

PRESIDENT OF NATIONAL LEAD COMPANY  
THE INVESTMENT ANALYSTS SOCIETY OF CHICAGO

APRIL 28, 1960

It was just about eight years ago that I last had the privilege and pleasure of talking to your group about National Lead Company. That's not a long span on the calendar of our space men who measure in light years. But in terms business men understand, 1952 was a long way back.

Your Midwest Exchange showed about 14 1/2 million transactions in 1952 and the Dow-Jones Industrial Index stood around 275. In 1959, Midwest business had more than doubled to 33 1/2 million dealings and the Dow-Jones figure advanced to 675.

And just another indication that time does move and brings change -- the White Sox last year improved considerably on their third-place finish of eight years ago.

Compared with 1952, National Lead, too, has moved forward on practically all fronts. As you may have gathered from our recently-issued Annual Report, or elsewhere, we grossed 530-plus million last year, with a net of just short of 52 1/2 million. The figures for 1952 were 358 million and 23 million. Last week we released first quarter figures which showed sales of \$132,500,000 and net earnings of over \$12,000,000, up slightly from the \$11,700,000 reported last year.

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It is not my intention today to serve up a lot of warmed-over statistics. I aim, instead, to quote figures and cite facts to show the uniformly upward trend of business in our main product lines. The factors that influence the trends are the basis of what you might call my conservative optimism.

As you doubtless know, we further broadened our product base some months back by bringing a Chicago concern, Goldsmith Bros. Smelting and Refining into the National Lead family. This new Division, which began operations before the Great Fire, forges another link in the chain of National Lead interests in this city.

Our Chicago manufacturing complex now includes one of the Company's three major "Dutch Boy" paint factories, a battery oxide plant, the Kirksite Die and Engineering operation, large automotive solder and flux production facilities, an automatic screw machine products unit, plants for making large tonnages of non-ferrous metal products and a Magnus bearing plant. Goldsmith, of course, is an important supplier of precious metals and their derivatives to many industries.

It occurs to me that this brief run-down of National Lead's products in this area alone gives a clue to why your jobs have become increasingly complicated. It is not so long ago that a company's progress and prospects -- and therefore its securities -- could be assayed on the simple basis of a single product line. The typical concern made gas lights, or buggy whips, or shaving mugs. With information readily at hand, you

were able to chart progress or regress of these vertical companies and keep your clients well posted on probabilities or possibilities.

With diversification and the horizontal industrial-product set-up, it became a harder job to get a completely in-focus picture of a firm's business, and harder still to figure out the crystal ball's predictions. Today you must have access to reams of information that requires the digestive capacity of a digital computer.

Now, National Lead's set-up is truly diversified, as you know, but it does make sense. It does not contain any really strange bedfellows and its operations overall should not be too difficult to assess. Many of the things we make go to the metal-working or associated industries. True, we do have a consumer item in "Dutch Boy" paint. However, in making paint, we are pretty much self-sufficient, with our own pigment and vehicle production. And our Titanium Division, which today has customers in varied industries and continues to find new fields, came into being about the time paint formulations were veering away from traditional white pigments. We doubt if anyone sensed the varied possibilities of titanium when it emerged from the pilot plant stage.

This brings me to the real meat of this discussion -- from here on we will deal mainly with the products of the Titanium Division, Doehler-Jarvis, Baroid, Titanium Alloy, Southern Screw Company, Chas. Taylor's Sons Co. and our very important European

operations. In brief, these products hold the key to the Company's future development and growth.

It is generally known that we were the first manufacturer of titanium pigments in quantity and are today the top producer. The principal type of titanium pigment is titanium dioxide, which the trade terms simply  $TiO_2$ . Our brand name, reasonably enough, is Titanox. This is one of the whitest known substances commercially produced. In fact, someone has claimed that the only thing that will make a white mark on a white surface is titanium dioxide. This intense whiteness is due to a higher refractive index, hence a greater opacifying power than that possessed by any other white pigment.

