

C. J. PARKINSON

May 24, 1971

✓
L. Smith
K. J. Parkinson

SUBJECT: REPRINTS OF 1971 LIA ADVERTISEMENTS

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

It is our pleasure to attach one set of reprints of 1971 ads from the Lead Industries Association campaign.

If you would like to have a few extra copies, please feel free to write me.

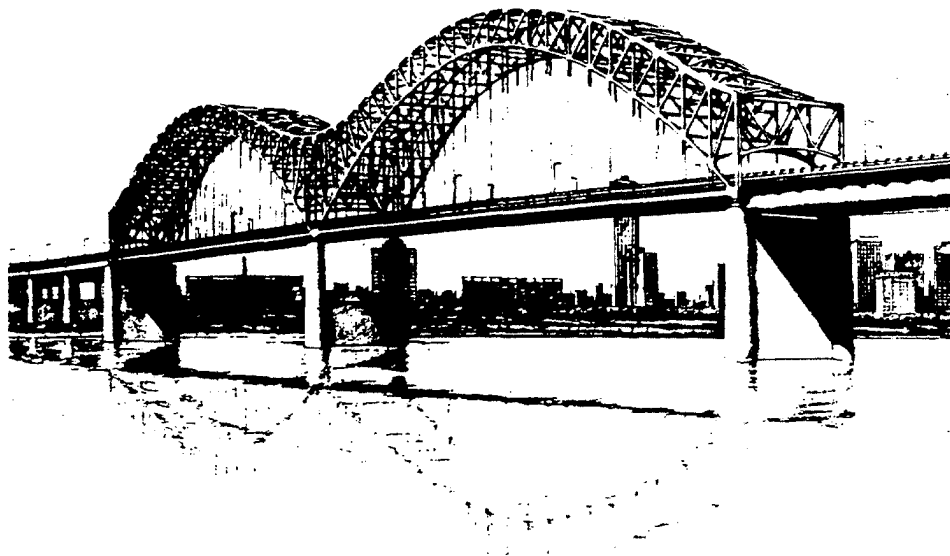
Very truly yours,

Jerome F. Smith

JFS:lm
Attachments

Jerome F. Smith
Manager, Advertising & Technical Service

PNYC00001359



Lead pigments save your bridge for all seasons.

Corrosion, a major problem for structural steel bridges, is combatted best with protective coatings of lead-based paint. Weather, industrial fumes and marine atmospheres are on the attack all seasons of the year. Lead pigmented systems maintain their corrosion-protective vigilance no matter what the season.

Notable new bridges all over the country have gone up in the last few years with time-tested lead paint systems as their trusted corrosion protection. Going up now is a major bridge over the Mississippi, connecting Shelby County, Tennessee, and Crittendon County, Arkansas. The new bridge, the superstructure alone costing \$25,000,000, is scheduled to have five coats of protective

paint, four of them containing basic lead silico chromate.

The structural steel for the bridge is delivered to the site with a wash primer and a shop-applied primer coat of orange silico chromate/alkyd resin paint. Three field coats follow: two red and a final coat of bright green, all containing basic lead silico chromate corrosion-inhibitive pigment. Specifications for this bridge were taken from the Tennessee Department of Highways paint specifications for steel structures. A third field coat was added to further extend the life of the paint system.

For information on lead pigments write Lead Industries Association, Inc., Dept. 000, 292 Madison Avenue, New York, N.Y. 10017.



Lead Industries Association, Inc.

Lead Industries Association, Inc.
1971 Advertising Program
This ad appearing in:
Engineering News-Record
Ad 7184

PNYC00001360

N10851.01

the

LEAD newsletter

Vol. 16 No. 2

Terne metal applies itself to critical design and production requirements

Lead-alloy coated steel, known to industry as "terne", is being used by metal fabricators for an ever increasing range of applications. In some cases terne has replaced other coated steel products, as well as aluminum, and, of course, cold rolled steel.

Major factors influencing the selection of terne over these other design materials are: new developments in the metal itself; an awareness that terne improves the life of certain products; and terne's paintability and ease of joining.

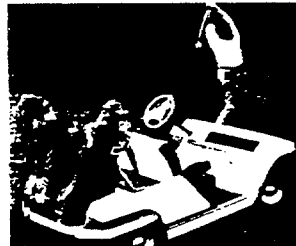
Terne incorporates the intrinsic benefits of lead with the essential strength of steel. Foremost among lead's advantages is its singular resistance to corrosion, and terne, of course, shares in this advantage. Manufacturers of products requiring deepdrawing or severe forming benefit from terne since the coating acts as a lubricant. Die life is extended significantly when terne is used in place of cold rolled; lubricant cleanup and die dressing costs are reduced. Terne can be soldered using non-corrosive fluxes since the coating functions as a solder in itself. Terne is readily and easily welded. Terne's lead coating accepts surface finishes easily after only a simple degreasing.

Terne insures long term life for golf cars

A major consideration facing manufacturers of golf cars is the need for a body and finish that will withstand the rigors of outdoor use for as long as 8 years without noticeable wear. Cushman Motors, important manufacturers of both recreational and industrial golf cars, answered this requirement by specifying terne for critical body areas on their entire line.

After exhaustive testing terne was specified over other materials because

of its (a) corrosion resistance, particularly in coach joints (b) ease of repair by distributors in the field, and (c) acceptance of a beautiful exterior finish.



Corrosion-resistant terne extends the body life of this Cushman Motors "Gran Cushman" golf car to 8 years, however rigorous the outdoor exposure.

A specially vulnerable area on the golf car is the coach joint, an inaccessible blind where moisture collects and causes conventional steels to rust. Terne used in this area offers a double protection since the opposing faces are both coated with the corrosion-resistant lead alloy.

New developments in Terne extend its applications

In recent years manufacturers of terne have developed variations of the metal that open new areas of application. Terne coated stainless steel promises new applications in the automotive and



The corrosive environment found in chemical laboratories meets its match in terne lab furniture. A plus for the manufacturer: no derusting is necessary before fabrication.

Photo: Duralab Equipment Corp.

building industries. A new terne with a bright shiny finish unlike the dull gray normally associated with the metal, has increased its use for parts that are highly visible. Terne foil has also been developed and may find use in automotive radiator cores as a replacement for copper. Available in coil form as light as .002 inches thick, the foil has a heavier than normal lead-alloy coating. Its excellent corrosion resistance and solderability extend its potential use from radiator cores to the manufacture of cans and containers, magnetic shields for color television, radiant heating panels, and other applications.



Automotive parts requiring deep drawing or detailed configurations, such as the 2-foot long fan and vane disc, are most easily stamped or spun out of terne.

Photo: Basic Steel Corp.

How can Terne benefit your operation?

If you are designing a part or a product that must, of necessity, be stored before fabrication, you should consider using terne. Its corrosion resistance is an effective rust inhibitor so that rust removal and other costly restorative processes are not necessary when the time comes to use the part. If your product is subject to unusual breakage during drawing or forming operations: if you wish to increase die life, terne provides the solution.

For detailed information on terne's availability, characteristics and applications write Lead Industries Association, Inc., Dept. 000, 292 Madison Avenue, New York, New York 10017.



Lead Industries Association, Inc.

Lead Industries Association, Inc.
1971 Advertising Program
This ad appearing in:
American Machinist, Machine Design, Product Engineering
Ad 7161

PNYC00001361

N10851.02



Lead helps keep BART on the go.

Tunnel waterproofing, complex electrical system, underwater tubes . . . all depend in some way on lead at San Francisco's new Bay Area Rapid Transit System (BART).

A special extruded wedge-shaped lead calking strip protects all bolted plate sections of the BART tunnels from underground water seepage. Why lead? Because lead is renowned for its effectiveness as a permanent waterproofing seal.

Lead sheathed cable insures complete reliability for the 12 critical miles of the electrical system that required direct underground burial. Why lead? Lead's flexibility, moisture impermeability, corrosion resistance and chemical stability dictated its

selection as the cable protection.

Further protection for this system is provided by lead platinum anode platforms strategically located along BART'S 3.6 mile long steel underwater tubes. The tubes are thus protected from the otherwise inevitable costly corrosion that would occur on steel immersed in seawater. The anticipated life of each anode is 5 years, providing long-term protection at minimal cost.

Lead's special characteristics and versatility offer time-tested advantages in all kinds of construction. For helpful solutions to your construction problems, write: Lead Industries Association, Inc., Dept. 000, 292 Madison Avenue, New York, New York 10017.

