feature articles on the use of SHEET LEAD SOUND BARRIERS for:

* A newly developed acoustical/thermal building panel used to quiet the sound of ductwork and fans at the Long Island Lighting Company's Northport, N.Y. plant. This story was the color-cover feature story of the May 15, 1973 issue of ELECTRICAL WORLD magazine and it was also featured as a one-page placement in PUBLIC UTILITIES FORTNIGHTLY, a two-page feature in METAL BUILDING REVIEW, a one-column feature in FACTORY, and a three-column feature in AMERICAN METAL MARKET.

* Montreal's Justice Building, which features the use of sheet lead sound barriers in the building's walls and at the partition line along the building's heating and air-conditioning system. Published in AMERICAN METAL MARKET.

A feature article concerning the introduction of LEAD CLAD STEEL was given prominent attention in such magazines as PURCHASING, MATERIALS ENGINEERING, PROGRESSIVE ARCHITECTURE, CHEMICAL EQUIPMENT and AMERICAN MACHINIST magazines.

Four recently-released feature articles, which have been distributed to a variety of monthly metalworking, design and engineering magazines, have been published in the daily newspaper, AMERICAN METAL MARKET.

The articles include such subjects as:

* LEAD SHIELDING used for nuclear medicine shipping containers and shields.

* LEAD CASTING used to produce an equestrian statue of the the last King of the Americas, King George III. Toppled from its pedestal by Revolutionary War patriots on July 9, 1776 and chopped to pieces to be used for bullets, parts of the statue were unearthed near Wilton, Conn., where they were believed to have been buried while enroute to a Continental Army armory.

* LEAD SOLDER PREFORMS used to mass-produce soldered joints for a variety of electronic and other products.

A feature article discussing the use of LEAD SHIELDING for an anti-skyjack X-ray device being tested for use at airports, has appeared in MACHINE DESIGN, SECONDARY RAW MATERIALS and ELECTRO-MECHANICAL DESIGN magazines. LEAD SHIELDING also was featured in a by-line feature by P.E. Robinson in AMERICAN METAL MARKET.

The fourth article to be published discussing the use of CHROME YELLOW PAINT to improve highway safety has been published as a three-page feature in AMERICAN PAINT JOURNAL magazine.

Publicity announcing the Annual Lead Industries Meeting appeared in such magazines as WASTE TRADE JOURNAL, IRON AGE, METALWORKING INTERNATIONAL, AMERICAN PAINT JOURNAL and in the AMERICAN METAL MARKET.

Releases announcing the re-election of D. Broward Craig to president and chairman of Lead Industries Association, Inc., appeared in more than 20 publications including MINING CONGRESS JOURNAL, AMERICAN METAL MARKET, SCRAP AGE, THE NORTHERN MINER, and ADVANCED BATTERY TECHNOLOGY.

The news release announcing the Second International Soldering Conference, which was jointly sponsored by the Lead Industries Association and the American Welding Society, appeared in more than 10 magazines including IRON AGE, WELDING JOURNAL, DESIGN NEWS, WELDING DESIGN & FABRICATION and AMERICAN METAL MARKET.

Eight papers concerning the use of lead in a variety of products and its availability were delivered during the Annual Meeting. More than 130 copies of the papers have been delivered to various editors.

Two literature availability notices were published in various magazines during the reporting period:

* "Publications and Films" was published in more than 5 magazines.

* "Lead -- A Modern Design Material" was published in more than 25 magazines.

Watch for publication of the following ready-for-distribution feature articles:

* Ninety Tons of Lead Batteries Provide Uninterruptible Back-Up Power For IBM Computers

* New Motorola "Tweeter" Loudspeakers Feature Use of Lead Zirconate-Titanate

* The Extensive Use of Massive Extruded Lead Tubes For New Copper Mine Acid Mist Precipitator

* The Use of Lead Acid Batteries To Power New England Flood Warning System

Second Quarter
Summary of Publicity Activities

Feature Articles Published	19
News Articles Published (including literature availability announcements)	60
Feature Articles Completed	8
News Release Completed (including personnel announcements and literature availability announcements)	10
Feature Articles in Preparation	7
Editorial Request Responses	146 *

* NOTE: This figure includes the more than 130 copies of papers delivered during the Annual Meeting provided to editors at their specific request.

LIA14994

Skillings Mining Review

MAY 12, 1973

Battery-Powered Personnel Carriers at Morton Salt Mine

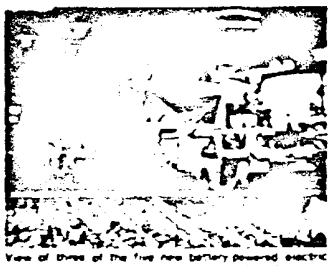
At Painesville, Ohio, Morton Salt Co. operates the deepest salt mine in the U. S. to produce about 1.5 million tons of rock salt a year. The 2000-ft. deep mine, situated on the shore of Lake Erie, about 30 miles east of Cleveland, also has the distinction of tapping a vast bed of what is believed to be the world's largest deposit of rock salt. The bed covers an area of about 100,000 square miles of rock salt, and it extends under Lake Erie, into Canada as far as southern Ontario, and diagonally across the U. S. as far south as West Virginia.

At Morton's Painesville mine, salt is mined by the room-and-pillar method. In this mining technique, about half the rock salt is removed from the working face of the mine whereas the remainder is left as the form of pillars to support the mine roof. The first step in mining salt at Painesville is blasting. A 10-ft. deep undercut is made at the base of the work face, and a series of multiple holes for explosives are drilled mechanically over the same distance into the face of the wall. The work face is blasted at the end of a work shift, providing about 500 tons of rock salt to be processed by the next work shift.

Supervisory personnel play an important role in the safe and efficient operation of the mine. One of their more important jobs is to check the work face to see that it has been properly undercut at the base, and to ensure that the holes for the explosives have been drilled properly and placed. Just as important, the supervisors also check to see that the explosives have been set properly before the work face is blasted. Because the work face being blasted can cover as much as 4000 ft., the supervisors must be transported quickly from one point to another along the work face.

Until recently, supervisory personnel were transported to and from work face areas by diesel-powered personnel carriers. A maintenance crew, operating from an underground shop on the mine's working level, also used the carriers for transportation to and from job assignments. In addition, (Continued on page 8)

Scene of a specially-designed machine undercutting the base of a rock salt work face to 10 ft. deep at Morton Salt Co.'s mine at Painesville, Ohio. At the end of a work shift, the face is blasted to provide about 500 tons of rock salt for initial processing underground before being hoisted to surface for additional treatment.



View of three of the five new battery-powered electric personnel carriers purchased by Morton Salt Co. to replace diesel-powered vehicles at its salt mine at Painesville, Ohio. The units are shown awaiting check-out at the motor pool, situated at the 2000-ft. deep working level of the mine.

The electric vehicles in service at the Painesville mine are designed to embody features of quiet operation, comfort, rugged construction, and give maximum distance between battery charges. The mechanical design of the vehicles is simple and requires a minimum of maintenance. The batteries used to power the traction of the new vehicles are 6-volt. The batteries range in amps from 190 to 225 and, unlike automobile batteries, they take repeated deep cycling, or charging and discharging. The largest of the five vehicles is powered by a 36-volt, d.c. traction-type motor that transmits power to a worm gear differential through a matched set of three drive belts.

AUTOMATIC BATTERY CHARGER EMPLOYED

An automatic battery charger has been incorporated in the design of the five vehicles, and it is a rugged and dependable piece of equipment. Vehicles maintenance personnel check the water level in each of the lead acid battery cells at least once a week, refilling them with water when required. They also add water at the end of the charging period, rather than at the beginning, to avoid the possibility of the solution freezing over because of heat expansion during the charging period. In addition to their use in transporting supervisors, the electric vehicles are used to transport personnel who supervise the first phase processing the rock salt undergoes after it is blasted from the work face. Performed by portable equipment temporarily installed adjacent to the work face, the first phase processing includes crushing large chunks of rock salt and screening them to uniform size.

Storage area for the 1.5 million tons of salt mined annually at Morton Salt Co.'s mine at Painesville, Ohio. When not in use, the stockpile, situated outdoors, is covered with a tarpaulin.

The uniform-size rock salt is hoisted to the surface where it is screened and processed further. Some of the salt is packaged in a variety of grades and container sizes, but most of it is transferred to large storage silos or piles to await shipment. Salt from Morton's Painesville mine primarily is used to melt snow and ice from streets and highways in a wide area extending from states bordering the Great Lakes to those in the northeast and as far into the southern region as West Virginia. Some of the salt from the Painesville mine also is used for a variety of agricultural and industrial purposes.

Feature article:

Battery-Powered Personnel Carriers Replace Internal Combustion Vehicles at Morton Company Salt Mine

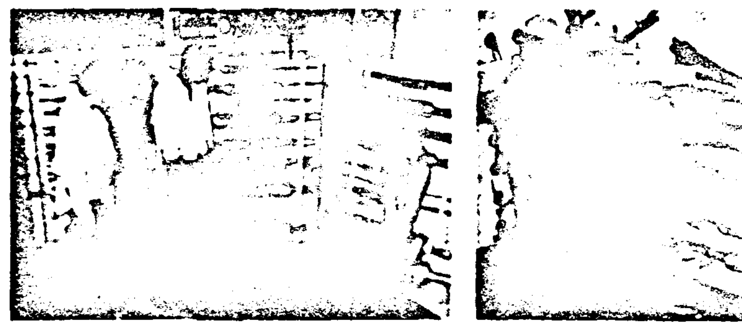
Published in:

SKILLINGS MINING REVIEW

May 12, 1973

LIA14995

Electrical World



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'Hands-on' training for lead-sheath wiped joints

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Procedure for wiping a joint

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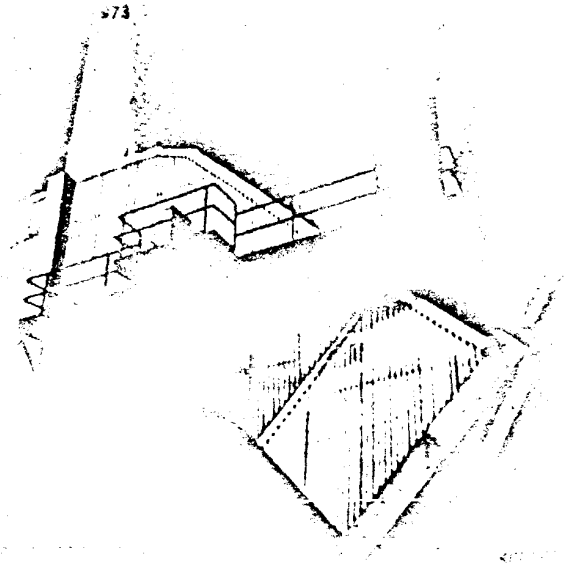
Exclusive feature story for:

ELECTRICAL WORLD -- May 1, 1973

Consolidated Edison's Lead Cable Splicing School

NOTE: ELECTRICAL WORLD carried color-cover feature story on the use of sheet lead to quiet Long Island Lighting Company facility in the magazine's following issue, May 15, 1973.

LIA14997



COVER STORY FEATURE ---

Use of sheet lead to quiet sound of Long Island Lighting Company Facility.....

One of six feature placements

ELECTRICAL WORLD - May 15, 1973

NOTE: This feature placement has been reprinted for use in the LIA promotional program directed to the sound control market.

LIA14998

Bedroom community's quiet undisturbed

As a result of an extensive-oriented construction project now nearing completion, the Long Island Lighting Co (Lilco) power plant at Northport, N.Y., remains one of the utility industry's quietest fossil-fuel generating stations.

The problem Lilco faced was, "How to increase the capacity of a large generating station in the middle of a 'bedroom' residential community without generating huge noise problems?" Lilco's solution involved the extensive use of acoustic barriers, plus noise-dampened intake ducts—both relying on the noise-deadening characteristics of sheet lead.

There are three 400-Mw generating units at the Northport plant. The recent construction program involved the installation of new equipment as follows:

- Induced-draft-fan equipment and associated ductwork, which are being installed to improve the operating efficiency of Unit 1, installed in 1967, and Unit 2, installed in 1968.
- Induced-draft-fan equipment and associated ductwork and an electrostatic precipitator, which are being installed as original equipment for Unit 3, which went on line in 1972.

To understand the problems Lilco faced in soundproofing the new equipment, it is necessary to understand why the utility is so concerned with noise control at its Northport plant.

Situated on Long Island Sound, the plant is flanked on three sides by a quiet suburban residential community. It contains more than 700 homes, some of which are as close as 1,200 ft to the power-station structures. Except for the Lilco plant, Northport has no commercial or business zones, or even any nearby commercial or industrial developments. The area also is removed from excessive vehicular, air, or rail traffic.

Because of the low ambient decibel levels in the community, Lilco engineers faced a particularly difficult noise-control problem when the first two units were being designed. They knew that operation of the machinery and associated equipment for the two units would produce intense sounds in the 90-to-130-db range, and that such levels would annoy homeowners in the surrounding community. Further complicating the problem was the fact that such sound would travel far in the quiet suburban atmosphere.

Studies in 1963 of community sound levels determined that a 3-to-5 decibel increase in ambient sound level would be acceptable, and would avoid widespread complaints from homeowners. Therefore, when the plant was being designed, Lilco specified that noise from the plant would not exceed 70 db outside the general plant walls, and 90 db immediately outside the exhaust ductwork and walls of the mechanical particulate collectors of each unit. To accomplish these goals, four basic steps were involved:

- Various equipment inside the plant was purchased with low sound level where practicable, or were enclosed in sound-deadening materials.
- Wherever needed, walls and ceilings inside the plant were covered with sound-absorbing panels and materials.
- The entire plant was enclosed in sound-deadening walls and exterior panels.
- Acoustic silencers were provided for forced-draft fans and ventilating systems.

As a result, when Units 1 and 2 were initially completed Lilco had no need to be concerned with noise complaints from the community. When the recent decision was made to install new induced-draft-fan equipment in Unit 1, however, additional noise-reduction work was required. Because the ID fans and their associated ductwork are too large to be installed inside the plant, the existing plant walls could not be used even partially to attenuate sound. So alternative noise-reduction methods had to be implemented.

Tests conducted within the ductwork on the exhaust side of the induced-draft fan installed in Unit 1 revealed an average reading of 125 db, a sound level far in excess of the original 90-db level set for noise outside the plant wall. As an indication of what the 125-db sound level means, it can be compared to the sound of a low-flying jet plane. And it is on the threshold of pain for the human ear.

