HOLLYWOOD, CALIF.
CITIZEN-NEWS Cir. 28,000
APRIL 16, 1943

CITIZEN-NEWS

FOUNDED IN 1905, being HOLLYWOOD'S OLDEST JOURNAL OF NEWS

STRANGE AS IT SEEMS—Cortes set sail for Mexico from Cuba on Nov. 18, 1518, with 11 vessels, about 700 Spaniards and 18 horses. The natives were much alarmed when the white men landed on the Mexican coast and fled from the noise of their firearms. Cortes built a fort and a few houses at Veru Cruz as a protection for his men. His drastic action in burning his entire fleet was undoubtedly designed to give his men the courage of despair.

ELECTRICAL CONTRACTING
"Monthly Publication of Practical Wiring and Electrical Maintenance Methods for Electrical Contractors, Factory Electricians, Inspectors and Motor Repair Shops"
McGraw-Hill, 330 West 42nd St., New York City
APR 1943

PROFITABLE SALVAGING

INDUSTRIAL

In many instances, vacuum cleaners, while being used to clean floors, walls, roof members, etc., can also act as a salvaging agent. This plant, in the eastern part of the country makes bronze and magnesium powders. The process is dusty, hence much of the

RECLAIMING MATERIAL from an unlikely position — amongst the roof members of an eastern powder plant.

fine particles soak the air and become attached to members of the building.

Instead of letting this scarce material go to waste it is profitably salvaged by an industrial type cleaner. Finely powdered bronze dropped on the sea, floats and will mark position of a submerged submarine. The operation returns a good profit.

AUTOMOTIVE INDUSTRIES
"Land—Air—Water"
Philadelphia, Pa.
APR 15 1943

New A.S.T.M. Methods

A.S.T.M. Committee E-3 on Chemical Analysis of Metals headed by G. E. F. Lundell, National Bureau of Standards, has perfected two new A.S.T.M. methods, one covering Analysis of Zinc-Base Alloy Die Castings (E 47 - 42 T) and the other Chemical Analysis of Tin-Lead-Base Solder Metal (E 46 - 42 T), the latter superseding the existing Tentative Methods of Chemical Analysis of Alloys of Lead, Tin, Antimony, and Copper (B 18 - 36 T). The standard for analysis of solder metal prescribes methods for the determination of tin, arsenic, antimony, copper, bismuth, and iron. In this class of alloys, the lead content is arrived at by difference. The committee also is developing methods for determining zinc and aluminum in solder metal, which will later be issued as a supplement to standard E 46. The other new method, E 47, covers the determination of lead, aluminum, copper, magnesium, cadmium and iron in zinc-base alloys, these materials being covered in the Tentative Specifications for Zinc-Base-Alloy Die Castings (B 86 - 41 T).

Important changes have been made in the emergency provisions effecting the specifications for soft solder metal (B 32 - 40 T) involving some additional recommended emergency grades and the inclusion of considerable appended data on uses and applications as well as properties.

THE FOUNDRY
"Established in 1892"
Penton Publishing Co.
Cleveland, Ohio
APR 1943

Detroit

NEARLY 130 were in attendance at the Feb. 18 meeting of the Detroit Chapter at the Rackham Memorial, taxing service facilities because many did not make advance reservations. A score or more came in after the dinner to attend one of the four roundtable discussions which were held on the subjects of cleaning room practice in steel foundries; problems in the use of malleable castings in ordnance; gating and risering magnesium castings; and aluminum foundry core practice.

The light metal discussions drew the major share of attention, particularly the presentation by H. W. Dietert, Harry W. Dietert Co., Detroit, on core practice in aluminum work. Mr. Dietert showed a particularly interesting color movie on some of the tests he has conducted in this field.

M. E. Brooks of the Dowmetal Foundry, Bay City, Mich., directed the magnesium discussion in his usual able fashion.

Major E. K. Smith of the tank engineering branch of the Tank-Automotive Center in Detroit, presented an engrossing but off-the-record discussion of malleable in ordnance.

C. E. Silver of Michigan Steel Casting Co. led the roundtable on steel foundry cleaning room practice.

A novel diversion was a brief but illuminating talk detailing events of the Dieppe raid, by a participant, Private L. Taylor of the Essex Scottish Regiment in Windsor, Ont.—*A. H. Allen, secretary.*

AMERICAN METAL MARKET
"Leading Iron, Steel and Metal Newspaper—Recognized price and market authority."
New York City
APR 7 1943

Magnesium Users With Small Inventories Not Required To File PD-40M

WASHINGTON, April 6.—Magnesium users with small inventories have been reminded by the Aluminum and Magnesium Division that under Order M-2-b users who have an inventory of less than 100 pounds of magnesium, magnesium products and scrap in any calendar month are not required to report on Form PD-40M. Users are asked to notify the Division the first time a change in inventory position makes it unnecessary to report so as to avoid needless correspondence concerning the matter. It is also pointed out that users must resume reporting whenever inventories reach 100 pounds or more.

VALLEJO, CALIF., LABOR JOURNAL
APRIL 23, 1943

Huge Magnesium Ore Deposits Discovered In Las Vegas, Nevada

Las Vegas, Nevada.

As the result of many months of intensive research, the Bureau of Mines of the Department of the Interior announces that it has developed a process whereby a 400,000,000-ton dolomite deposit near Las Vegas in the Boulder Dam area, could be utilized to produce "many millions of tons" of magnesia which is a raw material of magnesium, the highly-important light-weight metal used extensively in airplane construction.

In describing its successful quest of a method for extracting magnesia from the dolomite, the Bureau at the same time disclosed that it also had developed a new electrolytic process for turning this magnesia into metallic magnesium.

IRON AGE
Philadelphia, Pa.
APR 8 1943

Redistribution of Idle Goods Speeded By Heavy Demands

• • • Spurring its efforts to put more idle metals into war production, the WPB's redistribution division for Ohio, Kentucky, West Virginia and western Pennsylvania last week moved 5,879 tons of steel. The division also moved more than 14 tons of brass, copper, aluminum and other metals.

Examination of ledgers of 662 warehouses in the New York-New Jersey region resulted in making available quantities of more than 130 kinds of scarce critical materials urgently needed by war plants. Findings of the WPB men included metals ranging from steel to solder, and a wide variety of chemicals. Many of the materials found were so seriously needed that it was possible to conclude immediate negotiations for transfer to plants that required them.

The hunt turned up 3618 items of machinery and machine tools, 100 lb. of mercury, 60,117 lb. of copper, 1,960,681 lb. of magnesium, 814,680 lb. of steel (all forms), 212,000 lb. of tin and 61,448 lb. of welding rods.

Colville (Wn) Statesman-Index
April 5, 1943

Drill for Magnesite at Double Eagle Mine

According to reports from Chewelah diamond drill equipment is being installed at the Double Eagle mine which is to be prospected for a magnesium deposit. The property is located about 15 miles southwest of Chewelah and 13 miles west of Valley.

A contract has been let it is reported for a minimum of 6000 feet of holes. The ground includes about 300 acres controlled by Minneapolis and Spokane interests.

While the property has produced considerable silver-lead ore it is reported that during the first world war 200,000 tons of magnesite were shipped east from the property.

NEVADA STATE LABOR NEWS
RENO NEV.
4/30/43

Wingfield Interests In War Work

Did you know that the California Fuel and Utilities Company, ocntrolled by Goldfield Consolidated Mines Company is the third largest producer of magnesium powder in the United States?

Costs are the lowest in the country and the product is the best due to the process used.

Did you know the Getchell Mine, Inc., is the fourth largest producer of tungsten in the United States, and of course you know all the uses of tungsten in war production. All high-grade tools contain tungsten; all our tanks supporting the armed forces contain tungsten in order to give the steel high resistance to cannon and shell fire; every one of our naval craft is made of steel, carrying a vast percentage of tungsten.

Magnesium is now one of the greatest war essentials . . . almost daily new uses are found for it—but after the war, the commercial uses of magnesium will be inexhaustible.

OAKLAND, CALIF., TRIBUNE
Cir.—Daily 95,786; Sunday 105,136
APRIL 2, 1943

Nevada Magnesium Development Looms

WASHINGTON, April 2.—(U.P.)—A process has been developed whereby a 400,000,000-ton dolomite deposit near Las Vegas, Nev., could be utilized to produce millions of tons of magnesia, the Bureau of Mines of the Department of Interior reported today.

Magnesia is a raw material of magnesium, one of the most important metals in war production.

IRON AGE
Philadelphia, Pa.
APR 1 1943

• Of the 1479 plant projects owned by DPC, 1022 are in actual operation. Of these 1022 construction or equipment projects 800 were started after Pearl Harbor. Total of all commitments approved by the agency, including projects subsequently canceled or deferred, is $9,175,190,258, while total cost to DPC of constructing and equipping the 1022 projects is $4,317,751,000. This includes facilities at 57 plants costing $141,283,000 making steel and pig iron; 43 for $518,804,000 producing aluminum metal and fabrication; 24 for $307,728,000 producing magnesium metal and fabrication, and 22 for $29,722,000 producing other metals and minerals.

SACRAMENTO, CAL., UNION
APRIL 3, 1943

New Process Utilizes Magnesium Deposit

WASHINGTON— (AP) —Secretary of the Interior Harold L. Ickes has announced the perfection of a new process to utilize vast deposits of dolomite near Las Vegas, Nev., in the production of raw material to manufacture magnesium, a light weight, vital war metal.

Ickes disclosed the deposit, 19 miles southwest of Las Vegas, contains an estimated 400,000,000 tons of dolomite, a non-metallic ore containing magnesium.

Seattle (Wn) Star
April 10, 1943

Let's Go Get This Industry

THERE are many who believe the Northwest's future, with its immense reservoir of electric power, plus its admitted mountains of low-grade iron and available coal, is destined to be tied up with metals both heavy and light.

Most interesting development is the announcement that George E. Murphy, a Seattle metals industrialist, is in Washington seeking government backing for a $25,000,000 steel mill in Everett.

Establishment of such a plant would indeed be a boon to the whole Northwest and a throwback to the good old days so far as Everett is concerned.

'Way back in the '90's Everett had its heavy metals boom. From up Monte Cristo way was to come the ore. But it was low-grade ore and power was not available in those days as it is today. Eastern competition was too tough.

Let's not miss on this opportunity as we have on so many others; in other words, Seattle should get behind Everett and any neighboring city which has a chance to build such an industry.

* * *

WENATCHEE, too, has its ideas, believes lighter metals, aluminum and magnesium, are "just around the corner," wants the immense mountain of iron ore in Blewett Pass explored.

Rufus Woods, veteran editor of Wenatchee World, comments editorially on the fact that the investigating facilities of the government have recently been placed at Albany, Ore., just about as far away from the scene as possible. He says:

"We wonder if the location of the electro-metallurgical laboratory way down in Oregon is a sample of the way they are doing other things in Washington, D. C. The laboratory has been located down where they don't have the power and where they don't have the profusion of unusual minerals. And not so far from the Salt Lake laboratory. What is the excuse for this kind of a situation anyway? One report is that Paul J. Raver was opposed to eastern Washington. We do know that he has kept away from this country as tho it were rat poison.

"He doesn't realize that three-fourths of the power of the Columbia is at the mouth of the Snake. Grand Coulee itself is a sample of what can be done with the Columbia river power.

"The Howe Sound mine, with its 400 and 500 men who are rolling out copper, gold and silver, is a sample of other developments that will come in the future. And yet we have been trying for months and months and months for a core drilling of the mountain of iron ore on Blewett Pass. We were amazed one year ago to find the bureau of mines in Washington didn't have even a record of that mountain of dolomite in the Okanogan."

SOUTHERN POWER AND INDUSTRY
"The South's Own Power Publication."
Atlanta, Ga.
APR 1943

Separating and Sizing Process Materials

The author gives brief descriptions of available methods and shows how each may be used to advantage in the respective processes.

By M. F. A. Wulfinghoff

IT frequently happens that certain chemical ingredients or raw materials of the exact composition needed in a process cannot be readily obtained. Then, either a separating or a mixing stage becomes necessary. Furthermore, certain solids may come naturally in a state either too coarse, or too fine, or too irregular to be suitable for the manufacturing process. Consequently, either a size reduction (comminution) or a performing (agglomerating) operation of some kind must be resorted to.

Depending on the properties and composition of the raw materials and the relative particle size and output desired, a suitable way for separating can usually be found among those presented in Table 1.

Mechanical Separation

Screening is important in the working of minerals, rubber, paper pulp, in the sugar industry, breweries, and other plants. It consists in making the material pass over a discontinuous surface of punched plates or woven wire where the undersize particles fall through openings. Screens may be stationary (Grizzly) or moving (cylindrical or conical trommels, vibrating or oscillating devices). The material screened may be dry or wet; in certain cases moisture in the material may be objectionable and drying must precede the screening process.

Another difficulty arises if the size of the particles becomes extremely small. Then, it may be possible to apply *filtration*. This operation serves to recover finely distributed solids from either liquids or gases. For handling batches of liquid, the filter press is probably the most versatile type of equipment, while centrifugals can be applied to both batch and continuous operation. In the case of gases, stationary devices such as bag filters, and rotary units are available.

In both filter presses and bag filters, a certain amount of suspended matter deposits itself upon the discontinuous surface and thus forms the filtering medium proper. Obviously, the thickness of the filter medium ("Cake" in the case of liquid filtration) increases with time. Therefore, the cake in the case of the liquid slurry filter, and the dust layer in the case of the gas filter, have to be removed periodically to prevent the fine openings from getting choked completely.

In continuous operation, the filter area is usually arranged in the shape of a rotating cylinder, from which the excess layer formed by the solids is removed by a scraper blade. The force which makes the clear liquid pass through the filter layer may be provided either by the hydrostatic head of the slurry or by a pump acting directly on the slurry or creating a vacuum on the inner side of the filter medium.

The principle in so-called "Viscous air filters" is different. Here, the elements are filled with metal packings covered with a thin oil film. This film possesses a certain stickiness which causes suspensions to adhere.

Centrifugal force may serve to accelerate the separation of a solid and a liquid, or of two liquids. Depending on whether filtration or sedimentation (*settling*) is applied, two different types of centrifuges are used; the screen type and the solid bowl type. Batch centrifugals have vertical shafts; continuous ones may have horizontal shafts.

Screen type centrifugals operate at low to medium speeds. Wash liquid and filtrate may be separated; solids may obtain practically dry. Centrifugal forces up to about 300 times gravity are usual.

Settling is inherently much simpler than filtration and can be applied wherever there is a difference in densities between free-moving components of mixtures. Types of equipment are sedimentation chambers, clarifiers, thickeners, decanters, and solid bowl centrifugals. The latter employ high speed ranges and forces as high as 2000 times gravity. The degree of separation is controlled by adjusting the circumferential speed and the feed rate. Wash liquor and filtrate leave together. The capacity depends on solid and liquid densities, particle size of the solids, and percentage of solids in feed.

Settling is encountered in separations of petroleum and its fractions from water, metallic compounds from trade effluents, flue dust from blast furnace gases. Decantation separates immiscible liquids, as or-

ALBUQUERQUE, N. M., TRIBUNE
Cir. 14,023
APRIL 15, 1943

Magnesium, Silvery Cinderella Metal, To Be Turned Out by Dozen Plants

By JOHN W. LOVE
(Scripps-Howard Newspaper Alliance)

DETROIT, April 14.—Magnesium, that silvery Cinderella metal, now has more than a dozen plants paying court to her. The ninth or 10th primary works in the series of the last year or so is starting its operations north of here, adding its share to a target capacity of 600,000,000 pounds or more by next January.

This country's long neglect of magnesium came to an end in 1938 when the Army adopted it for planes. When the additional plants still under construction are done, we shall be turning out 100 times more of the metal than we were then.

About 150 engineers, industrial men and newspaper men witnessed the first pouring of metal at the new Dow plant in this area.

Hot or cold, magnesium looks like solder but it weights one third less than aluminum and about a fifth as much as steel. It is 10 times the cost of steel per pound, but a cubic foot of it would cost only a little over twice as much as the same bulk of steel.

The chief use of this lightest of metals is for aircraft, but large tonnages also go into incendiary bombs and flares. Though five American companies made it in the last year for $5 a pound, only one held on continuously, the Dow Chemical Co., of Midland, Mich., and its price today is 20 cents a pound. The story of its development is one of inventive genius, patience and persistence, with the fortunate accident that the process was ready for large-scale use when it was discovered what Germany was doing with it in the way of giving her bombers greater carrying capacity.

Several companies other than Dow have joined the industry since 1938. Plants which use Dow's electrolytic process include new ones at Austin and Velasco, Tex.; Lack Charles, La., Las Vegas, Nev., and Plainesville, O. Plants which use the ferrosilicon process include those built or building at Ford's Dearborn plant in Michigan, Henry Kaiser's Permanente plant at Manteca, Cal., National Lead near Toledo, and several others.

NEW YORK, N. Y., HERALD TRIBUNE
Cir. 336,511, Sun. 539,023
APRIL 18 1943

List of Essential Industries

From the Herald Tribune Bureau

WASHINGTON, April 17.—The following is a revised list of essential industries and activities as of April 17, 1943:

LIST OF ESSENTIAL ACTIVITIES

1. Production of Aircraft and Parts: The production, maintenance and repair of aircraft, gliders, parachutes, dirigibles, balloons, aircraft engines, aircraft parts, pontoons, propellers and similar products.

2. Production of Ships, Boats and Parts: The production, maintenance and repair of ships, boats, ship and boat parts and equipment.

3. Production of Ordnance and Accessories: The production, maintenance and rpair of firearms, guns, howitzers, mortars, gun turrets and mounts, tanks, sighting and fire-control equipment, torpedo tubes and similar products.

4. Production of Ammunition: The production of bombs, mines, torpedoes, grenades, chemical-warfare projectiles, explosives, fuses, pyrotechnics, as well as products such as glycerin which go into the manufacture of ammunition.

5. Agriculture and commercial fishing:

5A Agriculture: Livestock and livestock products, including beef cattle, dairy cattle, hogs, poultry, sheep and goats; fiber, oil crops and potatoes, including castor beans, American-Egyptian, Sea Island and upland cotton, flaxseed and soy beans, hemp, peanuts, Irish potatoes and sweet potatoes; field crops, including barley, dry field peas, oats, rye, wheat, alfalfa hay, alfalfa hay seed, cover-crop seed, broom corn, corn for grain and silage, dry edible beans, green peas for processing, rice, sweet corn, hybrid seed corn, grain sorghum, tame hay and seed, wild of native hay; tree fruits, small fruits and berries; medicinal, insecticide and rubber plants; vegetables for fresh consumption and processing; vegetable plants and seeds; other food and special crops, including honey, tree nuts, sugar cane for sugar and syrup, sugar beets, sugar-beet seed, sorghum and sorgo syrup, and tobacco.

5B. Agricultural services and commercial fishing: Agricultural, horticultural and animal-husbandry services, such as commercial hatcheries, seed processing, animal breeding, crop-disease protection services, initial processing services such as ginning, compressing, threshing, cleaning, shelling and curing, irrigation services, farm-repair and maintenance services, farm-product assembly services, all of which are performed on a substantially year-round basis to essential activities related to essential crops and livestock enterprises indicated in Local Board Release No. 175; commercial fishing.

6. Processing of food: Meat packing and slaughtering (including poultry); production of all types of butter, cheese, milk and eggs, canned or preserved fish and nuts, canned or preserved fruits and vegetables and their juices, soups, flour and other grain-mill products, prepared feeds for animals and fowls, starch, cereals, rice, bread and other bakery products, sugar leavening compounds, corn syrup and edible fats and oils (including dried, dehydrated, frozen and other special-processed foods).

7. Forestry, logging and lumbering: Timber tracts and logging camps, sawmills, veneer, cooperage-stock, planing and plywood mills, raising of tung-oil trees, fire prevention, pest control, forest nurseries and reforestation services, and gathering of gums and barks for the manufacture of naval stores and for medicinal purposes.

8. Construction: Highway and street construction, marine construction, construction of approved industrial plants, houses, hospitals and military projects, repair of such facilities, and services necessary to complete such construction.

9. Coal mining: The mining of anthracite, bituminous and semi-anthracite coal, lignite and peat, an dthe operation of breakers or preparation plants including also removing overburden and other such activities praparatory to coal-mining operations.

10. Metal mining: The mining of iron, copper, lead, zinc, aluminum, mercury, manganese, chromium, molybdenum, tungsten, vanadium and similar ores, and the dressing of such orders including also removing overburden, sinking shafts, and other such activities to metal-mining operations.

11. Non-metallic mining and processing and quarrying: the mining and processing of rock salt, phosphate rock, sulphur, potash, asbestos, graphite pyrites, graphite, borates and other salines, fluorspar, mica, talc, abrasive sands and similar products (excluding all mined or quarried non-metallic materials used exclusively in construction).

12. Smelting, refining and rolling of metal: primary and secondary smelting and refining, alloying, rolling and drawing of iron, steel, copper, lead, zinc, magnesium, aluminum, brass, bronze, nickel, tin, cadmium, ferro-alloys and any other metals used in the production of war materials; and scrap salvage.

13. Production of metal shapes and forgings: the manufacture of castings, die castings, forgings, wire, nails, chains, anchors, axles, pipe, springs, screws, bolts, tubing, stampings, pressings, structural shapes and machined parts.

14. Finishing of metal products: enameling, japanning, lacquering, painting, plating and galvanizing of metal products.

15. Production of industrial and agricultural equipment: power boilers, wiring devices and supplies, agricultural implements, electric lamps, storage and primary batteries, pumps, compressors and pumping equipment; recording, controlling and measuring instruments and meters; conveyors, industrial cars and trucks; blowers, exhaust and ventilating fans; mechanical power - transmission equipment such as clutches, drives and shafts; mechanical stokers; tools; files and saws; plumbers' supplies; professional and scientific instruments, photographic apparatus and optical instruments, and all equipment necessary to operate plants producing essential commodities.

16. Production of machinery: Engines and turbines; metalworking machinery and equipment; electric generating, distributing and industrial apparatus for electric public-utility, manufacturing, mining, transportation and construction use, for use in manufactured products or in service industries; construction, mining, agricultural, oil-field, smelting and refining machinery, as well as all machinery necessary to produce, equip and maintain aircraft, ships, ordnance and other military equipment.

17. Production of chemicals and allied products and essential derivatives thereof: glycerin; turpentine, rosin and other naval stores; wood tars, oils, acids and alcohols; plasticizers, lubricating oils and grease, animal and vegetable oils, fertilizers, tanning materials, chemical pulp, salt, synthetic rubber, coal-tar products, plastics, compressed and liquefied gases, refined sulphur, acids, caustic and other sodas, alcohols, electro-chemical and electro-metallurgical products such as carbide, sodium and potassium metals and high-percentage ferro-alloys; drugs and medicines, insecticides and related chemical compounds, synthetic textile fibers used in military equipment exclusively, grease and tallow (explosives, flares and other fireworks, generally classified as chemical products, are included with ammunition.

18. Production of rubber products: All rubber products.

19. Production of leather products: The production of shoe and belting leather; industrial belting for transmission of power; boots, shoes and gloves for military and industrial use; saddlery, harness and accessories.

20. Production of textiles: Spinning and weaving of fabrics for parachutes and powder bags; of canvas for tents, sails, tarpaulins and related heavy-canvas products; asbestos, fibrous glass, cotton, woolen, knit, linen, silk and synthetic-fiber goods for military and industrial use.

21. Production of apparel: Apparel for the armed forces, and working clothes.

22. Production of stone, clay and glass products: Scientific and industrial glass products; sand-lime, fire-brick and other heat-resisting clay products; lime; abrasive wheels, stone, paper, cloth and related products; asbestos products including steam and other packing, pipe and boiler covering, crucibles and retorts; porcelain electrical supplies, as well as parts of military apparatus.

23. Production of petroleum, natural-gas and petroleum coal products; drilling, rig - building and maintenance service operations, and petroleum refining (including also production of tar and pitch, coal gas and coke).

24. Production of finished lumber products: Cork products such as life preservers; storage-battery boxes, insulating material, cars, matches and wood-preservation activities (including also wooden parts of aircraft, ships and other military equipment).

25. Production of transportation equipment: The production of motor vehicles such as trucks, ambulances, fire engines, buses and military motorized units; essential parts and accessories of such motor vehicles: motorcycles, bicycles and parts; locomotives and parts; railroad and street cars and equipment.

26. Transportation services: Air Transportation; line-haul railroad; switching and terminal; railway and air express; freight forwarding; rail inspection; local transit, rapid transit, interurban electric railway and over-the-road bus; offshore and intercoastal water transportation, including shore service such as stevedoring and arbor operations; pipe-line transportation; transportation services on the inland waterways, Great Lakes, harbors, bays, sounds and waters connected with the seas, including short service such as stevedoring; trucking, warehousing; dry, open and cold storage of essential and perishable commodities.

27. Production of materials for packing and shipping products: Textile bags; vegetable and fruit baskets; cooperage; excelsior; heavy-duty paper and pulp; rope, cordage and twine; wooden, paperboard, container board, glass, fiber, metal and paper containers and envelopes for shipping and preserving essential products.

28. Production of communication equipment; radios and radio equipment; radar; telephone, cable, television and signaling apparatus.

29. Communications services: Magazines of general circulation which are devoted primarily to the dissemination of public information; newspapers and news syndicates; production of motion pictures (including technical and vocational training films for the Army, Navy and war-production industries); protective signal systems which supplement fire and police protection to military, public and private industrial and commercial establishments; radio broadcasting; radio communications (radiotelephone and radiotelegraph); submarine cable, telegraph, telephone and television.

30. Heating, power, water-supply and illuminating services: Electric light and power, water and gas utilities; steam-heating companies.

31. Repair services: Repair of vehicles, such as bicycles, motorcycles, automobiles, buses and trucks; repair of tires, typewriters and business machines, elevators, shoes, radios, refrigerators, clocks, harnesses, tools, stoves, pneumatic-tube systems, power-laundry equipment, electric appliances and motors, engines, heating equipment; scientific, commercial and industrial weighing machines, farm and other industrial scientific equipment, roofing, and electric, gas and plumbing and heating installations in domestic, commercial and industrial buildings. Also blacksmithing, armature rewinding and locksmithing. It is intended that consideration be given only to individuals qualified to perform all-around repair services on the types of equipment specified as required for the minimum essential needs of the community.

32. Health and welfare services: offices of physicians, surgeons, dentists, oculists, osteopaths, pediatrists and veterinarians; medical and dental laboratories, hospitals, nursing services, institutional care, auxiliary civilian-welfare services to the armed forces and welfare services to civilians.

33. Educational services: public and private industrial and agricultural vocational training; elementary, secondary and preparatory schools; junior colleges, colleges, universities and professional schools, educational and scientific research agencies, and the production of technical and vocational training films.

34. Governmental services.

35. Technical, scientific and management services: the applying of technical, scientific and management services to establishments engaged in war production; union management negotiation services; and the publication of technical and scientific books and journals.

DIPLOMATE
PHILADELPHIA PA.
5/43

The American output of magnesium has increased a hundredfold since 1939, and the aluminum output is now seven times what it was that year.

METALS & ALLOYS
New York City
APR 1943

trends

By Edwin F. Cone

Machine Tools

Some thoughts on the trend in the machine tool industry, particularly after the war, have been sent by the president of a large builder of such tools in a letter to his stockholders and they are worth repeating here in part. He said: "Unlike most items vital to the war, machine tools are not expendable in the war effort. If it should develop that the demand for turret lathes is not sufficient to utilize our full production facilities, we shall endeavor to undertake the manufacture of other items. Progress in this direction is already under way."

War Workers' Ideas

A trend of considerable interest and importance is the practice in many war plants of paying for war workers' production ideas. One company reports that such ideas or suggestions by workers saved 1,250,000 man-hrs. during 1942. A record $158,945 was paid last year for 16,204 suggestions adopted out of 53,945 submitted.

More Steel Plate

Output of steel plate continues to mount—a new record for any month was made in January at 1,135,400 net tons. The previous record was set in July 1942 when 1,124,118 tons were produced. Of the January total 566,000 tons were turned out by converted continuous strip mills.

Aluminum for 1943

The 1942 production of aluminum, according to Mr. P. D. Wilson of the WPB, was more than 3 times the 1939 output of 163,545 tons of primary ingot, all made by the Aluminum Co. of America. Including recoverable scrap and contracted ingot from Canada, the 1943 supply of the metal for the United States will be over 7 times that of 1939.

Earnings of Steel Companies

The trend of 1942 earnings of some of the leading steel companies has been downward as compared with 1941. For example the net income of the leading producer was 58 per cent lower last year than in 1941. Reported and estimated earnings for major producers indicate the industry's decrease will approximate 40 per cent. The principal reasons for this showing include increased labor costs and higher effective tax rates. Higher maintenance expenses due to continued peak operations are also a factor.

Stocks of Iron Ore

With the increased demand for pig iron and the building and enlarging of blast furnaces, stocks of iron ore at American and Canadian furnaces and at Lake docks have expanded to new totals. They aggregate 47,424,421 tons for the winter season compared with 40,456,893 tons a year ago. By May 1, this year, about 30,000,000 tons of this will be consumed, leaving only a moderate carry over.

The New Pennies

An electrolytically coated zinc sheet is being used by the Philadelphia Mint to produce the new pennies. A patented galvanized sheet was used initially, but the zinc coating clogged the dies,—another case of an electrolytic product being superior for some purposes to the galvanized. The case of tinplate is typical.

Electrolytic Tinplate

It is estimated that the total output of tinplate this year will run approximately 2,500,000 to 2,600,000 tons. No accurate estimate is possible as to what proportion of this will be made by the electrolytic process but there are those who rather reliably calculate that it will not be less than 40 per cent of the total. With all the principal makers of tinplate installing the electrolytic process, the expectation is that in 1944 at least 75 per cent of the total product will be made electrolytically.

Tin Consumption Down

"On the rough calculation that the tin coating of the hot dipped and electrolytic coated tinplate will average 1.1 per cent, the consumption of tin by the tinplate industry will be in the neighborhood of 6,000 tons during the first quarter of this year, or just about half the consumption per quarter in 1941."

Tin from Old Tubes

How much tin is being saved by turning in old toothpaste tubes, is a question often asked. The first authentic information we have seen has been given out by authorities who reveal that during October last year, these old tubes yielded 80 tons of tin.

Magnesium in 1943

The output of magnesium by the end of this year will be about 100 times the 3,300 tons produced in 1939, according to Phillip D. Wilson, chief of production, aluminum and magnesium div., WPB.

DOMESTIC COMMERCE
WASH. D.C.
4/1/43

WAR BOOMS AND TWISTS THE FAR WEST

By Raymond Reeves, Regional Business Consultant
San Francisco Regional Office, Department of Commerce

War has brought spectacular changes to the Far West. For example, the second most populous city in Oregon, Vanport, is too new to show on any map. It was built in 110 days, but has forty thousand inhabitants. One new Los Angeles aircraft plant employs more people than all the Hollywood studios put together. A giant steel plant is in full blast where an orange grove existed a few months ago. Wages are swirling into workers' pockets at a fantastic rate. One shipyard advertises continually for men or women to accept "at least $49.50 a week while you learn welding."

Shift from Agricultural to Industrial Economy

The real story of what the war is doing to this region is not found in such items as these. The change is deep and basic, for the area is being shifted from an agricultural to an industrial economy. Factories, raw materials, power, labor supply, and management which might take 50 years of normal development to obtain have all been thrust suddenly upon the Far West.

But all is not well. Thousands of business firms are being strangled. Small towns and farming areas are losing population at an unhealthy rate. A truck transportation breakdown threatens. Manpower shortages menace farm production. "Absenteeism" is the subject of much ill-informed talk. OPA regulations are complained of more frequently than prohibition was. Unhealthy prosperity is enervating many businesses and individuals.

Two developments, although intangible, may be of prime long-run importance. First, business has gained prodigiously in public respect. This has been reflected in such statements as Lt. Gen. Dwight Eisenhower's, "Thank God for American Industry — Labor and Management." Concomitant with this has been a cascading resentment of alleged governmental inefficiency. Second, private business is showing an increasing willingness to accept responsibility for post-war planning.

New Industries — General

Before the war the Far West was gaining a larger share of the national population and income each decade. However, the area lacked basic metal-producing plants, and this retarded heavy industry. Thus it is that the new iron, steel, magnesium, and aluminum plants in this area are not just additional factories. They represent an ever-widening flow of employment opportunities. They mean that a new industrial frontier has been opened.

Aluminum

The new Pacific Coast aluminum plants have a capacity which exceeds the pre-war total of the entire Nation. Not one ounce of aluminum was produced in the great Troutdale plant near Portland or the Central Valley plant in California before the war started, for the plants themselves didn't exist. By the end of 1943 it is estimated that our national production of aluminum will be at a rate about seven times greater than the 327 million pounds produced in 1939.

The Pacific Coast aluminum industry seems to have a sound basis for post-war existence. One of the chief costs in producing aluminum is electric power. The lowest — absolutely the lowest, no exceptions — cost hydroelectric power available anywhere in the country is in the Pacific Northwest. Bonneville, Grand Coulee, and other dams are now releasing a gigantic charge of power into these regions so large that it is estimated at two-fifths of the Nation's total water power. This tremendous electric power is itself a new factor added to the region since the war started.

Another sound support for the new aluminum plants is found in their nearness to aircraft production centers. Finally, the availability of low-cost water transportation for ores and finished goods will help. Optimism regarding the future of these "war babies" and their value to the region seems well-founded.

April 1, 1943

13.

PRIORITIES
5/43 New York City

Featherweight CHAMPION

ARE we living in the closing days of the age of iron and steel? Will our proud machines and implements of today reveal to the museum visitor of the future as great an ignorance of the proper use of the materials at hand as the stone ax of the cave man does to us? It well may be, for there is a group of so called "new" metals which is rapidly working a wide revolution in the size, weight, strength and structure and also in the appearance, performance, endurance and utility of an unending number of tools and devices for modern living.

Among the stars of this group are aluminum, chromium, molybdenum, nickel, beryllium and cadmium. Another, outshining them all at the moment, and a real smash-hit is magnesium. Not really new but long neglected it took the exigencies of the war to win due appreciation for this Cinderella metal. And the pace at which it is making up for lost time is fairly breath taking. The evidence is American increase in production from one million pounds in 1937 to 125 million pounds last year and perhaps 400 million this year.

What's magnesium got? First of all it is a featherweight with a giant's strength. It is only two-thirds as heavy as aluminum and has only one quarter the weight of steel, yet it has extreme toughness and the strength of iron. It also has such affinity for other metals that it alloys to produce almost

MINING AND METALLURGY
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New York City
MAY 1943

Utah Section . . .

New Magnesium Area Described

UTAH SECTION'S MARCH MEETING, ON the 18th, presided over by Vice-Chairman Soderberg, was featured by a most interesting talk by C. L. Severy, mining engineer for the U. S. Bureau of Mines, on "Drilling for Magnesium in the Vicinity of Thompson, Utah." (An abstract of Mr. Severy's talk will be published soon in MINING AND METALLURGY.)

Presentation of one of the national student prize paper awards, a check for $50, was made to Cy Greenhalgh, whose paper won second place in the graduate contest; and J. A. Marsh, Section delegate at the Annual Meeting of the Institute in New York in February, reported some of his impressions.—*James A. Marsh, Secretary.*

E & M J METAL AND MINERAL MARKETS
New York City
5/13/43

Magnesium Scrap Salvage

Magnesium is a newcomer to the scrap dealer industry and is not yet well known, according to the Bureau of Mines. Dealers handled little industrial scrap of this light metal in 1942, shipments amounting to only 1,871 tons. Use of magnesium in the past has not been sufficiently widespread to create a backlog of obsolete material for salvage.

D and W
For Executives who buy
SHIPPING - HANDLING
WAREHOUSING - DISTRIBUTION
Services and Supplies
MAY 1943

WPB 'Treasure Hunt' in Warehouses Turns Up Needed War Materials

▪ Substantial quantities of more than 130 different kinds of critical materials were rounded up in warehouses during the "treasure hunt" recently completed by the New York regional redistribution division of the War Production Board. Many of these materials are reported to have already been put to work in war plants where they were urgently needed.

During the search available inventories of critical materials were turned up in 181 of the 662 warehouses visited, and included 4,461 lots owned by 1,631 individuals.

Materials "resurrected" ranged alphabetically from agar, of which 3,180 lb. was obtained, to zinc oxide, of which 873,020 lb. was found. Also recovered were 3,618 items of machinery and machine tools. In all the search dealt with 360 different items, including pig bristles, sunflower seed and goose feathers.

Among the larger quantities turned up were: Ammonia and derivatives, 58,564 lb.; asphalt, 515,967 lb.; pig and hog bristles, 10,136 lb.; burlap and new bags, 4,270,500 lb.; cellulose acetate, 414,900 lb.; chromium chemicals, 25,000 lb.; Congo copal, 1,063,068 lb.; copper, 60,117 lb.; copper chemicals, 26,790 lb.; cork, 5,894,342 lb.; cotton linters, 407,920 lb.; cotton yarn (combed), 204,100 lb.; jute fiber, 1,355,200 lb.; kapoc, 907,706 lb.; magnesium, 1,960,681 lb.; staple fiber rayon, 118,637 lb.; crude rubber, 594,892 lb.; shellac, 1,130,504 lb.; steel (all forms), 814,680 lb.; tin, 212,000 lb.; urea, 114,000 lb.; welding rods, 61,448 lb.; wood pulp, 1,020,000 lb.; Egyptian cotton, 1,047,000 lb.; glycerine, 14,860 lb., and iodine, 782,670 lb.

In describing the search, Ralph A. Parker, assistant regional deputy director of WPB in charge of war contractors service, pointed out that it was made without any physical checks of goods in storage but merely by examining warehouse ledgers.

"In every instance where a ledger showed that an item of strategic material had been held in the warehouse for an excessive period full information was obtained from the holder to establish whether he had immediate essential need of such material or whether it could serve the war program more expeditiously by being redistributed," he said.

"Items that had been held by manufacturers longer than four months or by brokers longer than six months were checked in this way.

"In many instances the work of the survey was welcomed by holders of these materials because it provided immediate outlet by bringing buyer and seller together."

Better Freight Job Nets Government Cash Refund

Increased efficiency in handling freight has enabled the Jarka Corp., nationally known terminal operator, to refund to the government $30,000 on a contract. Announcement of the refund was made by Brig. Gen. W. E. Farthing, commanding general, Air Services Command, Newark, N. J.

F. W. Nolan, president of the corporation, sent a check for $30,000 to the general and said the company wanted only a reasonable profit on operations for the government.

"Thirty thousand dollars is a lot of money," the officer replied, "and you may be sure it will be used to good advantage. But more important is the fact that your ability to return this money indicates a real increase in operating efficiency."

NEW YORK, N. Y.
PM
MAY 4, 1943

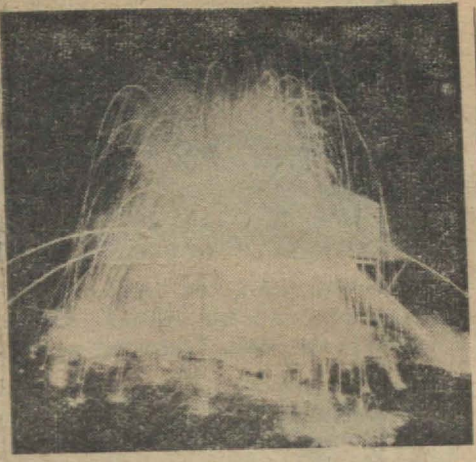
Germany's Master Plan:

How I. G. Farben Kept Magnesium From the Allies

Fear of Competition With Aluminum Used as a Curb on Industry

German's economic strategists realized the military value of the super-light metal magnesium. How they played upon Alcoa's fears of competition with aluminum to limit Allied production is told in today's installment of the best-selling "Germany's Master Plan."

By JOSEPH BORKIN and CHARLES WELSH



This is magnesium at its worst—an incendiary bomb set off in an American anti-incendiary demonstration.

Magnesium, Metal of Mars

To Germany, magnesium was a discovery of great military importance. Its sources are virtually unlimited. It is found in seawater and in widely distributed ores. No blockade can cut off its supply, and only production facilities limit its output.

To a monopolistic aluminum industry, magnesium meant a technological rival of formidable properties. Its mere existence was a nuisance.

In these two sets of conditions magnesium developed to take its place among the lightest of light metals. Germany, since 1915, constantly has pushed onward in magnesium production. The democracies not only lagged behind, but sought to throttle magnesium, because it threatened to make obsolete the interests vested in aluminum. Once more monopoly must guard against both competition and technological change.

With Mephistophelean guile, Germany's "minister of industrial war," I. G. Farben, lulled the American aluminum firms into dreams of security, while Germany made magnesium in ever-increasing amounts.

Both I.G. and Alcoa "knew what they wanted." I.G. desired magnesium. Alcoa wanted to erect a *"cordon sanitaire"* around the industry. I.G. lent willing aid.

Technologically, magnesium is in all important respects the greatest rival to aluminum. Magnesium can, when properly alloyed, fulfill any of the functions of aluminum with greater efficiency, since it is one-third lighter in weight, it is more easily shaped in the machining process, and has greater tensile strength.

At the end of the World War, the demand for magnesium declined, as did the output, and as a result, the price fell to one-third of its former level. Of the eight concerns which had been engaged in magnesium production, only two continued in the industry. These were the Dow Chemical Company and the American Magnesium Company, a wholly owned subsidary of the Aluminum Company of America.

Both companies, until 1927, probably sustained a small net loss. During this entire period, the weight advantage of magnesium over aluminum was offest by a much higher price. In 1926 Dow reduced the price from 90c per pound to 55c per pound.

Alcoa Gets Control Of Dow Production

Immediately Alcoa recognized that if, as output increased, price reductions occurred in proportion, its own aluminum business would be threatened.

Constitutionally opposed to competition, and at the same time desiring to obtain a grip on the magnesium industry, Alcoa in 1927 permitted its subsidiary to cease production, and in July of that year contracted to purchase its entire requirements of magnesium from Dow. A.M.C. became Dow's largest customer, and under subsequent sales agreements was granted preference as against all other customers of Dow.

At the same time the purchase agreement was signed, a cross-licensing agreement covering certain fabrication patents was executed between A.M.C. and Dow. Both A.M.C. and Dow still retained the privilege of dealing with others, and A.M.C. could, of course, re-enter production at any time.

During the years 1927-1928 the ubiquitous I.G. again became a member of the *dramatis personae* of the magnesium industry in the United States. I.G. approached Dow and several other companies in an effort to enter the American market with the aid of an American concern. Dow reacted negatively to I.G.'s advances. It was therefore almost inevitable that I.G., in making its rounds, should establish contact with Alcoa.

The first negotiations occurred in 1928; after a period of study of the process used in production and fabrication, and of discussion of the terms of agreement, Alcoa and I.G. signed what is known as the Alig Agreement, in October, 1931. This agreement became the charter of the magnesium industry in this country until war supervened.

Here again I.G. pursued one of its favorite practices in dealing with American industries: a joint corporation, the Magnesium Development company, was formed, in which Alcoa and I. G. each held 50 per cent of the stock. Magnesium Development company was a patent-holding organization to which I.G. transferred a number of fabrication patents and to which Alcoa contributed some process patents, although not as many as I.G.

In addition to its participation in M.D.C., I.G. eventually received a 50 per cent interest in American Magnesium, Alcoa's own subsidiary, via General Aniline & Film.

In 1933 Dow and A.M.C. entered into a five-year purchase contract reaffirming A.M.C.'s position as a preferred customer.

With only a few exceptions, the price record supports the contention that magnesium was artifically and arbitrarily valued until the advent of war.

The frantic efforts which have been necessary to meet our war-time needs for magnesium are the most concrete comment that could be made as to the effect of Alcoa's partnership and Dow's consortium with I.G.

NEXT—Krupp—the Hammer of Thor

(Published in book form by Duell, Sloan and Pearce)

Auburn, Cal., Herald
Cir. 880
MAY 29, 1943

Business - Professional Women

Henry Kaiser's 5th Atlantic Charter freedom—the freedom of production—was the subject of a talk given at the weekly meeting of the Business and Professional Women's Club at the Freeman Hotel Tuesday evening, by J. P. Hall.

Hall stressed the great difficulty the smaller mine operators of the West are now having to get their properties under production and provide the strategic and critical minerals now needed in the war, placing the blame with the advisory members of the War Production Board,, all of whom are representatives of large Eastern metal concerns. It is very evident, he said, that they are opposed to the expansion of the mineral and metal business in the West, preferring to import mineral from foreign countries by use of expensive convoys

The many extensive California copper deposits are getting no encouragement whatsoever from governmental sources, despite the fact that the nation will get during 1943 only 53% of its need, being 2,115,000 tons shy: 90% of our supply, both from foreign and domestic sources, is produced by but three companies. Placer and El Dorado counties have very extensive copper deposits, some of them rich in zinc and others in gold.

The magnesium industry is being held in close control by the metal barons holding $1.00 per year positions with WPB because it is a competitor to the well-entrenched aluminum business. Magnesium is lighter (1 cu. ft. weighing 108 lbs. as compared with 160 for aluminum) and tougher than aluminum and therefore more desired in the manufacture of airplanes, yet WPB is opposed to granting priorities to manufacturers. It will not even recognize the process of extracting magnesium from serpentine, of which there is billions of tons all over California that can be mined for 10c per ton. Every ton of California serpentine contains 300 or more pounds of the light metal.

Hall blamed the situation partially on the fact that engineers are trained to turn down properties so much so in times of peace that now with metal needed in all phases of the war and in all walks of life they are unable to adjust the appraisement of properties to fit the needs of the times.

The speaker hailed Senate Bill 414, that will reorganize the California Division of Mines, as step that will gear the state's minerals closer to the war effort. It has passed both houses of the Legislature and is now in the hands of the Governor. Much pressure is being brought to have him veto the bill. Hall asked the club to consider requesting Governor Warren to sign it.

Goldie Brewer took over the gavel as leader of the Auburn club, succeeding Lucy Singer, resigned. Mrs. Brewer reported on the recent state convention, held in Santa Cruz.

Seattle (Wn) Star
MAY 28 1943

PLANNERS WILL TALK RESEARCH

Session Opens Here Tomorrow

OLYMPIA—(UP)—Twelve planning research projects will come under discussion by the Washington State Planning council at a meeting in Seattle tomorrow, Pat Hetherton, executive officer, said today.

Light metals—aluminum and magnesium—and lumber industry expansions, comprise the major part of the proposed projects.

Additional peacetime uses for light metal alloys, now in heavy demand for warplanes and other military machines, will be the subject of one of the research projects. Others include study of the production of aluminum from eastern Washington clays; the electrolytic production of manganese from Olympic peninsula ores; electric smelting of alumnia from Washington clays; casting magnesium alloys; the development of a protective metallic coating for sheet magnesium.

Lumber projects due for discussion include utilization of wood waste; methods to upgrade lumber; improvement of wall sheathing and production of veneer from small logs and inferior species.

Crop investigations in Clark county and a vegetable seed survey approved for Skagit county will also be discussed.

A report will be made on the Elma area, subject of a planning council report last year which explained how the near-ghost town could be successfully turned from logging to farming.

MINING AND METALLURGY
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New York City
MAY 1943

Detroit Section . . .

Joint Symposium on Light Metals

ON MARCH 8, THE DETROIT SECTIONS OF the A.I.M.E. and American Society for Metals held a joint meeting on light metals. Following the dinner, an audience of over 300 crowded the Engineering Society of Detroit auditorium and made use of aisles for standing room. J. D. Hanawalt, of the Dow Chemical Co., spoke on "Magnesium and Magnesium Alloys in the War Effort," and P. V. Faragher, of the Aluminum Company of America, spoke on "Aluminum and Aluminum Alloys in the War Effort." Both speakers knew their subjects perfectly, gave excellent presentations, and matched wit as well as information.

Dr. Hanawalt pointed out that the proposed production of magnesium for 1943 in the United States would be about one hundred times the annual production of magnesium prior to 1939. He outlined various methods being used to extract magnesium from ores or brines. Magnesium alloys are used extensively as castings, which are capable of solution-precipitation treatments. Magnesium-base alloys, although not as extensively used in the wrought form, may be hot-worked.

Dr. Faragher indicated that the war had increased the production of aluminum in the United States about tenfold. For one of the five leading tonnage metals in the country this is a profound increase. New raw materials and processes have been developed for the production of aluminum to supplement or take the place of the older ones if necessary. Most of the aluminum alloys are used in the wrought form though castings are made in large quantities. The solution-precipitation treatment is used on both wrought and cast alloys.

Following the two talks, the audience addressed questions to the speakers. All in all, the meeting was a tremendous success.

New officers nominated for the coming year are as follows: Chairman, Adam MacKenzie, Carbaloy Co., Inc.; Secretary, D. Z. Dailey, Champion Spark Plug Co.; Vice-Chairman, E. O. Kirkendall; Treasurer, E. R. Darby; Executive Committeemen, B. B. Beckwith, J. D. Hanawalt, George Timmons (all for two-year term); and George Ewald and Olof Lindqvist (one-year term).—*Ernest O. Kirkendall, Secretary.*

WALL STREET JOURNAL
New York City
MAY 27 1943

* * *

MORE MAGNESIUM than the arms program needs now flows from American plants. So the Government has cut the production at the sea-water factories by 25%. The largest of these, run by Dow Chemical Co., was turning out one-fourth more than its estimated capacity, we're told. The Government didn't order a cutback, however, on the new plants which make magnesium from ores (rather than from sea water); they're more experimental than the time-tested Dow operations.

Although there is plenty of magnesium now, the expanding bomber production may later take up the slack.

This article was clipped from
PHOENIX FLAME
MOTHERS NUMBER 1943
NEW YORK
May- 43

STEEL, zinc, copper, tin, aluminum and magnesium are precious metals today. They are needed to conduct the war. Gold and silver are of small value on the firing line. Therefore, your new garbage pail may have to be made of 18 k. gold. And, your mop bucket, ash sifter or hitching post of finely engraved silver.

IRON AGE
Philadelphia, Pa.
MAY 13 1943

CMP-24 SUPERSEDES 12 FORMS: This new form to be used for the reporting of aluminum product shipments, exclusive of ingots, is said to supersede 12 previous forms. It is to be used with forms CMP-12-19 and 21 and must be filed for the first time by June 10, according to the Aluminum and Magnesium Division. Ingot is reported on CMP-23.

FORM CMP-24
ALUMINUM
(4-29-43)

UNITED STATES OF AMERICA
WAR PRODUCTION BOARD

ALUMINUM SUPPLIERS: MONTHLY REPORT OF SHIPMENTS AND UNFILLED ORDERS

BUREAU OF THE BUDGET NO. 12-R203.4
APPROVAL EXPIRES AUGUST 5, 1943

NAME OF REPORTING COMPANY

TO: War Production Board, Washington, D. C.
ATTN: Aluminum and Magnesium Division, Statistics Unit

ADDRESS (Street, City, State)

INSTRUCTIONS—Each maker or warehouse distributor of an aluminum product listed on instructions shall file two (2) copies of this report not later than the tenth (10th) day of month following month covered by this report. See full instructions.

REPORT OF SHIPMENTS FOR MONTH OF 194

PRODUCT CODE NUMBER REPORTED (a)	ALUMINUM PRODUCT SHIPPED (Use separate line for each product code and each program) (b)	ALLOTMENT NUMBER AND SYMBOL (c)	LEAVE BLANK (d)	NET SHIPMENTS DURING MONTH COVERED BY THIS REPORT (In lbs.) (e)	UNFILLED ORDERS AT END OF MONTH ORDERED FOR DELIVERY IN: MONTH COVERED BY THIS REPORT (f)	UNFILLED ORDERS AT END OF MONTH ORDERED FOR DELIVERY IN: THE PRECEDING MONTHS (g)

NEBRASKA BLUE PRINT
LINCOLN NEB.
5/43

Strategic Minerals

by E. F. SCHRAMM

Prof. E. F. Schramm, Chairman of the Geology Department, wrote this article especially for the Blue Print.

IN this jittery, propaganda crazed world most food stuffs and many mineral products are looked upon as absolute necessities in the event of war. When we read that there are certain minerals which are an absolute necessity for the peace of mind of war lords and capitalist leaders in industry, we begin looking around to see if we are long or short on the commonly used, highly publicized products of natural wealth.

Just at present and apparently for many years to come the United States is and will be long on gold, silver, iron, copper, lead, zinc, sulphur, potash, salt, petroleum, coal and many other products of the good earth regardless of the propaganda which we read to the contrary. We as a nation, from a producing standpoint are short on such necessary elements and mineral substances as manganese, chromium, mercury, tin, platinum, and antimony. Some writers on the subject of the so-called Strategic and Critical Materials who are always viewing everything with alarm, include also aluminum, mica, bauxite, iodine and nitrogen. The problem is not one of scarcity so much as one of mining, smelting and refining low grade ores.

This apparent paucity in what has been called by our War Department, "Strategic and Critical" elements and minerals gives us the political and economic jitters, and we start worrying on a wholesale community scale, as it were. Most of the situations and predicaments in this old world which we are inclined to worry about never happen and they are not likely to happen in this particular case .

Writers, publishers, profiteers and war lords must have employment and the dissemination of propaganda, knowingly or unknowingly is their stock in trade.

The magazines and Sunday supplements are filled with glaring headline stories about our shortage in certain types of mineral wealth. The stories are half brothers to those carried in the same publications during World War I, the "big cry" then was—what are we going to do for potash, since the great commercial deposits of this necessity are owned and controlled by Germany. Previous to World War I, we were importing from Germany most of the potash used in the United States. When hostilities cut us off from this source of supply we began as we should always do, to look around home for a convenient and adequate supply. In the case of potash we found most of what we needed in our own state of Nebraska, by recovering it from the brines of the Sand Hills lakes. This fortunate discovery made wealthy men of a few of our students in the geology and chemistry departments and "broke" a few business men who got in on the bonanza too late to realize dividends on their capital investment. Such is the history of the mining industry in one sentence; wealth and poverty peacefully fraternize in the same camp.

To make money in the mining world the time and the place must be properly synchronized. There are a few winners and many losers in the mining industry, which reminds us of Mark Twain's definition of a mine, he said "A mine is a hole in the ground owned by a damned liar." To my way of thinking that definition is 95 per cent perfect.

Lets get back to the strategic minerals, we were discussing, first, potash and our fears pertaining to that substance during World War I. Our need for potash as a fertilizer caused us to search the country thoroughly for this necessary mineral substance, and we found it in the lake brines of Nebraska and California, also in the potassium aluminum sulfate mineral known as alunite and occurring in abundance in the vicinity of Marysvale, Utah. We recovered some potash from glauconitic green sands which are extremely abundant in this country and additional potash as a by-product from cement plants.

In drilling for oil in the great Permian Basin of southwest Texas and eastern New Mexico, operators encountered potash bearing minerals in thick beds, within mining depth of the surface. As a result of this discovery our potash problem has been solved for many years to come. Three large companies with plants located near Carlsbad, New Mexico are producing potash from this deposit at the present time. In addition to the gangue minerals, common salt and gypsum; the ore minerals consist of sylvite, polyhalite, kainite, carnallite and langbeinite. It has been estimated that within the small prospected area of the Permian Basin we have a reserve of over 125,000,000 tons of ore averaging better than 14 per cent K_2O in beds varying in thickness from 4 to 12 feet. It is reported in the Mineral Yearbook of 1939 that we used 467,000 tons of potash in 1938. The date 1938 is taken as an average normal use year. If we assume that in the future we will use double this amount for fertilizer each year, we can lean back in our soft cushioned chairs and rest easy about future supplies of potash as we have enough known reserves of high grade ore to meet our needs for over 100 years, and for over 246 years at the present rate of consumption. So much for potash.

A few years ago our "pet fear" affections were lavished as now, on oil,—the question then was what are we going to do when the oil wells go dry. That was about 20 years ago and the experts if you want to call them that estimated that we had a reserve of oil in ground storage, at the then rate of consumption, to last us for 14 to 20 years. We are now producing and using over one billion barrels of oil per year and going strong, with present methods of recovery. The Oil and Gas Journal reports that we discovered in the United States—254 new oil fields in 1939. By using the oil well method of recovery it is my guess that we have enough

MINING RECORD
DENVER COLO.
5/27/43

Magnesium Find In Utah Big Bonanza

Great Thompson Deposit Can Produce 1000 Tons Daily for 100 Years.

Undreamed of riches in new mineral wealth are being developed in mining areas of Colorado and other western mining states since war necessity has started western mining men on their all-out drive to produce the needed metals to win the war. Beryllium is in the spotlight right now since the government has recently advanced the bid for beryl ore from the old bid price of $30 per short ton for 10% ore to $120 per short ton. There is a rish for potential beryl producers. We hear the rumor that our government has learned important facts regarding new important uses for the metal since the latest Axis airplanes, recently shot down, have been gone over with the spectroscope and the extent of the use of beryllium in them has been learned. Their lightness, due to beryllium, has added to their efficiency.

New Mines Are Needed

With war costing astronomical quantities of all materials, we are running out of high grade ores in certain metals, says The Engineers Bulletin. Supplies of bauxite, best source of aluminum, may be used up within three years, according to a report recently presented in the United States News. The great Mesabi Range of iron ore which supplies about 85% of our needs, may be exhausted before 1950. Lead deposits in the tri-state area centering near Joplin, Mo., are nearing their end. The prospects for several other equally important minerals are just as startling.

That is why developments in the field of magnesium are being carefully watched with concern as well as interest. And no magnesium development today can compare with that in prospect in the area surrounding Thompson, Utah.

Magnesium alloys are far lighter and stronger than steel and with many advantages over aluminum, which until

(Continued on Page 3)

BERYLLIUM ORES ALSO MAGNESIUM ADD NEW WEALTH

(Continued from page 1)

very recently has been considered the wonder metal. Automotive engineers plan, for example, to produce cheap cars immediately after the war that weigh less than 1100 pounds, less than half the average car of today, which will get 50 to 60 miles on one gallon of gasoline. This car will be possible because of the planned extensive use of magnesium.

Good for 100 Years

At Thompson, the richest deposit of magnesium producing minerals ever discovered in the United States appears to be capable of producing 1000 tons a day for 100 years. The importance of this figure may best be realized when it is considered that the entire production of magnesium in the United States in 1942 was only 130,000 tons and the demand far exceeded the available supply for wartime purposes.

A test well completed late in 1942 shows that the Thompson bed is capable of producing 13,740,000 pounds of metallic magnesium and 13,260 tons of potash per acre. The report covering this test well, prepared by the Bureau of Mines, indicates a bed of 2000 acres.

To Drill More Wells

With this report and another prepared by Shreve, Anderson & Walker, Detroit engineering firm, before them, the Utah Magnesium Corp., owners of the bed, immediately authorized expenditure of $875,000 for two more test wells and other explorations, with the aim of developing as rapidly as possible a chemical plant of 1000 tons capacity at a cost of $10,940,000 and a metal reduction plant costing $50,353,000. This would permit production of magnesium metal at a cost of 12c a pound at the plant site, based on a 10 year amortization, which price would be further reduced by the incidental production of 104,400 tons of potassium chloride and 208,000 tons of chlorine a year.

Great Beds of Ore

In the 220 foot section there were 91.6 feet of carnallite beds varying from one foot to 13.5 feet in thickness and assaying from 10% to 80% carnallite. Many of the thick beds assayed better than 50% carnallite. The 91.6 feet averaged 39.5% carnallite or the equivalent of 36.15 feet of solid 100% carnallite.

The sylvite amounted to 47.5 feet in thickness, averaging 26% or the equivalent of 12.35 feet of solid 100% sylvite. Converted into K_2O. The potash in carnallite amounts to the equivalent of another 6.1 feet of solid K_2O, a total of 13.9 feet.

Current exploitation by the owners includes experimentation with different methods of extraction by introduction of fresh water, which will be pumped from the Green river with an 800 foot lift, this water to be introduced at controlled temperatures and the resultant brine recovered. The 1000 ton capacity is figured on the basis of 1½ molecules of water of crystallization.

S. F., CAL., PACIFIC BUILDER
MAY 25, 1943

Ruling on Sale of Magnesium Scrap

Under War Production Board order M-2-b, magnesium scrap can be disposed of only by sale to a producer or approved smelter of magnesium, the Aluminum and Magnesium Division points out. Sales of magnesium scrap to dealers (and hence purchases by dealers) are prohibited without specific WPB permission.

Although a dealer may not buy magnesium scrap for his own account, he can collect magnesium scrap as an agent for a magnesium producer or approved smelter, under an agreement with the producer or smelter.

Dealers who discover magnesium scrap received in other scrap metal should dispose of it by sale to a producer or approved smelter, or through a dealer who is an agent of such companies.

NEW YORK, N. Y., TIMES
Cir. 474,277
MAY 19, 1943

GRADE LABEL PLAN ON FOODS DROPPED

OPA Cancels Program for '43 Pack, but Dealer Invoices Will Show Quality

PROMISES CONSUMER AID

To Give Public Some Method for Judging Item—Other War Agency Action

Special to THE NEW YORK TIMES.

WASHINGTON, May 18—Mandatory grade labeling of this year's output of canned fruits and vegetables and their juices was eliminated today in a revision of the OPA's regulation governning the pricing and labeling of canned goods which it issued last January. The compulsory labeling provision continued in the order has been in a state of suspension for several weeks pending the outcome of a controversy which Prentiss M. Brown, Price Administrator, has described as "one of the hottest" in OPA's experience.

In relinquishing its demand that all canners include the appropriate "A," "B" or "C" grade designation on the labels of their canned goods, officials of the price agency explained that they had substituted an alternative method "for protecting the housewife against hidden price increase through up-grading."

Essential points of the plan, according to OPA officials are:

1. Canners must continue to grade their 1943 pack in accordance with the U. S. Department of Agriculture grades, and canners' maximum prices will continue to be set by grade.

