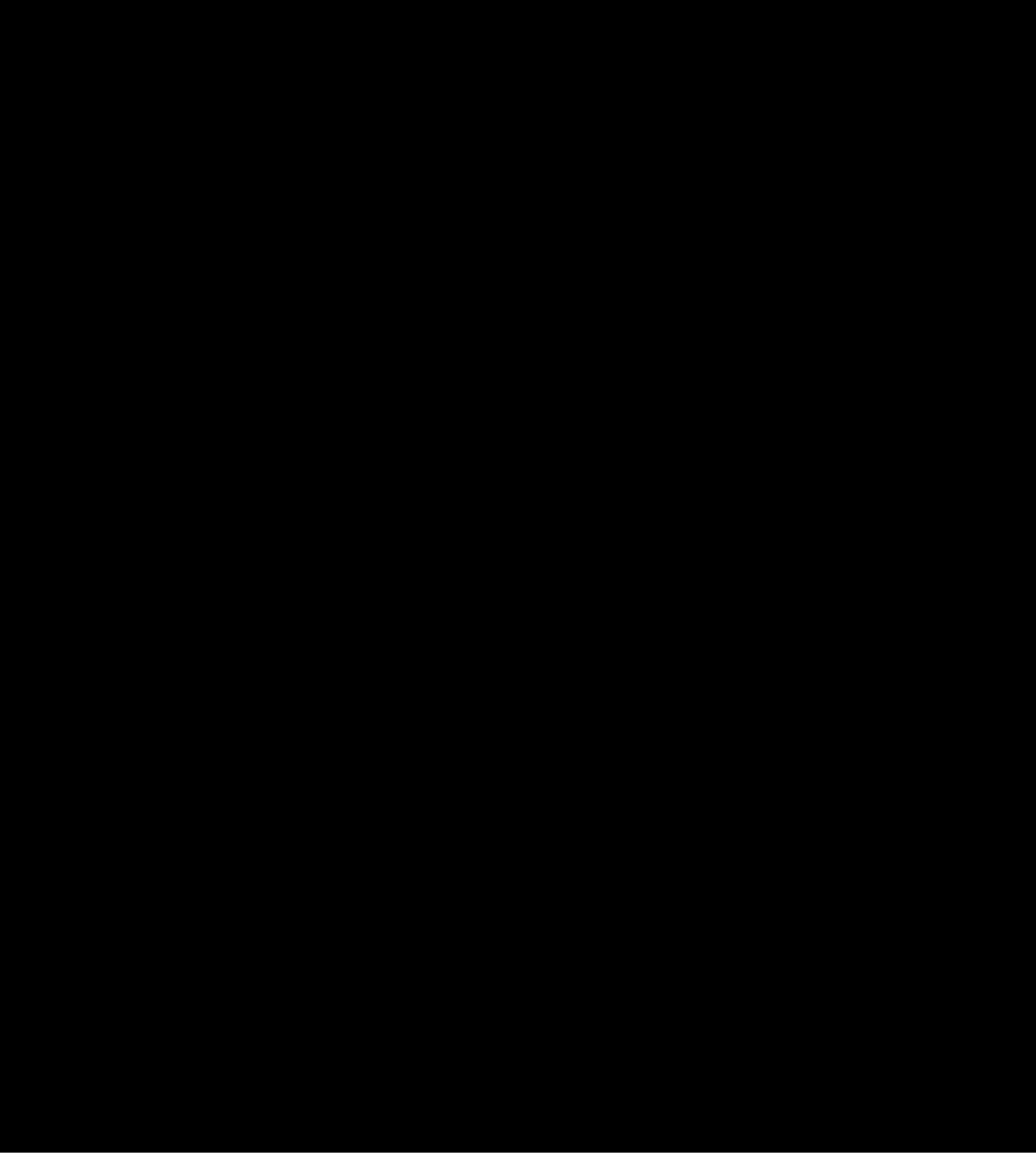




NATIONAL LEAD COMPANY

111 BROADWAY

J. A. MARTINO
PRESIDENT

New York 6, N. Y.

To the Employees of National Lead Company:

This booklet is for you. Its purpose is to tell you the story of our company--its products, its history, its resources.

In working for National Lead Company, you are part of an organization with widespread interests, producing a broad range of essential materials.

We can all take pride in our success and in the high regard in which our products are held. We know that this fine reputation is founded on our time-honored standards of quality and service. With the "Dutch Boy" as your guide in these pages, you will find, too, that our company has made notable contributions to the development of industry, to the advancement of science, to the improvement of our homes, to the welfare of our country. These contributions continue, as our steady, forward-looking growth continues.

Today, as in the past, the company moves forward through the hard work, the loyalty and the cooperation of its employees. Counting on you, we have full confidence in the future.



President

0000-NLI-000022121

I'm the "Dutch Boy"



I am one of National Lead Company's oldest employees. I came to work in 1907.

Since that time I've made many friends. There's hardly a person in the United States who hasn't seen me and come to respect the company for which I work—National Lead Company.

As the first step toward making me famous, the company commissioned a well-known portrait painter to paint my picture in oils. Then they printed copies of my picture and put it on all of our white lead packages (wooden kegs at that time). Pictures of me were first used in our advertising in 1907, and magazine and newspaper readers all over the country soon got to know me well.

Gradually, over the years, "Dutch Boy" Paints became accepted as "Good Paint's Other Name".

That's how I came to work, and that's how I became a symbol for the company itself. Today my name stands for the integrity that has been built into our business since the day it was formed.

When I first went to work in 1907, our company was actually a lead company. Our products were made of lead and lead compounds only. Since that time we've added hundreds of products to our line that don't contain lead at all. Here are some of them — titanium dioxide, castor oil, interior paints and

enamels, varnish, steel containers, oil well drilling muds, zinc alloys, tin products, zirconium compounds, iron concentrates and many, many others. Yes, we've come a long way and far afield from the days when white lead was our only product. In this booklet you'll read all about the many changes.

It was in 1891 that our company actually set up business as a corporation. In that year a number of manufacturers of white lead were brought together under the name of National Lead Company. These manufacturers were mostly well-established firms, each supplying its own section of the country. One of them, in Philadelphia, started business in 1772. And that part of our company, now the Philadelphia Branch, is today the holder of the oldest continuous bank account on the North American continent.

In 1776 the Declaration of Independence was signed and in 1781 Cornwallis surrendered at Yorktown, bringing freedom to the American colonies. So you see that the roots of our company reach back to the very birth of the United States.

Working for National Lead Company, you share with me this great tradition and background. That's why I count it a special privilege to tell you "The Story of National Lead Company".

Lead is low melting

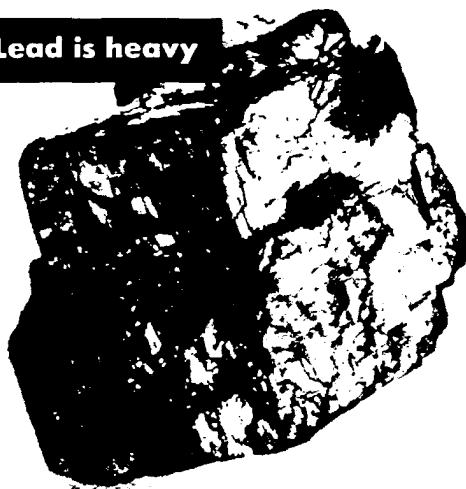
LEAD

the "Precious Metal"

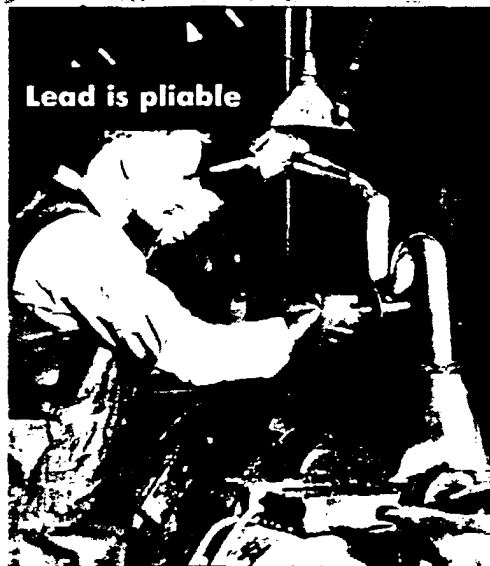
Lead is older than the hills



Lead is heavy



Lead is pliable



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From making white lead paint to using lead as a metal—that's only a short step. But it was important. It put us in the business of processing one of nature's most useful substances.

Though lead is inexpensive, it has been called a "precious metal"—or even better, "a common metal with uncommon properties".

Lead is old. The ancient Romans knew it and at least some of its uses. Maybe it was just coincidence that in 1907, just as I was starting out, a piece of an antique plumbing system was dug up in Rome. That length of lead pipe was really old—it had been buried for more than 1,800 years. Yet it was almost as good as new.

Here's why lead is so useful:

Lead is heavy. It makes good counter-balances and weights.

Lead is soft—it isn't brittle. In bearings, in gaskets and washers, it doesn't crack.

Lead is low-melting. For this reason, it is often added to other metals—to make electric fuses, heads for automatic sprinkler systems, solders, printing metals, and all kinds of metal products where a low melting point is needed.

Lead absorbs sound waves. It is the "metal without a voice". Because it deadens unwanted sounds, sheets of lead are used to soundproof radio and television studios. The same quality gives lead a place in pipe organs; the lead lining in the pipes is what assures that familiar "organ tone"—clear and true.

Lead absorbs vibration. This makes it particularly useful in the anti-vibration "pads" required as foundations for heavy machines, railroad stations, office buildings, and scientific observatories.

Lead absorbs harmful rays. As a protection against radiation, it has an important place in X-ray and radium laboratories, and in atomic energy plants.

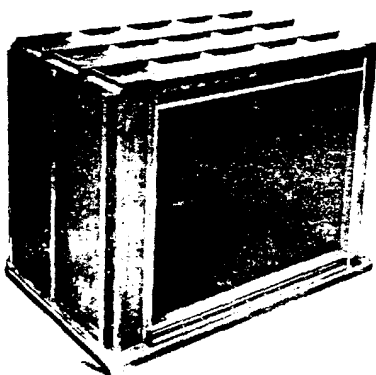
Lead fights corrosion. Soil, air, salt water, and many acids and alkalis don't affect it much, even though such substances attack and destroy most other metals.

Lead is easily bent. In the form of tubing, pipe, cable covering, sheet and wire, it can be made to fit all kinds of shapes and contours. And once it is shaped, lead stays put—it doesn't "spring".

Lead is enduring. As the old Romans knew, it lasts.

Lead is absorbent

shock...sound...harmful rays



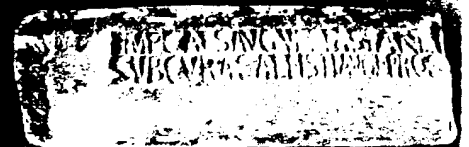
Lead-lined camera box used to photograph recent nuclear bomb tests in Pacific Ocean.

Lead is non-corrosive



General view of a New Jersey institution with lead-covered dome. Nearly 75,000 pounds of lead were required for the construction.

Lead is enduring



0000-NLI-000022125

Lead pipe installed in Roman plumbing about the year 75 A.D. It is almost like new today after nearly 1900 years in the ground.



The paint buyer can choose among 112 colors in the "Dutch Boy" Color Gallery of interior paints.

PAIN*T*...for

Speaking of paint—as we're going to right now—well, "This is where I came in." That's where my reputation started—in "Dutch Boy" Paints.

Over the years, paint keeps on making friends for me and for National Lead Company. People see my picture in our advertisements. They see it in paint stores, hardware stores and lumber yards. But that isn't all. They see it right on the can that holds the paints they buy and like to use.

Whether you're painting a bathroom or a battleship, we've got what it takes—exactly the paint, enamel or varnish to do a bang-up job. Take our "Dutch Boy" Color Gallery. It's a new addition to our paint line—and it's a good example of the service we give. In the "Dutch Boy" Gallery you can take your pick of 112 beautiful colors—in flat wall paint, in satin eggshell enamel, and in high lustre enamel. Walk into the store and write your ticket—your "Dutch Boy" dealer does the rest. He just squeezes a tube of your chosen color into a can of white blending base, and mixes it to your exact prescription. It's that simple.

For the outside of your house, there's Bright White (it really does clean itself), plus a rainbow of colors. Then there are porch and floor enamels that stand up underfoot and in all kinds of weather; sash and trim paints for shutters, doors and window frames, and a primer that provides a sealing and hiding undercoat. Varnishes, too—all kinds—exterior marine spar for doors, trim and decks; interior floor and trim; gloss and interior satin finish for floors, woodwork and cabinets.

White lead, they say, has been known and used for a couple of thousand years. Here in America white lead paint preserved and beautified the

houses of our Colonial forefathers. And, as you'll remember, National Lead's "forefathers" were early makers of that historic and enduring pigment. Today you can buy our pure white lead in two forms—in ready-to-use paint, or in a paste. Many professional painters still prefer to mix their paints from this paste—just like the good old days.

One thing more about lead paint—there's a special kind that has a bright red-orange color. It's called red lead and it's used to protect metal from rust and corrosion. You see it often on the steelwork of bridges and on the beams or girders of buildings as they are going up. Or maybe you've used it yourself in the repainting of a metal porch rail or garden gate. In any case, you probably know that red lead is one more familiar item on my "Dutch Boy" Paint list.



Protection and Beauty



Packaging "Dutch Boy" Paint in one of the Company's paint plants.



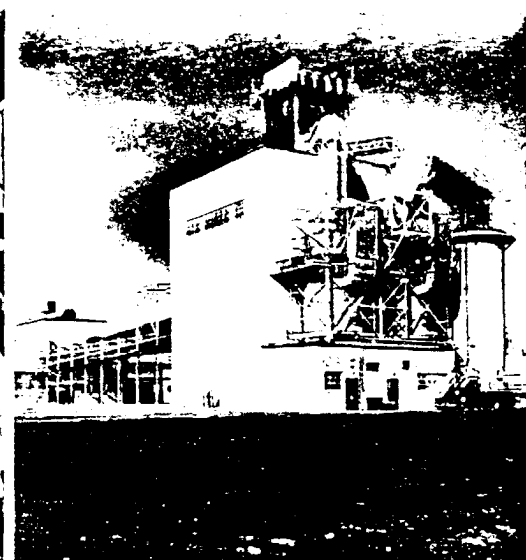
Adding dry materials to hopper of pebble mill.



Finger tip control governs flow of paint materials.



Looking down into a 1000-gallon paint mixing tank.



Rotary kilns where heat is applied to the processing of "Titanium" pigment.

TITANIUM DIOXIDE

*the Brightest and
the Whitest*



0000-NLI-000022128



Spinning red mill, where titanium ore is ground to salt-and-pepper fineness at Tahawus, New York, mine and mill for further processing.



Other mill in production of "Titanox" pigment at Titanium Division plant in Sayreville, New Jersey.



Titanium ore is washed by ship at Titanium pigment plant in Sayreville, New Jersey. Part of the ore comes from abroad.

High up in the Adirondack Mountains of New York, miners blast a black rock from the mountain side which finally turns out to be the whitest and brightest of materials — titanium dioxide.

At our mine and plant in Tahawus, New York, this black ore, known as ilmenite, is crushed and concentrated, then shipped to plants in Sayreville, New Jersey, and St. Louis, Missouri, where the processing miracle which turns black into sparkling white takes place.

Titanium dioxide is whiter than new-fallen snow—and thanks to what is known as its refractive index (power to break up light into tiny shafts), it has tremendous hiding power. This important product of our company—which our Titanium Pigment Corporation markets under the name of "Titanox"—produces the whitest of white paints. It covers and hides better than any other pigment.

It also "stays put". Even when exposed to high temperatures, it still coats the surface and stays white. Used in the enamel on your kitchen range, the fixtures in your bathroom, your refrigerator or your washing machine, it remains white through the baking process—comes out gleaming white and stays that way.

Millions of tons of ore furnish the raw materials for titanium pigment used in an almost endless list of products. It makes the sidewalls of your tires white. It whitens and makes opaque the paper in books and magazines. It's responsible for the brightness in many tinted fabrics and gay-colored shoes and purses. It will brighten and whiten anything plastic—from dentures to doorknobs and from buttons to billiard balls.

In fact, I can't name anything needing a white pigment that isn't best whitened or brightened with titanium—from the white shoes on your feet to the light felt hat on your head and from the linoleum on your floor to the shingles on your roof.

Our people have also created some beautiful gemstones from titanium dioxide. Called titania gems, they actually have more fire than a diamond. They're created by crystallizing titanium dioxide in a very hot flame and cut just about the way diamonds are cut. Many jewelry and department stores carry them in stock. And now our scientists have found that another titanium compound—strontium titanate—can be made up into very beautiful gemstones and also might have important uses in lenses and prisms.