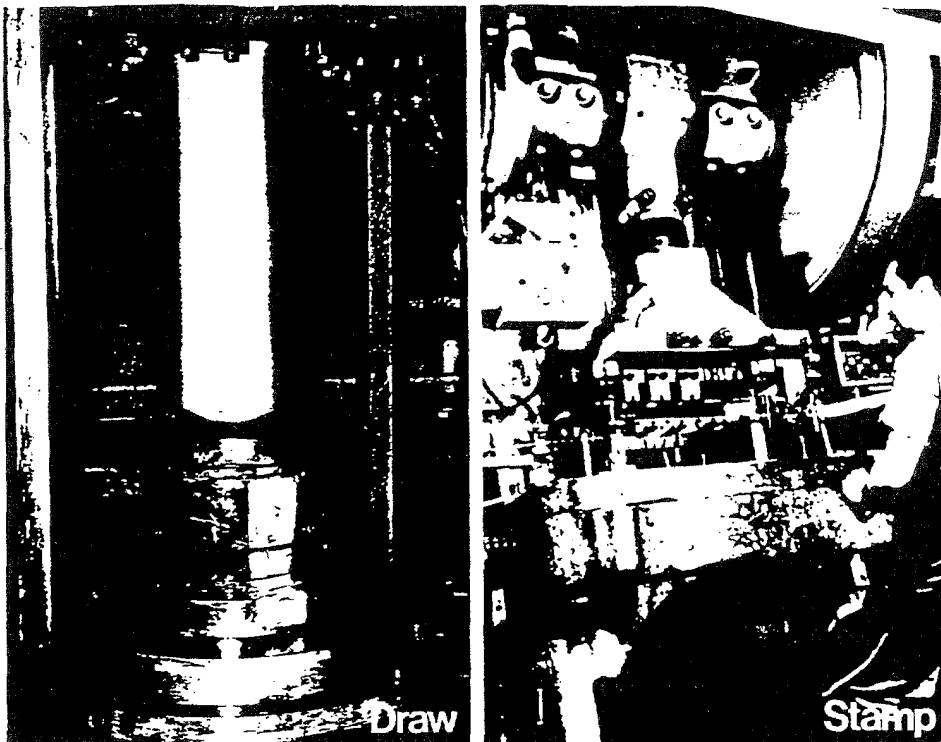


Lead Industries Association, Inc.

Lead Industries Association, Inc.
1971 Advertising Program
This ad appearing in:
Engineering News-Record
Ad 7179

PNYC00001362

N10851.03



How to double production with the same overhead.

New lead phosphate coated steels for deep drawing and extreme metal forming operations offer you increased production efficiency.

Sheet steel treated with lead phosphate, now commercially available as a mill applied coating from Youngstown Sheet and Tube Company, has built-in advantages over other phosphate coated steels that result in more efficiency and economy in stamping and drawing operations. How?

The coating does not interfere with welding or brazing and retains its effectiveness as a die lubricant for up to two or

three drawing operations. Product costs are automatically reduced since no additional lubricant is required and press downtime resulting from lubricant build-up is eliminated.

Also, lead phosphate coated steels serve as an excellent wash primer for painting — a simple degreasing will suffice. Less electric power is required when the electrocoating process is used.

For further information on lead phosphate coated steels write to Lead Industries Association, Inc., Dept. 000, 292 Madison Avenue, New York, New York 10017.



Lead Industries Association, Inc.

Lead Industries Association, Inc.

1971 Advertising Program

This ad appearing in:

Iron Age, American Machinist, Modern Manufacturing, Product Engineering
Ad 7177

PNYC00001363

N10851.04

the

LEAD

newsletter

Vol. 15, No. 1

Zn-75 A Showcase for New Lead Design Applications

The Zn-75, a sleek and beautiful one-of-a-kind Bertone/Lamborghini Miura sports car, is a mobile testing laboratory for new lead design ideas. This unique car was produced by the International Lead Zinc Research Organization, Inc. (ILZRO) to prove the practicality of new lead and zinc alloys and materials.

Lead, an ideal sound insulation material

To combat sound pollution, the design of the Miura uses a sheet lead and polyurethane sandwich as a floor underlay to attenuate engine and road noise. The sandwich uses a 1-lb. lead sheet (about 1/64" thick) between two 1/8" layers of polyurethane foam. Lead vinyl sheet is used in the door panels of the Zn-75 to damp vibration. The material is made of lead powder dispersed in a

vinyl sheet that is 1/16" thick and weighs 0.87 lbs. per sq. ft.

Designers will appreciate lead's sound-blocking properties in trying to reduce the noise level of machinery in order to comply with new Federal anti noise requirements.

Terne... Lead's Corrosion Resistance Plus Steel's Strength

Terne, a hot dip, lead alloy coating on cold rolled steel, is the traditional material for many automotive parts such as gas tanks, oil and gas filters and brake line tubing. On the Zn-75, similar applications were made.

Design advantages in the use of terne include its lubricating action that permits deep draws and extends die life, ease of soldering and welding, improved corrosion resistance, and the ability to accept paint without extensive surface preparation.

Now — Lead with a Backbone

Dispersion strengthened lead is a material with big design potential. It consists of a wrought product made up of 99.9% pure lead strengthened by a fine, uniform dispersion of lead oxide particles. It is used in the Zn-75 for the fuel line.

Physical properties of dispersion strengthened lead permit it to be fabricated by common sheet metal techniques including punching, embossing, roll forming, expansion, drawing, forging, bending and related operations. It offers designers all the advantageous properties of lead with greater strength for tomorrow's jobs.

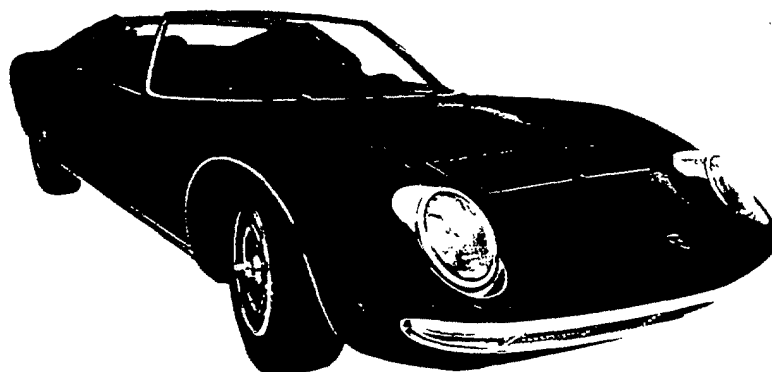
New Bearings Feature Lead's Lubricity

Connecting rod bearings of the Zn-75 feature a new sintered iron alloy that is impregnated with between 15% to 30% lead by weight. Lead's natural lubricity makes it ideal for this use. This material, with its excellent wearing quality and lubricity, offers new applications.

Miscellaneous Lead Uses

A lead based primer is used on the Zn-75 for corrosion resistance, and the finish coat has a pearlescent lead pigment often used to custom finish luxury cars. Lead solder, the lead acid battery and tetraethyl lead (TEL), complete lead's contribution.

For complete information write to Lead Industries Association, Dept. 000, 292 Madison Avenue, New York, New York 10017.



Lead Industries Association, Inc.

Lead Industries Association, Inc.
1971 Advertising Program
This ad appearing in
Product Engineering, American Machinist
Ad #7160

PNYC00001364

N10851.05

the

LEAD newsletter

Vol. 15 No. 2

Today's Developments In High-speed, Large-volume Soldering Operations

Readily available paste solders, mixtures of solder powder with fluxes and neutral suspending agents, together with automated application equipment, are giving an important boost to industry. For example, in automobile manufacture, where high-speed, large-volume soldering operations are required to meet production schedules, paste solders help maintain quality and lower production costs, often with increased output. How? Fluxing and solder placement are a one-step operation. With equipment available today precise amounts of solder metal can be metered out automatically; and nearly any alloy or flux can be incorporated into the paste.

Versatile automated paste application equipment has been designed to match the new developments in lead-alloy paste solders. In general, units consist of metering type guns with appropriate control systems and paste storage tanks.

Heating methods are not limited in any way by the use of paste solders. In automated joining operations it is desirable to use a heating method which distributes heat quickly and evenly yet does not exceed the limits that can be tolerated by the assembly or, in some cases, the flux. Induction and focused infrared heat are two methods used. Others frequently include flame, an oven, or radiant heat.