2. Canners and wholesalers must indicate on their invoices the Gorernment grade of the product sold.

3. Retail commuity-wide dollars-and-cents ceilings, being issued by OPA in principal shopping centers through the country, will list canned goods bygrade, showing the housewife at a glance the grade and the maximum price of a particular brand.

Seek to Tie Prices to Grades

OPA officials said they were seeking to develop some feasible means of typing prices to grades at retail. Among proposals which have received study are the posting of grade by retailers and the segregation of merchandise by grade within the retail store.

Both organized consumer groups and representatives of labor have carried on an active campaign to persuade OPA to retain the mandatory grade labeling provision in its order. Opposing them were canners, representatives of grocery distributors and a number of members of Congress. Opponents of the grade-labeling regulation denounced it as a "reform measure" being foisted upon the canning industry under the guise of a war requirement emergency.

In its statement of considerations accompanying today's order the OPA held that labels which notify the consumer of the grade of the merchandise upon which the ceiling price depends would obviously make it easier to enforce price control. Pointing out that this was the purpose of the original requirement, OPA added:

"Strong opposition to grade labeling has been evinced by certain producers, however, on the ground, among others, that the additional labor and expense involved in grade labeling would curtail production.

"It has been urged that in this industry the substantial purposes of grade labeling can be accomplished by other means. In the judgment of the Price Administrator these other means will secure in large part the same enforcement advantages as the marking of the grade on the label and should be adopted."

Early products of the 1943 pack for which OPA has thus far established canners' maximum prices, based on grade, are canned peas, corn, snap beans, tomatoes, spinach and grapefruit juice. These were covered in a special price regulation, No. 306, which called for common grade labeling. The requirement for such labeling was removed from the regulation today through an amendment.

The amendment provides that no producers can pack more than one grade of the same canned fruit or vegetable under the same brand name without a distinguishing label sufficient to show that different grades are being sold under the same brand name. Only if a canner desires to pack more than one grade under the same brand will any change in existing labels be necessary. The only change needed then, it was added, would be the addition to the label of a distinguishing term used only in connection with one grade.

Other actions by the war agencies included:

War Agency Actions Listed

GARMENTS: About 60 per cent of some 500 garment manufacturing establishments investigated recently by the Office of Price Administration failed in satisfactory compliance with the price agency's requirements for maintenance of records pertaining to costs of materials and direct labor used in making women's, misses' and children's outerwear apparel, according to Thomas I. Emerson, head of OPA's enforcement division. As a result of the survey, Mr. Emerson said, some 150 garment makers in all parts of the country will receive formal license warning notices from district and regional offices.

CONSTRUCTION MACHINERY: More than 7,000 items of used construction machinery with an estimated value of $60,000,000 have been supplied for construction jobs during the past six months through the inventories of used construction equipment set up in the War Production Board's twelve regional offices, it was announced. The utilization of this machinery, officials said, has saved a corresponding amount of new equipment representing some 120,000 tons of raw materials.

HORSE HAIR: Use of horse mane hair (raw) for civilian purposes was prohibited by WPB. The action was taken to make the entire output available for the manufacture of mattresses, parachute pads and saddle packs for the armed forces.

MAGNESIUM SCRAP: Under WPB Order M-2-b, magnesium scrap can be disposed of only by sale to a producer or approved smelter of magnesium, WPB ruled. Sales of magnesium scrap to dealers are prohibited without specific permission.

TWINE: The War Food Administration said that farmers could expect to have reasonable supplies of hay rope, binder twine and other cordage for harvesting 1943 crops. The WFA added that a large part of the supplies were being made from substitute materials and would require more careful handling than in the past.

LITHIUM: Civilian requests for lithium compound for May were denied by the chemicals division of WPB because of the increased direct and indirect military requirements and curtailed output of the porduct.

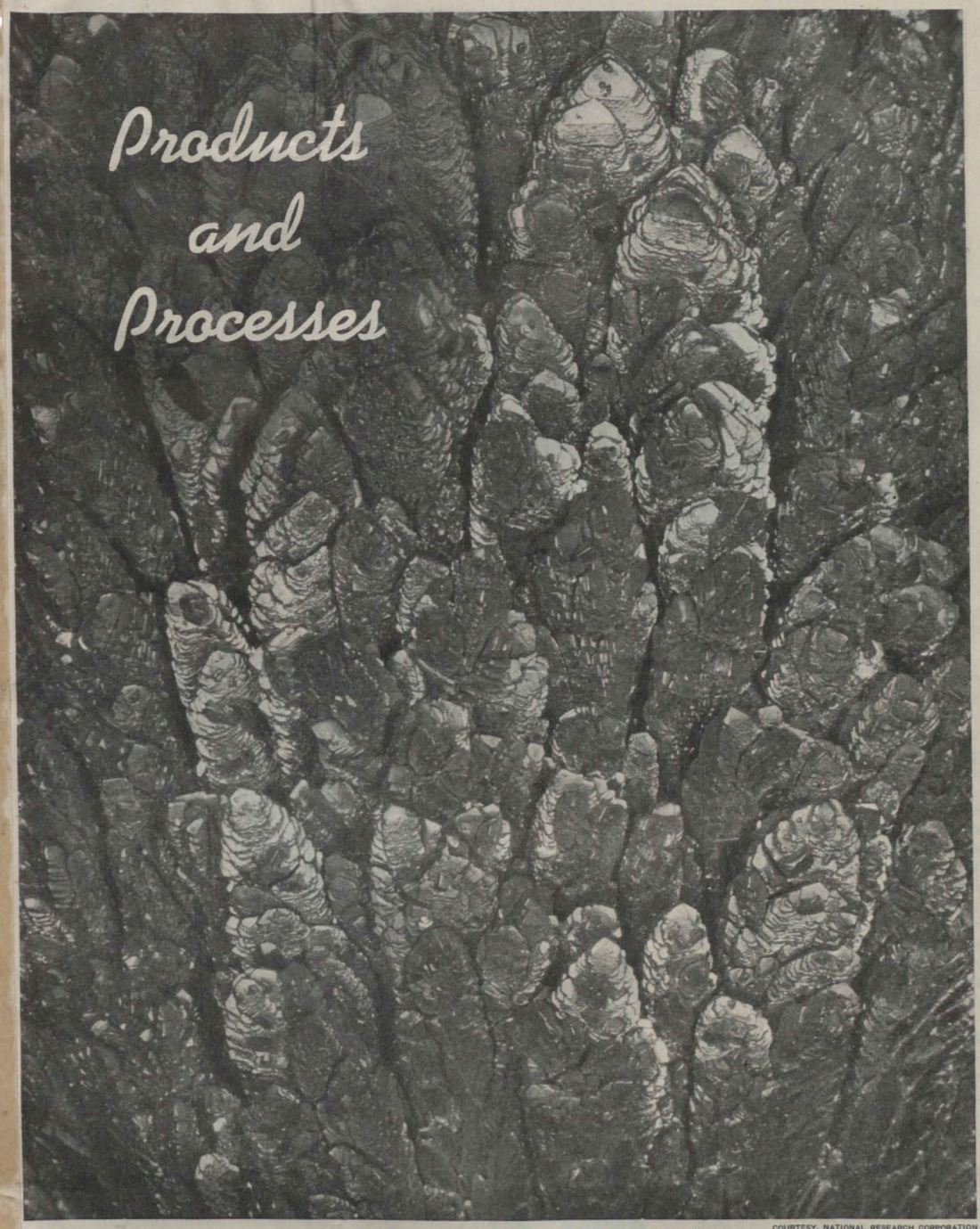
FUEL: Navy special fuel oil, which is sold exclusively to the United States Navy, was given specific dollars-and-cents ceilings by OPA. The ceilings are generally comparable to those for other residual fuels of similar gravities.

FEEDS: Maximum prices for sales of mixed animal and poultry feeds which contain corn were ordered reduced by OPA in New England, the Atlantic Seaboard and Southeastern States.

FARM EQUIPMENT: Restrictions on production of certain items of farm equipment requiring copper were modified by an amendment to WPB's Limitation Order L-170. The amended order permits the use of copper in manufacturing starting motors and headlights for farm tractors.

APPLES: Exemption from price control of sales and deliveries of sliced and peeled apples, which has been in effect since Aug. 8 last, was made retroactive from that date to May 11, 1942.

This article was clipped from
CHEMICAL & CHEMICAL ENGINEERING NEWS
New York City
MAY 25 1943



COURTESY, NATIONAL RESEARCH CORPORATION

PRECIOUS METAL—MAGNESIUM

Crystals of metallic magnesium produced from Dolomite by the thermal reduction of Dolomite under a pressure of one-hundredth thousandth of an atmosphere

PRODUCT ENGINEERING
"Edited for Engineers and Executives who Create, Design and Develop Machinery and 'Engineered' Metal Products"
McGraw-Hill, 330 West 42nd St., New York City
MAY 1943

PRODUCT ENGINEERING ✦ REFERENCE BOOK SHEET

Typical Properties of Structural Magnesium Alloys

Property	Typical Values**	
PHYSICAL PROPERTIES		
Specific gravity at 68 deg. F.	1.76–1.87	gm. per cc.
Weight per cu. in. at 68 deg. F.	0.064–0.067	lb.
Melting temperature (Liquidus)	1075–1200	deg. F.
Temperature of incipient fusion (Solidus)	760–1200	deg. F.
Boiling point*	2025	deg. F.
Crystal form	Close packed hexagonal	
Reflectivity for white light*	73	percent
MECHANICAL PROPERTIES		
Ultimate tensile strength:		
cast	14,000–39,000	lb. per sq. in.
wrought	32,000–51,000	lb. per sq. in.
Yield strength in tension:		
cast	4,500–22,000	lb. per sq. in.
wrought	14,000–38,000	lb. per sq. in.
Elongation:		
cast	0.5–10	percent in 2 in.
wrought	5–19	percent in 2 in.
Yield strength in compression:		
cast	4,500–22,000	lb. per sq. in.
wrought	11,000–27,000	lb. per sq. in.
Ultimate shear strength	11,000–22,700	lb. per sq. in.
Fatigue strength:		
cast	6,000–14,500	lb. per sq. in.
wrought	8,000–18,000	lb. per sq. in.
Modulus of elasticity	6,500,000	
Poisson's ratio	about 0.34	
Brinell hardness	33–85	500 kg. load, 10 mm. ball
THERMAL PROPERTIES		
Coef. of expansion, 68–212 deg. F.*	14.5	deg. F. x 10^{-6}
Coef. of expansion, 68–570 deg. F.*	15.6	deg. F. x 10^{-6}
Thermal conductivity at 212 deg. F.	0.16–0.33	c.g.s. units
Thermal diffusivity	0.38–0.75	c.g.s. units
Specific heat, 68–212 deg. F.*	0.249	cal. per gm. per deg. C.
Latent heat of fusion*	89	cal. per gm.
Heat of vaporization*	1340	cal. per gm.
Heat of oxidation*	6000	cal. per gm.
ELECTRICAL PROPERTIES		
Conductivity at 68 deg. F.	9.7–34.5	percent of annealed international copper standard
Resistivity at 68 deg. F.	5.0–17.1	microhms per cc.

* For pure magnesium. Values for structural magnesium alloys differ relatively little.
** Variations must be expected in practice.

IRON AGE
Philadelphia, Pa.
MAY 20 1943

NON-FERROUS METALS

. . . Market Activities and Prices

Dealers Move Large Scrap Tonnage

• • • **Scrap metal dealers** supplied 951,027 short tons of nonferrous scrap to consumers during 1942 according to the Bureau of Mines, United States Department of the Interior. More than half of this total consisted of copper and brass scrap, while the remainder was made up of lead and tin, aluminum, zinc, nickel and magnesium scrap.

A sharp dip in total dealers stocks during January and February, 1942, resulted almost entirely from the unloading of copper base scrap prior to new and revised price ceilings that went into effect Feb. 1 and 27. The general stock trend of all nonferrous scrap was upward throughout the rest of the year, and the rising flow of materials reflected not only the upsurge in war-time industry, but also the cooperation of a scrap-conscious public during the widely publicized iron and steel scrap drive.

Magnesium is a newcomer to the scrap dealer industry, and is not yet well known. Brass or iron turnings were occasionally reported by dealers as magnesium and although these entries were corrected whenever found, the figures presented may still be too high. Very little industrial scrap was handled by dealers during 1942, and the use of magnesium has not been sufficiently widespread to create a backlog of obsolete objects for salvage.

Dealers receipts of non-ferrous scrap from farms, households, factories, utilities, and other industrial sources of supply in 1942, gross weight, in short tons

	TYPE OF NON-FERROUS SCRAP METAL						
	Copper	Lead-Tin	Aluminum	Zinc	Nickel	Magnesium	Total
January	28,518	24,684	7,193	2,268	264	214	63,141
February	36,031	21,843	7,120	2,784	297	169	68,244
March	34,083	26,366	6,645	4,172	117	155	71,538
April	39,490	25,741	7,180	4,476	282	161	77,330
May	41,859	25,714	7,551	5,229	403	175	80,931
June	46,020	27,871	8,632	4,678	330	92	87,623
July	44,366	25,664	8,896	4,908	324	82	84,240
August	45,165	25,224	9,148	4,326	316	180	84,359
September	39,486	25,799	9,527	4,963	353	129	80,257
October	51,091	29,002	10,475	5,806	404	104	96,882
November	42,748	28,082	10,832	4,415	261	186	86,524
December	46,674	28,728	10,657	4,490	393	230	91,172
Total, 1942	495,531	314,718	103,856	52,515	3,744	1,877	972,241

Copper Recovery Nets 89,285 Tons

• • • **Through WPB's Copper** Recovery program 87,950 net tons of idle and excessive copper, both in primary and fabricated forms, have been allocated for war use to date. This amount represents two-thirds of the total amount of copper thus far reported under the program.

Of the remaining 44,640 tons reported, approximately 16,070 net tons consist of assembled products contaminated with materials not suitable for copper scrap. Arrangements for the movement of the rest are currently being made at Copper Recovery Corp.

Because of the ever-increasing demands for copper, the program is continuing without interruption. The original estimates of idle and excessive copper to be recovered ranged from 178,570 to 223,210 net tons. Thus far, 114,000 firms have been approached in connection with the program, and plans are being made to reach 98,000 plumbers, building contractors and their suppliers.

Of the 87,950 tons thus far allocated, approximately 27,670 tons are in the form of fabricated copper and copper-base alloy. Of the total allocated, 25,000 tons have been sold for use in present forms; 41,740 tons have been allocated for remelting, and 13,390 tons have been directed into the regular scrap market. Owners have been authorized to retain 7590 tons for essential production.

At present, outstanding purchase contracts for material not allocated total 5800 tons. Sources of idle and excessive material, include fabricators and distributors. Hardware stores have not yet been asked to report unless they also are wholesale distributors. The WPB Redistribution Division, which organized the program jointly with the Copper Division, has found it necessary to requisition copper in comparatively few cases. To date, only 85 tons have been requisitioned.

DAILY REPORTER
Milwaukee, Wisconsin
JUN 4 1943

World Position of U. S. in Production of Basic Commodities Improved by War

New York, June 3 (CCNS)—Wartime expansion has considerably improved the relative world position of the United States as regards production capacity and output of basic commodities, according to the National Industrial Conference Board.

Steel production in this country in 1940 amounted to 67 million tons, or 42.8 per cent of world output; in 1942 it reached an all-time high of 86 million tons, and will be further expanded to 92 million tons in 1943. Corresponding total steel capacity of the Axis nations is about 61 million tons.

This country produced slightly more than 200 thousand short tons of aluminum in 1940, or nearly a fourth of the world total, while the rate of production at the end of 1943 should exceed 1,000,000 short tons.

Other data released by the Conference Board show the U. S. produced 712.7 thousand short tons of copper from domestic ore, or an estimated 29.6 per cent of the world output. In 1942 it reached 1,100 thousand short tons. Production of magnesium in 1940 amounted to about 13 million pounds; ultimate wartime capacity is expected to be between 600 and 725 million pounds. In 1940 production of alloy steel ingots and castings was 4,966 thousand net tons; in 1943 it is expected to be from 13,000 to 16,000 thousand net tons.

The Board said that while was has given tremendous impetus to expansion in the production of alloy steels, magnesium and aluminum, after the war demand is expected to continue at a high level. Improved technology now permits steel makers to furnish alloy steels for a much wider range of special purposes than was formerly possible. Lowered production costs for aluminum and magnesium, coupled with their desirable physical properties of strength and lightness, are expected to give these metals important competitive advantages in the postwar markets.

Current expansion in synthetics is largely the result of wartime necessity. Synthetic chemicals are of vital importance in times of peace as well as in war. Future status of the synthetic rubber industry is indeterminate at present, depending upon postwar international trade policies. Peacetime uses of rayon have been increasing steadily in recent years.

TIMES—UNION
Albany, N. Y.
JUN 8 - 1943

New Gas Preferential List for Industries

WASHINGTON, June 7 (AP).—A revised list of industries to be given preferential treatment in the Eastern gasoline shortage area was issued today by the Office of Defense Transportation.

Approved by the War Production Board, it replaces the original WPB list issued May 30 and divides essential industries into four groups:

AA-1 (most critical).
A-1 (very critical).
A-2 (critical).
A-3 (important).

The AA-1 rating was assigned to trucks used in movements of Army, Navy, Maritime Commission, Coast Guard and lend-lease supplies for export by sea or air. Essential supplies for all other uses by those agencies will be given a preference on the same basis as other consumers.

The other three ratings were assigned to a wide variety of industries and services. Newspapers, periodicals and magazines were granted an A-3 classification when area deliveries have been pooled and combined in a manner approved by ODT.

ODT emphasized that even those carriers whose services are listed as essential will not be allowed additional gasoline unless they are utilizing their trucks "to the fullest possible extent." The preferred list will be used in connection with the recent reduction of 40 per cent in "T" rations for commercial vehicles.

FOOD IN A-1 CLASS

Among rating assignments were these:

Food production and distribution, including supplies from farms, food processing and food preservation:

A-1—Dairy products, fruits and vegetables (fresh and frozen); meat, fish, poultry, eggs (fresh and processed); bakery products, lard, shortening, animal and poultry feed and ice.

A-2—Cereals, flour, and meal, coffee, sugar, tea, and cocoa.

A-3—Fruits and vegetables (dried and canned) and extracts and spices.

Public utility services:

A-1—Electric energy, natural gas, manufactured gas and water.

Transportation services:

A-1—Supplies by truck for urban, suburban, interurban, common or contract or private carriers of passenger or freight; railways, waterborn shipping, airports and airfields, maintenance and repair yards or shops.

A-2—Automotive replacements parts parts, motor trucks, truck trailers; repair services for autos and autos and trucks.

A-3—Motor cycles.

Municipal services, including sewer systems and collection and disposal of sewage:

A-1—Sanitation, including plumbing, for war plants and war housing, fire and police services.

A-3—Courts and prison services.

Public communications services:

A-1—Radio communication and broadcasting, telephone and telegraph systems, postoffice and mail service.

A-3—Newspapers, periodicals and magazines when area deliveries have been pooled and combined in a manner approved by ODT; motion picture film, when area deliveries have ODT approval; government printing operations.

OTHER RATINGS

A-1—Hospitals, medical supplies, hospital supplies and services.

A-2—Undertakers' supplies.

A-2—Laundry and linen supply establishments.

A-1—Petroleum and petroleum products, except asphalt; asphalt A-3.

A-1—Production and distribution of coal and coke; retail deliveries of coal and coke A-3.

A-1—Metal and metal ore milling, smelting and refining of copper, zinc, mica, aluminum, abrasives (crude) mining, milling, smelting and refining of non-metallics. A-2, magnesium, iron ore, refractories, abrasives grain. A-3, lead, mining and milling, smelting and refining of other minerals and metals.

A-1 — Semi-fabricated products (iron and steel mills and products, copper products, aluminum products, and brass mill products; A-2, other metal products.

A-1—Industrial plants used for production, processing and distribution of the following: Natural and synthetic rubber, rubber products, components of aircraft, aircraft engines and parts, aircraft landing mate, small arms, artillery, ammunition, ships and ship parts, valves and steel pipe fitting, combat tanks and parts, combat vehicles and parts, military radio and radar, equipment, track-laying tractors, turbines, navigation instruments, reciprocating compressors and vacuum and power driven pumps, Diessel and gas engines, switch gear, optical instruments and lenses; fire control equipment; be arings; railroad, locomotive, car and equipment plants, Naval ordnance, extrusion presses, mechanical presses, rolling and other steel mill machinery, mechanics' hand service tools, metal cutting tools, reciprocating tseam engines, explosives and pyrotechnics, search lights, electric motors, large blowers and fans, welding rods, heat exchangers, machine tools and attachers, transformers, capacitators and switchboard appartus, cranes and hoists, forging machinery, gas cylinders, carbon graphite products surgical, medical, dental equipment and supplies, foundry equipment, heat treating equipment, power boilers, above 100 pound pressure, metal tanks, mechanical power transmission equipment, water purification equipment, wire and cable, electric control breakers, testing equipment and electrical measuring equipment, industrial power trucks, conveying equipment,, mining machinery and equipment, manufacturing gages and precision tools and instruments, bolts, nuts, rivets, washers, studs and screws.

RESEARCH LABORATORIES

A-2 fabricated pipe, industrial stokers, thermal installations used for fuel conservation, and insulation industry.

A-3, cordage rope and twine, construction on machinery and industrial equipment, industrial safety equipment, heating installatios for conversion from oil to coal.

A-1—Scientific and research laboratories, to the extent they are engaged in operations relating to war production.

A-1—Chemicals for war production.

A-1—(Lumber and lumber products) aircraft lumber, veneer, and plywood for British and American programs, marine plywood and airplane propellers. A-2—Amunition boxes, ties and bridge and trestle repair materials. A-3—Logging and sawmill operations.

A-1—(containers). Meta' strappingand steel drums (nev); A-2—Fire and corrugated box, fiber can, metal; A-3, wood containers.

A-3—Wood pulp, waste paper, pulpwood, if moved by farmers.

A-2—(Salvage) Non-ferrous metal scrap; A-3—Inedible rendering industry.

A-2—(Maintenance and repair)—Essential installations, maintenance and repair services for dwelling units, offices, warehouses, factories and buildings and essential equipment used by retail and service establishments.

JOURNAL OF COMMERCE
"America's Leading Business Newspaper."
New York City
JUN 16 1943

Stock-Piling and Mounting Production Of Rubber Step Up War Chemical Needs

The increased war requirements for nitrogen, toluene and magnesium will be met this year as new plant capacity comes into production. The enormous expansion in our alcohol needs, placed over the week-end by WPB Chairman Donald Nelson at 450 per cent over 1942, is being filled by industrial alcohol and beverage distilling plants.

Synthetic rubber is the foremost factor in the Government's tremendous alcohol demands at this time, and of the estimated 550,000,000 gallons to be made this year, it is now figured that 250,000,000 gallons, and probably more, will be used by the new rubber plants.

The bulk of the remainder, 300,000,000 gallons, will be required in the manufacture of smokeless powder and for shipment to other allied countries. Alcohol recovery at smokeless plants allows for the return of more than half of the amount first entering the process; however, it is estimated that 57 units of alcohol are required for the production of each 100 units of smokeless powder.

Stock Building

The WPB meanwhile is following a policy of building huge cushion stocks of alcohol and other chemicals, so that current production rates are not an indication of actual military consumption. One reason for this stock-building policy, it is believed, will be found in the transportation system and the War Production Board's apprehensions in that direction. It is also striving to accumulate surpluses wherever it can meet unlooked for breakdowns.

Magnesium production has increased from a few hundred tons before the war to an estimated 1943 capacity of 325,000 tons. About 70 per cent of this total is made through various electrolytic methods, the great bulk of the output being derived from seawater. It is reported in the industry that one of the largest producers was asked some time ago to reduce magnesium deliveries by 50 per cent as of June 1.

In view of tht estimated increase of over 200 per cent in 1943 requirements, therefore, it is conjectured that bottlenecks exist either in the fabrication of the metal or in the consuming lines. According to those who have surveyed the industry, the fabricating end is not as well developed as that devoted to the production of primary magnesium. A very large percentage of all primary magnesium produced is used in the form of powder for incendiary bombs, flares and tracer ammunition. Lend-Lease requirements are believed to be considerable.

Toluene Needs

Toluene or toluol needs have expanded more than 100 per cent, and Mr. Nelson indicates that the same increase will be necessary during 1943 for phenol. Toluene is the foundation for TNT and bombs, and its production has been greatly expanded by the petroleum industry and by the coke-oven by-product plants. In normal times our toluene requirements were not much above 25,000,000 gallons; in this war its use has probably risen more than 10 times that figure.

More productive capacity for toluene has been under construction this year, two of the largest plants for this purpose being located somewhere in California and in Texas. The latter State also has a plant which last year produced about one-half of the Allies' toluene requirements. Toluol production in the petroleum industry crosses with high octane gasoline processes in some respects, it was said in the industry yesterday. The explosives ingredient enters some aviation fuels, but the grade required is not up to the high specifications of nitration toluene which enters TNT. The new California plant began operations about a month ago.

Nitrogen and Fertilizer

The announcement that nitrogen demands for military production have been increased more than 100 per cent was not wholly expected in that industry. The general understanding is that ammonia production has been more than sufficient for the nitration of powder and explosives. Ammonia capacity was almost the first to be expanded by the Government during the early stages of the defense program which preceded our entry into the war.

Indications that the Government was not concerned over the ammonia situation were seen in the removal of restrictions last December on the use of ammonia solutions as fertilizer.

However, the whole nitrogen situation has undergone a marked change during the past two or three months, and the possible shifting of the war theatre to Europe and the Far East in the months to come may have a direct bearing on the ammonia, nitrogen and fertilizer situation. In the meanwhile there are still some new Government ammonia plant units which remain to be completed and placed in production.

MONTANA OIL AND MINING JR'L
GREAT FALLS MONT.
6/5/43

"Bill" Splan, Old School Prospector Of County Passes

Another old-time prospector passed out of Montana mining this week with the death of W. E. "Bill" Splan, miner and cowboy, at the age of 67 years. He has been active in Neihart mining district for many years and he devoted much of his time trying to extract magnesium metals from the limes of Logging Creek district. He succeeded in making a type of magnesium metal from dolomitic limes but he never revealed the process. He said it was "too simple to be true," indicating that he had accidentally come upon it without laboratory equipment. The particular piece brought to the Journal office would become a bright flare when exposed to a blow-torch. Nothing ever grew out of it although he filed claims on a considerable area of dolomite limes.

468
JUNE 3, 1943 628
JOPLIN, MO. NEWS-HERALD

Plenty of Magnesium, Too.

Easing the rubber situation, as indicated by official termination of the scrap rubber drive, undoubtedly was influenced in part by the opening of operations at one of the big synthetic rubber plants, where 150 pounds of rubber is being turned out every 30 seconds. When such a plant keeps busy it can turn out the material for a good many automobile tires in the course of a year.

At the same time, the government has cut production of magnesium at its sea-water factories by 25 per cent. Why? Because we now have more of this critical material than the arms program needs.

In part, this good showing for magnesium, which has caused no small amount of worry, is explained by the fact that at least one of the hurriedly-built plants has been turning a fourth more than it was estimated it could.

It is believed expanded bomber production may require an increased amount of magnesium, but nobody fears we won't be able to furnish it.

NEW YORK, N. Y., WORLD TELEGRAM, Cir. 434,603, Sun. 337,198
JUNE 11, 1943

Science Turns 'New' Metals to War Use

Mineral Deficiencies of Nation Supplied

By DAVID DIETZ,
Scripps-Howard Science Editor.

Metals practically unheard of in World War I are playing a key part in carrying America to victory in World War II, Dr. C. K. Leith, head of the metals and minerals branch of the Office of Production Research and Development of the WPB, reveals.

David Dietz.

Among them are magnesium, tantalum, molybdenum, lithium, indium and osmium.

Magnesium deserves its place at the head of the list because consumption of this metal is now 370 times what it was in World War I. In the form of light alloys it goes into airplanes, engines and numerous other weapons of war. In the form of powder it is a chief ingredient of many types of incendiary bombs.

It is estimated that the United States used approximately 200,000 tons of magnesium during 1942. It is using more in 1943.

The metal is being recovered today from a number of ore deposits, from brines pumped up from deep wells in various parts of the country and from the ocean. Extraction of magnesium from sea water marks the second great step in the mining of the oceans. The first was the recovery of bromine, which goes into ethyl gasoline and aviation fuels.

* * *

Tantalum, once tried as a material for the filaments of incandescent bulbs, but soon replaced by tungsten for that purpose, finds many uses today in the construction of the electronic tubes used in radios and in the radar, the device which locates enemy ships and planes by short-wave radio impulses.

Molybdenum is finding great use today in the making of alloy steels. It is taking the place of other alloying materials that were cut off by the situation in World War II.

Dr. Leith says that the production of molybdenum in this country has increased 6000 per cent and that it is now one of the principal alloying materials. "Moly" steels, as they are called, are expected to maintain their place in industry after this war is over.

* * *

As for lithium, indium and osmium, Dr. Leith says they are being used for special war purposes "that are yet partly secret."

"Hardly a month passes that new technological developments of war do not throw on the War Production Board a demand for relatively 'new' minerals," he said.

"The result of the present war demand is a draft on mineral resources on a scale without precedent in history. No nation has enough of all minerals.

"Practically every available ton of minerals is being used, even the minerals which we possess in great abundance. For the less-abundant minerals we are reaching into all quarters of the globe.

* * *

"We are developing low grade supplies at home which have never been used before. We are devising new processes for the concentration and improvement of these low grade materials and for their conversion into usable forms.

"We are using substitutes wherever possible and we are revising specifications to make it possible to use off-grade materials. The best technologists of the country, the great industrial laboratories are conducting investigations and laboratory tests."

JOURNAL OF CHEMICAL EDUCATION

"Sole official publication of Division of Chemical Education, American Chemical Society—Read by teachers everywhere."

New York City

What's Been Going On[1]

Magnesium. In 1939 the production of magnesium was 3350 tons. During the past year several new plants have been erected which have increased production 100-fold. The Permanente Corporation has a plant which uses the Hansgirg process, in which calcined magnesite is reduced with carbon at high temperatures (2000°C.). This temperature is reached by use of a 3-phase electric arc furnace. If the products were allowed to cool together the reaction would be reversed; so the magnesium vapor is diluted with a cold inert gas, in this instance natural gas. The magesium is recovered as a fine powder which must be consolidated before fabrication. The waste natural gas is used for fuel in the cement kilns adjacent to the magnesium plant.

Several plants are operating which have adopted the Pidgeon ferrosilicon process. In this method dead-burnt dolomite is briquetted with ground ferrosilicon (75 per cent silicon or higher) and heated in alloy steel retorts to about 1150°C. The magnesium is removed by vacuum distillation and is crystallizd in stainless steel tubes from which it is readily removed. The calcium is not removed under the conditions of operation. One of the problems presented by this process is the selection of the best and most economical type of retort, since the temperature of maximum efficiency is only slightly below the softening point of the special stainless steel used. The companies which use the method at present are the New England Lime Co., The Ford Motor Company, the Permanente Corp., and the Magnesium Reduction Company, with plants spread from coast to coast.

Basic Magnesium, Inc., the world's largest magnesium plant, began operation in the middle of last year and in November was placed under the management of the Anaconda Copper Mining Company. This plant uses as raw material magnesite ($MgCO_3$), which is mined, concentrated, and calcined at the site of the ore deposit. The oxide is converted to anhydrous magnesium chloride, which is melted and electrolyzed.

At the Freeport plant of the Dow Chemical Company, 85 per cent magnesium chloride, $MgCl_2 \cdot H_2O$, is used as feed in the electrolytic cell and is procured from sea-water. The magnesium in the raw water is precipitated as $Mg(OH)_2$ by means of lime and is then converted to the chloride. The Permanente Corporation is also turning to oceanic magnesium as a source.

Procurement of magnesium has not been the sole problem faced in this development; it has been necessary to erect fabrication plants, to train labor, and to provide adequate housing, often in remote sites, for the large number of workers required. In addition, it has been necessary to procure adequate electrical power for those plants which are based upon the electrochemical reduction methods. Despite this, progress has been so great that there will be enough magnesium produced this year for the very large estimated requirements.

Beryllium. Approximately twice as much beryllium is being produced as at the beginning of 1942, amounting to about seven tons a month. Much of this is used in beryllium-copper alloys for heavy bushings, instrument parts, springs, and diaphragms. Important new beryllium ores have been discovered in New Mexico and Illinois. Beryllium can be purified by melting it in beryllium oxide or graphite crucibles and distilling off the magnesium. Addition of 0.06 per cent of beryllium to platinum, for use as resistance windings in furnaces, increases the life of the coil from four to six times.

Selenium and Tellurium. The use of selenium in photoelectric cells is rapidly expanding; 100,000 pounds of selenium are also used annually in the production of pink and ruby glass. Selenium permits better transmission in the red part of the spectrum than does copper, and for that reason is preferred in railway signal lenses. It has been found that addition of an extremely small amount of tellurium increases the depth of chill in cast iron. Both selenium and tellurium may be added to copper-base electrical contact alloys to help prevent sticking.

Tungsten. New deposits of scheelite, calcium tungstate, have been discovered in Ontario through the use of short wave ultraviolet mercury vapor lamps. To the prospector, "lamping" at night has become as important as "panning."

Indium. Indium plating on such metals as cadmium, tin, lead, and copper results in an alloy surface which is more corrosion resistant than the base metal and has superior hardness or wearing characteristics. Indium diffused into silver or silver-lead bearings enhances antifriction properties and resistance to erosion and corrosion.

Precious Metals. Palladium hardened with five per cent ruthenium is now being employed for jewelry. Gold has received an unusual industrial demand because of its corrosion resistance, and a satisfactory electrolytic gold surface can be applied at a cost of one-half cent a square foot. Soft solder, containing two and a half per cent silver, the rest lead, is used in soldering the side seam of tin cans in place of the tin-lead solder previously used. Joints made by silver alloy brazing of 18–8 stainless steel sections are frequently stronger than the metals jointed. Silver bearings, used for the main motor bearings in aircraft, are produced by electroplating the casting. Platinum clad steel, with a platinum layer from 0.002 to 0.005 in. thick, is now used for corrosion resistance. Platinum alloy electrodes are used in spark plugs.

Alkali and Alkaline Earth Metals. A solution of lithium chloride is used in air-conditioning systems in public buildings and in certain types of naval vessels. The demand is so great that no lithium remains available for ceramics. Production of lithium salts from North Carolina spodumene has been started.

Strontium peroxide is an important chemical for making tracer bullets. This demand has stimulated experimental work on the recovery of strontium sulfate from the low grade celestite ores in Texas. Barium cements containing as much as 50 per cent barium oxide have high specific gravity and have been suggested for making concrete blocks to be substituted for pig iron for ships ballasts. These cements have greater mechanical strength than ordinary Portland cement and their relative impermeability to x-rays permits them to be substituted for lead for protection from such radiations.

Cesium, rubidium, and potassium can be used as well as selenium for cathodes in light-sensitive cells.

Radium. The Eldorado Mine at Great Bear Lake, Canada, has been reopened after two years of idleness and has resumed production of pitchblende concentrates as a source of radium and uranium compounds.

Tantalum. Tantalum is being used in relatively large quantities for making tantalum carbide machine tools and for fabricated tantalum equipment for the chemical industry.

Zirconium. Small-scale production of pure ductile zirconium has been started in this country. By reducing the complex salt, potassium zirconium fluoride, by means of potassium, or by reducing zirconium oxide by means of calcium, 99.7 per cent pure zirconium is obtained.

Mica. Mica is so essential for certain types of military equipment that sales of the better grades are rigidly controlled. Mica spark plugs are superior to all others for combat planes. A deposit of high quality muscovite was discovered in Ontario from which sound sheets up to two by three feet may be obtained.

L. S. FOSTER

[1] Abstracted from Annual Review Issue of *Mining and Metallurgy*, February, 1943.

Science Turns

Editor's Outlook

CONVERSION is one of the watchwords sure to survive the present war. It is not only playing an important part in the present conflict but in its very implication it is especially appropriate, for it sums up one of the many ideals for which we are fighting: freedom of individual initiative and its free mobilization in a national emergency.

All of us, little fellows and big, are turning our businesses, factories, professions, and occupations into war industries, voluntarily and enthusiastically. No, the result isn't one hundred per cent yet, but the heavier the bomber the longer the take-off run, and once we are in the air there will be plenty of reason for the enemy to dive for cover.

Our war is being fought by a *citizens'* army, built up from scratch around one of the smallest standing armies; it is an all-out, *national* war, in which everyone has a part, down to the housewife who saves her tin cans and grease scraps. And the efforts we are making in connection with these two considerations will, I believe, go a long way toward making us a better *citizens' nation*. We are proving that we can convert our own lives and industries to war use, thus proving that our democratic institutions are worth fighting for. If we fail in this, and find it necessary to recast our social, economic, and industrial institutions into a mold prefabricated for us by a higher military or government authority we confess ourselves conquered by the idealogy of our enemy, even though we storm his fortress and crush his military force.

The price of democracy—like that of freedom, its counterpart—is eternal vigilance. The infiltration of ideas is even harder to guard against than infiltration of wily enemy troops in the jungle. Unless he is careful, the scientist may become so preoccupied with the details of his own work that he will only wake up too late to realize that he is all tied up in red tape, well intentioned maybe, but no less binding, and certainly not of his own winding.

Too often, when a conscientious group gets its affairs in good enough running order to bring itself to public attention, along comes a governmental agency, generally dominated by "professional administrators," with the proposal to take over. If it isn't directly implied that the originators are incompetent, or unable to act in the public interest, they are at least indirectly insulted as unfitted to exercise the democratic prerogative of individual initiative.

If there was ever a good example of this it is the proposed Science Mobilization Bill, now before Congress. Scientists and technologists have already done most of the effective mobilizing for this war, if the news from the various fronts can be taken as any indication, and the results speak for themselves. Our small-parts manufacturers have done their jobs most satisfactorily *because* there were no party committees, commissars, or gauleiters to clutter up the place. Similarly, scientists and technologists, because they talk the same language, know where they are going and how best to get there, and have been making the best progress because they have been let alone by the professional politicians, administrators, and general hangers-around in the halls of government. That is our democratic way of doing things, and while it may perhaps be slow it gathers speed in its progress, until it is just about irresistible.

Too many of us succumb to the vacuum-cleaner salesman when he comes around in the spring, telling us that our last year's model should be replaced by a new one, because it is squeeky, full of dirt, and generally run down. As a matter of fact, we don't need new machinery; all we need is to clean and oil up what we have. We were under the impression, for example, that the National Academy of Sciences was founded, a long time ago, for somewhat the same purpose as the proposed Office of Scientific and Technical Mobilization.

Maybe you have seen fussy old Aunt Mollie bustling up to sturdy little Johnny, who is making an electric motor hum. Says Auntie: "Now, Johnny, that's a pretty big and dangerous piece of machinery you've got there. I'm sure you will hurt yourself and blow all the rest of us up. Now I'll take care of that and show you how to handle it." Of course, Auntie gets the wires tangled, blows a fuse, and blacks out the whole house.

However, there *is* a lesson in all this, and it particularly affects the education of our students of chemistry. We must be sure that their training involves a proper appreciation of social responsibility. If we are to maintain our right to the guidance of our own individual initiative—as of course we will—we must prove our ability to exercise it in the public interest. There has been a great deal of suspicion that science, technology, and industry have been grinding their own axes. To be sure, our early national history has shown that grinding your own axes gets the trees of the wilderness cut down. But it is true that we have not only to clear our own back lots, but the public forests as well.

The tendency in education, and in all world affairs, is toward the development of a more acute social conscience. This is not incompatible with individual initiative; it complements it. Some progress in this direction will undoubtedly be one of the results of the war; some will say that it was one of the *causes* of it.

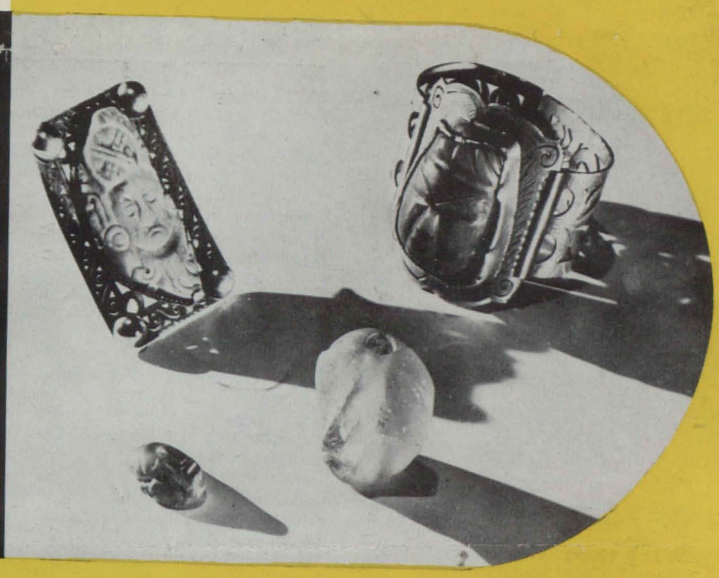
At any rate, the education of our future scientists and technologists must recognize it, in order that they may inspire public confidence and that the science and technology of the future may be free from the suspicions that are too common today.

★ PREHISTORIC FLUORSPAR JEWELS, FACES AND FIGURINES

FLUORSPAR
THE MINERAL WITH A PAST

BY

Col. Fain White King



REPRINTED FROM PITTSBURGH PLATE PRODUCTS, MARCH-APRIL 1942

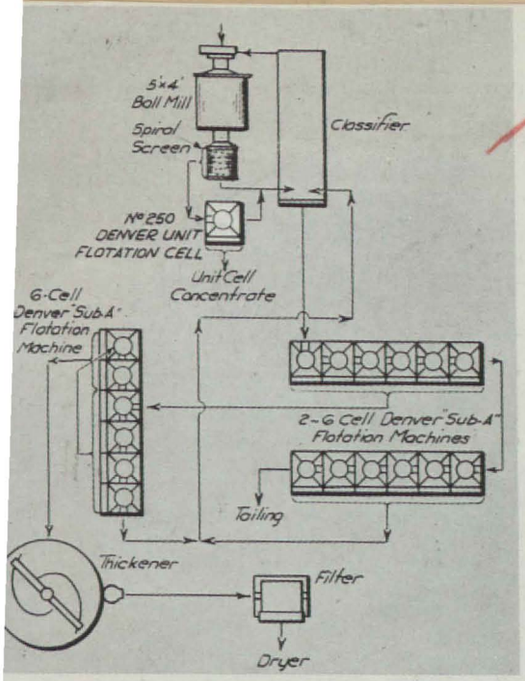
THE AUTHOR, Colonel Fain White King is Research Director, Division of Archaeology, State of Kentucky, with headquarters at Wickliffe, location of the world's greatest collection of Fluorspar jewels. His wife, Blanche Busey King, authored the book "Under Your Feet" . . . story of the American Mound Builders . . . published by Dodd, Mead & Company.

GEOLOGISTS MAKE MINUTE SEARCH FOR FLUORSPAR JEWELS AND OTHER ARTIFACTS IN THE INDIAN MOUNDS.

ALTHOUGH war has brought on shortages and outright loss of source of supply of some vital materials such as rubber and tin, America has a corner on the fluorspar supply. This mineral, necessary in the production of steel and aluminum, is mined in Kentucky near Marion and Salem and across the Ohio river in Illinois near Rosiclare. The mines in this district produce more of this precious mineral than the output of the rest of the world, and 79 percent of the total amount produced in the United States.

The use of fluorspar extends over a period long before Columbus came to America. The Mound Builder used it as his most valuable jewel. He adored its varied colors. With abrasives and harder rocks he fashioned it into shapes of animals, birds, and human figures. The colors are as varied as a rose garden in full bloom, with the additional colors of purple and blue. Blood red, pink, yellow, and deep purple, are the most prevalent shades. The pink afterglow of the sunset was found by the prehistoric people in this most precious material and no doubt satisfied their

(Continued on Page 10)



OPERATING NOTES

AFTER several years of operation, a Denver Unit Flotation Cell was placed in the flowsheet shown above. Without making additional changes in the circuit the Unit Cell is responsible for an increased plant recovery of from 1 to 5 percent. This is attributed to directly removing the mineral as soon as free, thus eliminating overgrinding and subsequent slime losses. Many minerals such as molybdenum, when overground, are easily coated by colloids; thus making recovery difficult and a high grade concentrate impossible.

The importance of making a granular product was definitely illustrated in this plant, for not only was the thickener and filter efficiency increased, but drying costs were reduced to 75 percent of those encountered with the fine slime concentrate formerly produced.

Grade of product from the Denver Unit Flotation Cell was found to be higher than ordinarily produced in the plant. This machine quickly paid for itself.

LETTERS

"The Denver Mineral Jig is tops as far as operation is concerned and it already handles a real product which is a commercial product. . . . You can send anyone in the United States here to see what a Denver Mineral Jig can do with a ⅜-inch separation. It can be done. . . . I don't think there is a better jig in the world than the Denver Mineral Jig and this one has shown its capabilities beyond question."

METALS AT WORK - MAGNESIUM

LITTLE did the men who built Boulder Dam realize that their masterpiece of engineering skill was paving the way for an even greater project — the world's largest magnesium plant.

Situated in a blistering Southern Nevada desert, where a year ago there was no water, no power, and only a few houses, this gigantic plant, Basic Magnesium, Inc., already is producing the metal and an equally vital chemical, Chlorine.

Without the energy generated by Boulder Dam, 15 miles distant, and the water it impounds, the magnesium plant could not exist. But just as important are Nevada's vast deposits of magnesium ore, close at hand.

A chemist with apparatus a yard square can make magnesium, but producing it in quantities required for global war is something else. Basic Magnesium, while only one of numerous such plants, as the largest of them all represents a new triumph of American ingenuity and inventiveness.

It cost more than $100,000,000, required 50,000 tons of structural steel, and has the largest single electrical installation in the history of American industrial construction.

It employs nearly three times Boulder Dam's maximum working force, housing it in a new model village of 1,000 demountable homes, a camp accommodating 6,000 single men, trailer camps, motor courts, and hotels and homes in Las Vegas, 15 miles away.

Children attend a new 12-grade school. The sick are treated in a new concrete hospital. A restaurant, large enough to seat 2,200 persons, serves 25,000 meals a day.

It was necessary to bring power and water over the mountains to the plant site. Bleak hills were straddled to carry the electricity generated at Boulder Dam. A huge pipeline brought water from Lake Mead to two huge new reservoirs. A 26-mile railroad and 50 miles of temporary dirt road were built.

You get some idea of the tremendous size of Basic Magnesium, Inc., when you consider that this plant soon will produce 30 times as much magnesium as did the entire world six years ago.

Magnesium, although eighth in abundance among the elements, does not exist in a free state. It was discovered in 1808, and first separated into the pure metal just before the turn of the century. But as recently as the 1920's, work with the metal scarcely had passed the laboratory stage. Now that it can be produced in quantity, its value to our war effort is incalculable.

Magnesium is used for tracer bullets, flares and incendiary bombs. Because it is so extremely light — lighter than aluminum—it is used in alloys wherever possible, in airplanes, engines, wings, fuselages, mountings, gas tanks, panels, flooring, wheels, ventilating ducts, dust covers, to name a few. It has become the miracle metal of the war.

There is no mystery about producing magnesium. In simple terms, it is the transformation of an oxide into a chloride, and the passage of an electric current through the chloride. Magnesium and chlorine are the result.

The magnesium oxide is mined and concentrated in a Nevada desert valley and shipped to the Basic plant, where it is ground, mixed with coal, peat moss, salt and a few other substances, and molded into pellets the size of walnuts or small bricks.

These are placed in kilns and dehydrated then melted in a large cylindrical furnace into which a stream of pure chlorine gas is injected.

The result is a molten mass of magnesium chloride which is tapped off and placed in electrolytic cells resembling large tiled bathtubs. A strong electrical current is passed through the mass, separating the magnesium from the chlorine.

Ordinarily copper would be used to carry the powerful electrical current through the molten magnesium chloride, but because there is an acute copper shortage (copper makes the best shell casings and we're making a lot of shell casings) it was necessary to find a substitute.

It turned out to be silver—1,600,000 pounds of it—in planks fabricated in Baltimore. At 71 cents an ounce, that is better than $18,000,000 worth.

In peace time, use of silver for such a purpose would not make sense. In an all-out war when it frees copper for shells it does make sense, particularly when such nonconsumptive use does not impair the value of the sterling.

Thus silver comes out of the vaults, back to the state where it was mined.

—Science Digest.

This article was clipped from
SOUTHERN FLIGHT
Fort Worth, Texas
JUN 1943

WPB Plans New Aircraft Control System to Increase Heavy Bomber Production

A new aircraft production planning and control system, to operate under the WPB Aircraft Production Board, for increased production of the heavier types of combat aircraft, was adopted at the conclusion of a three-day conference of airplane manufacturers, aluminum fabricators, and Army, Navy and WPB officials with the Aircraft Production Board in Washington recently, Charles E. Wilson, chairman of the APB, announced.

A planning and control group will be established, to include representatives of airframe manufacturers, parts producers, Aircraft Scheduling Unit, and the Aluminum and Magnesium Division of WPB, and among its jobs will be studying inventory positions in the field of fabricated parts where the demand is increasing, in order to "bring out the greatest possible production of certain parts required for the manufacture of the heavier combat ships and their proper distribution to the aircraft manufacturers," Wilson stated.

This article was clipped from
CENTRAL MANUFACTURING DISTRICT MAGAZINE
"Official publication of the Central Manufacturing District"
Chicago, Ill.
JUN 1943

Magnesium---
Aid to a Better World

EVER HEAR OF MAGNESIUM? To the average American of today the word "magnesium" is as new as was aluminum a quarter of a century ago. An army of carefully trained salesmen made aluminum a household word by demonstrating its culinary qualifications to millions of housewives *in little neighborly gatherings, first in* one home and then in another. Those suave salesmen conjured up highly tasteful meals out of their array of pots and pans and promptly harvested profitable crops of orders for their wares, after which they presented a pot or pan to the housewife whose home had been used for the demonstration.

The story of magnesium is only beginning to be written. Although discovered by the English scientist, Sir Humphrey Davy in 1807, it remained for a long time a laboratory curiosity. Europe was producing it commercially at the dawn of the twentieth century and production in the United States did not start until 1915.

At first it was used principally to make flashlight powder and the recent era of picture filled "tabloid" newspapers was ushered in by the noisome flash guns of a vast army of prying photographers to whom nothing seemed sacred, not even the inmost secrets in the lives of the socially elite. Magnesium lent its meteoric brilliance likewise to fireworks and flares, but save for those few major applications it did not impress itself upon the public mind to any marked degree.

Daily we tread on magnesium or dip into it when we swim in the ocean. Two per cent of the earth's crust is magnesium, but the problem is to extract it. Sea water contains thirteen one-hundredths of one per cent of magnesium and, of the commerical metals in the earth, only iron and aluminum are more plentiful than magnesium but, although it is one of the most abundant metals in the earth's crust, not one person in a thousand ever has seen it. One reason is because nowhere in Nature does it occur as a metal. It always is found in combination with other elements — in minerals widely distributed throughout the world, in saline deposits, in sea water and lake water. It is a silvery white metal which the chemist designates by the rather cryptic symbol "Mg".

The airplane gave magnesium its big chance in many ways. In its search for a metal with utmost lightness and strength, the aviation industry found its answer in magnesium, the production of which has increased phenomenally in recent years with the tremendously accelerated production of aircraft. Light weight materials are all important in airplane construction. They save precious weight for more bombs, more fuel and more men. Magnesium is the lightest common metal—a third lighter than aluminum—and today the nation's entire production of magnesium is used in the war effort.

This production soon will exceed the combined output of the Axis nations which, long before the United Nations realized their peace and liberty were threatened by a pair of European desperadoes, had begun the production of magnesium for use in airplanes and other implements of war. In the latter category is the incendiary bomb. Dropped by the Nazis in great quantities on London, such missiles not only caused widespread destruction but burned deeply into the public mind, abroad and in this country, a consciousness of magnesium's part in war. Only a comparatively few English folk recognized magnesium's presence in the twisted wreckage of a raider shot down,

SAN FRANCISCO, CAL., NEWS
Cir. 107,062
JUNE 21, 1943

New Process Used On Canned Peas

NEW YORK, June 21.—A new canning process which keeps peas in the cans so green they have been nicknamed "greenies" is described in the current issue of Nutrition Reviews published here by the Nutrition Foundation.

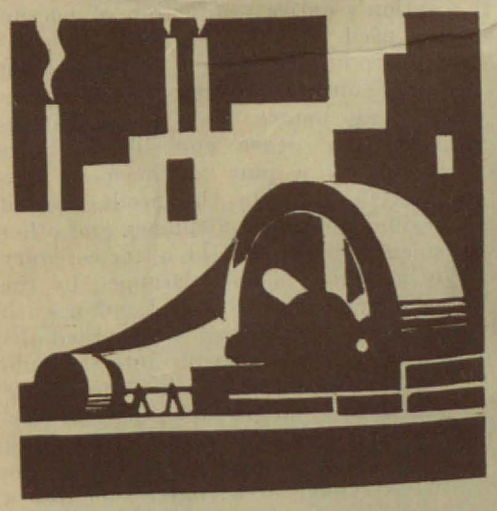
The process which keeps peas from taking on the familiar "olive drab" color of the usual canned peas was developed by J. S. Blair and T. B. Ayres of the American Can Co.

The reason canned peas lose the intense green color of peas picked from the vine is because during the ordinary shelling, canning and storing, they lose their chlorophyll. This green coloring matter loses magnesium and is gradually changed into pheophytin.

The new process, reported in detail in Industrial and Engineering Chemistry, involves, among other things, the addition of about one-tenth of a per cent of magnesium hydroxide in the packing medium.

but untold thousands of them were forced to battle its mighty destructive force as it burned its way through their rooftops and into their homes which are the very heart of England itself. Ignited by a charge of thermite burning at 3000 degrees, Fahrenheit, those cylindrical "sticks" of magnesium burned with an intensity that set fire to everything with which they came in contact and struck terror into the hearts of our noble allies second only to that caused by a block-busting demolition bomb. The very lightness of magnesium made it possible for raiding planes to carry great quantities of these incendiary bombs.

Such was the average person's greatest single contact with magnesium — either directly, as in the case of the immediate victim, or indirectly, as in this country, where stories of its destructive nature shocked a sympathetic American public when carried into homes by press and radio. Leaders of the courageous Britons knew the way to minimize fear of a force like magnesium was to teach the intended victims how to handle it, and so the shovel, the rake and the sand bucket became the standard equipment of every British home from the commoner's humble cot to Buckingham Palace. Every man, woman and child was taught by civilian defense organizations how to combat incendiary bombs. The same campaign of education was extended to this country as soon as we entered the war.



In order to be destructive as an incendiary, magnesium must be ground into a very fine powder. In solid form, such as cast and wrought shapes, it is almost impossible to set magnesium on fire. To return to the matter of production, it has been said this country's output soon will exceed that of all the Axis powers. Back in 1915 the United States produced only 40 tons of the metal, while this year estimated production will reach 250,000 tons! If you want to visualize the phenomenal growth of magnesium production during its brief history in this country, pick up your desk ruler which usually is divided into sixteenths of an inch. One of those little lines which mark off the fractions would represent the 1915 output of 87,500 pounds—not tons. The 1920 production was barely 50 cent more, while the 1925 total of 245,000 pounds was scarcely double that of the preceding five-year period. The 1930 production of 1,173,557 pounds represents a space of one-sixteenth of an inch on your desk ruler, and so offers the first appreciable comparison. By 1940 it had risen to 12,500,000 pounds (one-quarter inch on your desk ruler) and by 1942 it had leaped to 100,000,000 pounds, represented by one and three-eights of an inch on the measuring stick. This year's production, by such a ruler chart, would measure six and five-eighths inches, or about 500,000,000 pounds!

Magnesium is the lightest metal in commercial use, by a considerable margin, This saving in weight is important in anything that moves or must be lifted. It weighs only two-thirds as much as aluminum, one-fourth as much as steel and only one-fifth as much as copper. In most cases, however, the weight of a metal is not as important as its strength. Magnesium alloys are both light and strong. If a given volume of magnesium alloy will do the same job as the same volume of some other metal, it generally is found to be cheaper to use the magnesium. A cubic foot of lead weighs 708 pounds whereas a block of magnesium of the same size weighs but 108.7 pounds, and a cubic foot of the latter now costs less than a cubic foot of the former. Between these two widely separated extremes lie such other metals as aluminum; 168.5 pounds; cast

iron, 445.1; zinc, 445.7; tin, 455.1; nickel, 555.0; and copper, 557.0 pounds. Each of these metals, of course, has certain qualities which make it useful in particular fields and they have been chosen only to show relative weights.

In dozens of vital places from the nose to the rudder of an airplane, magnesium reduces weight. A fourteen cylinder, 1,700 horsepower airplane engine, for example, is 90 pounds lighter when magnesium is used wherever possible, in place of aluminum. In a bi-motored plane, this saving in engine weight alone is the equivalent of an extra man or more bombs or more fuel, all of which spells more speed and range to defeat our enemies. Magnesium readily dissolves various other metals and thus produces alloys of great lightness and strength. Magnesium alloys contain approximately 90 per cent of magnesium, with varying amounts of other metals. Magnesium alloys are extremely versatile. They can be sand-cast or die-cast, extruded and rolled into shapes, rods and tubes. They can be forged, welded and rolled into flat and special tapered sheets. They are strong, some of them have tensile strengths as great as the girders in skyscrapers. Their strength in relation to weight is even more impressive. Magnesium and its alloys can be machined more rapidly than any other metal, an advantage in wartime production.

Unlike our enemies who spent years in the accumulation of the vast quantities of implements of destruction which they loosed upon an unsuspecting world several years ago, we not only are using our vast mineral and industrial resources to turn their very weapons against them, but we are looking ahead to the time when magnesium, which the Axis has used to spread terror and destruction, will enter into our peaceful, everyday life as the means to build lighter automobiles which will be more economical of fuel and tires; more portable tools, luggage, radios, vacuum sweepers and hundreds of other items for everyday use. We foresee structural beams which a man can lift and yet will enable us to push magnificent buildings skyward. We visualize beds a child can move about with ease. We dream of a thousand other things which will be possible when our liberty no longer is threatened.

California has an important part in this vision of a new era. In its peaceful Santa Clara foothills, on one of the state's few ever-flowing streams to which the early Spanish explorers gave the musical name "Permanente" (the accent is on the next to the last syllable), is a plant which takes dolomite that is quarried in the hills near Natividad, crushes and calcines it in kilns to drive off the carbon dioxide. Then it is trucked to the Pacific ocean where it is mixed with sea water that adds other qualities. At Permanente the resulting magnesium oxide (a white powder) is mixed with petroleum carbon and ultimately converted into magnesium by one of the several processes for producing this young giant of a metal which has grown as a result of the war, and which will be put to work by us in peacetime.

BUSINESS BRIEFS

U. S. Railways Set New Mark

★ For the fourth consecutive year, railroads in the United States have set new records in the average number of tons of freight per carload, according to the Association of American Railroads. The average for 1942 was 40.1 tons per car, as compared with 38.2 in 1941 and 37.7 in 1940. This record resulted from the country-wide program in which shippers and receivers of freight have united to produce maximum efficiency in carloading and also from General Order No. 18 of the Office of Defense Transportation which requires cars to be loaded more heavily than in the past.

Ad Tells Plastics Future

★ "The farm will grow the materials for better home appliances," says a current advertisement by Delco, a division of General Motors. The ad, headlined with the hopeful phrase "There's a Great Day Coming," depicts a harvest scene and goes on to state: "No one questions but what synthetics, especially plastics, will play a big part in building better postwar home appliances, yet few realize how many of these materials literally will be grown from seed." After reminding the readers that coal, a vegetable deposit, has been for years a big mineral source of plastics, the ad goes on to say science has eliminated this middle step and makes plastics in new abundance direct from fresh vegetation. Soy beans, peanuts, wheat and trees are among the farm products which provide these materials for industry, the ad concludes.

Tire Pumps Join "Dodo"

★ Did you ever notice the little valve topped cylinders on Army jeeps? They are not filled with oxygen for medical emergencies, but contain compressed air for tires. Printer's Ink, in calling attention to them, says postwar motorists will

carry similar cylinders, fill them at gas stations and use the air to inflate their own tires before they start on trips. The rubber conservation program has made us "inflation conscious" and peacetime motorists will look to their air as they have to gas, oil and water in the past, but the old back breaking tire pump will be forgotten.

High Octane Gas Patents For All

★ Small refiners now will be able to manufacture high octane gasoline at low costs which will tend to revolutionize the whole automotive industry. This results from the recent filing by the Department of Justice of a supplemental judgment against the Standard Oil Company of New Jersey which makes available to all persons at a reasonable royalty rate, certain of the firm's patented processes for the manufacture of high octane fuel.

Citizens Shown Why Joy Rides Are Out

★ American citizens, once accustomed to piling on a train and heading for one place or another on a pleasure jaunt, readily could see why wartime joy rides via rail are cut out for the duration by reading between the lines in the Office of War Information's recently published 22-page summary of "The Battle of Transportation in the Continental United States," says Time (May 3rd issue).

Belmont, Cal. Courier
Cir. 1,265
JUNE 4, 1943

THE POCKETBOOK of KNOWLEDGE

by TOPPS

This article was clipped from
BOSTON NEWS BUREAU
"The only daily financial newspaper published in New England."
Boston, Mass.
JUN 29 1943

Goodyear Tire Developing New Post-War Products

Goodyear Tire & Rubber is not relying on tires and other rubber products alone to sustain sales in the post-war period. Although a tremendous backlog is being built up for tires as a result of restrictions on their sales, Goodyear is pushing an intensive research program designed to develop new products, especially those with qualities that make them more or less non-competitive. In addition, the company has become a leading factor in aircraft manufacturing. Goodyear's research and development work which is now centered in a new $1,000,000 laboratory in Akron, covers airplanes, lighter-than-air craft, magnesium, aluminum, plastics, resins, adhesives, radios and prefabricated houses.