0000-NLI-000022129

DOEHLER-JARVIS

I was amazed to find that every B-36 bomber, from wing tip to tail, from bomb bay to controls, has more than 30,000 die castings produced by our Doehler-Jarvis Division. This will give you some idea of the tremendous output of aluminum, zinc, magnesium and brass alloy castings coming from Doehler-Jarvis plants.

This operation, I discovered, dates back to 1908, when it had but one machine. Today it has hundreds of machines in eight huge plants.

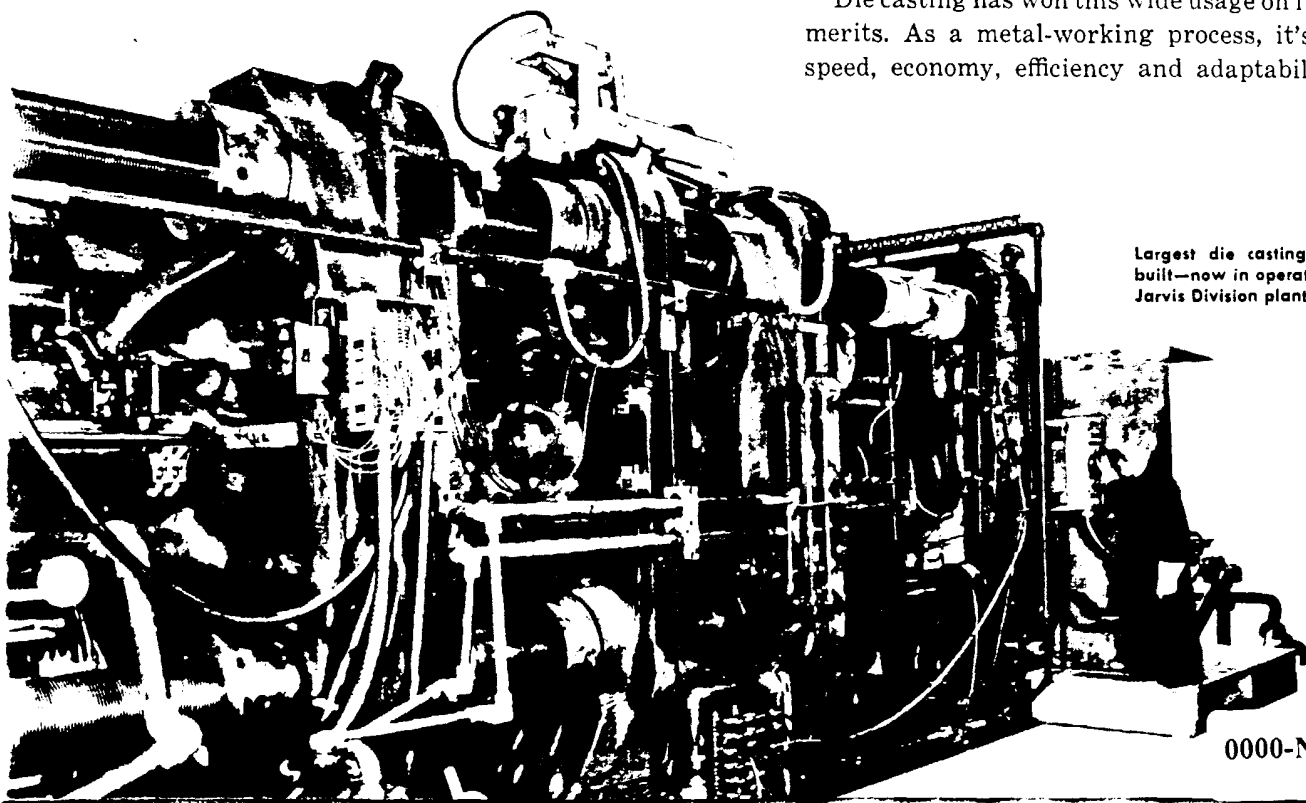
In die casting, molten metal is shaped in a steel mold or die. Between the two halves of this die, there is a cavity—the exact shape of the part to be cast. The liquid metal is forced into this cavity under heavy pressure. Then it is chilled and set—and the casting is completed. It takes just a few seconds to do the whole job. Lead used to be the common die casting metal; but today zinc, aluminum, magnesium, and some copper base alloys are most in use. For some purposes, die castings are ready to use “as is,” as soon as any extra metal squeezed out around the edges of the die has been trimmed off. Where a special finish is needed, the casting is painted or plated.

The biggest customer of this division is the automotive industry, and hundreds of different die castings go into each season's new automobiles. Radiator grills and ornaments, horns, fuel pumps, hydraulic brake pistons, torque converters, clutch housings and other automatic transmission parts, cigarette lighters, heaters, window frames, stop lights, fog lights, gas tank caps—all contain or consist of castings produced by Doehler-Jarvis.

Home appliances, too, from ironers to ice crushers, from vacuum cleaners to venetian blinds—contain die castings. Thermostats, radios and television sets, clothes washers, electric ironers, toasters, clocks, floor polishers, refrigerators, air conditioners, hardware, lamps and many other appliances rely on Doehler-Jarvis die castings for smooth operation and attractive appearance.

Manufacturers of office equipment also utilize Doehler-Jarvis die castings—in pencil sharpeners, checkwriters, adding machines, safes, typewriters and office chairs. You'll find die castings in toys, sporting goods, lawn mowers, cameras, bicycles and in countless other applications in countless other products.

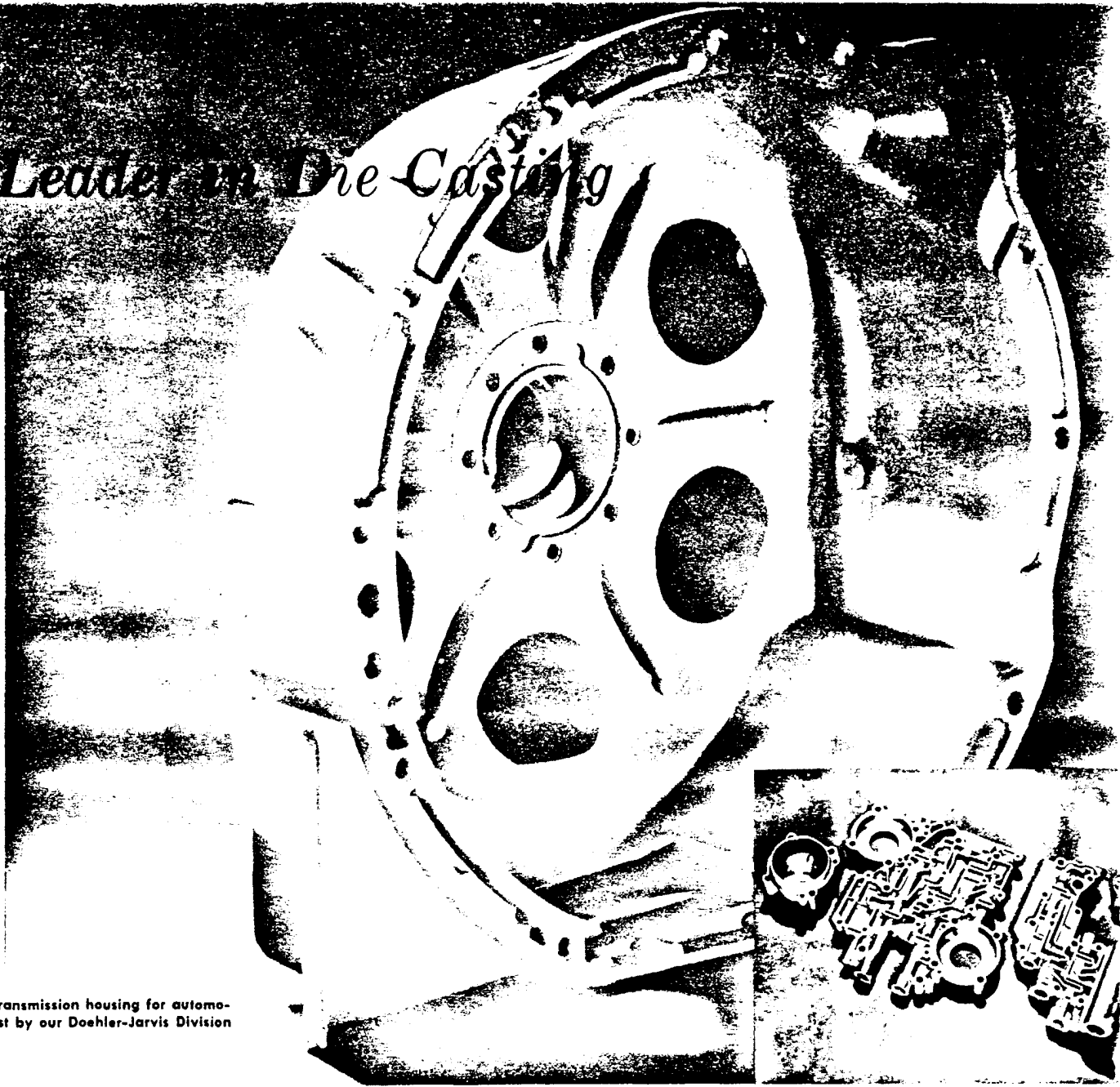
Die casting has won this wide usage on its proven merits. As a metal-working process, it's tops in speed, economy, efficiency and adaptability. And



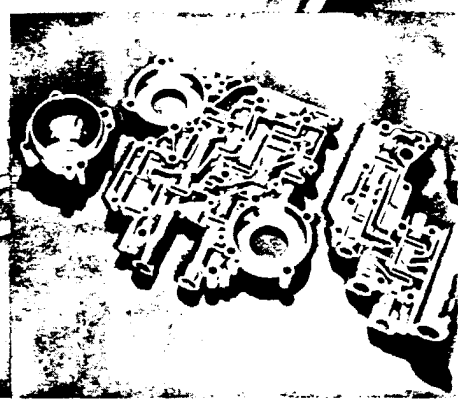
Largest die casting machine ever built—now in operation at Doehler-Jarvis Division plant in Toledo.

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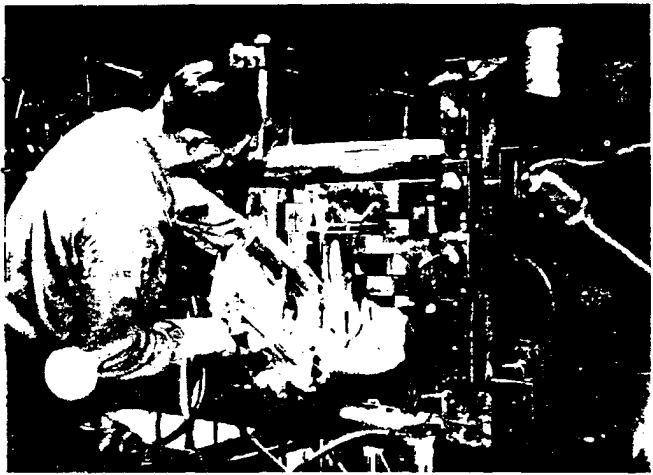
A Leader in Die Casting



Automatic transmission housing for automobile, die cast by our Doehler-Jarvis Division



One of many complex parts produced by Doehler-Jarvis for many industries by die casting.

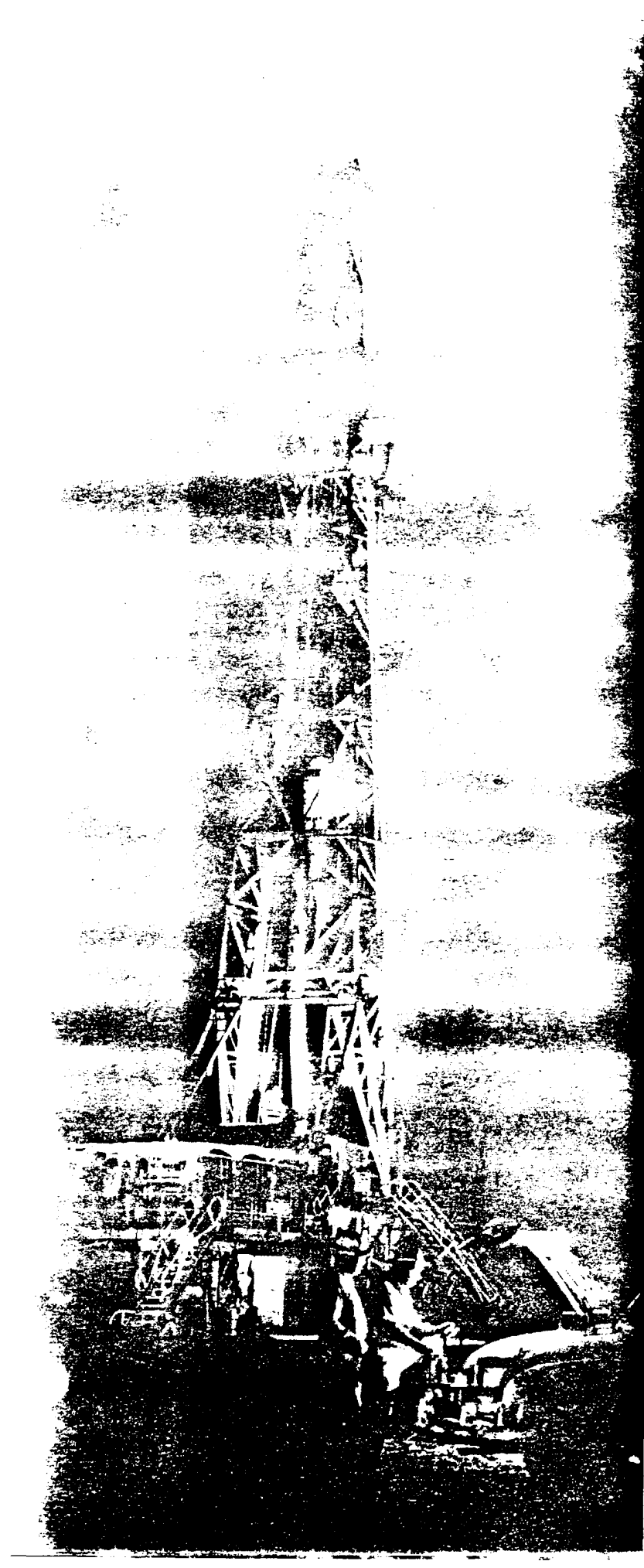


Removing aluminum part from die casting machine. This casting will form the base for a portable x-ray machine.

since Doehler-Jarvis was founded by the very man who invented the process, it has naturally been a leader in its field.

Doehler-Jarvis Division has eight large plants—two in Grand Rapids, Michigan; two in Toledo, Ohio; two in Pottstown, Pennsylvania, and two in Batavia, New York. These plants occupy a total of 2,000,000 square feet of factory space and employ 7,500 people in turning out thousands of die castings for practically every important industry.

0000-NLI-000022131



"MUD"

and Chemicals for the oi

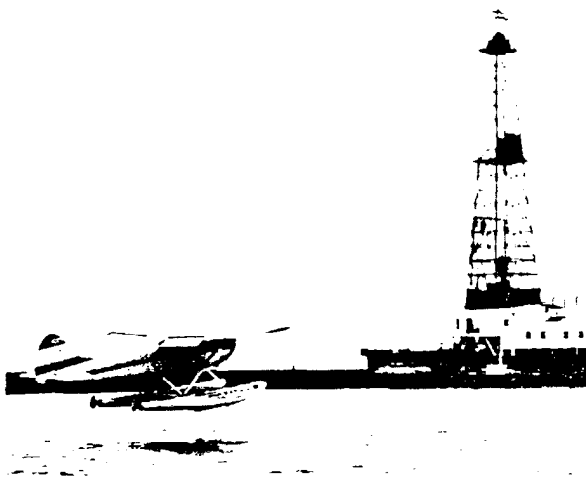
We all know how important the petroleum industry is to everyone. National Lead Company is not in the petroleum business. But I know a lot about how our company serves the industry that supplies people with gasoline for their automobiles, fuel for their furnaces, lubricants for their machinery and natural gas for their kitchen ranges.

This is how we help the oil and gas people drill their wells. When oil wells are drilled, a fluid is pumped down the drill pipe to cool the bit and to bring up rock cuttings from the hole. Oilmen call this fluid "mud". In the earlier days, despite good "clayey" drilling muds, high pressures often blew the fluid and drill pipe out of the hole. Derricks were wrecked, lives were lost and tremendous volumes of oil and gas were wasted.

To put a "cork" on this destructive pressure, the drillers needed something to make mud heavier and hold it down. So in 1928 our Baroid Division introduced a mud-weighting agent to the industry to overcome this condition. Technically this material, called "Baroid", is barium sulphate. When added to the drilling fluid, it increases its weight enough to confine the oil and gas under the highest pressures to the drilling formation.