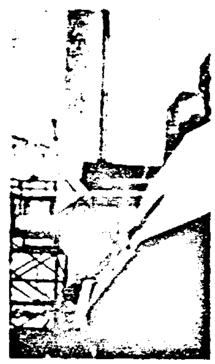
While the 600-ft-high emission stack, duct-connected to the induced-draft fan, was initially found to be a primary noise source, conventional filtering of the noise exiting from the top of the stack resolved the problem. It was then determined that a basic primary noise source, which required acoustical treatment, was the induced-draft-fan enclosure. Engineers learned that noise emanating from the east and west sides of the plant would have to be carefully controlled, since it travels directly and without resistance toward the surrounding community. However, noise emanating from the north and south sides of the plant—as caused by Unit 1's induced-draft-fan housing, for instance—was not a particular problem, because it either dissipates over Long Island Sound or is blocked by high bluffs behind the plant.

Based on this knowledge, thermal insulation with two sheets of 1-lb/sq ft lead was specified to enclose the induced-draft-fan housing of Unit 2—oriented east and west—as well as the ductwork leading from the housing to the stack. Ductwork leading from the particulate-collector house to the induced-draft fan was covered in thermal insulation with only one sheet of lead.

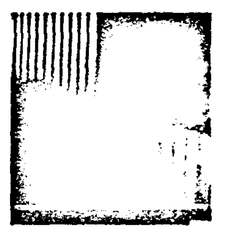
With this problem solved, the job of controlling the noise from Unit 3 began. While different than the first two units, since an electrostatic precipitator had been included in its design, experience gained in controlling noise from the first two units indicated that a combination of all three types of panels—thermal only, thermal/acoustic (one layer of lead), and thermal/acoustic (two layers of lead)—should be used to enclose its fan, ductwork, and precipitator.

First, the ductwork leading from the power plant to the precipitator and its hoppers (used to remove particulate matter resulting from operation of the precipitator) were enclosed with thermal-insulation panels. Next, the precipitator and ductwork leading from it to the induced-draft fan were enclosed in thermal/acoustical panels containing one layer of sheet lead. Then, the induced-draft-fan housing and the ductwork leading from it to the stack were enclosed with thermal/acoustical panels containing two layers of lead. To achieve maximum acoustical insulation, these two lead sheets are separated by a layer of mineral wool. In essence, the lead remains "free-floating," and is therefore more effective.

The ductwork and induced-draft-fan housing for the first two units required about 20,000 sq ft of panels. Approximately 33,000 sq ft were required to enclose the third unit because, in addition to the unit's induced-draft-fan housing and associated ductwork, its precipitator housing and the ductwork from the plant to the precipitator also had to be enclosed. Transco delivered the panels precut to size and ready for installation. This considerably reduced installation costs and decreased equipment downtime while the first two units were being modified. Also, use of the precut panels permitted the third unit to be readied for operational testing faster than would have been possible had the panels not been cut to size. •




Thermal-acoustical panels were installed on ductwork leading from induced-draft fan equipment (left) to No. 3 unit's 600-ft-high stack. Additional panels cover ductwork leading to induced-draft-fan housing and ductwork from precipitator to fan (right)




A Case History in Industrial Noise Control

PROBLEM: How to increase the capacity of a large electrical generating plant in the midst of a "bedroom" residential community without generating huge noise problems as well.

Solution: Extensive use of sound barriers along with a modified air intake—both relying primarily on lead.

As a result, the Long Island Lighting Company (LILCO) power plant at Northport, N.Y., is one of the utility industry's quietest fossil-fuel power generating stations. There are three power generation units at the utility's Northport plant and each unit is designed to produce 400 megawatts of electrical power for the LILCO system.

According to Lead Industries Association, sheet lead is being used "extensively as a primary sound barrier in a newly developed combination thermal-acoustic building panel. The panels are being used to build sound-deadening enclosures around new equipment in order to bring the Northport facility into conformance with the strict noise control specifications set by the utility when the plant was built.

"Super Quiet" Location

Situated on Long Island Sound, the plant is flanked on three sides by a very quiet suburban residential community. It contains more than 700 homes, some of which are as close as 1,200 feet to the power station structures.

level compares to that heard inside a quiet living room.

Because of these low ambient decibel levels, LILCO engineers faced a particularly difficult noise control problem when the first two units were being designed. They knew that operation of the machinery and associated equipment for the two units would produce sounds in the high 90 to 150 dbC levels and that such levels would be particularly annoying to homeowners in the surrounding community. Further complicating the problem was the fact that such sound would travel far in the quiet suburban atmosphere of the surrounding community.

Studies of sound levels in 1963 of the surrounding community determined that a 3-5 decibel increase in ambient sound levels would be acceptable and avoid widespread noise complaints from homeowners. Therefore, when the plant was being designed, LILCO specified that noise from the plant could not exceed 70 dbC outside the plant walls and 90 dbC outside the exhaust duct work and walls of the mechanical particulate collectors of each unit. These goals were accomplished through four basic steps:

- Various equipment inside the plant was purchased with the most practicable low sound level, or else was enclosed in standard sound-deadening materials.
- Wherever needed, walls and ceilings inside the plant were covered with sound-absorbing panels and materials.
- The entire plant was enclosed in sound-deadening walls and exterior panels.
- Acoustic silencers were provided for forced draft fans and ventilating systems.

As a result, LILCO was not concerned with noise complaints from the surrounding community until a recent decision was made to install the new induced-draft fan equipment in Unit No. 1. Because of their large size, the fans and their associated ductwork could not be installed inside the plant. Thus the existing plant walls could not be used even to partially attenuate sound.

A 600-foot high emission stack, connected to the induced-draft fan by huge ducts, was found to be the primary noise source. However, after adequately filtering noise exiting from the top of the stack, it was determined that a new primary noise source requiring acoustical treatment was the induced-draft fan casings and ductwork leading to and from them.

Sound Reduction

According to Frank J. Wells of LILCO's electrical engineering staff, the steel enclosures for the ductwork and fan housing provided a very large sound radiating surface much like that of a gigantic loud speaker system. Therefore, the decision was made to enclose both the fan housing and the associated ductwork with a sound barrier system.

Several problems had to be overcome before the noise barrier could be installed. It had to be able to withstand the approximately 450°F operating temperatures of the equipment, and it had to be capable of providing an adequate degree of sound attenuation since noise levels were not consistent throughout all areas to be covered.

To help solve the problem, the utility called on the services of Transco Inc., in Chicago. A leading manufacturer of prefabricated, thermal insulation panels, the company has recently developed two types of insulated panels that are specifically designed to provide a sound transmission loss of up to 52 decibels. Transco has installed its standard thermal insulation panels at more than 50 electrical power plants throughout the country as well as more than a score of other types of industrial plants. LILCO's Northport plant was the first application for the company's combination thermal-acoustical panel system.

Use of Sheet Lead to quiet sound of Long Island Lighting Company facility.......

one of six feature placements

PUBLIC UTILITIES FORTNIGHTLY May 1973

SHEET METAL
BUILDING REVIEW

MAY 1973

Frank J. Wells, LILCO Electrical Engineering Staff, displays cut-away of one of the two types of thermal/acoustical panels that solved major noise problems at company's Northport plant. Panel contains 1 lb. sheet lead sound barrier, seen extending from between two layers of mineral wool which provides panel with thermal insulating properties. Some of the equipment covered by the panels can be seen in background.

Two views of combination thermal/acoustical panel being installed to silence equipment being installed at Unit No. 3. Left view shows ductwork leading from induced draft fan equipment to unit's 600' high stack. Right view shows continuation of panels covering additional ductwork leading to stack, panels covering induced draft fan housing (bottom, center), and ductwork from precipitator to fan (right center). Lower walls of precipitator housing (partly visible at bottom right) also were enclosed with panels. Emission stack and other equipment for Unit No. 2 is visible in background.

LIGHTING COMPANY'S NORTHPORT, N.Y. PLANT IS A CASE HISTORY FOR INDUSTRIAL NOISE CONTROL

A report from the Lead Industries Association, 292 Madison Avenue, New York 10017

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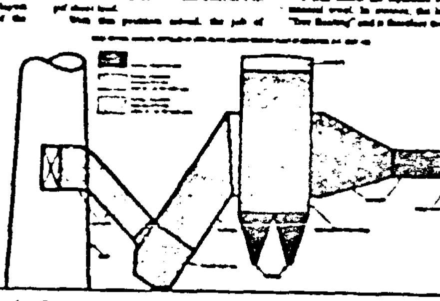

Line Drawing of power generation Unit No. 3 at Long Island Lighting Company's Northport, N.Y., plant shows location of three types of composite insulated building panels used to solve noise control problems for the installation's exterior ductwork and accessory equipment.

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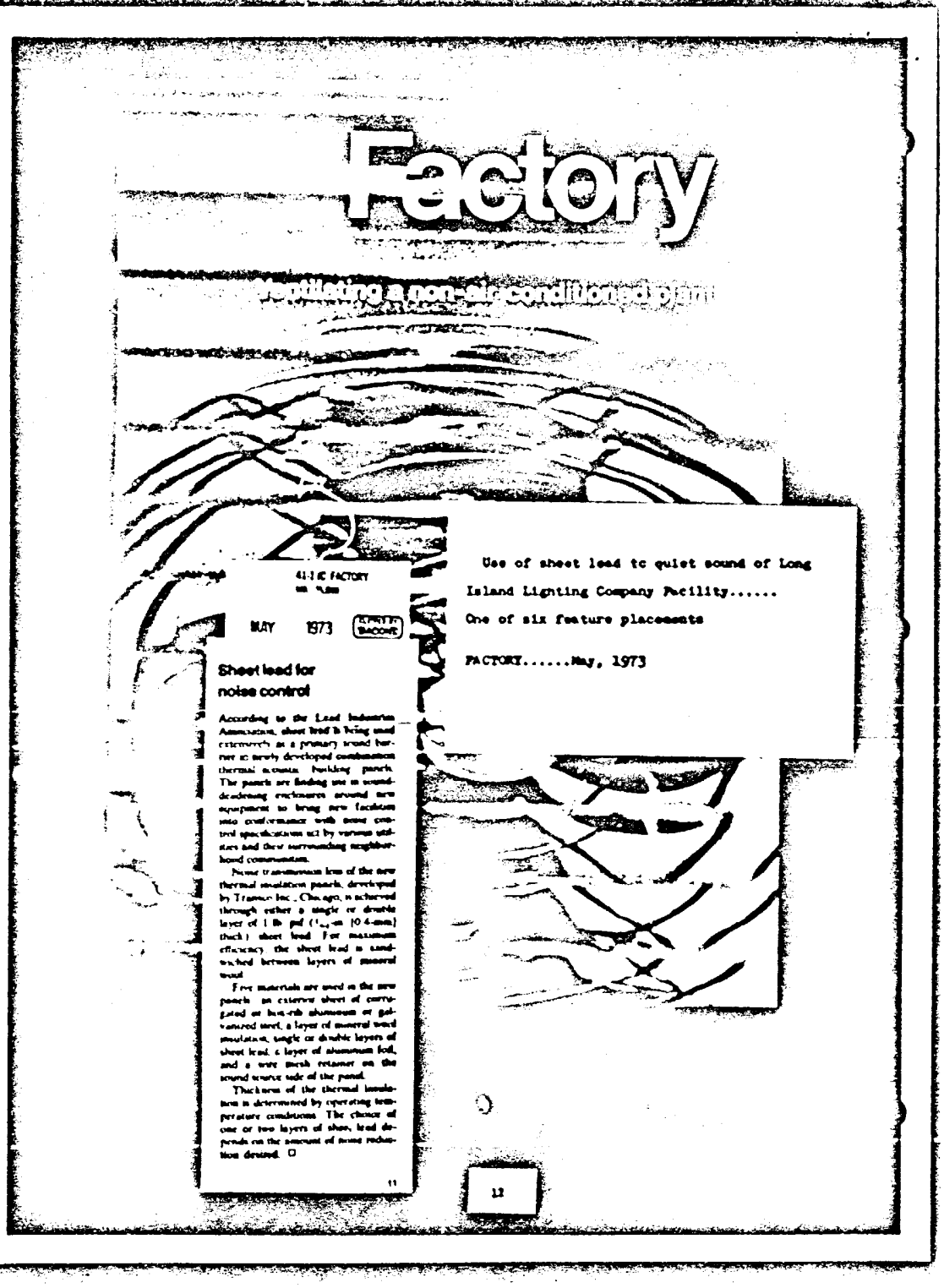
Use of sheet lead to quiet sound of Long Island Lighting Company Facility.......

One of six feature placements

METAL BUILDING REVIEW - May 1973

LIA15001


Factory
41-1 IC FACTORY
MAY 1973
Sheet lead for noise control
According to the Lead Industries Association, sheet lead is being used extensively as a primary sound barrier in newly developed combination thermal acoustic building panels. The panels are finding use in sound-deadening enclosures around new equipment to bring new facilities into conformance with noise control specifications set by various municipalities and their surrounding neighborhood communities.
Noise transmission loss of the new thermal insulation panels, developed by Transco Inc., Chicago, is achieved through either a single or double layer of 1 lb psf (1/64-in [0.4-mm] thick) sheet lead. For maximum efficiency, the sheet lead is sandwiched between layers of mineral wool.
Five materials are used in the new panels: an exterior sheet of corrugated or beaded aluminum or galvanized steel, a layer of mineral wool insulation, single or double layers of sheet lead, a layer of aluminum foil, and a wire mesh retainer on the sound source side of the panel.
Thickness of the thermal insulation is determined by operating temperature conditions. The choice of one or two layers of sheet lead depends on the amount of noise reduction desired. □
11
Use of sheet lead tc quiet sound of Long Island Lighting Company Facility.....
One of six feature placements
FACTORY.....May, 1973
12

LIA15002

AMERICAN
METAL MARKET
[illegible]

MAR 20 1973

LIA Believes Sound Barrier Application To Boost Markets

NEW YORK — The domestic lead industry appears confident that lead will become an integral part of industrial noise pollution control systems.

The Lead Industries Association said that a growing number of large electrical generating plants, located in residential communities, are having a problem increasing capacity without increasing noise levels above Occupational Safety & Health Administration, and Local standards.

LIA reports that one solution to the problem is the use of sound barriers along with a modified air intake system, both of which primarily use lead.