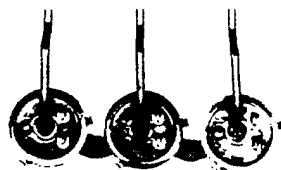
Power Steering Reservoir Assemblies

Characteristic of the new developments in soldering operations is this apparatus for producing automobile power steering reservoirs. Originally one operator applied flux and a solder ring to the top of the reservoir where an outlet tube was to be soldered. Another operator



loaded an induction coil machine. Two operators could produce 300 parts per hour. With introduction of the automated paste soldering machine, shown here, the same two operators can produce 500 soldered assemblies per hour—a 67% production increase.

Fuel Tanks and Fuel Level Indicators



The fuel tank manufacturing operation at General Motor's Oldsmobile plant in Lansing depends on automatic soldering procedures to meet the 8,000 tank-per-day production requirement of the plant. Filler necks, vents and gas lines are all soldered to theterne gasoline tanks. Filler necks are soldered with a trimmed 35/65 tin-lead alloy solder wire from coil stock. The solder is machine-dropped into place along with liquid flux and then an air torch using natural gas and compressed air sweeps around to position and melts the solder. The entire operation takes 30 seconds.

Gasoline tank vents are soldered automatically with a solder wire, flux cored, 0.156" in diameter, at a production rate consistent with the filler neck soldering operation.

Fuel level sensing devices manufactured by General Motor's AC Spark Plug Division in Flint are equally dependent on automated soldering techniques for production efficiency. The assembly consists of a fuel tube cover plate and float arrangement to which a potentiometer type sending unit is attached. Critical to the operation is a perfect seal between the tube and cover plate.



A paste solder consisting of a 50:50 tin-lead alloy in a glycol vehicle with ammonium chloride as a fluxing agent is used to make the joint. Automatic rotary type soldering machines designed and built by the Division's manufacturing engineering development department, perform two complete soldering operations simultaneously. The machines each hold 36 units and the various soldering phases — dispensing, preheating, cooling, cleaning and drying — are performed on two assemblies simultaneously.

Antimonial Solder Coated Strip for Radiators

Still another new development of interest to the heat exchanger industry is the present availability of a lead-alloy coated steel strip ideal for the manufacture of fins for soldered radiators or heat exchangers. The coating contains 6% antimony, balanced lead. Easily wetted, the coating facilitates soldering of the assembly even in difficult configurations.

Write now for further information on lead-alloy soldering to Lead Industries Association, Inc., Dept. 000, 292 Madison Avenue, New York, New York 10017.



Lead Industries Association, Inc.

Lead Industries Association, Inc.
1971 Advertising Program
This ad appearing in
American Machinist, Product Engineering
Ad #7168

PNYC00001365

N10851.06

the

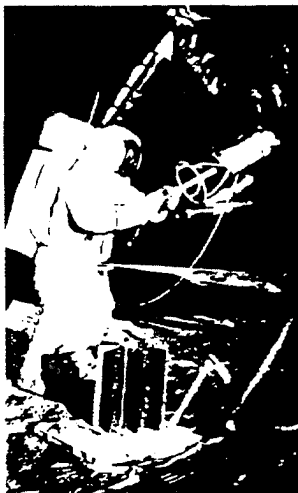
LEAD

newsletter

Vol. 16 No. 1

Space Exploration Leans On Lead

Lead, one of the heaviest metals used by man, is finding numerous applications in space exploration. Although the majority of metals put to use in the space program are relatively lightweight, lead also plays a vital role in the extension of man's knowledge of extra-terrestrial environment. From the John F. Kennedy Space Center to the surface of the moon, lead is there.



Thermoelectric generator in place on moon.

Telemetry Information Depends On Lead Sheath Cable

At the Kennedy Moonport complex the critical telemetry information, as well as the launch signal between launch control and the pad five miles away, is sent through gas pressurized lead sheathed cable. Lead sheathing was specified because maximum reliability

and safety are a must. Additionally, lead sheathed cable is impervious to moisture, provides a positive ground, and permits the use of a nitrogen purging system. Using the system, nitrogen gas, under pressure within the lead sheath, snuffs out any arc before it can cause an explosion. Where reliable power supply is of prime importance engineers can specify lead sheathed cable with complete assurance.

Stage Separation Relies on Lead

"Vee"-shaped lead extrusions filled with an explosive charge make possible the reliable separation of the stages of space vehicles. When placed in the form of an inverted "vee" between the stages and detonated, the energy points on the inside of the "vee" converge and form a wedge-shaped force that separates them. Today, as a result of this space research, police and firemen use an application of these "vee"-shaped charges for making forcible entry.

Lead Helps Power Moon Experiments

Perhaps, one of the most important contributions of lead to the space age is exemplified by the radioisotope-fueled thermoelectric generator that was recently placed on the moon's surface by the crew of Apollo 12. The generator, known as SNAP-27 (Systems for Nuclear Auxiliary Power), was designed to power scientific experiments and radio transmission equipment placed upon the lunar surface by the Apollo 12 astronauts.

For this mission, the life objective of this atomic battery was one year. That objective has now been met and scientists currently predict a five-to-ten-year life. The SNAP-27 is a direct descendant of one that has been circling the earth for eight years, keeping an early satellite, the Transit IV-A, functioning since it was placed in orbit.

The SNAP-27 generator is fueled with plutonium 238. Spontaneous radioactive decay of the plutonium within the fuel capsule generates heat (1480 thermal watts). An assembly of 442 lead telluride thermocouples converts this heat directly into electrical energy.

No moving parts are employed. The generator is cylindrical in shape and is 23 inches long, 8 inches in diameter and weighs 40 pounds. Born of space research these thermoelectric generators are now being applied for powering cathodic protection devices in remote locations as well as isolated weather stations and similar uses.

Lead Lightens On-board Computers

The fact that lead was used to lighten on-board computers may, at first, seem paradoxical. However, the use of lead bearing devitrified glass developed for earth bound applications made it possible to reduce the size of the miniature integrated circuits used in the space-



Lead glass encapsulated integrated circuit.

borne electronic equipment. By effectively sealing these integrated circuits with a lead bearing glass cover, a metal cap could be eliminated, making the whole system both smaller and lighter.

Saturn Rocket Rolls Along On Lead

The giant crawler transporter designed to move the Saturn out of the assembly building and to the gantry at Cape Kennedy is now an operating vehicle. Initially, when the transporter was loaded up to its rated 12 million pounds, the tapered roller bearings shattered. These roller bearings were all replaced, and a bronze-tin-lead sleeve bearing was substituted. About a fifth of the metal in the new bearing is lead. The unit has operated satisfactorily at its maximum speed of 1 mph under load since the bearing change.

For information on lead for design applications write to Lead Industries Association, Dept. 000, 292 Madison Avenue, New York, New York 10017.



Lead Industries Association, Inc.

Lead Industries Association, Inc.
1971 Advertising Program
This ad appearing in
Machine Design, Product Engineering
Ad #7178

PNYC00001366

N10851.07

How to avoid a computer blackout?

The significant increase in the use of computer systems within plants to control almost every aspect of operations from basic power source through manufacturing to product distribution has brought with it an equally significant danger. How can your plant avoid even a momentary power failure or voltage or frequency variation that could cause a serious breakdown in your systems operation?

Today's lead acid battery-powered uninterruptible power systems (UPS) provide the answer. Installations in opera-

tions as diverse as tire manufacturing, public utilities, airline reservations and flight routing, missile tracking, space exploration all currently employ UPS systems to meet the "no-break" power requirement.

Various systems exist to meet any conceivable need . . . all of them relying on lead acid batteries for complete dependability.

For more information on UPS systems write Lead Industries Association, Inc., Dept. 00-00, 292 Madison Avenue, New York, New York 10017.



Lead Industries Association, Inc.

Lead Industries Association, Inc.
1971 Advertising Program
This ad appearing in
Modern Manufacturing, Electrified Industry, Iron Age
Ad #7134

PNYC00001367

N10851.08

ONE BATTERY HAULS 375 TONS!



Incredible as it may seem, Armco Steel Corporation can and does haul as many as five 150,000-lb. capacity coil and bundle buggies at their Middletown, Ohio mill with locomotives powered by one lead acid battery.

The plant employs five of these locomotives, each of them powered by an 84-cell, 168 volt, 1305-ampere-hour capacity battery. The largest motive-power battery made, it measures approximately 4' x 6' x 12' and weighs 20,000 lbs.

Major factors in Armco's selection of this method of material handling were low operating and maintenance costs and the fact that the battery power is absolutely fume-free. Management emphasis on the latter is reflected also in their selection of lead acid battery-powered lift trucks, battery-powered radios, lights, heaters and horns on the locomotives.

For further information on battery power, write
Lead Industries Association, Inc., Dept. 000, 292 Madison Avenue,
New York, New York 10017.