Last year Goodyear's volume of business, amounting to $451,000,000 was at a new high. Moreover, 60% of the sales were made during the second half and it is believed that this upward trend has continued during the first six months of 1943. Earnings in 1942, the largest since 1929, were equivalent to $5.46 a share on the common stock, against $4.65 a share in 1941. The 1942 earnings, which totaled $14,300,000, were after a provision of $14,000,000 for renegotiation and $8,000,000 for losses in the Far East and contingencies. Reflecting the improved outlook, the company has declared dividends on the common stock totaling $1.50 a share thus far in 1943. Dividends for the entire year 1942 were $1.25 a share.

SAN FRANCISCO CAL., NEWS
Cir. 107,082
JUNE 12, 1943

New Metals Help Allies Win the War

BY DAVID DIETZ
Scripps-Howard Science Editor

Metals practically unheard of in World War I are playing a key part in carrying America to victory in World War II, Dr. C. K. Leith, head of the metals and minerals branch of the Office of Production Research and Development of the WPB reveals.

Among them are magnesium, tantalum, molybdenum, lithium, indium and osmium.

Magnesium deserves its place at the head of the list because consumption of this metal is now 370 times what it was in World War I. In the form of light alloys it goes into airplanes, engines and numerous other weapons of war. In the form of powder it is a chief ingredient of many types of incendiary bombs.

It is estimated that the United States used approximately 200,000 tons of magnesium during 1942. It is using more in 1943.

The metal is being recovered today from a number of ore deposits, from brines pumped up from deep wells in various parts of the country, and from the ocean.

Extraction of magnesium from sea water marks the second great step in the mining of the oceans. The first was the recovery of bromine, which goes into ethyl gasoline and aviation fuels.

Tantalum, once tried as a material for the filaments of incandescent bulbs, but soon replaced by tungsten for that purpose, finds many uses today in the construction of the electronic tubes used in radios and in the radar, the device which locates enemy ships and planes by short-wave radio impulses.

Molybdenum is finding great use today in the making of alloy steels. It is taking the place of other alloying materials that were cut off by the situation in World War II.

Dr. Leith says that the production of molybdenum in this country has increased 6000 per cent and that it is now one of the principal alloying materials. "Moly" steels, as they are called, are expected to maintain their place in industry after this war is over.

As for lithium, indium and osmium, Dr. Leith says they are being used for special war purposes "that are yet partly secret."

"Hardly a month passes that new technological developments of war do not throw on the War Production Board a demand for relatively 'new' minerals," he said.

This article was clipped from
COMMERCE
"Business Voice of the Middle West"
Chicago, Ill.
JUN 1943

The Editor's Page

MUCH less has been heard in recent years about the alleged antagonism of "human rights versus property rights," perhaps because the trend of national legislation and administration since 1933 has placed such emphasis on the former that only property owners themselves have felt much exorcised about the latter. Perhaps, too, it is becoming more generally recognized that the "antagonism" is largely fictitious and that property ownership and management, with due regard to the rights of other persons, is a fundamental human right in itself, unless the philosophy of Karl Marx is accepted as an alternative.

It is true that the Four Freedoms do not include any specific reference to the right to own property and to enjoy its lawful use, and former President Hoover has pointed out that without economic freedom the other freedoms cannot exist. There may be an implied concession to that right in the "freedom from fear" and the "freedom from want," although not necessarily if these phrases be interpreted in terms of paternalistic governmental policies.

So it was like a fresh and invigorating breeze to believers in private property and protection of the rights of ownership to read President Roosevelt's telegram to the rubber union leaders in Akron, directing them to call off the strike against the tire companies. The President said: "If this strike is not ended . . . your government will take the necessary steps to protect the interests of the nation, the legal rights and properties of the companies involved, and the rights of the patriotic workers who desire to work."

After the unmolested sit-down strikes of a few years back, the reference to the legal rights and properties of the companies may represent some sort of turning point in political trends.

An Economy of Plenty

THE National Industrial Conference Board has prepared some highly significant figures on the wartime expansion in the United States capacity for production of several basic commodities. According to these figures, steel production in this country will amount to some 92,000,000 tons in 1943. This compares with production in 1940 of 67,000,000 tons. Our aluminum production this year is expected to exceed a million short tons, compared with 200,000 in 1940. Copper produced from domestic ore totaled about 1,100,000 short tons in 1942, the board estimates, compared with 712,700 tons in 1939. Production of magnesium has expanded from 13,000,000 pounds in 1940 to an estimated 600,000,000 to 725,000,000 pounds for 1943.

These estimates are only representative of the tremendous boost the nation's productive capacity generally is getting because of the war. With the physical expansion, too, have come tremendous advances in technology and a great increase in the national pool of skilled and semi-skilled labor.

Here are the elements out of which an economy of plenty is made. Combined with our favorable raw material situation, this country should be prepared at the conclusion of the war to provide a standard of living surpassing anything that we, or any other nation, have ever known.

Let us hope that when the war is over, instead of re-embracing such economic fables as the "matured economy" theory or the fallacy that prosperity comes from destroying production, the country goes all out for the greatest production possible at the lowest prices that will return a fair profit. If government, business, labor and agriculture all adopt that policy the nation's real potential can be realized.

Another Rabbit

THE latest move on the price front—the rollback of certain food prices accompanied by the payment of subsidies to affected producers and wholesalers—is but one more patch in the crazy quilt which Washington advertises as price control.

From an economic standpoint, the rollback has two serious shortcomings. First, it does not encourage production of shortaged goods because it makes profit prospects even more meager and uncertain. Second, it adds to, rather than detracts from, the inflationary gap. The lowered price not only tends to increase demand for goods in which there is a shortage, but also leaves unabsorbed that portion of excess purchasing power which would have been taken up by the higher price. Meanwhile, through the subsidy payments the government is expanding purchasing power.

From the standpoint of appeasing organized labor, the rollback procedure holds no greater promise. It had hardly been announced when some of labor's spokesmen proclaimed that the price reductions were not big enough. The wave of strikes and wage demands in the latter part of May testify further to the ineffectiveness of the measure as a means of forestalling the seemingly insatiable demands of certain elements of organized labor.

All in all, this latest step of the would-be price controllers simply reemphasizes that we have not yet gotten a well-planned program to control prices. More than two years after the sharp rise started the government apparently has no policy except expediency and improvisation.

Alan Sturdy

COMMERCE

HERE - THERE and EVERYWHERE

• **Glass Breakers, Beware!** — Perhaps it took the rubber shortage and tire rationing to overcome inertia, but some cities are at last moving to do away with the broken-glass nuisance. Salem, Ore., has a new ordinance, under which a person may be fined up to $60 or jailed for as long as 30 days for depositing or leaving broken glass on Salem streets. The regulation is similar to one adopted not long ago by Boise, Ida., where anyone convicted of leaving bits of glass on a street after causing the breakage is liable to a fine of as much as $100. Some cities have difficulty in enforcing waste-paper regulations. Motorists will hope for better success in the case of broken glass.

• **Training Methods Pooled** — Through a new manpower division of the Automotive Council for War Production, 550 companies in the automotive industry are pooling information and working cooperatively to solve problems connected with the training of workers. Data are being compiled on the availability of women workers, part-time employes and handicapped persons. Industry specialists are delving into incentive plans, training and upgrading methods, and such questions as health, safety, nutrition and recreation.

•**Vegetables at Cost**—The increased cost of fresh vegetables is proving a stumbling block to efforts to hold living costs down, so far as many urban communities are concerned. Various corporations are taking an interest in this subject and adopting measures to aid employes to get vegetables cheaper. An automotive firm in Pennsylvania recently leased a 100-acre farm, which it will operate to provide vegetables for its 650 employes at cost. If farm labor is not available at factory pay rates, the farm will be operated by plant employes. Other firms are aiding employes to grow Victory gardens, sometimes on company land.

• **Soldiers of Production** — A military flavor was recently given the operations of the Marmon-Herrington Company plant in Indianapolis. Over the main employes' entrance, a large sign reads: "Through these gates march the soldiers of production." Plant thoroughfares have been given such names as MacArthur Drive, Casablanca Plaza, and Wainwright Street. In lieu of the factory whistle, bugle calls are sounded. On one morning recently when workers arrived at the plant they found a detachment of soldiers from Fort Benjamin Harrison ready to lead a procession and form a color guard for the raising of the American Flag over the plant. Col. A. W. Herrington, board chairman, speaking from the top of a Marmon-Herrington built tank, on this occasion urged employes to speed production and buy more war bonds.

• **Teamwork Builds Tanks**—The big role which small manufacturers have played in the manufacture of M-4 tanks —credited with being an important factor in turning the tide of victory in favor of the Allies in North Africa—was described recently by C. A. Liddle, president of the Pullman-Standard Car Manufacturing Company. He disclosed that 865 suppliers and subcontractors contribute to the building of each M-4 tank produced in Pullman-Standard plants. More than 700 of these, he said, are in the so-called "small plant group," employing less than 500 men each. In one instance, a plant in this group drew upon 300 additional suppliers and subcontractors. Mr. Liddle revealed that of every dollar spent with Pullman-Standard in 1942 for these 30-ton tanks, 82 cents were passed along to other producers. Subcontractors and suppliers in 206 cities in 25 states are working with the company under 5,432 contracts in its tank production program.

• **Plastic Printing Plates**—Plastics, which have replaced metals in many and varied uses, have now entered the field of printing. Comparative tests are said to show that plastic plates are equal to the best copper electrotypes in newspaper printing quality. Theodore Moss Comany, Brooklyn, producer of plastic Mosstypes, states that the plastic article has one-eighth the weight of the copper plate for the same purpose. The J. Walter Thompson Company, which arranged the newspaper tests, said: "In all newspapers participating, printed results of the two plates were identical in sharpness of detail in line and halftone."

• **Nozzles Without Metal**—Plastic nozzles for standard hose sizes for fire extinguishers used for the protection of in-

(Continued on page 52)

Seattle (Wn) Star
June 21, 1943

Government Ownership Can Be Potent Threat

BY THE time peace returns the United States government will have become the world's greatest industrialist, owning factory facilities that will represent a minimum expenditure of 10 billion dollars and a maximum well in excess of 15 billions.

Three billions of this will be in aircraft plants, two billions in shipyards, three and a half billions in facilities for making steel, rubber, aluminum, magnesium and other key raw materials.

The National Industrial Conference board reports that the government will own 96 per cent of new shipbuilding capacity, 93 per cent of new airplane, 71 per cent of new iron and steel, 64 per cent of new machinery and electrical equipment, 56 per cent of new machine tool and 41 per cent of new petroleum and coal products facilities.

Moreover—and this raises some mighty important questions—the government plant in most instances will be the newest, most efficient, most economical. It will have been built by private corporations with their expensively acquired "know how," utilizing processes on which they have spent millions of dollars and years of time. It will represent the last word in technique.

* * *

THIS plant is being operated by the companies whose inside knowledge made it possible. Usually the leases are of limited life, and at their termination, about the time peace returns, the builders will cease to have legal claim upon them. There is no slightest guarantee, express or implied, that the new plant will not either be operated by the government or leased to some private competitor who had nothing to do with perfecting the processes, devising the machinery or building the plant.

To take a specific illustration, the Aluminum Company of America has built for the government a producing and fabricating capacity considerably greater than that of company-owned plants. Moreover, all of the government facilities are brand-new and are more efficient than most of the company's own plants. Given electricity at the same cost, the government plants can make and fabricate aluminum cheaper than the company mills can.

* * *

THIS is possible because the company made available everything it knew about the business.

However, in 1947 the company will lose all legal claim upon the plants it has built. Their super-efficiency can be used either under government operation or under lease to some other concern to compete against the aluminum company.

The same danger of unfair competition exists in all the other fields mentioned if, as soon as the war ends, the now dormant campaign against all big business should be resumed.

OIL AND GAS JOURNAL
"Unquestionably the best buy in the Oil Industry"
Tulsa, Oklahoma
JUN 24 1943

Light Metals—Heritage Of War

If war has beneficial heritages, they are mainly of a material nature—the product of greatly stimulated scientific research. Among such heritages, the greatly increased production of light metals by the pressure of military necessity is certainly noteworthy.

The production of sufficient aluminum was an early bottleneck in our efforts to produce aircraft—not by insufficient facilities for production, but mainly by insufficient supplies of bauxite or high-grade ore. The only other light metal of commercial note is magnesium which will (or is) being produced at a rate nearly 100 times as large as in 1939. A goal of 700 million pounds per year has been set.

These materials are now being used mainly for aircraft and incendiary bombs, but postwar applications can make deep inroads on the present usages of steel. The light metals may be used widely for streamline trains, civilian aircraft, in automobiles, and for many smaller uses such as gas cylinders, furniture, etc. It is not probable that peacetime demand can support the grossly swollen output of the aluminum and (particularly) magnesium industries but the most efficient plants or operations will continue and these will be able to supply light metals at a cost lower than those heretofore asked.

There appears to be a golden opportunity to utilize the light metals for many small articles.

BRICK AND CLAY RECORD
Buckingham Blg.—Chicago, Ill.
"Leading Clay Journal of the World."
JUL 1943

Output of Crude Magnesite Establishes New Record

The output of crude magnesite, used in making magnesium metal and other products essential to the war program, established a new record in 1942, increasing 33 percent in quantity over 1941, according to the Bureau of Mines, United States Department of the Interior. The production of magnesium compounds from magnesite, brucite, dolomite, sea water, well brines, and lake brines also increased in 1942 compared with 1941. Such compounds, principally the oxide, chloride, carbonate, and sulfate of magnesium have a number of industrial applications, including use in refractories, in making magnesium metal, magnesia insulation for boiler pipes, and medicinals. Dead-burned dolomite, employed chiefly as a steel-furnace refractory, increased 15 percent in quantity output in 1942 compared with 1941, setting a new record which reflects the intense activity of steel furnaces throughout the year.

EMERGENCY RESOURCES of the WEST

In Relation to the Pattern of Western Economy

By J. R. MAHONEY
Bureau of Economic Research, University of Utah

COAL, natural gas, oil and water power are the principal fuel and electric energy sources needed to generate the heat light and power upon which an industrial civilization is based.

According to the 1940 census, the 11 western states possessed only 10.5% of the total United States population. But compressed within this same area are approximately 44% of all the bituminous coal reserves of the nation, 18% of its natural gas, 24% of its petroleum, and 82% of its oil reserves in shale. Combined, these energy resources add up to 46% of all the known mineral fuel reserves of the country. See Table 1.

Hydro-Electric Power in the West

Furthermore, the west has 40% of the developed hydro-electric power installations, and 68% of the potentially feasible undeveloped capacity.

The significance of these figures is this. With an abundance of energy resources, the West is singularly capable of supporting those particular industries, such as iron and steel, which make especially heavy demands on mineral fuels.

The West is, however, a very wide and varied geographical area. In many activities it is not an economic unit. To some extent the Rocky Mountains divide the area, leaving part of it facing the Great Plains and the Mississippi Valley. In the region West of the Continental Divide, some segments of an integrated pattern of economy is in the process of developing, but many sub-sections of this vast region have developed an economy largely independent of the rest.

In this extensive western region, while the total energy resources are vast, yet, they are very unevenly distributed. In the first place, the great coal resources are confined primarily to the Mountain States with the farthest westward extension in central Utah.

The only notable exception to this is the coal in the state of Washington. But here the qualities of the coal and the difficulties met in mining go a considerable distance to reduce the industrial significance of these deposits, or make them significant for the contiguous area only. The states of Idaho, Oregon, California, Nevada and Arizona are either almost, or entirely, devoid of extensive coal deposits.

While the 11 Western States have 44% of the total coal reserves of the country the great bulk of this is concentrated in eastern Utah, southwestern Wyoming and western Colorado. This great Tri-state coal field accounts for 33% of the bituminous coal reserves of the United States and 60% of all of the bituminous reserves of the 11 Western States.

J. R. Mahoney

SINCE JOINING the staff of the Department of Economics of the University of Utah, J. R. Mahoney who received his Doctor's Degree in Economics from Harvard University, has devoted considerable time to the development of mineral economics. The sheer bulk of the mineral industries in Utah and surrounding territory was ample justification for this course. Extensive undeveloped mineral resources also promised that this segment of the economic life of the West would become increasingly important. The war has greatly accelerated the rate of industrial development based on western minerals. At the same time, many questions have been raised as to the way they will fit into the pattern of postwar world economy.

A large portion of the research activity of the Bureau of Economic and Business Research is now directed to the economic phases of western industries based on minerals. This article is one in a series of studies he has made on this general topic.

Another significant feature of the energy resources of the West is the high degree of concentration of the oil and gas reserves in California, with smaller fields scattered through the mountain states. See Table 2.

The water power resources are also unevenly distributed over the West. There are only a few large rivers, but along these the fall in elevation is great so that the developed and undeveloped hydro-electric energy resources of the area are very large. The most favorable situations are along the Columbia river system in the Northwest, the rivers of California, the Colorado river system and the Missouri river system in Montana.

Many of the power sites are in remote areas. However, the improvements in long distance transmission will make much of this power available to industrial centers while the shift of industry to power sites is doing much to insure full utilization of those already developed or projected.

The Western States use 21% more energy per capita than the United States, but there is a marked difference in the pattern of energy use in the West and the country as a whole. Whereas 52% of all of the energy utilized in the United States comes from coal, the West derives only 17% from this source. On the other hand, the United States draws on petroleum to the extent of 33% of its total energy requirements while the West utilizes this fuel to the extent of 56%. Natural gas represents 11% of the energy for the country as a whole and 16% for the Western States. Hydro-electric energy makes up the remaining 11%, while in the nation it is 3.5%.

Rate of Depletion of Energy Resources

This latter heavy use of hydro-electric energy by the West is a very favorable feature of its energy use pattern. But the great extent to which the industries of the West utilize natural gas and petroleum raises fun-

ORE AND WATER ARE SUPPLY SOURCE OF MAGNESIUM METAL

Dow Chemical Co. Has Pioneered Industry in United States.

By a coincidence the war found the American magnesium industry in precisely the same non-competitive position as aluminum—there was only one company in the business. The Dow Chemical Co. was the sole producer of metallic magnesium in 1941 altho this was not always the case. When the first world war cut off German imports, several other American companies undertook to produce the metal, but during the course of the 1920's they gradually ceased operations.

Eight Corporations Get U. S. Funds

Today, new facilities financed by the government thru the Defense Plant Corp. are being operated by at least eight private corporations and three more are expected to enter the field this year. These companies supervise the construction of the plants in the same manner that aluminum producing capacity is being stepped up.

Underground brine and sea water have been the only domestic source of magnesium until recently. Their magnesium content seems small but the supply of raw material is unlimited. Underground brine contains from 3% to 6% of magnesium; sea water averages less than .013%.

There are important supplies of ores scattered thruout the United States which are rich in magnesium, altho heretofore the cost of extracting the metal has limited their use. However, the development of successful methods has now led to their use within the industry. These ores include brucite, magnesite, serpentine and dolomite. Magnesium is also found in potash salt by-products.

Electric Power Is Vital

As is the case with aluminum, electric power in ample quantity is a first essential in the production of magnesium whether the metal is derived from sea water, brine or magnesium bearing ores. Electrolytic chloride processes are more generally employed to extract the metal. These were developed by the Dow Chemical Co. and currently are being licensed by it to other companies. Another process has recently been perfected to extract magnesium from dolomite.

The characteristics of light weight, high strength in relation to weight and excellent machinability point to many applications for magnesium products not only in the aircraft industry but in ground transportation for engines, bodies and wheels of buses and trucks.

The war has emphasized the usefulness of light metals. Wherever there is mass in motion, light metals will have a potential market. Their proper application means a reduction in weight and less vibration, and these in turn can lead to lower operating costs.

S. F., CAL., WALL STREET JOURNAL
Cir. 4,037
JULY 6, 1943

Dolomite Output Breaks Record

California's 1942 output of dolomite, largely used for magnesium metal, amounted to 142,552 net tons valued at $413,469 and came from two properties in Monterey County and one each in Inyo, Los Angeles, Riverside, San Benito and Tuolumne, according to Walter D. Bradley, state mineralogist. Last year's production was largest on record in this state and compared with 22,300 tons worth $64,595 in 1941. Other uses of dolomite are for steel furnace flux and refractories, stucco dash, terrazzo, kalsomine, poultry grit, artstone and in mineral wool.

Another record mineral yield last year was that of sodium salts, including soda ash and trona from plants at Owens Lake, Inyo County, and soda ash, salt cake and trona from Searles Lake, San Bernardino County. Shipments in 1942 amounted to 267,723 net tons valued at $3,125,078, compared with 179,210 tons worth $2,828,718 in 1941.

Soda ash was used mainly in manufacture of soap, glass and paper, oil refining, and chemicals; trona for metallurgical purposes; salt cake or sodium sulphate in manufacture of paper, glass and chemicals.

Grass Valley, Cal., Union
Cir. 2,660
JULY 7, 1943

MAGNESIUM

ONE of the important metals of the future, competing with aluminum in lightweight construction, will be magnesium, according to Dr. L. H. Duschak, professor of metallurgy on the Berkeley campus of the University of California.

At present there are fifteen plants for the extraction of magnesium in the United States, producing more than one hundred times as much metal as in 1933.

Magnesium, said Professor Duschak, is the lightest of the common metals, having about one-fifth the density of copper. It has more strength per unit of weight than aluminum and several times that of ordinary steel.

It is one of the few metals produced from raw materials which are abundantly available. Magnesium may be obtained from several common minerals and from sea water.

MAXWELL, CALIF., TRIBUNE
Cir. 892.
JULY 7, 1943

* * *

MAGNESIUM IS METAL OF FUTURE

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One of the few metals produced from raw materials which are abundantly available, magnesium may be obtained from several common minerals and from sea water. One cubic mile of sea water contains four to six million tons of this metal.

Research is needed to design alloys of magnesium and to find a method to check corrosion. At present a considerable amount of magnesium is utilized for military purposes and it is also used to a limited extent in aircraft construction. The future of magnesium as a structural material, Professor Duschak maintained, is in the research labratory.

Delano, Cal., Record
Cir. 1,400
JULY 9, 1943

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IRON AGE
Philadelphia, Pa.
JUL 8 1943

Magnesite Output at New Peak in 1942

• • • **Mine output** of domestic crude magnesite in 1942 reached the all-time high of 497,368 short tons, an increase of 33 per cent over the 1941 production of 374,799 short tons, according to the Bureau of Mines. Increased requirements of basic open-hearth steel furnaces for dead-burned magnesia refractories was the chief factor in the record magnesite output, but demand for caustic-calcined magnesia in plastic magnesia flooring and magnesium metal manufacture also stimulated production.

Sales of dead-burned magnesite increased in 1942, exceeding the record 1941 shipments. The bulk of the output was consumed in the construction and repair of basic open-hearth steel furnaces, though some of the purer material was used in brickmaking. An impending shortage of magnesite brick was alleviated by increased use of periclase with chrome ore to form the "kromag" type of brick, said to be interchangeable with or even preferable to all-magnesite brick in certain areas of open-hearth steel furnaces.

Shipments of dead-burned dolomite in 1942, stimulated by requirements of the steel industry, were 15 per cent greater in quantity than the record levels attained in 1941.

Dolomite has long been used as a basic refractory for open-hearth maintenance and repair, averaging 5 to 8 times the quantity of magnesite used for refractory purposes. Only recently, however, has dolomite invaded the metal field, competing with and supplementing magnesite and brines as a source of magnesium metal and magnesium compounds.

The production of precipitated magnesium carbonate, magnesium chloride, magnesium sulfate, and magnesium hydroxide from magnesite, dolomite, sea-water bitterns, raw sea water, well brines, and dry-lake brines in 1942 was reported to the Bureau of Mines as 362,892 short tons valued at $14,238,364, compared with 103,906 tons valued at $3,288,687 in 1941. Part of the increase in the 1942 figure was caused by general expansion in output of virtually all magnesium compounds, especially magnesium chloride, and part was due to the inclusion in 1942 data of precipitated magnesium carbonate from dolomite, which was not included in the 1941 figures. In neither year do the figures include the magnesium sulfate derived from magnesite.

ENGINEERING AND MINING JOURNAL
"For nearly three-quarters of a century the outstanding authority of the metal and non-metallic, milling, smelting and refining industries."
McGraw-Hill, 330 W. 42nd St., New York City
JUL 1943

Magnesium Problems

MAGNESIUM PRODUCTION is scheduled to increase rapidly during the last half of the year. First units of the government-owned plant in the State of Washington went into operation late in May (See page 102).

Fear has been expressed that the expected rate of magnesium production may be so much greater than consumption that an unwieldy surplus will result. Government officials believe that any surplus of magnesium is more apparent than real and will be temporary.

Behind the scenes the proposal was made that certain high-cost plants be closed down. However, no curtailment is expected. The armed services insist that the full capacity of the entire country can and will be used in a very short time. This may possibly be the beginning of a postwar scramble for position in the metal markets. No one knows what to expect from magnesium alloys. Speculation is that the battle lines will be drawn for a three-way fight, with magnesium alloys competing with aluminum and copper.

GRIDLEY, CALIF., HERALD
Cir. 968
JULY 9, 1943

Magnesium To Compete With Aluminum

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Materials Abundant

One of the few metals produced from raw materials which are abundantly available, magnesium may be obtained from several common minerals and from sea water. One cubic mile of sea water contains four to six million tons of this metal.

Research is needed to design alloys of magnesium and to find a method to check corrosion. At present a considerable amount of magnesium is utilized for military purposes and it is also used to a limited extent in aircraft construction. The future of magnesium as a structural material, Professor Duschak maintained, is in the research laboratory.

WALL STREET JOURNAL
New York City

Revere Will Operate New Magnesium Plant

Net for First Half of Year May Double Income in Similar 1942 Period

Revere Copper & Brass, Inc., within the next few months at its Baltimore Division will start operations of a new magnesium sheet and strip mill, the largest of its kind in this county. Defense Plant Corp. is aiding in financing the plant.

The Baltimore Division already is making aluminum tubing and the facilities for manufacturing such products are being greatly expanded. Last year at the Rome plant the company began the making of aluminum rods and forgings.

The knowledge gained in these war contracts will be helpful in post-war developments, the company believes, particularly as it applies to the greater utilization of the lighter metals. It also should prove useful in augmenting Revere's major manufacturing business—that of copper and brass products.

Earnings of Revere for the second three months of the current year, are expected to approximate returns reported for the initial three months when net total $884,152, or 56 cents a common share. This was after making allowance for Federal income and excess profits, (based on the present law) but the estimate does not take into consideration renegotiation as it may affect 1943 returns.

On this basis indicated net for the first half year is about $1,760,000, or $1.12 a common share, which would compare with $994,295, or 51 cents a common share reported for the initial six months of 1942.

Last year the company paid off all arrearages on both the 7% cumulative preferred and the 5¼ cumulative preferred, which at the end of 1941 amounted to $40.25 and $5.25 a share, respectively. Revere simplified its capital structure when stockholders, on December 3, 1941, approved the reclassification of the Class A shares into common stock at the rate of 3½ shares of common for each share of Class A held.

WALL STREET JOURNAL
New York City
JUL 12 1943

Company Notes—

General Motors Corp.—Has awarded 68,505 contracts to 18,735 subcontractors in getting out its various war jobs, C. E. Wilson, president, announced.

Mountain States Telephone—The company, which is controlled by A. T. & T., proposes to increase its authorized stock from 500,000 shares to 1 million shares as a step toward financing post-war expansion.

Revere Copper & Brass—Will start operating at its Baltimore division within the next few months a U. S.-financed magnesium sheet and strip mill, the largest of its kind in the country.

U. S. Steel Corp.—Is in a "comfortable position" with regard to iron ore supplies and prospects are that sufficient stockpiles can be built up to carry operations through to May 1, 1944, Irving R. Olds, chairman, stated.

STEEL
Cleveland, Ohio
JUL 12 1943

Mines Bureau Gets Funds To Advance Minerals Program

Exploratory and development work of the Bureau of Mines looking toward expansion of local resources of steelmaking materials was given additional stimulus last week with announcement of a $2,000,000 appropriation for this purpose.

Projects directly benefited include iron ore, coal, coke, fluorspar and related materials. Also included were the bureau's pilot plant and laboratory programs.

Other funds allocated to the Bureau of Mines are for the following purposes:

To explore bauxite and alunite clays, $1,860,000; for manganese exploration and laboratory work, $900,000; for magnesium development, $225,000; for sponge iron, $400,000; for investigation of critical and essential minerals deposits, $3,900,000; for developing methods of producing alumina from low-grade bauxite and clays, $490,000.

These funds have been made available to the bureau in addition to the regular and continuing appropriations for safety work, etc. Officials hope to reach an early decision on projects which are to receive the additional money.

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THE CLIPPING CO.
524 E. Mason St., Milwaukee, Wis.
Journal of Commerce
Chicago, Ill.
468
AUG 17 1943

LargestMagnesium Strip Mill to Be Opened by Revere

NEW YORK, Aug. 16.—Revere Copper and Brass, Inc., will shortly widen its field of operations by opening the largest magnesium sheet and strip mill in the country, C. Donald Dallas, president, disclosed today in reporting first-half 1943 earnings of $914,434, or 46 cents a common share, compared with 51 cents a share earned in the year-ago period.

Predicting that the metal will find growing use in the future of aviation, Mr. Dallas said that by January, 1944, Revere plans to reach a capacity output of 500,000 pounds of magnesium sheet and strip a month.

"This relatively new metal, new to the extent that only recently have its military, naval and commercial potentialities been fully realized, is destined to play an important part in the future of the airplane. Trucks, buses, tank-type transport, and even the railroads offer sales possibilities," he said. "The market includes almost anything made of metal parts, where weight is a factor, the weight of magnesium being only two-thirds that of aluminum."

Mr. Dallas reported steady progress in war production in all plants in the last six months. He said the company is producing seamless aluminum tubnig and is now building, with government funds, a mill for production of aluminum blooms, rods, bars and other shapes.

BARRON'S
"The National Financial Weekly."
New York City
JUL 12 1943

METALS

Bohn Aluminum & Brass Corp. is expected to show materially better operating results in 1943 than last year because by midsummer earnings should reflect output from two new plants, financed by the Defense Plant Corp. While margin of profit from those plants cannot be expected to equal that of privately owned facilities, it may add substantially to earnings late this year and in 1944.

Present great expansion in production capacity of aluminum and magnesium should result after the war in much lower prices. Consequently widened commercial uses for these metals and their alloys suggest promising long-term prospects for the company.

LOS ANGELES, CALIF.
TIMES, Cir. 219,890, Sun. Cir. 407,634
JULY 12, 1943

Scientist Picks Magnesium as Vital Metal of Future

BERKELEY, July 11. (Exclusive)—One of the important metals of the future, competing with aluminum in lightweight construction, will be magnesium, according to Dr. L. H. Duschak, professor of metallurgy on the Berkeley campus of the University of California.

At present there are 15 plants for the extraction of magnesium in the United States, producing more than 100 times as much metal as in 1933.

Magnesium, said Prof. Duschak, is the lightest of the common meals, having about one-fifth the density of copper. It has more strength per unit of weight than aluminum and several times that of ordinary steel.

One of the few metals produced from raw materials which are abundantly available, magnesium may be obtained from several common minerals and from sea water. One cubic mile of sea water contains four to six million tons of this metal.

Research is needed to design alloys of magnesium and to find a method to check corrosion. At present a considerable amount of magnesium is utilized for military purposes and it is also used to a limited extent in aircraft construction. The future of magnesium as a structural material, Prof. Duschak maintained, is in the research laboratory.

SALINAS, CALIF., CALIFORNIAN
JULY 12, 1943

New Record Is Set for Dolomite

The 1942 output of dolomite in California totaled 142,552 net tons valued at $413,469 and came from two properties in Monterey county and one each in Inyo, Los Angeles, Riverside, San Benito, and Tuolumne counties. Also, but not included in the above figures, was a tonnage of dolomite from Tuolumne county that was burnt for lime so included in the lime figures. The 1942 production was the largest annual yield on record in this state. The 1941 production amounted to 22,300 tons worth $64,595, according to Walter W. Bradley, state minerologist.

The material shipped during the year was utilized for magnesium metal, for steel furnace flux and refractories, stucco dash, terrazzo, kalsomine, poultry grit, artstone, in mineral-wool, and for the manufacture of carbon dioxide.

S. F., CAL., COMMERCIAL NEWS
JULY 13, 1943

MAGNESIUM CALLED METAL OF FUTURE BY U. C. PROFESSOR

One of the important metals of the future, competing with aluminum in lightweight construction, will be magnesium, Dr. L. H. Duschak, professor of metallurgy on the Berkeley campus of the University of California, said yesterday.

At present there are fifteen plants for the extraction of magnesium in the United States, producing more than one hundred times as much metal as in 1933.

Lighter Metal

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Research Needed

Research is needed to design alloys of magnesium and to find a method to check corrosion. At present a considerable amount of magnesium is utilized for military purposes and it is also used to a limited extent in aircraft construction. The future of magnesium as a structural material, Professor Duschak maintained, is in the research laboratory.

LABOR NEWS

RENO NEV.
7/16/43

U.S. Workers Outslugging Axis Says WPB Official

Vice Chairman Joseph D. Keenan Praises American Labor on 'Labor for Victory' Program

Washington, D. C.—American workers are outslugging the regimented workers in Axis factories, WPB Vice Chairman Joseph D. Keenan told the nation in a July 4 "Labor for Victory" radio program.

"American men and women in American factories are turning out more than twice as much per hour as the workers could accomplish in 1918, Keenan said.

"Liberty ships are being produced by some yards in one-third the number of man-hours required when they started on those ships less than three years ago.

"Flying fortresses are being produced in almost one-quarter the number of man-hours originally estimated.

"To increase our capacity and speed production of war supplies, about eleven billion dollars worth of new government financed industrial facilities have now been completed. The building tradesmen and metal tradesmen did magnificent work in building and tooling up for war.

"The production of planes and tanks, guns and ships and other munitions of war was more than five and one-half times as great in April of this year as in the month before Pearl Harbor.

"We are now producing more than 7000 planes a month and a large number of them are big heavy bombers.

"We are producing what is needed. For example, in one month the production of navy single engine fighters was boosted 50 per cent.

"We launched in May new merchant ships, totalling one and three-quarters million tons. Launchings of Liberty ships were averaging almost four a day.

'In five months, scores of 'fighting ships were completed for the navy. This year we expect to double the size of our fleet.

"We are not forgetting other lines, either. We are turning out almost one and three-quarters billion rounds of small arms ammunition per month. That is seven times as much as our peak in 1918.

"We are producing 18 million rounds of artillery ammunition a month.

"Metal workers and miners have helped make all this possible. For example, last year they boosted the output of chromite by nearly 700 per cent, magnesium by 220 per cent and aluminium by 77 per cent.

"It takes a lot of transportation to make this production possible. A tremendous volume of war material is being hauled over the roads by the truck drivers. Last year railroad workers handled 638 billion ton miles of freight, the greatest volume in history—and did it with one-third less labor time than in 1918. Seamen have kept open the supply lines to our fighting men, despite bombs and torpedoes.

'Destroyers escorts, airplanes and aircraft carriers have been turned out in such volume and wiith such speed that a major defeat seems to have been inflicted upon the U-boats.

"Unions have helped in all of this. They have joined with management in finding ways to shortcut the production road for victory. They have helped to shift workers from job to job whenever contracts were completed or programs were changed.

"We have won real victories on the production front.

"But, let no one tell you that we can ease up! It is time for us to work harder. It is time for us to work more effectively."

ORANGE, CALIF., POST
Cir. 762.
JULY 23, 1943

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An Important Metal of the Future

Dr. L. H. Duschak, professor of metallurgy at the University of California at Berkeley, says magnesium will soon be competing with aluminum in lightweight construction and that it is one of the important metals of the future. It is obtained from several common substances and from sea water. One cubic mile of sea water contains from four to six million tons of this metal.

Magnesium is a light malleable, silver-white metal used for military purposes and also, to a limited extent, in aircraft construction. Every fifth bullet from an airplane machine gun is a tracer made of magnesium, and helps the gunner sight his target. Incindiary bombs are also made of magnesium.

There are a large number of magnesium plants on this coast, the location of which is naturally a military secret. The largest is Basic Magnesium, Inc., at Las Vegas, Nevada where some 13,000 workers are employed, with a payroll of a million dollars every week.

After the war, this metal will contribute to the industrialization of our Southern California. Peacetime uses will include the manufacture of automobiles, planes, ships, refrigerators and other kitchen equipment.

DENVER MINING RECORD & MACHINERY JOURNAL
For over 50 years the leading mining newspaper of the nation. Published every Saturday."
1829 Champa St., Denver, Colorado
JUL 15 1943

MAGNESIUM METAL OUTPUT INCREASED FOR WAR PURPOSES

Rich Brine Waters Prove Prolific Metal Source in New Demand.

Magnesium, a metal silvery white in appearance, has the very low specific gravity of 1.74. Because of this, magnesium in alloyed form provides industry with its lightest structural metal. It is the third most abundant structural metal on the earth's surface, being exceeded only by iron and aluminum.

The English scientist, Davy, first discovered magnesium in 1808; but it was not until 1830 in France that Bussy produced the element in metallic form. Commercial exploitation of magnesium did not occur in Europe until the early years of the 20th century and it was 1915 before the industry had its beginning in this country.

Produced by Electrolysis

For many years magnesium was produced in this country entirely by electrolysis of dehydrated magnesium chloride obtained from the chemically rich brine waters underlying certain parts of Michigan. Since 1941 the Dow Chemical Co. has also been producing magnesium chloride from sea water. Magnesium can be produced by direct reduction from its oxide, but at the present time the major portion of this metal used in the United States is produced by electrolysis of magnesium chloride.

Magnesium and its alloys have excellent machinability as well as light weight, and are readily adaptable to many processes of fabrication and assembly. Pure magnesium has relatively low strength and stability and its applications are governed accordingly. Mixed with small amounts of other metals, however, such as aluminum, zinc and manganese or combinations of these, magnesium alloys of exceptional ratios in strength weight are being produced which are suitable for both castings and wrought products. In general, the mechanical properties of magnesium alloys are in the same approximate range as those of aluminum alloys. Pure magnesium is produced in the form of ingot, powder, shavings, extruded wire and strip, and rolled ribbon.

Hundred-fold Increase

War requirements forced a hundred-fold increase in magnesium production, greater than any other metal in the entire military program. Its two major war uses are in airplanes where, alloyed with other metals, it contributes valuably to a reduction of the machine's dead weight, and in the field of pyrotechnics—tracer bullets, flares and incendiary bombs. Great Britain and Germany are said to use as much magnesium for incendiary bombs as they do for aircraft. Enemy aircraft use magnesium up to 5% or 6% of the weight of the plane, and as magnesium becomes available in this country an equal or even greater percentage is likely to be used here.

The month before Pearl Harbor, magnesium production in the United States was at the rate of 42,000,000 pounds annually, not large by today's standards but regarded by the War Production Board as tremendous when compared with the 6,000,000 pounds of 1938. At the close of 1942, output was at the rate of 260,000,000 pounds a year and a program sponsored by the government to raise production well over 600,000,000 pounds a year is well under way.

MIRROR
New York, N. Y.
JUL 25 1943

WORLD BEHIND The HEADLINES

NEW YORK, SUNDAY, JULY 25, 1943 PAGE 28

Light Metal—Our Heavy Asset

WHEN YOU CUT the weight of a 1,700 horsepower airplane motor by 90 pounds, you have cut the weight of a two-motored bomber by 180 pounds. That's the equivalent of another man, or of so much more in bomb or fuel load.

The whole struggle of aviation has been a struggle against weight: how to lift something heavier than air into the air and keep it there.

Speed, climb and maneuverability are all governed by the relationship between weight and horsepower.

For instance, an aircraft weighing two tons and powered with 2,000 h.p. would not be as efficient as one weighing one ton and powered with 1,250 h. p.—granted that each was designed equally well.

So, in its search for lighter and ever lighter materials, the aviation industry has found its answer in magnesium.

This metal weighs only two-thirds as much as aluminum, one-fourth as much as steel, one-fifth as much as copper.

Machined Rapidly

However, usually the weight of a metal is not as important as its strength. Magnesium alloys combine both lightness and strength—some of them having a tensile test as great as the girders in skyscrapers. Their strength in relation to weight is particularly impressive.

Also, these alloys, containing about 92 percent of magnesium, are extremely versatile. They can be sand-cast or die-cast, extruded and rolled into shapes, rods and tubes; or forged, welded and rolled into flat and tapered sheets.

Another important factor is that magnesium and its alloys can be machined more rapidly than any other metal.

The fact that there is a commercial abundance of this war-vital metal is still another important point; 2.7 per cent of the earth's crust is magnesium, and sea water contains thirteen one-hundredths of one per cent.

Magnesium in the raw is always found in combination with other minerals, saline deposits, sea water and lake water.

The problem is to extract it. Principal sources are dolomite rock (white marble) sea water and magnesite rock.

Dolomite is more frequently used because of the vast quantities of this rock in the earth's surface and because it doesn't have to be mined.

In fact, a stone quarry in Dutchess County, N. Y., which in days gone by used to supply the marble for the interiors of many of New York's office and apartment house buildings, is now supplying ore to magnesium plants.

There are several methods of processing magnesium, the best known being the Dow Method. The dolomite is crushed and burned to lime, after which the lime is mixed with sea water creating magnesium oxide. The oxide is then fused with chlorine, electrolytically smelted, and the result is the silvery white metal called magnesium.

It was discovered by the English scientist Sir Humphrey Davy in 1807, but remained a laboratory curiosity for some time. Europe started producing it commercially around 1900 and the U. S. finally got around to it in 1915, producing only 40 tons.

Each year since has seen greater production; the prediction for 1943 is 500,000,000 pounds!

Here are magnesium ingots ready for shipment to defense plants. If the above ingot was composed of lead this workman wouldn't be handling it so easily. Its lightness—only two-thirds as heavy as aluminum—and strength are qualities that make magnesium so valuable in war production.

World's Largest

The Government's $130,000,000 Basic Magnesium, Inc., plant at Las Vegas, Nevada, is now in full production. This plant is expected to produce three and one-half times more magnesium than all the world's other similar factories combined!

Solely for War

At first, magnesium was principally used to make flashlight powder and many a photographer was severely burned when using it to illuminate his "shot." The photographer would say "watch the birdie," while holding a scoop full of white powder above his head. That blinding light was created by magnesium.

Recently the peoples of Britain and Europe have known magnesium through the grim medium of the incendiary bomb. Those "sticks" of magnesium, ignited by a charge of thermite at 3000 degrees, Fahrenheit, burned with an intensity that set fire to everything they touched.

Magnesium for incendiaries is ground into a very fine powder because in solid form, it is almost impossible to ignite.

Production at present is solely for war, but when peace comes, magnesium will make itself known in every phase of life: Lighter automobles — economical in fuel and tires; more portable tools, luggage, radios, vacuum cleaners—in fact, everything that people lift or move will contain magnesium in place of other metals to reduce weight.

—Richard Kenny.

This is the last process in the refining of magnesium. Here the war-vital metal is being poured into ingot molds. Although the U. S. only produced 40 tons in 1915, 1943's forecast is 500,000,000 pounds!

HERALD TRIBUNE
New York City
JUL 30 1943

Ceilings Eased In Producing, Selling Cables

Revised O. P. A. Ruling Is Confined to Those Tested Rigidly on Essentiality

From the Herald Tribune Bureau

WASHINGTON, July 29.—Provisions for the individual adjustment of ceiling prices for producers and sellers of wire, cable and cable accessories similar to adjustment provisions recently made available to manufacturers of essential machinery were announced today by the Office of Price Administration.

The action, contained in amendment No. 4 to revised price schedule 82 (wire, cable and cable accessories), which becomes effective Aug. 4, is confined to cases qualifying under rigid tests of essentiality of the seller and the product.

Any increase in the cost of producing consumers' articles made of wire or cable would be infinitesimal and would not affect consumer price levels, O. P. A. stated.

Generally, the new provisions will permit O. P. A. to adjust prices after it has ascertained that ceiling prices are at such a level that supply of vital wire or cable is impeded or threatened provided that the adjusted price will not cause an increase in the cost of living.

Provisions for the adjustment of maximum prices charged by manufacturers of ferrous forgings, similar to those recently provided for manufacturers of machinery and for rebuilders and repairers of construction equipment, also were announced.

To obtain any adjustment, the ferrous forging producer must qualify under specified tests based on the essentiality of his production and its service in the war program.

No price adjustments will be granted if they affect the cost of living or cause pressure on the prices for consumer articles.

This action is similar in application and effect to amendment 78 to Maximum Price Regulation 136 (machinery and parts and machinery services) which was issued April 6.

MAGNESIUM: Sells of magnesium or magnesium alloy ingot in special non-standard shapes which cannot be produced at the premium of one cent a pound permitted for non-standard shapes were authorized to submit proposed prices for such to the O. P. A. for approval. The authorization is contained in Amendment No. 3 to Maximum Price Regulation No. 314 (magnesium and magnesium allow ingot), effective Aug. 4.

FARM EQUIPMENT: Twelve officers and executives of wholesale distributing houses, mail-order firms and co-operative distributing agencies were appointed to serve on a farm equipment suppliers' advisory committee.

FACTS ON FILE
NEW YORK
7/21-27/43

Science Aiding War Output. American science is wiping out scarcities in war materials, the WPB reports. Production of magnesium, now taken from brine and dolomite, is 30 times that of 1939, and new techniques are exploiting low-grade quartz and bauxite and increasing the output of aluminum, copper, chrome, manganese and rubber. [See Vol. I, p. 415M]

U.S. Troops Get Lightweight Cartridge. The Remington Arms Co., Inc., announces that it is producing 130,000,000 rounds monthly of a new-type rifle bullet less than half the weight and a quarter of the volume of the usual .30-caliber shell. It is accurate at 300 yards. [See pp. 205M, K; 181J]

UNION PRESS-COURIER
PATTON PA.
7/29/43

SCOTT'S SCRAP BOOK By R. J. SCOTT

CHEMICAL & CHEMICAL ENGINEERING NEWS
New York City
JUL 25 1943

Magnesite and Magnesium Compounds Production

The output of crude magnesite, used in making magnesium metal and other products essential to the war program, established a new record in 1942, increasing 33% in quantity over 1941, according to the Bureau of Mines, United States Department of the Interior. The production of magnesium compounds from magnesite, brucite, dolomite, sea water, well brines, and lake brines also increased in 1942. Such compounds, principally the oxide, chloride, carbonate, and sulfate, are used in refractories, in making magnesium metal, magnesia insulation for boiler pipes, and medicinals. Dead-burned dolomite, employed chiefly as a steel-furnace refractory, increased 15% in quantity output in 1942 compared with 1941, setting a new record which reflects the intense activity of steel furnaces throughout the year.

SAN FRANCISCO CALL-NEWS
Cir. 107,062
JULY 24, 1943

Will the Government stay in business, operate those plants? Or scrap them to remove competition? Or sell them cheap to private operators? Jesse Jones, whose RFC owns the 1500-odd war plants, warns they mustn't be used to destroy private initiative.

Others worry about latest German home-front propaganda telling mothers to produce babies for soldiers 20 years from now, urge necessity of keeping plants ready for national defense.

JOURNAL OF COMMERCE
"America's Leading Business Newspaper."
New York City
AUG 17 1943

Revere to Open Magnesium Plant

Will Be Largest Sheet and Strip Mill in United States

Revere Copper & Brass, Inc., will shortly further widen its field of operations by opening the largest magnesium sheet and strip mill in the United States, it was announced yesterday by C. Donald Dallas, president.

A special laboratory has been equipped and staffed by Revere to conduct extensive research in the application and utilization of magnesium-base alloys in the post-war world, it was stated. Exploration of the light metal market will be conducted in aviation, and in such industries as automotive, electrical, chemical, refrigeration, shipbuilding and agricultural. By January, 1944, Revere plans to reach a capacty output of 500,000 pounds of magnesium sheet and strip per month. This is the equivalent of rolling and handling 3,000,000 pounds per month of copper and brass.

The company reported a net profit for the six months, after creating a temporary contingency reserve to cover estimated net effect on income of factors that cannot be definitely determined at this time, of $914,434, equivalent, after preferred dividends, to 46c a share. Undetermined factors are listed as renegotiation of war contracts, the post-war credit and the portion of anticipated post-war losses and expenses fairly chargeable against current income. In the corresponding period of last year net was $994,296, or 51c a share.

The ratio of current assets to current liabilities was approximately three to one with tax anticipation notes purchased and on hand to cover estimated amount of taxes for the six months' period.

AMERICAN METAL MARKET
"Leading Iron, Steel and Metal Newspaper—Recognized price and market authority."
New York City
AUG 18 1943

Revere Copper Reports Slightly Smaller Net Profit In First Half

Company Shortly To Open Largest Magnesium Sheet And Strip Mill In U. S., Announces Pres. Dallas

Revere Copper & Brass, Inc. reports for the six months ended June 30, 1943, subject to audit and renegotiation of war contracts, a net profit of $914,434 after charges, federal taxes and $750,000 provision for contingencies, equal after preferred dividend requirements, to 46 cents a share on the 1,286,916 shares of common stock.

In the first half of 1942 the company reported a net profit of $994,295 or 51 cents a common share.

Federal taxes on income in the first half of 1943, amounted to $9,055,000 and were computed in accordance with the Revenue Act of 1942, but without deducting therefrom the post-war refund. The estimated amount of such refund is reflected in the reserve for contingencies. In the first half of 1942, federal taxes aggregated $8,480,000.

C. Donald Dallas, president, today stated that "Revere will shortly further widen its field of operations by opening the largest magnesium sheet and strip mill in the United States. This relatively new metal, new to the extent that only recently have its military, naval and commercial potentialities been fully realized, is destined to play an important part in the future of the airplane. Trucks, buses, tank-type transport, and even the railroads offer sales possibilities. The market includes almost anything made of metal, or containing metal parts, where weight is a factor, the weight of magnesium being only two-thirds that of aluminum.

"A special laboratory has been equipped and staffed by Revere to conduct extensive research in the application and utilization of magnesium and magnesium-base alloys, in the post-war world. Exploration of the light metal market will be conducted in aviation, and in such industries as automotive, electrical, chemical, refrigeration, shipbuilding, architectural, etc. By January, 1944, Revere plans to reach a capacity output of 500,000 pounds of magnesium sheet and strip per month. This is the equivalent of rolling and handling 3,000,000 pounds per month of copper and brass."

In commenting on the company's activities, Mr. Dallas said that "the past six months have witnessed steady progress on war production in all of our plants. Copper, brass, and other copper-base alloys have gone into an almost endless procession of tubing, sheet, strip, rod, ammunition cups, shell bands and artillery discs to meet the demands of the Army, Navy, Merchant Marine, and lend-lease for ammunition and war material.

"Our manufacturing departments, formerly engaged in the making of cooking utensils, giftware, and other items for consumer consumption, are turning out large quantities of aluminum forgings for use in airplanes, brass and steel shell cases, smoke bombs, rockets, welded steel tubes,

Net income	12,331,458	10,934,767
Miscel. chgs..	152,679	59,373
Int., amort., etc.	128,251	183,593
Depr. & amort. of war facil.	1,331,094	1,217,506
Prov. for contg.	750,000	-
Federal income tax, etc.	9,055,000	8,480,000
Net profit .	$914,434	$994,295

IRON AGE
Philadelphia, Pa.
AUG 5 1943

May

DOLOMITE

By J. H. CHESTERS
Central Research Department, United Steel Co.'s, Ltd., Stocksbridge, England

TWO serious limitations have hindered, though not prevented, the development of dolomite brick. They are the tendency of calcined dolomite to "perish" on standing, that is, to react with moisture in the air to form hydrate, the reaction proceeding much more slowly than with burned lime, but resulting in a similar expansion and crumbling; and the tendency of β dicalcium silicate formed in brickmaking or in service to invert to γ dicalcium silicate with a 10 per cent increase in volume. This reaction results in the formation of an extremely fine powder and is usually described as "dusting."

Dolomite, both in brick and monolithic form, has played, and is playing, a most important part in the steel plant, but the above limitations require a good deal more imagination and technique to overcome than is required when dealing with dead-burned magnesite.

Since both dusting and perishing (apart from fine grinding) led to the formation of extremely fine dust, the causes of failure of dolomite brick are often confusing. Thus in the early days of dolomite brick manufacture, the presence of free lime in the brick was not uncommon and sometimes led to perishing due to reaction with water in the atmosphere, or from a leaky cooling pipe. On the other hand, a similar phenomenon, actual dusting, might result from the inversion of dicalcium silicate in a brick which had not been completely stabilized. Fortunately X-ray examination provides a ready means of deciding between these types of failure, and it is to the application of this weapon that much of the progress in the manufacture of really stable products can be attributed.

In discussing dolomite products, a further ambiguity usually creeps in: the term "stabilization" is used to cover three quite distinct procedures: (a) The coating of calcined dolomite, for example, with pitch, to *reduce* the rate at which perishing occurs; (b) the conversion of the lime to silicate or ferrite to obviate hydration during storage and use; and (c) the addition of boric acid, phosphates or other stabilizers to prevent the inversion of β to γ dicalcium silicate.

It would be better if the term "stabilization" were applied only to the last two procedures, which are generally carried out simultaneously. Brick made by coating dolomite grains, say with a glassy bond, are usually referred to as "semi-stable" brick since they are far more stable than ordinary calcined dolomite, but do contain considerable amounts of free lime which eventually react with moisture in the atmosphere. Such brick have also been described as "bottled" brick, the lime being uncombined but separated from the atmosphere by an envelope of glass.

X-ray examination shows beyond a doubt that much of the raw dolomite used is a true compound having the formula $MgCa(CO_3)_2$, dolomites richer in lime being simply mixtures of this compound with calcite. When, however, this material is calcined, the carbon dioxide is lost and the product is simply a *mixture* of lime and magnesia. This is proved by the Debye Scherrer X-ray photograph which consists of a super-position of the lines of the two oxides together with a few lines due to traces of impurity.

As might be expected, the lime in this mixture is much more reactive than the magnesia, the perishing of basic being due initially to the hydration of the lime, not the magnesia. The properties of magnesium oxide have been given in the previous section. Those of lime are similar but more "possessive." Thus where basic is heated in contact with silica or ferric oxide it is the lime which reacts first. Like magnesia, lime is a cubic mineral having a specific gravity of 3.08 to 3.30. Pure lime is said to have a specific gravity of 3.32 and a refractive index of 1.83. Its unit cell has an edge length of 4.799 A°.

Binary Systems

Fig. 1 shows the outlines of the MgO-CaO system, which were worked out as far back as 1916 by Rankin and Merwin. The phase diagram is very simple. The most important observation for the steel plant is that no mixture of these two oxides has a melting point lower than about 4172 deg. F. Unslagged shrunk dolomite or basic is therefore very refractory.

The $GaO-SiO_2$ system has already been discussed in the section dealing with silica (THE IRON AGE, Jan. 21 and 28, 1943). From the standpoint of dolomite brick, it is simply a binary section of the all important ternary system $MgO-CaO-SiO_2$.

The $CaO-Fe_2O_3$ system is particularly important since dolomite, when used in a steel furnace, is always confronted with iron oxide, either as a slag constituent or as vapor in the furnace atmosphere. It will be seen from Fig. 2 that dicalcium ferrite and mono-dicalcium ferrite have melting points of about 2190 deg. F. and 2550 deg. F. respectively, and hence it is not surprising that iron oxide has a considerable corrosive action even on straight basic. There are two compounds normally formed, namely

Previous articles by J. H. Chesters on steel plant refractories, that have appeared in THE IRON AGE are:

"All-Basic Open Hearth Furnaces," Aug. 15 and 22, 1940.
"Steel Plant Refractories," Feb. 6 and 13, 1941.
"Basic Open Hearth Above Sill Plate Level," May 22 and 29, 1941.
"Basic Open Hearth," Aug. 7, 14 and 21, 1941.
"Casting Pit Refractories," Nov. 20 and 27, 1941.
"Electric Steel Plant Refractories," March 5 and 12, 1942.
"Acid Open Hearth Refractories," May 28 and June 4, 1942.
"Soaking Pit and Reheating Furnace Refractories," July 16 and 23, 1942.
"Acid and Basic Bessemer Refractories," Nov. 5 and 12, 1942.
"Silica and Semi-Silica Refractories," Jan. 21 and 28, 1943.
"Magnesite Refractories," June 3 and 10, 1943.

L.V. Review Journal
8/3/43

Magnesium Ranks Third In Abundance

Magnesium, a metal silvery white in appearance, has the very low specific gravity of 1.74. Because of this, magnesium in alloyed form provides industry with its lightest structural metal. It is the third most abundant structural metal on the earth's surface, being exceeded only by iron and aluminum, according to the Denver Mining Record.

The English scientist, Davy, first discovered magnesium in 1808; but it was not until 1830 in France that Bussy produced the element in metallic form. Commercial exploitation of magnesium did not occur in Europe until the early years of the 20th century and it was 1915 before the industry had its beginning in this country.

Produced by Electrolysis

For many years magnesium was produced in this country entirely by electrolysis of dehydrated magnesium chloride obtained from the chemically rich brine waters underlying certain parts of Michigan. Since 1941 the Dow Chemical Co. has also been producing magnesium chloride from sea water. Magnesium can be produced by direct reduction from its oxide, but at the present time the major portion of this metal used in the United States is produced by electrolysis of magnesium chloride.

Magnesium and its alloys have excellent machinability as well as light weight, and are readily adaptable to many processes of fabrication assembly. Pure magnesium has relatively low strength and stability and its applications are governed accordingly. Mixed with small amounts of other metals, however, such as aluminum, zinc and magnesium alloys of exceptional ratios in strength weight are being produced which are suitable for both castings and weight products. In general, the mechanical properties of magnesium alloys are in the same approximate range as those of aluminum alloys. Pure magnesium is produced in the form of ingot, powder, shavings, extruded wire and strip, and rolled ribbon.

Hundred-fold Increase

War requirements forced a hundred-fold increase in magnesium production, greater than any other metal in the entire military program. Its two major war uses are in airplanes where, alloyed with other metals, it contributes valuably to a reduction of the machine's dead weight, and in the field of pyrotechnics—tracer bullets, flares and incendiary bombs. Great Britain and Germany are said to use as much magnesium for incendiary bombs as they do for aircraft. Enemy aircraft use magnesium up to 5 per cent or 6 per cent of the weight of the plane, and as magnesium becomes available in this country an equal or even greater percentage is likely to be used here.

The month before Pearl Harbor, magnesium production in the United States was at the rate of 42,000,000 pounds annually, not large by today's standards but regarded by the War Production Board as tremendous when compared with the 6,000,000 pounds of 1938. At the close of 1942, output was at the rate of 260,000,000 pounds a year and a program sponsored by the government to raise production well over 600,000,000 pounds a year is well under way.

S. F., CAL., WALL STREET JOURNAL
Cir. 4,037
AUGUST 9, 1943

Turn of the Week

Comment on Progress of Events in Business and Industry Along Pacific Slope

MOST IMPRESSIVE single measure of the intensity of productive war effort in the Far West probably is to be found in electric power data.

Rate of gain in the flow of energy thus far this year over 1942, has been more than three times as great as the ratio that had been normal to the immediate pre-war years—27% against 9%. The 1942 first half gain over 1941 had been about 21%.

So great has been the power requirement thus far this year that usual seasonal variations have been submerged. Instead of some decline during the first four or five months of the year ordinarily to have been expected, there was a steady gain, and a daily average output of more than 100 million kilowatt-hours was attained for the first time in history in June.

Generators in the seven most western states developed about 16.7 billion kwh. of energy in the first half this year of which well over nine-tenths was hydro plant power. The flow was upwards of 16% of the national power production as reported to the Federal Power Commission. In the first half last year when the west produced 13.1 billion kwh. the ratio to national production was 14.8%.

As against a 92.8% ratio of hydro power in the Far West this year, the national ratio has been only 38%, obvious reason for the gravitation of the great new electro-metallurgical plants to the Coast. It is a movement not yet complete.

Among the latest of the big power eaters to reach maturity in production are those in Spokane, Las Vegas, Nev., and at Riverbank, Calif., two aluminum, one magnesium. The Riverbank plant based on San Francisco's Hetch Hetchy power, started a line of 100 reduction pots in May, starts another about mid-September, and the third and last about mid-October. Addition to power load is about 100,000 kw.—about 80,000 from San Francisco, the rest from Pacific Gas & Electric through city purchase. To even the drag, the city will supply daytime power, Pacific Gas part of the night load.

Boulder Dam recently, by working its machines at overload on rated capacity, attained a million kilowatt peak for the first time in the history of any one power plant operation. That isn't as much of a strain as it sounds, since all big modern hydro generators are capable of material overload, and Bonneville Administration, to meet the Northwest's tight situation last fall, took the same method.

The big thing, however, is the enormity of the gain in power production, achieved steadily without service curtailments and surpassing proportionately anything else in the nation.

It may well be mentioned in passing that although 92% of the Far Western power is from the hydros, it still took nearly 2.4 million barrels of fuel oil and more than 9.8 billion cubic feet of natural gas, not to mention a trivial 92,000 tons of coal, to run the steam plants of the area during the first half of the year. That was 41% more oil, 41% more gas and 23% more coal than in the like 1942 period. The natural gas burned was the equivalent of

RENO, NEV., GAZETTE
Cir. 12,571
AUGUST 14, 1943

Basic Plant Now Ships Trainloads

Magnesium, a metal silvery white in appearance, has the very low specific gravity of 1.74. Because of this, magnesium in alloyed form provides industry with its lightest structural metal. It is the third most abundant structural metal on the earth's surface, being exceeded only by iron and aluminum, according to the Mining Record.