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Baroid Division engineers provide around-the-clock service to oil well drillers in solving their drilling mud problems.



A fleet of Baroid Division airplanes brings quick oil well drilling mud service to "hard-to-get-to" locations.

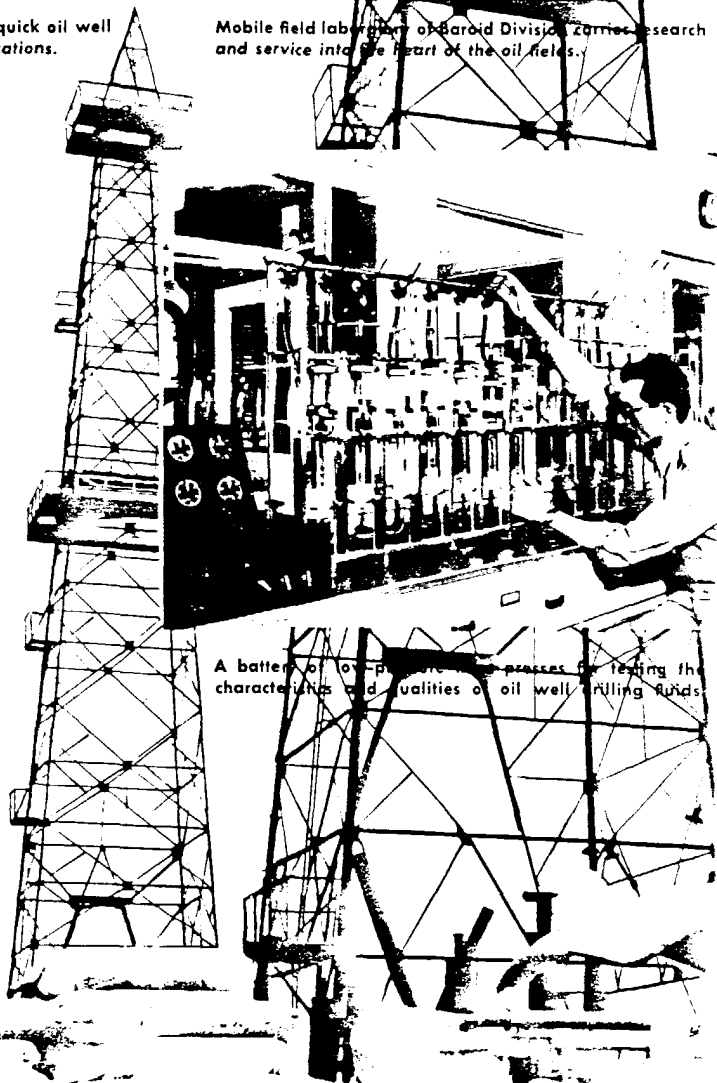


Mobile field laboratory of Baroid Division carries research and service into the heart of the oil fields.

business

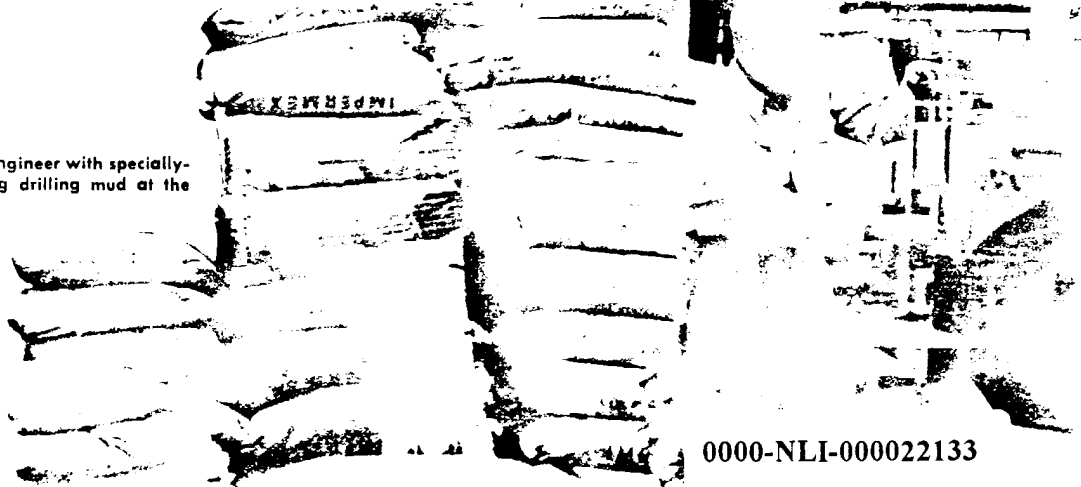
The Baroid Division of our company has pioneered in the development and improvement of drilling muds and has added many other materials and processes to produce and control drilling fluid and enable the drilling of today's deep wells. It makes "Aquagel" (a clay which makes a fine drilling mud when added to water), mud thinners, conditioners and testing equipment used in the analysis and control of drilling fluids.

A large staff of Baroid field service engineers provides a drilling mud testing service in every active oil field in the United States, Canada and even in Alaska. Baroid's laboratories work on oil field problems for the industry. In addition, several mobile field laboratories carry their test tubes right onto the spot for analysis and testing of muds. Baroid even has its own air force! A fleet of planes flies service engineers to the "water-country" of the Gulf of Mexico, Louisiana and other "hard-to-get-to" places to help solve the mysteries of oil well drillings.



A battery of oil-pressure test presses for testing the characteristics and qualities of oil well drilling fluids.

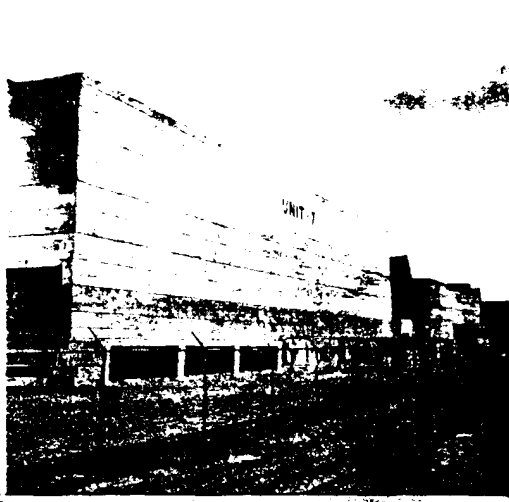
Baroid field service engineer with specially-equipped car, testing drilling mud at the well site.



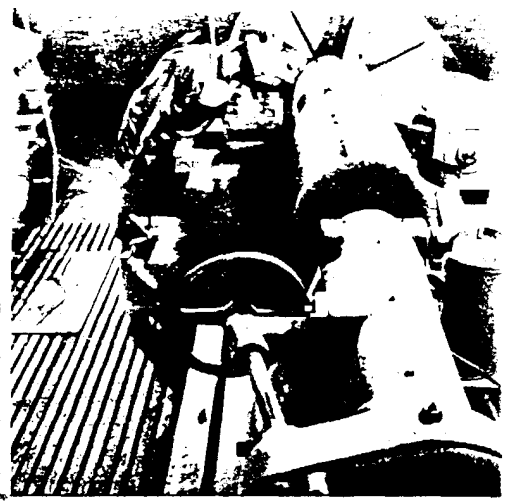
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Placing magnesium in titanium metal reactor prior to adding titanium intermetallic. Reaction produces titanium metal and magnesium chloride.



An exterior view of the Titanium Metals Corporation of America plant in Henderson, Nevada.



Turning titanium metal ingots in lathe after processing and testing at Henderson, Nevada, plant.

TITANIUM...

Everything from fishing rods to pot handles have been suggested as possible products to be made of titanium metal. That's a way off yet, but there's very little doubt in anyone's mind that this metal will have a busy future.

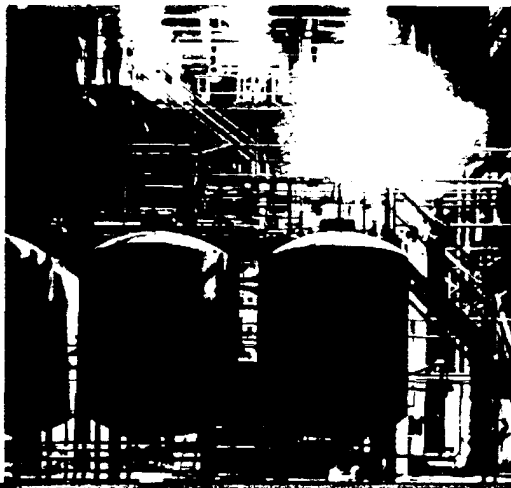
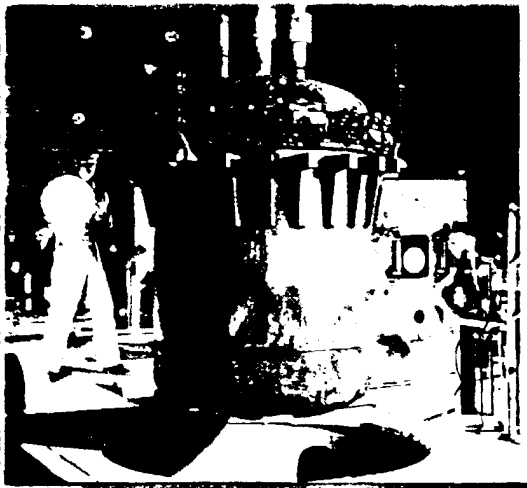
We make titanium metal at our Titanium Metals Corporation of America (owned jointly with Allegheny Ludlum Steel Corporation) plant in the southern tip of Nevada. From there it goes east for fabrication into sheet, bar, wire and forgings.

Most titanium metal today is going into military aircraft for such items as jet compressors and wing parts. By using titanium metal for jet engine parts, a considerable saving in weight can be realized.

The new Douglas DC-7 airliner has titanium engine nacelles and fire walls, with a saving of 200 pounds per airplane.

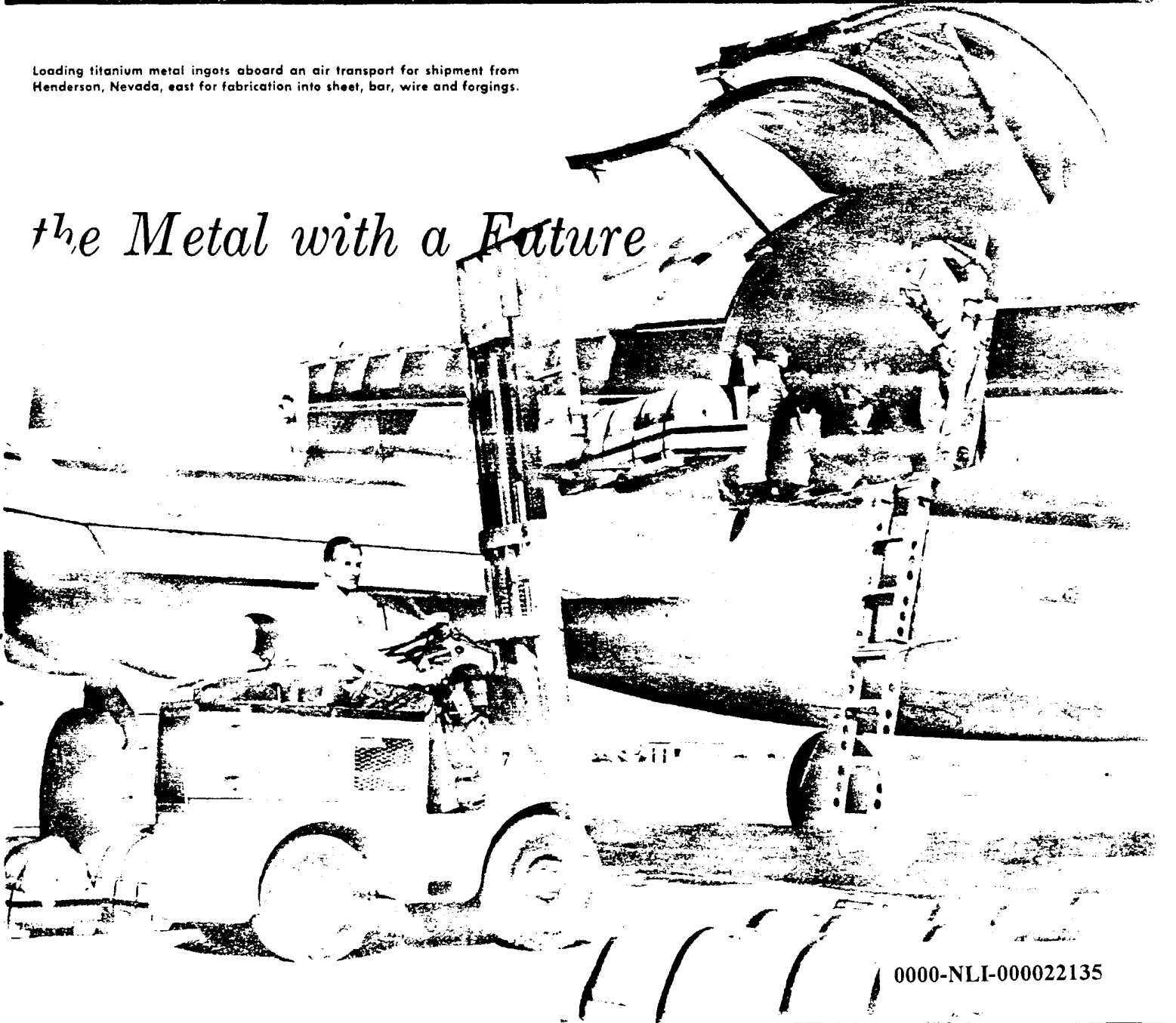
Why is titanium metal such a promising metal? For one thing it's only 56 per cent as heavy as alloy steels and even stronger than most of them. Titanium is also highly resistant to corrosion and is the only structural metal that acts in sea water just as it does in air. This characteristic should make it ideal for marine parts, such as sea water pumps, valves and piping, and many other applications where metal is exposed to salt water.

Countless other uses can be predicted for this remarkable metal, and it's quite probable that some day it will be as familiar to you as aluminum and stainless steel. But don't go out yet and try to buy that titanium fishing rod, or that cooking pot with the heat-resistant titanium handle. The supersonic jet has the right-of-way at the moment, and titanium fishing rods and pot handles must await their turn.

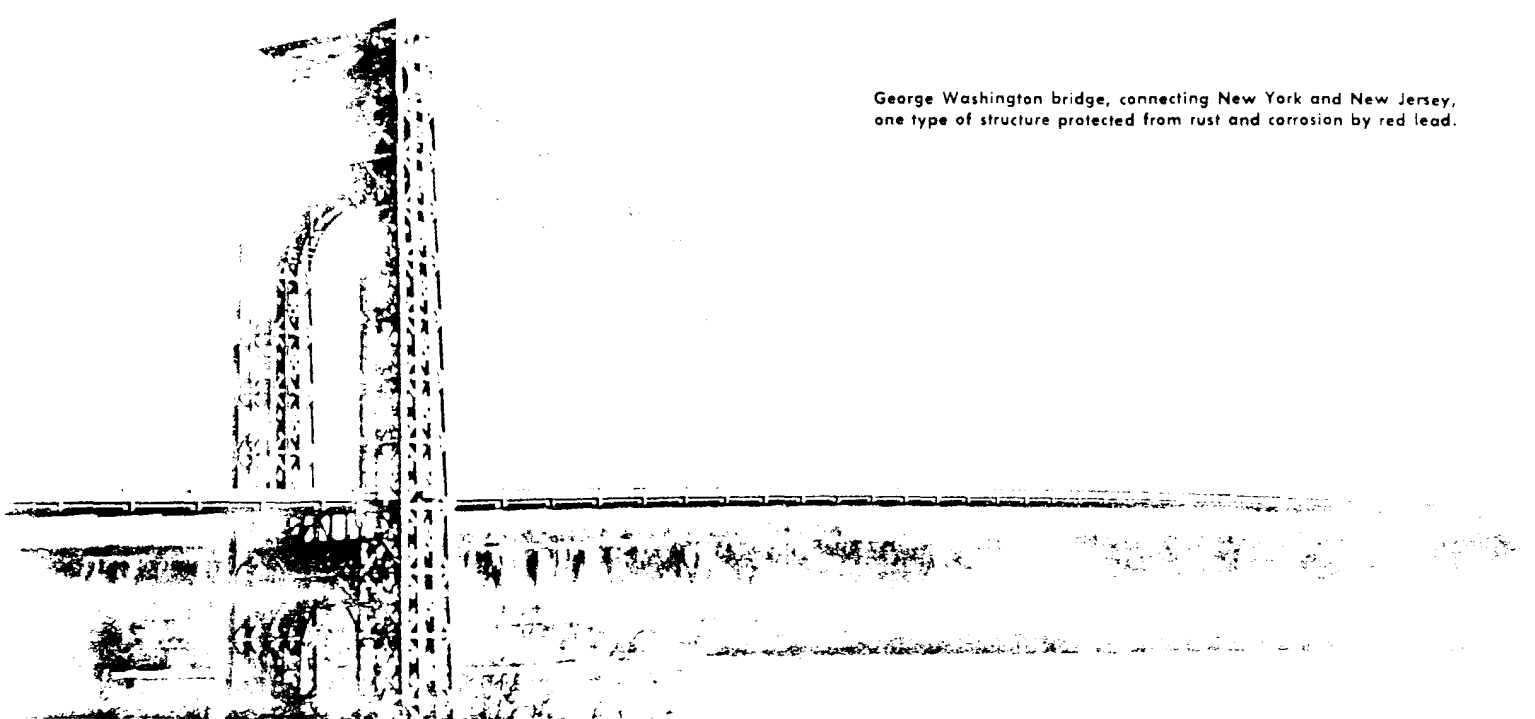


Loading titanium metal ingots aboard an air transport for shipment from Henderson, Nevada, east for fabrication into sheet, bar, wire and forgings.

the Metal with a Future



0000-NLI-000022135



George Washington bridge, connecting New York and New Jersey,
one type of structure protected from rust and corrosion by red lead.