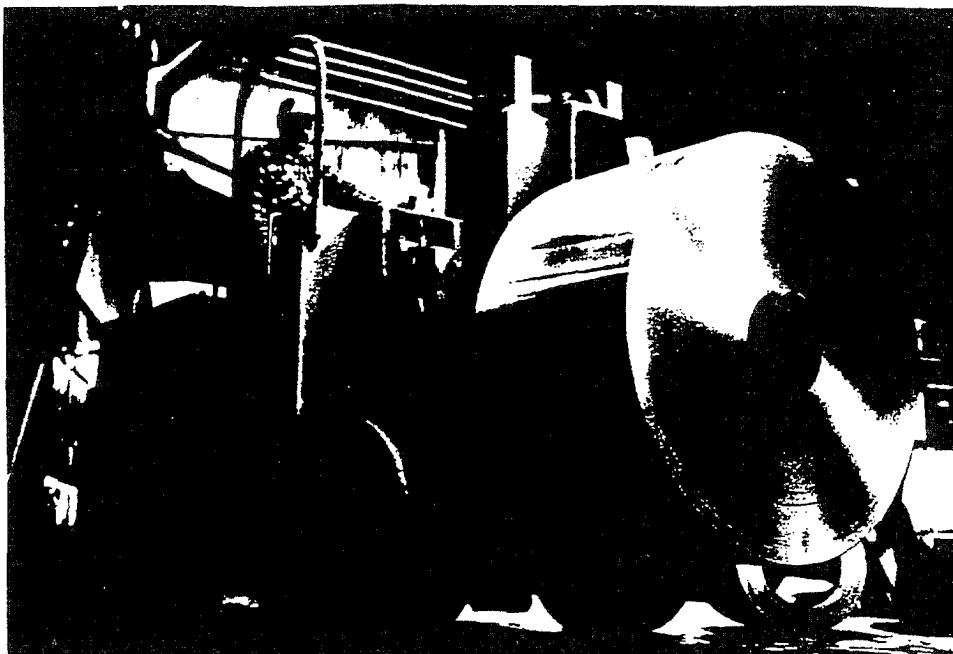


Lead Industries Association, Inc.

Lead Industries Association, Inc.
1971 Advertising Program
This ad appearing in
Iron Age
Ad #7131

PNYC00001368

N10851.09



Battery Power moves the big loads

Lead acid batteries provide the real muscle needed to move these 17-ton super-loads of steel coil. Battery-powered ram trucks carry 35,000 pound loads of coiled steel strip, transporting them from rolling to cutting to processing to coiling, and then to bin and shipping, in round-the-clock duty. The power of the ram truck is its lead acid batteries, ranging up to 1250 amp. hour sizes, two to the vehicle. These ram trucks operate three full shifts a day, seven days a week. They pause only long enough to change operators between shifts, and once every 24 hours for a battery switch.

And since there are fewer moving parts in an elec-

tric, there are fewer parts to wear, reducing maintenance to a minimum. Besides economy of operation, electricians are also cheaper to own because they insure freedom from unscheduled downtime.

The ram truck is just one of a range of battery-powered trucks and special purpose vehicles that contribute to economical operations. Lead acid batteries power fork lift trucks, truck trains, personnel carriers in and out of all kinds of industrial plants.

For more information on battery power, write to the Lead Industries Association, Inc., Dept. 000, 292 Madison Avenue, New York, New York 10017.

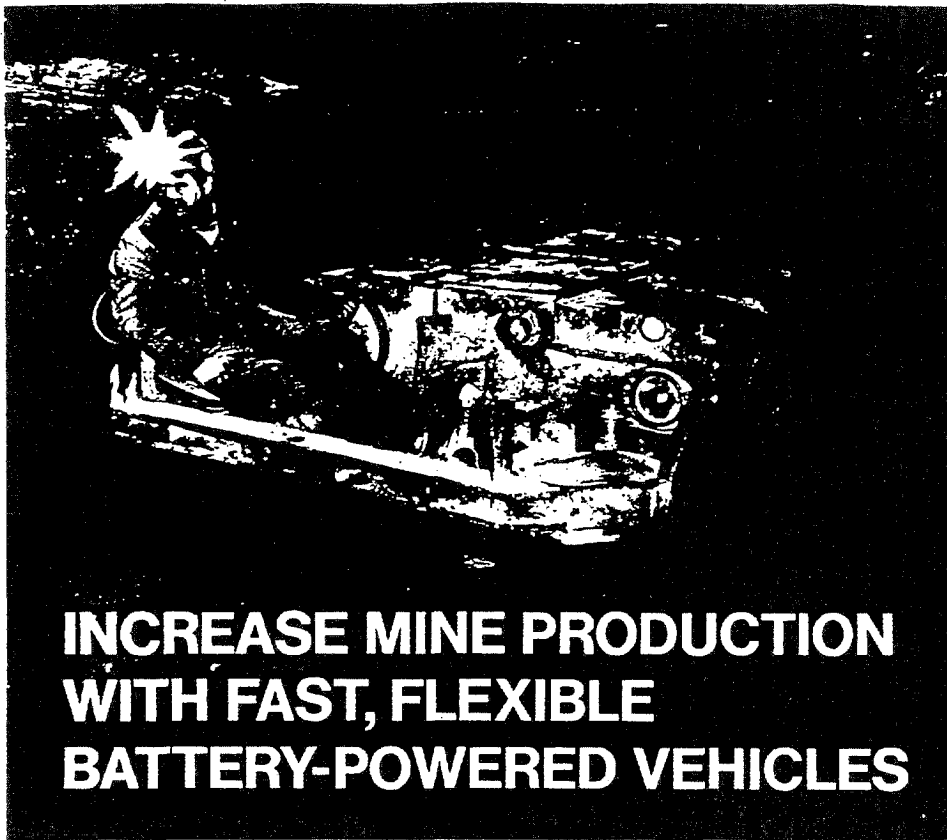


Lead Industries Association, Inc.

Lead Industries Association, Inc.
1971 Advertising Program
This ad appearing in
Electrified Industry, Iron Age
Ad #7122

PNYC00001369

N10851.1



For the last eighteen months of the two years that Island Creek Coal Company's Hamilton Mine has been in operation, lead acid battery-powered vehicles have consistently moved more coal faster than any other method tried. Thanks to battery power, mine production is at an impressive 800 to 1,000 tons per day per unit shift... 20,500 tons per day when the mine is in full production.

Increased production is due to the fact that battery-powered equipment has complete freedom of movement within the mine. Vehicles, several at a time, can maneuver in the same general area at any

given time without tangling cables, or encountering the other difficulties that one has with alternate types of equipment.

And the lead acid battery-powered vehicles at Hamilton move more than coal. The company relies upon them to move other equipment, supplies, and personnel as well.

For more information on how battery power can increase your mine production and keep your vehicle maintenance costs down, write Lead Industries Association, Inc., Dept. 000, 292 Madison Avenue, New York, New York 10017.

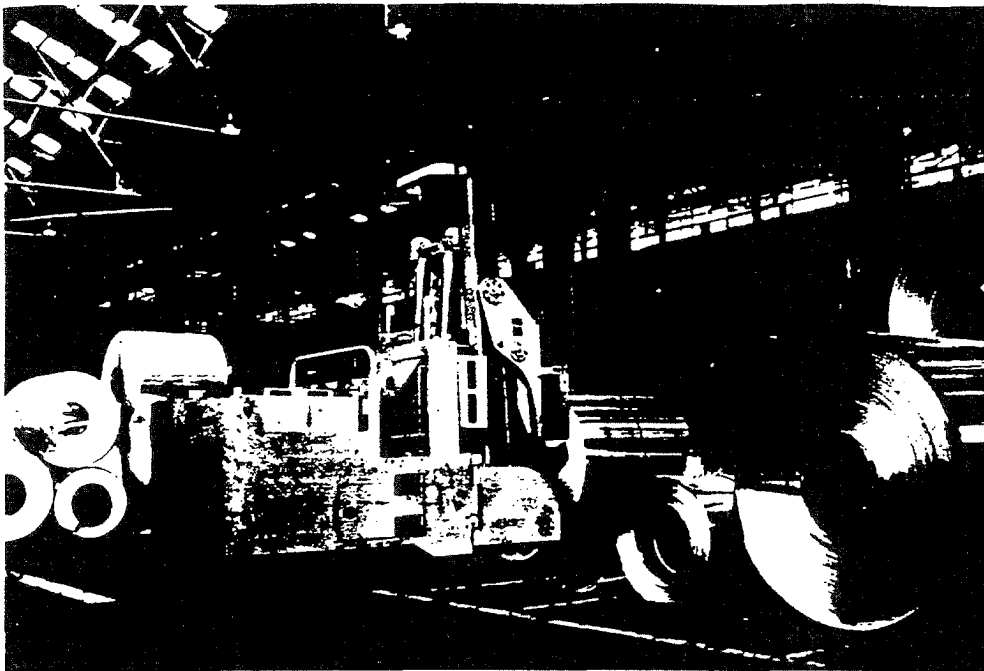


Lead Industries Association, Inc.