The English scientist, Davy, first discovered magnesium in 1808; but it was not until 1830 in France that Bussy produced the element in metallic form. Commercial exploitation of magnesium did not occur in Europe until the early years of the 20th century and it was 1915 before the industry had its beginning in this country.

NEW YORK, N. Y. MOTION PICTURE HERALD, Cir. 15,935
AUGUST 14, 1943

8,000,000 See Mine Unit Films

In its annual report for the year ended June 30th, the Bureau of Mines, Department of the Interior, has noted that 7,928,201 persons have been shown pictures produced by the bureau.

More than 95,000 showings were given during the year. M. F. Leopold, supervising engineer, reported that the Bureau's films not only were used by industries in the mining and allied fields, but also by the Army and Navy. The films, it was said, were of important use to the military in all its training activities.

It was reported that 8,487 reels were in circulation and by October three additional films would have been completed. They are "Story of Electric Welding," "Story of Synthetic Rubber" and "Story of Magnesium Metal."

During the past year, American industries appropriated more than $200,000 for the preparation of films produced under the Bureau's supervision. The subsidy is used for production costs and copies for Government distribution. The reception of the program by industries has led the Bureau to believe that even greater expansion will take place during the coming season, it is said. A number of the Bureau's films have been prepared with Spanish and Portuguese narrations for circulation in South America.

MINING JR'L
PHOENIX ARIZ.
8/15/43

OUTPUT OF MAGNESITE SHOWED MARKED INCREASE IN 1942

MINE output of domestic crude magnesite in 1942 reached the all-time high of 497,368 short tons in 1942, an increase of 33 per cent over the 1941 production of 374,799 short tons. Increased requirements of basic open-hearth steel furnaces for dead-burned magnesia refractories was the chief factor in the record magnesite output, but demand for caustic-calcined magnesia in plastic magnesia flooring and magnesium metal manufacture also stimulated production. Sales of dead-burned magnesite increased in 1942, exceeding the record 1941 shipments. The bulk of the output was consumed in the construction and repair of basic open-hearth steel furnaces, though some of the purer material was used in brickmaking.

Caustic-calcined magnesite displayed a wide versatility in its adaptability to the war program. The largest use was in oxychloride cements for industrial spark-proof flooring and interior marine decking. Magnesium metal was the next largest direct outlet for caustic-calcined magnesite. Substantial quantities were used as a fertilizer, and the synthetic rubber industry employed high-grade magnesia, derived from sea water, as a catalyst, and lower grades as fillers. Sea-water magnesia also was consumed in making rayon-coagulating solution.

The maximum price of $22 a short ton for maintenance grade of domestic grain magnesite in bulk, f.o.b. Chewelah, Washington, established by Order No. 75 of the Office of Price Administration on January 28, 1942, continued in effect throughout the year. Owing to shortage of this grade of magnesite, however, the Westvaco Chlorine Products Corporation was permitted by OPA to sell dead-burned grain magnesite from its stocks at Patterson and Permanente, California, at $32 a ton, f.o.b. Chewelah, Washington, to steel producers on the West Coast, an equivalent of $40.50 a ton f.o.b. Patterson and Permanente.

Shipments of dead-burned dolomite in 1942, stimulated by requirements of the steel industry, were 15 per cent greater in quantity than the record levels attained in 1941. Dolomite has long been used as a basic refractory for open-hearth maintenance and repair, averaging five to eight times the quantity of magnesite used for refractory purposes. Only recently, however, has dolomite invaded the metal field, competing with and supplementing magnesite and brines as a source of magnesium metal and magnesium compounds.

Expansion in magnesium chloride production for reduction to magnesium metal was the chief feature of the magnesium salines industry in 1942. Two magnesium metal plants produced magnesium hydroxide from sea water, converted it to the chloride, and electrolyzed the salt to magnesium metal. One firm recovered magnesium chloride from well brines for use in making metal. Magnesium sulphate and magnesium carbonate also were recovered from well brines, and Epsom salt from a dry lake.

The production of precipitated magnesium carbonate, magnesium chloride, magnesium sulphate, and magnesium hydroxide from magnesite, dolomite, sea-water bitterns, raw sea water, well brines, and dry-lake brines in 1942 was reported to the Bureau of Mines as 362,892 short tons, valued at $14,238,364, compared with 103,906 tons valued at $3,288,687 in 1941.

WALL STREET JOURNAL
New York City
AUG 19 1943

Magnesium Magic

For Post-War Era Is Plotted Now; Transport May Be Revolutionized

Projected All-Magnesium Airplanes Will Be Roomier —Auto Bodies Studied

Other Metals Will Compete

BY THOMAS J. KELLER

The men who make magnesium have begun planning, carefully but with imagination, to win their way in a competitive post-war age of light metals and plastics.

Producers—about a dozen of them, nearly all new to the business since the war began—and fabricators are probing technological questions and competitive cost factors. Among the most zealous are powerful companies which have traditionally devoted their energies to such materials as copper, lead, zinc. Some surveys are soliciting ideas of customers to find peacetime uses for magnesium, with existing or additional equipment.

Some of the proposals being weighed can be classified as potentially revolutionary in their fields. Experiments are in progress for making an all-magnesium plane, for instance, with the idea that relatively thick sheets of this lightest commercial metal could end the need of inner bracing, yielding more interior space. Already war has prompted use of magnesium for pilots' seats, instrument panels, oil reservoirs, bomb and ammunition racks.

Most kinds of transportation (because they are bulk in motion) are considered fair game for the bantam-weight champion. Bodies and working parts for buses, trucks, trailers and railroad cars are objects of research. Prospects for larger passenger autos are being examined, but small cars probably need most of their weight to hug the road.

Its Use Almost Universal

The future of magnesium need not hinge on such large ambitions as these. It is believed that thousands of industrial and consumer goods can be made partly or mostly of the metal. The domestic refrigerator may become a lighter piece of furniture. Other applications might include framework for portable typewriters; motor and oil pump housings; pulleys; motorcycles and bicycles; high-speed drills and other portable tools.

Magnesium is expected to compete head-on

Please turn to page 4, column 1

with aluminum, plastics, plywood and steel—especially of the stainless variety. It will also probably vie with brass and copper—in "fringe" areas where these are already engaged in a struggle with aluminum and steel. Typical are small mechanical parts such as reciprocating elements in textile machinery, or the works of a calculating machine, as well as housings for portable machinery.

Magnesium production facilities of the nation will soon exceed 600 million pounds annually, compared with about 6 million pounds in 1935 and 17 million pounds in 1941. Dow Chemical Co., which was the only producer and principal fabricator before the war, still leads in output. Ten other firms have entered production, and fabrication has been expanded by old non-ferrous metal interests.

Leaders of the industry emphasize they are keeping their feet on the ground. They say they expect no "Alfonse and Gaston" gesture from other materials, leaving the market wide open. None is so optimistic as to believe that magnesium will jump to the top rung.

Has Remarkable Qualities

Yet magnesium has certain remarkable qualities. It is:

(1) Light. A cubic foot of copper weights about 552 pounds; steel, 489 pounds; aluminum, 166 pounds—magnesium, 109 pounds.

(2) Strong. Not in pure form, which is never used commercially, but in alloys using up to 10% aluminum, 3% zinc and 2% magnesium, singly or in combination. These are easily machined and welded.

(3) Plentiful. In the earth's outer crust, aluminum ranks first among metals, approximating 8%; iron, second, with 4½% and magnesium third with about 2¼%. Commercial sources of magnesium—which include sea water and a number of common rocks—appear less susceptible to exhaustion than do iron and aluminum ores now of workable grade.

Many Difficulties To Be Solved

For every job that magnesium proposes to take, there are difficulties to be solved, however. A number of the broader ones may be mentioned.

Producing cost is perhaps the first on the list. The price per pound has been knocked down from $5 in 1915 to 20½ cents now. Aluminum is selling for 15 cents; copper for 12 cents, and alloy steel for about 2.4 cents. These price relationships are not necessarily permanent; the chances of reducing magnesium and aluminum prices are probably a good deal better than for steel and copper.

Part of the price question hangs not on technology, but on the payment the Government demands for productive facilities when the war is over. The bulk of present magnesium facilities has been built with public money, at costs which by peacetime standards will seem exaggerated. When the time comes to transfer them to private hands, the haggling will hold vast consequences for the future.

Before the war it was hard to interest manufacturers of finished metal goods in magnesium because they could not count on a continuous and adequate flow of alloy in wrought forms—sheets, rods, tubes, and shapes—which are made by processing ingots in rolling mills, extrusion dies or press forges.

This trouble may now be counted as conquered. A processing system is well inaugurated. Revere Copper & Brass, Inc., will soon begin operating the largest magnesium sheet rolling mill in the country (built largely with its own funds). Phelps Dodge Copper Products Co., subsidiary of Phelps Dodge Corp., is erecting (with Government money) a plant for extensive output of tubes, rods and shapes by extrusion. This plant can handle either magnesium or aluminum, and a Government program is under consideration for construction of additional extrusion plants to be operated in this dual fashion by other firms.

Up to now the biggest use of magnesium has been in castings, made in sand molds or by die casting. Incendiary bomb casings are one product. But it is wrought manufacturing which presents greatest possibilities.

U. S. Still Lags in its Use

There seems to be no doubt that the United States still lags behind the Germans and the British in use of magnesium. Some large English bombers have wheels and undercarriages of magnesium alloy, with a significant saving in weight. Captured planes have provided illumination on the extent to which the Germans have gone in applying magnesium in plane manufacture.

Particular interest centers on a large German engine mounting forged from a single sheet, apparently in a single operation, in such a way that stress parts were created without need of riveting or welding. Competent authorities believe a forge exerting as much as 30,000 tons pressure must have made it—a machine three or four stories tall. The largest press forge in this country is re-

ported to have a rated pressure of no more than 15,000 tons, though larger ones are under consideration.

One problem still troubling technical experts is the tendency of magnesium to corrode—about equal to that of iron. Metallic lip coatings and paints present a partial answer and are being developed. Strangely enough, the two metals most recognized for ability to withstand corrosion—copper and nickel—accelerate corrosion of magnesium.

Experts say fire hazards have been overemphasized. Talk of such hazards perhaps derives from long use of powdered magnesium in the pyrotechnics industry. In the form of fine powder, magnesium will burn and even explode. Under certain conditions the fine machinings from cuttings might become inflammable. But with proper care and special attachments to collect such particles, the danger is at a minimum. In sheets or other solids it is no more inflammable than other metals. Molten magnesium (requiring heat of 1,204 degrees Fahrenheit) can be handled safely.

Three long-established non-ferrous metal producers, under stress of war, are turning out about 22% of the nation's magnesium ingots. Basic Magnesium, Inc., now majority-owned by the Anaconda Copper Mining Co., operates the largest single producing unit in the country, Government financed. American Metal Co., Ltd., and National Lead Co. are operating Government plants whose construction they supervised. Other producers, in addition to Dow Chemical Co., the largest, are Permanente eMtals Corp. (a Henry J. Kaiser company), Mathieson Alkali Works, Inc., Union Carbide & Carbon Corp., Ford Motor Co., Diamond Alkali Co., International Minerals & Chemical Co., and New England Lime Co.

American Magnesium Co., subsidiary of the Aluminum Co. of America, which owned and operated a magnesium rolling mill, and casting and forging plants before the war, continues as an important fabricator.

BULLETIN OF AMERICAN SOCIETY FOR TESTING MATERIALS
Philadelphia, Pa.
AUG 1943

Materials Situation in 1942 and 1943

THE FOLLOWING notes excerpted from an extensive summary of a report on war production progress made by Donald M. Nelson may be of some interest to members. The detailed report covers munitions, construction and plant facilities, etc. Only that part relating generally to materials is condensed here.

MATERIALS IN 1942

In 1942 military consumption and export of strategic materials rose sharply. For example, at the end of 1941 about one-quarter of total steel consumption was in direct military use; at the end of 1942 direct military use and export to our allies accounted for over two-thirds. Military consumption of aluminum in 1942 was 1,177,000,000 lb., or 168 per cent higher than in 1941. In 1941 about two-thirds of military consumption of aluminum was for aircraft; in 1942 the ratio was almost 80 per cent. Exports of aluminum rose by 336 per cent. The story for other materials is similar.

This increased flow of materials into direct military production and exports came chiefly from the expansion of domestic supply and the reduction of certain civilian uses. The domestic output of many key materials increased substantially in 1942. Production of chromite rose by almost 700 per cent; magnesium by 220 per cent; aluminum, 77 per cent; alloy steel, 38 per cent; molybdenum, tungsten and vanadium, 40 per cent.

In 1942 the beginnings of a joint control of the international flow of raw materials by the United States and British governments appeared, with the creation of the Combined Raw Materials Board. By joint agreement, the United States was allotted all rubber exports from South America and Liberia, plus a portion of Ceylonese exports. A similar arrangement has been made in the case of tin.

Toward the end of the year, the Controlled Materials Plan was adopted, providing over-all controls extending throughout the production process. Full determination of the flow of all resources in a complex war economy is undoubtedly unattainable, but important steps were made toward this objective.

MATERIALS IN 1943

Needs of military production during 1943 call for much greater quantities of almost all critical materials than in 1942. Requirements for steel are up 31 per cent. Aluminum mainly for airplane manufacture, and nitrogen for explosive production, are up over 100 per cent. Phenol and toluene, also essential for the production of explosives, are likewise up over 100 per cent. Magnesium is up over 200 per cent.

An even larger increase—450 per cent—is expected in the direct military use of ethyl alcohol, principally for the synthetic rubber program and for making smokeless powder. Copper, almost alone among the leading industrial materials, shows less than a 10 per cent increase from 1942 to 1943, reflecting the great difficulty of increasing supplies of that metal.

Exports were also scheduled to advance substantially for most materials, except copper. Outstanding is a sevenfold expansion in magnesium shipments. Exports of toluene explosives are expected to rise about 70 per cent.

These increased requirements for materials for military use and for export during 1943 must be met through corresponding increases in new supply during the year, that is, from added domestic production and higher imports.

Unlike the 1942 situation, only limited quantities of most scarce materials can be rendered available by further reduction in the civilian economy. Nor is it possible, for most materials, to deplete stocks further without endangering the production program itself.

By the end of 1942, restrictions on nonessential uses of most metals had become so rigid that virtually no further diversion to military production can be expected from this source. The restrictions in effect at the beginning of 1943 were severe. Allotments for such uses as railroad equipment and maintenance, agricultural tools and machinery, and industrial repairs and maintenance are being increased above estimates made last December.

Outside the field of metals, the situation appears to be more flexible. Sharp reductions can still be made in the nonmilitary use of lumber, imported cordage fibers, and other commodities.

The balance between supply and requirements for most critical materials should apparently improve somewhat during 1943, but there are many uncertainties that may well affect hoped-for importation and production materials.

The scarcity of vital materials will remain a critical limiting factor on war production during 1943. The tightness of steel, copper and aluminum, especially, necessitates prompt and decisive shifts if we are to avoid cut-backs in projected programs.

Downieville, Cal., Messenger
Cir. 758
AUGUST 28, 1943

Magnesium Is Metal Of Future

One of the important metals of the future, competing with aluminum in lightweight construction, will be magnesium, according to Dr. L. H. Duschak, professor of metallurgy on the Berkeley campus of the University of California.

At present there are fifteen plants for the extraction of magnesium in the United States, producing more than one hundred times as much metal as in 1933.

Magnesium, said Professor Duschak, is the lightest of the common metals, having about one-fifth the density of copper. It has more strength per unit of weight than aluminum and several times that of ordinary steel.

One of the few metals produced from raw materials which are abundantly available, magnesium may be obtained from several common minerals and from sea water. One cubic mile of sea water contains four to six million tons of this metal.

Milwaukee Sentinel
Milwaukee, Wis.
AUG 19 1943

Aluminum Output Supply Adequate

WASHINGTON, Aug. 18—(AP)—Sec. of Commerce Jones said today that aluminum and magnesium are now coming out of government owned plants at a rate which assures an adequate supply.

In July, he said, aluminum production was 73,292,000 pounds from government owned plants and 77,800,000 pounds from privately owned plants.

Government owned magnesium plants in the same month produced 31,410,000 pounds and the one private plant, 3,500,000 pounds.

IRON AGE
Philadelphia, Pa.
AUG 26 1943

Al Output Five Times Pre-War Level

• • • **In the month of July**, 73,292,000 lb. of aluminum was produced in government owned plants, Jesse Jones, Secretary of Commerce has announced. For the same period, output of the plants of the Aluminum Co. of America and the Reynolds Metals Co. amounted to 77,600,000 lb., making the total for the month 150,892,000 lb. Before the war, average monthly production of aluminum was about 25,000,000 lb. For the first seven months of the year, government-owned plants have contributed 515,899,725 lb. of aluminum.

Production of magnesium in the same month was almost seven times greater than the average monthly output prior to the war. Government plants produced 31,410,000 lb., almost ten times the July output of the Dow Chemical Co. which amounted to 3,500,000 lb. Total production in government owned magnesium plants so far this year amounted to 233,540,276 lb.

DENVER MINING RECORD & MACHINERY JOURNAL
"For over 50 years the leading mining newspaper of the nation. Published every Saturday."
1829 Champa St., Denver, Colorado
AUG 26 1943

METALS ARE EASIER AS SUPPLIES GROW DEMAND TAPERS

New York, N. Y. — Copper tonnages allocated for September consumption are reported as lower than in August.

Trade circles say two factors probably are responsible—lesser tonnages to brass mills so that growing accumulations of mill scrap could be reduced, and smaller requests from some consumers in an effort to whittle inventories.

Recommendations for foreign lead to be used by domestic manufacturers next month were expected to exceed 20,000 tons.

Stocks of high grade zinc were reported increasing, which might result in less of lower grade types being processed into higher grades.

Production of aluminum and magnesium was officially reported at rates considered ample.

Army furloughs of men to nonferrous metal mines—copper, zinc and molybdenum—total 627 so far out of an ultimate goal of 4500 soldiers to be sent back.

CHEMICAL INDUSTRIES
"Devoted to economic and business problems of making and marketing, buying and using of chemicals."
New York City
AUG 1943

Calcium Chloride Shipments

Shipments of calcium chloride and calcium-magnesium chloride derived from natural sources, used chiefly in dust-laying of dirt roads, were 35 per cent greater in 1942 than in 1941, according to the Bureau of Mines. However, total consumption of natural and synthetic calcium chloride is not believed to have increased significantly in 1942. The increased shipments of the natural material are said to have resulted from the shut-down of a former producer of synthetic calcium chloride. There were 13 producers of natural calcium and calcium-magnesium chloride in 1942, compared with 10 in 1941.

Calcium chloride and calcium-magnesium chloride, recovered from natural brines, are largely byproducts of the manufacture of bromine, sodium chloride, magnesium chloride, and certain other salts.

WALL STREET JOURNAL
New York City
AUG 31 1943

Munitions Production Rises 3% in July But Still Fails to Hit Schedule, WPB Says

Sharp Boost Shown in Signal Equipment, Ground Ordnance and Aircraft

From THE WALL STREET JOURNAL *Washington Bureau*

WASHINGTON—Munitions production increased 3% during July to break away from the level at which it had remained during April, May and June but it still was slightly behind schedule, the War Production Board reported yesterday.

The production index (covering ships, planes, tanks, ordnance, quartermaster and miscellaneous items) for July was 593. (November, 1941, equals 100). This was an increase of 20 points over June, although it was still 5 points behind the monthly average increase.

W.P.B.'s complaint about production this summer has been that the rate of increase was not high enough. In its latest report it warned that, if goals were to be achieved, the step-up during the next six months must continue at the rate of the last year and a half.

One of the outstanding totals for July was in the field of signal equipment, which increased 17%. Ground ordnance came up 6% to even the schedule and to reach a new high. Aircraft and related munitions moved 5% ahead of June.

Production problems in many programs have been "largely licked," the W.P.B. said, and peak production rates have been achieved or are not far off. The most difficult of the troubles still remaining are concentrated in the airplane, signal equipment and Army ammunition programs.

Aircraft production showed a 4% increase over June. Included were a 19% rise for fighters and an 8% rise for transports. Heavy bombers gained 13%. A total of 7,373 planes were produced during July.

The W.P.B. attributed failure of aircraft production to increase faster to a variety of factors, including design changes and labor shortages. Aircraft ordnance, it was revealed, rose more sharply than aircraft production.

Admitting that peak rates were not far off, the W.P.B. said ship construction calls for sizable step-ups in the immediate future. The increase for naval vessels over June was 7% and for merchant ships 4%.

The war agency also reported that considerable progress has been made recently in eliminating serious bottlenecks. Some of the achievements mentioned were elimination of the production problem in magnesium and aluminum, increased quartz crystal output and establishment of a diamond die industry at home to eliminate dependency on overseas sources.

CHEMICAL & CHEMICAL ENGINEERING NEWS
New York City
AUG 10 1943

Magnesium Production

Revere Copper & Brass, Inc., will start operations of its new magnesium plant at Baltimore within the next few months. This is the largest magnesium sheet and strip mill in the country. The Baltimore division is already making aluminum tubing and is considerably expanding its facilities.

NEW YORK, N. Y., HERALD TRIBUNE,
Cir. 856,512, Sun. 539,023
AUGUST 31, 1943

Nelson Reports 3% July Rise in Arms Output

Gain in Equipment for Signal Corps Is 17%, 25% for Destroyers

From the Herald Tribune Bureau

WASHINGTON, Aug. 30.—A 3 per cent increase in munitions output during July was announced today by Donald M. Nelson, chairman of the War Production Board, who expressed himself as moderately pleased" at a renewed upward swing after the leveling off of April, May and June.

The two most prominent production increases noted in the thirteenth of Mr. Nelson's monthly reports was a 17 per cent rise in equipment for the Army Signal Corps and 25 per cent in the delivery of destroyers and destroyer escort vessels.

On the negative side of the production ledger, merchant ship output decreased 4 per cent from June, and ammunition for the Army, which had increased sharply in two previous months, remained level during July.

Aircraft picked up another 4 per cent during the month, Mr. Nelson explaining: "The increase i nJuly over June level included a 19 per cent increase for fighters and an 8 per cent increase for transports. Heavy bombers showed a gain of 13 per cent. The failure of aircraft production to increase more sharply was due to a variety of factors including design changes and labor shortages."

Gliders Being Tested

Tactical gliders, Mr. Nelson's statement added, have been produced in large volume in recent months, and represent a significant addition to the airplane output of the aircraft industry. However, they are not included in the aircraft production figures quoted.

As for merchant ships, which represented the heaviest production drop noted in the report, Mr. Nelson said the peak of ship construction rates is not far off, with sharp step-ups to meet those rates planned in the immediate future.

"Considerable progress has been made recently by W. P. B. and industry in eliminating many serious bottlenecks," he stated. "Many of these accomplishments have been given considerable public attention, while little is known of the progress on smaller but equally important programs."

As a few examples, Mr. Nelson listed the following:

The production problem in magnesium and aluminum has been overcome in fact, efforts are now being made to find further uses for magnesium.

Quartz crystal output, important in communication, has been increased markedly, with the notable assistance of conservation and substitution programs.

Diamond Dies New Industry

A new important domestic industry, diamond dies, has been erected almost overnight, freeing us from previous dependency on precarious overseas sources.

Substitution programs have been of considerable assistance in remedying the tight situation in jewel bearings, mportant n varous types of precision instruments.

Another achievement is the development of a generally satisfactory situation in steel. Although total requirements are still greater than supply, needs for all important programs are being met through increased production and better distribution.

The W. P. B. index of munitions production, based on fixed dollar values of all production, rose from 573 in June to 593 in July.

IRON AGE
Philadelphia, Pa.
SEP 2 1943

Briefly Told—

Postwar Survey Shows Industrial Planning; Magnesium Production Up

• One company in five plans to invade new fields after the war, according to a postwar survey by the management consulting firm of McKinsey & Co., New York. Two out of three companies plan new development in related lines. The poll covered 100 companies in 22 major industries. Six out of ten firms contacted have already begun postwar planning, with large companies showing greater interest. Indicative of postwar trends is the wartime development of plant decentralization. More than one manufacturer has found that small plants in rural areas have definite cost advantages over large factories in urban sections. Twenty per cent of the firms polled anticipate a substantial increase of employees while 45 per cent look for sharp reductions.

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• Production of magnesium castings has reached a rate three times as great as at the time of the Pearl Harbor attack, the WPB revealed recently. Incendiary bomb magnesium castings are not included in the totals, but WPB indicated that these castings have shown large production increases.

FINANCIAL TIMES
"Canada's Leading Newspaper for Investors."
651 Craig St. West, Montreal, Can.
SEP 3 1943

The Battle of the Metals

Large Scale Production of Light Metals Important Factor

From Fitch Market and Business Forecast, published by Fitch Investors Service, New York.

The title of this discussion does not refer to the present global war, which may better be called the war of machines, although, of course, the war machines, such as aircraft, warships, guns, tanks, bombs and munitions are almost entirely made of various metals.

We are referring here to the postwar competitive struggle between the principal metals, the production of which has reached astronomical figures under the urgency of war needs.

The producers of aluminum, copper, magnesium, nickel and steel must all strive to hold their markets and conquer new outlets, if possible, to keep their mines, smelters and fabricating plants going at sufficient capacity to earn a fair return on their invested capital. A large part of the increased facilities are owned by the government, and these may have to be closed down after the war, if there should be an insufficient demand for their output.

It is particularly the relatively new metals, aluminum and magnesium, which constitute a severe competitive threat to the older metals, especially copper. That was true to a moderate extent even before the war, but with a very large increase in productive capacity and a lowering of prices, the post-war years will undoubtedly witness a more intensified struggle for markets.

Copper's Post-War Problems

From the price standpoint, the situation for copper looks rather serious. Aluminum is now quoted at 15 cents per pound, down from 23 cents in 1934 and 20 cents in 1938, the last pre-war year. It is one-third as heavy as steel or copper.

Magnesium metal is priced at 20½ cents per pound, compared with $5 per pound in 1915, 86 cents in 1925 and 30 cents in 1938. It has only two-thirds the weight of aluminum and one-fifth that of copper. It is, therefore, quite evident that, on a volume basis, magnesium metal is cheaper than any other metal, except iron, followed in the order named by aluminum, zinc, lead, copper, nickel and tin.

It is clear that aluminum is preeminently the metal of air power and will maintain this position in the post-war expansion of commercial aviation. Aluminum production in the United States rose from 74,177,000 pounds in 1934 to 286,682,000 pounds in 1938 and 615,000,000 pounds in 1941, and is estimated at over 1,000,000,000 pounds in 1942.

An indication of the uses of aluminum in the pre-war period 1933-38 is shown in the figures of consumption by the principal groups: Transportation (land, sea, air), 29 per cent; machinery and electrical appliances, 15 per cent; cooking utensils, 14 per cent; electrical conductor, 10 per cent; building construction, 8 per cent; food and beverage, 6 per cent; chemical, 5 per cent. In 1937 only 6 per cent went into aircraft.

As for magnesium, production just before Pearl Harbor was at the annual rate of 42,000,000 pounds, compared with 6,000,000 pounds in 1938. At the close of 1942 output was at the annual rate of 260,000,000 pounds, which is expected to reach 600,000,000 pounds under a government program, which is well under way.

African Mines Offer Threat

Another important threat to the American copper mining industry is the development of the large, low-cost copper mines in Africa (Northern Rhodesia and The Congo), which are controlled by British, Belgian and French interests, and which had already reached a stage of production in the pre-war period which made their output a dominant factor in the world copper market, leading to the formation of an international cartel to maintain market quotas and fair prices.

Large copper production in Latin America and in Canada is also a factor to be reckoned with.

Summary of Prospects

Unfavorable factors are rapid decline of consumption for military purposes on the assumption that the Axis nations will be defeated, disarmed and kept disarmed for at least a generation. This would permit the United Nations also to reduce their armaments to a safe degree.

Competition for United States producers from low-cost mines in Africa, South America and Canada, unless the world price can be stabilized and market quotas agreed upon, which may not be possible for political reasons. If international agreements cannot be reached and with the loss of foreign armament demand, exports of American copper would practically disappear.

Exports have always been very important, amounting in 1937 to 309,611 tons of refined copper out of total domestic production of 964,176 tons and in 1938 to 385,223 tons out of 638,076 tons of domestic production.

It is significant that in both years Japan was by far the largest buyer, with Germany in second place in 1938.

Increased use of competing materials, such as aluminum, magnesium, stainless steel and plastics, to some extent.

Favorable factors are reduction of costs by improved methods.

Research and development of new markets, particularly in the building industry, such as copper roofing, copper shingles, increased use of copper pipes by reducing the price, etc.

Increased demand for power developments and electrification of farm homes and buildings.

Increased demand from many foreign countries where the standard of living is expected to rise as one of the indirect results of the war, having brought the people in contact with modern ways of living, such as the use of electric appliances, electric lighting, telephones, etc.

These foreign markets depend of course upon a practical arrangement of world prices and market quotas, as previously pointed out. Such markets are apt to be very large, with a continuous growth for a very long time. We are referring to China, The Middle East, India, North Africa and of course Latin America.

Difficult Position

Weighing these various factors on both sides, it would seem that the American copper industry will find itself in a rather difficult position after the war.

The leading companies will probably be able to adjust themselves and show fair earnings, by virtue of their large resources, their command of the highest technical and managerial skill and the fact that most of them produce a variety of other metals and materials in addition to copper, such as gold and silver, lead, zinc, lumber and coal.

Best situated of all are the large smelting, refining and mining companies, which have a well diversified production, including most of the non-ferrous metals, often quite substantial amounts of gold and silver, whose interests and investments are world-wide and who have good earnings and dividend records and also impressive financial resources.

STEEL
Cleveland, Ohio
SEP 6 1943

evaporative cooling capacity.

Milling Cutter

Super Tool Co., 21650 Hoover road, Detroit, announces a new carbide-tipped milling cutter with cast alloy body said to be instrumental for production increases of as much as 300 per cent in milling aircraft landing gear parts.

Made with a minimum number of flutes necessary for various classes of work, the cutter is designed so simple that its price is reduced to a point where it can be used generally on short runs and for general shop tooling.

A feature of the development is it can be operated at greater speeds—providing finishes comparable to ground surfaces. Greater accuracy also is claimed at these higher operating speeds. The feed per tooth being lower, the cutting pressure is lessened and there is consequently less distortion of the work. Another advantage is the throwing off of the major portion of the heat in the chip, leaving less to be absorbed by the work and the cutter.

On actual production jobs, the cutter is being used successfully in steel at surface speeds of 400 to 600 feet per minute with tooth load varying with the hardness of the steel from 0.0005 to 0.0025-inch, it is said. Standard cutters for cutting cast iron, brass, bronze, copper, aluminum and magnesium are supplied in diameters from 3 to8 inches in a variety of widths. These tools are 4 or 6 flutes. For cutting steel, sizes are offered with 6 to 16 flutes, according to the diameter.

POWER PLANT ENGINEERING
"Treats all subjects pertaining to the generation, transmission and utilization of power in the industries."
Chicago, Ill.
SEP 1943

Grand Coulee Starts New Unit

GRAND COULEE DAM'S fourth massive generator has recently been put into service adding more than a hundred thousand kilowatts to the capacity of this plant, constructed and operated by the Bureau of Reclamation under the Department of the Interior. Two additional large generators are being installed at Grand Coulee for service before next February.

The rated capacity of the Grand Coulee plant, with the latest addition, is more than 600,000 kw. This total includes two generators of more than 70,000 kw each, transferred from Shasta Dam in California and which are now in operation. The capacity is second only to Boulder Dam as the world's largest hydroelectric plant, and with three additional machines installed by 1945 the capacity would be increased to nearly 950,000 kw.

About 95 per cent of the power generated at Grand Coulee and transmitted by the Bonneville Power Administration is served to customers engaged in war work, including the production of 30 per cent of the nation's aluminum pig capacity, aluminum sheet, ships, carbide, steel, magnesium, sodium chlorate and ferro-alloys. In addition, the Government network is serving many military establishments.

THE FOUNDRY
"Established in 1892"
Penton Publishing Co.
Cleveland, Ohio
SEP 1943

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COMPARATIVELY low melting point for magnesium and magnesium base alloys makes it difficult to make fluxes which will be liquid at the desired stage of melting so that they will serve their purpose efficaciously. Generally it is desired to have a flux that will have a melting point at or under 600 degrees Cent. (1110 degrees Fahr.). To meet that condition, and more particularly to produce a low melting point flux, patent No. 2,311,126 describes a procedure for preparing part of a suitable mixture. It consists in ball mill grinding a mixture of 107 parts ammonium chloride, 24 parts sodium chloride and 40 parts magnesium oxide. That material then is fused at 420 to 550 degrees Cent. (785 to 1020 degrees Fahr.) until ammonia ceases to be evolved. The fused material is cooled and ground. Actual flux used may consist of 42 parts fused material, 36 parts sodium chloride and 32 parts magnesium fluoride, or 67 parts fused material and 33 parts potassium chloride.

This article was clipped from
AVIATION
"America's leading aircraft publication. Covers latest methods of production, inspection, operation of all American and Foreign planes and engines."
McGraw-Hill, 330 West 42nd St., New York City
SEP 1943

★ SPOT CHECKING ★

Grover Loening has been appointed chairman of NACA subcommittee on helicopters.

Postwar volume will be even less than 10 percent of 1944's expected $80 billion—the peacetime estimate of some people—according to J. Carlton Ward, Jr., president of AWPC East. He reveals that a study made for Washington predicts sales of $1 billion.

Any servicing of airplanes for war procurement agencies "whether in their preparation for shipment or subsequent servicing is exempt from price control," OPA announces.

Revealing that six different processes to increase aluminum production, including use of high-silica bauxite, have been approved, WPB announces that "many scientists report that the alumina situation looks better today than it did a year ago." Magnesium production in 1942, it is said, was 30 times that of 1939.

CANADIAN MINING JOURNAL
"Canada's Only National Independent Technical Mining Publication"
Gardenvale, Que.
SEP 1943

Aluminum and Magnesium Supply

One sign of the easier situation has been in magnesium. On the scarcity list, the metal has been moved down from Class I, in inadequate supply, to Class II, in adequate supply for war and essential uses. Magnesium output, in fact, has now attained the two-third mark of our yearly planned output, July production totaled 17,455 tons, or a yearly rate of 209,460 tons. Of the July total, government-owned plants accounted for 15,705 tons and the Dow Chemical plants for 1,750 tons. The government plant at Las Vegas, operated on fee by Anaconda Copper Mining, alone is reported to be turning out about 1,000 tons of metal a week. Government plants through July turned out 166,770 tons magnesium this year.

Output of aluminum is even nearer the planned yearly rate. Government-owned plants accounted for 36,646 tons in July and Aluminum Company of America and Reynolds Metals Company turned out 38,000 tons, and the 75,446-ton total figures out at 905,352 tons per year, just about 100,000 tons short of the projected production. Idleness of seven West Coast plants, due to labor shortage, with a yearly reduction capacity of 126,000 tons, accounts for the failure to reach the high point. Through the seven months to the end of July, government plants produced 257,950 tons of aluminum. Bottlenecks at fabricating plants, due to inadequate labor, have temporarily resulted in the supply of both of the light metals seeming excessive. Another factor in the situation has been the increased supply of scrap, principally wrecked airplane material but also including turnings and other grades of working material. The wrecked planes represent increasing arrivals from battlefields, from which iron has been also coming in fair tonnage, but non-ferrous scrap, aside from aluminum, has arrived only in small lots. With the war calling for more aircraft, rather than less, and more bombing, the supply of the primary light metals is not likely to be too large if aircraft factories are assured sufficient labor.

WALL STREET JOURNAL
PACIFIC COAST EDITION
415 Bush St., San Francisco, Calif.
SEP 1 1943

Phelps Dodge Corp. — New magnesium and aluminum extrusion mill to cost around $12 million, financed by Defense Plant Corp., and equipped and operated by a subsidiary of Phelps Dodge, will start operations about Oct. 1.

This article was clipped from
BUFFALO DAILY LAW JOURNAL
Buffalo, N. Y.
SEP 4 1943

Industrial Gains Phenomenal As Demands of War Bring Improvements

NEW YORK, Sept. 3 (CCNS) — The way is being paved for peacetime industrial developments of the greatest importance and value, the Guaranty Trust Company of New York states in its monthly review of business and financial conditions — The Guaranty Survey.

Even a brief review of some of the more outstanding and widely known lines of progress shows that war, the great destroyer, has also its constructive side. Under the spur of wartime necessity, industrial developments that might otherwise require years or decades are compressed into months.

One of the broadest fields of industrial development suggested by the technical progress of wartime is found in the wide variety of devices and methods known as electronics, according to the Survey. About 750 types of electronic tubes are already in use, and the total value of the American industry's product this year is expected to surpass that of the entire automobile industry before the war.

The chemical industries have made strides in response to the needs of World War II. The rubber emergency alone has given rise to a new branch of industry with long-term prospects that are still somewhat uncertain but potentially very important.

The swift growth in the use of plastics in recent years is a familiar fact, but the remarkable extent to which the war has stimulated that growth and enhanced the outlook for further expansion is less generally appreciated. Where pre-war consumption was measured in pounds, the Survey says, prospective post-war use will be expressed in tons.

Urgent war needs for metals have brought about phenomenal expansion in output of some of the lighter metals and have stimulated research in the development of new alloys of the heavier metals. The war is creating an aluminum industry in the U. S. of 10 times, and a magnesium industry of 100 times the pre-war volume, besides greatly increasing production of a number of other metals.

Demands of war have contributed greatly to the development of superior grades of motor fuel and of gasoline and Diesel engines. Hand-in-hand with the development of higher-grade fuels has gone the invention of lighter, more powerful, and more efficient engines.

STEEL
Cleveland, Ohio
SEP 13 1943

DPC Authorizes Plant Expansion, Equipment

Defense Plant Corp. has authorized the following expansions and equipment purchases (figures are approximate):

Metal-Mold Magnesium Corp., Cedarburg, Wis., for plant facilities in Wisconsin, $170,000.

Copper Range Co., Pittsburgh, $90,000 for additional equipment at a plant in Pennsylvania, making over-all commitment of about $375,000.

N. A. Woodworth Co., Ferndale, Mich., $110,000 for additional equipment at a plant in Michigan, resulting in over-all commitment of about $4,250,000.

Humphryes Mfg. Co., Mansfield, O., $230,000 for additional machinery and equipment at a plant in Ohio, resulting in over-all commitment of about $600,000.

Reynolds Metals Co., Louisville, Ky., $365,000 for additional equipment and machinery at plant in Kentucky, resulting in over-all commitment of about $1,215,000.

Iron Fireman Mfg. Co., Portland, Oreg., $70,000 for additional equipment at a plant in Michigan, making an over-all commitment of approximately $600,000.

STEEL

PORTLAND, ORE., JOURNAL OF COM.
Cir. 2,785
SEP 17 1943

Spokane Portland Cement Company To Tangle With U. S.

(D. J. of C.—Sept. 17, 1943)

Spokane, Wn. — Effort by the Spokane Portland Cement Co. to prevent seizure by the government of its dolomite quarry at Marble under guise of the war emergency act is expected to produce a legal struggle that may carry to the U. S. supreme court, so vital are the issues involved, R. W. Nuzum, counsel for the company, said here yesterday.

The company's property includes thousands of tons of dolomite, essential in the production of magnesium and aluminum.

The government is seeking to acquire the property by condemnation under the war emergency act demanding a title to it all in fee simple, with the intention of turning it over to some other company of its own choosing for operation, if past practices are followed, Nuzum said.

In its petition to prevent government seizure the Spokane Portland Cement Co. has submitted a counterplan in federal court by which it hopes to retain title to the property, while at the same time supplying the government with all the dolomite needed for the war effort.

The company asserts there is far more dolomite in its property than the government will need for the duration. It offers to give the government all the dolomite needed for the war at an offered price or one to be agreed upon, with the stipulation that the balance remain the property of the company.

Objects to Confiscation

The company by its offer expresses its desire to supply all government war needs but objects to the government's effort to confiscate all of the property.

"The case will have nation-wide interest," Attorney Nuzum said.

"If the court rules the government is within its rights to demand a fee simple title for the property under the war emergency act, there is no business safe from permanent government seizure under guise of war emergency."

• BACK THE ATTACK WITH WAR BONDS •

MINING JR'L
PHOENIX ARIZ.
9/15/43

NEVADA HIKES NUMBER OF ASSAYS GIVEN FREE TO PROSPECTORS

AN INCREASE in the number of assays for strategic minerals and ores is noted by the University of Nevada. Last spring the state legislature granted authority to increase the number of free assays in any 30-day period from two to five. The increase, however, applies only to strategic ores and the limit of two determinations in a 30-day period still applies to gold and silver.

The law was passed to encourage prospecting for strategic minerals and to aid in the discovery of new mineral deposits. Specifically mentioned in the law are antimony, arsenic, beryllium, manganese, magnesium, tungsten, molybdenum, quicksilver, zinc, lead, copper, tin, chromium, cadmium, or "other strategic minerals." Free assays are not available to operating mines, engineers sampling mines, or to check other assays. The state laboratory reports most determinations recently have been for lead, zinc, copper, tungsten, manganese, vanadium, antimony, and arsenic.

ST. JOHNS, ORE., REVIEW
Cir. 4,000
SEP 17 1943

Magnesium Developed Recently

The English scientist, Davy, first discovered magnesium in 1808; but it was not until 1830, in France, that Bussy produced the element in metallic form. Commercial exploitation of magnesium did not occur in Europe until the early years of the 20th century, and it was 1915 before the industry had its beginning in this country.

MEN'S APPAREL REPORTER
Monthly news magazine for Men's Apparel Buyers.
New York City
SEP 1943

POST-WAR CONTROL

Right now Uncle Sam owns 10 per cent of all steel mills; more aluminum plants than Mellon; 92 per cent of magnesium; 33 per cent more synthetic rubber than the pre-war natural rubber volume; almost 50 per cent of machine-tool facilities; ten times private aircraft plant value.

What effect will these government holdings have on industry? In right channels they can be directed toward bettering operations and relations; in wrong hands, they can be given away to private corporations, leaving the public holding the bag, or they can be held as a threat over private business.

SYNCHROSCOPE
DETROIT MICH.
10/43

. . . One eighth of United States electric output is used to produce aluminum and magnesium.

WOMEN'S WEAR DAILY
"Covering women's apparel and accessory trades."
New York City
OCT 1 1943

October 1943?

Ford Plant Behind

One of Ford's war plants is limping badly, and Washington experts are offering crutches.

It's a magnesium plant located at River Rouge, turning out that light metal required in airplanes. It was authorized by RFC's Defense Plant Corporation nearly two years ago (early 1942), with a government investment of $11,000,000.

But production has been so slow that both Defense Plant and WPB officials decided something would have to be done. So the aluminum division of WPB asked the Ford manager to come to Washington for conferences.

Both WPB and DPC are offering advice and expressing concern. They are saying in effect: "You have had nearly two years in which to reach production goals, and if you don't make the grade soon, the war will be over."

TURBINES AND SING TRIUMPH

The Magic of Plastics From the Heavily Wooded Timber Land Has Much to Offer for the Future of This Region — Power of Grand Coulee Dam Brings New Era to Area, With Industrial Growth in Aluminum and Magnesium Plants

CHEMICAL & CHEMICAL ENGINEERING NEWS
New York City
468 OCT 25 1943

* * *

Revere Copper & Brass, Inc., will soon open the largest magnesium sheet and strip mill in the United States, and by January 1944 plans to reach a capacity output of 500,000 pounds per month. A special laboratory has been equipped and staffed to conduct research in the application and utilization of magnesium-base alloys after the war.

F. O. C.
JAN 3 1944

Investigation Is Called for Utah Steel Concern

SAN FRANCISCO, Dec. 27 (UP)—Attorney General Robert W. Kenny, chairman of the California commission on interstate cooperation, today requested a joint investigation into the war production board order halting work on the Geneva, Utah, structural steel mill.

Kenny urged United States Senator Pat McCarran, democrat, Nevada, chairman of a committee on decentralization of the steel industry, to call a joint inquiry by United States senators and the California, Nevada and Utah commissions. He suggested that McCarran and Senator Abe Murdock, Utah, organize the investigation.

Kenny said abandonment of the Geneva steel mill, part of a huge, $180,000,000 outlay, would be a blow to the west's infant steel industry. In peace time it would produce girders for bridges and buildings which previously were shipped from eastern mills.

Kenny said purpose of the investigation would be to determine whether the WLB discriminated against the western steel industry, and why the APB had no westerner on its steel committee.

The WPB reported in Washington that it was not preventing Geneva Steel company from operating the completed jig iron plant in Utah. The WPB said it did not recognize a need to allocate Geneva pig iron to other steel mills, indicating that Geneva pig iron should be used for the Utah plant's own requirements.

BOSTON NEWS BUREAU
"The only daily financial newspaper published in New England."
Boston, Mass.
JAN 3 1944

No Magnesium Cutback

No immediate cutback in magnesium production is anticipated at Washington as increased consumption for strictly military purposes and for military and civilian experimentation have drastically reduced what was once surplus production. Present stockpiles are about half what is considered the minimum safety level. Until stockpiles reach the goal of two months' supply there will be no cutbacks, it is said, and prospects are that at the present rate of consumption that goal will not be reached until some time in the early summer.

NEW YORK, N. Y., TIMES
Cir. 474,277
JANUARY 4, 1944

MAGNESIUM OUTPUT RAISED

National Research Process Steps Up Production

High vacuum manufacture of magnesium, utilizing a process developed by the National Research Corporation of Boston has increased greatly the nation's output of that metal, it was announced yesterday. Large producers of magnesium are the Ford Motor Company plants and the New England Lime Company. The process has been called "one of the most important technical achievements of the war" by the War Production Board.

Another process used in the drying of penicillin has been developed by the corporation and is expected to revolutionize the dehydration step in the production of the drug by performing the operation several times faster and at greatly reduced cost. Most penicillin producers have adopted the process, and a sufficient supply for the armed forces and civilians is indicated by spring.

SAN FRANCISCO, CAL., NEWS
Cir. 107,082
JANUARY 8, 1944

ALIEN PATENTS AVAILABLE TO S. F. FACTORIES

War Plants Corp. Ready to Help Small Firms on New Jobs

BY ROBERT C. ELLIOTT

Manufacturers or would-be enterprisers looking for post-war products to make are offered their choice of more than 50,000 patents from Axis countries royalty free.

The San Francisco offices of the Smaller War Plants Corp., in the Furniture Mart, today offered to help manufacturers wanting to use enemy patents either for war or post-war use.

A Story About TOMORROW'S JOB

Pacific Coast war plants already are in search of new products to make after the war. They are considering plans to build up the West's new industries—aluminum, magnesium, steel, chemicals from oil and wood, plastics, and to expand food processing. They count on the West's increased population to make bigger markets.

The Smaller War Plants Corp. suggested that Axis patents, the largest block in the United States, may offer industries opportunities to break into new civilian fields, creating jobs.

The alien property custodian seized all patents controlled by the enemy. Worth untold millions, these inventions are declared to "represent some of the finest foreign research achievements in modern science, particularly in the production of dyestuffs, plastics, pharmaceuticals and electrical goods.

Variety of Products

"Other important patents include those relating to synthetic shellac manufacture, waterproofing of cloth, quick freezing of fruit juices, improved magnetic alloys and processes for making rayon."

It happens that many of these items is of interest to San Francisco, which offers advantages especially to small plants—the kind that a "little fellow" with a big idea, energy and a rented loft can start.

With the agricultural riches of Central Valley at hand, a manufacturer might use one of the food processing patents, develop a textile product from cotton, flax, wool or rayon, or adapt another patent to using the waste products of farming.

The California oil industry will break into a big industrial chemical field, with byproducts which small plants can put to different uses. Available to local risk-takers are chemical product patents of Daimler-Benz, Kuhlmann, Norsk-Hydro.

Famous Patents

Freed for American manufacture without royalties are inventions of electrical ignition systems by Robert Bosch, alloys and metallurgical equipment of Societe General Metallurgique de Hoboken, and electrical equipment of Kwaisha Toden Denkyu Kabushiki.

The Alien Property Custodian pledges the enemy patents shall be "made available forever to American industry for the benefit of labor and the consuming public." The charge fo ra license on a patent is $15.

Many patents "down the alley" of the San Francisco Area are listed, such as amusement and exercising devices, acoustics, apparel, baggage, batteries, furniture, dyeing, hardware, confections, chemistry, cutlery, heating, electrical equipment, kitchenware, metalwork, pumps, railway equipment, stoves, refrigeration, roofing, textiles, washing apparatus.

Free services are offered by the Smaller War Plants Corp. in exploring the possibilities.

LOS ANGELES, CAL.
TIMES, Cir. 219,890, Sun. Cir. [illegible]
JANUARY 2, 1944

Record Mineral Output in 1943 Worries Ickes

WASHINGTON, Jan. 1. (AP)—Reporting $8,000,000,000 worth of minerals, an all-time record, was dug, scooped and pumped from United States soil in 1943, Interior Secretary Ickes expressed concern today over dwindling resources and called for measures to assure this country "its share of the world's minerals at fair prices."

He raised the question of "how much longer we can continue to lead the world in mineral output" and to enjoy a large measure of self-sufficiency.

The Secretary made public year-end estimates by the Bureau of Mines.

Value Up 6 Per cent

The physical volume of minerals produced in 1943 went up 3 per cent. Because of higher prices their value went up 6 per cent.

Metallic products for the year were valued at $2,500,000,000, a 6 per cent gain; mineral fuels, $4,566,000,000, a 12 per cent gain; other nonmetallic minerals, $964,000,000, a decline of 14 per cent. This decline was mainly in sand, gravel, stone and cement.

Aluminum production increased more than 75 per cent from 621,106 short tons in 1942 to about 920,000 tons in 1943.

Magnesium Jumps

Magnesium increased from 47,420 tons in 1942 to about 185,000 tons in 1943.

The record production of crude oil in 1943 is estimated at 1,503,000,000 barrels.

Production of bituminous coal and lignite was estimated at 586,000,000 tons, about 6,000,000 tons greater than the previous record in 1942.

HERALD-TRIBUNE
New York, N. Y.
JAN 11 1944

Output of Magnesium Climbed 450% in '43

WASHINGTON, Jan. 20 (AP).—Magnesium production in the first ten months of last year was four and one-half times greater than in the corresponding period of 1942, the War Production Board said today in one of its first "Facts for Industry" reports on hitherto restricted information.

In the absence since 1939 of the Commerce Department's biennial census of manufacturers, the two agencies agreed recently to release periodic reports on as many industries as security considerations permit.

The magnesium statistics showed October production at 35,600,000 pounds, compared with 11,700,000 pounds in the like month of 1942, and a production rate of only 5,000,000 pounds a month in the first half of 1942.

DOMESTIC COMMERCE
Washington, D, C.
Jan. 1944

Nonferrous Metals

The general requirements for copper and zinc will be reduced materially in 1944, because of the satisfactory status of the munitions program. Demands for brass strip for use in the production of cartridge cases for small arms have been reduced from 400 million pounds in September 1943 to 112 million pounds in January 1944. This latter figure includes provisions for the use of brass strip in lieu of steel for artillery cartridge cases. Similarly, copper and brass rods and tubes will be used to replace steel products which were used as a substitute for the nonferrous materials.

The tonnages represented in the reduced requirements, unless diverted to miscellaneous and civilian supplies, may be the occasion for the development of manpower problems which may be far-reaching because industry in general will not have had an opportunity to adjust itself to taking over the surplus supply of labor. It is possible that in some instances operations will be reduced from 7 days to 6, and eventually to 5 days, or a 40-hour week. This type of adjustment may not be quite as simple in the mining industry because of a small register of experienced men to draw from locally, or willingness of labor to accept part-time jobs.

It is expected that the production of lead will follow the copper and zinc pattern, because of a reduction in the requirements for ammunition and the utilization of copper and brass in lieu of lead which served as the substitute material. The production of both lead and zinc may have to go beyond the requirements per se in order that sufficient amounts of cadmium and bismuth, byproducts resulting from the refining of the respective metals, may be obtained.

The expansion programs for the production of aluminum and magnesium were not completed in 1943. It is possible that they will be completed if the requirements in 1944 indicate the necessity for tonnages in excess of 1943. It is possible that stocks of virgin aluminum and magnesium which accrued during 1943 may be diverted to a new use pattern for military requirements or to civilian supplies.

There is an indication for a general cut-back in the domestic production and the purchase program from foreign sources of the alloy metals—vanadium, chromium, manganese, tungsten, and molybdenum. This is particularly true of molybdenum, the domestic production of which had been materially increased in order to use molybdenum as an initial substitute for tungsten and nickel and some other alloy metals.

JOURNAL OF COMMERCE
"America's Leading Business Newspaper."
New York City
JAN 10 1944

Financing Likely By Int. Minerals

May Spend $5,000,000 on Amino Plant, Mining Project After War

(Special to Journal of Commerce)

CHICAGO, Jan. 7.—The International Minerals & Chemical Corporation may require some $5,000,000 for a number of expansion projects after the war, it was learned here today. While no specific program of financing or of actual construction has as yet been formulated, it is learned that a number of specific projects are under consideration and several alternative methods of financing have been discussed.

One project which should receive consideration as soon as construction restrictions are lifted is a new amino products plant. International Minerals purchased the Amino Products Co. of Detroit in 1942 to produce monosodium glutamate, glutamic acid and other related products. Monosodium glutamate is used extensively by manufacturers of liquid and evaporated soups and dehydrated vegetables to enhance flavor. It is also used by the Army in ration K. International is one of the two largest producers of the material in the country.

It is learned that a number of monosodium glutamate customers have evinced interest in additional production and have even suggested that they might be interested in aiding with the financing. A new plant would cost approximately $2,000,000, but no decisions have as yet been made as to how such a plant would be financed.

International Minerals also has under consideration a mining project which, presumably, would require additional financing.

Some 184,000 warrants providing the right to purchase International Minerals common at $8.12½ a share are outstanding. Some holders of these warrants have begun to exercise their rights to purchase the stock. Sale of the entire amount of warrants would bring International Minerals approximately $1,500,000.

The company has 140,000 shares of common authorized and available for sale, but is not likely to finance through the sale of common at current market prices for the stock. The company has $6,900,000 of debentures outstanding, and, presumably, additional debentures could be issued.

The company has built up its cash position during the war and probably will not have to resort to financing for this purpose.

[illegible] nesium plant at [illegible] a magnesium chloride plant at Carlsbad, N. Mex. The plants are owned by the Government, and it is not yet clear whether International will stay in the magnesium producing business after the war, for no Government policy has been set as yet as to the disposal of its magnesium plants.

LOS ANGELES, CAL.
Sun. Cir. 407,6
JANUARY 8, 1944

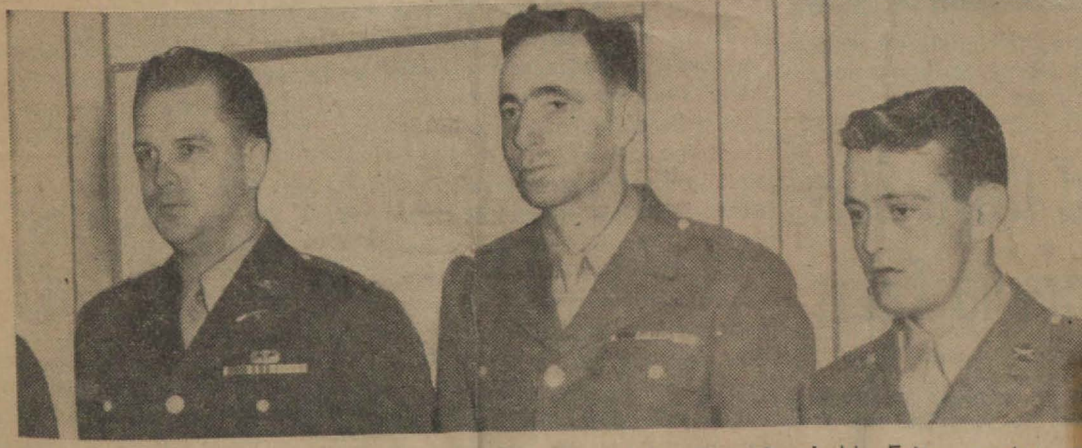
Los Angeles Times ** SATURDAY, JAN. 8, 1944—Part I 3

ARMY AND NAVY DIGNITARIES TAKE TIME OUT FROM WAR PARLEY

IT WAS THIS WAY—Gen. Thomas Holcomb, U.S.M.C., explains point to Mrs. William F. Halsey, wife of the admiral, at Warner studio dinner. Robert P. Patterson, Undersecretary of War, shown at left. Nearly 1000 persons attended the banquet. Times photo

AIR AND SEA CHIEFTAINS—Mrs. Jack Warner shown seated between Gen. H. H. Arnold, left, chief of the Army Air Forces, and Adm. William F. Halsey, commander of the South Pacific force, at the dinner sponsored by Harry and Jack Warner. Times photo

AT BANQUET—Lt. Gen. William S. Knudsen, Army's production director, shown with Actress Dolores Moran. Times photo



WOUNDED VETERANS—Lt. Joseph Zawacki, left, Pvt. Cerel M. Fritz, center, and Pvt. William L. Dye, wounded in Italian campaign, shown at press interview given yesterday by Lt. Gen. William S. Knudsen and Undersecretary of War Patterson. Times photo

Patterson Says War Still Calls for Full Output

Resumption of production of civilian goods is impossible in the near future because of continuing heavy demands for war, Undersecretary of War Robert P. Patterson reported here yesterday.

"The armed forces come first," he said gravely, "and the bulk of our supply must go to them."

"Are you satisfied with aircraft production on the Pacific Coast?" Patterson was asked.

Never Satisfied

"We're never satisfied—can't be," he replied.

... out in the Mojave ... he said.

Flanking Patterson at the press interview was Lt. Gen. William S. Knudsen, war department production chief, and three wounded veterans of the Italian campaign—2nd Lt. Joseph Zawacki and Pvts. Cerel Fritz and William Dye. Both Knudsen and Patterson joined in assertions that the nation's industries are "all right" on supplies of aluminum, magnesium and tin.

JOURNAL OF COMMERCE
"America's Leading Business Newspaper."
New York City
JAN 14 1944

Magnesium Control Simplified by WPB

(Bureau of Journal of Commerce)

WASHINGTON, Jan. 13.—Procedures governing the allocation and use of magnesium and magnesium products and the segregation and disposal of magnesium scrap have been simplified, the WPB announced today. The change resulted from an amendment to M-2-B.

Foundries will be permitted hereafter to accept the return of rejected or spoiled castings of their own manufacture without obtaining prior approval of WPB, and they will no longer be compelled to sell such castings to a producer or approved smelter.

The order also redefines "magnesium scrap" to exclude sawings, grindings, sweepings and similar fines; also dross and sludge containing less than 20 per cent magnesium by weight. Persons generating less than 1,500 pounds of scrap a month are freed from the requirement that they segregate their scrap.

WPB Form 309, heretofore filed by Magnesium Fabricators, is discontinued and applications for magnesium products will be made hereafter by consumers on WPB Form 3462 under the amendment.

JOURNAL OF COMMERCE
"America's Leading Business Newspaper."
New York City
JAN 13 1944

Minerals Data Released by U. S.

Bureau of Mines Resumes Publication of Hitherto Confidential Information

(Bureau of Journal of Commerce)

WASHINGTON, Jan. 12.—Acting under revised security regulations of the Bureau of the Budget, Dr. R. R. Sayers, director of the Bureau of Mines, today announced that certain confidential information on the production of aluminum, bauxite, copper, lead, magnesium, mercury, and zinc in the United States will be made public through resumption of regular reports by the Bureau of Mines on these commodities.

Dr. Sayers reported to the Secretary of the Interior Harold L. Ickes that the 1942 Minerals Yearbook, like the 1941 edition, will remain confidential as an entire volume because censorship on foreign trade data has not been lifted and the volumes contain some commodity information that is withheld for security reasons.

The separate chapters describing gold, silver, copper, lead, and zinc production in 1942 for individual States or groups of States will be made available for purchase from the Superintendent of Documents, Government Printing Office.

To Distribute Reports

The regular periodic commodity reports on aluminum, bauxite, copper, lead, magnesium, mercury and zinc will be distributed by the Bureau of Mines to its established mailing lists, but the Minerals Yearbook chapters given here can be obtained from the Superintendent of Documents.

Minerals Yearbook chapters for 1942 made public are: gold, silver, copper and lead in Alaska; gold, silver, copper, lead and zinc in Arizona; in California; in the Central States Arkansas, Illinois, Kansas, Kentucky, Michigan, Missouri, Oklahoma and Wisconsin; in Colorado, in the Eastern States Alabama, Georgia, New Jersey, New York, North Carolina, Pennsylvania, South Carolina, Tennessee, Vermont and Virginia; in Idaho, in Montana, Nevada, New Mexico, Oregon, Utah and Washington State. Prices for these chapters have not been established.

NEW YORK, N. Y., TIMES
Cir. 474,277
JANUARY 21, 1944

MAGNESIUM OUTPUT UP

Rise Put at 450% in 10 Months of '43, Compared With '42

WASHINGTON, Jan. 20 (AP)—Magnesium production in the first ten months of last year was four and one-half times greater than in the corresponding period of 1942, the War Production Board said today in one of its first "Facts for Industry" reports on hitherto restricted information. In the absence since 1939 of the Commerce Department's biennial census of manufacturers, the two agencies agreed recently to release periodic reports on as many industries as considerations of security permit.

The magnesium statistics showed October production at 35,600,000 pounds, compared with 11,700,000 pounds in the same month of 1942 and a production rate of only 5,000,000 pounds a month in the first half of 1942.

NEW YORK, N. Y., WORLD TELEGRAM, Cir. 414,608, Sun. 337,159
JANUARY 21, 1944

Magnesium Output Four-Times '42 Rate

By the Associated Press.

WASHINGTON, Jan. 21.—Magnesium production in the first ten months of last year was four and one-half times greater than in the same period of 1942, the War Production Board said today in one of its first "facts for industry" reports on hitherto restricted information.