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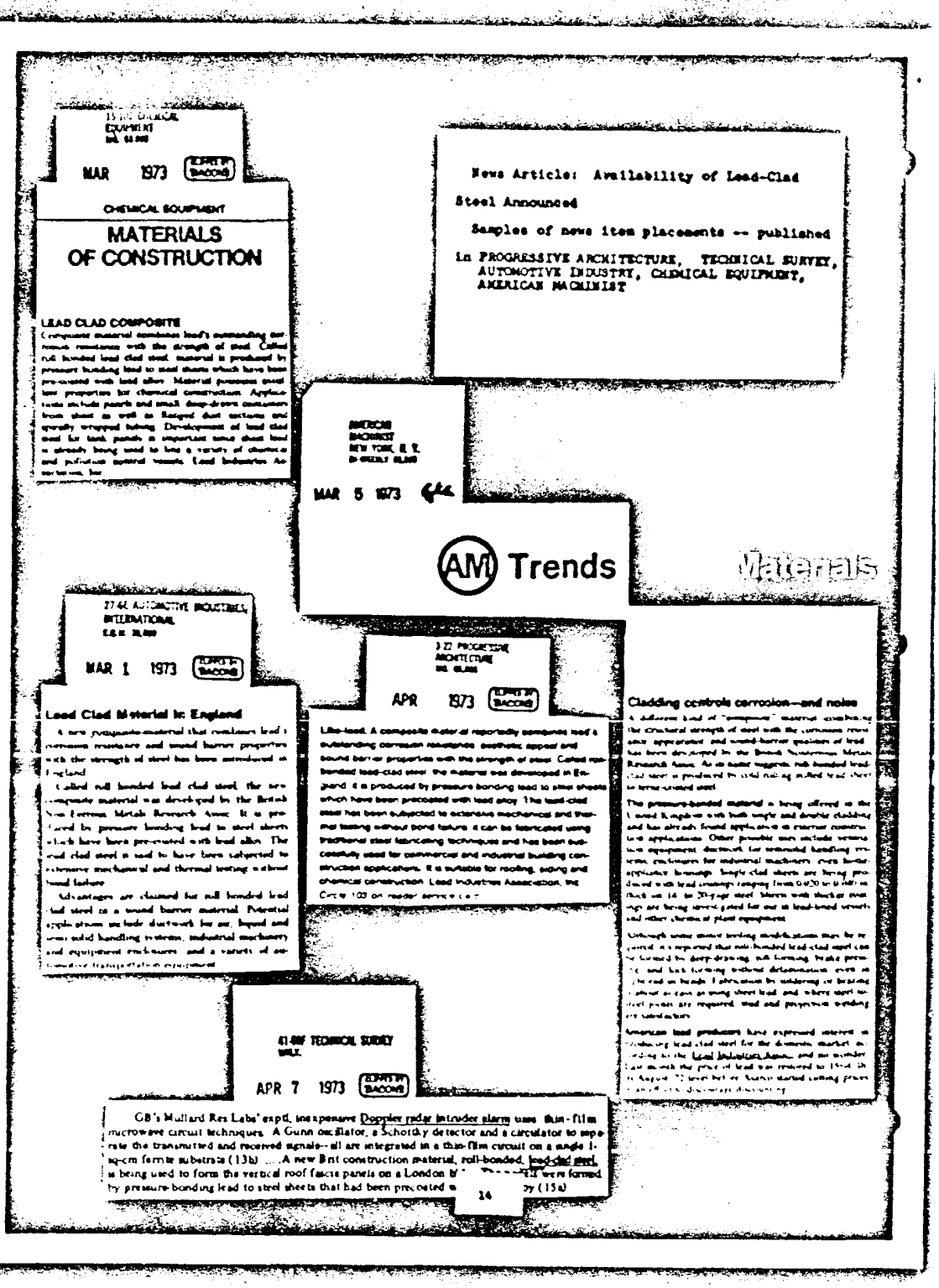
Initial Release on use of sheet lead to quiet sound of Long Island Lighting Company Facility

Published in American Metal Market
March 20, 1973

NOTE: Publication in daily newspaper followed by large number of magazine feature placements.



CHEMICAL EQUIPMENT

MAR 1973

EXPERT IN BACONS

MATERIALS OF CONSTRUCTION

LEAD CLAD COMPOSITE

News Article: Availability of Lead-Clad Steel Announced

Samples of news item placements -- published in PROGRESSIVE ARCHITECTURE, TECHNICAL SURVEY, AUTOMOTIVE INDUSTRY, CHEMICAL EQUIPMENT, AMERICAN MACHINIST

AMERICAN MACHINIST

MAR 5 1973

AM Trends

Materials

MAR 1 1973

Lead Clad Material in England

APR 1973

Lite-lead. A composite material reportedly combines lead's outstanding corrosion resistance, aesthetic appeal and sound barrier properties with the strength of steel. Called roll-bonded lead-clad steel, the material was developed in England. It is produced by pressure bonding lead to steel sheets which have been precoated with lead alloy. The lead-clad steel has been subjected to extensive mechanical and thermal testing without bond failure. It can be fabricated using traditional steel fabricating techniques and has been successfully used for commercial and industrial building construction applications. It is suitable for roofing, siding and chemical construction. Lead Industries Association, Inc.

Circle 109 on reader service card

Cladding controls corrosion—and noise

APR 7 1973

GB's Mullard Res Labs' exptl, inexpensive Doppler radar intruder alarm uses thin-film microwave circuit techniques. A Gunn oscillator, a Schottky detector and a circulator to separate the transmitted and received signals—all are integrated in a thin-film circuit on a single 1-sq-cm ferrite substrate (13b) .... A new Brit construction material, roll-bonded lead-clad steel, is being used to form the vertical roof fascia panels on a London b' ... were formed by pressure-bonding lead to steel sheets that had been precoated w ... by (15a)

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LIA15004

News Article: Availability of Lead-Clad Steel Announced

Two examples of feature placement --

PURCHASING MAGAZINE, March, 1973
MATERIALS ENGINEERING, March, 1973

71-75 PURCHASING MAGAZINE
MAR 20 1973

TECHNOLOGY TRENDS

Many uses seen for lead-clad steel

A COMPOSITE MATERIAL, developed in England combines the strength of steel with the corrosion resistance and barrier properties, and esthetic appeal of lead.

Roll-bonded lead-clad steel was developed by the British Nonferrous Metals Research Assn. and is produced by pressure-bonding lead to steel sheets coated with a lead alloy. The material takes extensive mechanical and thermal torture without bond failure. It can be fabricated with traditional techniques. U.S. lead companies are considering the material for industrial and construction uses.

Potential applications include small, deep-drawn containers, flanged duct sections and spirally wrapped tubing. Use of the material for tank panels should be significant, since sheet lead already is being used to line chemical and pollution control vessels. The material is expected to find use in sound-deadening enclosures for home appliances, air-handling equipment and industrial machinery.

The lead-clad steel is being produced in Britain. Single-side clad sheet is available immediately, while double-clad is produced to special order. Coatings range from 0.020 to 0.040", applied to steel from 14 to 20 gage. Thicker coatings are being explored for chemical applications.

Standard fabricating techniques such as roll forming, brake pressing, lock forming and deep drawing can be used on lead-clad steel. It can be bent through 180° without loss of adhesion and with normally acceptable thinning of the lead on the outer surface of the bend.

Most types of fasteners can be used for joining the material. It can be soldered, brazed and burned almost as easily as sheet lead.

For information, write to Lead Industries Assn., Inc., 292 Madison Ave., New York, N.Y. 10017.

MAR 1973

Three steel composites keep machinery quiet

Three composite materials, all using at least one layer or sheet of steel, substantially reduce noise emanating from a wide range of machinery. Combinations of steel and fiberglass, steel and lead, and steel and an adhesive have been developed and are now commercially available.

Working on the principle of constrained layer damping, U.S. Steel's Nudamp consists of a thin sheet of steel to which a sheet of thermoplastic viscoelastic adhesive is laminated. The resultant material is then bonded to the offending vibrating panel, housing or enclosure. Noises or vibrations are then dissipated as a small amount of heat. The new damping panel may be attached to wood, metal or glass with adhesives, mechanical fasteners or heat bonding. The resultant laminate is effective to 300 F.

Other potential applications for Nudamp include automotive components, air compressor housings, parts hoppers, transformer housings and conveyors. Circle 186

Another approach is a combination of steel sheet perforated with thousands of minute holes placed over 6 in. layers of fiberglass. According to Diamond Perforated Metals Div. of Armtzaler, noises are trapped and damped out by the fiberglass. The perforated metal has several functions. It enables the noise to reach the fiberglass through the perforations, protects the fiberglass and adds strength to large enclosure panels.

Enclosures measuring 100 ft long, 20 ft wide and 30 ft high for turbomachinery have been built and noise levels have been cut by 40 dB. The material is also a practical silencer for air intakes and exhausts. Circle 186

Lead-clad steel is a [illegible] is produced by bonding lead to steel which has been precoated with lead alloys. The lead clad steel has shown no failures after extensive mechanical and thermal tests, according to the Lead Industries Assn.

Lead cladding may be applied to one or both sides of sheet steel. Single cladding is being produced with lead coatings that range from 0.020 in. to 0.040 in. applied to 14- to 20-gage steel. Cladding between 0.020 and 0.030 in. on 20-gage steel is standard for building applications.

Standard roll forming, brake pressing, lock forming and deep drawing techniques can be used to fabricate lead clad steel. However, as with sheet lone materials, some minor initial tooling modifications may be needed to accommodate the composite material. Most mechanical fasteners may be used.

Potential applications include appliance enclosures, ductwork for air, liquid and semi-solid handling systems, industrial machinery enclosures and in a variety of automotive applications. Circle 187

FEB 26 1973

Nuclear Medicine May Be the 'Doctor' To Give Lead Industry That Robust Look

NEW YORK — While lead is taking a beating in some fields, due to environmental considerations, one bright spot for expanding consumption could be nuclear medicine.

The Lead Industries Association backed up this claim by pointing to the inherent dangers involved in using normal materials in places like hospitals.

Nuclear medicine has been used to diagnose internal cancer.

The process involves the injection of minute amounts of radioisotopes into the body.

The process has the advantage over X-rays by being more precise in locating the diseased area and determining the effectiveness of treatment.

But this science has one particular major disadvantage — radiation.

Various techniques have been developed to protect persons involved in nuclear isotopes from radiation.

Lead specialists are optimistic over the fact that lead is currently the leading contender as the material to shield persons from nuclear radiation.

According to the Atomic Energy Commission, when other shield materials are considered, "comparisons are usually expressed in terms of lead because it represents the most practical shield for most applications."

Among other things, the AEC is responsible for establishing the radiation limits permitted in nuclear medicine. Increasing doctors specializing in this science, and determining the thickness of shielding material for such applications as the lead shielding devices for radiopharmaceuticals.

Protective shields are required from the time the nuclear materials are shipped from the manufacturer until they are injected into the body. For example, the material is shipped to the user in special lead shielded devices.

Lead To The Rescue

Other special shielding devices are needed to store the material, and the storage shields themselves are in turn stored in lead-lined safes.

When the radio active material is being transferred from one shield device to another, the action takes place inside a radiation lead-proof, lead lined glove box, and technicians using 8 inch lead-impregnated gloves. Radiation protection in the form of hypodermic needle shields are used for nuclear medicine.

As the use of nuclear medicine expands the LIA predicts a dramatic growth of lead consumption in this field. However the LIA declined to give specific figures.

A number of companies are specializing in developing and producing nuclear medicine products. A leading firm in the field is Atomic Development Corp., Plainview, N.Y.

"Our company's success in the nuclear medicine product field is the result of its being built on a foundation of lead," Atomic president Pat Mista said. "Virtually everything we produce is either made entirely or partly of lead."

The company's product line ranges from containers used to ship and store nuclear medicine to accessory equipment for gigantic cancer detection scintillation scanners and cameras that can photographically scan the human body from head to toe.

The company's design department has developed a wide variety of lead radiation shielding products.

Saves Weight, Space

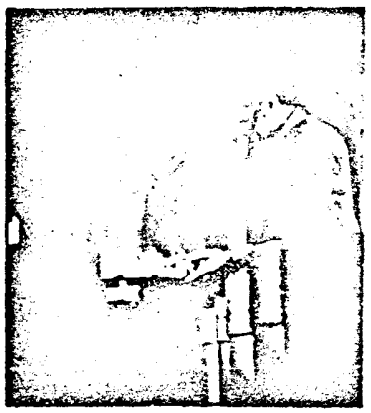
According to Mista, although lead's primary shielding property is mass, its use invariably saves weight and space. He also says the metal's ease and the ease with which it can be cast, extruded, rolled, machined or otherwise formed, combines to make it one of the most efficient and economical shielding materials.

Radiopharmaceutical shields and shipping devices are typical of the products the company casts from lead. To produce the devices, pig lead is melted and poured into round, cylinder-shaped molds with a hollow core. When the lead has cooled and the desired shape of the shield or shipping device has been formed, it is removed from the molds. If required, the sides of the devices are machined and then painted.

Molds also are used to produce the various types of caps that fit over the tops of the devices. Shield devices have lift-off caps while shipping devices usually, pivot for opening.

A typical radioactive shield or shipping device that would be used to ship a radiopharmaceutical is about 9 inches high, has lead walls about 1½ inch thick, a 6 inch diameter hollow core, and weighs about two pounds.

In addition to the advantages of being the densest of any commonly available material and being available in a wide variety of forms, lead has another advantage with regard to its use as a radioactive shield material. Because lead does not become contaminated by neutrons or gamma rays, it may be used continuously without fear of its becoming a radioactive source itself by emitting harmful rays, the LIA claimed.



NUCLEAR LEAD — Radioactive isotope shields, being sprayed by workmen, could be lost ceiling items, the Lead Industries Association predicts. Made from pure lead, they are used in medical facilities in conjunction with nuclear devices to detect illness.