The chief functions of  $TiO_2$  are (1) to provide maximum whiteness with a minimum amount of pigment, (2) to brighten and impart opacity to surface finishes, thus reducing the number of coats needed for hiding, and (3) to prolong the life of a coating.

The paint field, obviously, looms large in the titanium picture and currently accounts for a good share of production. However, the horizon has widened far beyond paint usage. No fewer than 16 major industries now employ titanium pigments in their end products.

The latest available consumption breakdown, for the year 1958, ran, in part:

|                     |     |
|---------------------|-----|
| Paint Industry      | 59% |
| Paper               | 15% |
| Rubber and Plastics | 9%  |
| Floor Coverings     | 6%  |
| Ink                 | 2%  |
| Miscellaneous       | 9%  |

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In the last-named group we include roofing granules, leather tanners and polishes, porcelain enamel, acoustical tile, asbestos shingles, welding supplies, delusterizers for synthetic fibers, soaps and toiletries.

The titanium pigment business has enjoyed spectacular growth. Consumption has increased each year over the previous year in all but five of the past 24 years.

The rate of increase is greater than that of the country's population. On a per capita basis, consumption in the United States in 1940 was 1.43 pounds. In 1959 it had risen to 5.08 pounds. Over the near term, it is reasonable to assume that the growth rate will equal that established in the 1950-59 period. This showed an average annual increase of between 6 and 7%. Our growth rate is somewhat higher than this.

The reasons for expecting constantly increasing consumption are these --

First - the amount of  $\text{TiO}_2$  in regular outside whites, colored house paints and exterior primers has been steadily increasing since 1951. Paint makers have taken steps to increase the hiding and covering power of their products. In addition, a new type of house paint called a "one coat white" has been well promoted and is growing in popularity. This paint, which is designed to hide the old surface with a single coat, contains about a pound more of titanium than regular house paints.

Second - the increase in the water paint market. This now

accounts for well over 30% of the gallonage sold for interior house painting. Every gallon of white interior water paint, usually referred to as latex emulsion paint, contains about a half-pound more of titanium than the oil base or alkyd base flat white paint sometimes used for the same purpose.

Third - the increasing trend to the use of lighter and brighter colors in paint as a result of paint-styling promotion and other factors. Each new American car of standard size finished in white or a light shade requires better than 5 pounds of titanium pigment. Each mile of highway marked with a 4" skip line down the middle requires 35 pounds of titanium pigment to formulate the traffic paint.

Finally - the growth of the paint market itself. This market has mushroomed gallonwise, and it still appears to be growing at a rate parallel to the population gain of about 2.5% a year. We think in terms of over a million new homes a year. Each house of modest size requires about 35 pounds of titanium pigment for painting inside and out. This does not include the potential for roofing shingles, appliances, floor coverings, etc. Add to this usage the normal repainting business which is several times the new and the size of the overall paint market challenges the imagination.

In the paper industry, the next to be evaluated, we see an upward consumption curve even steeper than the one in paint. Here again, the inherent whiteness, brightness and stability of titanium dioxide contributes qualities that are either needed

or desired in the end use of the stock.

Wrappings for food products, both fresh and frozen, are measureably improved in opacity and appearance when they contain titanium. Good examples are bread wraps and milk containers. More attractive, cleaner and more colorful printing of brand names and illustrations on the packaging is attainable too, thanks to titanium in both the paper and the ink.

Higher grades of printing papers for catalogs, booklets, slick magazines, airmail and bible thin papers nearly always have a titanium content. Here again, the pigment's whiteness, brightness and opacity provide paper that takes a good impression and gives a good impression.

From 1950 to 1958, the consumption of titanium pigments by the paper industry increased 144% -- a higher percentage than in any other consuming industry. Since there is a continuing tendency to upgrade printing papers, boxboards and other stocks processed by the graphic arts industry, and since per capita consumption of paper is increasing, more and more tonnage will be absorbed by this market.