In the absence since 1939 of the Commerce Department's biennial census of manufacturers, the two agencies agreed recently to release periodic reports on as many industries as security considerations permit.

The magnesium statistics showed October production at 35,600,000 pounds, compared with 11,700,000 pounds in the same month of 1942, and a production rate of only 5,000,000 pounds a month in the first half of 1942.

SAN FRANCISCO, CAL., NEWS
Cir. 107,082
JANUARY 21, 1944

TODAY'S *Story of Finance and Industry*

* * * *

American Magnesium Production Rises; New Rayon Fiber as Fine as Silk Developed

BY JOHN S. PIPER
The News Financial Editor

For the first time, the Government disclosed today American magnesium production data. The War Production Board reveals that output of this essential war mineral in the first 10 months of 1943 rose four and a half times above the corresponding 1942 period. In October alone, production totaled 35,600,000 pounds. In October, 1942, the figure was 11,700,000 pounds.

Las Vegas Tribune
1-21-44

Magnesium Output Showing Increase

WASHINGTON, Jan. 20.—(AP)—Magnesium production in the first ten months of last year was four and one-half times greater than in the corresponding period of 1942, the War Production Board said today in one of the first "facts for industry" reports on hitherto restricted information.

In the absence since 1939 of the Commerce Department's biennial census of manufacturers, the two agencies agreed recently to release periodic reports on as many industries as security considerations permit.

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NEW YORK, N. Y., TIMES
Cir. 474,277
JANUARY 14, 1944

OUTPUT LIMITATION RELAXED ON SHOES

WPB Move Allows Concentration on Children's Lines Within Quota—Other Agency Action

Special to THE NEW YORK TIMES.

WASHINGTON, Jan. 13—The War Production Board announced today that it has amended order M-217 to permit manufacturers of misses' and children's shoes to concentrate their production, within their quota, on any established line or lines of misses' and children's footwear. The action was taken, WPB said, to meet requirements for additional and better grade children's shoes.

For production purposes only, manufacturers may consider all misses' and children's shoes up to a net wholesale price of $1.75 per pair ($2.65-$2.95 retail) as one line, and youths' and boys' footwear up to net wholesale price of $1.75 per pair as one line, WPB said. Any new line so established must be approved by the Office of Price Administration as to the proper retail price.

Reference is made in the amendment to directors now under con-...

MAGNESIUM: Procedures governing the allocation and use of magnesium and magnesium products and the segregation and disposal of magnesium scrap have been simplified, WPB announced, in an amendment to General Preference Order M-2-b.

AMERICAN METAL MARKET
"Leading Iron, Steel and Metal Newspaper—
Recognized price and market authority."
New York City
JAN 18 1944

LOS ANGELES, CAL.
TIMES, Cir. 219,890, Sun. Cir. 407,1
JANUARY 9, 1944

Our Production Miracle No Cause for Letup

Were it not for sobering second thoughts, the record of American production miracles accomplished during two years of war, and particularly in 1943, plus the prospects for 1944, would be cause for boasting. It is, however, in no boasting spirit that the National Association of Manufacturers sets forth the record (with due regard to military secrecy) in a booklet called "Production for Victory."

The reason that boasting is not in order is that production alone will not win the war. Production furnishes the tools of victory, but those tools require to be applied to the enemy by men, and that part of the job has only started. We have spent two years getting ourselves into a relatively favorable position to fight, but we have not yet done much fighting or nearly enough to decide the issue, and in spite of our production we could still lose the war.

However, as an element in victory, production is not minor and the record is impressive. It is too long for anything but hitting the highest of the high spots:

In aircraft, the item of most interest to Southern California, we very nearly reached the goal set by the President two years ago of 100,000 planes in 1943; we produced 85,000, but the total tonnage undoubtedly exceeded expectations, since the President's program called for a higher total of light planes and a lower of heavy planes than the revised program finally worked out. The emphasis on bombers more than accounts for the discrepancy in numbers.

Ship production reached fantastic figures: in 1943 were built 19,000,000 tons of merchant vessels, plus naval construction which, by the middle of 1943, had expanded the Navy to 12 times its prewar strength and by the middle of 1944 will have brought it to 20 times.

Steel is another handy index. Estimated production for 1943 was 90,000,000 tons, or within 300,000 tons of total theoretical capacity. In 1944 theoretical capacity will increase to 96,000,000 tons and production probably to 93,000,000. Our best prewar production was 63,000,000 tons in 1929. Aluminum, of almost equal importance, has naturally shown a much greater proportionate growth; we made 1,841,000,000 pounds of the metal, recovered 557,000,000 pounds from scrap, and imported 448,000,000 pounds in 1943, as compared with a 1939 total supply of 327,000,000 pounds. Magnesium production rose from 6700 pounds in 1939 and 200,000 pounds in 1942, to 336,000 pounds in 1943.

And so it goes through the list. There are still bottlenecks, but the main production problems, provided everybody sticks on the job, are licked. What we must continue to remember is that the enemy is not licked yet.

FINANCIAL NEWS
"Western Canada's Only Financial Weekly"
1037 West Pender St., Vancouver, B. C.
JAN 21 1944

MAGNESIUM NOW FREELY AVAILABLE

Because Canada now has more than enough magnesium for war requirements, restrictions on the sale and use of Canadian-produced magnesium have been removed, Munitions Minister Howe announced.

"With magnesium on the free market, it is confidently expected that Canadian metallurgists will now be able to devise the new uses for this valuable metal about which there has been so much interesting speculation," said Mr. Howe. 'Light in weight, durable, and strong, magnesium eventually may be used in countless articles such as washing machines, vacuum cleaners, and other household gadgets, automotive parts, and a long list of other consumer items."

Under the rescinding order, issued by Metals Controller G. C. Bateman, the only magnesium transactions still requiring a permit will be purchases from suppliers outside of Canada.

AMERICAN METAL MARKET
"Leading Iron, Steel and Metal Newspaper—
Recognized price and market authority."
New York City
JAN 21 1944

TIMES
New York City
JAN 17 1944

MAGNESIUM OUTPUT UP

Rise Put at 450% in 10 Months of '43, Compared With '42

WASHINGTON, Jan. 20 (AP)—Magnesium production in the first ten months of last year was four and one-half times greater than in the corresponding period of 1942, the War Production Board said today in one of its first "Facts for Industry" reports on hitherto restricted information. In the absence since 1939 of the Commerce Department's biennial census of manufacturers, the two agencies agreed recently to release periodic reports on as many industries as considerations of security permit.

The magnesium statistics showed October production at 35,600,000 pounds, compared with 11,700,000 pounds in the same month of 1942 and a production rate of only 5,000,000 pounds a month in the first half of 1942.

MERICAN METAL MARKET

Magnesium

General Preference Order M-2-b
As Amended January 13th

WASHINGTON.—The following is the text of General Preference Order M-2-b—Magnesium—as amended January 13th by the War Production Board:

§ 921.16 **General Preference Order M-2-b—(a) Definitions.** For the purposes of this order:

(1) "Magnesium" means any metal in ingot or other raw form, the principal ingredient of which by weight is the element magnesium.

(2) "Magnesium products" means any basic forms (such as, but not limited to, castings, extrusions, sheet, strip, plate, forgings, and powder), the principal ingredient of which by weight is magnesium.

(3) "Magnesium scrap" means any scrap material (except sawings, grindings, sweepings, and similar fines), the principal ingredient of which by weight is magnesium, generated in the course of any industrial process, or any discarded magnesium products, which must be remelted to be of value for further use. The term "magnesium scrap" also includes any dross or sludge resulting from melting magnesium or magnesium scrap, when the dross or sludge contains at least 20% of magnesium by weight.

(4) "Producer" means any person who makes magnesium, in whole or in part, from a non-metallic raw material.

(5) "Approved smelter" means one of the smelting plants listed on Exhibit A attached hereto.

(6) "Fabricator" means any person, including pattern shops, foundries, and powder grinders, who makes magnesium products.

(b) **Delivery and use.** Except as provided in paragraph (g) with respect to dead stock, no person shall deliver, accept delivery of, or use magnesium, and no person shall deliver or accept delivery of magnesium products unless his action has been specifically authorized in writing by the War Production Board, or in the case of certain deliveries of magnesium products for aircraft purposes, by the Aircraft Scheduling Unit of the Aircraft Resources Control Office. The receipt by a fabricator from the Aircraft Scheduling Unit, of a Magnesium Allotment Notice to Fabricators for the months of February and March of 1944, shall constitute specific authorization in writing by the Aircraft Scheduling Unit to the fabricator to deliver the magnesium products described on the notice in the amounts allotted and to the customer designated thereon; and the receipt by a manufacturer from the Aircraft Scheduling Unit of a Magnesium Allotment Notice for the months of February and March of 1944, shall constitute specific authorization in writing by the Aircraft Scheduling Unit to accept delivery of the magnesium products described on the notice, in the amounts allotted and from the supplier designated thereon.

(c) **Prohibition against alloying, contamination, and debasement.** No person shall alloy, contaminate or debase magnesium except as the War Production Board may specifically authorize in writing.

(d) **Collection, segregation, and use of scrap.** (1) Each person owning or generating any magnesium scrap shall collect all such scrap, place it in containers, label the containers so as to identify the scrap, and otherwise prepare all such scrap for reprocessing. All magnesium scrap shall be kept free of contamination by other metals and materials, and otherwise handled in such manner so that it will be of acceptable quality for reprocessing.

(2) In addition, each person generating more than 1,500 pounds of magnesium scrap in any month beginning with December, 1943, shall thereafter segregate all magnesium scrap unless specifically authorized in writing by the War Production Board to do otherwise. Such scrap shall be segregated by alloys in accordance with the alloy designation of the American Society for Testing Materials, except that alloys #4 and #17 may be mixed with each other. Commercially pure magnesium, and magnesium scrap of each alloy not described by such designations, shall be kept segregated.

(3) Each person receiving segregated magnesium scrap must keep such scrap segregated prior to its use to the same extent as when received by him, and if he redelivers such scrap, he shall do so segregated to the same extent as when it was received by him.

(d) Any fabricator may use any magnesium scrap generated in his plant (or any casting of his own manufacture rejected or spoiled by another person) but only (i) if the scrap is remelted and refabricated in such plant into products for the production of which the fabricator is currently obtaining deliveries of magnesium in conformity with this order and (ii) if, in estimating, applying for, and ordering such magnesium, the fabricator reduces his requirements by an amount which represents a reasonable anticipation of the amount of magnesium scrap which will be recoverable for reuse under this paragraph.

(e) **Disposition of all scrap.** (1) Except as the War Production Board may specifically authorize in writing, any person, other than a producer or approved smelter, owning any magnesium scrap, shall sell all of it at reasonable intervals to a producer or approved smelter, and shall not use or dispose of it in any other way. However, a person who has found a new magnesium casting to be defective or has spoiled it, may deliver the casting back to the foundry which produced it.

(2) Except as specifically authorized in writing by the War Production Board, no producer or approved smelter shall mix two or more alloys during the remelting of scrap.

(3) Unless specifically authorized by the War Production Board in writing, no person other than a producer or approved smelter shall accept delivery of any magnesium scrap except that a foundry may accept delivery of a casting of its own manufacture which has been rejected or spoiled in machining.

(f) **Tolling prohibited.** Except as the War Production Board may specifically authorize in writing pursuant to an application filed on Form W.P.B.-165 (formerly Form P.D.-114), no scrap shall be delivered for processing or returned under any toll, repurchase, or similar arrangement.

(g) **Dead stock.** All magnesium and magnesium products which are not being used in, or which are in excess of reasonable needs for, the manufacture of items approved by written specific authorization, may be sold subject to the restrictions of Priorities Regulation No. 13.

(h) **Requests for authorizations and communications.** (1) A fabricator who seeks the specific authorization of the War Production Board to accept magnesium after Jan. 31, 1944, and to use it, and who seeks specific authorization for the producer or smelter who is his supplier to deliver the magnesium, should apply monthly by letter in duplicate, stating the form, alloy, and other specifications of the magnesium required, the amount in pounds of each type of magnesium, the magnesium product to be made from each type of magnesium, and the month in which, and the address to which, the magnesium is to be shipped. Such application should be made by the 15th of the month preceding the month of requested delivery.

(2) Consumers seeking to obtain delivery of magnesium products after April 1, 1944, may apply for specific authorization to accept delivery, and for specific authorization running to the fabricator who is his supplier to make the delivery, on Form W.P.B.-3462, whether the application is made to the War Production Board or to the Aircraft Scheduling Unit. Instructions appear on the form indicating the manner and place of filing.

(3) Any person who seeks the specific authorization of the War Production Board to do anything under this order not covered in paragraph (h) (1) or (h) (2), may request his authorization by letter in duplicate, setting forth the relevant facts.

(4) All other applications, statements, or communications to the War Production Board concerning matters related to this order should be addressed to the War Production Board, Aluminum and Magnesium Division, Washington 25, D. C., Reference: M-2-b.

(i) **Report of operations.** Any person who in any calendar month has had in inventory any magnesium, magnesium products, or magnesium scrap, shall file such reports as may be required from time to time by the War Production Board.

(j) **Intra-company deliveries.** The provisions of this order with respect to deliveries prohibit or restrict deliveries not only to other persons, including affiliates and subsidiaries, but also deliveries from one branch, division, or section of a single enterprise to another branch, division, or section of the same or any other enterprise under common ownership or control.

(k) **Applicability of regulations.** This order and all transactions affected thereby are subject to all applicable regulations of the War Production Board, as amended from time to time.

(l) **Violations.** Any person who wilfully violates any provision of this order, or who, in connection with this order, wilfully conceals a material fact or furnishes false information to any department or agency of the United States is guilty of a crime, and upon conviction may be punished by fine or imprisonment. In addition, any such person may be prohibited from making or obtaining further deliveries of, or from processing or using, material under priority control and may be deprived of priorities assistance.

NOTE: The reporting provisions of this order have been approved by the Bureau of the Budget under the Federal Reports Act of 1942.

Issued this 13th day of January, 1944.

WAR PRODUCTION BOARD,
By J. JOSEPH WHELAN,
Recording Secretary.

Exhibit A
Approved Smelters Of Magnesium

Aluminum & Magnesium, Inc., 1 Huron St., Sandusky, Ohio.

American Smelting & Refining Co., Federated Metals Division, Barber, N. J.

Apex Smelting Co., 2537 West Taylor St., Chicago, Ill.

Berg Metals Corporation, 2652 Long Beach Avenue, Los Angeles, Calif.

Gallagher Smelting Company, 1820 Tenth St., Oakland, Calif.

National Smelting Co., 6700 Grant Avenue, Cleveland 5, Ohio.

CHICAGO JOURNAL OF COMMERCE
Chicago, Ill.
JAN 21 1944

10-Month Magnesium Output 4½ Times 1942

WASHINGTON, Jan. 20 (AP).—Magnesium production in the first ten months of last year was four and one-half times greater than in the corresponding period of 1942, the War production Board said today in one of its first "facts for industry" reports on hitherto restricted information. In the absence since 1939 of the Commerce Department's biennial census of manufacturers, the two agencies agreed recently to release periodic reports on as many industries as security considerations permit.

Output Of Primary And Secondary Magnesium At Peak In October

Production Of 35,600,000 Pounds Treble That Of Year Ago

WASHINGTON. — Primary production of magnesium for the first ten months of 1943 was four and a half times that of the corresponding period of 1942, the Aluminum and Magnesium Division of the War Production Board revealed today. Primary magnesium output in October was 35,600,000 pounds compared with 11,700,000 pounds in October of last year and only about 5,000,000 pounds a month in the first half of 1942.

With the increase in magnesium output and the larger quantities of magnesium products in use, recovery of secondary magnesium is also increasing. Secondary recovery in October, 1943 at 2,700,000 pounds was more than half of the total monthly magnesium metal production in early 1942. Secondary magnesium recovery has mounted from 6% of primary production in early 1942 to 8% in October, 1943.

The War Production Board will continue to release data on primary magnesium metal production and secondary recovery monthly, in line with

November .	15.9	..	0.7	..
December .	18.2	..	0.9	..
Total, year	98.0	..	7.9	..

finishing many new materials previously not available, or only recently developed. Plastics, magnesium, and aluminum are three important examples.

How soon after the war radical changes will develop is another question. During the inflated seller's market that is bound to follow rationing and restricted manufacture, development will bow to production. It will be another story when satiated consumer demand swings the market in favor of the buyer. Then new products made of new materials will appear, and the finish man will have to stand ready to decorate and protect them to suit public taste and purse appeal.

The metals industries will undoubtedly take advantage of the greatly increased supplies of aluminum and magnesium which have increased 7-fold and 100-fold respectively, since the outbreak of the war. Either metal offers finishing problems peculiar to general finishing knowledge. The metal finisher who can solve these problems will be able to keep his paint pots busy and cash in the till when Peace returns to the World!

INDUSTRY & POWER
"A Magazine for Engineers and Industrial Executives."
St. Joseph, Mich.
MAR 1944

New methods for developing unusually high vacuum involve diffusion-condensation pumps and are being used for the distillation of vitamins, for drying of heat-sensitive penicillin at sub-freezing temperatures, and for the production of magnesium by the ferrosilicon process. Great things are expected of such high vacuum systems, particularly in the food industry. According to one authority, meat, for example, can be dehydrated under high vacuum and at very low temperatures without destroying the flavor of the meat. Pressures as low as one-hundred millionth of a millimeter can now be attained with the new equipment.

INDUSTRY & POWER
"A Magazine for Engineers and Industrial Executives."
St. Joseph, Mich.
MAR 1944

Power Resources

With industrial production leveling off and the installation of additional power generating capacity continuing, we are assured of all the electrical energy we will need. Last year our total production was over 274,000,000,000 kw-hr, adequate reserves were maintained, and no areas suffered a power shortage. Since we are producing more aluminum and magnesium than we actually need just now for war and are stockpiling quantities of these metals, questions are being asked as to what we are going to do with our excess electrical generating capacity after the war. Metallurgical processes have been taking around 1/3 of our total power production and many of the electrochemical plants are located in comparatively low population districts. Expanded uses for these metals will help solve part of the problem, interconnection and rural electrification will help, and population changes may be a factor. Eventually some generating equipment may have to be shifted to other areas.

An indication that our total of installed power capacity, now greater than 50,000,000 kw, may not be so much greater than our peace time needs is given by the report that consumption of electricity in the home was 7% greater in 1943 than in 1942, despite the complete stoppage of the manufacture of household appliances. With expanding markets for air conditioning, panel or radiant heating, electrical cleaning of air, television, and with many more electrical appliances in the home, the commercial and domestic electrical loads will mount rapidly.

NEW YORK, N. Y., HERALD TRIB.
MARCH 9, 1944

Cut in Output Of Magnesium Studied by U. S.

Further Drop in Production of Aluminum Also Under Official Consideration

A cutback in the production of magnesium—whose supply was the most critical of all war materials two years ago—is under consideration by war production officials, it was learned yesterday. Further reductions in the output of aluminum, another aircraft metal, also will become necessary later on, it is understood.

Great Britain, which formerly imported large amounts of magnesium from the United States, already has ordered a substantial cut in the production of this light metal.

A stockpile of several months supply has accumulated here and the current rate of production indicates that these reserves will mount rapidly. Present production of magnesium in the United States is estimated at around 500,000,000 pounds a year, while potential capacity is placed at 600,000,000 pounds.

Magnesium Output Control

Large-scale production of magnesium was carried on here for the first time in 1942 while output in the month before Pearl Harbor was at the rate of 42,000,000 pounds a year. Production in 1939, in contrast to present output levels, amounted to only 6,000,000 pounds.

Philip D. Wilson, head of the aluminum and magnesium division of the War Production Board, who has made a study of light metal controls for Germany and Japan after the war, believes that the only controls over magnesium should be over the reduction plants themselves.

Available in Quantity

Pointing out that raw materials that are satisfactory for the production of magnesium are available in quantity all over the world, Mr. Wilson feels that any attempt to control Axis raw material sources of this metal would be impossible.

For essential peace-time civilian economy in Germany and Japan, he believes, only a small amount of magnesium could, "by the wildest stretch of the imagination," be considered really necessary.

Therefore, he feels that it would be feasible to shut down all magnesium reduction plants in the Axis countries immediately after the war. A civilian economy commission, according to Mr. Wilson, should then determine the basic essential requirements for magnesium in each country and forthwith scrap all excess reduction capacity.

TULARE, CAL., ADVANCE-REGISTER
MARCH 15, 1944

EXTRAVAGANCE IN MAGNESIUM PLANT CRITICIZED

WASHINGTON, March 13 (AP)—The Senate's Truman Committee today released a report charging "extravagances and inefficiencies" in a giant $133,000,000 government-financed magnesium project at Las Vegas, Nev., but reported production of that metal has reached a point where its use for civilian goods manufacture should now be permitted.

The report urged the War Production Board to cancel its order limiting the use of magnesium to war and essential civilian items. Such a step, the committee said, would lay the foundation for a new post-war industry through development of new uses for the metal and protect the government's $500,000,000 wartime investment in magnesium plants.

Further research should be undertaken at once, the committee said, to develop magnesium for such uses as the making of photo-engraving plates, automotive parts, portable tools, conveyors, vacuum cleaners, typewriters and business machines. Magnesium is a metal one-third lighter than aluminum.

In charging waste and inefficiencies in the construction and early operation of the Nevada development, described as the world's largest, the committee said its actual cost as of last November 30th was in excess of $129,000,000, and that its final estimated cost of $133,000,000 was almost double original estimates.

CHEMICAL & CHEMICAL ENGINEERING NEWS
New York City
MAR 10 1944

Magnesium Cutbacks Expected

WPB is instituting a survey of magnesium requirements as a basis of expected cutbacks in production, as potential capacity production by all plants would exceed all needs. All military and export requirements are now being filled, in spite of somewhat increased needs of Great Britain, where one of the largest plants has been shut down to relieve the manpower situation. A two-month stockpile is now on hand and is expected to increase to the year's supply desired, in spite of cutbacks.

Present United States production is estimated at over 500,000,000 pounds of pure magnesium annually, and potential capacity at more than 600,000,000 pounds. Meanwhile military experiments in this country and in England have made possible the use of less magnesium in certain types of incendiary bombs.

The partially completed plant of Mathieson Alkali at Lake Charles, La., is producing at one third of its rated ultimate capacity, about 44,000 pounds a day, and its by-product chlorine is being re-used in the manufacturing process. Completion of the plant has been delayed by labor shortages.

Seeley & Co., New York, manufacturer of flavoring extracts and aromatic chemicals, plans a western division in charge of Melvin F. Vincent.

VOLUME 22, NO. 5 » » » M

NEW YORK, N. Y., TIMES
MARCH 14, 1944

URGES MAGNESIUM FOR CIVILIAN USES

Truman Report Asks WPB to Relax Curbs—Charges Waste in U. S. Las Vegas Plant

Special to THE NEW YORK TIMES.

WASHINGTON, March 13—The United States has stepped up its production of magnesium to a point where its use in more civilian goods is warranted, the Truman Committee reported today. It charged, however, that inefficiency and waste had delayed the construction and operation of a $133,000,000 magnesium plant financed by the Government at Las Vegas, Nev.

In addition to urging the War Production Board to remove restrictions limiting magnesium use to war and essential civilian items, the committee recommended the prompt initiation of programs promoting wider use of magnesium. Such action is necessary, the report said, to protect the Government's $500,000,000 investment in magnesium plants.

Pre-war use of magnesium was so small compared to present production capacity that the future of existing facilities is jeopardized, it was stated, unless civilian industry learns new ways to use the metal, which has been vital in the wartime production of airplanes, bombs and other implements of war.

Surplus of Facilities Seen

Senator Mon C. Wallgren, Democrat, of Washington, who headed the investigation of magnesium as chairman of the Truman subcommittee on light metals, said that there was already a large surplus of magnesium-producing facilities. He said that the WPB would soon begin action to reduce production.

While deploring "the bungling and incompetence" in building the Basic Magnesium plant at Las Vegas, Senator Wallgren and his subcommittee praised the plant's present 112,000,000-pound output as "the largest in the United States and believed to be the largest in the world."

This project, authorized by the Defense Plant Corporation in 1941 under contract to the Basic Magnesium Corporation of Cleveland, cost $129,000,000 up to Nov. 30. The final cost will run to $133,000,000.

Question of Management

However, since October, 1942, the plant has been managed by the Anaconda Copper Mining Company, and Senator Wallgren remarked:

"It is most unfortunate that that project was not entrusted to Anaconda Copper originally."

The committee gave the Dow Chemical Company of Midland Mich., credit for its part in helping meet the country's wartime magnesium requirements. However the company was also held responsible for America's poor showing in magnesium production before the war, compared to Germany's.

Pointing out that Dow Chemical was the only producer of magnesium in 1939, Senator Wallgren said that the committee "was concerned" to find that Germany, with about half the population of the United States, had produced nearly six times as much magnesium in that year.

MAR. 14, 1944
DES MOINES, IA. REGISTER
332

1.64; No. 1 dark northern spring, $1.65.

URGE RELEASE OF MAGNESIUM FOR VACUUMS

WASHINGTON, D. C. (AP)—Release of magnesium, a metal lighter than aluminum, for use in the manufacture of vacuum cleaners and other civilian goods was recommended Monday by the Truman senate war investigating committee.

An increased supply, the committee declared, warrants such a move. The committee suggested that magnesium might be used in automobile parts, business machines and photo-engraving plates.

The committee also denounces what it termed "extravagances and inefficiencies" in the construction of a government-financed magnesium project at Las Vegas, Nev.

Although noting that the plant's output has been a vital factor in war production, the committee said it eventually will cost 133 million dollars, or virtually double original estimates.

The plant now is under management of Anaconda Copper Mining Co. The committee termed the original contract with Basic Magnesium Corp. of Cleveland, Ohio, "one of the most unjustified" in the war program, declaring the company was not equipped to handle the job.

PORTERVILLE, CAL., RECORDER
MARCH 14, 1944

PRODUCTION OF MAGNESIUM TO BE AMPLE

WASHINGTON, March 14. (U.P.) The Senate Truman Committee, in its long-awaited report on magnesium, said it was 'reasonable" to assume that 1944 production not only will suffice for war and essential civilian needs but also provide a surplus for production of other civilian items.

Climaxing a long inquiry headed by Sen. Mon C. Wallgren, D., Wash., chairman of a subcommittee also:

1.—Said the War Production Board soon will initiate action to reduce production of magnesium, which is used for such things as incendiary bombs and aircraft parts.

2.—Gave Dow Chemical Co. major credit for the nation's success in meeting the bulk of wartime magnesium requirements but criticised the company for its failure to match German output in recent years.

3.—Criticised inefficiencies in construction of the $133,000,000 Basic Magnesium, Inc., project at Las Vegas, Nev., but nevertheless praised the plant's present 112,000,000 pound output as the "largest in the United States and believed to be the largest in the world."

4.—Recommended an immediate program to familiarize civilian industry with the advantages and techniques involved in the use of magnesium. This, the committee said, would open a larger future market for the light, tough metal and make private operators of government-built plants more inclined to purchase them for post-war operation.

CAL., WALL STREET JOURNAL
MARCH 17, 1944

WPB Curbs Magnesium Output 6%; Two Coast Plants To Be Affected

WASHINGTON—A reduction of 34 million pounds annually, about 6%, in the production of magnesium was ordered yesterday by the WPB.

With output of this formerly critical metal running between 8% and 10% in excess of requirements, the WPB directed five major producers to cut their production by amounts ranging from 35% to 100%.

The companies affected and the cuts in production in relation to rated capacity are: Electro-Metallurgical Co., Spokane, 50%; Permanente Metals Corp. (Kaiser), Manteca, Cal., 50%; Ford Motor Co., Dearborn, Mich., 100%; Mathieson Alkali Works, Lake Charles, La., 100%; and, Amco Magnesium Corp., Wingdale, N. Y., 35%.

The total rated capacity of all magnesium plants in the country is 586 million pounds annually.

WPB officials disclosed that current production is in excess of needs because the armed services have failed to consume their stated requirements. Stocks on hand are sufficient to meet two months' requirements at the present rate of consumption, it was said.

Only one of the plants curtailed, Permanente Metals Corp., has been operating at capacity, so the curtailments will not be quite as drastic as it may appear, officials said. In the case of Electro-Metallurgical Co., the order will merely freeze production at 50% of rated capacity.

TULARE, CAL., ADVANCE-REGISTER
MARCH 18, 1944

MAGNESIUM PRODUCTION ORDERED CUT

WASHINGTON, March 18 (AP) — The War Production Board has ordered curtailment ranging from 35 to 100 per cent in production at five magnesium plants located in various parts of the country.

The agency halted production entirely at the Dearborn, Mich., plant of the Ford Motor Co., and at the Mathieson Alkali Works at Lake Charles, La. Fifty per cent were ordered for the Electro Mettalurgical Co., Spokane, Wash., and Permanente and Metals Corporation-Manteca, at Manteca, Calif. A 35 per cent reduction goes into effect at the Amco Magnesium Corp., Wingdale, N. Y.

The agency said production currently is running between 5,000,000 and 10,000,000 pounds a month in excess of requirements.

The Billboard
THE WORLD'S FOREMOST AMUSEMENT WEEKLY
New York — Chicago — St. Louis — London
Publication Office: Cincinnati, Ohio
MAR 18 1944

Post-War Metal Control

Drastic post-war control of metals essential for war-making was urged at the annual meeting of the American Institute of Mining and Metallurgical Engineers.

P. D. Wilson, of the War Production Board, said any post-war control of armament industries and raw materials in Germany and Japan "short of strict, direct military supervision" would be ineffective and would likely result in such relaxation that another war would be inevitable.

Discussing the post-war control of aluminum and magnesium in the enemy countries, Wilson held that control should be designed so that only such supply as is strictly necessary to the maintenance of a domestic civilian economy on a reasonable subsistance level will be permitted.

From
WALL ST. JOURNAL
New York, N. Y.
MAR 17 1944

Magnesium: The W.P.B. orders a 6% cut in magnesium production, involving five plants. W.P.B.-5213.

NEW LEADER
New York, N.Y.
MAR 18 1944

World Cartels Map Post-War Plans to Tighten Monopoly

By Wendell Berge

Assistant Attorney General of the United States

AMERICA can never have a foreign policy based on the principles of democracy and international good will so long as international trade is dominated by cartels. It does not seem possible that the Atlantic Charter, the Good Neighbor Policy, and the reciprocal trade pacts can effectively prevail if the special privileges of cartels dominate trade and politics in the postwar world.

In many respects cartels form one of the central issues of the present period. The greatest threat to our success in achieving full production and full employment at home, and friendly cooperation with other nations abroad, is the philosophy and practice of privilege embodied in cartels.

It is essential to understand that cartels are, in effect, private economic governments which seek to divide and rule world industry on the basis of economic privilege. If cartels are successful in gaining a foothold in the postwar period, it will almost be impossible for this nation to maintain a high level of peacetime production or to cooperate in the reconstruction of world trade.

In general, cartels restrict rather than promote trade. Cartels typically engage in such practices as dividing fields of operation and market areas between members so as to eliminate competition, restricting production by agreement, and fixing prices so as to avoid price competition. They also promote various kinds of patent licensing contracts which enable them to control and limit the use of new inventions and thus restrict the benefits of technological advance. The effects of these practices include reduced production and employment, higher prices and profits, retarded spread of technological improvements and a lower standard of living.

The conduct of cartels before and during this war has been one of the tragic pages of our history. The shortages of aluminum and magnesium resulting from cartel restrictions forced us to strip the kitchens of America and scar our public squares with scrap piles. The scarcity of rubber is a never-ceasing threat to our productive effort. Our armed forces plead with us to contribute our binoculars. The lack of vital drugs and medicines has jeopardized our men fighting in fever stricken areas. In fact, almost wherever there was a cartel there was a shortage.

But cartels have an even more serious aspect. These private governments threaten the sovereignty of democratic nations. The political implications of cartel activity threaten to subvert future national public policy of the United States.

* * *

THERE is a close relation between a country's economic policies and its foreign relations. It is generally recognized now that economic freedom cannot be attained at home if private groups are permitted to acquire monopoly power over industry. Likewise, it must be equally recognized that friendship and cooperation between this country and other nations cannot be established without the free exchange of goods and services. Reciprocal trade treaties and good neighbor policies can have little effect if private cartels can shut off American markets to foreign producers or prevent American producers from selling abroad.

The Good Neighbor Policy is one of the fundamental principles of our relations with Latin America. While our Government was bending every effort to bring about the conditions of sound and mutually advantageous cooperation, cartels were systematically undermining these effects. Latin America was turned over by private cartels as a colony to hostile foreign interests. By giving German industry virtually a free hand in Latin America, and by agreeing not to compete, American cartelists made possible the creation of a German sphere of influence. Nazi propaganda, espionage, and subversive activity all stem directly from this unhampered German penetration. When South Americans sought to purchase drugs, metals, precision equipment, and munitions from the United States, private cartel treaties had already provided that American concerns could not engage in this trade. Not only was the healthy development of South American trade and in- [illegible], but even today we struggle desperately to overcome the political consequences of cartel activity.

We have long cherished the principle of open covenants openly arrived at. In fact, this policy is an essential part of America's conduct of foreign affairs. Every treaty commitment made by this country is debated publicly by the peoples' representatives. Without the agreement of two-thirds of the Senate and the President, no treaty may be made. Yet agreements have been made in international industry affecting both the American economy and our foreign policy which were secretly contrived and clandestinely arrived at.

In February of 1941, when Britain was in the most critical peril, a cartel agreement decreed that a large American munitions manufacturer could not supply certain explosives to the British. This would have violated the commitment of the American cartelist to his German partner.

In 1935, after Hitler had announced his intentions, England and France sought to obtain desperately-needed military optical goods from this country. A cartel agreement decreed that England and France were territory to be supplied by German interests and the sale was prohibited.

Prior to the war, the shipment of vitally needed magnesium from this country to Great Britain was restricted by cartel agreements. Examples like these could be multiplied almost indefinitely.

* * *

MAKE no mistake—the war has not interfered with cartel plans. Cartel agreements invariably provide for the contingency of war. Long before the war, cartels worked out a modus vivendi—a method of continued existence—for they felt that their relations must be preserved, war or no war. Thus we find American and British cartelists agreeing to preserve the German position in Latin American markets after the war. Agreements between the cartel members of countries now at war provide for a resumption at the war's close. In case legislation or government action interfere, then they will cooperate to adapt their relations, as one agreement states, "in the spirit of the present agreements."

Therefore, the necessity for vigorous action in keeping open the channels of trade becomes apparent when we consider that those who create cartels hold themselves above the law or seek to control legislation and Government policy in the many countries where they operate. Their attitude has been expresed often by cartelists in the United States and other countries. An example provided by one of the leading exponents of the cartel system in Great Britain states quite bluntly that: "With a large organization such as we have, I find it is a good thing to issue such warnings from time to time—one went out at the time of the Ottawa Conference—so that everything possible is done to ensure that no prospective political or legislative action on the part of Governments is permitted to influence relation between du Pont and I.C.I."

These same groups are making their own postwar plans. Because they have found the enforcement of the Sherman Act a hindrance in the past they have expressed a desire to have the antitrust laws repealed. It should be recalled that the political deal which Munich represented had its counterpart in the Dusseldorf agreement, in which the Federation of British Industries and the German industrial overlords expressed their intention of stabilizing and rationalizing world trade.

This Dusseldorf agreement was reached immediately after Hitler's invasion of Czechoslovakia and it constituted an agreement between the British and German cartel groups that they would work together to eliminate competition and fix prices. Among other things, it was provided that "agreements upon prices or other factors between Germany and Great Britain are only a step, although a most important step, toward a more ordered system of world trade." The parties to this agreement also stated that:

"The two organizations realize that in certain cases the advantages of agreements between the industries of two countries or of a group of countries may be nullified by competition from the industry in some other country that refuses to become a party to the agreement. In such circumstances it may be necessary for the organizations to obtain the help of their governments and the two organizations agree to collaborate in seeking that help."

Thus, in effect, these two industrial cartel groups agreed that in case of competition from other countries that refused to accede to the cartel arrangements, the parties would seek aid from their respective governments to effect reprisals against the countries offering competition.

Wendell Berge has stepped into Thurman Arnold's shoes as the foremost fighter against monopoly power. He has carried on the fight to smash cartel practices which restrict production in order to maintain profits. Despite various monopoly pressures, the anti-trust division has proceeded with the indictment of duPont and Imperial Chemical, and other cartel groups.

The problem will loom larger in the post-war world when monopoly groups emerge stengthened by the profits of war. What shall we do with cartels? Mr. Berge's article here is based on a speech delivered to a recent conference of the People's Lobby.

SURELY we must realize now that if the program of Dusseldorf prevails in the postwar world it will produce World War III. Surely we realize that we cannot build a free world without a free economy. Cartels cannot accept this prospect, for they know that economic freedom brings economic competition. They cannot stand competition for it means expanded production, lower prices and the destruction of their control. But without competition they are able to shut off one country from another, to build private tariff walls, and to restrict the growth of industry throughout the world.

An example of the way in which cartel practices strangle industrial development within the British Empire is provided in the case of the Canadian chemical industry controlled by Imperial Chemical Industries and du Pont. The policy of the combine in that instance was stated in a letter which declared the "CIL (Canadian Industries, Ltd.) shall stay in Canada and not spread out into other countries, either by laying down plants, exporting their products, or licensing under their processes. . . ." An officer of this Canadian subsidiary of the du Pont-ICI cartel stated in 1939 that:

"CIL, in company with other Canadian firms, were subject to considerable pressure by their Government to develop Canadian export trade with the West Indies especially because the Canadian Government was spending important sums in subsidizing steamship facilities with the West Indies. He felt that the CIL position with its Government would be strengthened if free to quote on certain products—where necessary protecting ICI prices—as refusal to quote had led to complaints to the Government on occasion in the past."

But under the agreement between du Pont, ICI, and CIL, the latter company was confined in all its manufacturing and selling operations to Canada, notwithstanding the policy of the Canadian Government to encourage West Indian trade.

There is an awakening, however, in Canada, as well as in Great Britain itself. There has been in recent months a substantial interest indicated in Canada in this whole cartel problem. Thus, the *Ottawa Journal* recently stated editorially that "it is fairly clear to all that cartels, large combinations of industries parcelling out territories among themselves, controlling patents and fixing prices, may be a menace to the general well-being, and what is more vital, a menace to world peace."

But in any event, there can be no doubt about the American policy. It is embodied in the Sherman Act. Under that Act agreements between competitors which divide the market, restrict production and otherwise restrain competition are regarded in most instances as unreasonable restraints of trade and illegal, and agreements with respect to price, with certain limited exceptions, are always illegal. The Act applies to foreign as well as domestic commerce. American companies cannot enter into such agreements without violating the law and foreign companies cannot perform such agreements in this country without violating the law.

If and when some measure of control and regulation becomes economically necessary on an international scale in a particular industry, a question is presented for governmental action—not for private cartel action. If, for example, in a particular industry it seemed necessary to control production in order to avoid waste of a scarce natural resource, such a problem would be a proper one for solution by national or international governmental action. But where control is needed, it must be by public authority. If international restrictive agreements are ever needed, they must be determined upon by rsponsible governments—not by private cartels.

LOS ANGELES CALIF. TIMES
MARCH 16, 1944

Greater Industrial Era Here Forecast

Chamber Expects Government-Owned Plants to Be Used in Private Work

New industrial vistas for postwar Los Angeles were envisioned yesterday by the Chamber of Commerce on the basis of the probable retention of many of the government-financed plants constructed here at a cost of $313,000,000 for the production of basic materials.

Continued operation of the new industries, launched since the advent of the war, appears likely from the standpoint of the continuously expanding market developing in the West, it was pointed out.

Materials Produced

Basic materials now being produced in this area for the first time include aluminum, synthetic rubber, magnesium, aluminum extrusions and aluminum, steel and copper tubing, according to James F. Bone, manager of the chamber's industrial department.

"Los Angeles' great airplane plants, which in peacetime produced 50 per cent of all the planes manufactured in the nation," declared Bone, "will offer one of the biggest markets for the aluminum now being turned out here."

Large Tire Center

This area is the second largest tire and tube manufacturing center in the nation, and thus will offer a natural market for synthetic rubber, which has been found to be better suited for some products than the natural variety, it was pointed out.

Aluminum, steel and copper tubing is employed in the manufacture of furniture, airplanes and combustion engines, as well as scores of other products fabricated here, according to Bone.

"By continuing in operation after the war, these plants," Bone stated, "can become a valuable part of our normal economy."

Value of Plants

The chamber executive disclosed that the government-financed plants, operated by private firms under management contracts, constitute 27 per cent of the county's total industry, valued at more than $1,125,000,000.

Since the county is located in an area defined by the Army as "vulnerable," only those plants which were deemed absolutely essential to this area were constructed here, it was pointed out.

Las Vegas AGE
3-19-44

Magnesium Output Growing Steadily Report Discloses

Primary productiin of magnesium for the first ten months of 1943 was four and a half times that of the corresponding period of 1942, according to the Aluminum and Magsium Division of the War Production Board. Primary magnesium output in October was 35,600,000 pounds, compared with 11,700,000 pounds in October of last year and only 5,000,000 pounds a month in the first half of 1942.

With the increase in magnesium output and the larger quantities of magnesium products in use, recovery of secondary magnesium is also increasing. Secondary recovery in October at [illegible]0,000 pounds was more than [illegible] of the total monthly magnesium metal production in early [19]42. Secondary magnesium recovery has mounted from 6 per cent of primary production in early 1942 to 8 per cent in October, 1943.

Following is the monthly production for 1942 and 1943 in millions of pounds:

	Primary 1942	Primary 1943	Secondary 1942	Secondary 1943
Jan.	5.0	20.7	0.3	1.1
Feb.	4.7	21.4	0.4	1.2
Mar.	5.2	26.1	0.5	1.5
April	5.0	27.3	0.6	1.7
May	5.3	30.4	0.5	1.7
June	5.3	30.3	0.6	1.6
July	6.6	33.4	0.6	1.7
Aug.	6.9	34.5	1.0	2.1
Sept.	8.2	32.6	1.0	2.5
Oct	11.7	35.6	0.8	2.7
Nov.	15.9	....	0.7	....
Dec.	18.2	....	0.9	....
Total	98.0	—	7.9	—

NEW YORK, N.Y., HERALD TRIBUNE
Cir. 336,512, Sun. 559,023
MARCH 19, 1944

Hindsight on Magnesium

In its report on war-time magnesium production, just made public, the Truman committee has high praise for the Dow Chemical Company, to which it gives the major share of the credit for the nation's success in meeting its requirements. However, some of the edge is taken off this citation by what the committee has to say about the company's pre-war record. Noting that Germany's production in 1933 was 33 million pounds, against only 7 million pounds for Dow Chemical, the sole American producer, the committee issues a dictum to the effect that it is "incumbent" on any firm holding a monopoly on any type of production to make certain that the United States at least equals other countries in output of that material.

Commenting on this latter suggestion, Dr. Willard H. Dow, president of the chemical company, notes pointedly that "Germany and the countries preparing for war, as opposed to the United States, operating entirely for peace, represent two entirely different modes of living, two entirely different approaches to the development of markets, and in no sense is there any comparison between the two."

In the rather ungracious observation of the Truman committee two criticisms seem to be implicit: first, that Dow Chemical enjoyed a monopoly in the field of magnesium production which enabled it to determine the amount produced in the pre-war years; second, that it was lacking in foresight with respect to war-time needs. It is true that in the middle of the war effort the Justice Department brought monopoly charges against the company, but Dr. Dow has denied these emphatically, and certainly the record, on its face, seems to sustain him. It shows, for example, that in the twenty-two years, from 1918 to 1939, despite the fact that the company was reducing prices from $5 a pound to 21 cents a pound, it lost money in its magnesium activities in all but four years and could not dispose of its production. Dr. Dow's statement that his firm enjoyed no basic patents which would give it a monopoly seems to be borne out by the events of the war.

In 1940, according to the unrefuted testimony of Dr. Dow, this company alone foresaw the importance of magnesium in the war effort and proceeded on its own convictions and with its own resources to construct additional facilities with a productive capacity of 36 million pounds of the metal. In December of that year the advisory commission of the Council on National Defense, on the advice of the Army-Navy Munitions Board, was reporting to the President that 1941 requirements would be only 14 million pounds, those of 1942, 22 millions. It was not until the early months of 1941 that the Office of Production Management awakened in a panic to the realization that earlier estimates should have been at least ten times higher than they were. The Dow company was called in to help get a $400 million program under way, and in 1942—the critical production year—the group of plants which it organized produced more than 91 per cent of the nation's metallic magnesium. And it produced it twice as economically as competitors following other processes.

In the light of this record it can hardly be said that the head of Dow Chemical is overstating the case when he declares that his company "has served the country in spite of, and not because of, the government."

From POST
Glen Falls, N.Y.
MAR 27 1944

Magnesium output averaging close to 10,000,000 pounds a month above military and civilian requirements.

SEE MAGNESIUM SURPLUS

Despite a slow start by private industry and "bungling and incompetence" in construction of a government-financed magnesium plant, the Senate Truman Committee reported that 1944 produc-

IRON AGE
Philadelphia, Pa.
MAR 23 1944

Statistical Notes

• **The net consumption** of silver in industry for 1943 was reported to have totaled 118 million oz., according to figures submitted at a recent Silver Producers and Distributers Industry Advisory Committee meeting. Imports of ore and base bullion and refined silver amounted to about 63 million oz. and United States mine production added about 40 million oz. The deficiency between new supply and requirements was supplied from Treasury free silver.

• **For the first month** of the year, copper production from domestic mines including Alaska was 89,506 net tons, a decrease of 1288 tons from that in December, 1943, the Bureau of Mines announced. For the same period, domestic zinc mines yielded 64,894 tons, an increase of 1020 tons over the previous month's output of 63,874 tons. Mine production of lead in January increased 409 tons to 38,325 tons.

• **Figures on non-ferrous** secondary metal recovered in 1942 have just been released by the Bureau of Mines. In brief these are:

Secondary Metal	Net Tons
Aluminum	198,492
Magnesium	6,238
Copper	427,755
Nickel	4,142
Lead	323,001
Antimony	18,200
Zinc	330,526

CHEMICAL & CHEMICAL ENGINEERING NEWS
New York City
JAN 25 1944

Curtailment of War Production

Office of War Information Jan. 7 issued a statement on curtailments of war production, based on data from the Navy, Army, WPB, and U. S. Maritime Commission.

None of the curtailments has been based upon plans for resuming manufacture of civilian goods. No considerable curtailments for that purpose can be scheduled during 1944 unless the war in Europe should take an early decisive turn in our favor, ending hostilities not later than June or July.

Chief cutbacks will come in small arms and ammunition, tanks, certain types of anti-aircraft equipment, noncombat aircraft, and artillery fire-control equipment. More than offsetting this will be an almost doubled production of combat aircraft, greatly increased emphasis on bombers, a tripled requirement for high-octane gasoline, and other expansions in merchant shipping, trucks, electronic equipment, heavy guns, heavy artillery shells, ground ordnance, and signal items.

Curtailments in production of raw materials, due in some cases to cutbacks in military equipment and in others to overproduction, according to WPB, are:

(1) Bauxite will have been cut back by about 40% by the end of January. Primary aluminum production will probably be curtailed nearly as much within the next few weeks.

(2) Alloy steels are now plentiful. However, facilities for rolling steel are still short and finished plate will be on the critical list for some time to come.

(3) Copper, magnesium, zinc, and molybdenum, desperately short only six months ago, are now fairly plentiful.

(4) Practically all other metals, including tin, are expected to come off the critical list during 1944.

MAR. 24, 1944
PALESTINE, TEX. ADVOCATE

• BEHIND THE SCENES IN WASHINGTON

BY PETER EDSON
NEA Staff Correspondent

FIRST full report to the American people on the production of the new, war-born magnesium industry is contained in a special report of the Senate Truman Committee investigating National Defense Production, which has just been released.


Edson

In 1939 only 3350 tons of magnesium were manufactured in the United States. 2100 tons of which were sold to Germany and Japan. In 1943 U. S. production was 195,000 tons and for 1944, estimated at 265,500 tons. This tremendous increase is one of the production miracles of the war, but it also points towards the possible uses for all this production after the war, in what has frequently been hailed as the coming "light metals revolution."

Some 46,000 tons of this year's production of magnesium are being set aside for a War Department experimentation program to find new uses for the metal, especially in aircraft.

Development of magnesium production in the U. S. has been involved by 10 years of legal battling, on which the Truman Committee now throws some new light and makes some conclusions tending to absolve the two principal pre-war American producers, Dow Chemical, American Magnesium, and Magnesium Development Corporation—the last two being Aluminum Company of America subsidaries—of much abuse.

AMERICAN MAGNESIUM had stopped production in 1927 after Alcoa had lost $1,000,000. Dow Chemical had also lost money but it had pioneered a new low-cost process, and American Magnesium could buy from Dow cheaper than it could produce itself. In 1931, the Aluminum Company (Alcoa) made an agreement with the principal German producer, I. G. Farben, forming a new jointly owned Magnesium Development Corporation to control Farben patents and processes in the U. S.

In 1941 the Department of Justice obtained an anti-trust indictment against this combination. The American companies paid fines of $140,000, canceled cross licensing, agreed to royalty-free use.

Today, the U. S. government has invested approximately $515,-000,000 in magnesium production and fabricating. Production has been increased 80 times, the cost brought down to 20½ cents a pound (aluminum costs 14). Every pound of magnesium replacing aluminum in plane construction permits that plane to carry another half-pound of fuel or cargo.

Today there are two private and 13 government plants, only six of which are now producing at capacity. Among them:

Dow Chemical produces magnesium by electrolysis of sea water or brine from wells at Midland, Marysville and Ludington, Mich., Freeport and Velasco, Tex. Dow "know-how" is used by Diamond Magnesium at Painesville, O., in recovery from the waste liquors of lime production.

Henry J. Kaiser's Permanente, Calif., plant, using magnesia obtained from brine or magnesite ore, mixes it with coke in an electric arc furnace.

Original costs of this metal were over a dollar a pound, but this has been reduced to 35 cents per pound or cost of production, whichever is less.

MINING JR'L
PHOENIX ARIZ.
3/30/44

MAGNESIUM PRODUCTION TO BE CURTAILED BY WPB ORDER

CURTAILMENTS in the production of magnesium, ranging from 35 to 100 per cent, have been ordered by the War Production Board for five magnesium plants in various parts of the country. The curtailments are estimated to total about 34,000,000 pounds a year, or less than 6 per cent of the country's productive capacity of 586,000,000 pounds.

WPB has halted production entirely at the Dearborn, Michigan, plant of the Ford Motor Company, and at the Mathieson Alkali Works at Lake Charles, Louisiana. Fifty per cent cuts were ordered for the Electro Metallurgical Company of Spokane, Washington, and for Permanente Metals Corporation, Manteca, California. A 35 per cent reduction was ordered for the Amco Magnesium Corporation at Wingdale, New York.

According to the federal agency, production currently is running between 8,000,000 and 10,000,000 pounds a month in excess of requirements, as the armed services have not consumed the quantity stated in their estimates. As a result surplus stocks of magnesium now total more than the amount required for two months at the current rate of consumption.

It is believed that the reduction in production will release about 2,500 persons for other essential war jobs. Furthermore, the action is designed to effect savings in coal, gas, transportation, etc., in areas where one or all of them are scarce.

Of the five plants, only Permanente Metals Corporation has been operating at capacity; therefore, the curtailment will be much less drastic than appears from rated-capacity figures, said WPB.

STEEL
Cleveland, Ohio

MAR 27 1944

Magnesium Production Reduced at Five Plants

War Production Board has ordered reductions in magnesium production at five plants located in various parts of the country. The reduction will amount to about 34,000,000 pounds per year, or less than 6 per cent of the country's annual capacity of 586,000,000 pounds.

Production was ordered curtailed at this time for several reasons. In the first place, production currently is running between eight and ten million pounds per month in excess of requirements. This large surplus production is due primarily to the fact that the armed services have not consumed the quantity stated in their requirements. Surplus stocks of magnesium now total more than the amount required for two months at the rate of current consumption, WPB revealed. Furthermore, this action will result in savings of coal, gas, and labor.

The plants affected and the reductions in production in relation to rated capacity are: Electro Metallurgical Co., Spokane, Wash., 50 per cent; Permanente Metals Corp., Manteca, Calif., 50 per cent; Ford Motor Co., Dearborn, Mich., 100 per cent; Mathieson Alkali Works Inc., Lake Charles, La., 100 per cent; and Amco Magnesium Corp., Wingdale, N. Y., 35 per cent.

Only one of these plants, the Permanente Metals Corp., has been operating at capacity. Therefore, the curtailments will be very much less drastic than appears from the rated-capacity figures. In the case of Electro Met, for example, the order will merely freeze production at 50 per cent of rated capacity or slightly more than present rate.

Magnesium is being released by WPB for all possible military requirements and for essential civilian needs. Greater utilization of magnesium products by the military has been encouraged by WPB for some time. It is felt that restrictions for all civilian purposes cannot be removed at this time because magnesium fabricating facilities such as foundries, are not adequate for other than essential demands.

MAR. 27, 1944
JOPLIN, MO. NEWS-HERALD

War Production Notes.

Here are some of the latest items of interest pertaining to production, officially publicized by the WPB:

Synthetic rubber is being produced at a greater rate than crude rubber was consumed in 1941, but immediate war demands, plus essential civilian demands for tires and other rubber products, still exceed supply. Consequently—your old tires must be made to last.

The average weight of crude rubber and latex used in rubber footwear has been ordered reduced by approximately 50 per cent, to help save crude rubber.

About 5,000 families are to be interviewed in the near future by OCR to learn what things are most needed on the home front.

Approximately 4,500,000,000 jars of food were put up in American homes during the past year. The glass container industry produced 3,901,000 gross of home canning jars.

Sole leather for the repair of civilian's shoe soles, will be reavailable to repair shops from April 1 to June 30 at the rate of 300,000 "bends" per month. A bend makes holf soles for about 26 pairs of shoes. This is an increase over the monthly average for 1943.

Authorization has been given to increase production of bedsprings and box springs by 25 per cent. Also, quality will be improved through authorized use of more steel per unit. But no innerspring mattresses are allowed, as yet.

"Reflecting the easier situation on some metals," says WPB, "present restrictions on the use of such metals in many products destined for civilian use have been removed. In general, this means production of more durable products, saving of many man-hours, and, in many cases, saving of lumber, not critically short. It does not mean that pre-war models will be available, or that greater quantities can be produced now."

Shortages in magnesium have been licked but lumber continues the No. 1 shortage problem. All major consumers of lumber must file applications with WPB before April 25, giving their requirements for the second and third quarters. Unless such applications are filed they will be permitted no lumber at all.

METAL AND MINERAL MARKETS
McGraw-Hill, 330 W. 42nd St., New York City

MAR 30 1944

Canadian Metal Statistics, 1940 to 1943

The Dominion Bureau of Statistics has released the following figures on Canada's production of metals for 1940, 1941, 1942, and 1943 (preliminary):

	1940	1941	1942	1943
Antimony, lb.	2,594,492	3,185,077	3,041,108	1,086,000
Cadmium, lb.	908,127	1,251,291	1,148,963	776,442
Chromite, lb.	335	2,372	11,456	30,085
Cobalt, lb.	794,359	263,257	(a)83,871	169,687
Copper, lb.	655,593,441	643,316,713	603,661,826	578,981,467
Gold, oz.	5,311,145	5,345,179	4,841,306	3,649,671
Iron ore, ton	414,603	516,037	545,306	641,294
Lead, lb.	471,850,256	460,167,005	512,142,562	444,354,772
Magnesium, lb.	......	10,905	808,718	7,149,525
Manganese ore, ton	152	......	435	......
Mercury, lb.	153,830	536,304	1,035,914	1,709,000
Molybdenite (conc.) lb.	22,251	196,600	227,586	813,268
Nickel, lb.	245,557,871	282,258,236	285,211,803	287,763,825
Selenium, lb.	179,860	406,930	495,369	380,200
Silver, oz.	23,833,752	21,754,408	20,695,101	17,230,939
Tellurium, lb.	3,491	11,453	11,084	61,300
Tin, lb.	......	64,744	1,237,863	(b)
Titanium ore, ton	4,535	12,651	10,031	73,723
Tungsten (conc.) lb.	12,002	82,846	520,981	1,353,089
Zinc, lb.	424,028,862	512,381,636	580,257,373	608,568,434

(a) Excludes metal in ore in government's stockpile. (b) Not available for publication.

From
PRESS
Binghamton, N. Y.
MAR 10 1944

MAGNESIUM EXCESS

London (INS)—The United States and Great Britain are producing more magnesium than is needed and one British plant will be closed as the result. Magnesium is used in production of planes, plane engines and incendiary bombs.

BOSTON NEWS BUREAU
"The only daily financial newspaper published in New England."
Boston, Mass.
MAR 29 1944

Further Magnesium Cut

A further drastic cutback in production of magnesium is planned by WPB, says Washington dispatch. In addition to the recently announced 6% cutback, it is understood WPB will order production cut another 14% in near future, bringing the total cutback to 20%.

This article was clipped from
PRECAMBRIAN
WINNIPEG CAN.
3/44

Wood Competes With Light Metals

While engineers are predicting a tremendous increase in postwar applications of aluminum and magnesium, wood product manufacturers are preparing to compete with light metals in several fields. Strong and resilient wood makes a good material for automobile bumpers, providing the same protection as steel, with less weight and cost. For reciprocating parts, such as connecting rods of farm machinery, wood may permanently replace the light metals. Plywood automobile doors, trunk lids, etc., are definite postwar possibilities.

PRECAMBRIAN
WINNIPEG CAN.
3/44

Magnesium Castings Impregnated With Tung Oil

A new technique in the impregnation of magnesium castings with tung oil, has been developed by the Chevrolet Grey Iron Foundry at Saginaw. The new method forces the oil through porous sections of castings under direct pressure thereby saving considerable time and producing a better job.

MAR. 31, 1944
DALLAS, TEX. CRAFTSMAN

Reduce Output Of Magnesium

Washington. — WPB has reduced magnesium production at five plants, releasing 2,500 workers, as a result of less-than-anticipated use of magnesium by the armed forces. WMC offfcials said the displaced employes would be speedily absorbed by other war industries.

The plants affected and the reductions in production in relation to rated capacity are: Electro Metallurgical Co., Spokane, Wash., 50 per cent; Permanente Metals Corp.-Manteca, Manteca, Calif., 50 per cent; Ford Motor Co., Dearborn, Mich., 100 per cent; Mathieson Alkali Works, Inc., Lake Charles, La., 100 per cent; and Amco Magnesium Corp., Wingdale, N. Y., 35 per cent.

Only one plant, the Permanente Metals Corp., has been operating at capacity.

Magnesium production has been running 8,000,000 to 10,000,000 pounds in excess of requirements, WPB said. The reduction in output will amount to approximately 34,000,000 pounds a year, or 6 per cent of the total.

"In taking this step there has been complete co-operation between the Aluminum and Magnesium Division, the Office of Labor Production and the Office for Manpower Requirements of WPB and the War Manpower Commission in providing employment to persons released by the production change," WPB officials said.

AMERICAN METAL MARKET
2-25-44

Post-War Control Of Axis Power As Regards Aluminum And Magnesium And Their Raw Materials

The following address was delivered by Mr. P. D. Wilson of the War Production Board at the annual meeting of the American Institute of Mining and Metallurgical Engineers in New York on February 22, 1944:

When the United Nations win the war and the decision has been made to control future armament in the Axis countries, plans for the extent and operation of such control must have been prepared, to be ready to put into immediate execution. Such control to be effective must be premised upon complete military occupation of the two countries for a substantial period of time, with an arrangement at the end of such occupation for continued supervision of these industries into an indefinite future. Whether or not the United States will be willing to permit its armed forces to participate in continued occupation of these countries should be decided, insofar as possible, before plans for occupational control of Axis industries are put into effect. If, for instance, the United States should take over her share of strict and drastic control, thus antagonizing the occupied countries, and should shortly thereafter withdraw from such participation, antagonism of the other allied nations would be generated with the unfortunate result that we would then be cordially disliked by enemies and allies alike.

Any control short of strict, drastic military supervision would, in my opinion, be ineffective and would be likely to result in such relaxation that another war would be inevitable. The point should be stressed that, when once committed, the United States must be prepared to continue participating in military control for a sufficient period of time to be absolutely sure that a resurgence of belligerency on the part of Axis powers will not occur.

As far as the light metals are concerned, control should be so designed that only such supply as is strictly necessary to the maintenance of a domestic civilian economy on a reasonable subsistence level will be permitted. Since aluminum, and to a lesser extent magnesium, are today so critically essential to the development of a wartime aircraft industry, the control of these metals is of supreme importance. In determining the level of civilian requirements, the broad phases of the industrial economy of the country in question must be considered, such as the relation for civilian purposes of aluminum to steel and to copper, the latter requiring imports of the metal as opposed to the production domestically of aluminum.

While bauxite has been the only raw material from which alumina for metal purposes has been produced economically and effectively, it must be kept in mind that metal alumina can be produced, if bauxite is not available, from a large number of other aluminous raw materials. These include clay and high alumina-bearing rocks, such as labradorite, anorthesite, nepheline syenite, alum shales, alunite and others which are abundantly distributed throughout the world. In fact, the raw material from which alumina and aluminum can be produced are so abundant and are so widely distributed that to attempt to control the raw material supply would be futile. Processes to produce alumina commercially from these non-bauxitic materials have never so far been entirely successful but there is every reason to believe that they can and will furnish in the future a substantial source of aluminum.

A review of the bauxite reserves of the world, which can, of course, be considered as only roughly approximate, indicates that potential tonnages are now distributed about equally in areas under Allied and Axis control, some 600-million tons each. The important deposits now in the hands of the Axis are located in France, Hungary, Yugoslavia, Rumania, Italy and the Netherlands East Indies. There are no important deposits in either Germany or Japan. It would, therefore, appear to be impracticable to attempt to control the sources of bauxite other than to make abundantly certain that no large stockpiles of the ore should be accumulated in either of these two countries.