NUCLEAR MEDICINE REQUIREMENTS EXPAND USE OF LEAD FOR RADIATION SHIELDING

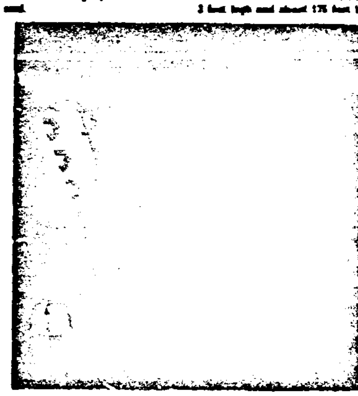
Initial publication of feature story.... published in Feb. 26, 1973 issue of AMERICAN METAL MARKET

61-2 AMERICAN METAL MARKET
N.Y. CX. SUB., DAC. AND HOLIDAYS 16,000

MAY 29 1973 (CLIPPED BY BACON'S)

Lead Will Tip Quebec's Scales Of Justice in Favor of Silence

[illegible]

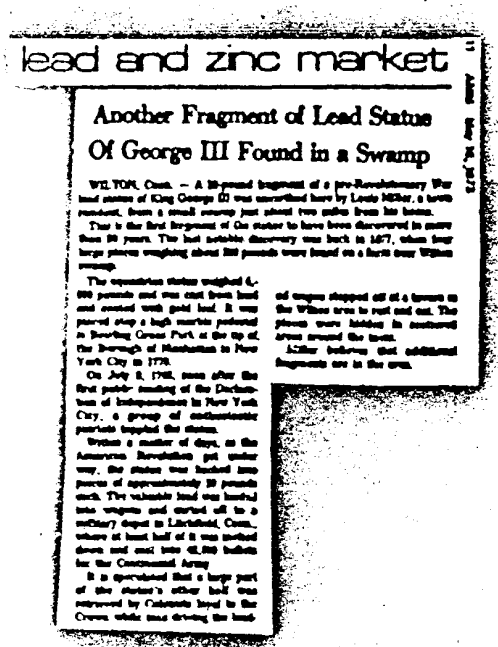


A CLOSEUP of the heating system at Montreal's Justice Building shows how sheet lead is installed at office partition wall lines to keep noise from traveling between offices.

Initial publication of feature article:
Sheet Lead Used To Control Noise in New Province of Quebec Justice Building in Canada

AMERICAN METAL MARKET — May 29, 1973

LIA15007



lead and zinc market

Another Fragment of Lead Statue Of George III Found in a Swamp

WILTON, Conn. — A life-sized fragment of a pre-Revolutionary War lead statue of King George III was unearthed here by Louis Miller, a town resident, from a small swamp just about two miles from his home.

This is the first fragment of the statue to have been discovered in more than 90 years. The last notable discovery was back in 1877, when four large pieces weighing about 300 pounds were found on a farm near Wilton Corners.

The equestrian statue weighed 4,000 pounds and was cast from lead and covered with gold leaf. It was placed atop a high marble pedestal in Bowling Green Park at the tip of the Borough of Manhattan in New York City in 1770.

On July 9, 1776, soon after the first public reading of the Declaration of Independence in New York City, a group of enthusiastic patriots toppled the statue.

Within a number of days, as the American Revolution got under way, the statue was hacked into pieces of approximately 30 pounds each. The valuable lead was hauled into wagons and started off to a military depot in Litchfield, Conn., where at least half of it was melted down and cast into 42,000 bullets for the Continental Army.

It is speculated that a large part of the statue's other half was destroyed by Colonists loyal to the Crown, while those driving the lead ox wagons slipped off at a farmer in the Wilton area to rest and eat. The pieces were hidden in unobserved areas around the farm.

Miller believes that additional fragments are in the area.

Initial publication of feature article:
Lead Fragment of King George III Statue
Destroyed by Revolutionary War Patriots
Is Unearthed
AMERICAN METAL MARKET -- May 10, 1973

AMERICAN METAL MARKET
NEW YORK, N. Y.
D. 16,000
JUN 6 1973

Call for Mass-Produced Soldered Joints Increasing Use of Lead Alloy Preforms

NEW YORK — Rising industrial demand for mass-produced soldered joints has resulted in the increased use of lead alloy preforms, a recent survey by Lead Industries Association showed.

The survey revealed a continuous effort by many industries to either partially or completely automate production lines. This, in turn, has brought about many changes in soldering procedures and techniques, including the solder preform.

Lead alloy solder preforms, the Association said, are manufactured solder configurations containing varying quantities of certain metals alloyed with lead, with or without a flux core. Alloy combinations are available in wide variety for joining specific metals, it was pointed out.

Lead content in the alloys may range from nearly 100 percent to a low of 30 percent. In most cases the alloy is made with tin.

Among the tin-lead alloys listed by the Association, two of the most common are 63 percent tin-37 percent lead soldering alloy used for temperature-sensitive electronic components, and 40-60 tin-lead solder used for automobile radiator cores and cooling coils.

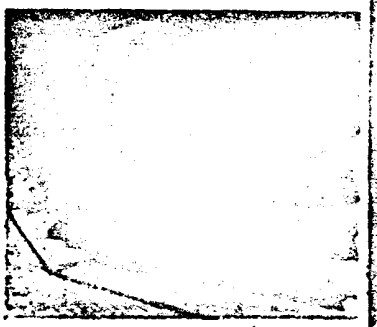
Other types of alloys contain small amounts of silver and one, an example of this would be a 92.5 percent lead, 2.5 percent silver alloy used for torch brazing an engine brass and similar metals. When the material to be soldered is intended for use in humid environments, 2 percent tin is added to the above to eliminate susceptibility to corrosion.

Other alloying elements include copper, gold, antimony, bismuth, cadmium, arsenic, and indium. Each ingredient in some way or another prevent lead to be used in joining virtually any metal, the Association stated.

Solder preforms are designed to produce perfect solder fillets for specific joints at an economic. They can be economically place on the area to be soldered or they can be dispensed automatically by a variety of mechanical devices that are usually custom-designed for a specific solder preform installation.

Once in place, solder preforms can be joined by all conventional heating methods compatible with the assembly, including infra-red lamps, induction or resistance heating, vapors or gaseous gas torch, oven or hot plate. Depending on the specific requirements, one or a combination of these heating techniques can be used to make joints with lead alloy solder preforms.

The preforms come in a variety of shapes, such a derivative of one or more of the following four shapes commonly known were punched pads, spheres, or solder-coated metal forms, the Association said.



CHARD WASHERS, 63 percent tin-37 percent lead alloy, are typical of the solder preforms that have been developed to solve the wide variety of joining problems in the electronics and other processing industries.

Initial publication of feature article:
Use of lead for soldered preforms

AMERICAN METAL MARKET -- June 6, 1973

41-71 MACHINE
DESIGN
[illegible]

APR 5 1973 [illegible]

Electronic Defense Against Air Piracy

FBI agents move in with guns drawn on skyjacker of a United 727 jet in Seattle on August 19, 1972. Agent [illegible] on [illegible] (left wing) is [illegible] aboard the plane. Anti-skyjacking regulations put into effect on January 5 have thus far [illegible] scenes such as this. Photo, UPI.

cursion to Cuba is often a three-day affair. Some 17,000 people have had trips interrupted in the past 10 years. A more serious problem, however, are the casualties among the passengers that result from shoot-outs with authorities. To date, 3 passengers have been killed in the U. S. in duels with skyjackers.

The skyjacker's lot is not a happy one, either. Over 75 skyjackers have fled to Cuba. Because of conditions there, 16 have returned to the U. S. to face prosecution. Two-thirds of those that remain are said to be in jail or under house arrest. Also, four have been killed in gun battles. One was the victim of an apparent suicide.

Keeping Kooks Off

As of January 5 of this year, airlines were required by federal law to screen and/or search every passenger and every piece

Detector finds new job screening passengers at airports. Originally developed in Finland to locate broken drill bits lost in ore taken from mines, the single-frequency detector establishes an alternating magnetic field between coils in each side of the stanchion housing. The device is preset by the manufacturer to ignore objects that are smaller than weapons. Photo, Harrison R. Cooper Associates.

planes. The occasional body search, the presence of Sky Marshals, and metal detectors used prior to 1973 were

...orts

...ffective in stopping

...Costs

...y has been expensive ...e involved, including

...ace the most obvious ...ees. Last year, ran-... totalled more than $2.5 million of which ... recovered. Other ex-...penses include lost ... operating expenses ...yjacked plane, in-...urance premiums, in-...nsom loans, damaged ... expenses for housing ... during unscheduled ...ports and Cuba. A ...rector for one air-...verage out-of-pocket ...s about $10,000 for a ride to Cuba."

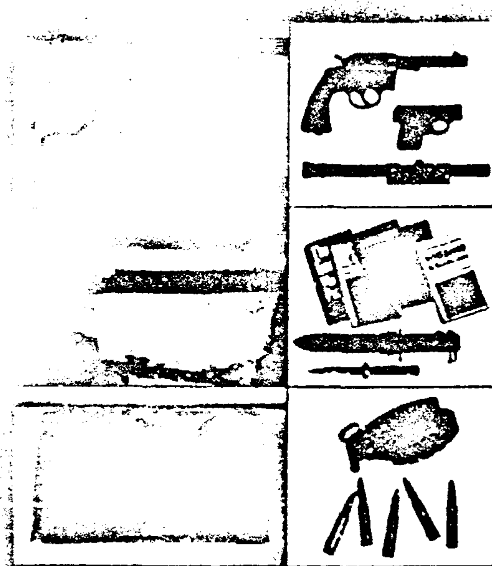
Pilots are occasional victims ...yjackers. The Airline Pilots Association reports that 150 crew members (pilots, navigators, stewardesses)—or 1 out of 70—were involved in skyjack attempts in 1972. Over the years, six pilots have been shot or stabbed, one was blinded.

The federal government pays, too. Each time a skyjacked plane touches down at a U. S. airport, a swarm of FBI agents descends on the plane. The greater the number of stops, the more agents are involved. Recently, the FBI has begun following commandeered planes in a chase plane, obviously increasing the cost of surveillance.

Also, the FAA's celebrated corps of Sky Marshals (1,200 to 1,300 strong) has been placed on ground duty at airports around the country to help prevent pirates from boarding aircraft.

The public suffers much in the way of inconvenience. An ex-

LIA15010



X-ray fluoroscope "looks" into carry-on luggage. Gun, knives, and grenade, concealed in packages, show up clearly on fluoroscope screen. Photo, Philips Electronic Instruments.

guishes between small and large objects by generating two fields—one at a high frequency, the other at a low frequency. Disturbances within the field are analyzed by data-processing circuitry to determine if the object is large enough to be a weapon.

Processing time for passengers has been improved with the newer, walk-through models. Passengers are rarely delayed for more than three minutes during inspection.

X-ray fluoroscope equipment is used to check carry-on baggage in airports around the country. This system is mounted in a lead-lined enclosure to prevent radiation leakage. At the enclosure surface, radiation level is said to be about the same as that emitted from a color TV set. Typical maximum package size is 24 x 18 x 26 in.; maximum weight is 100 lb.

One system, built by Philips Electronic Instruments, Mount Vernon, N. Y., uses an X-ray-generating unit that is adjustable from 30 to 130 kV, depending on the "penetrating power" required. This system projects the X-ray image of the package to a mirror so that the primary radiation will not be reflected to the viewing port. An operator views the image at the port on a sheet of leaded glass 0.25 in. thick. Resolution on the glass is 3 line-pairs/mm. Operating speed is estimated to be as high as 4,800 packages per day, or 15 sec per package.

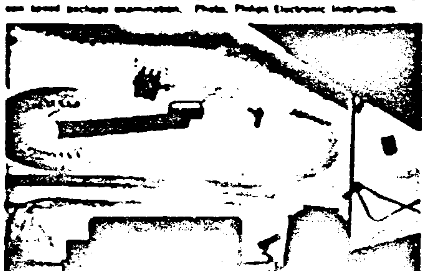
Price for X-ray equipment runs about $10,000 to $35,000. This expense must be borne by the airlines because the FAA does not specifically require that X-ray equipment be used. It simply states that carry-on baggage must be inspected, and the airlines seem to be of a consensus that X-raying the packages is the fastest way of doing the job.

SKYJACKING

Do Screening Measures Work?

Since July, 1972, when tough boarding procedures were first put into effect, skyjackings dropped from an average of four per month to less than one per month, according to FAA figures. Since the even stricter measures were put into effect on January 5 this year, two at-

Bomb-triggering device, tucked into a shaving kit in a suitcase, is uncovered by X-ray equipment. Although X-ray systems are not required by new FAA screening regulations, they're being tried by several airlines because they can speed package examination. Photo, Philips Electronic Instruments.



AIRPORT ANTI-SKYJACK X-RAY DEVICE SHIELDED BY LEAD

Feature article released by LIA used as basis for expanded feature published in MACHINE DESIGN April, 1973

One of three feature placements

LIA15011

MAR 1973

With Lead in Gas Being Threatened Industry Is Looking for New Uses

With the possibility of lead being removed from gasoline, industry officials are desperately looking for other applications to take up the slack.

One such new application would be lead shielding used for X-Ray airport baggage inspection systems.

Like nuclear medicine, airport inspection systems will require lead for safety units, the Lead Industries Association claimed. However no specific consumption predictions were given by the group.

A LIA spokesman told this newspaper that nuclear medicine and airport baggage inspection systems, "of course won't consume as much lead" as currently used in gasoline, "but these new applications really could help in taking up the slack."

The inspection system being touted by the LIA allows airport officials to view the contents of carry-on airline luggage or packages without opening them.

The system, called Dynaflour and manufactured by Torr-X-Ray Corp., Los Angeles, has been "successfully" tested by Western Airlines and Pacific Air West Airlines at Los Angeles International Airport, and by Delta Airlines at New York's Kennedy International Airport, according to an LIA spokesman.

Also, the federal government has reportedly bought 34 of the systems which are exclusively distributed by Electronic Instruments, Mount Vernon, N.Y.

Using an X-Ray, the system produces visible images of the contents of luggage or a package. The images, which are viewed on a screen seen through a specially designed porthole, are similar to those seen in a three-dimensional photograph negative.

The images consist of shadows of varying density and a specially trained operator can detect weapons and explosives by their shape.

Despite its advantages, the new airline security device has one potential hazard — excessive radiation.

Therefore, the manufacturers had to build an effective radiation shield using about lead.

The unit's entire X-Ray generator system is completely enclosed in 5/32 of an inch thick lead, except for the X-ray tube slit which directs the beam. The lead sheets weigh roughly 10 pounds per square foot.

Lead also plays a critical role in the unit's fluoroscopic viewing system. Indirect viewing of the screen is accomplished by use of a mirror so that primary radiation from the X-ray tube will not strike the viewing port. To insure complete shielding from any secondary radiation, the viewing port consists of 1/4-inch thick leaded glass.

Delta Airlines held a recent three-week test of a Dynaflour unit at its Kennedy International Airport terminal.

In addition to determining if the system would be effective in the inspection of all baggage to be carried aboard airliners, Delta also wanted to see how quickly the equipment could function.

According to Cary Moore, Delta Airlines station manager at Kennedy International Airport, the test was highly successful from the standpoint of its capability of rapidly and efficiently providing a visual inspection of all hand baggage.

Delta estimates that widespread use of an X-ray fluoroscopic unit throughout its system would reduce from minutes to seconds the time required to process an individual's carry-on baggage.