Lead Industries Association, Inc.
1971 Advertising Program
This ad appearing in
Engineering & Mining Journal
Ad #7127

PNYC00001370

N10851.11



Cut Your In-Plant Vehicle Maintenance In Half

When the giant Reynolds Metals Company Alloys plants converted a 35,000-lb. capacity split-fork truck from motor-generator-set power to 72v. lead acid battery power, maintenance costs on the unit were cut 50 per cent.

These Reynolds plants have high speed rolling mills which are among the largest and most modern in the aluminum industry. A 30,000 pound coil is routine, and dependable, high-capacity electric trucks play a key role in providing on-time delivery to Reynolds customers.

The in-plant fleets include 64 battery-powered

lift trucks ranging from 6,000 to 35,000 pound capacity. Personnel vehicles with capacities of two to six persons are also battery powered.

Lower maintenance costs are just part of the story with electrics. They're also relatively compact and therefore require less working space.

Improved battery and control technology make today's electrics your best buy in materials handling, both inside and outside your plant. For more information, on battery power, write to Lead Industries Association, Inc., Dept. 000, 292 Madison Avenue, New York, New York.



Lead Industries Association, Inc.

Lead Industries Association, Inc.
1971 Advertising Program
This ad appearing in
Materials Handling Engineering
Ad #7128

PNYC00001371



Who says electric can't be used outside?

Indoor or outdoor, in temperatures ranging from the tropic atmosphere of a foundry to the icy temperatures routinely found in refrigerated warehouses, lead acid battery-powered vehicles of all kinds consistently provide the complete answer to material handling. And electric vehicles operate with substantially lower maintenance and equipment replacement costs.

Instant starting in all weather, maneuverability, reliability, low maintenance

costs, absence of noxious fumes, are all reasons why you should be getting a profit lift from electric vehicles.

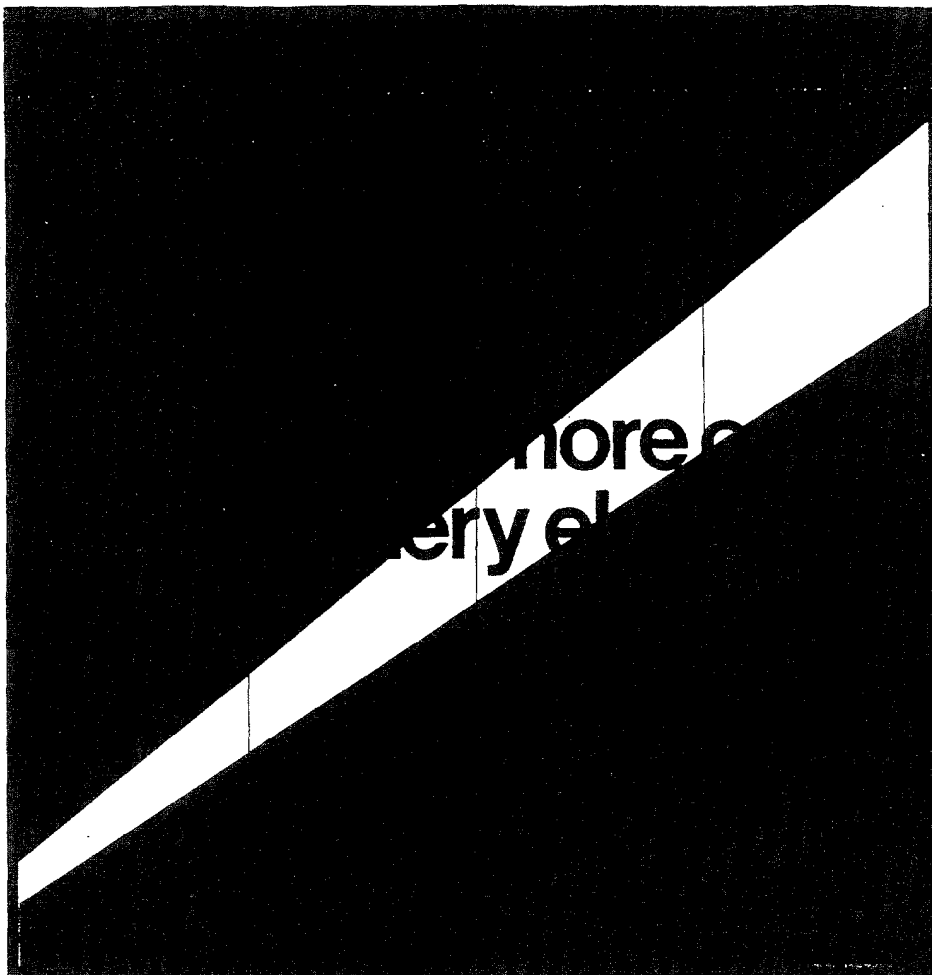
Improved lead acid battery technology makes it possible to use electric vehicles for most every conceivable material handling task at the low operational cost. For more information, write Lead Industries Association, Inc., Dept. 000, 292 Madison Avenue, New York, New York 10017.



Lead Industries Association, Inc.

Lead Industries Association, Inc. 1971 Advertising Program
This ad appearing in Modern Manufacturing Ad #7135

PNYC00001372



Lead acid battery-powered equipment hauls 20% greater volume of ore than cable shuttle systems previously used in one major western mining operation. That's one way to make mining profits grow!

Seven 12-ton capacity electrics haul ore from loaders to belts at a per unit shift volume of 1200 to 1500 tons. Since they have no cables, electrics go anywhere. And they do it at headroom clearances of 6½ feet.

Cable shuttles draw high currents at peak hours. This increases demand

charges; whereas with battery electrics power costs are kept to a minimum, since batteries are recharged when it's economical and convenient. And ore isn't the only thing hauled by battery-power. Combination maintenance-personnel carriers haul men and supplies throughout underground mines all over the country.

For more information on lead acid battery-powered vehicles for the mining industry, write Lead Industries Association, Inc., Dept. 000, 292 Madison Avenue, New York, New York 10017.



Lead Industries Association, Inc.

Lead Industries Association, Inc.
1971 Advertising Program
This ad appearing in:
Engineering & Mining Journal
Ad 7139

PNYC00001373

N10851.14



Lead Plugs the Forty-Year Leak

For the past forty years the graceful oval pool on the grounds of the Missouri State Capitol Building has leaked. All attempts to stop it with tar and paint and other things have failed. An 8-lb. (1/8" thick) sheet lead lining finally turned the trick.

A prior, highly successful application of lead as the waterproofing membrane for the steps of the Missouri State Capitol Building pointed to its selection for waterproofing the pool as well. Waterproofing of the State Capitol steps (part of an overall Capitol Restoration Program) was done in order to gain use for offices and storage of the vast space underneath the staircases. While the antimonial sheet lead was used to keep water out of the area

under the Capitol steps, it was used to keep water in the newly lined pool.

In addition to lead's impermeability, the ease with which it can be worked made it a natural for the complicated design of the pool. Welding was a relatively simple matter and the lead was easily carried up over the drains, overflows and pipe penetrations. The end result: a handsome, exposed waterproofing membrane that works very successfully.

For information on lead as a waterproofing agent and detailed specifications, write Lead Industries Association, Inc., Dept. 000, 292 Madison Avenue, New York, New York 10017.



Lead Industries Association, Inc.

Lead Industries Association, Inc.
1971 Advertising Program
This ad appearing in:
Progressive Architecture
Ad 7108

PNYC00001374



Lead solves unusual construction problem in a brand new way.

Hoffmann-La Roche, major manufacturers of pharmaceuticals and fine chemicals, turned to traditional sheet lead — to solve a new and unusual construction problem.

Design of the firm's new Research and Quality Control Building in Nutley, New Jersey, included the necessary provision for continually changing conditioned air in each laboratory. The problem: how to seal most effectively and economically, the air conditioning distribution system from potential leakage when the plenum space above each ceiling in the nine story building contained myriad pipes, conduits and ducts required for laboratories.