FROM WHITE LEAD TO

I've already told you about amazing titanium dioxide. Now I'm going to talk about some other paint materials which our company manufactures. I started with National Lead selling white lead and then red lead pigments.

Of course white lead, with which our company began — that goes on and on. Paint manufacturers put white lead into paint for added durability, for easier brushing and to make it stick to the surface.

Metal rusts. To prevent rusting, red lead is used. And we make and sell red lead in large quantities for painting ships, bridges, girders — anywhere metal is likely to rust.

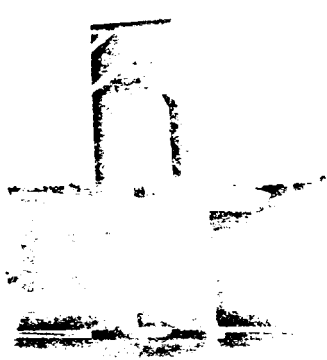
A different kind of white lead is "Dutch Boy" Basic Silicate White Lead 45X. It's made by coating powdered silica with a lead compound. I'm told that it has all the good qualities of a straight lead pigment but costs the paint maker less — there's more pigment per pound. A hundred pounds of "45X" equals in effect 169 pounds of regular white lead.

Some other pigments we make are litharge, a yellowish compound used in storage batteries, glass, tile, linoleum, paint and printing inks; sugar of lead, which I hear isn't sugar but a salt, and is used in paint driers and in insecticides, and antimony oxide, which also goes into paints and fireproof compounds. Antimony metal, by the way, is used to

harden solder, type metal, lead pipe and sheets and babbitt. We produce antimony metal, too, at our Texas Smelting and Refining Division plant in Laredo, Texas. Barium and calcium pigments for paints are manufactured by our De Lore Division.

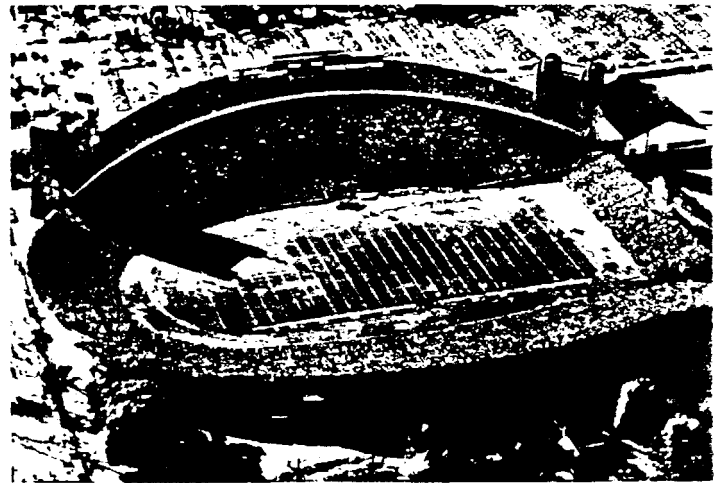
Of paint oils, the most popular and widely used is linseed oil. And so, for a long time linseed oil has been one of the "Dutch Boy's" products. Linseed oil is about the only paint oil that can be used in paints just as nature produced it—raw. But for most purposes it is treated and that's what we do with it—boil it, bleach it, refine it at the Minnesota Linseed Oil Company plant in Minneapolis. This plant is owned jointly by our company and Minnesota Paints, Inc.

I guess we all remember too well the taste of castor oil. But I don't think most of you know that it goes into paint. The Baker Castor Oil Company makes castor oil as a light-colored, medium hard-drying oil — excellent for making clear varnishes and enamels. Castor oil and its compounds go into a wide range of products. Look at these—adhesives, artificial leather, asphalt tile, cosmetics, fertilizer, greases, hydraulic fluids, perfume, waxes, printing inks and plastics. I'll bet when you took a tablespoonful of the stuff, you didn't think it would be good for perfumes, did you?

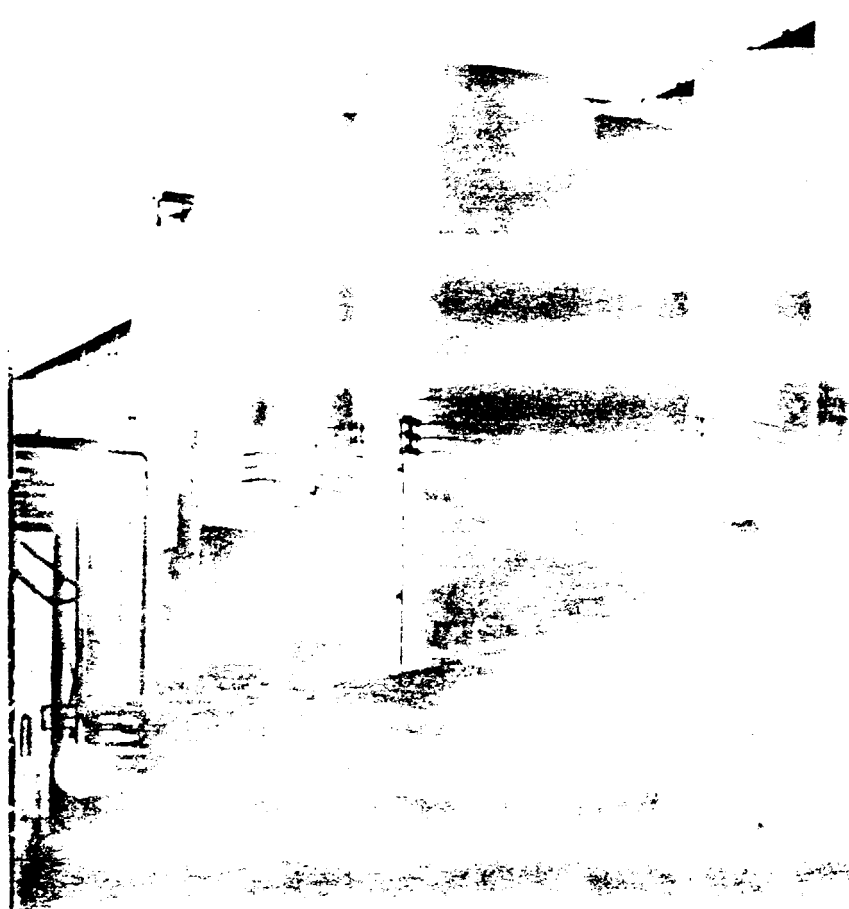


Flax conveyor belt at Minneapolis plant of Minnesota Linseed Oil Company.

CASTOR OIL



Dyche Stadium of Northwestern University at Evanston, Illinois, where a red lead primer coat protects the steel bleachers against weather extremes and corrosion.



Tanks holding finished castor oil products at the Bayonne, New Jersey, plant of Baker Castor Oil Company.

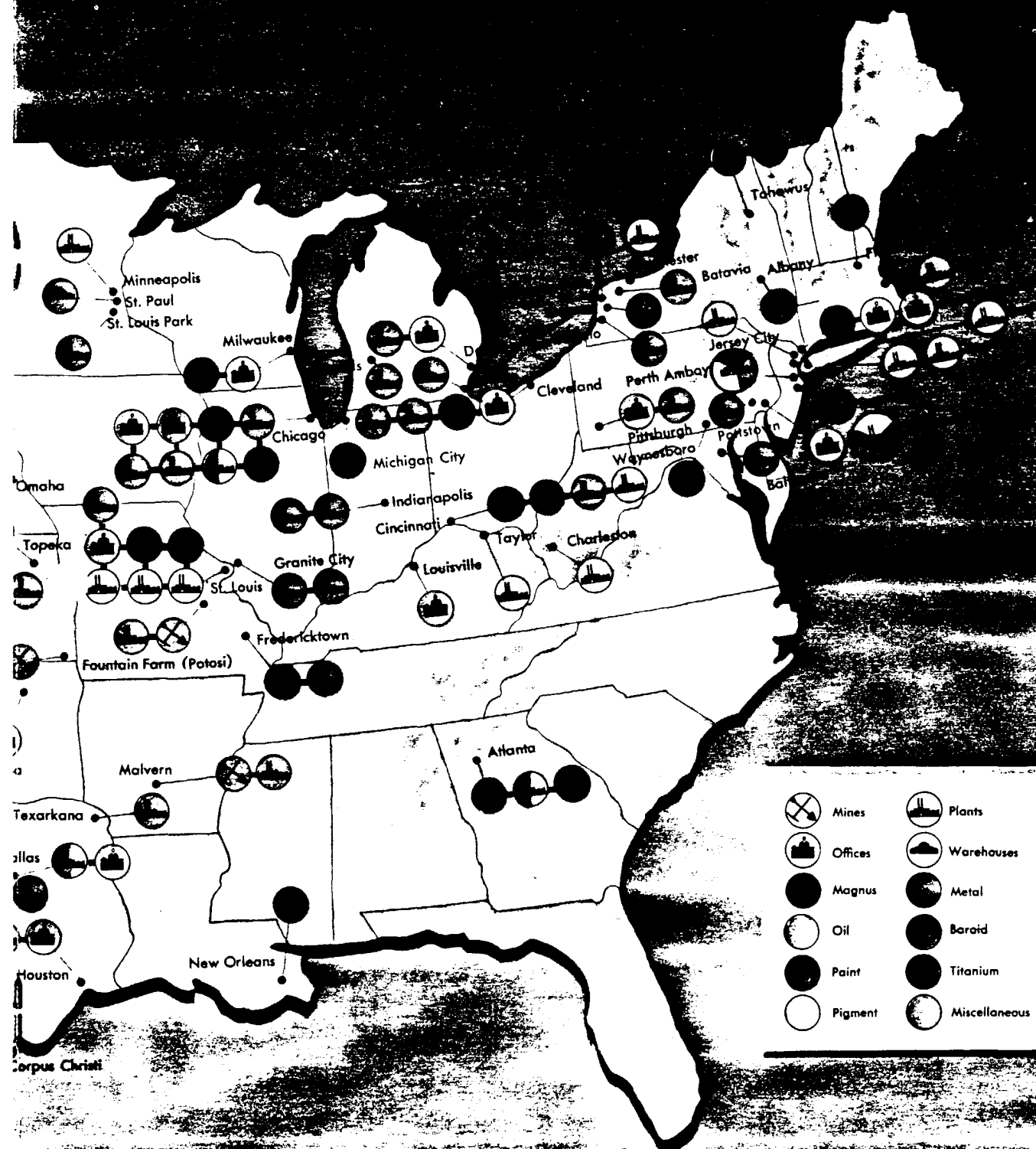


This pebble mill grinds ingredients as first step in producing "Dutch Boy" Basic Silicate White Lead 45X.

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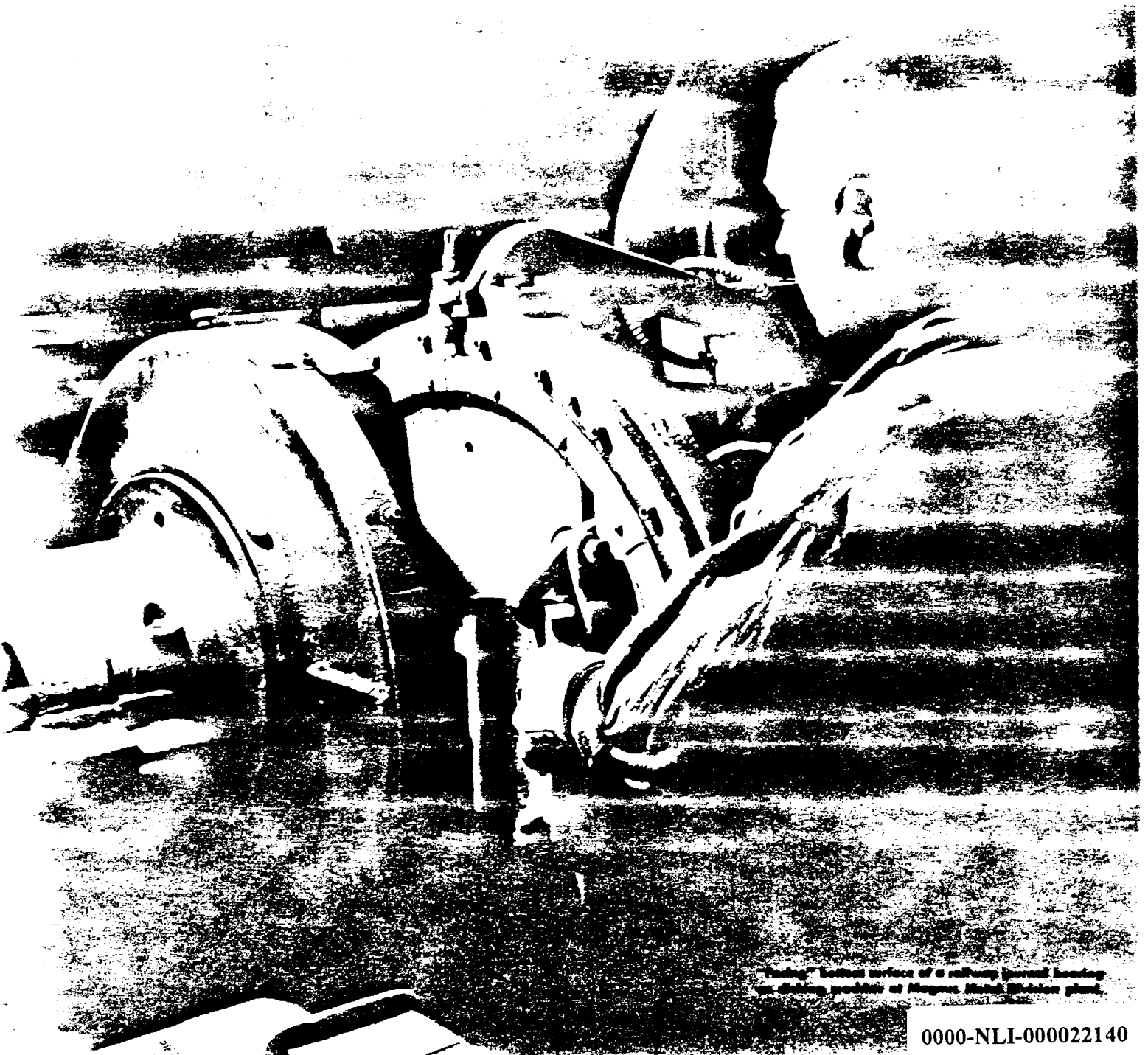
National Lead Company Facilities
in the United States

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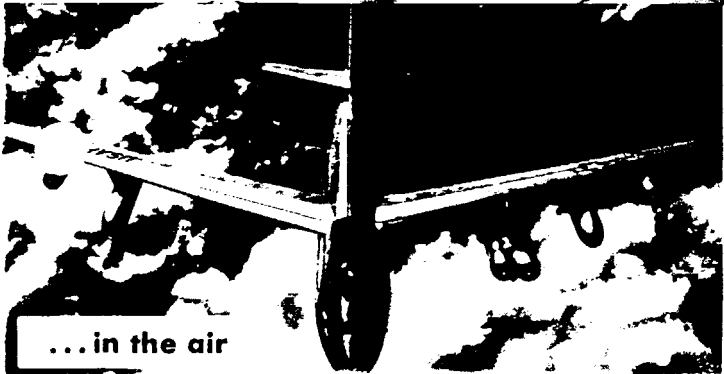
	Mines		Plants
	Offices		Warehouses
	Magnus		Metal
	Oil		Baroid
	Paint		Titanium
	Pigment		Miscellaneous

BEARING METALS.