For example, it could take as long as five man-hours to manually inspect carry-on baggage of passengers preparing to board a jumbo jet.

Tests conducted by Western Airlines and Pacific Air West Airlines at Los Angeles International Airport have determined that with the new X-ray system, the average bag inspection takes about 10 seconds, indicating that relatively little delay is encountered by boarding passengers.

Other Tests

In the meantime, the new detection system is being used for other purposes. The U.S. Air Force is using it to check incoming overseas mail, packages and baggage for contraband such as illegal weapons and narcotics.

A number of religious organizations and agencies that directly or indirectly represent foreign governments are using the equipment to screen incoming mail and packages that might contain explosives mailed by terrorist organizations.

SECONDARY RAW MATERIALS, March

AIRPORT ANTI-SKYJACK X-RAY DEVICE SHIELDED
BY LEAD
Feature article published in SECONDARY
RAW MATERIALS -- March, 1973
One of three feature placements

25-41 ELECTROMECHANICAL
DESIGN
(M) 50,000

APR 1973 LUCE'S PRESS CLIPPING BACON'S

X-RAY SENSORS SPOT CONTRABAND

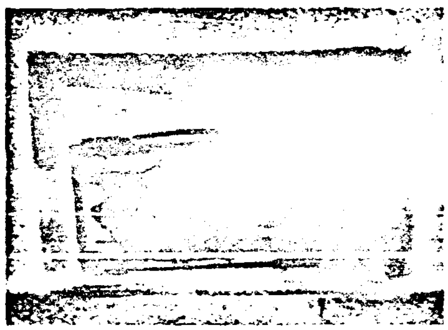
lead shielding protects bomb detectors

Preventing hijacking and increasing airline passenger security has forced designers to develop a wide array of sensors that detect contraband. Familiar now to most air travelers, magnetic detectors and security guards often line the entrances of airport departure terminals. But despite these apparent improvements in security, departing passengers are subject to a great deal of delay while their carry-on baggage is searched.

Confronted with this problem, engineers at the Torr X-Ray Corp., Los Angeles, designed a fluoroscopic surveillance system called Dynaflour. In secondary radiation, the viewing port consists of 1/4" thick leaded glass.

Delta Airlines began a three-week test of a Dynaflour unit at its Kennedy International Airport terminal in mid-December of last year. In addition to determining if the system would be effective in the inspection of all baggage to be carried aboard airlines, Delta also wanted to see how quickly the equipment could function.

Delta estimates that widespread use of X-ray fluoroscope units throughout its system would reduce from minutes to seconds the time required to process an individual's carry-on baggage. For example, it could take as long as five man-hours to manually inspect carry-on luggage of passengers preparing to board a jumbo jet. Tests conducted by Western Airlines and Pacific Air West Airlines at Los Angeles International Airport have determined that



An illegal syringe, concealed inside a transistor radio, shows up on the viewing screen of an x-ray viewer for checking carry-on baggage. Pockets of [illegible] show up in upper right corner of the small suitcase.

addition to providing fast baggage inspection, the X-ray unit is entirely safe from radiation hazard, says the manufacturer. Claimed to be five times safer than the new industry standard for a color television set, the unit's entire X-ray generator system is completely enclosed in 3/32" thick, 10 lbs/sq ft lead, except for the X-ray tube slot which directs the beam.

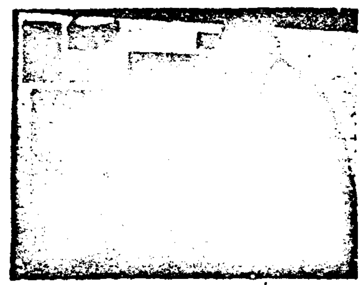
Lead also plays a critical role in the unit's fluoroscopic viewing system. Designers accomplished indirect viewing of the screen with a mirror, so that primary radiation from the X-ray tube does not strike the viewing port. To insure complete shielding from any

with the new X-ray system, the average bag inspection takes about 10 seconds, indicating that relatively little delay is encountered by passengers.

In the meantime, the U.S. Air Force is using the new detection system to check incoming overseas mail, packages and baggage for contraband such as illegal weapons and narcotics. A number of religious organizations and agencies that directly or indirectly represent foreign governments are also using the equipment to screen incoming mail and packages that might contain explosives mailed by terrorist organizations.

51-2 AMERICAN
METAL MARKET
N.Y. CX. DAILY, EXC. SAT AND
HOLIDAYS 15,000

MAR 12 1973 LUCE'S PRESS CLIPPING BACON'S



LEAD TO THE AIRPORT — Airport skyjacking, believe it or not, may open a new area for lead consumption, the Lead Industries Association asserts. The carry-on baggage checking system, above, which is being used by Delta Airlines at New York's Kennedy Airport, combines X-ray and fluoroscopic viewing to observe the interior of packages without having to open them. However, a shield of 3/32 of an inch thick lead sheet is needed to protect people from radiation.

AIRPORT ANTI-SKYJACK X-RAY DEVICE SHIELDED BY LEAD

Feature article published in ELECTROMECHANICAL DESIGN -- April, 1973

One of three feature placement

Photo caption release -- AMERICAN METAL MARKET

41-75 DESIGN NEWS

MAY 21 1973

Design *NEWS*

Feature article: Battery-Powered Pleasure Boat Introduced

Published in: DESIGN NEWS

May, 1973

Battery-powered Boat is Pollution-free

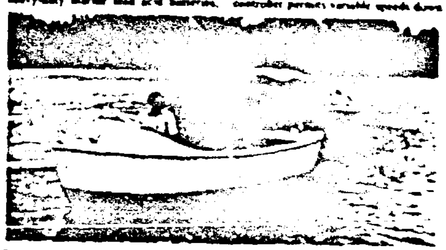
—Port Salerno, FL—Lead acid batteries are helping to put pleasure back in boating. They're being used to power an 18-ft-long boat that is made by the Branson Boat Co.

Called the "Electra-18", the battery-powered boat was designed to solve two of the major problems facing the rapidly expanding pleasure boat industry: noise pollution and oil residue pollution.

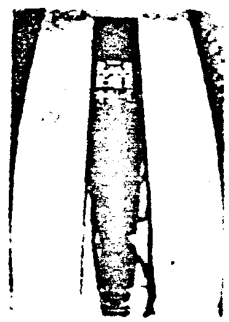
Although it was designed for trolling, the boat is also gaining acceptance for leisurely sightseeing, picnicking and cruising in light traffic waters, according to Branson.

The Electra is powered by two heavy-duty marine lead acid batteries, each delivering 272 amp-hr at 24V and installed in a keel box. The keel box also contains the boat's electric motor and an automatic bilge pump that prevents the motor from flooding due to excessive rain-water. The total weight of the boat, including the keel box and its equipment, is 1,300 lb. Since the weight is at the craft's centerline, the boat is unusually stable.

The inboard power system for the craft, a permanent magnet electric motor that delivers 3/4 hp, can run the boat for about 30 miles at 5 mph cruising speed. At 3 mph, the boat can be operated for 12 hours. A solid state controller permits variable speeds down ... transistorized circuit prevents overcharge and, with good care, the batteries will last several years, says Branson. Cost is $4,500 FOB.



Battery-powered "Electra", with 5-1/2-ft beam and 1-ft draft, is stable boat for leisurely cruising.



Two heavy-duty marine batteries (272 amp at 24V) drive motor mounted in keel box to give maximum speed of 6 knots and range of 30 miles without recharging.

BATTERIES HELP ELIMINATE NOISE AND POLLUTION OF WATERWAYS

"Pleasure" gets put back in pleasure boating...

Lead acid batteries are helping to put pleasure back in pleasure boating. They are being used to power an 18-foot long boat that is being produced by the Branson Boat Company, Port Salerno, Fla.

Appropriately ... 18," the boat ... designed to solve ... problems facing ... pleasure boat ... communities ... pollution from ... engines used to ... boats, and the ... residue emitted ...

"A lot of water ... outlawing ... Conservationists ... pressing hard ... prohibiting ... waterways by ... engine craft. Our ... eliminate these ...

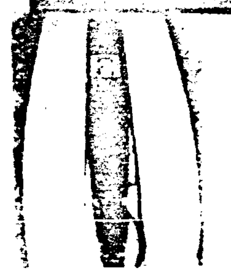
Norman Branson, president of the boat company.

Designed for trolling, the boat is also gaining acceptance for leisurely sightseeing, picnicking and cruising in light ... boat for about 30 miles at 5 miles per hour cruising speed. At 3 miles per hour, the boat can be operated for 12 hours. A solid state controller permits variable speeds down to below 1 mph. ... automatic ... into any 115 volt ... to recharge the ... A tran... overcharge ... the batteries will ... according to the ...

Feature article: Battery-Powered Pleasure Boat Introduced

Published in: THE BATTERY MAN

June, 1973

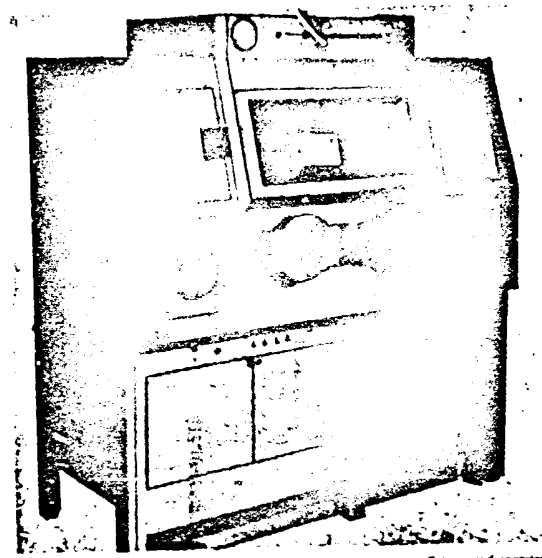


In addition to being designed to provide optimum stability, the hull and keel also provide protection for the boat's heavy-duty propeller and rudder. The craft has a 5½' beam and a draft of only one foot, making it especially useful for shoreline exploring.

Company President Branson reports that work is in progress for a mold to produce a 30' fiberglass electric boat. He says the boat will be known as the "Electra 30" and it will have an 8' beam and a draft of 18". The boat will have a total displacement of between 5 to 6 thousand pounds depending on the number of people aboard.

The battery capacity of the Electra 18 will be over 30 kilowatt hours and the boat's maximum speed will be about 6 knots. At a speed of 3 knots, the boat is expected to run for more than 12 hours for a total distance of about 60 nautical miles before recharging.

THE BATTERY MAN, June, 1973



SINGLE-STATION GLOVE BOX [illegible]

Growing Atomic Energy Use Spurs Lead Shielding Demand

[illegible]

NEW YORK — [illegible]

[illegible]

Mr. Robinson is executive vice-president of the Lead Industries Association, Inc., New York City.

[illegible]

The Favored Material

Lead is clearly the favored [illegible]

AMERICAN METAL MARKET

SPECIAL SUPPLEMENT:

"METALS FOR NUCLEAR ENERGY"

Special feature article by:

Philip E. Robinson

(Page One)

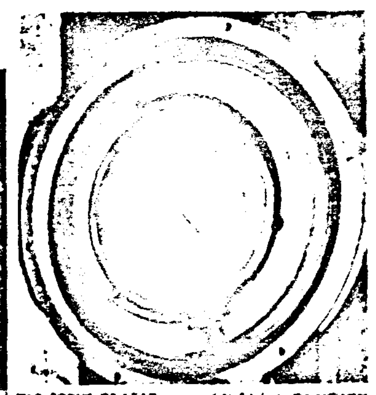
Growing Atomic Energy Use Spurs Lead Shielding

(Continued from page 2A)

[illegible]

TYPES OF LEAD USED FOR RADIATION SHIELDING

Form	Use
Lead Sheet, Slab, and Plate	Permanent shield installations
Lead Shot	Where solid lead is impractical, due to location, shape, and accessibility
Lead Wool	Filling deep cracks in a radiation barrier
Lead Epoxy	In-the-field crack filling and patching
Lead Putty	Non-hardening, temporary crack [illegible]
Lead Brick	Convenient, easily handled, may be moved and re-used
Lead Pipe	Shielding of Radioactive liquids
Lead-clad Tubing	Shielding of radioactive liquids
Lead-lined/Lead-clad Pipe	Shielding of radioactive liquids
Lead Sleeves	Shielding of ducts and pipes carrying radioactive materials
Lead Powder	Dispersed in rubber or plastic for [illegible]



TWO FORMS OF LEAD were used to fabricate the collimator seen mounted in the center of a radiography camera, which is used for head-to-toe cancer detection scanning

AMERICAN METAL MARKET

SPECIAL SUPPLEMENT:

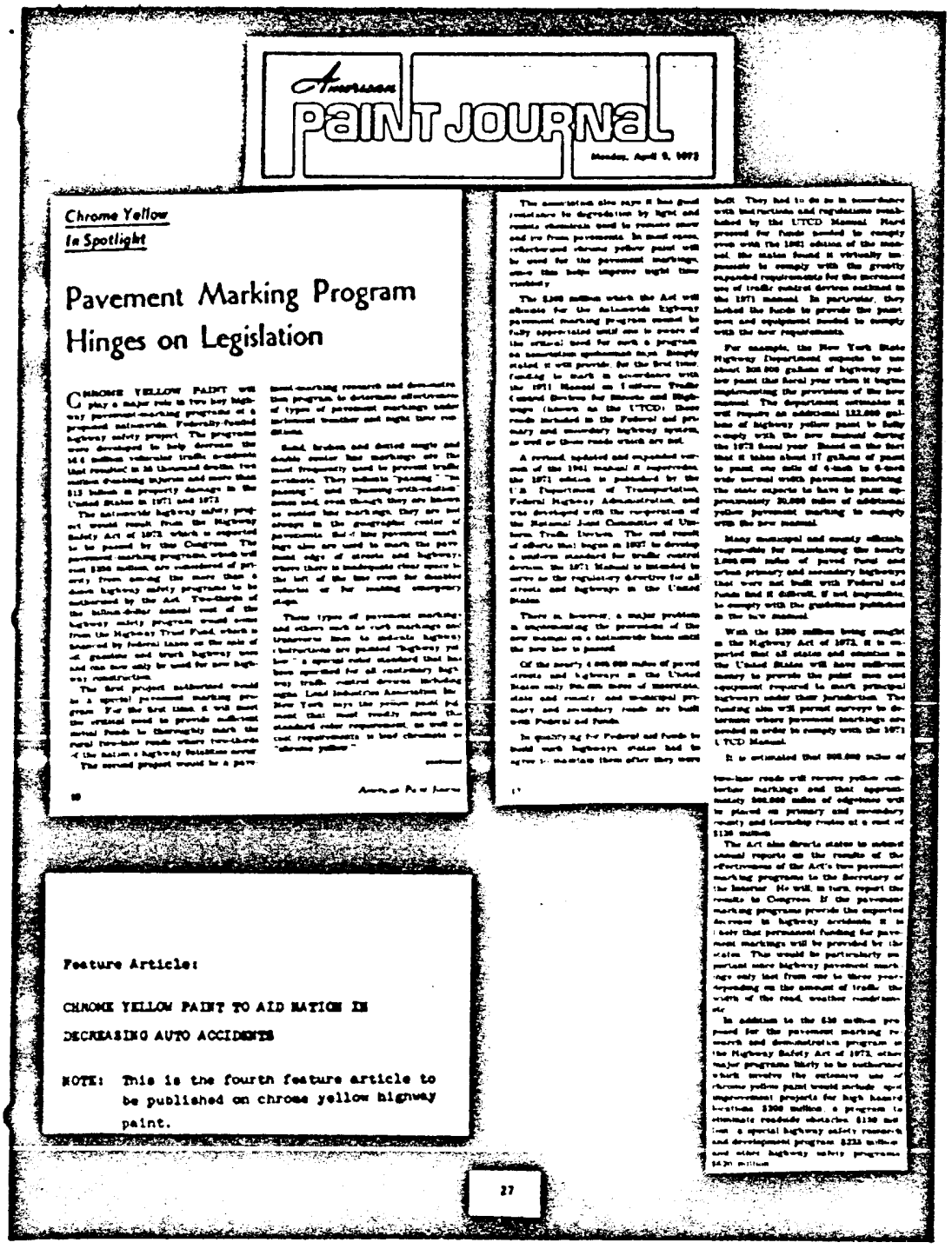
"METALS FOR NUCLEAR ENERGY"

Special feature article by:

Philip E. Robinson

(Page Two)

LIA15016



American PAINT JOURNAL

Monday, April 9, 1973

Chrome Yellow
In Spotlight

Pavement Marking Program Hinges on Legislation

CHROME YELLOW PAINT will play a major role in two key highway pavement-marking programs of a proposed nationwide, Federally-funded highway safety program. The programs were developed to help decrease the 54.6 million reportable traffic accidents that resulted in 55 thousand deaths and 2 million disabling injuries and more than $13 billion in property damages in the United States in 1971 and 1972.

The nationwide highway safety program would result from the Highway Safety Act of 1973, which is expected to be passed by the Congress. The pavement marking programs, which will cost $200 million, are considered of primary importance among the more than a dozen highway safety programs to be implemented by the Act. Two-thirds of the billion-dollar annual cost of the highway safety program would come from the Highway Trust Fund, which is financed by federal taxes on the sale of gasoline and used to build highways and can now only be used for new highway construction.

The first project authorized would be a special pavement marking program. For the first time, it will direct the critical need to provide authorized annual funds to thoroughly mark the most two-lane roads where two-thirds of the nation's highway fatalities occur. The second project would be a pavement marking research and demonstration program to determine effectiveness of types of pavement markings under day/night weather and night time conditions.

Solid, broken and dotted single and double center line markings are the most frequently used to prevent traffic accidents. They indicate "passing" or "no passing" and "passing with caution" areas and, even though they are known as center line markings, they are not always in the geographic center of pavements. Edge line pavement marking lines are used to mark the pavement edge of streets and highways where there is inadequate clear space to the left of the line even for disabled vehicles or for making emergency stops.

These types of pavement marking and others such as curb markings and crosswalk lines to indicate highway intersections are painted highway yellow - a special color standard that has been specified for all continuous highway traffic control devices including paints. Local Industries Association, Inc. New York says the pigment paint must "not visually mimic the standard color requirements, as well as cost requirements of lead chromates in 'chrome yellow'."

(continued)

American Paint Journal

The association also says it has good resistance to degradation by light and caustic chemicals used to remove snow and ice from pavements. In most areas, reflectorized chrome yellow paint will be used for the pavement markings, since this helps improve night time visibility.

The $200 million which the Act will allocate for the nationwide highway pavement marking program cannot be fully appreciated until one is aware of the critical need for such a program. As Association spokesman says, Dunphy stated, it will provide for the first time funding to mark in accordance with the 1971 Manual on Uniform Traffic Control Devices for Streets and Highways (known as the UTCD). Those roads included in the Federal and primary and secondary highway systems, as well as those roads which are not.

A revised, updated and expanded version of the 1961 manual is expected to be published by the U.S. Department of Transportation, Federal Highway Administration, and was developed with the cooperation of the National Joint Committee of Uniform Traffic Controls. The said manual of efforts that began in 1927 to develop a uniform standard for traffic control devices. The 1971 Manual is intended to serve as the regulatory directive for all streets and highways in the United States.

There is, however, a major problem in implementing the provisions of the new manual on a nationwide basis until the new law is passed.

Of the nearly 4,000,000 miles of paved streets and highways in the United States only 800,000 miles of interstate, state and county and municipal primary and secondary roads are built with Federal and State.

In qualifying for Federal and State-aid funds highways states had to agree to maintain them after they were built. They had to do so in accordance with instructions and regulations established by the UTCD Manual. Many persons for funds needed to comply even with the 1961 edition of the manual, the states found it virtually impossible to comply with the greatly expanded requirements for the increased use of traffic control devices outlined in the 1971 manual. In particular, they lacked the funds to provide the paint, men and equipment needed to comply with the new requirements.

For example, the New York State Highway Department expects to use about 300,000 gallons of highway yellow paint this fiscal year when it begins implementing the provisions of the new manual. The department estimates it will require an additional 122,000 gallons of highway yellow paint to fully comply with the new manual during the 1973 fiscal year. Based on the fact that it takes about 17 gallons of paint to paint one mile of 4-inch to 6-inch wide normal width pavement marking, the state expects to have to paint approximately 20,000 miles of additional yellow pavement marking to comply with the new manual.

Many municipal and county officials, responsible for maintaining the nearly 3,000,000 miles of paved local and urban primary and secondary highways that were not built with Federal and Funds find it difficult, if not impossible, to comply with the guidelines published in the new manual.

With the $200 million being sought in the Highway Act of 1973, it is expected that all states and counties in the United States will have sufficient money to provide the paint, men and equipment required to mark principal highways under their jurisdiction. The funding also will permit surveys to determine where pavement markings are needed in order to comply with the 1971 UTCD Manual.

It is estimated that 900,000 miles of two-lane roads will receive yellow centerline markings and that approximately 500,000 miles of edgelines will be placed on primary and secondary county and township roads at a cost of $120 million.

The Act also directs states to submit annual reports on the results of the effectiveness of the Act's two pavement marking programs to the Secretary of the Interior. He will, in turn, report the results to Congress. If the pavement marking programs provide the expected decrease in highway accidents it is likely that permanent funding for pavement markings will be provided by the states. This would be particularly important since highway pavement markings only last from one to three years depending on the amount of traffic, the width of the road, weather conditions, etc.

In addition to the $30 million proposed for the pavement marking research and demonstration program in the Highway Safety Act of 1973, other major programs likely to be authorized which involve the extensive use of chrome yellow paint would include spot improvement projects for high hazard locations $300 million, a program to eliminate roadside obstacles $150 million, a special highway safety research and development program $250 million and other highway safety programs $430 million.

Feature Article:

CHROME YELLOW PAINT TO AID NATION IN DECREASING AUTO ACCIDENTS

NOTE: This is the fourth feature article to be published on chrome yellow highway paint.

LIA15017

Battery Powered Bus Publicity released during and immediately after Annual Lead Industries Association, Inc. Meeting in Detroit

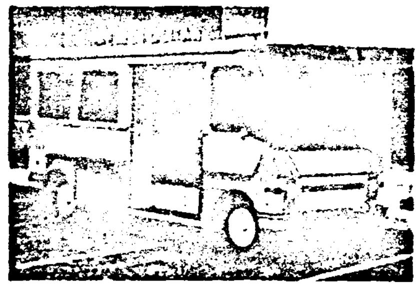
Published in AMERICAN METAL MARKET, THE NORTHERN MINER, MACHINE DESIGN

41-77 MACHINE DESIGN
E.O.W. 114,000

MAY 31 1973 (LUCE'S BACONS)

NEWS TRENDS

Electric Bus Features Quick-Change Batteries



Battery-powered shuttle bus now operating in Cleveland is heralded by the Lead Industries Association Inc. as one "answer to some of the major intra-city transportation problems that might result from promulgation of vehicular restriction laws passed by various metropolitan authorities." The laws referred to are those which would prohibit internal-combustion vehicles in some sections of a city to cut down on air pollution.

The bus carries 25 passengers and is operated by Cleveland Electric Illuminating Co. to transport employees from the company's headquarters to a service center. The bus makes eight round trips daily on runs that are approximately 2 miles long. It is one of the first electric-powered mini-buses to be in permanent use in the U. S.

Designed and manufactured by Battronic Truck Corp., Boyertown, Pa., the new bus has a top speed of 25 mph—well suited to city speed limits—and a maximum range of 40 miles before the batteries have to be recharged or changed. A self-contained battery system permits removal and replacement of the lead-acid battery power package in less than 5 min—the vehicle does not have to be tied to a battery charger for long periods or taken out of service while batteries are changed.

54-77 THE NORTHERN MINER
WKLY 30,000

APR 12 1973 (LUCE'S BACONS)

57-2 AMERICAN METAL MARKET
DLY. EX. SAT., SUN. AND HOLIDAYS 23,000

MAY 15 1973 (LUCE'S BACONS)

A Cleveland Firm's Intro-Plant Bus Is Powered by a Lead-Acid Battery

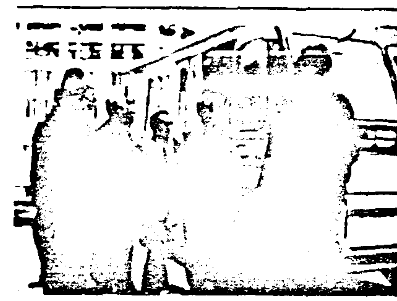
NEW YORK — A lead-acid battery-powered bus may be one answer to strict United States government requirements for efficient control of automotive pollution emissions, the Lead Industries Association claimed.

One lead-acid battery bus, designed and manufactured by Battronic Truck Corp., Boyertown, Pa., is being employed by the Cleveland Electric Illuminating Co. to transport employees between the company's headquarters and service center.

The 25-passenger bus has a top speed of 25 miles an hour, and a maximum battery range of 40 miles.

A self-contained battery system developed by Battronic permits removal and replacement of the lead-acid battery power cell in less than 5 minutes.

This means that the vehicle does not have to be tied to a battery charger for long periods or taken out of service while the batteries are recharged.



ELECTRIC VEHICLE [illegible]

Test run for a new lead consumer

Above are some of the nearly 300 officials representing North American and foreign companies who attended the 3-day combined annual meetings of the Lead Industries Association and the Zinc Institute held in Detroit on Apr. 4-6, who prepare to board an electric bus for a short tour of downtown Detroit.

Supplied by the Cleveland Electric Illuminating Co., which is testing it, and the Battronic Corp., manufacturers, the vehicle demonstrates the role lead acid batteries are playing in developing non polluting passenger systems for intra-city, shopping centre, airport and other types of shuttle service.

Visible from left to right are R. L. Stubbs, [illegible] and Development Association, London, England; E. R. Gautschi, Cominco Ltd., Vancouver, Canada; R. E. Wallace, Homestake Mining Co., San Francisco, Calif.; P. E. Robinson, Executive Vice President of the Lead Industries Association Inc. [illegible] the Zinc Institute, New York, N.Y.; R. B. Barnes, Cominco American, [illegible] Spokane, Wash.; Robert De[illegible], Battronic Corp., who represented the manufacturer of the electric bus; and H. J. Whitson, NL Industries, Hightstown, N.J.

LIA15018

AMERICAN PAINT JOURNAL
April 23, 1973

Lead Industries Association Names Mardick, Ramsey New Directors

Detroit, April 18 — J. A. Mardick, vice president, Metals Division, N L Industries, and R. H. Ramsey, vice president, Rosemont Mining Corp., both of New York, were added as new members of the board of directors of Lead Industries Association, Inc., at its recent meeting here.

Other directors re-elected at the 45th Annual Meeting of the Association were: D. B. Craig, St. Joe Minerals Corp., New York; J. G. McCullough, Amax Lead & Zinc Inc., Clayton, Mo.; S. D. Strauss, American Smelting & Refining Co., New York; F. H. Osborn, Broken Hill Associated Smelters Proprietary Ltd., Melbourne, Australia; J. C. MacLean, Cominco American Inc., Spokane, Wash.; H. T. Fargey, Cominco Ltd., Vancouver; L. M. Herman, Dresser Industries Inc., Houston; R. O. Brounlie, E. I. du Pont de Nemours & Co., Wilmington, Del.; R. J. Kenny, Kidd Inc., Philadelphia; R. A. Konkel, American Smelting & Refining Co., New York; R. A. Gardner Jr., Gardner Metal Co., Chicago; R. H. Ramsey, Rosemont Mining Corp., New York; W. H. Love, Hecla Mining Co., Wallace, Ida.; P. C. Henshaw, Homestake Lead Company of Missouri, San Francisco; J. A. Mardick, N L Industries, Inc., Hightstown, N.J.; E. C. Hendrick, Noranda Sales Corp., Ltd., Toronto; H. A. Krueger, Ozark Lead Co., Sweetwater, Mo.; R. Visner, Hyman Viener & Sons, Richmond, Va.; and T. M. Smythe, Ethyl Corp., Baton Rouge, La.

D. B. Craig, executive vice president, St. Joe Minerals Corp., New York, was re-elected president and chairman of the board of directors.

T. M. Smythe, Ethyl Corp., Baton Rouge; J. F. [illegible], [illegible] Corp., Plymouth Meeting, Pa.; and J. G. McCullough, Amax Lead & Zinc Inc., Clayton, Mo., were re-elected vice presidents of the association.

L. E. Oage, director of communications, was elected to the additional post of assistant secretary.

Other officers re-elected were: P. K. Robinson, executive vice president; J. F. Smith, secretary and general manager; R. J. O'Hara, Amax Lead & Zinc, treasurer; and Mrs. D. L. Moore, comptroller and assistant treasurer.