The dual problem of controlling air flow in the plenum and preventing sound

transmission from laboratory to laboratory was solved architecturally by the selection of sheet lead — after consideration of various possible alternatives.

One-pound sheet lead (1/64-in. thick), offered its notable workability and ease of installation to solve the seal problem — its superior sound attenuation capability to solve the noise problem. And the choice of lead provided still another bonus: the low in-place cost.

For further information on the use of lead to solve diverse construction problems — old and new — write for data sheet A-15. Lead Industries Association, Inc., Dept. 000, 292 Madison Avenue, New York, New York 10017.



Lead Industries Association, Inc.

Lead Industries Association, Inc.
1971 Advertising Program
This ad appearing in
Engineering News-Record, Progressive Architecture
Ad #7117

PNYC00001375

N10851.16



Building Architect:
Edward Durrell Stone and Emery Roth & Sons,
Associated Architects
Tenant Consulting Architect:
Richard Gascoyne
Interior Designers:
Braun & Chamberlin, Inc.
Lead Work:
Movable Partitions, Inc.

Sheet lead keeps office conversations private

Insulation against potential sound transmission between offices on the forty-fourth and forty-fifth floor of New York's most spectacular new office building was provided by 10,300 square feet of one-pound sheet lead as plenum barriers.

The J. B. Williams Company, Inc., internationally-known manufacturers of toiletries and pharmaceuticals are the occupants of these two floors of the fifty-story General Motors Building, the latest addition to New York's Fifth Avenue. Architects and sub-contractors for the Williams' space in the building selected thin gage sheet lead as the most effective means of assuring quiet office efficiency.

One-pound per square foot sheet lead (1.64 inch in thickness) was hung vertically above Vaughn walls between all offices on the two floors. Material selection was based on the knowledge that dense, naturally limp lead is an ideal sound insulator. Also thin sheet lead cuts easily, and forms with ease, simplifying installation around pipes, ducts and conduits. And lead is economical and salvageable. Solve your noise problems with lead: metallic sheet, leaded plastics, bulk damping compounds and other lead products.

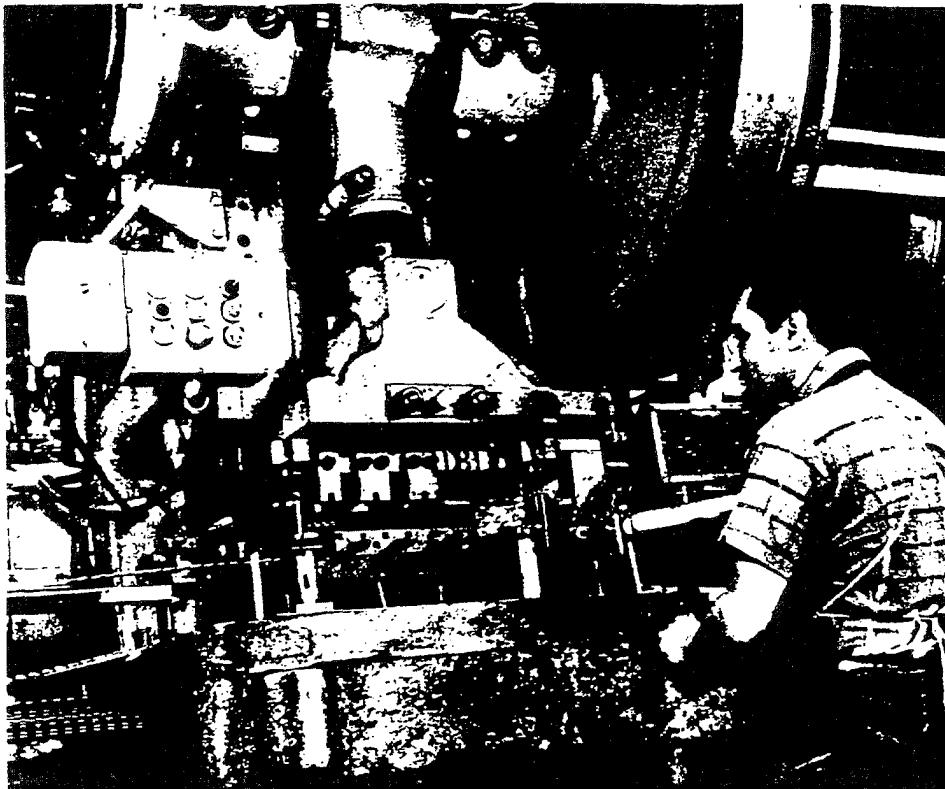
For additional information on the use of lead for the attenuation of airborne noise and your copy of "Acoustical Plenum Barriers and How to Install Them," write Lead Industries Association, Inc., Department 000, 292 Madison Avenue, New York, New York 10017.

 **Lead Industries Association, Inc.**

Lead Industries Association, Inc.
1971 Advertising Program
This ad appearing in
Engineering News-Record, Progressive Architecture
Ad #7119

PNYC00001376

N10851.17



Limit machinery noise levels with Lead.

Presses, automatic riveters, screw machines, lathes, many other types of machines, and a variety of assembly line operations common to metalworking, have normal noise levels potentially injurious to hearing. It's an age-old problem now very much in the forefront thanks to enlightened management and new regulations.

Lead and lead composites fill all the prerequisites of a maximum efficiency sound barrier: density, limpness and impermeability. And they are normally unaffected by coolants, cutting oils, drawing compounds

and other industrial materials. Lead's "workability" and ease of installation make it a natural for enclosures that demand complex configurations. Complete enclosures, partial enclosures, curtain walls, lead loaded epoxies or vinyl sheets, laminates, shrouds, anti-vibration pads—all are used to reduce noise to acceptable levels.

For further information and technical assistance, write Lead Industries Association Inc., for Industrial Noise Data Sheet No. 1, Dept. 000, 292 Madison Avenue, New York, New York 10017.



Lead Industries Association, Inc.

Lead Industries Association Inc. 1971 Advertising Program
This ad appearing in American Machinist, Modern Manufacturing, Product Engineering, Ad #7152

PNYC00001377



Because Lead is there

A life is saved

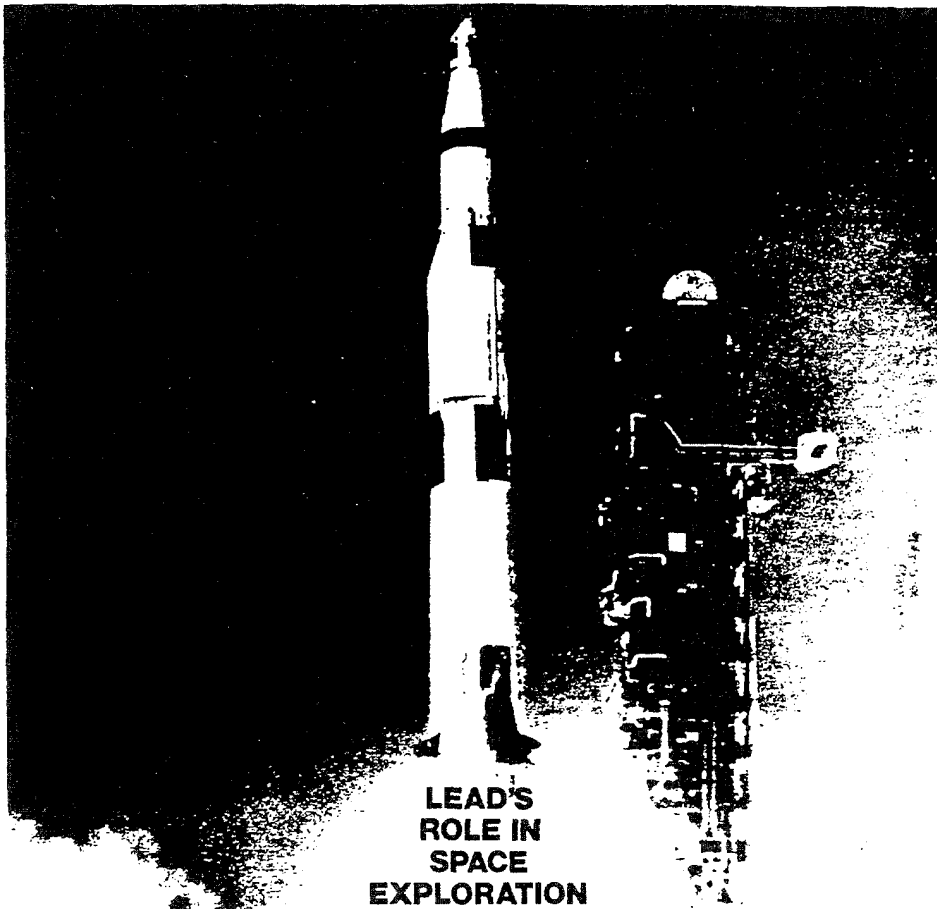
A phone rings at 3 A.M. A 13-year-old girl has gone into insulin shock. Dr. Brown heads for his car. He doesn't know it, but he has an unseen helper. Lead. It's the dependable, powerful material that starts his car.