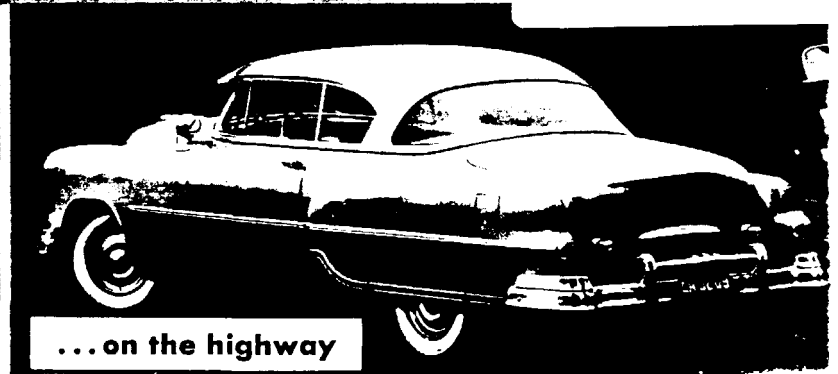


"Grinder" lathe surface of a rotating journal bearing grinding machine at Magna Metal Division plant.

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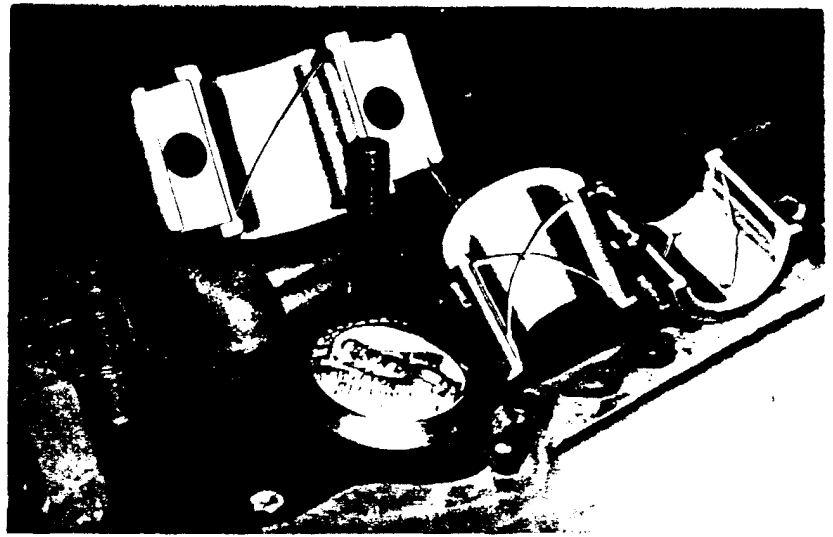


...in the air



...on the highway

...carry the load



Ingot of "Dutch Boy" Perfection Anti-Friction Bearing Metal, showing bearings lined with this metal.

In your automobile, in locomotives, in jet engines, in the huge engines that drive ocean liners, bearing metals keep the wheels spinning.

We make a complete line of bearing metals to fit any need, under my trademark and the Hoyt trademark. These metals, called "babbitt" generally, contain lead, tin, antimony, copper and other metals in varying amounts, depending on what they're going to be used for—high-speed machinery, for exceptionally severe service (such as in aircraft engines), for machinery that undergoes sudden strains. Precision bearings for many industries are made by our American Bearing Corporation.

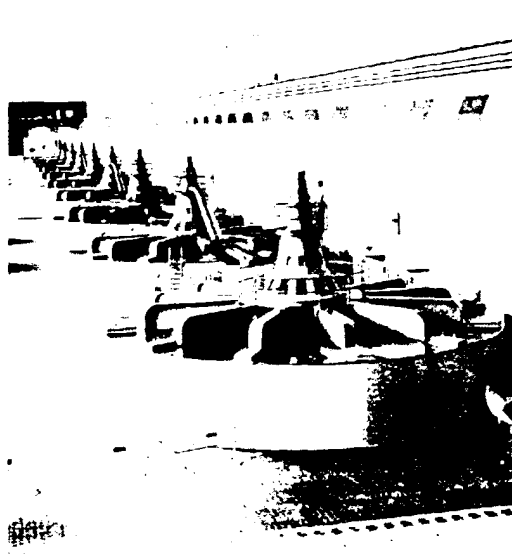
Many of the cars of the nation's leading railroads

roll on our Magnus Metal Division's journal bearings. The first Magnus plant was built in Chicago in 1885. Growing with the demand for its products, Magnus today has eighteen plants in the country's major railway centers. This division also makes bearing metals and other bearings for locomotives, diesel engines and heavy machinery of all types.

They even make a bearing that sends up smoke signals! Here's how it works. Two cartridges filled with a certain material are inserted in grooves in a railway car bearing. If it gets too hot, these cartridges automatically give off a heavy, white smoke and a penetrating smell, warning the train crew that trouble is brewing.



...on the rails



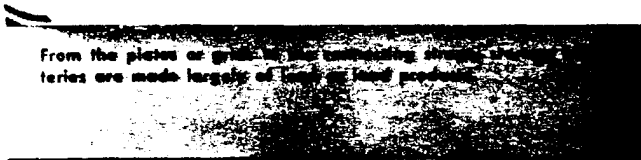
...in the factory



...under the sea



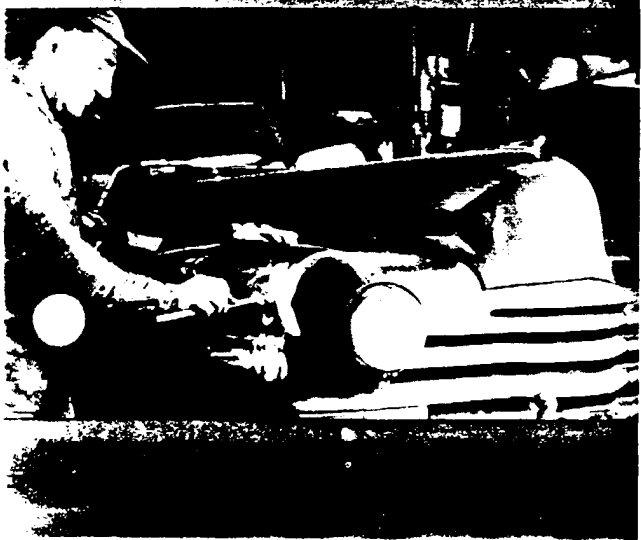
FROM BLATCHFORD



From the plates or grids in manufacturing storage batteries are made largely of lead or lead products.



All types of storage batteries are made from lead products.



Storage batteries don't get the credit they deserve—but they get plenty of blame when they go dead. Remember that cold morning when you couldn't start your car? And it isn't just your car that depends on this device. Batteries are standard equipment in airplanes, in ships and submarines, in power stations, in hospitals, in factories, on farms. A storage battery is a reservoir of electricity. What makes it perform this service is a reaction that takes place between substances in dilute acid—and these substances are usually lead compounds.

Our company processes several essential lead products for battery manufacturers—lead hardened with antimony, red lead and litharge. The hardened lead is cast into "grids," with openings into which the red lead or litharge is "pasted". In fact, nearly the whole battery and its connections are lead products. Its straps and its terminal posts are lead, and a lead compound may even have gone into making the hard rubber case.

.....
If you'll take a look around, you'll find solder wherever metals have to be joined together—whether they're tin, lead, iron, copper, nickel or steel. Since lead is one of the main ingredients in solder, you won't be surprised that we're in this business, too—as you can see from the "Dutch Boy" picture on our solder packages. We make a large part of all the solder used—not only the familiar kind your plumber and electrician use, but also auto-body solder for filling in dents, solder for automobile radiators, low melting solder for fire-extinguishing systems, and even "made-to-order" solders for special jobs.

While you're reading about all these uses of lead, did you ever stop to think you wouldn't be reading in print—if it weren't for lead? Without it there'd

BATTERY METALS TO BASE



Intricate printing plates are mounted on our honeycombed "Blatchford Base" for flexibility in positioning and time-saving.

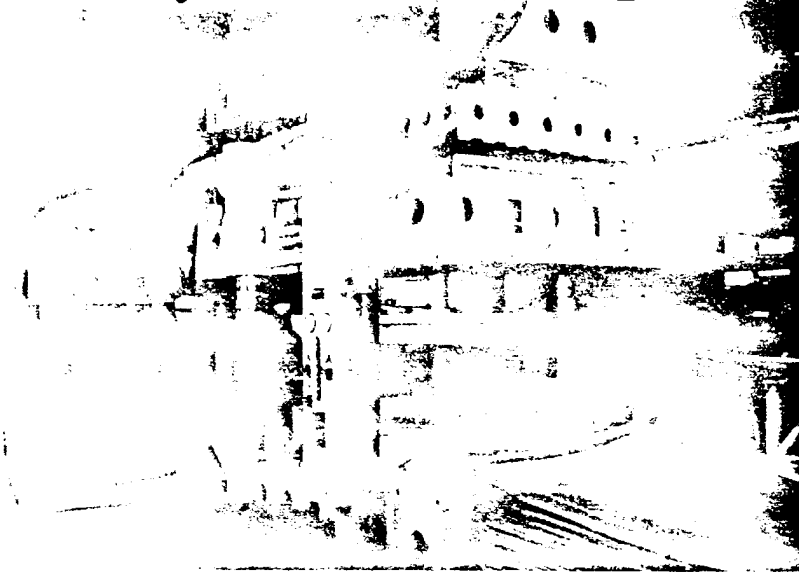


Linotype machine for casting type. Our company is a major source of supply for type-casting metals.

be no printer's type. With tin and antimony added, lead goes into every print shop as type metal. A modern printing plant melts its used metal down for re-casting. With a little "toning up" it can be used over and over.

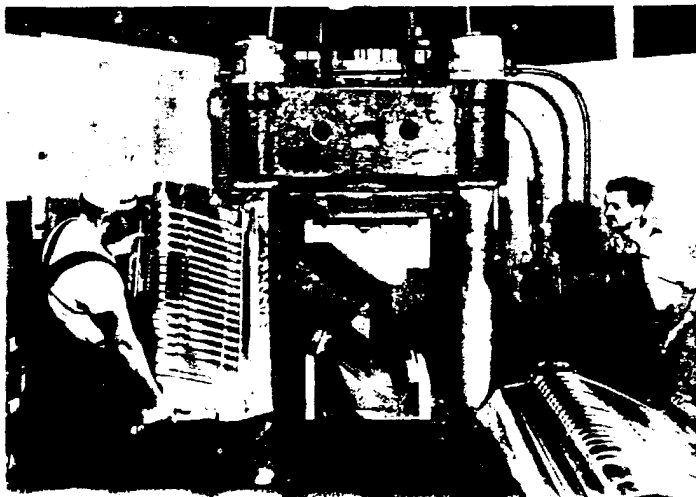
Our E. W. Blatchford Co. Branch sells every kind of metal needed in the printing industry—all the way from linotype metal to "toning up" metal. We also produce "Blatchford Base" for mounting printing plates. This is a honey combed platform to which the printer anchors his printing plates—a time-saver for the printer and just one more item in our long list of specialized materials for a thousand and one specialized uses.

KIRKSITE *and other alloys* for autos, airplanes and art objects



A battery of presses are set up in one of our plants for Kirksite and Nalco-Lite die tryouts and short runs of parts.

Beautiful art objects can be made from pewter, produced in sheets and discs by our company.



Two of my products, "KIRKSITE" and "NALCO-LITE" (trademarks) die materials, have created quite a stir in automotive circles, I find. These alloys are now used by many automobile manufacturers, principally for making dies to produce sheet metal parts for test models. Designing engineers work from these in preparation for next year's automobiles.

NALCO-LITE is a recent newcomer in the tooling business and is a plastic material. KIRKSITE die material is a zinc alloy, similar to a mild steel. NALCO-LITE is used exactly as KIRKSITE and gives weight savings up to 75 per cent and saves a lot of time, too.

KIRKSITE became a veteran in World War II. When fighter planes and bombers needed quick changes in design, dies made of this alloy made an overnight "face lifting" possible. More than 25,000 wing tanks for the famous World War II fighter, the "P-38", were stamped out of steel, using one set of KIRKSITE dies.

Your grandmother used a metal called pewter. So did the ancient Romans. And so, perhaps, do you. For after centuries of use, this unique metal with its distinguished "atmosphere", still is fashioned into articles of lustrous beauty.

Pewter is composed mainly of tin, to which are added small amounts of antimony and copper. To manufacturers of pewter products, our company supplies the metal in discs and rectangular sheets.

The base of the lamp that stands on an end table at the side of your divan, or any of a dozen of children's toys may be made of one of our metals called "C.T.", an alloy of lead and antimony.

I have mentioned the use of tin for alloying lead. Our company also uses tin to manufacture pipes for soda fountains, or for coils to cool beer, as well as tin tubing, sheets, anodes, wire, tape, bars and ingots. And finally, for delicate soldering, we even supply pulverized tin.

0000-NLI-000022144

New "Nalco-Lite" plastic dies stamping out aircraft parts. These dies save considerable time, cost and 75 per cent in weight.



A sheet lead rolling mill, where lead is rolled into forms suitable for use in the chemical, plumbing and petroleum industries.

Because its "uncommon properties" are so versatile, lead is a *must* in a wide and diversified range of industries. For example:

For the petroleum industry and for the manufacture of rayon, our company has developed a special method of recovering sulphuric acid. For customers who use this Simonson-Mantius Vacuum Process, our acid-recovery department designs and helps build acid-concentrating plants, and constructs lead-lined equipment—concentrators, stills, evaporators, coolers and crystallizers.

Corrosion-resisting sheet lead is the standard lining for vats and tanks in chemical plants. Here "chemical" lead is used. That's lead to which small amounts of silver, copper, tellurium, or antimony have been added—and it is a match for even such witch's brews as sulphuric, phosphoric and hydrochloric acid. Along with these containers for acid, we produce lead, or lead-lined pipe and valves, as well as acid-resistant pumps and other equipment.

Acid-handling is just one of the big jobs lead does for industry. To take another example, lead is used wherever something heavy must be anchored to masonry—massive machinery, electrical cables, fire escapes. These massive weights are held fast by a

kind of bolt called a "Cinch Anchor" and the "business end" of this mighty midget is made of lead. Its grip is terrific—in an actual test, one of our company's 4-inch anchors withstood a pull of 239 tons!

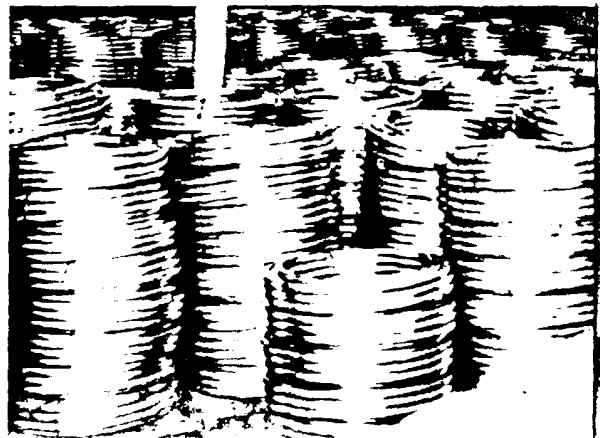
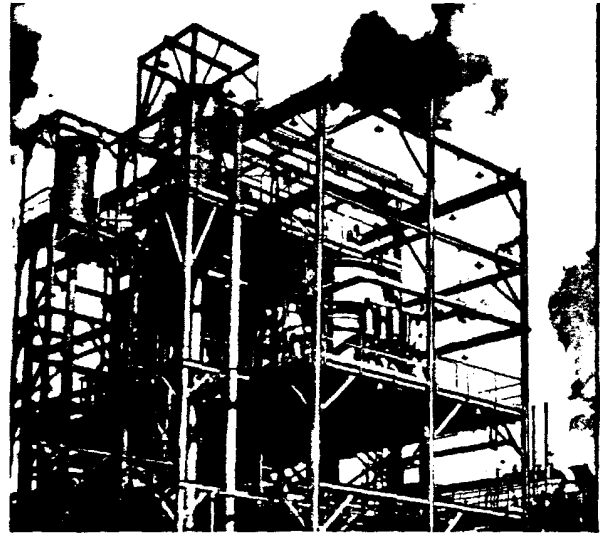
But you'll also find lead at work nearer home. Your own house very likely has a sheet lead pan under your shower, and there are probably lead traps or bends in your kitchen and bathroom plumbing. Lead is also used for sash weights and dividers in leaded glass windows. We make them all.

In fact, we make lead products for so many and such different uses, it's hard to name all the places where they might turn up. Here are just a few:

- the lead wire used in electrical connections and to align bearings;
- spun lead wool for caulking;
- lead shot—familiar to hunters and sportsmen;
- small-bore lead tubing, used in pipe organs and in lightning rods.

Lead even helps you keep your teeth clean—because the tube from which you squeeze your toothpaste was very likely made from a tin-covered lead blank sold by our company.