April 23, 1973

IRON AGE METALWORKING
INTERNATIONAL
PHILADELPHIA, PA.
MONTHLY 21,[illegible]

FEB 1973

Please excuse the delay in the mailing of this clipping to you. The publication from which it was taken was late in arriving in our office.

BURRELLE'S

Annual Meeting—Lead Industries Association—4-6 April, Detroit. Agent: Lead Industries Association, 292 Madison Ave., New York, New York 10017

National Fluid Power Association Spring Meeting—8-11 April, [illegible], Florida. Agent: NFPA, P.O. Box 49, Thiensville, Wisconsin 53092.

[illegible] National Open Hearth & Basic Oxygen Steel Conference & Blast Furnace[illegible] Conference—9-11 April, Cleveland. Agent: The Metallurgical Society of AIME, 345 East 47th Street, New York, New York 10017.

41-71 WASTE TRADE JOURNAL
WKLY.

MAR 24 1973 BURRELLE'S

Lead Industries Association, Zinc Institute to Hold Joint Annual Meeting April 4-6

The Lead Industries Association, Inc. (LIA) and the Zinc Institute, Inc. (ZI) will hold their Annual Joint Meeting at the Sheraton-Cadillac Hotel, Detroit on April 4-6. The meeting will mark the 45th for the LIA and the 55th for ZI.

Attendance at the two meetings will be primarily confined to members of the two associations and members of closely related trade associations whose members are consumers of the two metals. Foreign and domestic government officials as well as members of the press will be invited to the meetings.

The Annual LIA Meeting is scheduled to begin on the afternoon of April 4 with a business session to nominate and elect the Association's Board of Directors and to hear the Treasurer's report. Later in the afternoon, there will be a report on the status of lead in gasoline and a panel from the auto industry will discuss the future use of such lead-containing products as batteries, solders and paints in automobiles. A LIA Board of Directors Meeting will be held in the late afternoon.

The annual LIA meeting will con[illegible]

April 6, an announcement will be made of the election of ZI officers and the treasurer's report will be delivered as part of the morning session. The use of zinc in automobile design during the 1973-80 period and use of zinc in appliances during next ten years will be discussed.

The Galvanizers Committee, a Zinc Institute-related association made up of U.S. and foreign companies who produce galvanized steel, will join the LIA/ZI luncheon on April 5 when the Zinc Institute makes its annual Sponsors Award. The Galvanizers Committee will join the ZI for the noon luncheon on April 6.

General publicity resulting from releases announcing LIA Annual Meeting and selection of LIA Board of Directors

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33-2 AMERICAN
METAL MARKET
[illegible]

MAR 5 1973 BURRELLE'S

calendar of events

The listing of industry meetings and other events is published regularly on the first Monday of each month.

APRIL

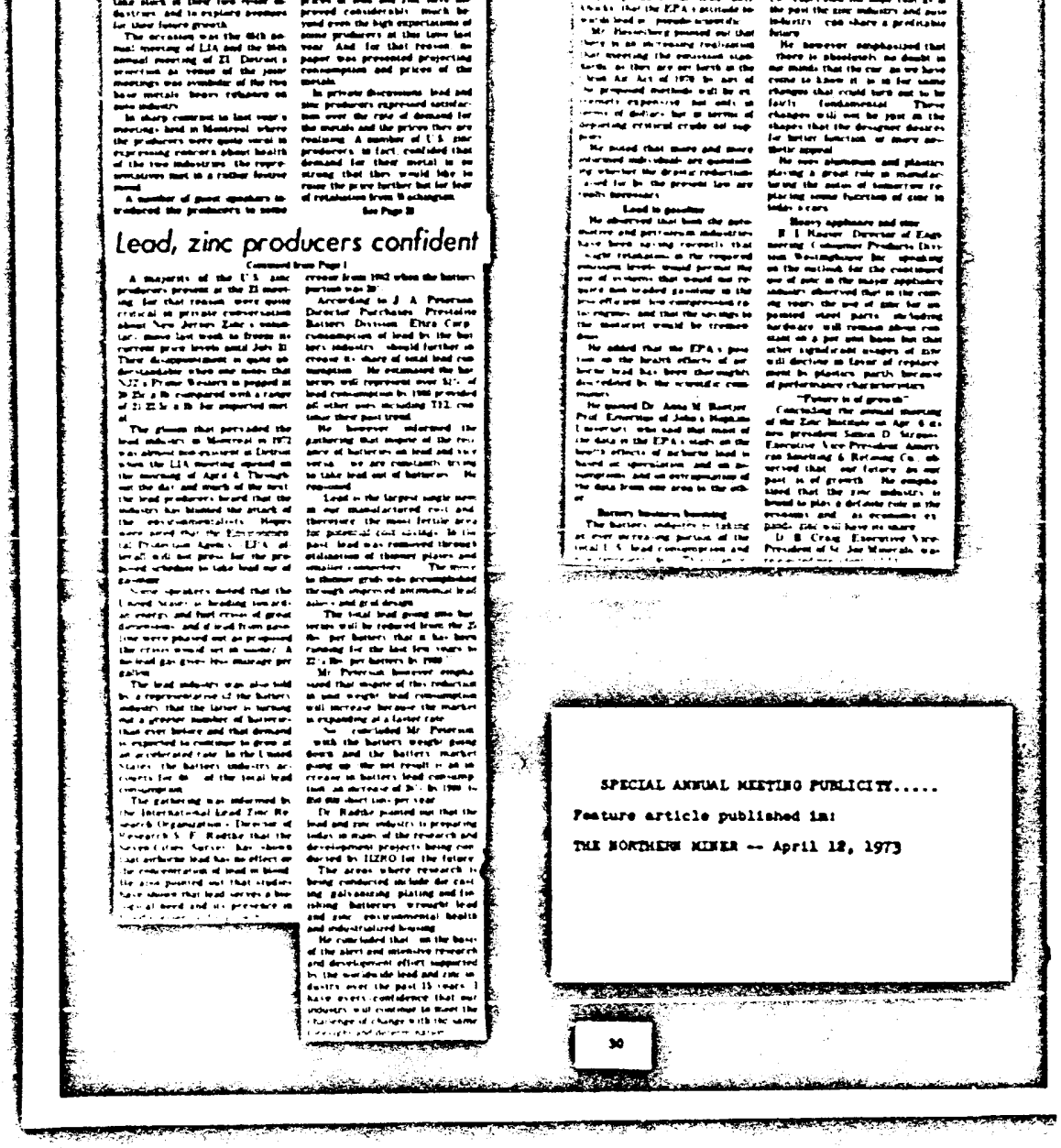
1-4 - National Handling Institute Equipment Association, Regency Hyatt House, Atlanta. (Contact Material Handling Institute Equipment Association, 1326 [illegible] Rd., Pittsburgh, Penn.)

4-6 - Lead Industries Association and Zinc Institute, annual meeting, Sheraton-Cadillac, Detroit, Mich. (Contact Lead Industries Association, 292 Madison Ave., New York, N.Y. 10017)

... Manufacturing Engineers, 20501 Ford Rd., Dearborn, Mich. 48128)

9-12 - Design Engineering Conference and Show, Philadelphia Civic Center. (Contact Clapp & Poliak, Inc. 245 Park Ave., New York, N.Y. 10017)

9-12 - American Metal Stamping Association Technical Conference, Pfister Hotel, Milwaukee. (Contact AMSA, 27027 Chardon, Cleveland, O.)



Lead, zinc producers confident

SPECIAL ANNUAL MEETING PUBLICITY.....

Feature article published in:

THE NORTHERN MINER -- April 12, 1973

APR 1973

Craig to Head Lead Association

D. B. Craig, executive vice president, St. Joe Minerals Corporation, New York, was re-elected president and chairman of the board of directors of the Lead Industries Association, Inc.

Re-elected vice presidents of the Association during the 45th annual meeting in Detroit were: T. M. Smyth, Ethyl Corporation, Baton Rouge, La.; J. F. Rittenhouse, Eltra Corporation, Plymouth Meeting, Pa.; and J. G. McCullough, Amax Lead & Zinc, Inc., Clayton, Mo.

L. E. Gage, director of communications for LIA, was elected to the additional post of assistant secretary.

Other officers re-elected by LIA were: P. E. Robinson, executive vice president, J. F. Smith, secretary and general manager, R. J. O'Hara, Amax Lead & Zinc, Inc., Clayton, Mo., treasurer, and Mrs. D. L. Moore, comptroller and assistant treasurer.

lead and zinc market

Lead Industries Association Re-elects Craig to Top Post

DETROIT — D. Broward Craig, executive vice-president, St. Joe Minerals Corp., New York, last week was re-elected president and chairman of the Lead Industries Association, Inc.

At its 45th annual meeting, held here, T.M. Smyth, Ethyl Corp., Baton Rouge, La., J.F. Rittenhouse, Eltra Corp., Plymouth Meeting, Pa., and J.G. McCullough, Amax Lead & Zinc Inc., Clayton, Mo., were reelected vice-presidents of the lead marketing association.

L.E. Gage, director of communications for LIA, was elected to the additional post of assistant secretary.

Other officers reelected by LIA were P.E. Robinson, executive vice-president, J.F. Smith, secretary and general manager, R.J. O'Hara, Amax Lead & Zinc, Inc., Clayton, Mo., treasurer, and Mrs. D.L. Moore, comptroller and assistant treasurer.

J.A. Mardick, vice-president, Metals Division, NL Industries, and R.H. Ramsey, vice-president, Newmont Mining Corp., both of New York, were elected directors of the Association.

Directors who were reelected were D. Broward Craig, St. Joe Minerals Corp., New York, J.G. McCullough, Amax Lead & Zinc, Inc., Clayton, Mo., Simon D. Strauss, American Smelting & Refining Co., New York, F.R. Osborn, Broken Hill Associated Smelters Pty. Ltd., Melbourne, Australia, J.C. MacLean, Cominco American Inc., Spokane, R.T. [illegible] Cominco Ltd., Vancouver, B.C., L.M. Herman, Dresser Industries, Inc., Houston, R.G. Brendle, E.I. du Pont de Nemours & Co., Wilmington, Del., R.J. Kenny, ESB Inc., Philadelphia, R.A. [illegible], American Smelting & Refining Co., New York, R.A. Gardner, Jr., Gardner Metal Co., Chicago, R.H. Ramsey, Newmont Mining, New York, W.H. Love, Hecla Mining Co., Wallace, Id., P.C. [illegible], [illegible] Lead Co. of Missouri, San Francisco, J.A. Mardick, NL Industries, Hightstown, N.J., E.C. [illegible], Noranda Sales Corp. Ltd., Toronto, H.A. Krueger, Ozark Lead Co., Sweetwater, Mo., R. Vimer, Hyman Viener & Sons, Richmond, Va., and T.M. Smyth, Ethyl Corp., Baton Rouge, La.

ZINC INSTITUTE ELECTIONS

S. D. Strauss, executive vice president, American Smelting & Refining Co., has been elected president and chairman of the Board of Directors of the Zinc Institute, Inc.

Elected vice presidents were J. B. Alexander, The New Jersey Zinc Co., Bethlehem, Pa., J. C. Duncan, St. Joe Minerals Corp., New York, N. Y., and R. D. Madison, Texas Gulf, Toronto, Canada. R. J. O'Hara, Amax Lead & Zinc, Inc., Clayton, Mo. was re-elected treasurer.

MAY 1973

Simon D. Strauss, executive vice president of American Smelting and Refining Co., has been elected president and chairman of the board of the Zinc Institute, Inc., and D. B. Craig, executive vice president of St. Joe Minerals Corp., was re-elected president and chairman of the board of the Lead Industries Association, Inc.

MAY 1973

Simon D. Strauss, executive vice president of American Smelting and Refining Co., has been elected president and chairman of the board of the Zinc Institute, Inc., and D. B. Craig, executive vice president of St. Joe Minerals Corp., was re-elected president and chairman of the board of the Lead Industries Association, Inc.

MAY 21 1973

D. Broward Craig, Executive Vice President, St. Joe Minerals Corporation, has been appointed to the Board of Directors of The Burke Rehabilitation Center, it was announced by John S. Carey, Board President. A graduate of Harvard College and Harvard Law School, he was [illegible]

APR 26 1973

MAY 1973

APPOINTMENTS

* Chloride Automotive Batteries, Ltd., Harry Lymath becomes managing director.
* Chloride Industrial Division, Leonard Groening was appointed to the new position of European Director.
* Chrome Electric Corporation, R.L. McDonald is the new manager, Motive Power Sales.
* Globe-Union, Inc., the board of directors have approved the nomination of John Arvel to vice president and chief financial officer.
* Lead Industries Association, Inc., at the 45th Annual Meeting D.B. Craig, executive vice president of St. Joe Minerals Corporation, was re-elected president and chairman

31

Lead Industries Association

Personnel Announcement........

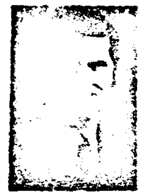
D. B. Craig Elected to President & Chairman

of Lead Industries Association, Inc.

LIA15021

12-1 ASSOCIATION MANAGEMENT [illegible]

MAY 1973 BURRELLE'S BACON'S



Jerome F. Smith

Jerome F. Smith has been named Secretary and General Manager of Lead Industries Association and Zinc Institute. Mr. Smith has been with LIA since 1961, serving as Technical Director and Advertising Director.

61-7 PAINT & VARNISH PRODUCTION [illegible]

APR 1973 BURRELLE'S BACON'S

LIA and ZI Name Four

Jerome F. Smith has been named secretary and general manager of Lead Industries Association (LIA) and Zinc Institute (ZI). Other LIA and ZI appointments include Dorothy Moore, assistant treasurer and comptroller, Lewis E. Gage, director of communications, and Ray Assadi, manager of association services.

Mr. Smith has been with LIA since 1961, serving as technical director and advertising director. He was elected LIA secretary and manager in 1971. A member of several professional organizations, Mr. Smith is a graduate of the University of Miami with a B.S. in chemistry and geology. Mrs. Moore has been with Zinc Institute since 1953. As comptroller and assistant treasurer for LIA and ZI she will be responsible for the financial operations of both organizations.

A graduate of Wesleyan University, Mr. Gage has been active in market development and communications programs for ZI since 1961. In his new assignment he will assume over-all responsibility for advertising, promotion and public relations programs for the two marketing groups. He had previously been associated with U.S. Rubber Co. and Bundy Corp.

Mr. Assadi has been with LIA since 1968, handling a number of market development and trade show assignments. A graduate of Teheran University with a B.S. in engineering, he formerly served with Continental Auto Parts.