Floor coverings now found in homes, stores, offices, public buildings and elsewhere contain considerable titanium. The kitchen floor type of linoleum of our younger days is rapidly being replaced by vinyl asbestos tile -- and in other places in addition to the kitchen. The beauty, color fastness and spick-and-span appearance of this versatile tile is largely traceable to its titanium pigment content. The demand for

hard surface floor coverings is growing and it is reasonable to assume that, in this area, annual consumption of titanium pigments from now until 1965, say, will equal total usage over the past five years.

In the rubber industry, titanium finds its biggest single use in white wall tires. According to our study, in 1947 thirteen per cent of the total auto tire output was white wall. In 1959, about 46% of the 103 million tires turned out were white walls. We estimate an even higher proportion of tire production in 1965 will be in white walls.

The plastics industry, which like titanium itself, seems to recognize no market barriers, finds  $TiO_2$  just what its chemists ordered for imparting certain qualities and properties. The physical and chemical stability of titanium, plus its ability to whiten, brighten and control opacity and translucence, have made titanium pigments the standard additive in vinyl and polystyrene. Both of these types of plastics have produced very good growth patterns over the past decade. Titanium pigments are widely used, too, in vinyl coated fabrics, automobile and furniture upholstery, shower curtains, window shades, rainwear, wall coverings and coatings for wire insulation.

The lighter colored inks used in the printing industry, like the paper that is inked, frequently contain titanium pigments. The brilliance, the brightness, the trueness of color tone, the opacity of the ink all trace directly to these qualities in the pigment employed in the ink formula. The future of titanium in

this field, too, is bright, due to the increasing use of colorful labeling on packages and cartons and printed inserts.

In the miscellaneous category, two promising uses for titanium pigments are in the making of roofing granules and in delusterizers of synthetic fibers.

The granules used on asphalt shingles once were confined to the gray-to-black range. With titanium pigments this color limitation has been lifted. Fly over any modern community these days, look down and you spot many roofs in pastel and off-white shades. This trend to lighter roof colors has both decorative and functional aspects. It is well known that a light colored roof absorbs less heat, thus provides cooler living conditions in summertime. With something better than a million new housing starts each year, we expect to sell more Titanox in this market.

In the delusterizing of man-made fibers, titanium pigments are introduced into the liquid mass of nylon or rayon before the fiber or filament extrusion stage. The pigment has the effect of removing the shine or luster from the fibers. You are all aware of the continuing growth pattern for the synthetic fiber business with all its ramifications. Thus, we have another interesting use for titanium pigments.

This pretty well sums up the titanium pigment phase of National Lead's operations. In the light of past and present acceptance, its future would seem to be bounded only by the imagination of research and development men in many segments

of industry. As the first and foremost producer, we are confident that we have both the resources and the resourcefulness to meet any and all demands upon us. We intend to remain the leader in the field.

Another of our major divisions which I think has a large growth potential is Doehler-Jarvis. In the die casting industry, Doehler occupies much the same position as the Titanium Division -- first and foremost in its field.

We acquired the Doehler business about seven years ago by issuing National Lead stock with an approximate market value of 37 1/2 million. Since joining us, Doehler-Jarvis has turned in a profit every year. Cash flow from operations has been sufficient to meet dividend requirements on the issued stock and, in addition, it has amounted to more than half our entire investment in the division.

Now, a few words about Doehler's principal product -- die castings. As you know, there are a number of ways to form metal -- by stamping, gravity casting, extrusion, explosion, investment, and so on. But the fastest way to form large numbers of identical metal parts is the method pioneered by Doehler -- forcing molten metal under high pressure into a die cavity of the shape of the piece to be formed.

Most of you have watched a Linotype in action in a newspaper plant. Well, you saw precision die casting, much as Doehler does it. The difference is that Doehler operates much larger machines and uses zinc, aluminum, magnesium or brass instead

of a lead alloy type metal.