Acid-concentrating plant, designed by our Acid Recovery Department. Plants of this type use lead-lined valves, pipes and tanks.

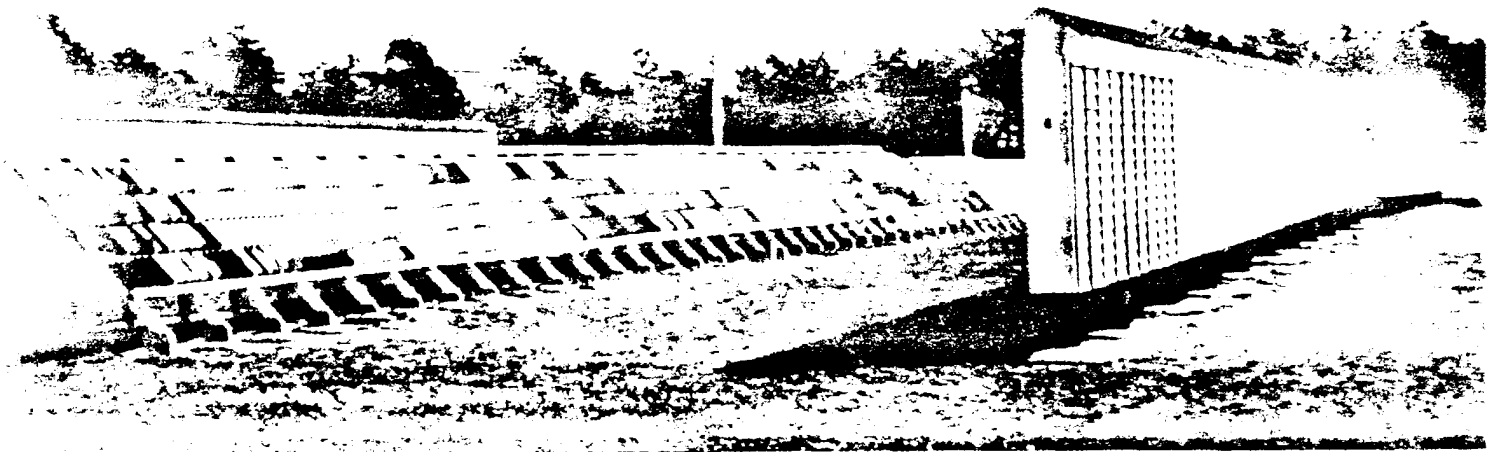


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Coils of lead pipe in one of our warehouses, before packaging for shipment.

RESEARCH...

for a better future

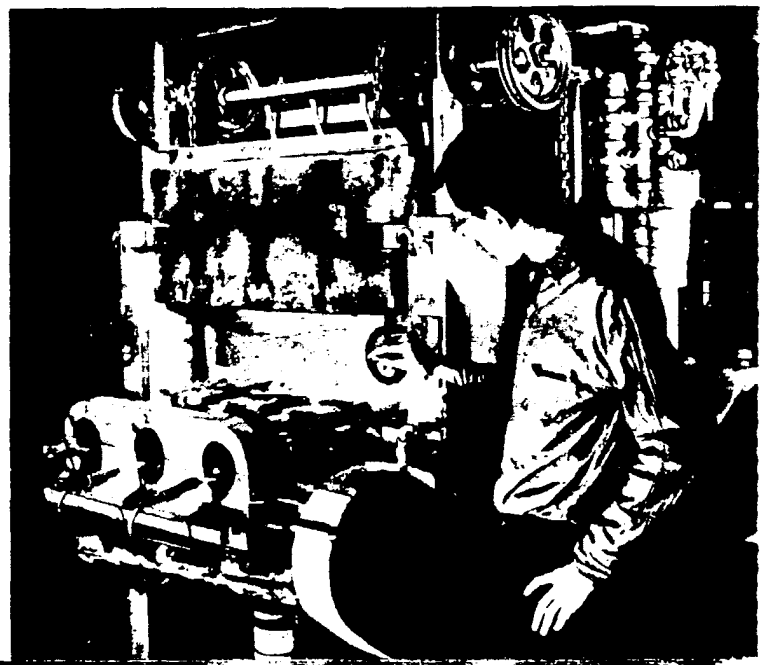
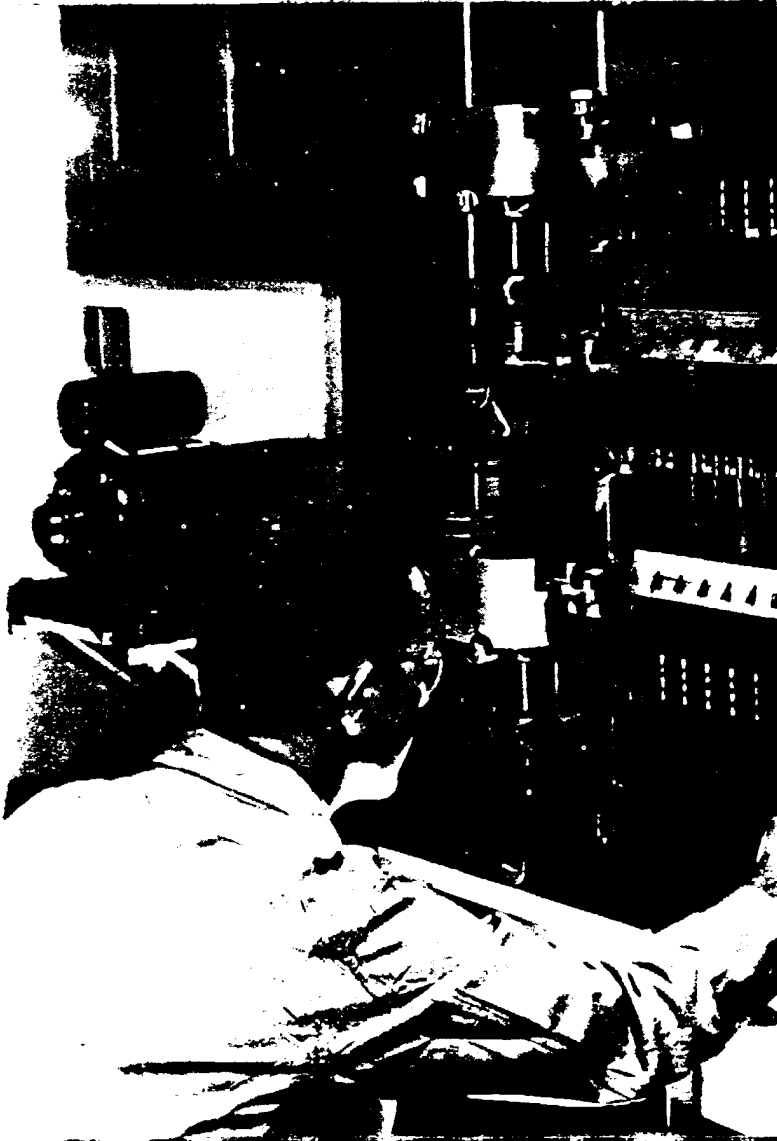


Exterior paint testing station "fences" at Sayville, Long Island, New York, where thousands of paints and enamels are exposed to weather in exhaustive tests.

Endurance limit of metals is determined by flexing in fatigue-testing machine.

0000-NLI-000022146

Small furnace used in development work on new types of pigments. Much information can be determined by processing small batches in such furnaces.



Our company was one of the first of American Industrial enterprises to put research on its payroll. National Lead set up its first laboratory in 1891, our initial year as a corporation. At that time our research was directed toward the very few products we made then—white lead, litharge, linseed oil and metal products such as lead pipe and sheet lead.

As our company grew, our laboratories grew. By 1911 we manufactured and sold two dozen items, and scientists had to expand their facilities to keep pace. Today, more than a half-century after National Lead began operations, I, the "Dutch Boy", am proud to say that we produce nearly 150 basic products and thousands of derivatives that are essential to home and industry, many of them the result of work done in our laboratories.

I'm going to give you a good example of how our company developed a new product—"Dutch Boy" Blended Paint. Our chemists and paint experts first conducted tests and tried different formulas of pigments. Then preliminary tests on hiding power, spreading capacity, leveling, and so on, were made upon small panels at the laboratories.

After generally acceptable formulations had been developed in this way, our Experimental Test Station at Sayville, Long Island, New York, took over. Here we have two and a half miles of "fences" with panels of paint on them. As many as 30,000 panels are out on test at one time! By exposure to the elements, our experts can determine whether their choice and blend of materials is going to stand up under the double test of time and weather.

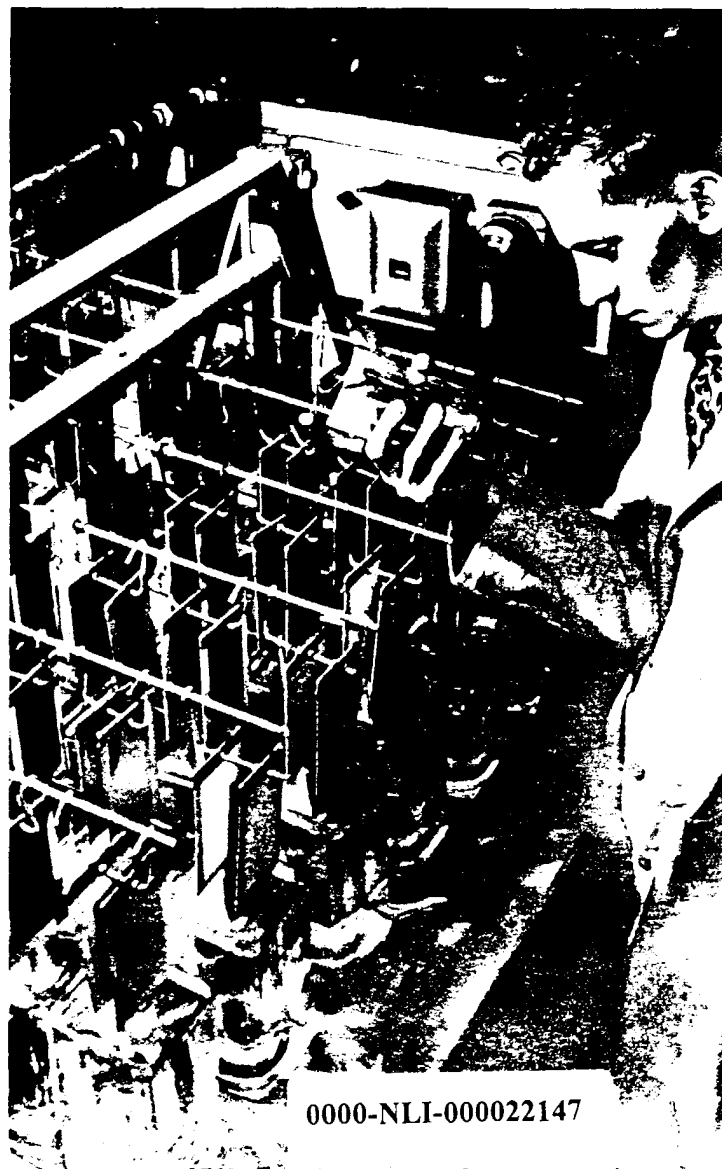
Many tests of actual homes around the country were made, also. Our Blended Paint passed the tests with flying colors, and a paint line worthy of my name and reputation was born.

Not only do our scientists experiment to improve our products, but they also work to solve the unanswered problems of other industries — rubber, plastics, petroleum and steel, for example.

On an ever-expanding scale our laboratories work—testing raw materials, testing and checking those materials as they become finished products, searching for new materials, better methods, new products and new uses for our established products.

National Lead laboratories are equipped with the latest in scientific equipment and staffed with well-trained technicians, who are widening constantly the boundaries of their never-ending search for a better life for you and for me.

Immersion of metal sheets in sea water tests red lead paint coatings for resistance to corrosion.



Wet milling apparatus used in pigment research.



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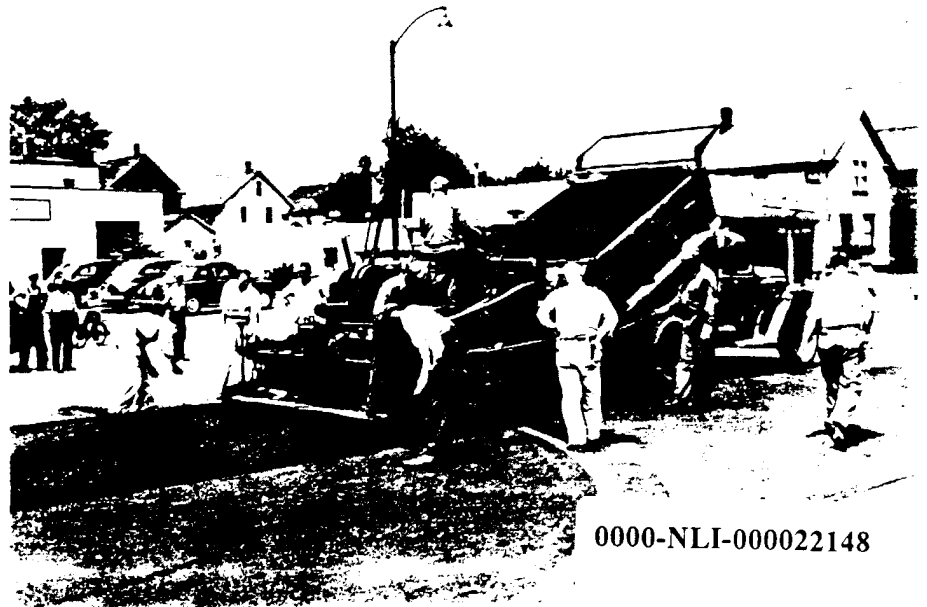
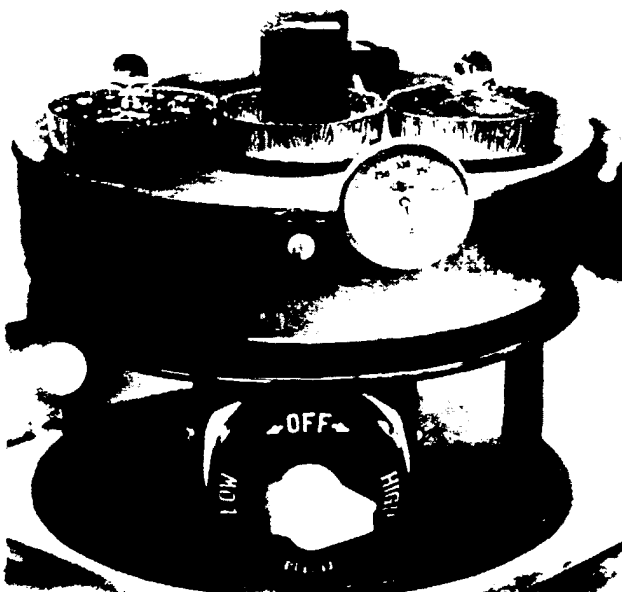
Pool for direct arc electrical furnace, composed of pre-fired special refractory shapes manufactured at the Chas. Taylor & Son, Co. plant in Cincinnati. These zircon and aluminum silicate products have melting points above 3300°F.

NEW PRODUCTS

*for shoes, and ships,
and sealing, (and) wax—*

Heat stability of "Bostone" product is shown in this photo. Block of "Bostone" product is under a modified 590° heat, while soap-bone grease on other side can melt.

Fast installation of rubberized asphalt pavement containing "Bostone". This product provides excellent resistance to traffic, weather and skidding.



0000-NLI-000022148

Time was when to speak "of shoes, and ships, and sealing, (and) wax" was to talk nonsense. But not any more. Here at National Lead it makes sense. We help to make them all, and to make them better—better shoes with "Dutch Boy" chemicals; better ships with bearing metal, as you'll recall from another page; better sealing properties with "Dutch Boy" Paints; better wax with our chemical "gels."

But these aren't the only surprises I can pull out of my "Dutch Boy" cap. Many of our new products now on the market seem nearly magic. For instance: working with the Goodyear Tire and Rubber Company and the Berry Asphalt Company, we're prepared to put more bounce-per-mile into the highway. How? By adding our rubberized barytes to the asphalt used in road building—and in laying parking areas and air strips. Tests prove these "rubber roads" can take it, whether subjected to the wear and tear of traffic or exposed to extremes of temperature. They slow down skidding, too.

We're also prepared to take the poison out of your next crop of poison ivy blisters. How? Just apply an ointment developed by our Titanium Alloy Manufacturing Division, with zirconium carbonate as its main ingredient. That's just one of the

new "Dutch Boy" products add the plus of improved performance

Zirconium imparts outstanding heat and electrical resistance to crucibles, arc-chute plates for high-voltage circuit breakers and to bricks for electrical furnaces heated to temperatures up to 3300°F.



division's zirconium products—for almost literally a thousand and one uses. Some are used as opacifiers (to keep light from shining through), or as refractories. Others go into dyes, pigments, water repellents, and so on. And, of course, there's also zirconium metal—a lot like titanium. It's being given more and more jobs to do, including an extra-special job in atomic energy plants.