As far as the intermediate material, alumina, is concerned, it is proposed that at the moment of the armistice in each case all of the alumina plants in the defeated Axis countries should be immediately closed down. There will be such huge quantities of metal stocks, both in the form of primary ingot and of secondary, and so much available aircraft and battle scrap, that for a substantial period of time it will be entirely unnecessary to produce more metal for civilian needs in any of the Axis controlled countries. ... as occupation of the countries ... careful industrial survey should be made of the requirements of civilian economy. Any alumina capacity in excess of that determined as necessary to self-sufficient civilian economy should then be scrapped. Continued control must be detailed enough to prevent the rebuilding of alumina plant capacity. In this connection the possible secret construction of chemical plants, which could be used for or converted to the manufacture of alumina from any of the non-bauxitic raw materials, must at all costs be prevented.

It is believed that present production of aluminum in Germany is between 300,000 and 400,000 tons per year. Before Germany began to increase its aluminum capacity in anticipation of World War II, less than 50,000 tons of aluminum per year seems to have been necessary to maintain the civilian economy. It has been suggested by some that the plant capacity in Germany in excess of 20,000 tons per year should be scrapped immediately upon signing the armistice. Another suggested figure is 40,000 tons per year. It should be apparent that the 100% difference between these figures could easily mean the difference between a successfully operated internal economy and complete chaos. The theory behind any effective control is to teach the German people by force to confine themselves to peaceful pursuits. It is admitted by political economists that the means adopted must permit the conquered country to exist and to be self-sufficient. In Germany this implies the means to manufacture consumer goods, and control of the production of aluminum should be directed toward that end. It is estimated that at least four-fifths of the expansion which has taken place in the German aluminum industry during the past ten years has been based on military requirements. Any such potential capacity as that now existing would remain as a continued threat of rearmament. The use of aluminum for purely commercial and peaceful activities is, however, a practical necessity to any manufacturing nation and any attempt to forbid the production of sufficient metal to satisfy purely civilian requirements would probably do a great deal more harm than good. The problem, therefore, resolves itself into just how much Germany shall be allowed to produce.

In Germany, as well as elsewhere in the world, there will unquestionably exist a very considerable tonnage of aluminum in ingot form, probably enough to last a year, perhaps two years or longer, under conditions of peace. Immediately upon the military occupation of the country all aluminum production could be ordered stopped forthwith without any risk of economic repercussions. Concurrently the importation of the necessary raw materials, the principal of which is bauxite, should be prohibited until further notice and, as stated above, the alumina plants should be shut down. A necessary adjunct to such a step would be a strict prohibition against the export of any raw or semi-fabricated aluminum. The continuance of such a ban would serve as an efficient brake on any future expansions of consequence under the possible guise of commercial operations for international trade.

Immediately upon the complete cessation of aluminum production, a careful detailed study of the country's "aluminum economy" should be undertaken. While it will undoubtedly be

(Continued on page 5)

ANTIMONY

American, 99½% Grade:
For shipment from smelter in carload lots, in bulk:
F.o.b. Laredo, Texas 14.50c
Equiv. N. Y. delivery ... *15.265c
For Warehouse delivery at Jersey City, N. J., in cases:
10,000 lbs. to 35,999 lbs.. *15.84c
224 lbs. to 9,999 lbs. *16.09c

* Based on freight from Laredo of $1.88 per case of 224 lbs. and/or 76.5c per 100 lbs. in carloads in bulk.

American, 99.8% Grade:
For shipment from smelter in carload lots, in bulk:
F.o.b. Laredo, Texas 15.00c
N. Y. delivery equiv. 15.765c
Chicago del. equivalent .. 15.487c
For warehouse delivery at Chicago, in cases:
10,000 lbs. to 35,999 lbs. .. 15.987c
224 lbs. to 9,999 lbs. 16.237c
Includes 3% excise tax on transportation, effective December 1, 1942.

Chinese 99% grade:
For warehouse or dock delivery at New York, in cases .... nominal

LEAD

Fair Tonnage Sold Today For March Delivery

NEW YORK, Feb. 24.—Consuming requirements for the month of February are fully covered and those for March nearly so, and as a result, overall activity is at rather low ebb at present. One important seller, however, experienced a momentary flurry of inquiry today and at the end of the day found that a respectable tonnage of lead had been sold for March delivery. It was pointed out that the business came from buyers who apparently waited a bit longer than usual to place their orders and that the buying otherwise was without special significance.

Other sellers here reported quiet conditions with no special interest expected to be shown in the market until order books for April business are opened next Tuesday or Wednesday.

Maximum Prices

Common Grade
New York 6.50c
St. Louis 6.35c

Chemical Grade
New York .... 6.55c†
St. Louis 6.40c*

* Maximum is 6.45c. †Maximum is 6.60c.

Corroding Grade
New York 6.60c
St. Louis 6.45c

DIVIDEND DECLARATION

Directors of Harrisburg Steel Corporation on Wednesday declared a quarterly dividend of 30 cents per share on the common stock, payable March 27, 1944 to stockholders of record March 13, 1944.

DETROIT, Feb. 23.—Detroit Steel Corporation has declared a dividend of 35 cents a share on the capital stock, payable March 18th to stockholders of record on March 4th.

SILVER

NEW YORK, Feb. 24.—

	Spot	Forward
London	23½d	23½d
	N. Y. Official*	New Mine Domestic
Handy & Harman quotation	44¾c	70⅝c

O.P.A. max. price for foreign silver †45c
U. S. Treasury price for foreign silver 35c
U. S. Mint official buying prices: Mined after June 30, 1939 . 71.11c
* Applies to refined bullion imported on or after August 31, 1942.
† Effective August 31, 1942.

MAR. 19, 1944 415
SWEETWATER, TEX. REPORTER

A New Era, Magnesium Aim

BY PETER EDSON
Sweetwater Reporter Washington Correspondent

First full report to the American people on the production of the new, war-born magnesium industry is contained in a special report of the Senate Truman Committee investigating National Defense Production, which has just been released.

In 1939 only 3350 tons of magnesium were manufactured in the United States, 2100 tons of which were sold to Germany and Japan. In 1943 U. S. production was 195,000 tons and for 1944, estimated at 265,500 tons. This tremendous increase is one of the production miracles of the war, but it also points towards the possible uses for all this production after the war, in what has frequently been hailed as the coming "light metals revolution."

Some 46,000 tons of this year's production of magnesium are being set aside for a War Department experimentation program to find new uses for the metal, especially in aircraft.

Development of magnesium production in the U. S. has been involved by 10 years of legal battling, on which the Truman Committee now throws some new light and makes some new conclusions tending to absolve the two principal pre-war American producers, Dow Chemical, American Magnesium, and Magnesium Development Corporation—the last two being Aluminum Company of America subsidiaries—of much of the abuse that has been heaped upon them, saying that without their efforts, the U. S. might have had no magnesium industry at all.

I. G. FARBEN IN THE PICTURE

American magnesium had stopped production in 1927 after Alcoa had lost $1,000,000. Dow Chemical had also lost money, but it had pioneered a new low-cost process, and American Magnesium could buy from Dow cheaper than it could produce itself. But in 1931, the Aluminum Company (Alcoa) made an agreement with the principal German producer, I. G. Farben, forming a new jointly owned Magnesium Development Corporation to control Farben patents and processes in the U. S. There followed an infringement suit against Dow, which was withdrawn in 1934 when Alcoa and Dow agreed to cross license patents.

In 1941 the Department of Justice obtained an anti-trust indictment against this combination. The American companies paid fines of $140,000, canceled cross licensing, agreed to royalty-free use.

Today, the U. S. government has invested approximately $515,000,000 in magnesium production and fabricating. Production has been increased 80 times, the cost brought down to 20 1-2 cents a pound (aluminum costs 14). Every pound of magnesium replacing aluminum in plane construction permits that plane to carry another half-pound of fuel or cargo.

PLANTS SCATTERED EVERYWHERE

Today there are two private and 13 government plants, only six of which are now producing at capacity.

Dow Chemical produces magnesium by electrolysis of sea water or brine from wells at Midland, Marysville and Ludington, Mich., Freeport and Velasco, Tex. Dow "know-how" is used by Diamond Magnesium at Painesville, O., in recovery from the waste liquors of lime production; and by International Minerals and Chemical at Austin, Tex., from the end liquors of potash produced from brine.

Henry J. Kaiser's Permanente, Calif., plant, using magnesia obtained from brine or magnesite ore, mixes it with coke in an electric arc furnace to produce magnesium vapor which is then condensed and distilled into pure magnesium.

Original costs of this metal were over a dollar a pound, but this has been reduced to 35 cents per pound or cost of production, whichever is less.

A costly ferro-silicon process, mixing this ore with magnesium-bearing dolomite ore and heating in a retort under vacuum produces magnesium vapor which is distilled. Half a dozen companies use it.

A German process adapted by the British Magnesium Elektron, Ltd., interests is used by Basic Magnesium, Inc., now taken over and operated by Anaconda Copper Co., at Las Vegas, Nev.

It is on this basis that America's magnesium industry of the future is to be built.

From
SENTINEL,
Rome, N. Y. MAR 17 1944

The Future of Magnesium

Prior to the present war this country's consumption of magnesium was slight; Germany, with about half our population, was producing nearly six times our output of the metal. Because of its need in war production, the government financed a basic magnesium plant at Las Vegas, Nevada, in the vicinity of Boulder Dam, to cost $113,000,000. It is said its present 112,000,000-pound output is "the largest in the United States and believed to be the largest in the world." It was authorized by the Defense Plant Corporation in 1941 under contract with the Basic Magnesium Corporation of Cleveland; but since October, 1942, it has been managed by the Anaconda Copper Mining Company.

Senator Don C. Wallgren, Washington Democrat, as chairman of a subcommittee of the Truman committee of the Senate, has just made public a report on the magnesium situation with recommendations. He and his colleagues declare production has been stepped up to a point where its use in more civilian goods is warranted. Indeed, they hold such a course is essential to protect the government's $500,000,000 investment in such plants. They assert that pre-war use of magnesium was so small compared with present production capacity, that the future of the existing facilities is jeopardized unless civilian industry learns new ways to use the metal, which has been vital in the wartime manufacture of airplanes, bombs and other implements of war.

This presents a topic for interesting consideration. Way back in pre-Spanish War days and subsequently the Republican party waged campaign after campaign in support of the policy of high tariff rates for the express purpose of barring foreign manufactures that might otherwise put American factories out of business. World War I, on the other hand, left us with what was then regarded as a huge nitrate plant at Muscle Shoals on the Tennessee River, over the disposition of which a prolonged battle waged in Congress. It today is embraced in the general operations of the Tennessee Valley Authority.

Despite the widespread conviction that at the close of hostilities the government should "retire from business," we now have this group within the Truman committee arguing for prompt and effective protection of the federal basic magnesium plant. Obviously if it were needed for this war, it would be equally needed in another. But also it is contended magnesium can be as advantageously employed for manufacturing civilian goods as for machinery and implements of war.

JOURNAL OF COMMERCE
New York, N. Y.
MAR 27 1944

BUREAU OF MINES HAS NEW MAGNESIUM FILM

(Bureau of Journal of Commerce)

WASHINGTON, March 26.—Unveiling the interesting process surrounding the production of the lightweight metal magnesium, the Bureau of Mines over the week-end announced release of a new educational sound motion picture, "Magnesium—Metal from the Sea," which describes how this essential material is created from common sea water and from salt brines.

The new film, available for free use by public and private schools, war-training classes, the armed forces, civic groups, and other organization, is in 16-millimeter sound and was produced in co-operation with a large industrial firm, Dr. R. R. Sayers, Bureau Director, reported to Secretary of the Interior Harold L. Ickes. The picture has a running time of 23 minutes.

Applications for free short-term loans of the film "Magnesium—Metal from the Sea" should be addressed to the Bureau of Mines Experiment Station, 4800 Forbes street, Pittsburgh 13, Pa., and should state specifically that the borrower is equipped to show 16-millimeter sound films. No charge is made for use of the film but the exhibitor is expected to pay transportation charges and for loss or damage other than normal wear.

RENO, NEV., JOURNAL
Cir. 7,505
APRIL 27, 1944

Magnesium List Shows Sources Of Rare Metal

In releasing hitherto censored statistics covering 1942 production of magnesium metal the U. S. Bureau of Mines lists the principal producers of the 97,925,684 pounds (200 per cent greater than in 1941) as follows (with name of company, location and source listed in that order):

Dow Chemical company, Midland, Mich., brine; Dow Chemical company, Freeport, Texas, sea water; Dow Chemical company, Valasco, Texas, sea water; Permanente Magnesium corporation Permanente, Cal., magnesite; Permanente Magnesium corporation, Manteca, Cal., magnesite; Diamond Magnesium company, Painesville, Ohio, magnesite; International mineral and Chemical company, Austin, Texas, chloride; Mathieson Chemical company, Lake Charles, La., chloride; Basic Magnesium, Las Vegas, Nev., magnesite; Ford Motor company, Dearborn, Mich., dolomite; Magnesium Reduction company, Luckey, Ohio, dolomite; New England Lime, Canaan, Conn., dolomite.

Actual consumption of magnesium, both primary and secondary, totaled 84,525,700 pounds in 1942.

Friday Harbor (Wn) Journal
April 6, 1944

THE Northwest of Tomorrow. The prediction of Dr. Wm. J. Hale, research consultant for Dow Chemical company, that light metals, plastics and industrial alchol will become the three basic industries of the future, is of more than academic interest here.

Light metals, which require large quantities of electric power to process, include aluminum and magnesium. The major source of American bauxite ore, the raw material from which aluminum is derived, is Dutch Guiana, of South America. Lesser quantities are found in Arkansas, Alabama and Georgia, and some bauxite is imported from Brazil. Because of the abundance of electric power, much of this bauxite is brought to Pacific Northwest plants for reduction—a fact which forshadows the establishment of rolling mills in this region.

Added possibilities are seen in the presence of large deposits of alunite clays, notably in the Castle Rock district, of Southwest Washington from which aluminum may be extracted. Experiments now are under way.

Magnesium, a "wonder metal," one-third lighter than aluminum, should become an important industrial factor. Magnesite, found in quantity in Eastern Washington, is being reduced at Spokane. Engineers at Washington State college, Pullman, whose research already has paid high dividends, are experimenting with olivine as a source of magnesium. In the Twin Sisters region of Whatcom county is one of the largest deposits of olivine in the country. The division of metallurgy at the state college has been encouraged by its experiments in extracting magnesium from mineral, and is planning to intensify its research efforts.

While the source of plastics are diversified, the use of cellulose materials offers a wide field for the expansion of the industry in the nations greatest forest empire. The manufacture of plastics from wood waste is both practicable and profitable.

Dr. Hale's statement that ethyl alchol will be important in the coming chemical age is timely in connection with the announcement that a government-financed $1,000,000 addition to the Bellingham plant of the Puget Sound Pulp & Timber company will utilize waste sulphite liquor in the manufacture of alchol. Prospective expansion of plant capacity to 20,000,000,000 gallons from all sources within twenty years—as envisaged by Dr. Hale—means that a large market awaits this by-product of the Northwest's growing wood pulp industry.

Possibly half of the new wartime population brought to the Pacific coast will remain permanently. As peacetime industry expands, the tide will continue to flow westward.

The Northwest is the logical center of the "basic industries of the future." By united effort we can make it so.—Bellingham Herald.

APR. 15, 1944 468 420
FT. SCOTT, KS. TRIBUNE

BEHIND THE SCENES IN WASHINGTON

BY PETER EDSON
NEA Staff Correspondent

FIRST full report to the American people on the production of the new, war-born magnesium industry is contained in a special report of the Senate Truman Committee investigating National Defense Production, which has just been released.


Edson

In 1939 only 3350 tons of magnesium were manufactured in the United States, 2100 tons of which were sold to Germany and Japan. In 1943 U. S. production was 195,000 tons and for 1944, estimated at 265,500 tons. This tremendous increase is one of the production miracles of the war, but it also points towards the possible uses for all this production after the war, in what has frequently been hailed as the coming "light metals revolution."

Some 46,000 tons of this year's production of magnesium are being set aside for a War Department experimentation program to find new uses for the metal, especially in aircraft.

Development of magnesium production in the U. S. has been involved by 10 years of legal battling, on which the Truman Committee now throws some new light and makes some new conclusions tending to absolve the two principal pre-war American producers, Dow Chemical, American Magnesium, and Magnesium Development Corporation—the last two being Aluminum Company of America subsidaries—of much abuse.

AMERICAN MAGNESIUM had stopped production in 1927 after Alcoa had lost $1,000,000. Dow Chemical had also lost money, but it had pioneered a new low-cost process, and American Magnesium could buy from Dow cheaper than it could produce itself. But in 1931, the Aluminum Company (Alcoa) made an agreement with the principal German producer, I. G. Farben, forming a new jointly owned Magnesium Development Corporation to control Farben patents and processes in the U. S.

In 1941 the Department of Justice obtained an anti-trust indictment against this combination. The American companies paid fines of $140,000, canceled cross licensing, agreed to royalty-free use.

Today, the U. S. government has invested approximately $515,000,000 in magnesium production and fabricating. Production has been increased 80 times, the cost brought down to 20½ cents a pound (aluminum costs 14). Every pound of magnesium replacing aluminum in plane construction permits that plane to carry another half-pound of fuel or cargo.

Today there are two private and 13 government plants, only six of which are now producing at capacity. Among them:

Dow Chemical produces magnesium by electrolysis of sea water or brine from wells at Midland, Marysville and Ludington, Mich., Freeport and Velasco, Tex. Dow "know-how" is used by Diamond Magnesium at Painesville, O., in recovery from the waste liquors of lime production.

Henry J. Kaiser's Permanente, Calif., plant, using magnesia obtained from brine or magnesite ore, mixes it with coke in an electric arc furnace.

Original costs of this metal were over a dollar a pound, but this has been reduced to 35 cents per pound or cost of production, whichever is less.

CHEMICAL INDUSTRIES
"Devoted to economic and business problems of making and marketing, buying and using of chemicals."
New York City
APR 1944

Magnesium Fabricated Products

The War Production Board revealed recently that shipments of magnesium fabricated products doubled in 1943 as compared with 1942. This increase reflects the rising demands of the aircraft program for the light metal, where over 90 per cent of the fabricated magnesium is used. Although data on incendiary bomb castings were not revealed, it may be said that shipments of this single type of permanent mold casting exceed shipments of all other kinds of fabricated magnesium combined.

The rate of increase has been most marked in forgings and permanent mold castings (other than bombs) where quarterly shipments at the end of 1943 were more than 1,000 per cent greater than those at the beginning of 1942.

Shipments of sand castings, from the tonnage standpoint the most important of the magnesium products, trebled from the beginning of 1942 to the end of 1943. Virtually all of this product is heat-treated for increased strength and goes into engine, wheel, and other aircraft parts.

RENO, NEV., MINING PRESS
Cir. 1875
APRIL 1944

NEVADA RANKS HIGH IN YIELD OF MAGNESIUM

At a recent meeting of the Nevada section of the American Institue of Mining and Metallurgical Engineers, Glenn L. Allen, district engineer in Nevada for the U. S. Bureau of Mines, stated that Nevada now ranks third in productive capacity of magnesium.

National productive capacity, he said, is approximately 300,000 tons per year, with Texas rated at 68,000 tons, Michigan at 65,000 tons and Nevada at 60,000 tons.

Engineer Allen pointed out that the Bureau of Mines has increased the production of helium to a volume over 25 times that of 1941, meeting every war requirement.

Still on the list of critical minerals are condenser mica, corundum, fluorite, tantalite, lithium minerals and optical spar. Supply is still exceeded by demand for cadmium, bismuth, tin and nickel.

For other metals, a balance has been fairly well obtained between supply and use both for war needs and for the most urgent industrial uses.

SUPER MARKET MERCHANDISING
"The Only Publication Reaching All Mass Buyers In All The Food Field Classification."
New York City
APR 1944

UNIVERSAL MATCH CORP. distributed 725 million Universal Book Matches during 1943 each with War Bond copy on front and back cover. These match books went into all forty-eight states. S. M. Rosenberg, vice-president, says the company feels War Bonds should be backed with the proven selling power of book match advertising. He is shown here presenting

Anita Colby, featured in Columbia Picture's production, "Cover Girl," with the 800,000,000th book of Universal Matches promoting the sale of War Bonds and Stamps. The signal and magnesium division of the corporation has been awarded the Army-Navy "E" for outstanding production. The division manufactures signal flares for aircraft magnesium powder and secret weapons for chemical warfare. Not one pound of magnesium powder nor one signal have been rejected. More than 90% of the employees are women, all specially trained by the company.

CHEMICAL & METALLURGICAL ENGINEERING
"The Monthly Magazine of the Process Industries"
McGraw-Hill, 330 W. 42nd St., New York City
APR 1944

MAGNESIUM GETS THE AX

HEAVY CUTS in the scheduled production of magnesium were ordered Mar. 16 at five plants. The official explanation of the cutback is as follows: "Production was ordered curtailed at this time for several reasons. In the first place, production currently is running between eight and ten million pounds per month in excess of requirements. This large surplus production is due primarily to the fact that the armed services have not consumed the quantity stated in their requirements. Surplus stocks of magnesium now total more than the amount required for two months at the rate of current consumption, WPB revealed. Furthermore, this action will result in savings of coal, gas, transportation and labor in areas where one or all of them are scarce."

IRON AGE
Philadelphia, Pa.
APR 13 1944

Magnesium registered a very big gain at 7,149,525 lb. as against 808,718 lb. the preceding year. The first commercial production of magnesium in Canada since 1918 occurred in 1941. Molybdenite concentrate production was estimated at 407 tons last year, as against 114 tons in 1942. The mining of molybdenite ores in Canada prior to 1943 was irregular, owing chiefly to the rather erratic nature of the mineralization in the known ore deposits. Canada is one of the world's largest producers of the metals of the platinum group. They occur in association with the nickel-copper ores of the Sudbury district of Ontario. Production in 1943 was valued at $13,549,470.

AMERICAN METAL MARKET
"Leading Iron, Steel and Metal Newspaper—Recognized price and market authority."
New York City
APR 28 1944

Chicago Chapter Of Foundrymen To Hold Meeting May 1st

CHICAGO, April 25.—The Chicago Chapter of the American Foundrymen's Association will hold a meeting on Monday evening, May 1st, at which there will be the regular round-table type program. Two men from the R.A.F. will speak at the dinner, which will be held in the main dining room of the Chicago Bar Association, 27 So. LaSalle Street, at 6:30 P. M., and the meeting is scheduled to start at 7:30 P. M.

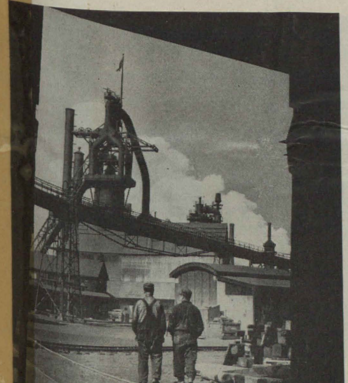
The subjects to be discussed at the round-table meeting are:

"Close Cupola Control and How To Get It."
"Aluminum and Magnesium."
"Foundry Maintenance."
"Pattern Construction Methods."

LEADER
Kingston, N. Y.
APR 29 1944

Magnesium is the ightest of structural metals, being one-third lighter than aluminum.

MODERN POWER AND ENGINEERING
481 University Avenue
Toronto, Canada
APR 1944



Photos by National Film Board

Glimpses Into Postwar Business

by Dewitt Munson

I RARELY indulge in the dangerous pastime of crystal-gazing and, consequently, offer my predictions about Canadian postwar business prospects with some trepidation. Undoubtedly those intimately in touch with specific industries will find flaws in my reasoning, but I have attempted to base my forecasts upon the best available information upon past performances, and also on the evident trends in Ottawa, the 1944 capital of Canadian business.

Power: Total output will drop to about 35 billion kilowatt hours in 1944, should level off at about 32 billion in the immediate postwar period. The 40 billion peak will be reached again within five years of the end of the war. Installed capacity in use in the year the war ends will not exceed 9 to 9.2 million horsepower.

Steel: 1943 ingot production exceeded 3 million tons, more than double the 1939 total, but heavy importations were necessary to meet our needs. The steel situation was easing sharply as 1943 drew to a close and the controller relaxed some restrictions. The United States has cancelled contracts for new steel-making facilities, and is diverting substantial tonnages to essential civilian needs. Release of steel in volume may be expected in Canada in 1944, particularly in view of sharp cutbacks in the shipbuilding programs, and it is likely that rail steel and railway rolling stock will be given first claim. Some export demands will be met, and any surpluses may go to the construction industry. War orders and Mutual Aid have opened up large potential markets for Canadian steel and these, with heavy backlogs of domestic orders, give indications that the Dominion's mills will be able to operate at 60 to 70% capacity for some years after hostilities cease. There is but a remote possibility that consumption will ever again demand capacity output.

Alloy Steels: No field of Canadian industry has seen a more spectacular wartime expansion, and output today is at a rate more than five times that of 1939. The industry will be able to furnish not only all domestic requirements after the war, but will have heavy surpluses for export, whereas Canada imported large supplies prior to 1940. Abundant Canadian sources will mean a stronger trend toward the use of more special steel in motor cars, railway stock, aircraft, machine tools, and other products. It is doubtful if all postwar markets will absorb more than 50 to 60% of our wartime volume. Availability of fine steels has brought in its wake a number of brand new Canadian industries, such as that producing surgical instruments.

Aluminum: Canada's aluminum production has equalled 40% of the combined needs of the United Nations, and the volume has been many times that of pre-war. Even if the light metal were to be used for motor car bodies, furniture, store fittings—uses that are considered remote—production could not be maintained at much more than double the pre-war peak volume. The possibility of selling large quantities abroad has been lessened by the opening of substantial sources in the United States, and Germany is said to have an output running close to that of Dominion refineries. Within ten years of the end of the war, however, new uses may be absorbing huge quantities of aluminum in the home markets.

Magnesium: As with aluminum, magnesium now is in surplus supply in North America. The commercial possibilities of the light, strong metal have barely been scratched, but it will attain more and more prominence among the useful metals as science develops new applications and finds out more of the secrets of processing it. United States production of magnesium is many times that of 1939. Canada established a government-owned plant to make magnesium from dolomite by the Pigeon process and the output climbed at one time to more than 17,000 pounds daily. Canadian production costs are high, however, and unless some means can be found to bring them down, imported metal may supplant the Canadian product in the postwar market.

Chemicals and Explosives: The wartime expansion more than doubled the capacity of the Canadian chemicals and explosives industry. Up to last October the output of the wartime program alone had passed the million ton mark. Not more than one third of the expansion can be salvaged economically for postwar purposes; plants engaged solely in the making of military explosives and in shell-filling must be scrapped. New products have come out of the war which have definite postwar possibilities, and the Canadian chemical industry will enter a number of new fields which should step up the gross output of the industry in the first year after the war to about 150% of 1939 production.

Nickel: Canada holds a commanding position as a supplier of nickel

DAILY JR'L OF COMMERCE
SEATTLE WASH.
4/20/44 464

Magnesium Reduction Test Runs Begin Soon

A series of test runs is planned soon at the pilot plant for electrothermic reduction of magnesium set up by the U. S. bureau of mines at Washington state college, Pullman.

The plant is now being moved from its location in the college power plant to a larger site in the Hydraulics building, where expansion is planned to perfect a process which eventually may prove to be the simplest and most feasible way of producing magnesium, say the sponsors.

KNICKERBOCKER NEWS
Albany, N. Y.
MAY 20 1944

Increased Production Of Magnesium Forecast

Charlottesville, Va. — (AP) — Sidney K. Kirkpatrick, president of the American Electrochemical Society, predicted last night the United States "will emerge from this war with plants that can produce twice as much magnesium as all the aluminum formerly made and used in this country."

Magnesium being lighter, he said, two pounds of it "will do the work of three pounds of aluminum in most cases."

STAR
Glen Falls, N. Y.
MAY 18 1944

EARTH IS LARGELY IRON

Iron constitutes 40 per cent of the earth. The next most abundant element is oxygen, comprising about 28 per cent. Then come silicon, magnesium, nickel, calcium, aluminum and the rest.

IRON AGE
Philadelphia, Pa.
APR 20 1944

Magnesium Statistics

• • • **Primary magnesium** production in the United States in 1942 exceeded the combined output of all previous years since the inception of the industry in this country in 1915, according to the Bureau of Mines, which just released the data previously withheld because of censorship regulations. Output of primary magnesium in 1942 totaled 97,925,684 lb., 200 per cent more than that in 1941 (32,589,052 lb.) and 682 per cent more than the 1940 production (12,521,726 lb.). Dow Chemical Co. continued to be the largest domestic producer, using brines at Midland, Mich., and sea water at Freeport, Tex. Dow Magnesium Co. began production during 1942 from sea water at Velasco, Tex. Permanente Metals Corp. continued to produce magnesium from its Hansgirg carbothermal process plant at Permanente, Cal., and also began operation of a new ferrosilicon process plant at Manteca, Cal. Seven new companies in the field began production during 1942: Diamond Magnesium Co., Painesville, Ohio, and International Minerals & Chemical Co.,

CHEMICAL INDUSTRIES
"Devoted to economic and business problems of making and marketing, buying and using of chemicals."
New York City
APR 1944

Magnesium Demand Up

Shipments of magnesium fabricated products in 1943 were double those in 1942, the War Production Board has reported. Reflecting rising demands of the aircraft program for the metal, where over 90 per cent of fabricated magnesium is used, the figures showed that shipments of sand castings, most important of the magnesium products from the tonnage standpoint, trebled from the beginning of 1942 to the end of 1943.

Although data on incendiary bomb castings were not revealed, it was said that shipments of this single type of permanent mold casting exceeded shipments of all other kinds of fabricated magnesium combined. The rate of increase was most marked in forgings and permanent mold castings, other than bombs, where quarterly shipments at the end of 1943 were more than 1,000 per cent greater than those at the beginning of the previous year.

CANADIAN MINING JOURNAL
"Canada's Only National Independent Technical Mining Publication"
Gardenvale, Que.
MAY 1944

Magnesium Costs

Some interesting cost figures are presented in the Truman Senate Committee's report on magnesium production. Dow Chemical's Velasco, Tex., plant, which uses sea water as its raw material, was reported with the lowest cost, 12.4 cents a pound. The report that Basic Magnesium's costs had been high but were being gradually cut down, so that in November of last year the costs had dropped to 23.5 cents. The War Production's opinion was that the metal could be produced electrolytically at 12 to 20 cents a pound and by the ferro-silicon method at 15 to 25 cents a pound. The report also took the WPB to task for not permitting Idaho Maryland, gold producer, from turning out magnesium from serpentine ore at under 10 cents a pound. WPB's action in not giving the gold producer priority on equipment was probably due to the fact that our output already exceeded our needs.

PALO ALTO, CAL. TIMES
Cir. 4,972
MAY 8, 1944

EDSON IN WASHINGTON

War plants cause worry

By PETER EDSON

Secretary of Interior Harold L. Ickes isn't saying anything more just at present on that trial balloon he recently launched to give ownership of the government's war plants to veterans of the armed services. He doesn't want to get too specific.


Edson

If the thing sounds screwy—well, it's a screwy world. But the grateful government gives the veterans bonuses, insurance policies, hospitalization, dependents' benefits, pensions. Why not give them a few shares of stock? Sure. Make budding capitalists out of them and stop a lot of this communistic nonsense.

Maybe Harold has something there. It would solve the problem of what to do with all this surplus property. Simply form a huge stock company, another government corporation, say White Elephants, Inc. The shares would be free. Being free, they would be worthless to begin with, and could be counted on to depreciate from there. The dividends — don't be silly. No government corporation ever paid a dividend.

If the stock were made negotiable, the vets would soon dispose of it at one good combination ham and swiss cheese sandwich on the dollar. Speculators would soon buy up the stock and get control of the war plants, and the veterans could than march on Washington.

A legitimate worry

All kidding aside, this disposal of government-owned war plants is something to worry about. The figures most frequently kicked around are that the government has invested $15,500,000,000 in war plants, private industry having invested $4,500,000,000 more, bringing the total to a neat 20 billion dollars, as compared with the 30 billion dollar valuation on all prewar, privately owned factories.

War Production Board's planning division estimates that 40 per cent of the new plants can be fully used for civilian production, 30 per cent can be used partially, and 30 per cent can't be used for anything but production of munitions. It can be assumed that all of the privately financed plants will go into civilian production for full utilization. Uncle Sam is stuck with the less desirable properties.

One of the little appreciated complications of the government-owned plants is that on over a third of the projects the government does not own the real estate under the plants, just the improvements. For instance, the Ford jeep plant expansions, built at government expense and government owned, are not on government-owned property. Of nearly 1,800 Defense Plant Corporation propects nearly 1,000 are in this class.

War plants galore

The list and breakdown by industries on the DPC properties, having a valuation of $7,500,000,000 or about half of the $15,000,000,000 figure mentioned above, gives a slight indication of the staggering job of property disposal that's ahead:

No.	Project	Investment
548	Aircraft plants, including parts and ergines	$2,800,000,000
96	Aluminum	783,000,000
36	Aviation gasoline	175,000,000
128	Chemicals, including equipment in 68 alcohol plants	92,000,000
163	Machine tool plants	82,000,000
47	Magnesium plants	443,000,000
62	Minerals projects	157,000,000
78	Ordnance plants	309,000,000
68	Shipyards	151,000,000
100	Radio and communications	69,000,000
166	Steel and iron works	901,000,000
68	Synthetic rubber and components	657,000,000
72	Flying schools	45,000,000
185	Miscellaneous pipelines, barge lines and guinea pig farms for Public Health Service	419,000,000

The total number of these projects as of January 1 was 1,817; total investment as of that date was $7,163,000,000. Some of the plants had two or more projects, so the net number is 1,788. Largest is an investment of $200,000,000; smallest, $400.

JOURNAL OF COMMERCE
"America's Leading Business Newspaper"
New York City
MAY 31 1944

Magnesium Sets Production Mark

(Bureau of Journal of Commerce)

WASHINGTON, May 30.—Primary magnesium production averaged over 41,000,000 pounds a month during the first quarter of 1944 and exceeded output for all previous periods, according to information just released by the aluminum and magnesium division of the WPB. The quarter's record will probably remain as the peak for the duration of the war, WPB said, since the production curtailment recently announced by the agency took effect during the latter part of March.

Secondary recovery rose rapidly in the quarter and reached a new high of 3,500,000 pounds in March. The sudden increase in secondary recovery resulted from the melting of an accumulation of scrap in facilities previously occupied with the alloying of primary metal.

Depending on the process employed, primary magnesium is initially produced as pure notched ingot or in "raw" or unrefined forms, such as long, crystalling cylinders or "muffs"; blocks or "cheeses" of unrefined cell metal; irregular formations of large crystals; and metallic dust.

The data released by WPB for 1943 reflect the adjustment of the production statistics for the raw forms to a pure ingot equivalent. Since the losses involved in melting these types of metal have decreased to a negligible portion of total production, the adjustment will not be made i nhte future.

JOURNAL OF COMMERCE
New York, N. Y.
MAY 31 1944

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MAGNESIUM ASSN.

TIMES—STAR
Cincinnati, Ohio
MAY 10 1944

—18—

Steel vs. Light Metals in War's Future; Admirals Cling to Surface Naval Forces

Undersecretary of Navy Holds to "Iron and Steel" Belief.

By MAJ. A. P. de SEVERSKY

Iron and oil were described recently as the two materials that "lie at the base of everything that is done in modern war." The description was offered in a talk before the Bond Club of New York by James V. Forrestal, Undersecretary of the Navy. So fundamental are these materials, he declared, that despite the large reserves at home "the United States also must dip into the deposits of Cuba, Brazil and Chile."

With the death of Secretary Knox, the specific weight of Mr. Forrestal in the Washington line-up has increased. His voice is the most influential in naval affairs. He is regarded as the most vigorous opponent of plans to merge military services with a view to eliminating duplication and providing a more realistic organization for the country's air power. In the nature of the case Mr. Forrestal's views can be accepted as representing prevailing opinion in upper-bracket naval circles.

To technicians and engineers, his emphasis on iron and oil says a great deal more than it does to laymen. It tells them that Mr. Forrestal—which is to say the admirals around him—look upon surface naval forces as the main reliance of national safety for America in the immediate future. Iron and oil are the key materials of naval power.

Those of us who believe that air power, rather than sea power, will be the primary military arm are less concerned about iron and oil—more concerned about light metals and synthetic fuels.

OIL TO CONTINUE

Aluminum, magnesium and other light metals have already acquired terrific importance because of the growing weight of aviation in warmaking. Assuming that air power will be recognized as the paramount force, sources of these metals will become far more significant for American national safety and greatness than iron. The same applies to new fuels. Oil will continue to be used, but synthetic fuels, distilled from coal and vegetation, will become vastly important. More than 60 per cent of German high-octane fuel is synthetic and comes from coal. And since, according to geologists, American deposits of coal will last us 2,000 years, Mr. Forrestal's worries are somwhat premature.

It can be foreseen that the reciprocal engine of the present type will go, just as the reciprocal steam engine we used to see on ferry boats is gone, having been replaced by the steam turbine. The familiar airplane engine of this day seems destined to be replaced by gas turbines. The propelled-engine combination now standard will be elbowed out by jet propulsion. The new gas turbine will use not only oil, but alcohol, all sorts of hydrocarbons chemically produced from coal and vegetation. The rocket planes and torpedoes will move on oxygen and hydrogen.

In short, the emergence of air power to first place in the military scheme of things may completely revolutionize the demand upon metallurgy and fuels in their relations to military force. Those who overlook this, and through inertia continue to base all their plans on iron and oil, have not caught the vision of the new age, in my opinion.

In the seventeenth and eighteenth century, copper in artillery was replaced by steel; wooden ships were replaced by ironclads and later by steel-plated vessels. Wood became a structural material and iron became the foundation of military strength. A shift of basic elements of even greater proportions is now in the making. The shift will not take centuries or generations, but will occur within our own lifetime.

GREAT DISTANCES

Iron and steel will give way, as military materials, to aluminum, magnesium alloys and other light metals. Steel will be diverted to the home front, to be used almost exclusively as a structural material and as a basis of the tools for forging weapons.

We have grown used to the idea that war is a technological contest. If it is true at present, it will be doubly true in the future. The wars of the future will be duels across any distances—including ocean distances—between two industrial giants. There will be a home front forging the military force to carry destruction through the air to the enemy's home front.

The basis of the home front will be steel—entering into architectural uses, railroads, machine tools, etc. But the weapons themselves, the striking force, will be made predominantly of light alloys. To keep abreast of a changing technological world, if we want to plan in relation to future facts rather than present facts, these realignments in the field of raw materials must be taken into consideration.

All this is based on my profound belief that air power will be the dominant military force. And in my opinion it is our national duty to build up the producing sources of aluminum and magnesium, to accumulate not pig iron, but pig aluminum and magnesium. Rubber, too, is basic to air power, so that there can be no slacking off in the development of synthetic rubber. We must also push the latest processes for refining oil, and manufacturing facilities for refining fuel, not only from crude petroleum but from other sources of synthetic fuels, to meet the demand of the new forms of propulsion.

(Distributed by McNaught Syndicate, Inc.)

From
JOURNAL OF COMMERCE
New York, N. Y.
MAY 22 1944

Kirkpatrick Sees Magnesium Gain

CHARLOTTESVILLE, Va., May 20 (AP).—Sidney D. Kirkpatrick, president of the American Electrochemical Society, predicted last night the United States "will emerge from this war with plants that can produce twice as much magnesium as all the aluminum formerly made and used in this country."

Magnesium being lighter, he said, two pounds of it "will do the work of three pounds of aluminum in most cases."

Kirkpatrick told the University of Virginia Chemical Fraternity meeting that automobiles, planes and bus bodies of the future would be largely built with magnesium.

From
WALL ST. JOURNAL
New York, N. Y.
MAY 31 1944

Milwaukee Journal
Milwaukee, Wis.
MAY 31 1944
468

The Sun
Chicago, Ill.
MAY 31 1944

SAN FRANCISCO, CAL. NEWS
Cir. 107,087
MAY 31, 1944

CHICAGO, ILL., HER. AMERICAN
Cir. 453,410, Sun. 863,091
MAY 31, 1944

S. F., CALIF., PEOPLE'S WORLD
Cir. 14,300.
MAY 12, 1944

Anaconda Official on Magnesium Sales

LAS VEGAS, Nev.—Ross A. Ross, of the Anaconda Copper Company's Basic Magnesium, Incorporated, told a party of airline executives and aircraft manufacturing representatives recently visiting here that he was hopeful for the postwar outlook for the plant, and that "there's a long period of commercial expansion ahead for both of us."

He said magnesium consumers could be heartened by the recommendation of the Truman Committee that operation of Basic Magnesium be continued after the war in order to eliminate the monopoly which existed prior to the war—and to provide all consumers with more than one market to buy in.

Ross said that "if the automobile manufacturers should decide to use only a little more than 400 pounds of magnesium and/or aluminum per postwar car it will require the entire present wartime production capacity of the magnesium and aluminum industries to satisfy that single demand. . . ."

moderately.

MAGNESIUM OUTPUT AT PEAK

Primary magnesium production averaged more than 41 million pounds a month during the first quarter of 1944, exceeding American output for all the previous similar periods, WPB reported.

The WPB said the quarterly mark probably will remain a duration peak because a curtailment program was ordered late in March.

SUN
New York, N. Y.
JUN 22 1944

Magnesium in Earth.
Magnesium constitutes 2.5 per cent of the earth's crust.

MINING RECORD
DENVER COLO.
5/4/44

United States Should Be Independent Producer

AT THE OUTSET of the war the United States found itself exceedingly short of certain war essential metals. One of those metals was magnesium, sometimes called the metal of mystery. Its production in vastly increased quantity was regarded as all-important for the successful prosecution of the war.

AFTER ENGLAND had been bombed and some of its industries put out of business, when the British agencies which had theretofore manufactured magnesium were unable to obtain brucite or magnesite from which to produce magnesium, they came to the United States and brought with them the blueprints and plans for installing

der Dam, one of the greatest power plants in the world if not the greatest. It is owned by the government of the United States thru the Defense Plant Corporation.

PAID FOR by $133,000,000 coming from the Reconstruction Finance Corporation, this gigantic plant has been producing and is now producing at the rate of from 160 to 165 tons each day of the mystery metal known as magnesium. This magnesium has been produced because the war effort needed this metal..

THE FOUR UNITS of the Basic Magnesium plant which it is now proposed to close on July 1 cost the government of the United States $53,000,000. It will cost at least $640,000 per unit to put those units back into production once they are closed. This means that four units, representing $53,000,000 of the taxpayers' money, are to be junked if production at Basic Magnesium is curtailed. That is rather ruthless handling of the taxpayers' money.

SUN
New York, N. Y.
JUN 9 1944

Magnesium's Weights.
Magnesium is about one-third as heavy as aluminum.

SALT LAKE CITY, UTAH, TRIBUNE
Cir. 53,522; Sunday 94,635.
MAY 2, 1944

Record of Hearings Bares Epistles on Magnesium

By the Shift Boss

The official record of last November's senate committee hearings on public land withdrawals held at Salt Lake City makes public for the first time correspondence between W. S. McCarthy of Salt Lake City and Donald M. Nelson, E. R. Stettinius Jr., Thurman W. Arnold (at the time assistant attorney general of the United States), Senator Abe Murdock, Arthur E. Bunker and other officials, relative to the magnesium salts in Utah.

The record shows that September 20, 1940, long before the drilling of the much discussed Defense Plant corporation well near Thompsons, McCarthy called Donald M. Nelson's attention to the presence of the magnesium-potash-calcium-bromine brines in an early drilled well in the same district. Under date of September 24, 1940, Nelson informed McCarthy that the matter had been referred to E. R. Stettinius Jr., then organizing matters of that nature. Under date of October 2, 1940, Stettinius wrote McCarthy that the supply of magnesium did "not appear as though it would present an immediate bottleneck," but that his (McCarthy's) letter had been referred to Marion Folsom, then division executive in the industrial materials department for mining and mineral products.

Cites U S G S Analysis

On February 3, 1941, McCarthy wrote to Thurman W. Arnold, calling his attention to U. S. geological survey analysis of Utah well brines showing high percentages of magnesium, which McCarthy said "is believed to be the richest deposit of magnesium in the world." In this letter McCarthy expressed suspicion concerning the "stifling of production" of Utah magnesium. Arnold, on February 25, 1941, informed McCarthy of his (Arnold) having referred the matter to the advisory committee to the council of national defense for attention.

McCarthy wrote Senator Abe Murdock under date of November 6, 1941, in connection with the senator's efforts to obtain consideration for Utah magnesium, calling his attention to the urgent need for magnesium for war, and the suggestion of the office of production management that individuals desiring to produce magnesium in Utah refer the matter to the Dow Chemical company.

Writes to Nelson

After Donald M. Nelson's appointment to the chairmanship of the war production board, McCarthy wrote him (January 16, 1942), calling Nelson's attention to his original letter of September 20, 1940, and Nelson's reply of October 2, 1940, plus the fact that no word had ever been received from Marion Folsom, to whom Nelson had referred the matter of Utah magnesium. Reference was made to a press dispatch under date of November 30, 1941, stating that "Arthur H. Bunker had asked the bureau of mines to drill the Utah magnesium beds"—a request the bureau denied having received.

Nelson referred McCarthy's letter to D. L. Odell, his special assistant, who in turn (January 30, 1942) wrote McCarthy, telling him the matter had been referred to Arthur H. Bunker, chief of the magnesium branch of the materials division of W P B. As of February 5, 1942, McCarthy wrote Odell, calling attention to 475 days wasted and saying, "So ends another ride on the Washington Merry-Go-Round with Mr. Bunker."

Bunker, under date of February 6, 1942, wrote McCarthy, informing him that "the present difficulties are not in obtaining adequate amounts of magnesium, but rather to shortages of electric power, difficulties in obtaining electric equipment"—and—"it may, however, be that some wells will be drilled in this (Thompson's) district, although the problem of how best to convert any brines at that location into magnesium metal is a very difficult one to resolve."

Asks Explanation

Answering Bunker's letter on February 15, 1942, McCarthy told Bunker: "Surely you cannot expect acceptance of the explanation offered" (in Bunker's letter of February 6, 1942), and that 500 days had passed since Stettinius had referred McCarthy's first communication to Marion Folsom; with caustic reference to the National Academy of Science, and again calling attention to the desperate need for magnesium. Again on October 26, 1942, McCarthy wrote Bunker, asking why Bunker, "a government official, discredits and rejects the findings of the U. S. geological survey and the U. S. bureau of mines and opposes development (of Utah magnesium) unless it is approved by the National Academy of Science."

As of June 7, 1943, McCarthy called the attention of Harvey A. Anderson, chief, conservation division, W P B, to the reported difficulties encountered in shipping raw material from Luning, Nev., to the Basic Magnesium plant near Las Vegas and the fact that the U. S. bureau of mines report showed the Thompsons carnallite deposit to contain 78,000 tons of carnallite per acre. On June 10, 1943, Anderson thanked McCarthy for his letter, saying the magnesium situation had improved but that he was "referring McCarthy's offer of assistance to the aluminum and magnesium division so they can take advantage of it if they find it necessary in the future and for the present we don't believe it will be necessary to ask you to spend any time on the subject."

The record of correspondence between McCarthy and Washington ends with McCarthy's letter of June 15, 1943, to Anderson, calling his attention to the "scathing denunciation of the light metals section of the war production board in the report of the special senate committee investigating the national defense program."

From
TIMES—UNION
Albany, N. Y.
MAY 21 1944

Post-War Boom in Magnesium Seen

CHARLOTTESVILLE, Va., May 20 (AP)—Sidney D. Kirkpatrick, president of the American Electro Chemical society, predicted last night the United States "will emerge from this war with plants that can produce twice as much magnesium as all the aluminum formerly made and used in this country." Magnesium being lighter, he said, two pounds of it "will do the work of three pounds of aluminum in most cases." Kirkpatrick told the University of Virginia chemical fraternity meeting that automobiles, planes and bus bodies of the future will be built largely with magnesium.

This article was clipped from
TOBACCO RECORD
"The INDUSTRY'S Reading Habit"
63 Park Row, New York City
MAY 24 1944

REVIEW-JOURNAL -6/19/44

Magnesium Freed for Industry; Effect on BMI Plant Not Known

With the announcement yesterday in Washington, D. C., that magnesium had been released for industrial use, F. O. Case, general manager of Basic Magnesium, Inc., contacted the Defense Plant corporation in Washington to determine the affect upon production here.

He was informed that a meeting of officials was being held in Washington today to determine the procedure under the new ruling and the amount of metal to be diverted into industrial channels.

Limit Lifted

Heretofore a small amount of magnesium has been allowed for post war experiments, Case revealed. However, there were limitations upon the amounts, and the metal was available only to concerns which made an application to government authorities and received a recommendation for a specified amount.

It is impossible to determine what effect the new order will have on the BMI plant until the plan of procedure is announced by Defense Plant corporation, Case said.

When BMI first was established, the entire output of metal was assigned for production of munitions, notably incendiary bombs, tracer bullets and other such weapons of war. In recent months there has been a steady increase of the flow of magnesium into aircraft production and a decrease in the munitions manufacture, Case revealed.

The ban on the use of aluminum for war production only also was lifted by the order issued in Washington yesterday, and it is expected that commercial production of many items which have been banned during the past two and one-half years may be resumed again.

Cleveland Press
JUN 29 1944
469

U. S. Leads World in Magnesium Output

WASHINGTON, June 28—(U.P.)—The United States, with a potential capacity of 300,000 net tons of magnesium, is the world's largest producer of the metal, and greater Germany, once the leader, is running a poor second with a 40,000-ton output, according to the Department of Commerce.

The metal, which once sold for as high as $5 a pound, was down to 20.5 cents per pound in 1943 when the United States produced 368,000,000 pounds of the "tempermental" metal, the department said.

AMERICAN METAL MARKET
"Leading Iron, Steel and Metal Newspaper. Recognized price and market authority."
New York City
JUN 1 1944

Magnesium Output During First Quarter Probably War's Peak

Primary And Secondary Production 123,900,000 And 8,300,000 Pounds Respectively

WASHINGTON, May 31. — Primary magnesium production averaged over 41,000,000 pounds a month during the first quarter of 1944 and exceeded output for all previous periods, according to information just released by the Aluminum and Magnesium Division of the War Production Board. The quarter's record will probably remain as the peak for

(Continued on page 3)

... is recovered. Depending on the process employed, primary magnesium is initially produced as pure notched ingot and also in "raw" or unrefined forms, such as long, crystalline cylinders or "muffs"; blocks or "cheeses" of unrefined cell metal; irregular formations of large crystals; and metallic dust. The data released by W.P.B. for 1943 reflect the adjustment of the production statistics for the "raw" forms to a pure ingot equivalent. Since the losses involved in melting these types of metal have decreased to a negligible portion of total production, the adjustment will not be made in the future.

(In millions of pounds)

Month.	Primary 1943.	Primary 1944.	Secondary 1943.	Secondary 1944.
Total-Year	368.2	...	22.7	...
Jan.	20.7	42.0	1.1	2.1
Feb.	21.4	40.9	1.2	2.7
Mar.	26.1	41.0	1.5	3.5
Apr.	27.2*	...	1.7	...
May	30.3*	...	1.7	...
June	30.2*	...	1.6	...
July	33.3*	...	1.7	...
Aug.	34.4*	...	2.1	...
Sept.	32.5*	...	2.5	...
Oct.	36.1*	...	2.7	...
Nov.	36.8	...	2.7	...
Dec.	39.2	...	2.2	...

* Revised.

This is the second in a series of releases on magnesium production. All inquiries regarding this information should be referred to the Bureau of Census, Washington 25, D. C. The first release in this series appeared under the title Magnesium Ingot.

El Centro, Cal., Desert Magazine
Cir. 6,448
JUNE, 1944

Las Vegas, Nevada . . . 468

Hitherto censored statistics on 1942 production of magnesium metal, just released by U. S. bureau of mines, reveal 200 per cent greater production than in 1941. Of total 1942 production of 97,925,684 pounds, actual primary and secondary consumption that year was 84,525,700 pounds. Principal producers, location and source are: Dow chemical company, Midland, Mich., brine; Dow chemical, Freeport, Texas, sea water; Dow chemical, Velasco, Texas, sea water; Permanente magnesium corporation, Permanente, Calif., magnesite; Permanente, Manteca, Calif., magnesite; Diamond magnesium company, Painesville, Ohio, magnesite; International mineral and chemical company, Austin, Texas, chloride; Mathieson chemical company, Lake Charles, La., chloride; Basic magnesium, Las Vegas, Nev., magnesite; Ford motor company, Dearborn, Mich., dolomite; Magnesium reduction company, Luckey, Ohio, dolomite; New England lime, Canaan, Conn., dolomite.

. . .

THE MONETARY TIMES
"The Weekly Business News Digest."
Toronto, Canada
JUN 1944

Use of Magnesium Up 2,400%

"Maggie, the Lady of the Foundry" is not a pin-up queen. Foundrymen grow whimsical on occasion, and this is what they dub that capricious metal, magnesium. Metallurgists agree that you never know how magnesium will act under all circumstances.

Use of the featherweight metal has increased 2400 per cent since the war began, American Foundrymen Associates learned during a recent convention.

IRON AGE
Philadelphia, Pa.
JUN 1 1944

• **MAGNESIUM FIGURES**—For the year 1943, rated annual capacity of all magnesium metal plants in this country was 290,000 net tons of which 44 per cent belonged to the Dow group, producers of 60 per cent of all magnesium made. During the year, Dow owned or managed plants produced at 87 per cent of rated capacity while all others averaged only 46 per cent. Dow received 38 per cent of all government money spent on the magnesium program and has returned 1.2 lb. of magnesium per government dollar invested. For every pound produced by others, the government has an investment of $1.67 and receives 0.6 lb. for each dollar.

REVIEW-JOURNAL 6-30-44

Magnesium Production Still Important to War Program

Declaring the production of magnesium is still one of the most important items on the war program, Wm. Royle, war manpower commission representative in Nevada, arrived in Las Vegas last night for a series of conferences with labor leaders and management of Basic Magnesium, Incorporated, in the hope some solution might be reached for the manpower problem here.

Royle described the situation at Basic as "critical," stating that the crews there had reached the rock-bottom figure upon which the six units could continue in production.

"If we can't get enough men in here to man the plant, the result is quite obvious—there is likely to be still further curtailment," Royle declared.

"There is no question at all as to the continuation of BMI at its present rate of production because its entire output is vital to the war effort, and it's the patriotic duty of every man and woman there to stay on the job.

"Too many Americans have the idea the war is about over and they better get back into peacetime pursuits so they'll have the jump on the others when the armistice is signed. The war isn't over and won't be for some time. Everybody who walks off the job now is deserting the men on the battlefronts—and that goes for BMI particularly because of the heavy turnover during the past few months."

Royle conferred with labor leaders this morning and will confer with management tomorrow in an effort to work out a solution to the manpower shortage at the plant. He expects to be here several days and is accompanied b. Harry Z. Guerin, veterans placement officer for Nevada.

Royle said the restrictions on changing employment which go into effect tomorrow were adopted only as a last resort to keep war plants functioning and to halt the migration of workers which has reached serious proportions.

Fresno, Cal. Bee
Cir.—Daily 40,513; Sunday 48,268
JUNE 15, 1944

From Washington

By RAY TUCKER

MISMANAGEMENT—Navy Secretary James V. Forrestal spilled a deep politico-industrial secret when he tried to shut down the Brewster plant because he no longer needed its Corsair model plane.

A checkup inspired by the Forrestal venture discloses numerous plants have been kept in operation although there is a sufficient surplus of their manufactures to supply the fighting forces of all the United Nations. Moreover, uneconomic factories have been permitted to fulfill their contracts, even though competitors can offer the same goods at lower cost to the government.

The most spectacular example of this condition is in magnesium. Henry J. Kaiser's western firms are making this metal at an average price of more than 40 cents a pound. Mills managed by Dow Chemical, which was engaged in its production for many years before the conflict, can turn it out for approximately 20 cents.

The practical thing would be to close down the high priced companies and rely on their better organized rivals for replacement supplies, if they should be needed. The latter could be retained simply to stand by.

Instead, the amounts orginally scheduled have been reduced through contract modifications. But the efficient producers have suffered as severe a cutback as have their less fortunately placed competitors.

The basic reason in that cancellation would throw men and women out of employment at a time when no definite program for reconversion or peace time reconstruction has been evolved in Washington.

SALT LAKE CITY, UTAH, TRIBUNE
Cir. 58,522; Sunday 94,635
JUNE 3, 1944

Policies on Magnesium, Potash Prove Puzzling

By the Shift Boss

The policies respecting potash and magnesium of the department of the interior continue to puzzle all concerned, particularly in connection with the much discusssed carnallite and sylvite beds of Grand county, Utah. Delays in issuing prospecting permits in this field and the sometimes "impossible" requirements set up for acquisition of such permits have been described in this column in previous articles.

Pertinent comment comes from various sources. A close observer of the department of the interior's tactics and policies makes the following concise statement:

"To say the least, we believe the department of the interior is definitely inconsistent in its plan respecting potash. The 'formation of a policy' claimed as an excuse for delay is a lean one. The Potash Act is clear in its statements of purpose and fact and quite convoys the intent of congress. It looks, therefore, a little presumptuous to allow a year or two's time to be occupied by departmental policy forming which, apparently, has become paramount to the policy of the act itself.

"There seems also to be interdepartmental inconsistency such as the course following the department of justice in the prosecution of combinations in restraint of trade under the Clayton Act and the Sherman antitrust law while the department of the interior holds up the rights of qualified citizens to prospect for and competitively produce a commodity which is 90 per cent controlled by three major operating potash companies in New Mexico. Why one department of the government (bureau of mines) should foster a situation which another department of the government is determined to destroy is one of the unanswered questions in connection with potash."

It would be difficult to find a more straight-to-the-point analysis of the past two years' procedure in connection with Utah's great potash and magnesium beds, certified to by the U. S. bureau of mines and the U. S. geological survey, both of which are part of and under the department of the interior.

The next public hearings to be held by the senate subcommittee on the public land policies of the land office promise to be interesting.

BOSTON NEWS BUREAU
"The only daily financial newspaper published in New England."
Boston, Mass.
JUN 16 1944

MAY END MAGNESIUM-ALUMINUM CURBS

Truman Committee Would Turn Metals Into Things Civilians Need

Washington (AP)—Predicting an early end to restrictions on use of aluminum and magnesium, the Senate war investigating committee announced it would try to find out Monday what can be done about turning the metals into things civilians need.

Chairman Truman, Dem., Mo., said representatives of Aluminum Co. of America and Reynolds Metal Co. would appear. These firms are the chief manufacturers of the two metals and their products.

Chairman Nelson of WPB, who has assured the committee that "he is prepared to end general restrictions on materials that are in surplus," also will testify, Truman said.

LEADER
Kingston, N. Y.
JUN 30 1944

Aluminum Company Offical Brings New Conversion Theory

BY PETER EDSON
NEA Staff Correspondent

A NEW "chink-in" theory of reconversion of industry from war to peace has been brought to Washington by I. W. Wilson, vice president of the Aluminum Company of America. It spells out like this:

Edson

Here is a company making aluminum products for war. As long as its production is on war orders, everything is fine and the company has a feast. But when a contract is completed, everything goes fooey and the company has a famine until it gets a new war order. In the interim, organization is disrupted, manpower drifts to other jobs. And when the new contract is received, this company has to build up its organization again.

It is Mr. Wilson's theory that in these between-contract periods, manufacturers should be permitted to "chink-in" production of civilian goods—subject only to manpower shortages in the area and other military requirements—so that when new military orders are placed, contractors will have their working forces together and be able to swing in on new war production with greater facility.

WILSON presented his ideas before a special session of the Senate's Truman Committee investigating the war effort. In many ways it was a dramatic session. War Production Chairman Donald M. Nelson was first to testify, explaining steps his organization had taken to deal with cancellation of war production restrictions and reconversion in the aluminum and magnesium industry.

After Nelson came Wilson and Vice President George R. Gibbons of the Aluminum Company, and finally R. S. Reynolds, president of Reynolds Metals, who in 1939 entered the aluminum production field in competition to Alcoa. What the Truman Committee was driving at was the earliest possible relaxing of controls over the aluminum and magnesium industries, so that private business might take the initiative in reconversion and show what postwar use could be made of the light metals now in surplus production and facing further heavy cutbacks. Before the three-hour hearing was over, Reynolds and the Aluminum company officials, facing each other as competitors, had given a fantastic picture of what the long-predicted "light metals revolution" might mean for American industry.

MR. REYNOLDS'S main point, however, was with regard to peacetime utilization of government-owned magnesium and aluminum plants. Reynolds made the plea for government leasing of these plants to private business, and for the creation of a third major producing company to share the business which his company and the Aluminum company now hold exclusively. Reynolds suggested that a major user of light metals—such as Henry Ford or the entire automobile industry—become the third producer. His reason for seeking a division of the industry was so that there could be no possible postwar danger of a monopolistic price increase.

This was a bold proposal to make in public before a Senate committee, and the Truman group was obviously impressed. It is, however, a long-range program requiring a major decision in domestic economy policy. Before it can be settled there is the more immediate problem of making sure this revolution in light metal usage is not defeated by government war restrictions kept on so long and so tight that they delay reconversion, or released so soon they cause war production to break down.

S. F., CAL., PACIFIC FACTORY
Cir. 5,646
JUNE 1944

... Corporation will erect a $24,000 addition to its plant here.