Doehler-Jarvis produces precision die castings even smaller than a Linotype slug and as large as the flange on one of those huge reels you see paying out cable in the street. The castings may weigh a fraction of an ounce or up to 60 pounds in aluminum or three times that amount in zinc. I mention this range to indicate the tremendous range of parts possibilities open to the Doehler method.

To give you some idea of the growth of the die casting business over the past 15 years, sales which in 1946 amounted to 130 million dollars reached a peak of 457 million dollars in 1955. This does not include the output of the so-called captive shops -- about which I will say something in a few minutes.

There are, however, two factors in this field that have

influenced our thinking and acting -- and continue to do so. One is the captive shop and the other is the use of hot metal - aluminum.

Captive die casting shops, those owned and run by users of die casters to supply their own needs, have cut into the sales of independent casters, of course. For example, in 1955 aluminum die castings for automotive uses, produced in captive plants, amounted to 48 million pounds. By 1959, the total had risen to 104 million, or more than the tonnage shipped to auto makers by independent casters. On the zinc side, custom die casters have been able to hold their share of the automotive business. In this connection, a straw in the wind appeared in a recent newspaper item. Because of mechanical difficulties and high costs, one of the automobile producers decided to discontinue zinc die casting and plating at one of its plants.

Captive competition, if I may put it that way, is nothing new to Doehler, even in non-automotive parts. Every so often, a customer will decide to put in his own die casting department. In some cases, however, this do-it-yourself project does not work as planned. It is one thing to put up a physical plant and equip it, but quite another to staff and operate it properly. After a couple of years trial, these plants find it extremely difficult to keep pace with the technological development of the independent die casters. And, like as not, the former good customers go back on Doehler's books. Many a user of die castings is loud and sincere in his praise of Doehler-Jarvis die casting savvy -- it has helped them over rough situations.

Now, just a few words about hot metal contracts. We have, naturally, weighed the pros and cons of this means of obtaining aluminum in relation to Doehler plant locations. It is our considered opinion that we retain a more flexible position by purchasing our aluminum requirements in the form of ingots, dealing as we do with both the primary aluminum producer and the secondary suppliers.

The field for metal die castings, like the field open to our Titanium Division, appears unlimited. We expect Doehler-Jarvis to keep on growing. One reason for this optimism is found in our aluminum engine block. This is an achievement, reckoned by any standard. An old-time die caster, returning to the scene after a mere ten-year lapse, takes a look at our latest block and, like the farmer who saw his first giraffe, says, "There just ain't no such animal."

We will admit that the engineering problems involved in making this block seemed insurmountable, but they were licked. All I can say to you now is that Doehler, starting this work in 1951, has proved that aluminum engine blocks can be made by high pressure precision die casting methods. We are hopeful that a Doehler aluminum block will be featured in one of the auto industry's 1961 models. With the trend to lighter, more compact, easier-on-the-gas transportation, lightweight die cast engine blocks are surely in the picture.

The Baroid business has made substantial contributions to the company's earnings in the past and, we are sure, it will do so

in the future. I say this even though right now the well-drilling phase of the oil industry is somewhat below par. At present, drilling activity is at its lowest ebb since 1947, yet Baroid has had a most satisfactory first quarter. Profits are running well ahead of last year.

Baroid, as you may know, has long been a virtual partner of the oil well drilling industry. It mines and processes the needed weighting materials, and supplies literally hundreds of compounds demanded by the churning drill strings in probing deep into the earth for black gold. Baroid also furnishes well logging service to drillers, as well as many pieces of testing and detection equipment.