For furnaces and furnace linings, refractory structures are made by one of our National Lead subsidiaries, the Charles Taylor's Sons Company of Taylor, Kentucky, and Cincinnati. These refractories are used in metal processing, in glass works, in potteries, and wherever manufacturing takes super-heated temperatures. Their melting points top 3300 degrees Fahrenheit! And that's hot!

From the plains of Kansas comes something that stretches paint. Called "LORITE", it's mined and processed by our DeLore Division. It's used as an extender pigment for low-gloss paints—wall primers, flat wall paints and traffic paints. It has special qualities of flatness, and its sealing ability is excellent. That's why it rates a place in our nonsense title.

Next there are the chemicals in the "Dutch Boy" line developed by our National Lead laboratories. As stabilizers and plasticizers for plastics (vinyl resins), they prevent deterioration, as well as discoloration from heat and light. You can see how important this is, now that plastics have become a standard material for such things as: unbreakable records, floor coverings, upholstery, luggage, packaging, protective sheets, raincoats, shower curtains, electrical insulation—and uppers for those shoes we've been talking about.

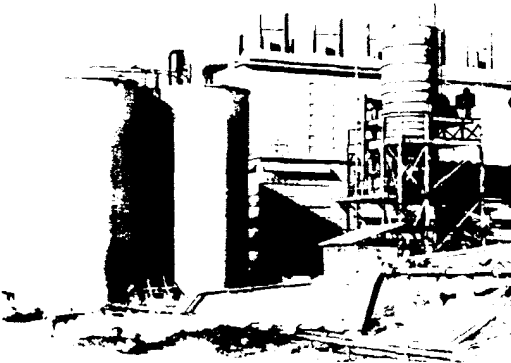
Another group of remarkable "Dutch Boy" chemicals are called "BENTONES" or "gels." Used in lubricating greases, they resist water and extremes of heat and cold. At high temperature, they have no melting point; they are equally hardy when the bottom drops out of the thermometer. On farm machinery, for example, this one grease will do the whole job singlehanded, replacing a dozen different ordinary greases. In paints, "BENTONES" make for smoother brushing and spraying, prevent sagging, increase stability, and promote water resistance. Elsewhere they are equally useful in many products and in many uses—in putty, paint removers and printing inks; in adhesives and hydraulic fluids—yes, in stains for shoes and even in waxes.

There! That gets them all in. It shows, too, that for shoes, and ships, and sealing, (and) wax—and lots of other things—new "Dutch Boy" products add an extra *plus*.

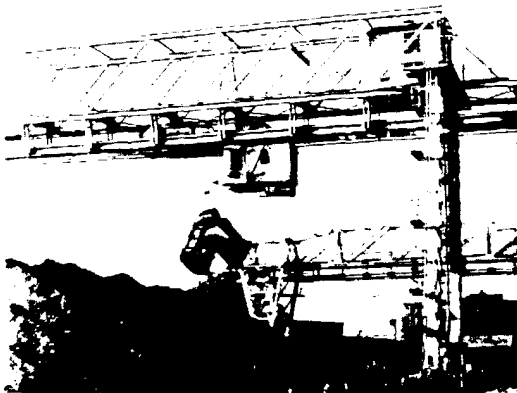
THE "DUTCH BOY"

and Uncle Sam

This primary refining mill is used to roll uranium into bars for further fabrication into slugs for nuclear reactors at the uranium production center at Fernald, Ohio, operated by our company for the Atomic Energy Commission.



A section of the U. S. Government nickel plant in Nicaro, Cuba, operated by our company.



Crane and ore pile at the Nicaro, Cuba, nickel mine and plant. The installation is 450 miles east of Havana.



A section of the National Lead Company-operated Atomic Energy Commission's feed materials production center at Fernald, Ohio, a short distance from Cincinnati.

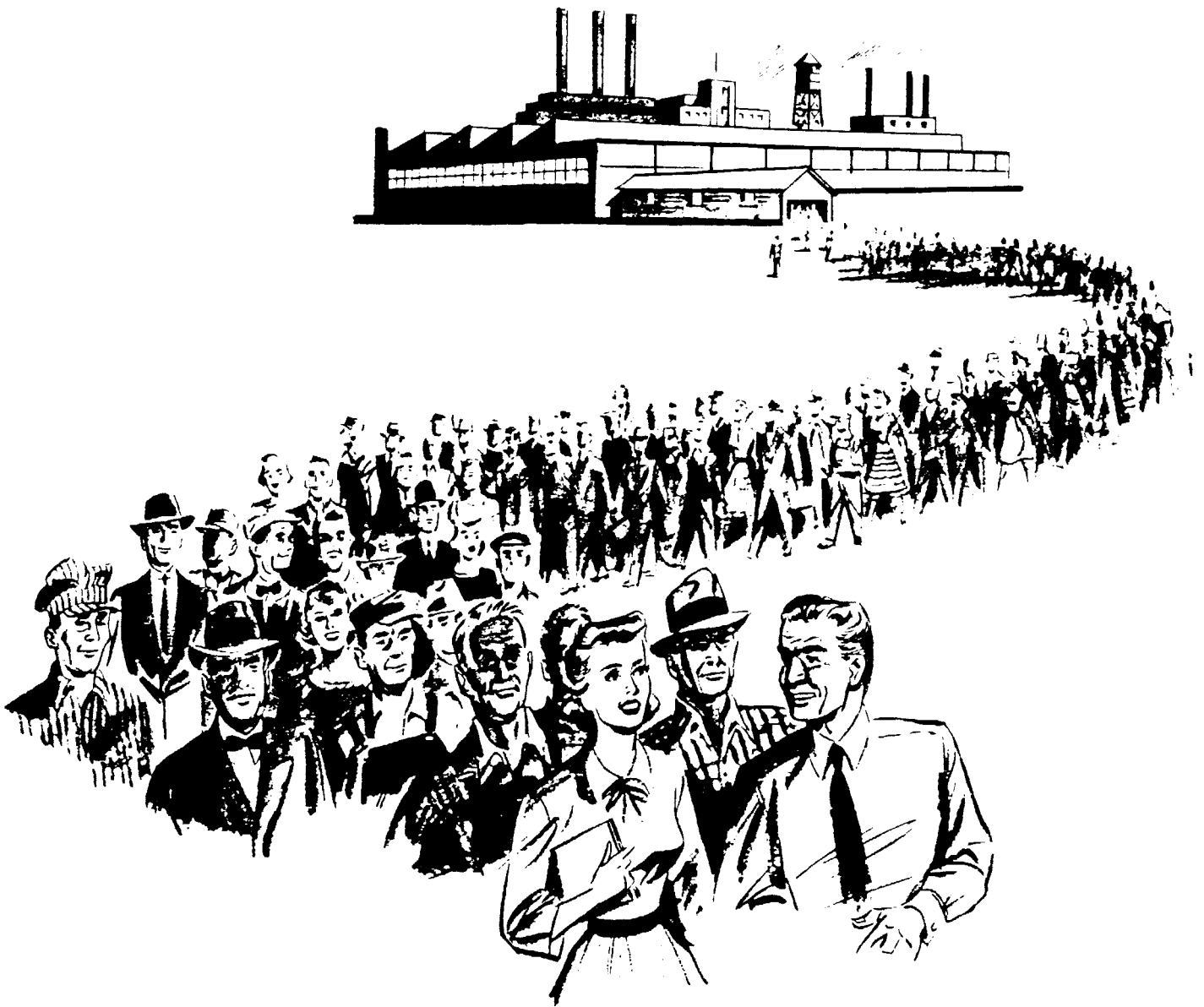
I am now a partner with Uncle Sam in two of his important projects, producing two vital metals—uranium and nickel.

Uranium we all know as the metal used in atomic weapons and which could soon become the source of power for transportation, for factories, for homes. In Fernald, Ohio, near Cincinnati, the Atomic Energy Commission has constructed a huge center which converts raw uranium ore into uranium metal. This metal is then suitable for conversion into atomic weapons and for research study in other Atomic Energy Commission plants and laboratories. This plant is operated by National Lead Company and is an essential link in the chain which extends from uranium ore to finished atomic weapons. We also operate the Commission's Winchester laboratories, which develop processes for the treatment of uranium-bearing ores, and include a uranium pilot plant at Grand Junction, Colorado.

About 450 miles east of Havana, on the northern shore of Cuba, is located the United States Government-owned Nicaro nickel plant, which is now adding about one-tenth to the free world's nickel supply. Operator of this plant is Nickel Processing Corporation, in which National Lead Company owns the majority interest. The product from this plant is shipped to steel producers in the United States, who alloy it into special steels for high-speed machines necessary to national defense, especially jet engines. Nickel is also used extensively in the chrome plating industry.

So you can see that I, the "Dutch Boy," am helping Uncle Sam in keeping our country strong whenever the need arises.

0000-NLI-000022150



NATIONAL LEAD AND YOU

I've been talking about what our company does. Now, what *is* National Lead?

It's not just a name. It isn't only plants, or mines, or offices—although those are necessary. It isn't a trademark like me—although I like to think I contribute something.

No—a company is people—people like you, whose hands and minds contribute to the planning, the making, and the selling of our company's products;

people like our officers, whose planning and direction help to make it successful; people like our stockholders, who have put their dollars to work for us, to buy tools and opportunity, and people like our customers who know and trust and use the things we make.

We couldn't have our company without all of them—all working together—all contributing to the success of the thing we call "the company".

0000-NLI-000022151

Let's see what that means.

Without customers, we couldn't stay in business one day. But without you, who work with National Lead, we couldn't even start one day's business. And unless you make our products well, unless each one of you helped to put into those products, every day, the quality that has won our customers for us, we couldn't *keep* our customers.

The tools to make and distribute these products cost a good deal of money. Where does that money come from? In part it comes from the operation of our business—and in part from the stockholders: people who believe in us, who have been willing to put their money to work for us. What our stockholders have done is to hire their dollars out to us—put them to work for us for wages. Not as high wages as we get, of course, because it's cheaper to hire dollars than it is to hire men.

But all of us who contribute to making up the company get a return for our efforts.

MONEY FROM SALES IS SPLIT MANY WAYS

The money our company receives from sales to customers is divided into many parts. A large share goes into your salaries and wages, and another big portion is paid out for materials we need in the business—metals, ore, acid and the like; for water, gas, electric power and charges for trucking, water and rail freight; for supplies of all kinds, repair

and maintenance of plants and equipment, rent and similar charges. Still more goes to Federal, state and local taxes. Our stockholders get another share in the form of dividends.

Some is set aside for reserves. Tools do wear out, you know, and have to be replaced. Plants need to be renewed and expanded, new facilities have to be bought.

That's what reserves are for—to be sure we'll have the money when it's needed for renewals. As I see it, it's a good idea.

When you break it down, that's what a company looks like.

Now, who are the stockholders? There are about 30,000 of them. Most of them aren't "big" people—or rich people. They're average Americans—men and women who have a little money laid by that they want to put out to work for them.

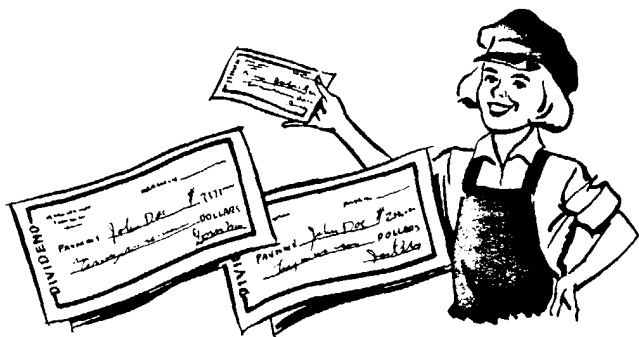
Those are small holdings—and the analysis presents a good picture of the broad distribution of our shares among a lot of ordinary folks. Nearly half of them, by the way, are women.



MANY OF US OWN COMPANY STOCK

As a matter of fact, among the stockholders, you'll find many of us who work with National Lead—folks who *know* that it's a good company, and a good place to put their money to work.

And what about us—the folks who work with National Lead?



First, once we start here a great many of us stay with our company. Nearly half of us have worked here for more than five years.

That's who we are. Now, we need a reserve just like the one our company provides for its own needs—something set aside for future needs—a reserve to help take care of us when we get to the age when we'd like to retire.



WE HAVE RESERVES, TOO

And the company has arranged for that, too. As early as 1912, the company established a pension system—a sort of private “reserve” for each employee reaching retirement age. This program helps us to build up our *personal reserve* . . . assures us that, beyond our regular salary, we, too, are building for the future.

Then there's the group life insurance plan. Under this policy we can select our own beneficiary, and can determine how the money is to be paid in case of death. And that helps us to build up a reserve for the ones we love in case one of us should die.

Yes—it seems as though the company's not the only one with a provision for a “reserve.” We've got reserves as well.

And if you want further information about this plan—either the retirement annuity section or the life insurance section—ask your immediate supervisor for full particulars. If he doesn't have the information, he can tell you where to get it.

Of course we get vacations with pay.

In safeguarding our health, our company has always done more than the law required. Factories include such facilities as showers, clean washrooms, restaurants where good food can be purchased at low prices, rest rooms and separate lockers. Where they are needed, the company furnishes respirators and goggles and, to eliminate dust, has installed suction equipment.

I talked about the long service records of many of us with the company. The company is proud of that record—and does everything possible to recognize it. Thousands of us wear service buttons awarded for each five years of work. And in 1940 the company adopted another form of personal recognition. Each employee who completes twenty-five years is given an engraved, gold watch.



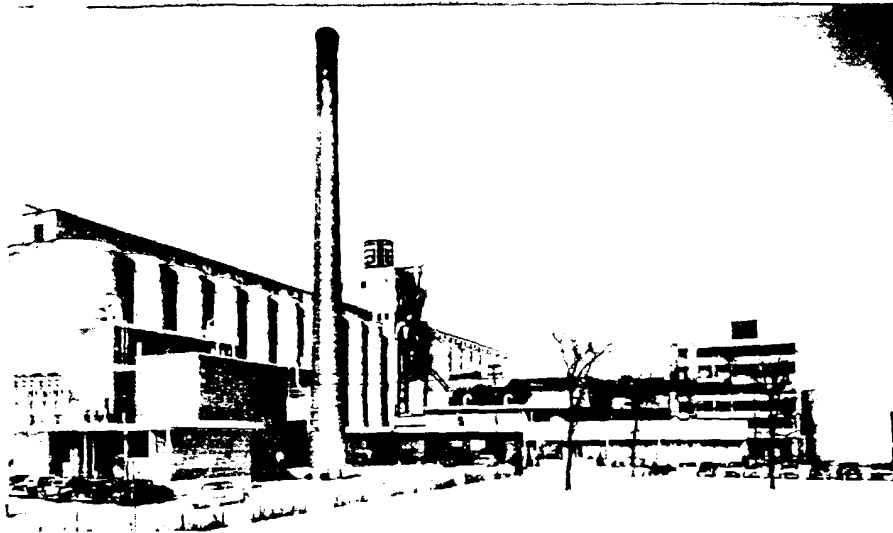
Looks as though, in the years to come, the company will be buying a lot of watches!