23-13 CERAMIC CLAY & CERAMICS [illegible]

APR 1973 BURRELLE'S BACON'S

Jerome F. Smith has been named Secretary and General Manager of Lead Industries Association (LIA) and Zinc Institute (ZI). The announcement was made by Philip F. Robinson, Executive Vice President of the two organizations. Other new appointments announced for LIA and ZI were Mrs. Dorothy Moore, Assistant Treasurer and Comptroller, Lewis E. Gage, Director of Communications, and Mr. Ray Assadi, Manager of Association Services.

DIE CASTING ENGINEER DETROIT, MICH. [illegible]

MAR-APR 1973 [illegible]

• Jerome F. Smith has been named secretary and general manager of Zinc Institute (ZI) and Lead Industries Association (LIA). Other new appointments include Mrs. Dorothy Moore, assistant treasurer and comptroller, Lewis E. Gage, director of communications, and Ray Assadi, manager of association services. Mr. Smith has been with LIA since 1961, serving as advertising and technical director. Mrs. Moore has been with ZI since 1953, while Mr. Gage has been active in market development and communications programs for ZI since 1961. Mr. Assadi has been with LIA since 1968, working on market development and trade show assignments.

• Sheldon Rudorfer president and Phil Crain, V.P. have formed North American Die Casting Corp., Fredericksburg, Va. The company will specialize in zinc die cast products used by the building products

J. F. Smith

WORLD MINING SAN FRANCISCO, CALIF. [illegible]

MAR 1973 [illegible]

Smith

[illegible] has been named [illegible] manager of Lead [illegible] and the Zinc Institute with the Lead [illegible] since 1961, serving [illegible] and advertising [illegible] was elected secre-

Lead Industries Association

Jerome F. Smith has been named secretary and general manager of LIA and Zinc Institute. With LIA since 1961, Smith has served as technical director and advertising director; he was also named LIA secretary and manager in 1971.

J. F. Smith

54-1E WORLD MINING [illegible]

MAR 1973 BURRELLE'S BACON'S

Smith

Jerome F. Smith has been named secretary and general manager of Lead Industries Association and the Zinc Institute. Smith has been with the Lead Industries Association since 1961, serving as technical director and advertising director. In 1971 he was elected secretary and manager.

Edgar A. Scholz has been named president of the British Columbia and Yukon Chamber of Mines, Canada. Scholz, who is vice president, exploration, for Placer Development Limited, had been a vice president of the Chamber of Mines.

Lead Industries Association Personnel

Announcements..........

Smith, Moore, Gage, Assadi

23 Magazines

LIA15022

MAR 1973

AWS Presents Big Chicago Package

54th Annual Meeting
1973 Welding Show
AWS Technical Sessions
2nd International Soldering Conf.
4th International Brazing Conf.
Social and Special Events

MAR 22 1973

FEB 28 1973

Soldering Conference Slated

NEW YORK — The Lead Industries Association and the American Welding Society will cosponsor the second international soldering conference, which is scheduled for April 3-4 in Chicago.

Subjects to be discussed include such solder areas as new materials and products, and the latest developments in mechanisms, equipment, atmospheres and fluxes, environmental controls and soldering.

New ideas, workshops, consultants spark '73 Welding Show in

WELDING JOURNAL
MIAMI, FLA.

MAR 1973

equipment, atmosphere and fumes, environmental controls and soldering.

The AWS 54th annual meeting technical program will feature more than 100 welding and metallurgical experts.

OSHA as it affects welding operations in shops.

The Welding Research ... conduct a workshop ... testing. Authorities will ... current weldability ...

Some 1973 Welding Show exhibitors

Second International AWS Soldering Conference

(Co-sponsored by Lead Industries Association)

Tuesday—April 3

McCormick Place

MAR 1973

Morning Session (9:30 a.m.)
Soldering Developments and New Applications—Part I
Chairman: R. Hoyles, Kester Solder Company

Welding show and AWS meeting scheduled

MIAMI, FLA.—The American Welding Society will stage its 1973 Show April 3-5 and its 54th Annual Meeting April 2-6 at McCormick Place in Chicago. Other featured events will be the Second International Soldering Conference, April 3-4, and the Fourth International AWS-WRC Brazing Conference, April 4-5.

Considered one of the nation's major metalworking expositions, the 1973 Welding Show is expected to attract visitors representing structural fabricators, EDP and electronic equipment manufacturers, automotive and earthmoving equipment industries, and a broad network of metalworking plants. A 3000 visitors from country and abroad ...

The Soldering Conference, sponsored by the Lead Industries Association, will feature new developments and applications involving the solutions to soldering problems ...

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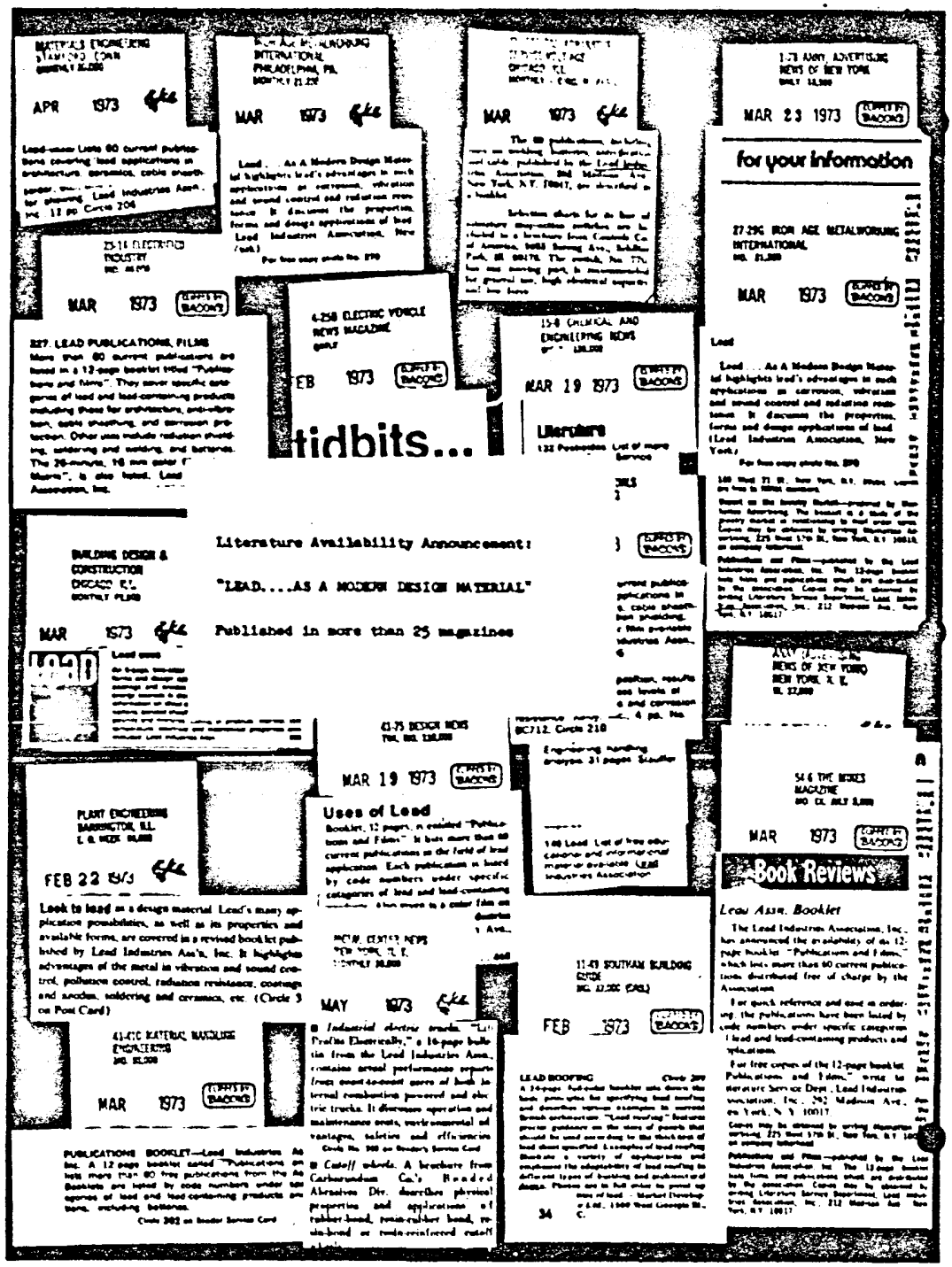
Electroslag welding, Surfacing and gouging
Weldability testing
Ultrasonic and gas shielded-arc welding process studies
Soldering Session I—Soldering developments and new applications—Part I

JOINT CONFERENCE WORKSHOP.......

AMERICAN WELDING SOCIETY'S BRAZING AND SOLDERING WORKSHOP

LIA15023



tidbits...

Literature Availability Announcement:

"LEAD....AS A MODERN DESIGN MATERIAL"

Published in more than 25 magazines

for your information

Lead ... As A Modern Design Material highlights lead's advantages in such applications as corrosion, vibration and sound control and radiation resistance. It discusses the properties, forms and design applications of lead. (Lead Industries Association, New York)

Uses of Lead

Booklet, 12 pages, is entitled "Publications and Films." It lists more than 60 current publications on the field of lead application. Each publication is listed by code numbers under specific categories of lead and lead-containing

Look to lead as a design material. Lead's many application possibilities, as well as its properties and available forms, are covered in a revised booklet published by Lead Industries Ass'n, Inc. It highlights advantages of the metal in vibration and sound control, pollution control, radiation resistance, coatings and anodes, soldering and ceramics, etc. (Circle 3 on Post Card)

PUBLICATIONS BOOKLET—Lead Industries Association, Inc. A 12-page booklet entitled "Publications and Films" lists more than 60 free publications from the Association. Each booklet is listed by code numbers under two sources of lead and lead containing products are listed, including batteries.

Circle 202 on Reader Service Card

Book Reviews

Lead Assn. Booklet

The Lead Industries Association, Inc., has announced the availability of its 12-page booklet "Publications and Films," which lists more than 60 current publications distributed free of charge by the Association.

For quick reference and ease in ordering, the publications have been listed by code numbers under specific categories of lead and lead-containing products and applications.

For free copies of the 12-page booklet "Publications and Films," write to: Literature Service Dept., Lead Industries Association, Inc., 292 Madison Ave., New York, N. Y. 10017.

Lead ... As A Modern Design Material highlights lead's advantages in such applications as corrosion, vibration and sound control and radiation resistance. It discusses the properties, forms and design applications of lead. (Lead Industries Association, New York)

Publications and Films—produced by the Lead Industries Association, Inc. The 12-page booklet lists more than 60 current publications which are distributed free of charge by the Association. Copies may be obtained by writing Literature Service Department, Lead Industries Association, Inc., 292 Madison Ave., New York, N.Y. 10017

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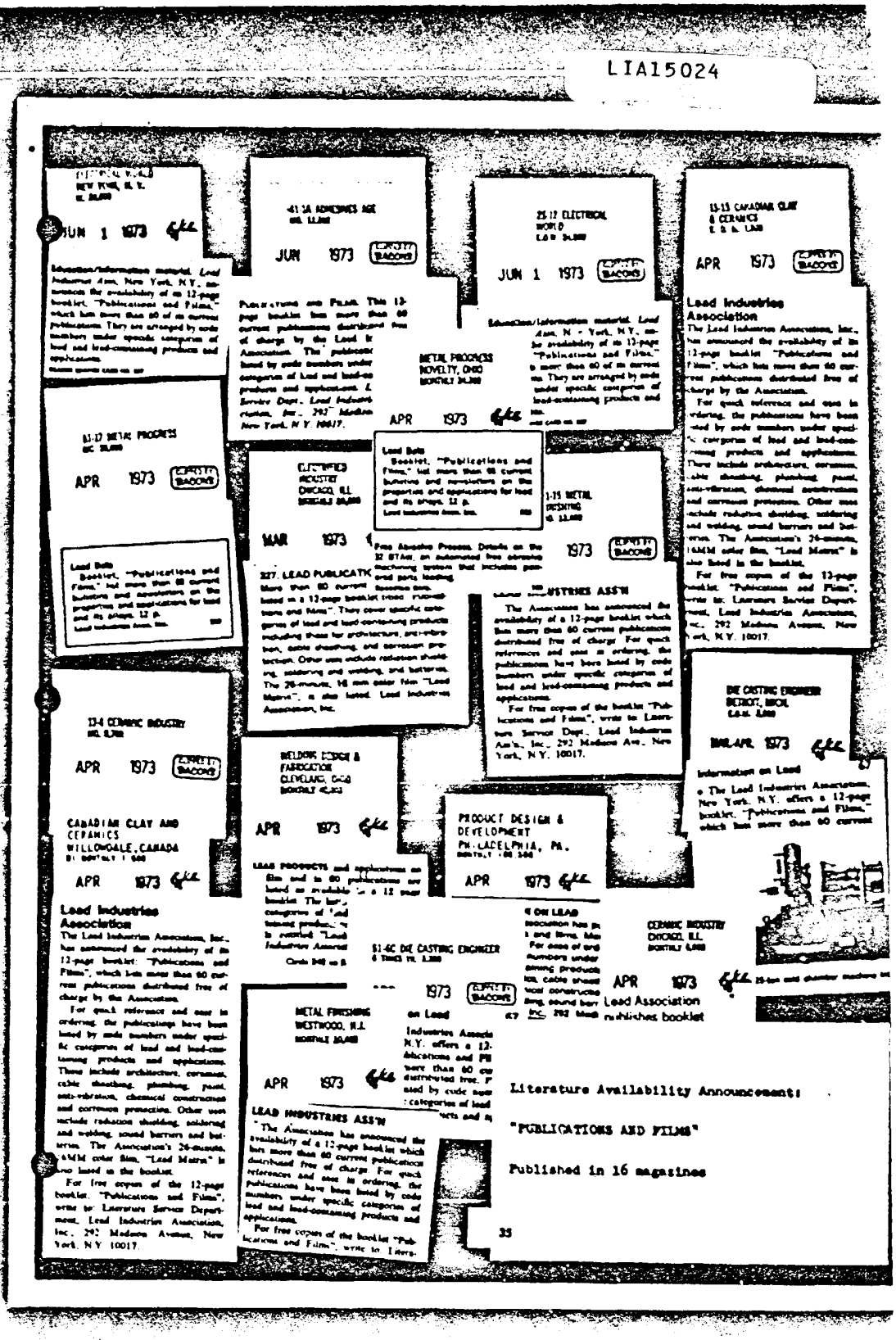

Literature Availability Announcement:

"PUBLICATIONS AND FILMS"

Published in 16 magazines