Oil well drilling activity reached its peak in 1956 when about 235 million feet were sunk. In 1957 activity fell off to below 225 million feet. The decline continued through '58 with a drilling rate of under 200 million feet -- lowest since 1952. Last year activity picked up a bit with about 210 million feet drilled. These rates provide a pretty accurate barometer of Baroid's business. After reaching a new high in earnings in 1956, the Division did even better in 1957. Fifty-eight, however, saw a marked dropoff in earnings. This was due, we feel, to three factors:

One - a decline in footage drilled, as I indicated;

Two - price reductions instituted by the industry in the spring of '58 to stimulate drilling activity; and

Three - management's decision to assume complete distribution of Baroid's products.

The figures for 1959 would indicate that factors two and three had the desired effect. The price decrease may have affected footage drilled because there was an increase in this activity. Also, the first full year of our own distributorship was highly successful. As against the previous system of reliance on independent distributors, we have been able to market the full range of Baroid products more efficiently and with substantial savings in commissions.

Also, we have introduced some new and profitable products. Furthermore, we have improved our competitive position. The end result was that Baroid's earnings last year were the third best on record -- some 50 per cent better than in '58. Regarding the future, I expect Baroid to contribute more and more to our overall operations, in spite of the fact that curtailed drilling in the United States does seem to be a deterrent.

As a realist, I recognize that drilling activity in this country may merely mark time for the next few years. But outside the United States and in the rest of the free world this is not the case. Free world crude production, which totaled about 4 million barrels a day in 1950, now amounts to about 9 million, having passed the United States daily figure in 1955. Currently, this country's output is running at a 7 million barrel daily rate.

In addition to its domestic operations, Baroid has plants in Canada, Venezuela, Trinidad and Italy, barytes mines in Brazil,

Peru and Sicily and is in an excellent position to handle the needs of almost all areas of the free world. Even the Kodiak bears are getting used to seeing Baroid's red and yellow trademark as drilling activity proceeds in our 49th State.

The word "miscellaneous" seems to mean lack of definite identity and, as such, is used with some reluctance. Because, in this category, we have literally some big names in the industrial register. Also, this product group accounted for 8 percent of the company's dollar sales volume -- 44 million -- in 1959, whereas it was only 3.8 percent -- 16 million -- in 1954. This certainly indicates an increasing importance in our earnings picture.

One of our so-called miscellaneous components is Southern Screw Company -- world's largest producer of wood screws. Southern also makes a wide variety of metal screws and fasteners for other purposes. Since its acquisition, sales of this company have increased over 300%. What with an unlimited field in which to operate, and with facilities and equipment unsurpassed in the industry for highly economical production, we see a bright future for Southern Screw.

The Chas. Taylor's Sons Company, whose sales also are included under "miscellaneous", are producers of special types of mullite and zirconium refractories. Plants are located in Cincinnati and Taylor, Kentucky. A recent development of Taylor's is the manufacture of dense zirconium refractories which have found almost universal acceptance where fiber glass

is melted. Fiber glass, as we all know, is a comer on the industrial scene and we feel our new refractory will share in its growth. Another recent Taylor development is a high grade refractory for blast furnace use which permits higher temperatures, therefore an increase in iron output from the furnace. The glass industry is also an important consumer of Chas. Taylor's goods. Taylor is currently enjoying the best year in its history.

Our Titanium Alloy Manufacturing Division, with plants at Niagara Falls, New York, is an up-and-coming member of the miscellaneous group. As is true of a number of company divisions, TAM, too, is a pioneer in its field. In this case the products are zirconium components, chemicals and alloys. This business has been growing consistently, sales having increased 60% in dollar volume over the past five years. Their largest volume items are ceramic compounds which are used in wall tile, sanitary ware and refractories.

Titanate powders developed by this division are finding substantial use in ultrasonics. Moreover, products of this type may find wide usage in semi-conductors and other electronics field components.

Zirconium chemicals have been the subject of intensive research by the TAM division and it is encouraging to report that these products are being increasingly used in leather tanning and in making paints. The market for zirconium catalysts also is growing.