Magnesium Production Up

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Primary magnesium production averaged over 41,000,000 pounds a month during the first quarter of 1944 and exceeded output for all previous periods, according to information just released by the Aluminum and Magnesium Division of the War Production Board. The quarter's record will probably remain as the peak for the duration of the war, WPB said, since the production curtailment recently announced by the agency took effect during the latter part of March. Secondary recovery rose rapidly in the quarter and reached a new high of 3,500,000 pounds in March. The sudden increase in secondary recovery resulted from the melting of an accumulation of scrap in facilities previously occupied with the alloying of primary metal. The data on primary output cover all the magnesium produced in the United States, regardless of the forms in which it is recovered.

U. S. CAMERA
"The Great New Photo-Picture Monthly."
122 E. 42nd St., New York City
JUN 1944

MAGNESIUM—METAL FROM THE SEA is the latest Bureau of Mines release. Showing the process of production of light-weight metal magnesium, it describes how this material is created from common sea water and salt brines. The sixth most abundant material, magnesium is widely used in aircraft construction and other equipment where lightness and strength are essential. Although the greater portion of the magnesium produced today is for structural purposes, millions of pounds are used by the armed forces in incendiary bombs, airplane landing flares, signal flares, bomb flares and photographic flares.

Of equal interest to technical and nontechnical groups, the Bureau's new motion picture describes in easily understood terms how sea water is made to yield the glistening metal. The story is unfolded both by animation and by views of magnesium-production plants.

Applications for short-term loans should be addressed to the Bureau of Mines Experiment Station, 4800 Forbes St., Pittsburgh, Pa., and should state specifically that the borrower is equipped to show 16-millimeter sound films. No charge is made for the use of the film, except for transportation costs.

AMERICAN METAL MARKET
"Leading Iron, Steel and Metal Newspaper—
Recognized price and market authority."
New York City

Magnesite And Other Magnesium Compounds In 1943

The production of magnesium raw materials for the manufacture of magnesium metal, basic refractories, and for other essential commodities expanded in 1943, according to a report prepared by Charles L. Harness and Nan C. Jensen, of the Bureau of Mines, United States Department of the Interior. A variety of raw materials was used, including magnesite, brucite, dolomite, raw sea water, sea-water bitterns, and well brines. The mine output of crude magnesite reached the record quantity of 754,832 short tons valued at $6,071,596, compared with 497,368 tons, valued at $3,874,334 in 1942.

Magnesite

Production of magnesium metal in excess of rated capacity of the plant of Basic Magnesium, Inc., Las Vegas, Nev., accounted largely for the tremendous increase in production of magnesite in 1943 over 1942. Refractory demands also were heavy. The American Iron & Steel Institute reported basic open hearth steel furnace annual capacity as 83.3 million short tons as of January 1, 1944, compared with 77.6 at the beginning of 1943, and 76.5 for January 1, 1942. The new construction involved during 1943 created such heavy demands for refractory brick that magnesite and sea-water sources combined were insufficient to satisfy the periclase requirements, and much refractory brick was made with a lower periclase content than usual. The program of new construction was nearly completed by the end of the year, lessening the demand for brickmaking grades of magnesite, and refractory producers were revising their production schedules accordingly.

Commercial caustic-calcined magnesium oxide is obtained by calcining magnesite or by extracting it from magnesium-bearing liquors or dolomite. Caustic-calcined magnesium oxide is available in many purities and at widely varying prices. That obtained by calcining magnesite is the least pure, a characteristic analysis (calcined basis) being MgO 82.5 SiO_2 11.0, Fe_2O_3 2.0, Al_2O_3 0.5, and CaO 1.8%. Such material, however, is quite suitable for oxychloride cements and fertilizers. Somewhat higher grades (83 to 95% MgO) are generally used in making magnesium chemicals, including Epsom salts. For making magnesium metal an even higher grade is required, lime in excess of 2½% being detrimental.

Magnesia Derived From Magnesite, Brucite, Dolomite, Sea-Water Bitterns, Raw Sea Water, And Well Brines, Sold Or Used By Producers, 1938-43

Year	Caustic-calcined Short tons	Value	Refractory Short tons	Value	Total Short tons	Value
1938	7,400	$228,498	38,738	$730,978	46,138	$959,476
1939	10,157	310,102	86,077	1,699,723	96,234	2,009,825
1940	16,261	512,607	140,668	2,802,537	156,929	3,315,144
1941	30,225	1,052,077	201,481	5,052,879	231,706	6,104,956
1942	41,889	2,028,126	273,661	7,823,963	315,550	9,852,089
1943	191,792	11,497,505	301,382	9,341,183	493,174	20,838,688

Magnesia Sold Or Used By Producers In The United States, 1942-43, By Kinds And Sources

(Quantities and values reported apply to finished products, not raw materials)

	From magnesite Short tons	Value	From brucite, dolomite, and sea-water bitterns Short tons	Value	From well brines, dry-lake brines, and raw sea water Short tons	Value
Finished products.						
Caustic-calcined .	25,344	$1,049,493)				
Refractory	189,218	4,397,766)	93,521	$3,907,396	7,467	$497,434
	214,562	5,447,259	93,521	3,907,396	7,467	497,434
1943:						
Caustic-calcined .	137,300	7,941,587	8,649	547,888	45,843	3,008,030
Refractory	185,992	4,426,152	89,283	3,664,258	26,107	1,250,773
	323,292	12,367,739	97,932	4,212,146	71,950	4,258,803

The Bureau of Mines estimates that in 1943 refractory magnesia was consumed in the United States as follows: In brick, 36; in cement, 26; and in grain, 38%. Similar percentage breakdowns cannot be published for the uses of caustic-calcined magnesia, as there are only one or two suppliers for most specific uses; however, the following are the largest consuming industries, listed in order of quantity consumed in 1943: magnesium metal (by far the largest), oxychloride cement, synthetic rubber catalyst, fertilizer, rayon catalyst (the oxide is converted to Epsom salt for this purpose), electrically-fused refractories, and magnesium chemicals.

Prices

Dead-burned grain magnesite as sold by Northwest Magnesite Company remained at $22 a short ton f.o.b. Chewelah, Wash., during 1943. This price has been virtually static since 1928. Prices for the mined and synthetic magnesias of the Westvaco Chlorine Products Corporation were unchanged in 1943 except that bulk mined periclase, 90% MgO, was raised from $38.74 a short ton in 1942 to $40.50 in 1943. Following is a price schedule of representative magnesias sold by this firm in 1943 (carlots, f.o.b. California): Caustic-calcined magnesite, bulk, $52.75; powdered, $58.75; calcined (sea water) magnesia, bulk, $54; powdered, $60; mined periclase, bulk, 85%, $38.24; 90%, $40.50; sea water periclase, bulk 85%, $36.00; 90%, $36.50.

The Office of Price Administration published specific dollars-and-cents ceiling prices of basic refractories in M.P.R. 416 of June 28, 1943.

Review by States

California.—Johns-Mansville Products Corporation, Redwood City, prepared 85% magnesia insulation for steam pipes and boilers, using crude magnesite as a raw material. The Marine Magnesium Products Corporation continued to extract high-quality magnesia for medicinal and other purposes from raw sea water at S. San Francisco, using the Cheany process. The Permanente Cement Company, an affiliate of Permanente Metals Corporation, shipped magnesite from Gabbs, Nev., for dead-burning and caustic-calcining at San Jose, Calif. Plant Rubber & Asbestos Works, San Francisco, produced 85% magnesia insulation at Emeryville and Redwood City, using sea water bitterns as the raw material.

Westvaco Chlorine Products Corporation added a fifth kiln at Newark in the Spring of 1943 to calcine crude magnesite from Luning, Nev., for oxychloride cement, thus freeing another kiln at this plant for the increased requirements of a synthetic magnesia employed as a catalyst in making synthetic rubber. The firm now uses both calcined dolomite and calcined oyster shells to precipitate magnesia from sea water bitterns. The magnesia content of the dolomite is precipitated with that of the bitterns. The Westvaco Chlorine Products Corporation mined magnesite at its Western mine at Livermore and its Bald Eagle mine at Gustine, both in California. The ore reserves of the Bald Eagle mine were virtually depleted in 1942, but some high-quality material was produced for blending with Luning magnesite, considerable of the latter being calcined at the Bald Eagle kiln.

Michigan.—Michigan Chemical Corporation, St. Louis, Mich., completed two new brine wells, one in the Dundee formation, the other in the Sylvania, to provide adequate additional raw material for an expansion to its magnesia plant, added in 1943. The magnesia is a special caustic-calcined oxide for use in compounding neoprene and other synthetic rubber. The original magnesia unit, completed in 1942, is also producing caustic-calcined magnesia, but partial conversion to periclase is planned for 1944. The magnesias are characterized by very low content of boron, manganese, and phosphorus.

Nevada.—The huge magnesium metal project of Basic Magnesium, Inc., at Las Vegas, which produced at better than its rated capacity of 9½ million pounds of magnesium a month in the latter part of 1943, required large quantities of magnesite. The mineral was mined, ground, purified by froth flotation, and calcined at Toiyabe, Nev. The calcined product was shipped to Las Vegas for reduction.

The Sierra Magnesite Company owned jointly by Westvaco Chlorine Products Corporation (Newark, Cal.) and Henry J. Kaiser and his associates (Oakland, Cal.) mined magnesite from the Segerstrom property and other claims near Luning, the crude mineral being shipped to Newark and San Jose, Calif., for calcining. At Newark the material is caustic-calcined for oxychloride cement and chemical use, whereas at San Jose it is caustic-calcined for domestic uses and for export, and dead-burned for refractory use.

Texas.—C. E. Heinz continued production of magnesite at Llano, shipping it crude to a firm in Joplin, Mo., for grinding, and to Gardner and Cates, new magnesite producers at Llano, for calcining for fertilizer use. Meramec Minerals, Inc. shut down its Llano mine temporarily and had no output in 1943.

Washington.—The Northwest Magnesite Company, chief producer of refractory magnesite in the United States, mined its Finch and Allen-Moss deposits and operated its seven kilns at Chewelah at near capacity in 1943. Part of the magnesite mined was purified by froth flotation. The calcined product was used chiefly for maintenance grade refractories, although the flotation concentrates and some of the regular output went into refractory brick production.

The Bureau of Mines prepared a circular during 1943, I. C. 7269, on the subject of marketing magnesite and allied products.

Dolomite

Crushed dolomite, both raw and calcined, was used in increasing quantity as a basic open hearth dressing and for routine furnace maintenance in 1943. Total sales of dead-burned dolomite are given in the following table.

Dead-burned dolomite sold by producers in the United States, 1938-43:

Year:	Short tons	Value
1938	366,626	$3,095,355
1939	671,561	5,447,554
1940	867,909	6,925,328
1941	1,069,887	9,111,172
1942	1,229,337	10,817,634
1943	1,276,725	11,243,017

The United States has been very fortunate in its supply of basic refractories in comparison to some of the other warring countries, notably Germany, which suffers from a shortage of chromite, and Great Britain, which lacks magnesite but has solved the shortage by a wider use of stabilized dolomite brick and grain and of serpentine-magnesia mixtures.

In Great Britain, refractory dolomite is stabilized by calcining it with serpentine, whereby the lime is converted to stable tri-calcium silicate. This procedure differs from American practice, by which the lime is converted to dicalcium silicate with addition of stabilizing iron oxide. The American product softens at a lower temperature than the British on account of its content of the low-melting calcium ferrites, but this is no drawback for maintenance use. In Britain, however, much stabilized dolomite must be sufficiently refractory for brickmaking; hence formulas are used which require as little stabilizer as possible.

G. E. Seil and Alvin Schallis have reviewed in fairly comprehensive fashion methods for separating magnesia from dolomite, the former in the July, 1943 issue of the *Journal of the American Ceramic Society*, pages 218 - 238, and the latter in Bureau of Mines Information Circular 7247 entitled "Economic Considerations in the Recovery of Magnesia from Dolomite."

Other Magnesium Compounds

The Bureau of Mines traditionally collects production data on "natural" magnesium salts, though in recent years the definition of "natural" has been enlarged to include magnesium hydroxide and magnesium chloride from raw sea water. In the former case the hydroxide anion comes not from sea water but from lime, and in the latter case the chloride anion comes not from raw sea water but from the electrolysis of salt. To obtain complete coverage, the Bureau of Mines now canvasses the magnesium chloride made from magnesite by Basic Magnesium, Inc., and from dolomite by International Minerals and Chemical Corporation, Mathieson Alkali Works, and Diamond Alkali Co., and such data are included along with natural magnesium chloride crystallized from well brines and other natural sources. Virtually all magnesium chloride produced to metal in 1943.

On the other hand, only sulfate recovered from n is reported, the data n that made by neutraliz calcined magnesia with s solution. Magnesium sul in aqueous solution as a r lant, in tanning, in phar as a fertilizer, and for othe

The figures for precipi nesium carbonate include r rived from magnesite, do well brines, and consist basic carbonate for 85% m sulation.

Magnesium Compounds (Other Than Magnesium Oxide) Sold C Producers (Exclusive Of Those Used By Producers In Makir Magnesium Compounds) In The United States, 1942-4 1942

Product	Short tons	Value	Short tons
Precipitated magnesium carbonate...	66,042	$5,596,698	63,90
Magnesium chloride, 100% basis* ...	210,000	7,468,518	646,13
Magnesium sulfate, 100% basis*	20,200	1,029,662	26,41
Other	643	143,486	61
	296,885	14,238,364	737,06

* Figures recorded in Mineral Market Report MMS No. 1062, and Magnesium Compounds Production Greater in 1942," Jun calculated to basis of 100%.

Magnesium's Future

That 40 per cent production on cut at Basic Magnesium, Inc., in not necessarily the beginning of the end for the world's largest magnesium factory. President Hobbins of BMI and its parent company (by adoption), Anaconda Copper Mining Company, is reported submitting plans to Washington (p. 48) for fabrication of magnesium and other postwar developments. We hope for details in the next issue.

RUSTON, LA. LEADER
JULY 3, 1944 J13

United States production of magnesium metal reached a new high in 1943 with an estimated output of 370,000,000 pounds, according to the Department of the Interior.

IRON AGE
Philadelphia, Pa.
JUL 6 1944

Magnesium

●●● Raw materials for the production of magnesium metal, basic refractories, and other essential magnesium compounds were produced in greater quantities in 1943 according to the Bureau of Mines. These included magnesite, brucite, dolomite, sea water, sea water bitterns and well brines. The mine output of crude magnesite reached the record quantity of 754,832 short tons valued at $6,071,596, compared with 497,368 tons valued at $3,874,334 in 1942. Production of magnesium metal in excess of the rated capacity of 9 1/3 million lb. per month by Basic Magnesium, Inc., Las Vegas, Nev., accounted largely for the tremendous increase in production of magnesite in 1943, the Bureau reported.

JUN 26 1944

L. V. AGE 7-2-44

Magnesium Said InBasicBig Three

EAST PITTSBURGH, July 1. A. A. Bates, manager of the chemical and metallurgical department of Westinghouse Research Laboratories at East Pittsburgh, in a recent address had this to say in regard to the future position of metals:

"In the realm of the metallic, I am going to make a statement which may at first seem to be difficult to defend and that is this: that in spite of the some 60 or 70 metals that nature provided us, there are actually only three basic structural metals, and those are iron and aluminum and magnesium. That is actually, on the basis of mechanics and chemistry, a fairly easily defended statement. Aluminum, magnesium and iron. And I think it is significant that in this wartime, this machine war of ours, we have found as the most outstanding metallurgical development the tremendous increase in the production of iron, aluminum and magnesium. Other metals have increased, likewise, but none I think, in terms of absolute tonnage equal to iron or in terms of percentage equal to magnesium or aluminum.

Other Metals Important

"As a Westinghouse man interested in the field of electrical equipment, I certainly am not going to tell you that other metals, such as copper and so on which are used as electrical conductors, are not important and will not continue to be important. They will. But fundamentally those are the three basic metals, with the possible exception of this future exception, and since the research worker takes a very long-time, distant view of these things I think you will excuse me if I make a prediction which is so remote that for the next few years you will hardly encounter the results of the prediction even if it does begin to come true.

"There are just remote possibilities of two other elements becoming basic metals, and those are manganese and titanium. They are both very plentiful elements in nature, they are both elements not too difficult to recover, they are both elements rather difficult to recover in purified state, they both have physical properties of values, and I shall not detail those physical properties now but I shall be glad to go into them with you individually later if you wish; they both have properties which lead us to give some credence to the idea that some day they may be important structural metals. That some day is a long way off, but I would like to make that fundamental prediction — that some day there may be two more structural metals added to the big three, those two being manganese and titanium."

AMERICAN METAL MARKET
"Leading Iron, Steel and Metal Newspaper—Recognized price and market authority."
New York City
JUL 7 1944

Controls Over Use Of Magnesium To Be Revised By W.P.B.

WASHINGTON, July 6.— W.P.B. has announced that controls over the distribution of magnesium products are being revised and that specific details as to the nature of the new procedures are not yet available but will be released shortly.

It has been definitely decided that Form W.P.B.-3462, "Magnesium Products: Consumer's Application For Allocation" will not be used to apply for permission to accept delivery of magnesium products scheduled for any time after September 30, 1944. Consequently, applications ordinarily due July 15th covering October deliveries need not be filed with W.P.B.

It was pointed out, however, that consumers of unfabricated magnesium (ingot, crystals, sticks) should continue to apply in the same manner as in the past.

AMERICAN METAL MARKET
"Leading Iron, Steel and Metal Newspaper—Recognized price and market authority."
New York City
JUL 8 1944

Magnesium Output In April Down 8% From First Quarter

Production Of Sand Castings Off 9% — Die Castings Up Slightly

WASHINGTON. — Primary magnesium production in April dropped to 37,846,000 pounds—8% below the peak reached in the first quarter of 1944—according to data just released by the Aluminum and Magnesium Division, War Production Board. This decrease reflected for the first time the Government-ordered curtailment in the magnesium metal program. Secondary recovery returned to more customary levels after the unusual spurt in March and amounted to 2,272,000 pounds.

Sand castings reached a high for the war in March when 7,574,000 pounds were shipped but fell back by almost 9% in April to 6,918,000 pounds. The down-trend in magnesium die castings was reversed for the first time in five months when April shipments of 185,000 pounds rose 8% over March. Magnesium sheet activity rose substantially in both March and April; shipments of 309,000 pounds in April were over 70% greater than in January of this year and 140% greater than in April 1943.

(Continued on page 5)

	Sand	Permanent Mold*	Die
1942—			
January ..	1,984	33	58
February .	1,973	34	61
March	2,284	32	93
April	2,428	50	77
May	2,536	70	90
June	2,547	84	126
July	2,639	97	113
August ...	2,642	124	122
September .	2,868	164	129
October ...	3,426	200	155
November .	3,428	226	105
December .	3,536	249	176
Total ...	32,292	1,364	1,304
1943—			
January ...	3,934	253	189
February ..	3,931	299	215
March	4,802	300	262
April	4,694	284	259
May	4,652	343	268
June	4,159	296	235
July	4,406	290	244
August ...	4,770	257	211
September .	5,391	390	227
October ...	6,096	431	247
November .	6,068	452	272
December ..	6,220	382	238
Total ...	59,123	3,978	2,866
1944—			
January ...	6,210	536	238
February ..	6,603	489	221
March	7,574	496	172
April	6,918	413	185

	Forgings	Wrought Products—Extrusions†	Sheet, Strip and Plate
1942—			
January ..	3	28	37
February .	3	20	36
March	2	16	35
April	3	21	43
May	5	25	56
June	1	19	71
July	3	35	88
August ...	5	29	107
September .	3	41	123
October ...	7	49	100
November .	4	53	92
December .	4	82	94
Total ...	42	416	879
1943—			
January ...	10	62	145
February ..	10	62	139
March	16	85	132
April	17	67	129
May	29	84	164
June	9	77	112
July	12	64	101
August ...	9	96	93
September .	25	85	162
October ...	27	114	129
November .	28	121	151
December ..	34	113	222
Total ...	227	1,029	1,680
1944—			
January ...	33	110	181
February ..	54	168	194
March	32	182	238
April	52	140	309

* Excludes cast sticks, used for powder manufacture, and castings for incendiary bomb bodies.

† Excludes extruded sticks, use for powder manufacture, and extruded rolling slabs (sheet stock) and forging stock; includes rod and bar

vn 8% From First Quarter

.P.B. Acts On Requests Accept Late Delivery On Unrated Pigment Orders

VASHINGTON, July 7.—Favorable sideration will be given by the uminum and Magnesium Division requests of distributors of aluum powder and paint to accept delivery of unrated orders for ments from a person other than roducer who received but did not the distributor's order between y 15th and June 30th, last, W.P.B. today.

tocks of aluminum powder and at in distributors' inventories on rch 15, 1944, may be sold as pro- d in Supplementary Order M-1-g ond June 30th without preference ings or limitation as to end use.

ome isolated cases have been ught to the attention of the divi- where distributors are under the pression that a preference rating AA-5 or better constitutes suffi- t authority to fill orders regard- of end use, W.P.B. said this is the case. The Aluminum and gnesium Division will, as in the past, continue to recei for uses not permitte as provided for in pa the order. With a gre feed material at hand supply situation contin a more liberal attitude may be expected, W.P

ousands of pounds, as reported by the War Production Board:

Scrap Metal Situ Unchanged

BUFFALO, July 7 new developments in scrap market here i minum continues in cept for low-copper reported in fair de and red brasses are mand, with supplies ther behind inquiries scrap are well-balanc buying prices are unc

Buffa

Dealers' buying pr

No. 1 heavy copper and	9.25
No. 2 heavy copper and	8.25
Light copper	7.25— 7.50
No. 1 copper borings	9.25
No. 2 copper borings	8.25
No. 1 composition	8.25— 8.50
No. 1 composition turn	8.00— 8.25
Clean red car boxes	7.25— 7.50
Cocks and faucets	6.50
Heavy brass	4.00
Auto radiators, unsweet	6.75— 7.00
Rolled brass	8.00— 8.50
New brass clippings	7.00
Light brass	4.50
No. 1 rod turnings (non	5.00— 6.00
Brass turnings	3.00— 3.50
Rod ends	6.50
Brass pipe	6.00
Heavy lead	4.50— 4.75
Battery lead	2.50
Mixed babbitt	5.00— 6.50
Solder joints	7.00— 7.25
New zinc clips and tri	4.50
Engr. and litho. plates	6.00
Old zinc	4.00
Unsweated zinc dross	4.50— 4.75
Die cast slab	3.00
New die cast scrap	2.25
Radiator grilles, old an	2.50
Old die cast scrap	2.00
Block tin pipe	44.00
No. 1 pewter	30.00
Siphon tops	25.00
Auto bearing babbitt	26.00
Small foundry type	6.50
Monotype	5.75— 6.00
Linotype and stereotyp	5.00— 5.25
Electrotype	4.00— 4.50
New type shell cutting	7.25— 7.50
Printers' lead rules	4.00— 4.50
Clean hand picked typeas	3.00— 3.25
Linotype and stereotypes	3.00
Aluminum borings & t	1.00
Mixed	1.50— 2.00
Segregated	2.50
Cast and sheet alumin	2.50
Mixed plant clippings	7.00
Aluminum cables (non	20.00
Nickel sheets and clip	20.00
Nickel anodes	14.00
Nickel turnings	20.00
Nickel rod ends	13.00
Monel clippings	8.00
Monel turnings	12.00
Monel sheets (old)	13.00
Monel rods	8.00
Monel castings	

New Yo

Dealers' buying p

No. 1 heavy copper an	9.25— 9.50
No. 2 heavy copper an	8.25— 8.50
Light copper	7.50— 7.75
No. 2 copper borings	8.75— 9.00
No. 1 composition	8.50— 8.75
No. 1 composition tur	4.50— 4.75
Heavy yellow brass	4.50— 4.75
Yellow brass turnings	7.75— 8.00
New brass clippings	6.50— 6.75
Auto radiators, unswe	3.75— 4.00
Light brass	6.75— 7.00
No. 1 brass rod turnin	6.75— 7.00
New brass rod ends	7.00— 7.25
Clean red car boxes	7.50— 7.75
Cocks and faucets	6.50— 6.75
Brass pipe	6.25— 6.50
Rolled brass	

RECONVERSION

Plan Return to Civilian Production

War Production Board to free materials for building of working models of postwar products. Limitations on aluminum and magnesium relaxed for use in civilian end products. Purchase and ordering of machinery and tools to be permitted

ALTHOUGH the next three months are expected to be the most critical yet faced in munitions output, War Production Board officials last week started charting definite preparations for reconversion to civilian goods output.

Prefacing every step in the new peace-preparedness program with emphatic statements on the necessity of getting military production up to schedule and keeping it there, WPB Chairman Donald M. Nelson outlined three steps to be taken at once to ease the country back toward a civilian economy. These were:

1. An order authorizing any manufacturer to acquire enough materials and components to make and test a single working model of any product planned for postwar production. It was pointed out that the manufacturers could take orders against this working model for future delivery.

2. Reconversion of WPB orders limiting the use of aluminum and magnesium so that manufacturers will be able to obtain these metals and fabricate them into essential end products whenever and wherever manpower is available. With the exceptions of castings, foil and forgings, stocks of aluminum and facilities for producing it are more than sufficient for war needs. Existing restrictions on the manufacture of end products from aluminum and magnesium will be lifted by vesting in the WPB regional offices authority to permit manufacture of items from these metals as the manpower situation warrants.

3. Beginning July 1, manufacturers will be allowed to purchase machinery, tools and dies for civilian production, whenever possible out of existing surpluses listed with WPB and Defense Plant Corp., but if necessary, through the placing of orders validated by WPB for production at times and under conditions that will prevent interference with war production.

Must Not Interfere with War

Mr. Nelson, however, told Congress he would not hesitate a minute to cancel any of these steps to restore civilian production if they interfered in any way with the war program.

Speaking of the war production program over the next quarter, Mr. Nelson said military production schedules are heavier than ever before. "Some increases have already been ordered as a result of recent actions overseas; the tank program, for instance, was ordered stepped up last week, and other increases will undoubtedly follow. Our need for on-schedule production is absolutely imperative, and we are faced by a manpower problem which is causing us to lag far behind schedule in some of the most critical programs. We have got to drive harder than ever before to meet our military needs.

"This obviously means there can be precious little in the way of expanded civilian production for the immediate future. But in the interest of war production itself, and for the protection of the entire economy, it nevertheless is essential to prepare now for the return to civilian production.

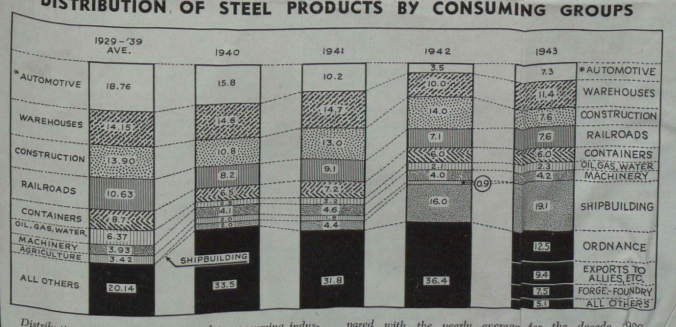
"Just as industrial preparations for war had to be started long before the large-scale fighting began, so also the industrial preparations for peace must be begun in plenty of time before the fighting ends."

In reference to expanded tank production, military authorities said builders would be called upon to replace three times the expected losses on the beaches of France, because expenditure of the armored vehicles was running at a rate far exceeding expectations. This expansion likely will be at the cost of the locomotive building program.

Heavy truck output, now running 25 per cent behind schedule, must be stepped up to schedule and kept there, due to losses in the invasion.

Likewise, cargo ship construction, which recently has been reported as tapering, is to be increased, according to Rear Adm. Emory S. Land, chairman of the Maritime Commission. Admiral Land said the present program calls for 20,000,000 deadweight tons this year and that the volume of work in merchant

DISTRIBUTION OF STEEL PRODUCTS BY CONSUMING GROUPS



*Distribution of steel products shipped to consuming industries on a percentage basis for 1940 through 1943, compared with the yearly average for the decade 1929 through 1939. *Includes aircraft from 1941 on.*

STEEL
Cleveland, Ohio
JUL 10 1944

marked in it of the bars ... to denote the size.

Magnesium Association's Sand Cast Division Meets

The Sand Cast Division, Magnesium Association, recently held a meeting at the Waldorf-Astoria, New York, more than 70 members attending. Dan W. Moll, Mills-McCanna Co., Chicago, chairman, Sand Cast Division, presided.

Manley Brooks, Dow Chemical Co., Midland, Mich., outlined melting and pouring practice for foundry magnesium casting and told of how some of the major troubles can occur. E. R. Coyle of Diamond Magnesium Co., Painesville, O., outlined the alloying of magnesium; he told of their development with beryllium and how it eliminates burning to some extent. H. M. Griffith, Hills-McCanna Co., outlined the new test-bar proposal for magnesium sand castings.

W. B. Griffin, Apex Smelting Co., Chicago, read a paper on the "Conversion of Salvage Materials to High Grade Magnesium Alloys," showing where consistently fine grain ingot can be produced from such materials which would be well within the A.S.T.M. specification. J. D. Barrington, Dominion Magnesium, Ltd., Haley, Ont., told of some of the high lights of his recent trip to England to visit magnesium operations in that country. He stated that there has been considerable increase in consumption of magnesium since the metal has become more plentiful.

Oscar Blohm, Hills-McCanna Co., told of the work and recommendations of the

in Size Committee. Among the recommendations mentioned he stated that per cent scrap should be used in each ge where at all possible; metal should efined at around 1360 degrees and ed four minutes; that the holding should be kept at a minimum and crucibles should be cooled in the air.

BURLINGAME, CALIF. ADVANCE
Cir. 4037
JULY 12, 1944

Reconversion Scheduled for Prompt Start

WASHINGTON, July 12 (U.P.)—War Production Chief Donald M. Nelson was regarded today as the winner in his dispute with the armed forces over his plans for a prompt start in limited reconversion of industry.

The differences, which had gone as high as the White House, were settled late yesterday at a meeting between WPB officials and representatives of the army, navy and Maritime and War Manpower Commissions. Nelson emerged with virtually all his original proposals, although the military won delays, none of any great length, in the effective date for some of the provisions.

Nelson originally had planned to put into effect on July 1 a program to permit reconversion in areas where manpower was available and for products for which materials were not scarce. It was delayed by his illness, from which he still is convalescing; in the meantime, the military high command developed strong objections, on grounds the program would jeopardize war production.

The final settlement, worked out just 24 hours after War Mobilization Director James F. Byrnes had said he would step in if a protracted squabble developed, provided these dates for issuance of various orders in the program:

July 15—Order lifting some of the present restrictions on the use of aluminum and magnesium.

July 22 — Order permitting manufacture of a minimum number of models for experimental purpose.

July 29 — Order permitting requests for certain machine tools and equipment.

Aug. 15 — Order permitting manufacturers *"who have facilities and manpower not needed for the war effort and where material is available"* to secure permission of WPB officials to produce civilian articles, production of which is now prohibited.

WPB Executive Vice-Chairman Charles E. Wilson, who announced the staggered schedule of reconversion orders, said that Nelson concurred with the plan.

Wilson pointed out that the schedule was arranged to give the War Manpower Commission time to perfect its organization and administrative controls and to give industry time to prepare for the gradual change without jeopardizing war production schedules.

The plan is virtually the same as Nelson's original proposals, except for the delay in the time schedule.

It was the last and most important order, the one scheduled to become effective Aug. 15, which was reported to have been the chief point of contention. The army and navy had objected to giving control of industrial reconversion control to field offices, fearing it would take authority too far from official Washington. The compromise on this issue, apparently was only on the date of its issuance—a delay of a month and a half.

Nelson's opposition included the majority of his own WPB leaders, as well as the army and navy and big business. He received support from three of his vice-chairmen, from the Senate Truman Committee, the Senate small-business committee and the CIO.

Wilson, who had been one of Nelson's leading opponents, said that the revised schedule "was agreed upon after extensive review to assure safeguards that would be needed to prevent any possibility of interference with military production."

EVENING NEWS
Buffalo, N. Y.
JUL 12 1944

COMPROMISE SETS GRADUATED OUTPUT OF CIVILIAN GOODS

By the Associated Press

WASHINGTON, July 12.—Donald M. Nelson's program for "reconversion in miniature," fought by the Army and Navy in one of Washington's most explosive interagency struggles, will go into partial effect Saturday and full effect Aug. 15.

In a compromise announced Tuesday night, the War Production Board chairman agreed to postponement until mid-August of the most important part of his program—an order which would permit manufacturers to make civilian goods now restricted or banned entirely, upon approval from WPB field offices. This step, one of four orders which Mr. Nelson described as "industrial preparations for peace," will mean at the start a slight increase in civilian goods, through the use of plants and workers not needed in the war effort.

Concession Made on Protests

Ultimately, however, it is intended to provide the machinery for giving work to men and machines left idle by the deep cutbacks in arms production which will come when Germany falls.

The other three orders—all vital to industry but of less immediate concern to consumers—will appear at seven-day intervals, starting Saturday with the lifting of curbs on the use of aluminum and magnesium. The staggered schedule of effective dates was agreed upon by all factions, WPB announced.

The concession resulted from protests of Manpower Director Paul V. McNutt and the armed services that the start of civilian manufacture would aggravate the labor-supply problem in three ways: By luring men from war plants; by hindering recruiting of new war workers and by jeopardizing the whole new federal job-control program.

Date Schedule Approved

The compromise agreement, approved late Tuesday by Mr. Nelson at his apartment where he is convalescing from pneumonia and then ratified by a full board session of WPB, provides this sequence of orders:

JULY 15—Removal of some bans on the nonwar use of aluminum and magnesium; also, permission to substitute them for other metals in such civilian articles as are now produced.

JULY 22—Permission to manufacturers to make experimental models of post-war products.

JULY 29—Permission to industry to start at once placing orders for machines, tools and equipment which will be needed in tooling up for peacetime pursuits.

AUG. 15—Local, "spot" authorization by WPB field offices for civilian manufacture where no interference with war work will result. WPB has prepared a preferential list of 124 groups of scarce civilian products, ranging from bathtubs and sewing machines to hair clippers and fountain pens.

SAN MATEO, CAL. TIMES & LEADER
Cir. 5,598
JULY 15, 1944

Reconversion Clouds Ahead

Eastern business executives are more worried than they care to admit about the uncertainties of reconversion. Problems of transition and employment are stupendous and complicated. Many blueprints have been sketched but Washington procrastinates in putting them in force.

One difficulty is a new clash over policies. One faction wants to dispose of federal surplus property at bargain prices to big corporations. Another demands that it be placed within the reach of smaller firms and individuals.

Donald M. Nelson, despite army-navy objection, sticks to his original order that excess aluminum and magnesium shall be released for civilian goods. A powerful bloc in the WPB held up his decree on the ground that it would give an unfair competitive advantage to some branches of the metals industry.

These disputes are not political in the narrow partisan sense; they are battles between rival groups of industrialists and economists, each fighting for its own theory or self-interest.

Practical suggestions for reconversion are found in surveys made by the Truman committee, in the Baruch-Hancock report, the sixteen point recommendations of the senate post-war economic policy and planning committee and proposals by other researchers.

Private organizations and industrial associations have worn out mimeograph machines piling up documents on the subject. A special committee of the house also is at work.

Business will be handicapped in making arrangements for production and jobs until the authorities distribute the rule book. But congress has recessed. When its members return from vacation, they will shy from offending voters until after November.

This unwillingness to accept responsibility prompts the Magazine of Wall Street to charge: "Republicans are as asleep at the switch as the Democrats in planning for unwinding the war economy."

In the meantime magnates are receiving warnings of a downward trend in business. The number of workers in non-war corporations is dropping at an average of almost fifty thousand a month. New York headquarters of national associations of retail merchants have been informed of a slackening of sales in scattered districts owing to "cutback jitters" among customers. These are the clouds before the rain.

Bankers and their industrial associates complain because Washington does not give the go-ahead signal on reconversion. They are certain that free enterprise can handle the change-over if strait-jacket regulations are removed and the inventive spirit, venture capital and profit motive are permitted free play.

It will be a gigantic undertaking to reach, in total production of goods and services, the one hundred seventy-five billion dollar goal set by economists as the necessary peace level. But the financiers are sure it will happen if business is allowed to take preliminary steps now.

L. V. TRIBUNE
7-16-44

Magnesium Freed By WPB; Metals Given Go Signal

WASHINGTON, July 15.—(AP) The War Production Board today authorized wide new uses for aluminum and magnesium in the first of four orders carrying into effect Chairman Donald M. Nelson's program for the limited reconversion of industry.

It approved substitution of aluminum, now in surplus supply, for other metals in any civilian goods now being manufactured. However, the action does not increase the output of any consumer item.

Some restrictions on the use of

(Continued from page 1)

Magnesium Freed By W. P. B.

the light metal, considered necessary to protect arms production, are continued, but WPB announced that "anyone who wants to use aluminum for any purpose not covered by the order, or who wants to increase his use over the allowed limits, may ask for permission."

The restrictions continued in force were intended chiefly to prevent the diversion of labor from war production to the manufacture of peacetime goods. WPB said:

"No immediate large-scale resumption of civilian production is expected. War demands still come first—and will continue to come first until Germany and Japan are defeated."

The action makes possible the use of aluminum for pots and pans, but production still is held to the quotas established for these articles when made from steel. The metal may also be used in the manufacture of cans for the packing of fruits, vegetables and other products.

The order was the outcome of a compromise Tuesday under which the opponents of Nelson's reconversion program agreed to issuance of all his proposed orders, but won delays in their effective dates.

The schedule calls for issuance one week hence of an order permitting manufacturers to build experimental models of planned post-war products. Another on July 29 will permit manufacturers to place purchase orders for machine tools which will be needed for peacetime production. On August 15 will be issued the most important order of the series, authorizing WPB field offices to approve the manufacture of civilian goods by plants which have idle labor and machinery.

SAN FRANCISCO, CAL., NEWS
Cir. 107,082
JULY 31, 1944

Magnesium Output Ordered Curtailed

WASHINGTON, July 31. — The War Production Board today ordered the termination of production at the Dow Magnesium Corp. plant located at Marysville, Mich., and reduced the output schedules of four other magnesium plants.

This action will trim overall magnesium output to 7,517,000 pounds a month. "It was taken," the WPB said, "to bring surplus supplies of magnesium more into line with the nation's stockpile objectives."

Production curtailments were ordered at plants of the Dow Corp., Velasco, Tex.; Electro Metallurgical Co., Spokane, Wash., and Basic Magnesium, Inc., Las Vegas, Nev.

IRON AGE
Philadelphia, Pa.
JUL 20 1944

WPB Lifts Restrictions on Use Of Aluminum and Magnesium

Washington

• • • **Pointing out that** it was conforming to recent decisions to lay the groundwork for eventual conversion to peacetime output, WPB has announced rules permitting wide new uses of aluminum for essential products, and at the same time lifted restrictions on the use of magnesium.

The new rules relating to the use of aluminum, contained in Supplementary Order M-1-i, provide that the metal may be used in the manufacture of cans, subject to packing quotas applicable to all cans under Order M-81 and for making pots and pans to the extent allowed by the L-30 series of WPB orders. In addition, rules relating to the use of aluminum in the manufacture of closures were liberalized. Furthermore, aluminum may be substituted for any other metal in the manufacture of any item. The order prevents this substitution from creating an increase in total production because to do so might divert manpower from essential operations.

Modifications of the magnesium order, M-2-b, lift restrictions on use of the metal in other than ingot or raw form and provide means for its distribution to civilan uses. It may be used as a substitute for other metals in the same way as aluminum. Since there are no large uses for magnesium at present, it is expected that its civilian uses will be largely for experimental purposes.

IRON AGE
Philadelphia, Pa.
JUL 13 1944

Magnesium

• • • **Primary magnesium** production in April dropped to 37,846,000 lb.—8 per cent below the peak reached in the first quarter of 1944—according to data released by the Aluminum and Magnesium Division, WPB. This decrease reflects the government-ordered curtailment in the magnesium metal program. Secondary recovery amounted to 2,272,000 lb.

Magnesium sand castings reached a high for the war in March when 7,574,000 lb. were shipped, but fell by almost 9 per cent in April to 6,918,000 lb. April shipments of magnesium die castings totalling 185,000 lb. rose 8 per cent over March. Magnesium sheet, strip and plate shipments rose substantially to 309,000 lb. in April which was more than 70 per cent greater than in January, and 140 per cent greater than in April, 1943. Magnesium forgings increased by 62½ per cent in April to 52,000 lb. Extrusions dropped by 23 per cent to 140,000. These figures do not include production of incendiary bomb castings, extruded sheet stock and forging stock, or sticks.

EUREKA, CALIF., TIMES
Cir., Daily, 6,073; Sunday 7,077.
JULY 16, 1944

NEW USES SET FOR ALUMINUM AND MAGNESIUM

(By Associated Press)

WASHINGTON, July 15.—The War Production Board today authorized wide new uses for aluminum and magnesium in the first of four orders carrying into effect chairman Donald M. Nelson's program for the limited reconversion of industry.

It approved substitution of aluminum, now in surplus supply, for other metals in any civilian goods now being manufactured. However, the action does not increase the output of any consumer item.

Some restrictions on the use of the light metal, considered necessary to protect arms production, are continued, but WPB announced that "anyone who wants to use aluminum for any purpose not covered by the order, or who wants to use aluminum for any purpose not covered by the order, or who wants to increase his use over the allowed limits, may ask for permission."

STEEL
Cleveland, Ohio
JUL 17 1944

Perry D. Helser has been named secretary-director of the Magnesium Association, which is composed of manufacturers, fabricators and smelters and which has established permanent offices at 3239 RCA building, 30 Rockefeller Plaza, New York. Mr. Helser formerly was chief of the Magnesium Products Branch, Aluminum and Magnesium Division, WPB, and prior to that was president of General Ceramics Co., New York.

RENO, NEV., JOURNAL
Cir. 7,503
JULY 20, 1944

NEV. MAGNESIUM IS BIG FACTOR

Output of Mineral is Stupendous

The production of magnesium raw materials for the manufacture of magnesium metal, basic refractories, and for other essential commodities expanded in 1943, according to the Bureau of Mines.

A variety of raw materials was used, including magnesite, brucite, dolomite, raw sea water, seawater bitterns and well brines. The mine output of crude magnesite reached the record quantity of 754,832 short tons valued at $6,071,596, compared with 497,368 tons valued at $3,874,334 in 1942.

Production of magnesium metal in excess of rated capacity of the plant of Basic Magnesium, Inc., Las Vegas, Nev., accounted largely for the tremendous increase in production of magnesite in 1943 over 1942.

The huge magnesium metal project of Basic Magnesium, Inc., which produced at better than its rated capacity of 9 1/3 million pounds of magnesium a month in the latter part of 1943, required large quantities of magnesite.

The mineral was mined, ground, purified by froth flotation, and calcined at Gabbs, Nev. The calcined product was shipped to Las Vegas for reduction.

SCIENCE NEWS LETTER
"Published by Science Service. Weekly illustrated magazine for quick reading—new items in science written non-technically by experts."
Washington, D. C.
JUL 22 1944

56

CHEMISTRY

Helium Used in Safer Magnesium Production

AN IMPROVED method for the production of magnesium from its ores is the subject of patent 2,353,193, issued to Dr. Royd R. Sayers of the U. S. Bureau of Mines and assigned royalty-free to the government. Standard procedure for freeing magnesium from its oxides is to heat it with a carbonaceous material, which takes up the oxygen and releases the magnesium in vapor form.

To prevent the magnesium from reoxidizing, hydrogen or some carbon-containing gas is usually introduced during the cooling process. This, however, forms dangerously explosive mixtures. Dr. Sayers substitutes the inert safety gas, helium, eliminating this difficulty. He also speeds the agglomeration of the cooling magnesium into droplets by subjecting the vapor to intense but inaudible supersonic vibrations.

Science News Letter, July 22, 1944

AMERICAN METAL MARKET
"Leading Iron, Steel and Metal Newspaper—Recognized price and market authority."
New York City
JUL 13 1944

Magnesium Association Meets At Chicago

CHICAGO, July 12. — An interesting and instructive general meeting of the Magnesium Association was held today at the Palmer House here. About sixty members and non-members were present.

The meeting was dedicated to "Magnesium Research" and talks were made, some of them illustrated, by staff members of the Battelle Memorial Institute. They included: Clyde E. Williams, director; V. H. Schnee; J. D. Sullivan; J. H. Dehaven; C. H. Lorig, and L. R. Jackson.

Edward S. Christiansen of Apex Smelting Company, president of the Magnesium Association presided.

MODESTO, CAL., BEE
Cir. 13,456
JULY 17, 1944

Bans On Magnesium, Aluminum Are Eased

SAN FRANCISCO, July 17.—Production of magnesium and aluminum for civilian goods, particularly on the Pacific Coast, got a shot in the arm Saturday with a War Production Board reconversion order lifting restrictions on the metals.

The new order, first of a series on Donald Nelson's reconversion program, is expected to stimulate the manufacture and processing of the metals in west coast plants. Two days ago Maury Maverick, chairman of the Small War Plants Corporation, predicted the WPB order would be the first step in an expanded and permanent aluminum and magnesium production in California, Utah, Washington and other states.

WPB announced the order with the reservation that no immediate large scale resumption of civilian goods production can be expected.

On the other hand, the order frees aluminum for the possible manufacture of pots and pans, cans and other goods which have not been made since the first metals restriction orders were put into effect.

JOURNAL OF COMMERCE
New York, N. Y.
JUL 20 1944

SECONDARY MAGNESIUM RECOVERY IS DOUBLED

WASHINGTON, July 19.—The amount of secondary magnesium recovered in 1943 almost doubled that reclaimed from purchased scrap in 1942 and was more than six times the amount recovered in 1941 according to the Bureau of Mines. A total of 11,404 short tons of secondary magnesium, including alloying constituents, was recovered in 1943 compared with 6,283 short tons in 1942. The value of the 1943 output totaled $4,798,803 compared with $2,794,624 in 1942.

Recovery of magnesium was again almost entirely from new scrap; the figures for 1943 showed 11,254 tons recovered from new scrap and 150 tons recovered from old scrap compared with 6,151 tons from new scrap and 87 tons from old scrap in 1942. Of the total 11,009 tons were recovered as ingot, 327 tons in castings, and the other 68 tons in miscellaneous uses.

Magnesium Book Free

"The Collection and Control of Dust and Fumes from Magnesium Alloy Processing" is the title of a new booklet just issued by Peters-Dalton, Inc., 628 E. Forest Ave., Detroit 1, Mich.

How to Hold Friends and Educate People

By W. C. Mattox

ONE of the pleasures in life is to tell people what you know. Particularly people who suspect you don't know much. I can't recall any experience that gives more genuine satisfaction than to sit down with some intelligent listener, and amaze him with my knowledge on some specific subject. That satisfaction is doubled if I'm talking to someone of superior intellect—like an executive secretary of a Chamber of Commerce in a big city — like Boston, for instance.

I wouldn't name any names, of course, because the man I'm thinking of is a modest chap, who avoids personal publicity, and he'd be the first to frown on a piece that seemed to reflect credit on him. So just forget any clues you may have as to his identity. Just imagine the fellow I'm talking about is a well-educated man (say Harvard), a student of affairs, and genuinely interested in any subject one wishes to introduce. Incidentally, his sense of humor makes things tough at times for those who expose their chins.

Up Comes Magnesium!

"I've being doing some work on magnesium," I began. "You know that's going to be quite a metal for commercial use."

"What can you use it for?" he asked.

"Oh, lots of things. Wheelbarrows, for example."

"Who'd want a magnesium wheelbarrow?"

"Wouldn't you prefer a wheelbarrow that weighs only a fraction—"

"No, I don't want a wheelbarrow. Why should I want a wheelbarrow? I've got one."

"Well, suppose you didn't have a wheelbarrow—"

"But I have," he insisted. "So let's don't waste time on useless speculation. Where does this manganese come from?"

"Not manganese—magnesium."

"Same thing, isn't it?"

"No—manganese is—"

"I thought you were talking about magnesium. Where does it come from?"

"It's extracted from sea water by a process—"

"I don't believe it. Why that's perfectly ridiculous."

"It's a fact, though. In sea water—"

"There used to be yarns flying around about sea water being filled with gold," he said. "Do you believe you can go out and dig gold nuggets out of the ocean?"

"Of course not. But this magnesium is dif—"

"What do they do with the water?"

"What water?"

"The sea water you say they take this magnesium out of."

"I don't know. What do you care? The point is—"

But the man interrupted again.

Pocketfuls of Metal

"The point is you came in here with a wild tale about going down to the beach and filling your pants pockets with some costly metal, and I don't believe it."

"I didn't say a word about my pants pockets, and magnesium isn't a costly metal. At least—"

"What does it cost?"

"I don't know."

"Then how do you know it isn't costly? However, we'll pass that. Where else do they get magnesium?"

"Out of the brine wells of Michigan."

"I don't believe that, either. You don't pull up a bucket of metal out of a well. Did you ever dip up metal out of a well?"

"No—but this magnesium—"

"What do you get when you lower a bucket into a well?"

"Water, of course—"

"But you just said you get magnesium. Stick to your tall stories, Bill, but don't ask me to believe palpable falsehoods. I've been out to Michigan, and I know they get water from the wells out there."

"Okay, okay! So they get water out of wells in Michigan. Let's don't fight about it. But you may be interested to know that this new metal, magnesium—"

"What's new about it?"

"It isn't new exactly. But—"

"You said it was new. I'm taking your word for it. What's it good for?"

"To make things. Now you take a wheelbarrow, for instance—"

"I won't take a wheelbarrow. I don't like wheelbarrows. Can't you get wheelbarrows off your mind?"

I'm a patient man, and I knew here was an important subject that the fellow ought to know about. So I started on a different slant.

"Magnesium comes from a mineral, too—a substance called Dolomite. It exists in great quantities—"

"What's Dolomite?" he asked.

"It's an ore from which magnesium is extracted."

What, Not From Sea Water?

"Oh, so it doesn't come from sea water, at all, eh? That's just something you made up."

"I didn't do anything of the sort," I protested. "It does come from sea water. And from brine wells in Michigan. And from an ore called Dolomite. Can't you understand—"

"I can understand a lot of things I hear. But I don't believe everything I hear. I don't believe, for instance, that Boston Harbor is filled with magnesium."

"There's enough magnesium in Boston Harbor to supply the world with magnesium for a hundred years," I said.

"Yeah! But what would Boston do without a harbor? Here we've been trying to build up Boston Harbor for years as a waterway, a shipping port, the best port in the world, the United States port nearest to Europe, then you pop in with a subversive plot to pump all the water out of Boston Harbor under the guise of a mining project. I can't subscribe to any such scheme. Besides, how do you know?"

"How do I know what?"

"That there is enough magnesium in Boston Harbor to supply the world for a hundred years. How much water is there in Boston Harbor?"

"I don't know, but—"

"How much magnesium will the world use in a hundred years?"

"I don't know that, either, confound it! I was merely—"

"Better get your facts straight, my lad, before coming in here and trying to ruin our harbor," he advised, condescendingly.

"It wouldn't hurt your damn harbor. The magnesium is a part of the water—"

"Do you mean to tell me that if we took all the water out of Boston Harbor, we'd have any harbor left? That's what makes a harbor—water. Without water we'd have nothing but mud flats. Now I suppose you'll be telling me we can get magnesium out of mud flats."

"Well, I suppose you might at that," I said.

Go Dig Mud Flats!

"Then go dig up some mud flats and let our harbor alone."

"All right, let's forget your harbor. Let's get back to your question."

"What question?"

"Didn't you ask a question awhile back?"

"Did I? I don't recall. I guess I got sidetracked, worrying about Boston Harbor."

"Well to get back to magnesium, then, it's the lightest metal—"

"What's the matter with aluminum?"

"Nothing's the matter with aluminum. It's fine. It's grand stuff. I'm in favor of it. But magnesium is lighter than aluminum."

"So what? Suppose it is lighter. Aluminum is lighter than iron, isn't it?"

"Sure, but—"

"And we still use a lot of iron, don't we? Why do you condemn iron?"

"I don't. I'm in favor of iron. It's a very splendid metal. But I was merely trying to point out that magnesium is the lightest metal for commercial—"

"How much magnesium is lighter than how much iron?"

"A pound of magnesium will—"

"Ha! Don't pull that old chestnut. A pound of magnesium weighs the same as a pound of iron, and you know it."

It was a hot, moist day and I was steadily getting more uncomfortable.

"Listen, my friend. I came in here to tell you about magnesium. I have some information to impart—information that I'm sure will be valuable to you. And what happens?"

Agin Emptying Harbor

"What happens," he answered, "is that you try to sell me a wheelbarrow. I told you frankly that I didn't want a wheelbarrow. Then you talk about emptying Boston Harbor to get some magnesium. I'm agin that project, too. It isn't practical. Then you take some sly digs at iron. I suppose if you went on, you'd try to shut down all the steel mills, and copper mills.

"Frankly, Bill, you wander around a bit in your discourses. I'm tremendously interested in learning all I can about manganese, but—"

"Not manganese! Magnesium!"

The man arched his eyebrows.

"Seems to me we're back where we started. What's the difference between manganese and magnesium?"

"I don't know exactly, but—"

"It strikes me you are taking on quite a contract, my misguided friend. You come in here posing as an expert on magnesium, and now you admit you can't tell it from manganese. If the two metals are that much alike, why discriminate?"

"Okay—let's forget the whole thing. But before we do that, there's one fact you ought to know about magnesium. It possesses a high damping factor."

"Damping factor? What's that?"

"Don't you wish you knew?"

I walked out with a sneer on my lips.

—— *Buy War Bonds* ——

CHEMICAL & METALLURGICAL ENGINEERING
"The Monthly Magazine of the Process Industries"
McGraw-Hill, 330 W. 42nd St., New York City
JUL 1944

MAGNESIUM PEAK PASSED

PRODUCTION of magnesium during the first quarter of 1944 was approximately 123 million lb., a record for any three months. The production during the second quarter, ending in June, was definitely lower because of the production cutback ordered by WPB late in March. It is officially announced that the record of the first quarter "will probably remain as the peak for the duration of the war." Secondary recovery of magnesium has been unusually high during the spring, amounting to as much as 3.5 million lb. in March.

Estimates of postwar requirements of industry for magnesium are discussed frequently in Washington. The most optimistic forecast noted seems to be about one-third of the installed production capacity of the United States. The more conservative estimate is approximately ten percent of capacity and less than the privately held capacity of the principal producer, Dow Chemical Co.

AMERICAN METAL MARKET
"Leading Iron, Steel and Metal Newspaper—Recognized price and market authority."
New York City
AUG 3 1944

Magnesium Reduction Co. To Curtail Production

CLEVELAND, Aug. 2.—Production at the Magnesium Reduction Company, Luckey, Ohio, makers of the basic war product, would be curtailed "about 20% to bring surplus supplies of magnesium in line with the country's stockpile objectives," it was announced by the regional War Production Board in Cleveland. No other Ohio magnesium plant is affected at present, the board stated.

HOLLYWOOD, CALIF.
CITIZEN-NEWS, Cir. 26,000
JULY 31 1944

fic are a group of 15 volcanic islands fringed with coral reefs.

The lightweight mineral, magnesium, invaluable in the war effort, was first identified in 1808.

AMERICAN METAL MARKET
"Leading Iron, Steel and Metal Newspaper—Recognized price and market authority."
New York City
JUL 20 1944

Recovery of Secondary Magnesium Nearly Doubled During 1943

WASHINGTON — The amount of secondary magnesium recovered in 1943 almost doubled that reclaimed from purchased scrap in 1942 and was more than six times the amount recovered in 1941, according to a report prepared by F. H. Wright and E. B. Steely, of the Bureau of Mines, United States Department of Interior. A total of 11,404 short tons of secondary magnesium, including alloying constituents, was recovered in 1943, compared with 6,283 short tons in 1942. The value of the 1943 output totaled $4,798,803 compared with $2,794,624 in 1942.

As in the previous year, recovery of magnesium was almost entirely from new scrap; the figures for 1943 showed 11,254 tons recovered from new scrap and 150 tons recovered from old scrap compared with 6,151 tons from new scrap and 87 tons from old scrap in 1942. Of the total, 11,009 tons were recovered as ingot, 327 tons in castings, and the other 68 tons in miscellaneous uses.

Thirty-five plants of various types reported consumption of a total of 13,909 tons of purchased magnesium scrap, consisting of 12,614 tons of borings, grindings, drosses, etc., 1,152 tons of castings and 143 tons of solid wrought scrap.

There was some market for magnesium sawings and grindings but owing to the difficulties in recovering finely divided magnesium by simple remelting, the fire hazard presented by an accumulation of these materials, and the contamination of sand and iron that interfered with remelting, large quantities were burned or otherwise disposed of without any attempt being made to salvage the magnesium content.

IRON AGE
Philadelphia, Pa.
JUL 27 1944

—WASHINGTON COMMENT—

OPA Announces Changes In Iron and Steel Price Resale Setup

Washington

• • • **Effective July 25,** OPA has announced minor changes in the price schedule governing the resale of iron or steel products that either reflect industry practice or clarify existing provisions.

A number of items were added to various price tables to correct inadvertent omissions from the schedule. For example, the pickling extras heretofore set forth an Appendix C for other bars now apply to hot rolled alloy bars. An extra of 25c. was added for beveled edge sections of hot rolled carbon bar flats, square and round edge. New size designations were added to the size extra tables in all zones for channels and half ovals.

Certain changes were made in previously-established extras. Among these is one extending the tables fixing extras for pickling in zones 1, 2, 3 and 4 to provide an extra in cases in which hot rolled sheets and bars, plates and hot rolled strip have been job or warehoused pickled. This extra was already in effect for all other zones and is in accordance with industry practice.

Typical of the changes made for purposes of clarification was the rewriting of the freight tables in zones 5, 11 and 17 so as to clarify the application of the maximum freight absorption provisions. Descriptions of the Omaha, Duluth-Superior and St. Paul-Minneapolis free delivery areas have been added in order to facilitate the determination of maximum prices in those regions.

•

WPB Eases Situation On Aluminum and Magnesium

Washington

• • • **The WPB Conservation** Division last Thursday announced that it had shifted the position of aluminum and magnesium from Group II, the list of materials currently in balance between supply and demand, to Group III, the materials that exceed current war and essential needs. This was the outstanding feature of Issue No. 13 of the Materials Substitution and Supply list released by the division.

Howard Coonley, division director, said that the supply of many fabricated and semi-fabricated metal products continues to be tighter than the metals themselves because of the scarcities of manpower or facilities.

"Among ferrous items in limited supply are malleable iron castings, small and medium steel castings, automotive-type gray iron castings, forgings, flat-rolled steel products, cold-drawn seamless tubing, rails and wire rope, quality carbon bars and forging billets," said Mr. Coonley.

Non-ferrous shortages are in copper base alloy rod, bar, wire, tubing over 4 in. and condenser tubing, all insulated copper wire, cable and cords (other than weatherproof wire and cable). Similar shortages are found in tungsten and molybdenum rod, wire and sheet and to some extent in aluminum foil.

•

MINING J'R'L
PHOENIX ARIZ.
7/15/44

PEC STAFF CREATED FOR PEC NEW APPOINTMENTS ANNOUNCED

THE War Production Board recently added to its organization by the creation of the Production Executive Committee Staff, organized in May to handle readjustments that grow out of changes in the military production program. Arthur H. Bunker, who has been serving as vice-chairman for Metals and Minerals, has been appointed director of the Production Executive Committee Staff. Bunker also was appointed vice-chairman of the PEC and deputy executive vice-chairman of the WPB.

Succeeding Bunker as vice-chairman of Metals and Minerals is Philip H. Wilson, formerly director of the Aluminum and Magnesium Division. The latter post was given to George C. Heikes, formerly manager of the Tacoma reduction works of the Olin Corporation and, prior to that, director of the WPB's Zinc Division.

Albert Butler, executive assistant to the vice-chairman of Metals and Minerals, is the representative of that division on the PEC Staff and Wilson represents the division on the Production Executive Committee. John Blair, special assistant to the chairman of the Smaller War Plants Corporation, is the representative of that organization on the PEC Staff.

The PEC itself has been functioning for some time, geared to war-time production. The PEC Staff, recently organized, is the body that will help industry make the change-over from all-out war to increasing civilian production as the need arises.

JOURNAL OF COMMERCE
"America's Leading Business Newspaper"
New York City
JUL 20 1944

SECONDARY M... RECOVERY IS DO...

WASHINGTON, July 19.—The amount of secondary magnesium recovered in 1943 almost doubled that reclaimed from purchased scrap in 1942 and was more than six times the amount recovered in 1941 according to the Bureau of Mines. A total of 11,404 short tons of secondary magnesium, including alloying constituents, was recovered in 1943 compared with 6,283 short tons in 1942. The value of the 1943 output totaled $4,798,803 compared with $2,794,624 in 1942.

Recovery of magnesium was again almost entirely from new scrap; the figures for 1943 showed 11,254 tons recovered from new scrap and 150 tons recovered from old scrap compared with 6,151 tons from new scrap and 87 tons from old scrap in 1942. Of the total 11,009 tons were recovered as ingot, 327 tons in castings, and the other 68 tons in miscellaneous uses.

EVENING NEWS
Buffalo, N. Y.
JUL 25 1944

Arrests Threatened In Dumping of Magnesium

Evidence that live magnesium still is being dumped in the La-Salle Ave. quarry of the Buffalo Crushed Stone Corporation today brought a warning from Health Commissioner Fronczak that corporation officers will be arrested if dumping of objectionable material continues.

Declaring he would start injunction proceedings, Thomas V. Walters, 96 Minnesota Ave., chairman of a neighborhood committee fighting the dumping, today reported that a trucker for one big Buffalo company told him his company had no intention of stopping the dumping of magnesium, which is inflammable on contact with water.

A preliminary report from a Health Department inspector indicated a mixture of magnesium and sand has been dumped since Dr. Fronczak's order prohibiting the dumping of objectionable material. The inspector was sent to point out this fact to Richard H. Templeton, corporation lawyer, who has conferred at length with city officials during the last week.