Lead works behind the scenes, but it will help get Dr. Brown to the hospital. It will keep the lights on in surgery even in a blackout. It sparks a world of action.

In sound attenuation, battery power, solder, anti-corrosion paints, and cable transmission, lead gets the job done. For more information on lead acid battery power, write to Lead Industries Association, Inc., Dept. 000, 292 Madison Avenue, New York, New York 10017.

Lead Industries Association, Inc.
1971 Advertising Program
This ad appearing in
Business Week
Ad #7190

PNYC00001378



LEAD'S ROLE IN SPACE EXPLORATION

We think of the Space Age in terms of exotic metals and materials. Yet lead, one of the most common minerals of the earth's surface, is now being employed to extend man's knowledge of his extra-terrestrial environment. From the J.F.K. Space Center to the surface of the moon, lead is there.

At the Kennedy Moonport complex, lead sheathed cable carries vital telemetry information as well as the launch signal between control tower and launching pads five miles away. Miniature integrated circuits, employed by on-board flight control computers, are made with devitrified lead glass. Detonating charges encased in lead extrusions are used to disengage interim stages of the space vehicle. On the moon itself, lead telluride thermocouples help provide power for the instruments and radio transmission equipment left there by the astronauts. From soundproof library to efficient automotive performance, lead plays a role in your life. For more information write to Lead Industries Association, Inc., Dept. P-2, 292 Madison Ave., New York, N.Y. 10017.



Lead Industries Association, Inc.

Lead Industries Association, Inc.
1971 Advertising Program
This ad appearing in
Business Week
Ad #7181

PNYC00001379

N10851.2

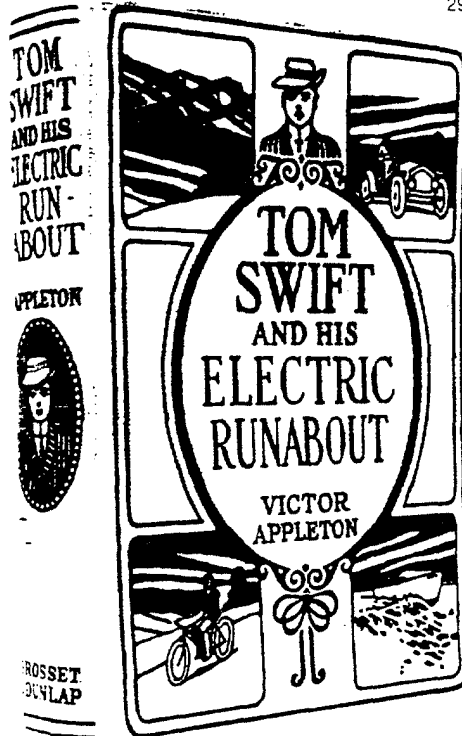
Tom stages a come-back

Up until around 1910 the electric car was giving an assortment of steam and gasoline powered vehicles a run for the money. So Victor Appleton's 1905 novel didn't face any credibility gap in putting Tom Swift ahead of all contenders in his Long Island race classic. But by 1925 the race was clearly not to Swift. The internal combustion engine took a commanding lead, a position not to be challenged even today.

But here are some significant statistics which point to a turn-around: U. S. industry has proved out battery power by putting more than a million electric fork lift trucks, personnel carriers and specialized vehicles to work. The demands of urban living suggest a future for battery powered on-the-road vehicles for mass transportation, delivery trucks and that

second car which operate in multiple-stop, low speed conditions. The moving forces behind this prospect are more efficient batteries, improved charging techniques and solid state controls.

You'll find that lead plays a role in *your* life. Say, your car battery for starters. Find out all about it. For more information write: Lead Industries Association, Inc., Dept. 000, 292 Madison Avenue, New York, N Y 10017.



Lead Industries Association, Inc.

Lead Industries Association, Inc.
1971 Advertising Program
This ad appearing in
Business Week
Ad #7182

PNYC00001380

N10851.21



Because Lead is there

He may find an answer for tomorrow

Tomorrow's doctors, dentists, medical researchers, students at Cleveland's Case Western Reserve University, apply critical concentration to their studies in a noiseless air controlled atmosphere . . . because lead is there.

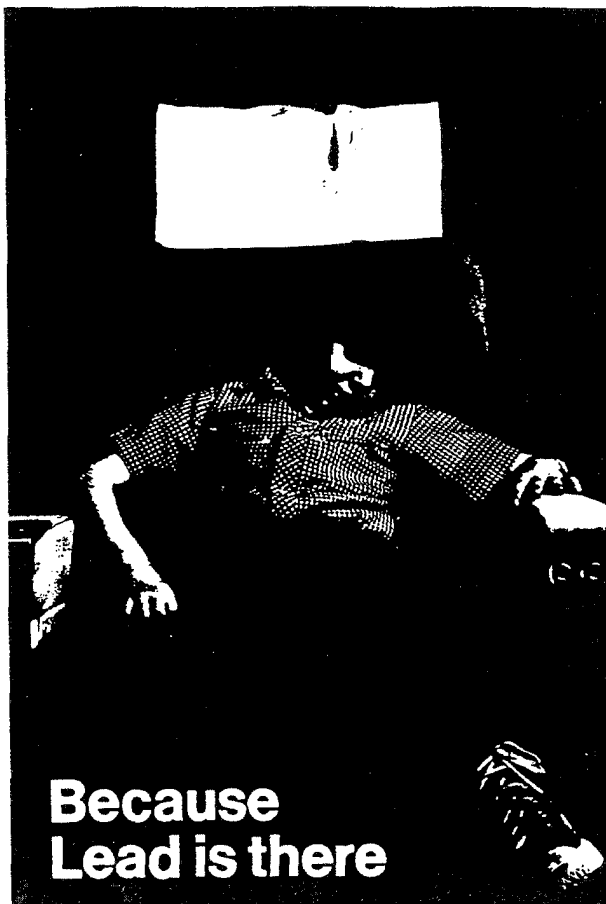
Designers and constructors of the Medical School complex followed the example of accoustical engineers everywhere by using sheet lead laminated to fiber glass. Thousands of feet of potentially noisy, rattling air conditioning ducts were silenced and maximum efficiency study conditions maintained.

As an insulator against sound transmission lead is without peer. For information write Lead Industries Association, Inc., Dept. 000, 292 Madison Avenue, New York, New York 10017.

Lead Industries Association, Inc.
1971 Advertising Program
This ad appearing in:
Business Week
Ad 7101

PNYC00001381

N10851.22



**Because
Lead is there**

Flying's safer, more dependable

Only the computer makes possible the handling of the mountainous data required in today's mass air transportation. Your travel safety, flight data, passenger information, even hotel and car reservations all depend upon the computer.

And behind the computer are lead acid batteries, the basis of uninterruptible power systems (UPS). They provide the airlines with computer power dependability. Power failure, even voltage or frequency variations, cannot be permitted to disturb the split-second timing of information flowing through the computers. UPS takes over until auxiliary power comes on.