Numerous lead chemicals, stabilizers and various types of Bentone, developed by our research laboratories, are increasing in popularity. Sales of these items have more than doubled in the past 5 years.

From the days when steel kegs replaced the old oaken bucket for white lead, we have had a plant for making steel packages. Now we make here not only small containers for our paint line and for the screw business, but also for many other companies who use this type of packaging. This business is moving nicely, sales having doubled since 1954.

Two of our main product lines that I can cover rather briefly are fabricated metals and our Magnus journal bearing. These are first class members of the National Lead family, you may be sure, but their growth rate is somewhat more limited and probably it will proceed at the same pace as the national economy itself.

In the fabricated metal products group we have lead pipe, sheet, valves, fittings and other items for the chemical processing industry, antimonial lead, plumbers' lead goods, solders and fluxes for the automotive, communications, electronics and other fields, and numerous other products for industry.

Call it good fortune or good foresight, National Lead was found well prepared when the atomic age opened -- both with some of the metals vital to the handling of this new form of energy and with the know-how in working with even newer metals such as uranium and thorium.

The ramifications of our nuclear field work are too extensive to detail here -- our Annual Report covers them pretty well. But I do want to point out that in the shielding category -- both lead and depleted uranium -- we are looked upon as top suppliers. Tonnages are increasing as new atomic plants are built and as industry is adopting the use of radioactive isotopes for various purposes. The outlook for business here is, of course, excellent.

Magnus has so long been associated with the railroad business that when anyone thinks of journal bearings he has Magnus in mind. The rate of use of solid-back bearings produced by Magnus goes hand-in-hand with the rate of upkeep of the freight road's rolling stock. The two million freight cars in service will require solid-back bearings for many years to come.

We have been aware, for a long time, of the possibility that other than fixed bearings may some day be rather generally adopted by the roads for certain types of cars. Developments in the direction of roller or ball bearings are being watched closely and you may be sure we will be well prepared for any eventuality should a major trend appear. We have in the company, in addition to Magnus, a fund of bearing-building experience in the American Bearing Division, producers of precision bearings.

Most of the foreign operations of the Company are conducted through subsidiaries. Paints are manufactured at plants located in Manila, Philippine Islands and Frederikstad, Norway;

titanium pigments at Varennes, Quebec, Canada, Langerbrugge, Belgium, and Leverkusen, Germany; and fabricated lead and allied products at Villa Lugano, Argentina and several plants in Canada: Montreal, Toronto (which also manufactures lead oxides and other products), Windsor, Vancouver (2 plants), Winnipeg (which also produces lead oxides), and Calgary. Die castings are manufactured at Hamilton and Oakville in Ontario, Canada and brass forgings at Scarborough, Ontario, Canada; while bearings and antifriction metals are produced at London, England; Ermington, New South Wales, Australia; and Paris, France.

Other foreign controlled properties include a plant in London, England, which produces stabilizers and gellants; - a barytes mill in Trinidad, British West Indies; - facilities for the production of oil well drilling materials in Sardinia, Italy; - a plant for the smelting of secondary metals and the production of copper refinery shapes in Hamburg, West Germany; - a mill and barytes deposit in Brazil; - barytes deposits and antimony mines (acreage leased or owned) in various parts of Mexico; leased barytes and bentonite deposits in British Columbia, and Alberta, and a mill in Onoway, Alberta, Canada; -- two barytes plants in Venezuela; - a lead smelter, a lead and zinc mine and mill, a plant producing antimonial and pig lead, antimony and fluorite, and a lead oxides plant in Argentina; -- a die casting plant in Sao Paulo, Brazil; -- and three Australian rutile and zircon mines and mills located respectively at Cudgen, Southport

and Tweed Heads. In addition, through subsidiaries, the Company has an ilmenite mine and mill near Hauge i Dalane, Norway.

Thus, you see that, while National in name, we are truly international in scope.

Other propositions now under consideration, if they work out, will involve additional footholds in Europe, South America and Australia.