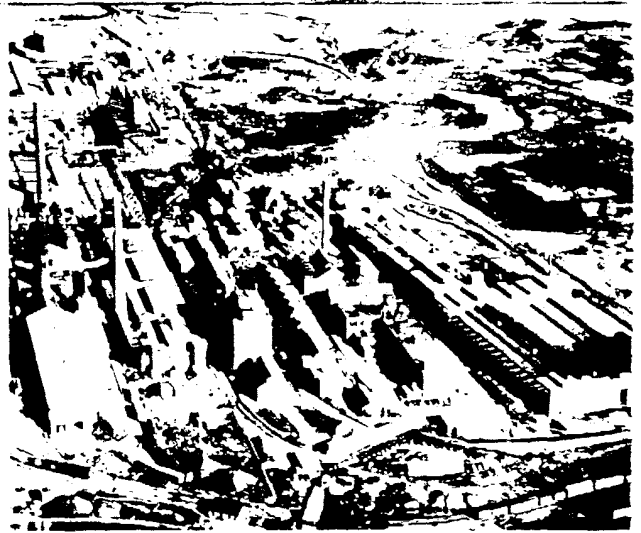
You'll be seeing me,
The “Dutch Boy”

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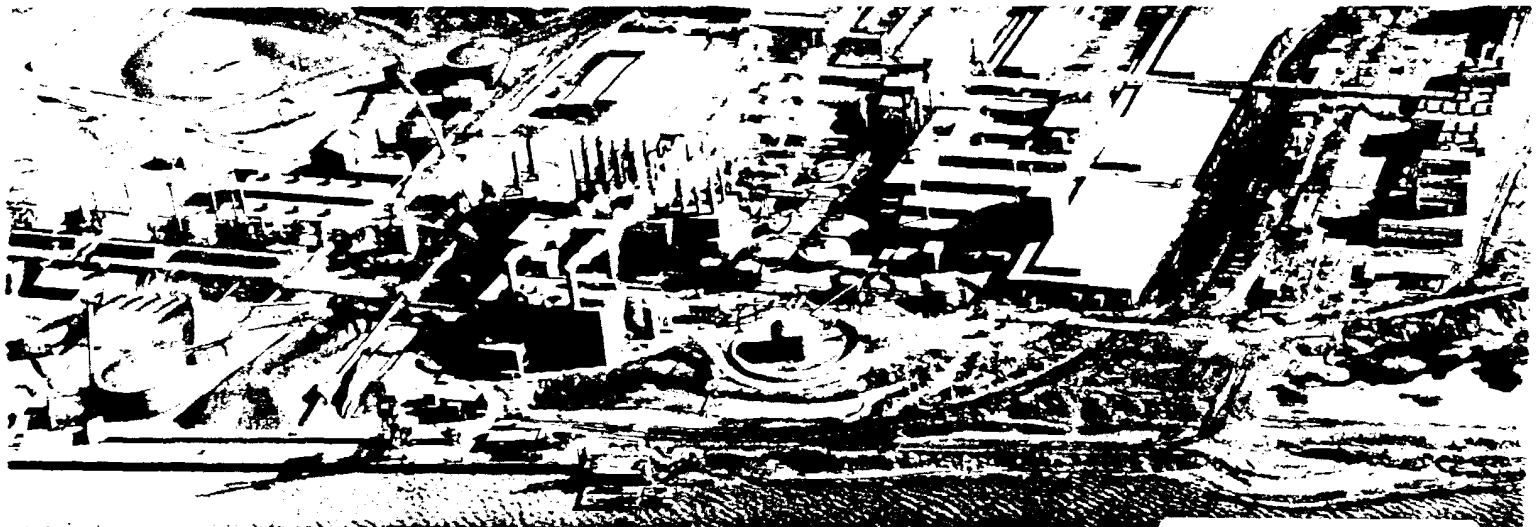
SOME OF THE HOMES OF OUR



Linseed oil of many types for all specifications is produced at this plant of the Minnesota Linseed Oil Company in Minneapolis.

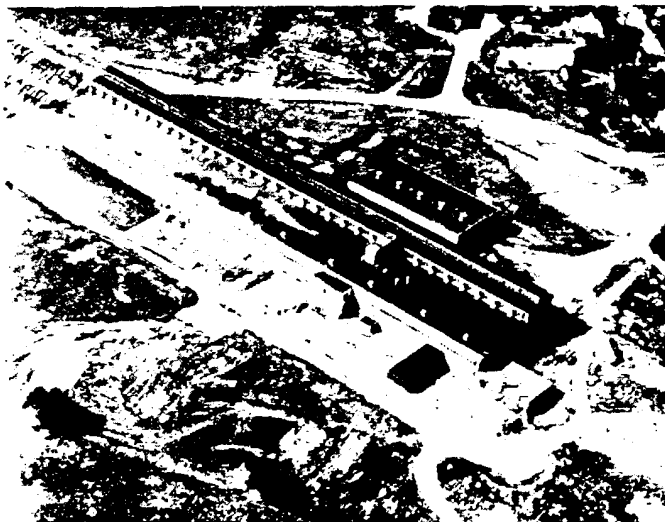


"Dutch Boy" Paints, fabricated lead goods and pigments are all manufactured at the Perth Amboy, New Jersey, plant.

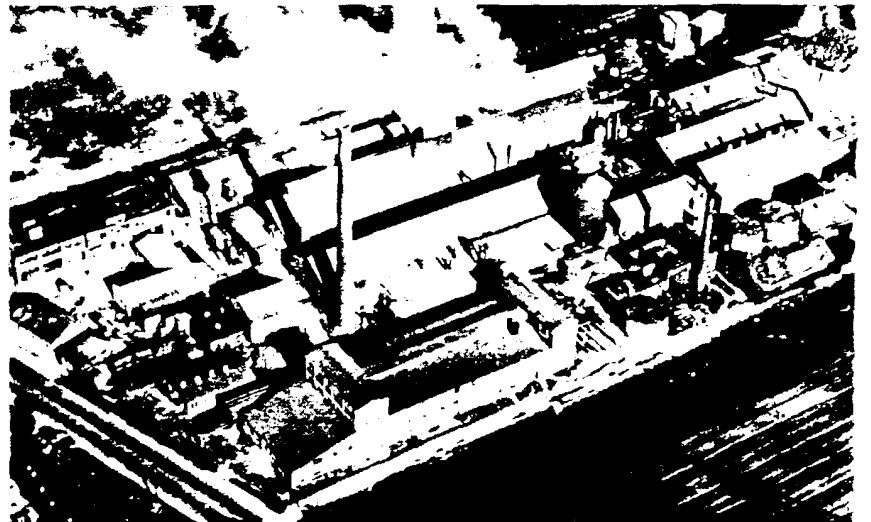


At Sayreville, New Jersey, is one of the plants producing "Titanox" pigments for paints, paper, rubber, plastics, roofing and floor coverings.

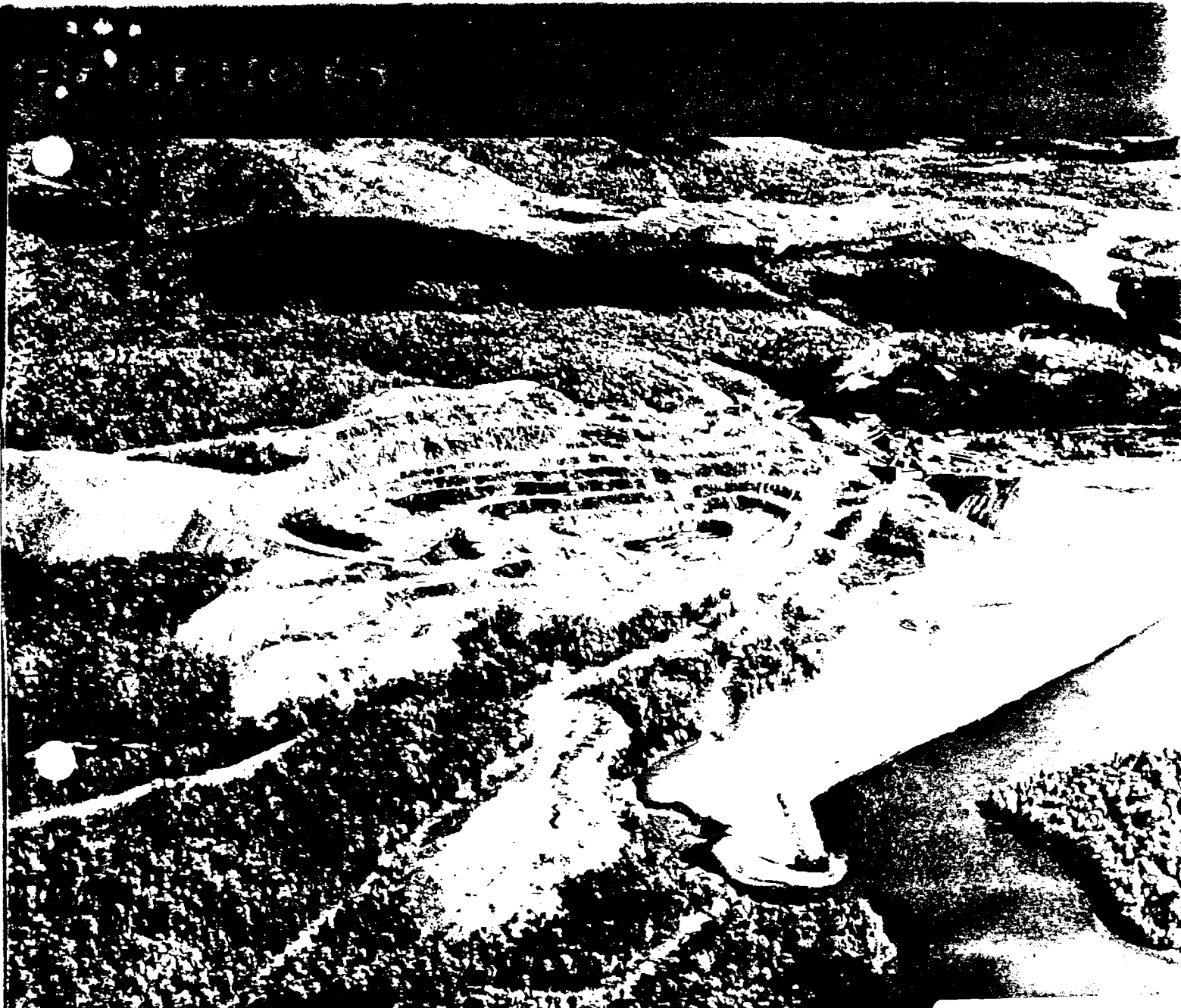
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Pottstown, Pennsylvania, plant of our Doehler-Jarvis Division turns out large quantities of die castings for home appliances and other products.

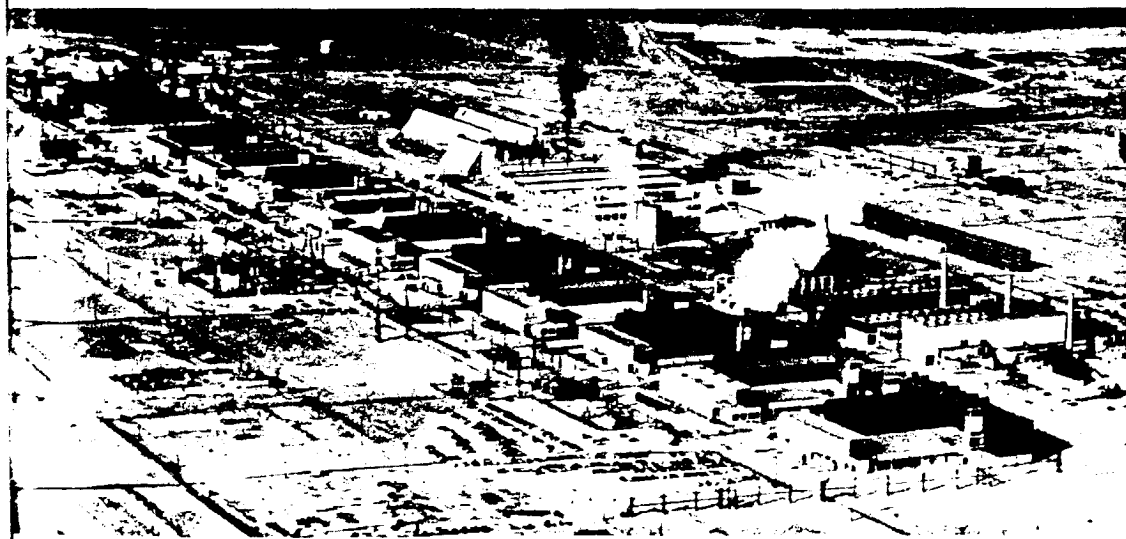


Zirconium compounds, zirconium metal and titanium alloys for special steels are manufactured at the Niagara Falls plant of the Titanium Alloy Manufacturing Division.

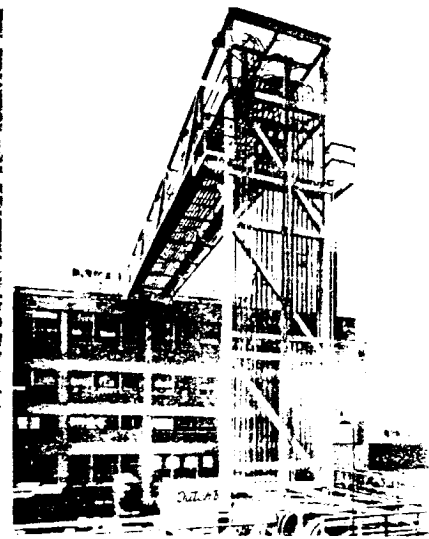


Ilmenite (titanium-bearing ore) mine and mill at Tahawus, New York, in the heart of the Adirondack Mountains. Concentrates from here are shipped to plants at Sayreville, New Jersey, and St. Louis for processing into titanium dioxide pigments.

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Aerial view of the site of the Titanium Metals Corporation of America plant in Henderson, Nevada, where strategic titanium metal is produced for jet engines and other aircraft parts.



This "Dutch Boy" Paint plant in Los Angeles supplies paints and enamels to the Southern California area.

Branches and Divisions

ATLANTA BRANCH...400 Bishop Street, N.W., Atlanta
Paints, Pigments and Metal Products

ATLANTIC BRANCH...111 Broadway, New York
Paints, Pigments and Metal Products

BALTIMORE BRANCH...214 West Henrietta Street, Baltimore
Metal Products

BAROID DIVISION...2404 Danville Street, Houston
Oil Well Drilling Mud Service

CHICAGO BRANCH...900 West Eighteenth Street, Chicago
Paints, Pigments and Metal Products

CINCINNATI BRANCH...659 Freeman Avenue, Cincinnati
Paints, Pigments and Metal Products

CLEVELAND BRANCH...1776 Columbus Road, Cleveland
Paints, Pigments and Metal Products

DE LORE DIVISION...Carondelet Station, St. Louis
Barium Sulphate and Calcium Carbonate Pigments

DOEHLER-JARVIS DIVISION...Smead Avenue, Toledo
Die Castings

EVANS LEAD DIVISION...Charleston, W. Va.
Lead Oxides

E. W. BLATCHFORD CO. BRANCH...111 Broadway, New York
Type Metals and Blatchford Base

MAGNUS METAL DIVISION...111 Broadway, New York
Railway Car Journal and Diesel Locomotive Bearings

NATIONAL LEAD CO. OF MASS....800 Albany Street, Boston
Paints, Pigments and Metal Products

PACIFIC COAST BRANCH...2240 Twenty-fourth Street, San Francisco
Paints and Pigments

PHILADELPHIA BRANCH...2607 East Cumberland Street, Philadelphia
Paints, Pigments and Metal Products

ST. LOUIS BRANCH...722 Chestnut Street, St. Louis
Paints, Pigments and Metal Products

ST. LOUIS SMELTING & REFINING DIVISION...Fredericktown, Missouri
Lead and Zinc Concentrates

SOUTHWESTERN BRANCH...959 Terminal Street, Dallas
Paints, Pigments and Metal Products

STEEL PACKAGE DIVISION...722 Chestnut Street, St. Louis
Small Steel Containers

TEXAS MINING & SMELTING DIVISION...Laredo, Texas
Metallic Antimony and Antimony Oxides

TITANIUM ALLOY MFG. DIVISION...111 Broadway, New York
Titanium and Zirconium Products

TITANIUM DIVISION...111 Broadway, New York
Titanium Products; Ilmenite and Magnetite Iron Ore

Corporations Wholly or Partly Owned or Controlled Through Ownership of All or Part of the Capital Stock

AMERICAN LEADING CORPORATION...New York
Fredericktown, Missouri

NATIONAL LEAD CO. OF MASS....New York
Fredericktown, Missouri

CANADIAN TITANIUM INDUSTRIES LIMITED...New York
Titanium Oxide Pigments

PACKER PROCESSING CORPORATION...New York
Metal Oxides

DOEHLER-JARVIS CORPORATION...Toledo

THE CANADA METAL COMPANY, LTD....Toledo

Lead Oxides

HOYT METAL COMPANY OF GREAT BRITAIN, LTD....London
Anti-Friction Metals

Pigments

NOVA CO. A/S...Fredrikstad, Norway

MORRIS F. KIRK & SON, INC....New York
Pigments and Metal Products

Titanium Oxide Pigments

SOCIETE SELOE DU TITANE, S. A....Brussels, Belgium

MAGNUS BRASS MFG. CO....Cincinnati
Locomotive Specialties

TITAN COMPANY, INC....Wilmington, Del.

Titanium Oxide Pigments

SOCIETE INDUSTRIELLE DU TITANE...Paris, France

MAGNUS METAL CORPORATION...New York
Railway Car Journal and Diesel Locomotive Bearings

TITAN N. V....Rotterdam, Netherlands

TITANGESELLSCHAFT, m.b.H....Leverkusen, Germany

MASTER METALS, INC....New York

TITANIUM ALLOY MANUFACTURING CO. PTY. LTD....Tweed Heads, Australia

MINNESOTA LINSEED OIL CO....Minneapolis
Linseed Oil

TITANIUM METALS CORPORATION OF AMERICA...New York
Titanium Metal Products

TITANIUM PIGMENT CORPORATION...New York
Titanium Oxide Pigments

*Wholly Owned



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