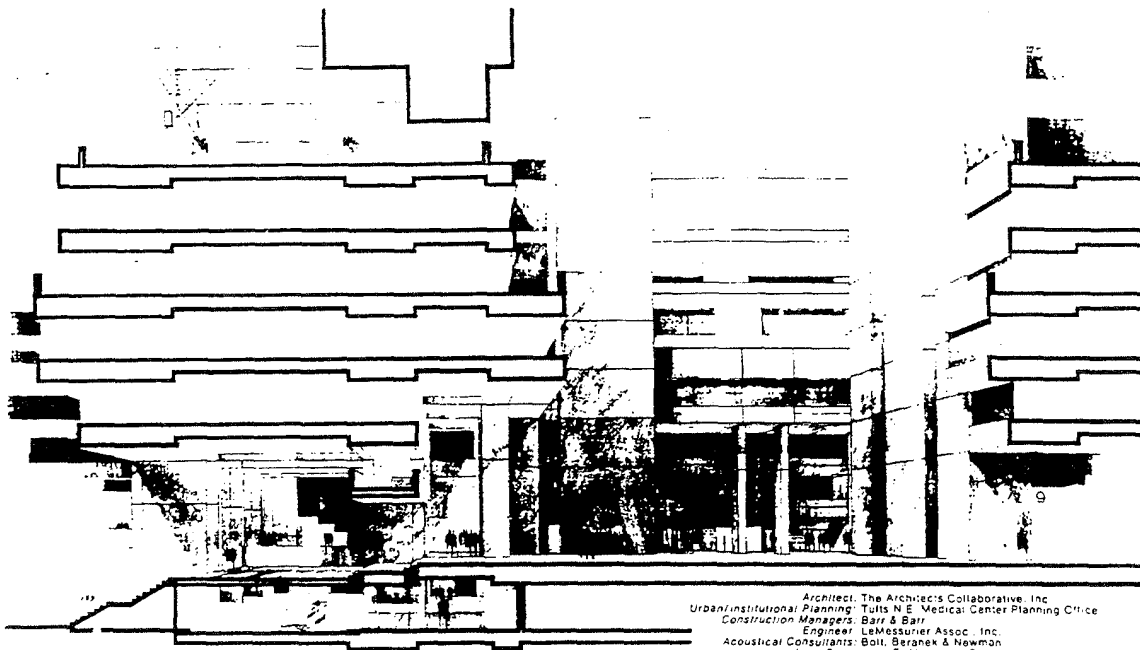
So when you fly, remember you're safer because lead is there.

For more information, write Lead Industries Association, Inc., Dept. 000, 292 Madison Ave., New York, New York 10017.

Lead Industries Association, Inc.
1971 Advertising Program
This ad appearing in:
Business Week
Ad 7183

PNYC00001382

N10851.23



Architect: The Architects Collaborative, Inc.
 Urban/Institutional Planning: Tufts N.E. Medical Center Planning Office
 Construction Managers: Barr & Barr
 Engineers: LeMessurier Assoc., Inc.
 Acoustical Consultants: Bolt, Beranek & Newman
 Lead Pads: John F. Abernethy Co.

Lead Vibration Pads Bring Healthy Quiet to a Modern Hospital

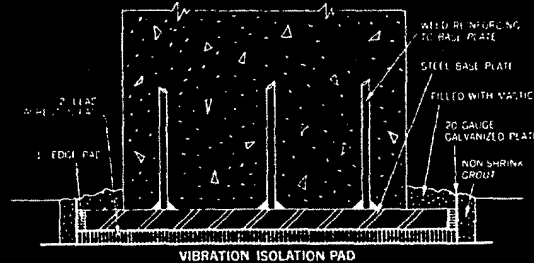
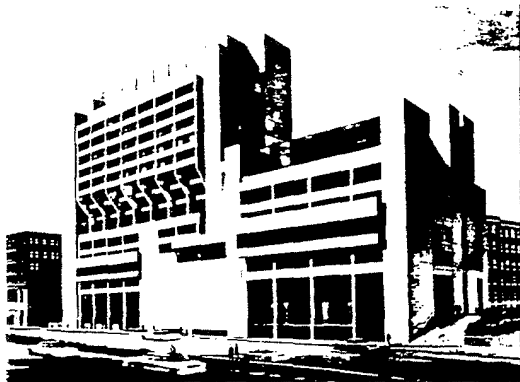
Nine years of painstaking research have gone into the planning of Boston's Tufts-New England Medical Center. As a result there has been a careful meshing of the needs of the community, hospital and patient. Advanced concepts of patient service dictated horizontal, as opposed to tower, layouts. This in turn made necessary the securing of air rights over Boston's busy Washington Street and underground transit system. Like other buildings

confronted with the problem of annoying vibration, the Center has specified lead asbestos vibration isolation pads (see detail drawing).

Perhaps lead in form of pads or sheet can be a space saver for you in making maximum use of air rights as well as space under pools and planters. For assistance write Lead Industries Association, Inc., Dept. 000, 292 Madison Ave., N.Y., N.Y. 10017.



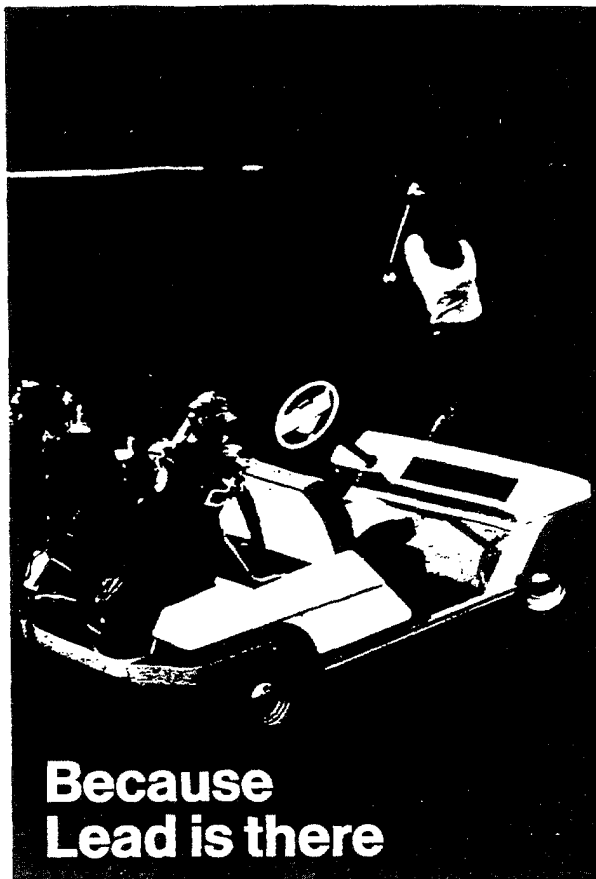
Lead Industries Association, Inc.



Lead Industries Association, Inc.
 1971 Advertising Program
 This ad appearing in
 Engineering News-Record, Progressive Architecture
 Ad #7113

PNYC00001383

N10851.24



**Because
Lead is there**

You drive in style

This golf car's no rusty clunker! It's got the "brand new" look because lead is there. Golf cars made of lead-alloy coated steel (terne) last longer and look better because lead effectively resists corrosion.

Golf car bodies constructed of terne, such as this "Gran Cushman", will weather all climates for as long as 8 years with minimum body maintenance. Even areas particularly vulnerable to corrosion won't rust. And the lead-alloy coating has special properties that enable terne to take and keep a beautiful finish.

Another thing. It's probably lead acid batteries that provide the no-fail power that transports you to the 9th and back. Because lead is there you can take your golf car for granted... concentrate on staying under par.

For more information on lead write Lead Industries Association, Inc., Dept. 000, 292 Madison Avenue, New York, New York 10017.

Lead Industries Association, Inc.
1971 Advertising Program
This ad appearing in
Business Week
Ad 7185

PNYC00001384

N10851.25



**Because
Lead is there**

X-ray diagnosis poses no hazard

Today we take the X-ray for granted. Everybody has one sooner or later. X-rays help the dentist preserve your smile. They may help the doctor preserve your life.

And maybe you don't know it but in most instances X-rays and other medical and industrial procedures using radioactive materials just wouldn't be possible without lead. Because lead is the most protective common material available, and because it cannot be contaminated itself, it is used most often as the shield that protects you, your family, and technicians from harmful radioactive rays. Lead shielding keeps the rays within the area in which they belong.

X-ray shielding is still another way that lead makes your life safer . . . better. For more information on lead write Lead Industries Association, Inc., Dept. 000, 292 Madison Avenue, New York, New York 10017.

Lead Industries Association, Inc.
1971 Advertising Program
This ad appearing in:
Business Week
Ad 7186

PNYC00001385

N10851.26



Who says electrics can't be used outside?

Indoor or outdoor, in temperatures ranging from the tropic atmosphere of a foundry to the icy temperatures routinely found in refrigerated warehouses, lead acid battery-powered vehicles of all kinds consistently provide the complete answer to material handling. And electrics operate with substantially lower maintenance and equipment replacement costs.

Instant starting in all weather, maneuverability, reliability, low maintenance

costs, absence of noxious fumes, are all reasons why you should be getting a profit lift from electrics.

Improved lead acid battery technology makes it possible to use electric vehicles for most every conceivable material handling task at the low operational cost. For more information, write Lead Industries Association, Inc., Dept. 000, 292 Madison Avenue, New York, New York 10017.



Lead Industries Association, Inc.

Lead Industries Association, Inc.
1971 Advertising Program
This ad appearing in:
Materials Handling Engineering, Factory,
Iron Age, Electrified Industry
Ad 7135

PNYC00001386