Our foreign business has become an important contributor to the company's earnings and could well become even more of a factor in the near future. You no doubt noticed that dividends from continental European subsidiaries increased from \$58,650 in 1955 to over 5 1/2 million in 1959. With currency restrictions virtually eliminated in Europe, it is now possible to transfer earnings freely in the form of dividends.

Since 1955 we have put around 20 million in the capital investment program of our foreign subsidiaries. This figure does not include the titanium pigment plant investment in Canada.

We are now faced with the need for stepping up titanium pigment production in both Germany and Belgium, and before the year is out we may have to do so in Canada. When carried out, this program could involve between \$25,000,000 and \$35,000,000.

In 1958 we expanded our Consolidated Statement to include all of our whole owned Canadian subsidiaries. We are also considering further expansion of our Consolidated Statement to include whole owned European subsidiaries.

This pretty well fills in the company's business picture as related to earnings possibilities. Some areas I described in considerable detail, others I touched on lightly, mostly for lack of time.

National Lead Company has owned deposits of iron concentrates at Fredericktown, Missouri, for many years. When the nickel, cobalt and copper contained in this material was needed for the Korean War effort, the government contracted with the company for the construction of a plant to produce specified tonnages of these metals. The contract later was amended to lease the plant to the company for six years beginning December 1, 1956, with the right to sell cobalt and copper to the government and nickel in the open market. Although stockpile needs for cobalt and copper were filled within three years the government was obligated to buy another three years' production of these metals, worth 2 1/2 million dollars more than the then current market price. Under a recent amendment to the contract, the government's obligation to buy more copper and cobalt was ended and the company received a settlement valued at 2 1/2 million dollars, which will be reflected in this year's operations. The contract amendment also included new leasing arrangements at lower rental, and, metals now being produced at Fredericktown, are being sold to industry for the company's account.

I feel you'd like to be brought up-to-date on the business of the Titanium Metals Corporation, which we own jointly with Allegheny-Ludlum. This firm got back into the black in 1959,

as our Report showed. With sales of just \$23,227,000, depreciation and amortization charges of \$4,400,000 weighed heavily on the operation. Though these charges remain rather substantial, they become progressively less in 1960, '61 and '62, by which time the plant account of some 30 million will be pretty well written off.

Industry mill products shipped last year amounted to 3,200 tons with TMCA the largest producer. It is worth noting that 1959 shipments were three times those of 1953 and were the best since the peak years of '56 and '57 when 5,050 and 5,650 tons respectively were shipped. We are some distance away from those figures but the trend is in the right direction.

Most titanium metal continues to go to military uses, with missile production taking about 15%. Civilian business is improving and accounts for 15 to 18% of TMCA's shipments.

Due to the unique properties of the metal, the chemical industry will undoubtedly develop as the prime user of titanium. Shipbuilders are much interested in the metal, both for its structural qualities and its corrosion resistance.

Titanium is now being successfully produced in alloy form, in most cases with titanium the major element.

Our net equity in TMCA at the end of last year was \$10,956,000. As you know, we have not taken any dividends out of this company -- a policy with which Allegheny-Ludlum is in complete accord.

My reason for bringing TMCA into this talk is that I firmly believe that before very long titanium metal will have earned wide acceptance in many fields and therefore Titanium Metals Corporation will benefit as befits the leader in this industry.

Now, having gone into the income producing phase, I should say something about outgo activities -- operations that cost money but which we expect to pay off.

One of these activities is research and development. About a thousand of our people are employed in some fifteen decentralized research departments. Annual expenditures are around 7 1/2 million. I don't include in these figures the large number of technical people engaged in research for the Atomic Energy Commission in connection with our nuclear material work at Fernald, Ohio and Winchester, Massachusetts. These units are operated for the AEF on a fixed fee basis.

The latest move to integrate many research and development activities is the initiation of engineering for a new central facility in Hightstown, New Jersey.

No one questions the necessity today of an adequate program for developing new materials and for improving existing products. In the intense competition for business today, both inter-industry and intra-industry, any concern that stands still moves backward rapidly. We must keep pace and wherever possible, outdistance competition. This takes considerable doing, since we aim to serve so many sections of industry.

We think we are investing the proper money, in the most promising directions, in research. We are not lavish, neither are we miserly. Like Abe Lincoln, who said a man's legs should be just long enough to reach the ground, we maintain that research investment be sufficient to insure our having for our customers the best possible products at the lowest possible prices. This policy may mean the development of new items or it may mean discovery of new processes for making existing goods. Either way, the benefits are mutual and the research dollar has done 100 cents worth of work. Within the past five years, our laboratories have introduced 271 new products.

Among the newcomers are two now well-known to the paint industry. One is called 45X and is used by most paint grinders who have cut out or cut down on traditional white lead. The other is called M50 and is used for most purposes where zinc chromate and pure red lead formerly served.

Both are included in what we call our "Oncor" group of pigments. As suggested by the word, these materials consist of a very fine particle - core - of some inert substance like sand or silicon, coated with another substance. The idea is to produce a pigment less costly than the one it is designed to replace, which will have all the desired qualities. Other "Oncor" pigments are being developed.

We are also working on products that are somewhat like the "Oncor" variety. We call these encapsulated materials -- a jaw-breaker of a word -- but, if I figure correctly, a profit -

maker for the company in the not too distant future.

The other activity which requires both an outlay of money and faith in its investment is promotion of our product lines. A company may have excellent merchandise and large productive capacity but these mean little if the goods don't move. To assure distribution and acceptance of many of our products we spend relatively (I say relatively as based on gross) modest sums for advertising and related merchandising activities. The promotion effort behind our consumer line - "Dutch Boy" paints - compares favorably indeed with that of the competition. And our expenditures in behalf of industrial items keep them continuously before buying people.

All so-called growth companies are expected to grow, both by expansion of existing facilities and by acquisition of others. In our case, I am frequently asked whether we have changed our policy or are merely consolidating our gains before making additional moves. There has been no change in our thinking on the subject -- it is with us constantly. Hardly a day passes without some discussion on this score taking place within our organization or with prospective concerns. Our people are eternally alert to promising situations which could develop in their areas.

The standards we have imposed in this regard may possibly account for our seeming inactivity. In looking at a prospect, we assay it for sales, growth potential, satisfactory present earnings, the hope of substantial future earnings and capable top management personnel, among other factors. The closer

the good will account to one dollar, the better. If any of you know of any real bargains I wish you would bring them to my attention.

We maintain our financial house in good order. Cash generation from earnings and depreciation should be sufficient to continue our liberal dividend payout, carry out capital programs and put some aside for the future of the business. Our capital expenditures for 1960 for the consolidated group could well be in the range of \$12,500,000 to \$15,000,000. Projects slated to get under way this year are the centralized research center in New Jersey, a new plant for the production of Nalco products, the first under the encapsulation program, and additional facilities for Doehler-Jarvis. At this time we see no need for going into the money market here in the United States. We may however do so abroad for our foreign operations.

I realize this has been a rather lengthy resume of National Lead's capacity to earn money and its expectation of increasing income. But we do have a diversified business and explanations are needed to bring it into proper perspective.

In closing, I am reminded of a definition much used by one of our people that seems to have some connection with my being here. This man used to call on railroad, steamship and other industrial people. After long and trying experience he arrived at the conclusion that the best way to describe a purchasing agent was to say that "he was a man who knew the

price of everything and the value of nothing." Now, I don't go along with that, of course, today's purchasing agents are really knowledgeable people. But I wish to leave the thought that, as a representative of National Lead, I have provided information, not on how to arrive at the price of our securities but on how to estimate their value.

If you have any questions, I will be glad to try to answer them.