WALL ST. JOURNAL
New York, N. Y.
JUL 21 1944

Magnesium: Monthly production schedules of four magnesium plants have been reduced and that of a fifth plant terminated in order to bring surplus supplies of magnesium more in line with the nation's stockpile objectives, the W.P.B. reports. *W.P.B.-6196.*

WALL ST. JOURNAL
New York, N. Y.
JUL 21 1944

Critical Materials: The W.P.B. shifts the position of aluminum and magnesium Group II, the list of materials currently in balance between supply and demand, to Group III, the materials that exceed current war and essential industrial needs, in a new issue of the material substitutions and supply list. *W.P.B.-6134.*

SAN JOSE, CAL., NEWS
Cir. 15,437
JULY 28, 1944

NEW FURNACE RECORD SET

An all-time high in furnace feed in the reduction of magnesium was reported today at Permanente's San Jose plant.

Breaking all previous records, 82,330 pounds of magnesium oxide and coke pellets were fed into the company's new "1-A" reduction furnace during a 24-hour period, the company announcement said. The pellets, fed into the furnace, are subjected to 3600 degrees Fahrenheit and the magnesium is separated from the raw materials in a vaporous form.

ADVERTISING AGE
"The National Newspaper of Advertising."
Chicago, Ill.
JUL 17 1944

* * *

In a recent talk before the Sales Executives Club of New York, L. S. Hamaker of the Republic Steel Corporation pointed out that although magnesium production capacity has increased 70 times and aluminum capacity seven times since 1939, these metals might displace only 3,000,000 tons of steel. He said alloy steel is now replacing aluminum for airplane crank cases and other parts, and that light metals might be expected to make inroads into some fields.

* * *

TULARE, CAL., ADVANCE-REGISTER
Cir. 1,911
JULY 31, 1944

WPB Slows Down Magnesium Plants

WASHINGTON, July 31 (AP) —Output schedules of Basic Magnesium, Inc., at Las Vegas, Nev., and four other magnesium plants have been reduced by the War Production Board, which ordered termination of production at the Dow Magnesium Corp. plant, Marysville, Michigan.

Output at the Las Vegas plant was cut from 6,500,000 to 4,500,000 pounds a month, the action trims overall magnesium output 7,517,00 pounds a month, and was taken, WPB said, to "bring surplus supplies of magnesium more into line with the nation's stockpile objectives."

WPB said it had been informed by the War Manpower Commission that the plants affected are in or close to tight labor areas where workers released will be able to find jobs in war plants.

MINING JR'L
PHOENIX ARIZ.

METAL PRODUCERS alarmed at

Aluminum-Magnesium Strategy

Release of Aluminum and Magnesium for Civilian Use Menaces Future of Copper, Lead, Zinc Producers

● Real Strategy

The recent decision of Donald Nelson to release aluminum and magnesium for civilian use is being criticized in some industry quarters. The government overbuilt on each of these metals and in spite of shutdowns and cutbacks, we still have a surplus. The War Production Board is not to be blamed for the building of excess facilities. These were built upon the presumed requirements of the Army and Navy at a time when no one really knew what would be required . . . and at least this is a case where it was not too little and too late.

Nevertheless, the situation has proved embarrassing, particularly for those armchair strategists who believe that exactly the right amount of material could have been planned for. Pressure for more and more civilian supplies, fostered to a great extent by the Truman Committee, required some answer. What could be easier than releasing aluminum and magnesium, already a glut on the metals supply list, especially as these two metals frequently are only components in many products? Unless facilities for manufacturing, manpower, and other materials are available, the gesture means nothing.

However, aluminum and magnesium circles have shown real strategy in getting the green light first, as there are, after all, certain products which can be made wholly of these metals. The zinc producers, for instance, can properly feel uneasy at the idea of aluminum replacing zinc in many kinds of die castings while zinc has gone to war. This type of problem is going to loom larger and larger as reconversion approaches, not only in the field of raw materials, but also in finished products.

Who, for instance, will be released to make washing machine first? Probably not the large manufacturers as they always have a backlog of war orders. Are they to lose their businesses to new makers, or is the public to wait for its goods? It will become more and more a burning question.

Now that aluminum and magnesium are in the limelight again due to the removal of restrictions against their use for civilian goods, it is interesting to notice how, almost at the same time, the Aluminum-Magnesium Division has forged ahead in the WPB hierarchy. It is not long since Arthur Bunker, formerly director of the division, became WPB vice-chairman for metals and minerals, filling a position which should have been offered to Howard I. Young. Young, however, was made Bunker's deputy.

Bunker now goes to larger duties in the office of Charles Wilson, WPB executive vice-chairman, and will be in charge of certain reconversion plans, besides having a say about present production. Into Bunker's shoes steps Phil Wilson, who has succeeded Bunker as director of the Aluminum-Magnesium Division, and out goes Howard Young.

No news has been received from Washington as to who will succeed Young. He will be missed as the top champion of the nonferrous metals industry in WPB, particularly because of his sympathetic attitude toward small mine problems. Young kept very close contact with Senator Scrugham's Subcommittee on Mining and Minerals Industry, having been appointed by Charles Wilson as liaison officer between the committee and WPB.

WPB Vice-Chairman Anderson also came up via the aluminum division route. So three top positions are filled by the aluminum crowd at the same time these metals are permitted to reenter the industrial field of civilian supply.

● Will Freeze Surplus Metals

Senator Carl Hayden of Arizona has received a promise from Senator Murray of Montana, chairman of the Senate Military Affairs Committee War Contracts subcommittee which will deal with surplus property legislation, that a clause will be inserted in any surplus property bill drafted by his subcommittee to freeze surplus government-owned stockpiles of critical and strategic minerals and metals left over at the termination of hostilities for use exclusively by the Army and Navy in some future national emergency.

● Where Is Bill Batt?

Since the public announcement of Senator Scrugham's Subcommittee on Mining and Minerals Industry that it will inquire into our foreign minerals procurement program, the administration is reported to have under consideration an international conference for the purpose of arranging equal access to the world's mineral supplies. This is a pet idea of Dr. C. K. Leith and it is said he and Baruch will represent the United States. Wonder why Bill Batt was not mentioned.

● Dame Rumor

It is rumored that James Douglas, director of the WPB Zinc Division, is being considered seriously for deputy vice-chairman of the Metals and Minerals Division.

BIG EQUIPMENT ORDER IS RECEIVED FROM RUSSIA

An order for 800 Fahrenwald flotation cells has been received in this country for delivery to Russia. Yankee ingenuity triumphs again! A. W. Fahrenwald, director of the Idaho Bureau of Mines and Geology and dean of the Idaho School of Mines, developed the equipment which carries his name and is one of the fortunate men who has been able to witness the adoption of his development throughout the mining world.

● Will Support Bi-Metallic Plank

Senator Murray of Montana expects to be named the Montana delegate on the Democratic Convention's Resolutions Committee. The Senator has stated that if a bi-metallic plank is formulated he will support it strongly.

● Too Hasty

The Taft amendment to the OPA bill which passed the Senate in such form as to wipe out all subsidies as of June 1945 probably will be held in the bill by the Senate and House conferees, even though the House of Representatives bill provided that raw material subsidies be protected.

In his haste to cut out all subsidies Taft has caught the Metals Reserve Company which administers the premium price plan and actually, if no change is made, it looks as though Metals Reserve will have to repudiate part of its commitments. However, Congress has a year in which to correct the matter and we can be sure the more sensible western senators and representatives will introduce legislation to take care of the situation.

● WPB Made Contracting Agency

Senate and House conferees, in executive session on S. 1718, the War Contract Termination Bill, agreed to retain an amendment to section 3 (g) of the House measure which makes the WPB a contracting agency within the meaning of the bill and which will finally, it is believed, make WPB responsible for a number of its mistakes. Letter contracts or oral instructions count as formal contracts under the quasi, informal, or defective contract section.

This means in effect that WPB, which has been the prime agent in stimulating industry to spur ahead and invest money for war production, but which was in no way responsible for its acts, will now be responsible for any quasi or informal contracts which it has entered into with metal producers, and those producers should be in a position to enter claims for contract termination.

The amendment to the House bill was proposed by Representative Harless of Arizona. He maintained that the mine operators who acted in good faith in getting out needed critical minerals and metals are just as much entitled to a fair deal as the contractor who is producing bombs or other war materiel.

● Strictly Confidential

It has been rumored that the date of the International Monetary Conference to be held at Bretton Woods, New Hampshire, was chosen by Secretary Morgenthau or his advisors so as to make it practically impossible for Congressional representatives to be present. Henry detests prying eyes and ears and so, probably, do the British experts he is so chummy with.

● Quicksilver Price Drops

For the first time since the war began, quicksilver prices have broken to below $100 per flask. Round lots of 100 flasks or more can be bought for $97 a flask, as contrasted with the wartime high of $210 a flask. Prices have dropped steadily since the first of the year, following the cancellation of contracts with quicksilver producers by Metals Reserve Company.

AMERICAN METAL MARKET
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New York City
JUL 19 1944

Magnesium

General Preference Order M-2-b As Amended July 15th

WASHINGTON.—The following are the changes effected in General Preference Order M-2-b—Magnesium—as amended July 15th by the War Production Board:

Section 921.16 (General Preference Order M-2-b) is amended to read as follows:

921.16 General Preference Order M-2-b (a) **Definitions.** For the purposes of this order:

(1) "Unfabricated magnesium" means any metal in ingot or other raw form, including sticks, the principal ingredient of which by weight is the element magnesium.

(2) "Magnesium products" means any basic forms (such as, but not limited to, castings, extrusions (other than sticks), sheet, strip, plate, forgings, and powder the principal ingredient of which by weight is magnesium.

(3) "Magnesium scrap" means any scrap material (except sawings, grindings, sweepings, and similar fines), the principal ingredient of which by weight is magnesium, generated in the course of any industrial process, or any discarded magnesium products, which must be remelted to be of value for further use. The term "magnesium scrap" also includes any dross or sludge resulting from melting magnesium or magnesium scrap, when the dross or sludge contains at least 20% of magnesium by weight.

(4) "Producer" means any person who makes unfabricated magnesium, in whole or in part, from a non-metallic raw material.

(5) "Approved smelter" means one of the smelting plants listed on Exhibit A.

(6) "Fabricator" means any person, including pattern shops, foundries, and powder grinders, who make magnesium products.

(7) "Civilian purchase order" means any purchase order for an article which is not to be delivered directly or indirectly to the United States Army or Navy, the Maritime Commission, the War Shipping Administration, or any foreign country under the Lend-Lease Act.

(b) **Delivery and use of unfabricated magnesium.**

(1) Except as provided in paragraph (m) with respect to dead stock, no person shall deliver, accept delivery of or use unfabricated magnesium without the written specific authorization of the War Production Board.

(2) A person who seeks the specific authorization of the War Production Board to accept unfabricated magnesium and to use it, and who seeks specific authorization for his supplier to deliver unfabricated magnesium, should apply monthly by letter and duplicate stating the form, alloy and other specifications of the unfabricated magnesium required, the amount in pounds of each type of unfabricated magnesium, the magnesium product to be made from each type of unfabricated magnesium or other use to which it is to be put, and the month in which, and the address to which the unfabricated magnesium is to be shipped. Such application should be made by the 10th of the month preceding the month of requested delivery.

(c) **Use of magnesium products permitted on military and aircraft orders.** Magnesium products may be used in making any items prescribed for use by and produced for the United States Army or Navy, Maritime Commission, the War Shipping Administration, or the Army or Navy of any foreign country, and in making any aircraft or aircraft components or airborne equipment.

(d) **Use of magnesium products for experimental purposes.** Magnesium products may be used for research, developmental, or experimental purposes, including the making of experimental models, to the extent permitted by applicable W.P.B. orders and regulations.

(e) **Use of magnesium products as substitute for other metal.** (1) In adding to the uses mentioned above, any person may use magnesium products as a substitute for any other metal in the manufacture of any article (including parts, components and sub-assemblies) if he does not make more units for civilian purchase orders in any quarter than the number of units of the same size he lawfully made out of other metal for civilian purchase orders in the second quarter of 1944. Also, without regard to second quarter production, magnesium products may be used as a substitute for any other metal allowed by W.P.B. orders in the following cases:

(2) A person whose output of an article is expressly limited to a specific number of units per quarter or a specified dollar amount (either under a W.P.B. order or by an authorized production schedule under the Controlled Materials Plan or Priorities Regulation 11-B) may use magnesium products in place of other permitted metal as long as he does not exceed these limits.

(3) A person whose output is not restricted by a specific unit or dollar limit but is covered by a W.P.B. order restricting his use of other metal during a given period to a specified percentage of his previous use, may use magnesium products as a substitute for other metal as long as the total number of units of the article which he makes during the period, and the size of the units, is not greater than he uses magnesium products for all or part of his production than it could be under the W.P.B. order if he used other metal exclusively.

(4) A person whose output is not restricted in any of the ways mentioned in (2) or (3) above, and who has been specifically allotted steel, copper or aluminum for the third quarter of 1944 to make an article under C.M.P., may use magnesium products to take the place of the allotted steel, copper or aluminum as long as he does not increase his total production in the quarter (including production from magnesium as well as from steel, copper and aluminum) over the number of units of the same size he could have made with the allotted steel, copper and aluminum only. In the fourth quarter of 1944 and subsequent quarters, his production will not be restricted except as may be otherwise provided.

(f) **Restrictions in other orders on use of magnesium products superseded.** All restrictions in other W.P.B. orders as to the use of magnesium products (whether referred to by name or as a metal) no longer apply. However, magnesium products obtained with priorities assistance for a particular purpose may not be used for other purposes except as permitted in applicable Priorities Regulations.

(g) **Other uses of magnesium products.** Except as stated above, no person may use magnesium products without the specific authorization in writting of the W.P.B. Authorization to accept a delivery of magnesium products for a particular purpose is equivalent to authorization to use it for that purpose. Anyone who wants specific authorization of the W.P.B. to use magnesium products for a purpose not permitted above and does not need an exemption from any order of the W.P.B. (or an authorized production schedule), may apply by letter to the Aluminum and Magnesium Division, War Production Board, Washington 25, D. C., Ref.: M-2-b. The letter should be filed in duplicate and should contain substantially the information numbered as shown below:

(1) Weight, form and alloy of magnesium products for which authorization to use is requested.

(2) The number of months the quantity of magnesium products requested will cover estimated requirements.

(3) The part to be fabricated or other use to be made of the magnesium product requested.

(4) The article into which such part will be incorporated and end use of the article.

(5) Manpower information on form WPB-3820, or, if granting the authorization will not involve any increase in number of production employes in applicant's plant, a statement to that effect.

(h) **Appeals for relief from quantity restrictions.**..If a person wants to use magnesium products as a substitute for other metal to make an article in greater quantity than is allowed by paragraph (e) of this order, and believes that his case involves exceptional conditions warranting relief, he may appeal to the W.P.B. as explained in Priorities Regulation 16. The appeal should be filed with the Aluminum and Magnesium Division as an appeal from this order except that if he also wants relief from quantity restrictions imposed by another order of the W.P.B. governing the article he is making, he should appeal from the other order.

(i) **How fabricators fill orders for magnesium products.** Every fabricator shall fill, in preference to all other orders, those orders for magnesium products which he is specifically authorized in writing by the W.P.B. (or, in the case of certain deliveries for aircraft products, by the Aircraft Scheduling Unit of the Aircraft Resources Control Office) to deliver before October 1, 1944. All orders for magnesium products which are not so authorized shall be filled according to preference ratings as provided in Priorities Regulation 1.

(j) **Prohibition against alloying, contamination, and debasement.** No person shall alloy, contaminate or debase unfabricated magnesium except as the War Production Board may specifically authorize in writing.

(k) **Collection, segregation and use of scrap.** (1) Each person owning or generating magnesium scrap shall collect it, place it in containers, label the containers so as to identify the scrap, and otherwise prepare all such scrap for reprocessing. All magnesium scrap shall be kept free of contamination by other metals and materials, and otherwise handled in such manner so that it will be of acceptable quality for reprocessing.

(2) In addition, each person generating more than 1,500 pounds of magnesium scrap in any month beginning with December, 1943, shall thereafter segregate all magnesium scrap unless specifically authorized in writing by the War Production Board to do otherwise. Such scrap shall be segregated by alloys in accordance with the alloy designation of the American Society for Testing Materials. Commercially pure magnesium, and magnesium scrap of each alloy not described by such designations, shall be kept segregated.

(3) Each person receiving segregated magnesium scrap must keep such scrap segregated prior to its use to the same extent as when received by him, and if he redelivers such scrap, he shall do so segregated to the same extent as when it was received by him.

(4) Any fabricator may use any magnesium scrap generated in his plant (or any casting of his own manufacture rejected or spoiled by another person) but only (i) if the scrap is remelted and refabricated in such plant into products for the production of which the fabricator is currently obtaining deliveries of unfabricated magnesium in conformity with this order and (ii) if, in estimating, applying for, and ordering such magnesium, the fabricator reduces his requirements by an amount which represents a reasonable anticipation of the amount of magnesium scrap which will be recoverable for re-use under this paragraph.

(l) **Disposition of all scrap.** (1) Except as the War Production Board may specifically authorize in writing, any person, other than a producer or approved smelter, owning any magnesium scrap, shall sell or deliver for processing on toll all such scrap at reasonable intervals to a producer or approved smelter and shall not use or dispose of it in any other way. However, a person who has found a new magnesium casting to be defective or has spoiled it, may deliver the casting back to the foundry which produced it.

(2) Except as specifically authorized in writing by the War Production Board, no producer or approved smelter shall mix two or more alloys during the melting of scrap.

(3) Unless specifically authorized by the War Production Board in writing, no person other than a producer or approved smelter shall accept delivery of any magnesium scrap except that a foundry may accept delivery of a casting of its own manufacture which has been rejected or spoiled in machining.

(m) **Dead Stock.** All unfabricated magnesium and magnesium products which are not being used in, or which are in excess of reasonable needs for, the manufacture of items approved by written specific authorization, may be sold subject to the restrictions of Priorities Regulation No. 13.

(n) **Requests for authorizations and other communications.** All requests for authorizations under this order shall be filed in duplicate and shall give the relevant facts, including any information specifically called for above. All such requests and other communications regarding this order should be addressed to the War Production Board, Aluminum and Magnesium Division, Washington 25, D. C., Ref.: M-2-b.

(o) **Special directions.** The War Production Board may issue special directions with respect to the ordering, production, delivery, and receipt and use of magnesium and magnesium products.

(p) **Report of operations.** Any person who in any calendar month has had in inventory any unfabricated magnesium, magnesium products, or magnesium scrap, shall file such reports as may be required from time to time by the War Production Board, subject to approval by the Bureau of the Budget under the Federal Reports Act of 1942.

(q) **Intra-company deliveries.** The provisions of this order with respect to deliveries prohibit or restrict deliveries not only to other persons, including affiliates and subsidiaries, but also deliveries from one branch, division, or section of a single enterprise to another branch, division, or section of the same or any other enterprise under common ownership or control.

(r) **Applicability of regulations.** This order and all transactions affected thereby are subject to all applicable regulations of the War Production Board, as amended from time to time.

(s) **Violations.** Any person who wilfully violates any provisions of this order, or who, in connection with this order, wilfully conceals a material fact or furnishes false information to any department or agency of the United States is guilty of a crime, and upon conviction may be punished by fine or imprisonment. In addition, any such person may be prohibited from making or obtaining further deliveries of, or from processing or using, material under priority control and may be deprived of priorities assistance.

Issued this 15th day of July, 1944.

WAR PRODUCTION BOARD,
By J. JOSEPH WHELAN,
Recording Secretary.

SANTA CRUZ, CALIF.
SANTA CRUZ SENTINEL-NEWS
JULY 30, 1944

Magnesium Output Ordered Curtailed

Washington, July 29 (AP) — The war production board today ordered termination of production at the Dow Magnesium corporation plant at Marysville, Mich., and reduced the output schedules of four other magnesium plants.

The action trims overall magnesium output 7,517,000 pounds a month. It was taken, WPB said, to "bring surplus supplies of magnesium more into line with the nation's stockpile objectives."

The production curtailments were ordered at the plants of the Dow corporation in Texas, Ohio, at Spokane, Wash., and at Las Vegas, Nevada.

The Tribune
Chicago, Ill.
JUL 30 1944

... speed in the face of declining military demand.

BIG REDUCTIONS IN MAGNESIUM OUTPUT ORDERED

Washington, D. C., July 29 (AP).—The WPB today ordered termination of production at the Dow Magnesium corporation plant at Marysville, Mich., and reduced the output of four other magnesium plants.

The action trims overall magnesium output 7,517,000 pounds a month to "bring surplus supplies of magnesium more into line with the nation's stockpile objectives," WPB said.

The production curtailments were ordered at the plants of the Dow corporation, Velasco, Tex., from 6,600,000 pounds a month to 6 million pounds; Magnesium Reduction company, Lucky, O., from 1,050,000 pounds to 833,000; Electric Metallurgical company, Spokane, Wash., from 2,300,000 pounds to 1,200,000; and Basic Magnesium, Inc., Las Vegas, Nev., from 6,500,000 to 4,500,000.

The order eliminates production of 3,600,000 pounds monthly at the Dow Marysville plant. WPB said the actual shutdown date had not been determined.

STAR
Washington, D. C.
AUG 20 1944

Senate Group Moves To Lighten Surplus Disposal Controls

By the Associated Press.

In a move to tighten congressional control over disposition of Government-owned surplus war property, the Senate Military Affairs Committee yesterday approved a proposal to require quarterly reports to Senate and House from a projected surplus property board.

The action followed Friday's acceptance of an amendment to the Murray-Stewart-Taft property disposal bill to substitute an eight-member board to direct disposals for other pending legislation calling for a single administrator.

Senator O'Mahoney, Democrat, of Wyoming, who sponsored the amendment, House is expected to conclude action might be reached tomorrow. The House is expeced to conclude action on a separate bill early this week.

Under the O'Mahoney amendment, the board would be required to submit quarterly reports containing a statement of all properties disposed of and the value received as well as recommendations for further necessary legislation.

This would be preceded by an over-all report six months after the enactment of the bill giving Congress a detailed statement on all classes of Government-owned property, including aluminum, rubber, chemical, aviation gasoline, iron and steel, aircraft, shipyard plants and transportation, radio and processing facilities. Also required would be information on processes, techniques and inventions.

The board would be authorized to dispose of aircraft plants, shipyards, transportation facilities and radio and electrical equipment in its discretion, but it could not sell aluminum, magnesium, rubber, chemical, aviation gasoline, iron and steel plants or processes, techniques and inventions "until 30 days after a report to Congress ...

STEEL
Cleveland, Ohio
JUL 31 1944

CRITICAL MATERIALS

Shift of Aluminum, Magnesium to Group III Features New Supply List

Reflects excess of supply over current war and essential industrial needs. Are first of the big-tonnage nonferrous metals to reach that group since early in 1942. Supply of many fabricated metal products continue tighter than primary metals

MALLEABLE iron castings, small and medium sized steel castings, automotive-type gray iron castings, forgings, flat-rolled steel products, cold-drawn seamless tubing, rails and wire rope, quality carbon bars and forging billets are listed in group I (materials in insufficient supply for essential requirements) of the latest Material Substitutions and Supply list released by the Conservation Division, War Production Board.

Nonferrous shortages are in copper-base alloy rod, bar, wire, tubing over 4 inches and condenser tubing; all insulated copper wire, cable cords (other than weatherproof wire and cable). Similar shortages are found in tungsten and molybdenum rod, wire and sheet, and to some extent in aluminum foil.

Shifting of the position of aluminum and magnesium from group II, the list of materials currently in balance between supply and demand, to group III, the materials that exceed current war and essential industrial needs, was one of the outstanding features of the report. These are the first important tonnage nonferrous metals to reach that group since early in 1942. Zinc and lead also have eased but remain in group II. "The supply of many fabricated and semifabricated metal products continues to be tighter than the metals themselves, "says Howard Coonley, director of the division, "because of scarcities of manpower or facilities.

"The lumber supply remains critical, especially for crating. Bituminous coal and residual fuel oil (except on the Pacific Coast) are currently in approximate balance, but both probably will be in short supply by winter. For this reason, users should order their winter fuel now while delivery facilities are available.

"The improved materials situation on many items reflects the results of both strict government regulation and voluntary co-operation by industry. The progress of the war probably will determine further improvement in the materials situation."

In addition to the ferrous and nonferrous metals mentioned above as being in short supply, the following metals are in group I: Cadmium, chromium metal, sodium, tin, columbium, and nickel (including monel).

Supplies of the following metals (in group II) are sufficient to meet war demands, plus essential industrial demands within the limits imposed by existing administrative controlling orders: Beryllium, bismuth, refined copper, lead,

HOWARD COONLEY

platinum, silver, tantalum, zinc, cobalt, ferrochromium, and steel (except items in groups I and III).

Supplies of the following group III metals, except for local shortages, are available for essential uses: Aluminum, antimony, calcium, gold, magnesium, mercury, palladium, ferroboron, ferromanganese, ferrosilicon, ferrotitanium, ferrotungsten, ferrovanadium, molybdenum, silicomanganese, silvery iron, zirconium ferroalloys, forgings (except drop and upset), gray iron castings (except automotive), pig iron, all types of reinforcing steel, and rerolled rail.

Construction Activity Shows Slight Seasonal Increase

Construction activity in the United States during the first half of this year showed the first break in the long monthly series of decreases in evidence since August, 1942, the War Production Board said last week.

The slight upturn of about 3 per cent, which began in April, was due to mild seasonal increases in private construction as public construction continued its long decline. While it is expected that this trend will continue through the early summer, seasonal factors and decreases in public construction will cause the downtrend to be resumed in the fall, WPB said.

Total new construction activity during the first half of 1944 amounted to $1,874,000,000, a decline of 58 per cent from the first half of 1943 and 40 per cent from the second half of 1943. This was due primarily to decreases of 70 per cent and 50 per cent, respectively, in public construction as private construction fell off only 4 per cent and 11 per cent over the same time period.

For 1944 as a whole, total construction activity is expected to be only about $3,500,000,000, or 54 per cent less than in 1943. The steepest decline is expected to fall in public construction activity with a drop of 65 per cent from 1943, while private construction for the year is expected to drop about 10 per cent.

Public construction activity accounted for more than $1,100 million during the first half of this year as compared with $3,770 million during the first half of 1943. Over the same period of time, military construction dropped from $1,550 million to $380 million; public industrial fell from $1,309 million to $357 million; public housing from $400 million to $130 million. All other public construction dropped less sharply from $500 million to $300 million.

Copper Division Handling All Components for Wire

All component parts going into copper wire and cable now will be handled by the Copper Division, which has been made a claimant agency, the War Production Board has informed the industry. The supply of components is tight, but additional capacity for some elements may soon be provided and delivery of others may be assured by direction, WPB said. Based on the present order pattern, third-quarter requirements for copper wire and cable will exceed the productive capacity of the industry.

Tight supplies of materials and facilities have necessitated directives to all copper wire mill warehouses and all copper wire mills, establishing a quota limiting the shipments on "V-3" orders to consumers, dealers and repairmen operating under Controlled Materials Plan regulation No. 9.

Appointments-Resignations

Russell J. Greenly of Carnegie-Illinois Steel Corp. has joined the staff of the Steel Division, War Production Board, as assistant to Mr. Longfield, assistant director of production.

° ° °

W. S. Murphy has resigned as chief, Gold and Silver Section, Miscellaneous Minerals Division, War Production Board. Plans are being made to merge the Gold and Silver Section with the Rare Metals and Mercury section with Henry E. Stauss, now head of the Rare Metals Section, as the new chief.

° ° °

Lawrence A. Appley has been appointed a member-at-large of the War Manpower Commission's National Management Labor Committee. He resigned in July as deputy chairman.

ENGINEERING AND MINING JOURNAL

"For over three-quarters of a century the outstanding authority of the metal and non-metallic, milling, smelting and refining industries."

McGraw-Hill, 330 W. 42nd St., New York City

A. H. Bunker

Harris & Ewing

Philip D. Wilson

Howard I. Young

Sixfold Shuffle of WPB Mineral Personnel

Announcement has been made of the appointment of a new War Production Board vice chairman for Metals and Minerals and other organizational shifts of interest to the mining industry.

The new director of mineral policies and activities of WPB is Philip D. Wilson, who has recently been director of the Aluminum-Magnesium Division of WPB. He succeeds Arthur H. Bunker, who was appointed vice chairman for metals and minerals when this office was created in January.

Many years of experience in mining have qualified Mr. Wilson for the important responsibility he now bears. He is a native of Chicago, and a graduate of Princeton and the Columbia University School of Mines. He was engaged in the copper industry in Arizona from 1911 to 1924, with the Phelps Dodge Corporation and the Calumet & Arizona Mining Company. Later, he joined the American Metal Company, Ltd., working in North and South America, Europe and South Africa in the exploration, development and management of mining properties. At the time he joined the Office of Production Management, WPB's predecessor, Mr. Wilson was vice chairman of Pardners Mines Corporation, New York, N.Y., with interests in many parts of the world.

Mr. Bunker's vacation of the metals and minerals vice chairmanship is due to his advancement to the post of deputy executive vice chairman of WPB, in which capacity he is also vice chairman of the important Production Executive Committee. In this position it is expected that he will be in charge of cut-backs, and will succeed Charles E. Wilson as executive vice chairman.

Announcement is also made of the resignation of Howard I. Young, well-known mining executive, as deputy vice chairman for Metals and Minerals. Mr. Young will resume full-time control of the American Zinc, Lead & Smelting Co., of which he is president. The return of Messrs. Wilson and Young to private business is conditioned by the circumstances that the urgent production programs which they came to Washington to assist have been substantially accomplished, and their talents are required to direct the adaptation of their companies to postwar conditions.

James Douglas, who was director of the Zinc Division, succeeds Howard Young as deputy vice chairman for Metals and Minerals. The vacancy left by Mr. Douglas has been filled by consolidating the zinc and tin-lead divisions under Erwin Vogelsang, who has been director of the Tin-Lead Division.

Succeeding Philip Wilson as director of the Aluminum and Magnesium Division is George Heikes, who for three years served in the Zinc Division of WPB and its predecessor agencies. Mr. Heikes is returning to government service from his present post with the Olin Corporation, Tacoma, Wash.

Harris & Ewing

James Douglas

O.W.I. photo

Erwin Vogelsang

Geo. C. Heikes

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MAGNESIUM is now being made in this country at a cost of 13 cents a pound, exclusive of depreciation. Where are those who said it couldn't be done?

SALT LAKE CITY, UTAH, TRIBUNE
Cir. 58,522; Sunday 94,635.
AUGUST 8, 1944

U. S. Magnesium Plants Far Overbuilt for War

By Harry J. Brown

WASHINGTON, Aug. 7 — Behind the order of the war production board, curtailing the output of metallic magnesium by 7,517,000 lbs. a month, is the admitted fact that our wartime magnesium industry was grossly and unjustifiably overbuilt. The comparatively new white metal has been in far less demand than the army and navy anticipated when they brought pressure to bear on the war production board and the defense plant corporation, soon after the war started, with the result that the stock pile of magnesium has grown out of bounds, and far exceeds any existing or anticipated needs for the remainder of the war period. But the curtailment is officially attributed to man power shortage in other essential industries and a desire to release labor from the magnesium plants, so the men may be shifted to strategic metal mines and mills, or be sent into other types of war industries.

This is the second time in five months that W P B has cut down on the magnesium program. The curtailment ordered in March was comparable to that which has just gone into effect. The two orders, considered together, lead to the inescapable conclusion that in its mad rush to be prepared, the government built fully twice the capacity it actually needed for producing metallic magnesium, due, first to excessive estimates by the armed services, and secondly, to the reluctance of many industries, particularly the airplane industry, to widely substitute magnesium for aluminum in the manufacture of airplanes.

Started Last March

Last March the war production board ordered the closing of 4 units at the Basic Magnesium plant at Las Vegas, Nev. Two more units are now being closed, meaning that this plant, for the future, will operate at less than half its capacity. The monthly output at Basic is being reduced from 6,500,000 lbs. to 4,500,000 lbs.

The heaviest cut of all, however, was made at Marysville, Mich., where one of the Dow Magnesium Corp. plants, which had been producing 3,600,000 lbs. of magnesium a month, from brine, has been closed completely, while another Dow plant making magnesium from seawater, at Velasco, Tex., is cut only from 6,600,000 lbs. to 6,000,000 lbs. a month. It has been demonstrated that it is cheaper to produce magnesium from Michigan brine than from seawater, but the Michigan plant is the one that has been put out of operation. In that case it manifestly is true that there is an acute labor shortage in neighboring plants where tanks, trucks, tractors, and mobile artillery are being made.

Hits Spokane

The magnesium plant at Spokane, which was heavily cut as to quota in March, is now further reduced from 2,300,000 lbs. to 1,200,000 lbs. But as to that plant, it was disclosed at the time of the March order that it was nowhere approaching its assigned quota, and it may be that in the ensuing months that plant has not been able to meet even its reduced quota. Inability to secure adequate man power was the reason assigned for the low output at Spokane, and the labor situation has not improved in the Pacific northwest during recent months—quite the contrary.

Manpower shortage is not the major motive behind the curtailment of the production of metallic magnesium. The fact that the metal has been piling up until today it is a drug on the market, combined with the fact that industry is not disposed to substitute magnesium for the cheaper aluminum, is a more potent factor.

The defense plant corporation recently announced its purpose to send engineers to England to make a study of their methods of fabricating magnesium, in the hope of building up a new demand for this metal in the United States when the war is over. D P C is anxious, during postwar days, to get rid of the magnesium plants which were built with funds which it advanced, and which it hoped, in time, to recover in large part, through sale of the properties. With the industry over-built, unless new outlets can be found for the surplus magnesium which the army and navy cannot use, and which plane manufacturers hesitate to use, except in limited amounts, the D P C is aware that it may have a number of white elephants on its hands.

The W P B says that Las Vegas and Spokane "are in tight labor areas and have experienced heavy labor turnover." They add that "the reductions in production at those 2 plants are expected to ease the turnover problem."

NEW YORK, N. Y., TIMES
Cir. 424,277
AUGUST 3, 1944

Gets Magnesium Group Post

Perry D. Helser, formerly chief of the magnesium branch of the War Production Board, has been named secretary-director of the newly formed Magnesium Association, 30 Rockefeller Plaza. The organization, formed to increase the use of magnesium, is composed of producers, fabricators, smelters and consumers. E. S. Christiansen, vice president of Apex Smelting Company, Chicago, is president of the organization; C. C. Loomis, president of the New England Lime Company, Canaan, Conn., is vice president, and C. E. Larson, manager of operations, White Metal Rolling and Stamping Corporation, Brooklyn, is treasurer.

MANUFACTURERS RECORD
"The South's Business Paper for more than 60 years—Published Monthly for Business Executives and Industrialists."
Baltimore, Md.
AUG 1944

Magnesium Production Cut

War Production Board announced recently that the monthly production schedules of four magnesium plants have been reduced and that of a fifth plant terminated in order to bring surplus supplies of magnesium more in line with the nation's stock pile objectives. The curtailment at these plants, all of them Government-owned, will result in a reduction of 7,517,000 pounds per month in magnesium production. Manpower considerations were the principal criterion in the selection of the plants to be curtailed. WPB said it had been informed by the War Manpower Commission that all plants affected are in or immediately adjacent to tight labor areas and that jobs are available in war plants and strategic metal mines and mills for all workers who are released as a result of the cutbacks.

AMERICAN METAL MARKET
"Leading Iron, Steel and Metal Newspaper—Recognized price and market authority."
New York City
JUL 18 1944

Regulations Permitting Greater Use Of Aluminum, Magnesium For Essential Civilian Requirements Announced

Some Controls Retained To Assure That Manpower Needs For War Production Are Fully Met—No Immediate Large Scale Resumption Expected

WASHINGTON, July 17.—Rules permitting wide, new uses of aluminum for essential products were announced by the War Production Board.

These rules include provisions for substitution of aluminum, now in relatively free supply, for other metals and critical materials not so readily available.

These rules, together with the lifting of restrictions on the use of magnesium announced at the same time, conform to recent decisions of W.P.B. to lay the groundwork for eventual conversion of industrial production to peacetime output, at the same time assuring that war demands are met, W.P.B. said.

War Production Board officials emphasized that although the new order still preserves some restrictions, which are considered essential to protect war production, anyone who wants to use aluminum for any purpose not covered by the order, or who wants to increase his use over the allowed limits, may ask for permission under regular authorization and appeal procedures.

Controls that are retained over aluminum are chiefly to assure that manpower requirements of war production are fully met and that labor is not diverted to production of peacetime goods. At the same time, it was emphasized by W.P.B. officials that no immediate large-scale resumption of civilian production is expected. War demands still come first—and will continue to come first until Germany and Japan are defeated, the officials stressed.

The new rules relating to use of aluminum, contained in Supplementary Order M-1-i, provide that the metal may be used in the manufacture of cans, subject to packing quotas applicable to all cans under Order M-81, and for making pots and pans to the extent allowed by the L-30 series of W.P.B. orders. The use of aluminum was formerly forbidden for these products. In addition, rules relating to the use of aluminum in the manufacture of closures have been liberalized.

All other products that previously could be made from aluminum continue to be permitted under the revised order.

Furthermore, aluminum may be substituted for any other metal in the manufacture of any item. The order contains restrictions preventing this substitution from creating an increase in total production — which might use too much aluminum or divert manpower from more essential operations.

All restrictions on use of aluminum in W.P.B. orders other than M-1-i, whether it is referred to specifically as aluminum or merely as a metal, no longer apply. However, rules relating to aluminum scrap (order M-1-d) and to aluminum pigment (M-1-g) are not affected by the changes.

Persons who desire to use aluminum for purposes other than (1) manufacture of articles permitted under permitted Order M-1-i, or (2) substitutes for other metals may apply to the Aluminum and Magnesium Division, War Production Board, Washington 25, D. C., for specific permission to do so. Such applications should be made by letter in duplicate, and should indicate substantially the following information:

1. Weight, form and alloy of aluminum, for which authorization to use is requested.
2. The number of months the quantity of aluminum requested will cover estimated requirements.
3. The part to be fabricated, or other use to be made of the aluminum requested.
4. The product into which such part will be incorporated, and end-use of the product.
5. If previous requests for this use have been authorized or denied, give reference number of most recent authorization or denial.
6. Manpower information of Form W.P.B.-3820, or, if granting the authorization will not involve any increase in number of production employes in applicant's plant, a statement to that effect.

The amended order also contains an appeals provision, which may be used by persons who desire to use more aluminum for a specific purpose than they would be permitted to do under its provisions. Appeals should be filed with the Aluminum and Magnesium Division, to conform with provisions of Priorities Regulation No. 1 relating to appeals or according to the terms of a particular W.P.B. order if relief from its provisions is sought. If the case involves exceptional conditions that warrant relief, the appeal will be granted, W.P.B. said.

As a precautionary measure to assure that amounts of aluminum made available for production of civilian goods do not interfere with output of aluminum for military purposes, a deferred allotment procedure has been adopted. Aluminum may still be obtained under the usual allotment application procedures, but, especially for new uses, W.P.B. may issue "deferred allotments" of aluminum, which will permit producers to delay filling orders for aluminum going into civilian goods if they would interfere with war orders. This procedure is described in the new Direction 54 to Controlled Materials Plan Regulation No. 1.

Modifications of the magnesium order, M-2-b, lift restrictions on use of the metal in other than ingot or raw form and provide means for its distribution to civilian uses. It may be used as a substitute for other metals in the same way as aluminum, W.P.B. officials said.

Since there are no large civilian uses for magnesium at present, it is expected that its civilian uses will be largely for experimental purposes.

It will be made available for new civilian uses on preference ratings after previous allocations for war purposes have been met.

Orders implementing both the aluminum and magnesium rule changes are attached. They include: (1) the revision of Order M-1-i, the aluminum order; the revised Order M-2-b, making changes with respect to magnesium; and Direction No. 54 to C.M.P. Regulation No. 1, making provisions for deferred allotments.

DEMOCRAT—CHRONICLE
Rochester, N. Y.
JUL 28 1944

SENATORS MAP DISPOSAL PLAN FOR WAR GOODS

Would Use Regular Trade Channels For Surplus

Washington — (AP) — Placing at $103,000,000,000 the probable value of surplus war goods, a Senate subcommittee last night recommended disposal through "regular trade channels" wherever possible, assuring small business a substantial share.

In a preliminary report, the special small business subcommittee headed by Senator Stewart (D., Tenn.) also proposed that Congress pass upon the disposition of government-owned warplants costing $5,000,000 or more. Such plants would be leased for two years by the surplus property administrator, but final sale or disposition would require the lawmakers' approval.

The volume of surplus war materials, facilities and equipment contemplated in the report is roughly 17 times that which remained — about $6,000,000,000 worth—at the end of World War I.

Small Lot Sale Set

To discourage speculators, the subcommittee composed of Stewart and Senators Taft (R., Ohio) and Murray (D., Mont.) said Congress should direct that surplus property suitable for civilian use be sold in small lots, through regional offices, and that credit terms be made available to established business concerns.

The report suggested that the Smaller War Plants Corporation be authorized to buy surplus supplies and resell to small businesses as a curb on monopolistic trends.

The report suggested preference to veterans who need equipment or supplies for post-war civilian business. Post exchanges and ship's stores for their benefit after the war could be operated, the group added.

Office Already Filled

Submitted with the report was a proposed bill to set up a surplus war property administration within the Office of War Mobilization. Such an office already exists, directed by W. L. Clayton. It was set up within OWM by executive order of President Roosevelt, Feb. 21, 1944. The bill proposes it as a policy control agency, with actual property disposal to be handled by the Army, Navy and other war agencies.

In proposing that disposition of $5,000,000 be left to Congress, the report said this policy should apply especially to aircraft, aircraft parts, synthetic rubber, high octane gasoline, aluminum, magnesium, steel, ships or shipyards and pipelines.

As a further safeguard the subcommittee said the attorney general's office also should review all property sales of more than $5,000,000.

JOURNAL OF COMMERCE
"America's Leading Business Newspaper"
New York City
JUL 17 1944

Curb on Aluminum, Magnesium Eased

First Step Taken by WPB for Reconversion to Peacetime Output

Text of orders relaxing curbs on aluminum, magnesium, on Page 15.

(Bureau of Journal of Commerce)

WASHINGTON, July 16. — The limited reconversion program mapped by the War Production Board in the face of strong military opposition got under way over the week-end with the issuance of orders relaxing restrictions upon the use of aluminum and magnesium for civilian manufacture.

One of four steps to be taken in the course of the next four weeks to expand civilian output, the first orders approved make possible the use of aluminum and magnesium in the production of a wide variety of essential as well as other civilian goods.

Maagnesium for Research

It was stressed by WPB that inasmuch as civilian uses for magnesium are strictly limited at present, the new regulations will in its case have the effect mainly of releasing the metal for experimental purposes.

In the case of aluminum, however, the relaxation of restrictions will be of immediate value to industry.

The new rules provide that:

1. Aluminum may be used in the manufacture of cans, subject to packing quotas, and for making pots and pans to extent allowed under existing limitation orders. The use of aluminum was previously forbidden for these products. In addition, the provisions relating to the use of aluminum for closures has been liberalized.

2. All other products that previously could be made from aluminum continue to be permitted under the revised order.

Replaces Other Metals

3. Aluminum may be substituted for any other metal in the manufacture of any item. The order contains restrictions preventing this substitution from creating an increase in total production—which might use too much aluminum or divert manpower from more essential operations.

4. All restrictions on use of aluminum in WPB orders other than M-1-I, whether it is referred to specifically as aluminum or merely as a metal, no longer apply. However, rules relating to aluminum scrap (Order M-1-D) and to aluminum pigment (M-1-G) are not affected by the changes.

5. In addition, the new order contains an appeals provision under which a manufacturer may seek approval for the use of the metal in the production of larger amount of civilian goods than permitted under existing quotas.

War Production Board officials emphasized that, although the new order still preserves some restrictions, which are considered essential to protect war production, anyone who wants to use aluminum for any purpose not covered by the order, or who wants to increase his use over the allowed limits, may ask for permission under regular authorization and appeal procedures.

Some Controls Kept

Controls that are retained over aluminum are chiefly to assure that manpower requirements of war production are fully met and that labor is not diverted to production of peacetime goods. At the same time, it was announced by WPB officials that no immediate large-scale resumption of civilian production is expected. War demands still come first—and will continue to come first until Germany and Japan are defeated, the officials stressed.

Persons who desire to use aluminum for purposes other than (1) manufacture of articles permitted under Order M-1-I, or (2) substitutes for other metals may apply to the Aluminum and Magnesium Division, War Production Board, Washington 25, D. C., for specific permission to do so. Such applications should be made by letter in duplicate, and should indicate substantially the following information:

1. Weight, form and alloy of aluminum, for which authorization to use is requested.

2. The number of months the aluminum requested will cover estimated requirements.

3. The part to be fabricated, or other use to be made of the aluminum requested.

End Use of Products

4. The product into which such part will be incorporated, and end-use of the product.

5. If previous requests for this use have been authorized or denied, give reference number of most recent authorization or denial.

6. Manpower information of Form WPB 3820, or, if granting the authorization will not involve any increase in number of production employes in applicant's plant, a statement to that effect.

As a precautionary measure to assure that amounts of aluminum made available for production of civilian goods do not interfere with output of aluminum for military purposes, a deferred allotment procedure has been adopted. Aluminum may still be obtained under the usual allotment application procedures, but, especially for new uses, WPB may issue "deferred allotments" of aluminum, which will permit producers to delay filling orders for aluminum going into civilian goods if they would interfere with war orders. This procedure is described in the new Direction 54 to Controlled Materials Plan Regulation No. 1.

Modifications of the magnesium order, M-2-B, lift restrictions on use of the metal in other than ingot or raw form and provide means for its distribution to civilian uses. It may be used as a substitute for other metals in the same way as aluminum, WPB officials said.

TIMES
New York, N. Y.
JUL 30 1944

GOVERNMENT CUTS MAGNESIUM OUTPUT

Curtails in Four U. S.-Owned Plants, Drops Schedule in One—Other Agency Action

Special to THE NEW YORK TIMES.

WASHINGTON, July 29—The War Production Board announced today that monthly production schedules of four magnesium plants have been reduced and that of a fifth plant terminated in order to bring surplus supplies of magnesium more in line with the nation's stockpile objectives.

The curtailment of these plants, all of them Government-owned, will result in a reduction of 7,517,000 pounds a month in magnesium production. Manpower considerations were the principal criterion in the selection of the plants to be curtailed.

The cutbacks are effective in plants of the Dow Magnesium Corporation at Maryville, Mich., and Velasco, Tex., and at the Magnesium Reduction Company plant at Luckey, Ohio; the Electric Metallurgical Company, Spokane, Wash., and Basic Magnesium, Inc., Las Vegas, Nev.

Other activities by war agencies today included:

RESIGNATION: John W. Iliff has resigned effective Aug. 1 as general counsel for the consumers' durable goods division, WPB, to join the law firm of Moyle & Wanless, Washington, D. C.

BICYCLES: The new national adult bicycle quota for August will be 19,500, an increase of 2,000 as compared with July, OPA announced.

HACKSAWS: Simplification and standardization specifications for hacksaw blades and bandsaws are provided in two new schedules to limitation order L-216, issued by WPB.

OWI: George W. Healy Jr., director of domestic operations, Office of War Information, today announced establishment in the domestic branch of a new graphics bureau, through which all government graphic activities will be coordinated. Mr. Healy also announced today the appointment of an outdoor advertising advisory committee of which Harry Crawford, of the Crawford Advertising Agency, is chairman.

BEANS: OPA announces an increase in the maximum prices of dry edible beans to allow for parity increase since the ceilings were established. The agency also announced a complete revision of the pricing structure for the beans and a slight increase in prices for certain grades of split peas to correct an error made in the original computations. The total increase of 40 cents a 100 pounds in bean prices is the amount certified by the War Food Administrator as necessary to meet the increase in parity. Of this amount, 25 cents is added to the former f.o.b prices and 15 cents is named as a margin for the first handler or dealer. For the three best known types of beans the new f.o.b. ceilings are $6.05 a 100 pounds for processor and $6.20 for dealers. The former ceiling was $5.80.

RUBBER HEELS: OPA ruled that rubber heels being made of higher quality by manufacturers because better materials are now available must be sold at the ceiling prices applicable since Nov. 1, 1943, to lower quality heels.

SUGAR: OPA ruled that consumers may apply to their local ration boards for certificates for use in replacement of sugar that is lost, damaged, destroyed or stolen.

PIGMENTS: Because of increasing war requirements, the pigment ultramarine blue will be made subject to allocation effective Aug. 1, under an amendment to the general allocation order M-300, WPB announced. The small order exemption without use certificate is 25 pounds a person a month.

DRIED FRUIT: OPA ruled that processors may make sales of dried fruits of the 1944 crop to the Government under an "adjustable pricing" order. The order, effective today, permits processors to enter into contracts for immediate deliveries of dried fruits at 1943 ceilings, with the provision that prices may be adjusted to the level of those which will be established by the agency later.

STAR—GAZETTE
Elmira, N. Y.
AUG 15 1944

WPB Eases Limitation on Civil Goods

Washington—(AP)—Rules which will permit business and labor to swing into civilian production when war contracts are curtailed were ordered into effect by the War Production Board today.

The action by Chairman Donald M. Nelson will permit individual manufacturers—if they have workers and machinery not needed for war—to produce several hundred consumer items whose production has been prohibited since the start of the war and before.

The list, announced last night, includes a host of office and household articles, but Nelson noted that the continuing stern limitations on manpower and materials will prevent any large increase in civilian goods "for the time being."

He emphasized, instead, the importance to the future economy of creating a mechanism to fill the holes left by war contract cancellations by saying:

"Above everything else, it is vital to arrange the machinery so that in the future, when military demands decline or change, the men, the facilities and the materials which are set free can speedily be put to other uses."

The action was the fourth and final order in the program announced by Nelson in mid-June. Opposition immediately flared up in the Army, Navy and War Manpower Commission, leading to a major controversy over whether the civilian-goods plan would divert labor from war production.

The dispute ended with agreement that the orders would issue in staggered sequence, the climactic fourth order being deferred until now. The previous three actions released certain controls on aluminum and magnesium, permitted manufacturers to make experimental models of postwar products, and to place orders for machines to be needed in peacetime production.

Subject to that limitation, WPB field offices in all major cities are empowered to make "spot" or local authorizations to manufacturers to go into civilian goods production if they have labor and machinery not needed for war work.

If an eligible manufacturer can make one of a long list of "preferred" items—those selected by WPB as being scarce and badly needed—he is entitled to a priority rating which will help him get materials.

If he can not make a preferred article, he may apply to produce any of the thousands of other articles whose production has so far been prevented by some 86 WPB limitation orders and conservation orders. Even gambling machines and phonographs thus became possible candidates for a return to production.

The list of preferred articles includes vacuum cleaners, electric ranges, gas but not electric refrigerators, wringers and mangles but not washing machines, lawn mowers, electric heaters and heating pads, oil burners, bicycles, virtually all types of enameled and cast iron ware, metal office furniture, sewing machines, church goods, electric fans, water heaters and storage batteries.

Simpler items were named as well, including ash cans, coal hods, funnels, pails and buckets, dinner pails, wash tubs, enameled percolators, egg beaters, clothes hangers, pot scourers, carpet sweepers, wash boards, electric irons, hair pins and bobbie pins.

PURCHASING
"Since 1915, the National Magazine for Purchasing Agents."
New York City
AUG 1944

...nually, and are made from reclaimed rags.

MAGNESIUM CONSERVATION BULLETIN NO. 3 SUSPENDED

The Operating Committee on aircraft materials conservation announces that since the issuance of Conservation Bulletin No. 3 dated June 9, 1943, the entire magnesium situation has shown considerable improvement. All aircraft requirements for magnesium are being met and fabricating facilities for all products, including sheets, forgings, extrusions, and sand, die and permanent mold castings are also adequate. Accordingly, conservation bulletin No. 3 is suspended.

ADDITIONAL CURTAILMENTS FOR ALUMINUM AND MAGNESIUM

TWO government-owned magnesium metal plants have been shut down, one at Manteca, California, operated by Permanente Metals Corporation, and one at Wingdale, New York, operated by Amco Magnesium Corporation. The shutdown at Wingdale will save coal, while the curtailment in California will conserve substantial amounts of natural gas, WPB stated. Both plants are listed among the high-cost producers, and therefore were selected for curtailment when excess supplies of magnesium metal gave an ample margin of safety.

The situation in magnesium is similar to that of aluminum where a further curtailment in production is being accomplished with the closing of the last four pot-lines at the aluminum reduction works at Queens, New York. The shutdown was ordered, WPB officials said, to bring virgin metal output more nearly into line with consumption. Requirements as originally estimated by the various government claimant agencies have been modified, making a curtailment of production advisable.

The Queens plant, while government owned, was operated by the Aluminum Company of America. It consisted of eight pot-lines, two of which were shut down at the beginning of the year, two more in the spring. The annual production capacity of the entire plant was 288,000,000 pounds. One of the principal reasons given for the selection of the Queens plant for curtailment was the fuel saving which would be realized by the cut in electric power deliveries. It is estimated that nearly 2,000,000 tons of bituminous coal a year will be conserved for other essential uses by the shutdown.

Total labor layoffs in all three plants will affect approximately 2,000 workers, it was stated by WPB, and arrangements have been made for the War Manpower Commission to handle their placement in other war industries.

WPB emphasizes the fact that curtailments have been only in virgin metal facilities. Production of fabricated aluminum and magnesium products and of metal made from scrap is not affected.

OIL PAINT & DRUG REPORTER
"The market authority since 1871 — Chemicals, Dyestuffs, Drugs, Paints, Oils, Fertilizers."
New York City
AUG 7 1944

Magnesium Production Curtailed by WPB

The War Production Board has announced that the monthly production schedules of four magnesium plants have been reduced and that of a fifth plant terminated in order to bring surplus supplies of magnesium more in line with the nation's stock pile objectives. The curtailment at these plants, all of them government-owned, will result in a reduction of 7,517,000 pounds per month in magnesium production. Manpower considerations were the principal criterion in the selection of the plants to be curtailed. The program is being put in effect as follows:—

	Pounds—Previous output	Pounds—New output
Dow Magnesium Corp. (Mich.)	3,600,000	.....
Dow Magnesium Corp. (Texas)	6,600,000	6,000,000
Magnesium Reduction Co.	1,050,000	833,000
Electro Metallurgical Co.	2,300,000	1,200,000
Basic Magnesium, Inc...	6,500,000	4,500,000

AUTOMOTIVE INDUSTRIES
"Land—Air—Water"
Philadelphia, Pa.
AUG 15 1944

Magnesium Production Cut to Less than Half

Under orders from WPB, the Dow Magnesium Corp. will terminate magnesium production at the large government-owned plant at Marysville, Mich. Also, operations will be suspended at the feeder plant at Ludington, Mich. Production will taper off during August and will cease by Sept. 1 at Marysville.

The order to halt production is part of a national reduction program which will curtail production at plants at Velasco, Texas; Luckey, O.; Spokane, Wash.; and Las Vegas, Nev. The national output of 20,050,000 pounds of magnesium will be shortened by 7,917,000 pounds under the order, but WPB states that the supply on hand is adequate to meet all needs. Aluminum and magnesium have recently been removed from the list of critical materials by that agency. It is understood, however, that the closed plants will be maintained in stand-by condition to be used if needed.

The Marysville plant had been producing 3,600,000 pounds of magnesium a month. Relatively high production costs, manpower shortage, a critical coal consumption problem, and transportation difficulties were given as reasons for halting operations by WPB.

OIL PAINT & DRUG REPORTER
"The market authority since 1871 — Chemicals, Dyestuffs, Drugs, Paints, Oils, Fertilizers."
New York City
AUG 7 1944

Trade Briefs

Magnesium salts production in California totaled 9,030 net tons.

CANADIAN FINANCE
"Insurance, Investment, Banking Executives' Study"
Stovel Building, Winnipeg, Canada
AUG 16 1944

METALS OF THE FUTURE

Aluminium, iron and magnesium will be principally relied upon for the metallics of the long-range future, in the opinion of the American Chemical Society. In a recent report it pointed out that mineral deposits are undergoing alarming depletion to meet the voracious demands of war. Aluminum, iron and magnesium are the only truly abundant structural metals in the earth's crust, which leads to an obvious conclusion.

The society states that methods of recovering aluminium from clays and iron from low-grade ore must be developed to practical applicability as the richer deposits become exhausted. There are, of course, tremendous quantities of rock in the earth's crust from which magnesium can be extracted. It can also be extracted from seawater.

It can be assumed, of course, that even if the current tremendous demand for metals continues for years, the shift from high-grade to low-grade sources of metallic minerals will be a gradual one. Canada's copper resources, for example, are still enormous and the iron deposits at Steep Rock Lake promise to be very large.

TIMES—UNION
Rochester, N. Y.
AUG 15 1944

Civilian Production Rules Ordered Effective by WPB

Washington—(AP)—Rules which will permit business and labor to swing into civilian production when war contracts are curtailed were ordered into effect by the War Production Board today.

The action by Chairman Donald M. Nelson will permit individual manufacturers—if they have workers and machinery not needed for war—to produce several hundred consumer items whose production has been prohibited since the start of the war and before.

Stern Limitations

The list, announced last night, includes a host of office and household articles, but Nelson noted that the continuing stern limitations on man power and materials will prevent any large increase in civilian goods "for the time being."

He emphasized, instead, the importance to the future economy of creating a mechanism to fill the holes left by war contract cancellations by saying:

"Above everything else, it is vital to arrange the machinery so that in the future, when military demands decline or change, the men, the facilities and the materials which are set free can speedily be put to other uses."

The action was the fourth and final order in the program announced by Nelson in mid-June. Opposition immediately flared up in the Army, Navy and War Manpower Commission, leading to a major controversy over whether the civilian-goods plan would divert labor from war production.

Agreement Reached

The dispute ended with agreement that the orders would issue in staggered sequence, the climatic fourth order being deferred until now. The previous three actions released certain controls on aluminum and magnesium, permitted manufacturers to make experimental models of post-war products, and to place orders for machines to be needed in peacetime production.

Still not satisfied that the reservoir of munitions workers was protected, War Mobilization Director James F. Byrnes tightened up manpower controls by putting rigid ceilings on civilian as well as war plants in labor scarcity areas, and gave WMC representatives authority to veto any increase in civilian production under Nelson's program.

Subject to that limitation, WPB field offices in all major cities are empowered to make "spot" or local authorization to manufacturers to go into civilian goods production if they have labor and machinery not needed for war work.

Ratings Cited

If an eligible manufacturer can make one of a long list of "preferred" items—those selected by WPB as being scarce and badly needed—he is entitled to a priority rating which will help him get materials.

If he can not make a preferred article, he may apply to produce any of the thousands of other articles whose production has so far been prevented by some 86 WPB limitation orders and conservation orders. Even gambling machines and phonographs thus became possible candidates for a return to production. Officials hastily pointed out, however, that field officials will be guided by the supply of materials and parts and will disapprove any completely non-essential goods which would use up needed steel and copper or scarce parts like electric motors.

List Given

The list of preferred articles includes vacuum cleaners, electric ranges, gas but not electric refrigerators, wringers and mangles but not washing machines, lawn mowers, electric heaters and heating pads, oil burners, bicycles, virtually all types of enameled and cast iron ware, metal office furniture, sewing machines, church goods, electric fans, water heaters and storage batteries.

Simpler items were named as well, including ash cans, coal hods, funnels, pails and buckets, dinner pails, wash tubs, enameled percolators, egg beaters, clothes hangers, pot scourers, carpet sweepers, wash boards, electric irons, hair pins and bobbie pins.

The field offices will themselves handle all applications from small manufacturers, but will forward to Washington for final decision any application from firms of the following sizes: In the West Coast critical areas, companies employing more than 50 workers; in "acute" or "serious" labor areas elsewhere, firms of more than 100 workers; and in other areas, companies with a payroll of over 250.

ARGUS
Mt. Vernon, N. Y.
AUG 15 1944

Nelson Allows Civilian Output If War Permits

WASHINGTON, (AP) — Rules which will permit business and labor to swing into civilian production when war contracts are curtailed were ordered into effect by the War Production Board today.

The action by Chairman Donald M. Nelson will permit individual manufacturers—if they have workers and machinery not needed for war—to produce several hundred consumer items whose production has been prohibited since the start of the war and before.

For Home And Office

The list, announced last night, includes a host of office and household articles, but Mr. Nelson noted that the continuing stern limitations on manpower and materials will prevent any large increase in civilian goods "for the time being."

He emphasized, instead, the importance to the future economy of creating a mechanism to fill the holes left by war contract cancellations.

The action was the fourth and final order in the program. The previous three actions released certain controls of aluminum and magnesium, permitted manufacturers to make experimental models of postwar products, and to place orders for machines to be needed in peacetime production.

Vacuum Cleaners, Too

The list of preferred articles includes vacuum cleaners, electric ranges, gas but not electric refrigerators, mangles but not washing machines, lawn mowers, electric heaters and heating pads, oil burners, bicycles, virtually all types of enameled and cast iron ware, metal office furniture, sewing machines, church goods, electric fans, water heaters and storage batteries.

Simpler items were named as well, including ash cans, coal hods, funnels, pails and buckets, dinner pails, wash tubs, enameled percolators, egg beaters, clothes hangers, pot scourers, carpet sweepers, wash boards, electric irons, hair pins and bobbie pins.

JOURNAL OF COMMERCE
"America's Leading Business Newspaper"
New York City
AUG 8 1944

Big Magnesium Output Since '42

End Use Revealed by Bureau of Mines Consumption Review

Magnesium production is now more than four times greater than it was in 1942, it is indicated in an announcement of the Bureau of Mines which discloses that production of primary magnesium last year was nearly four times greater than during the preceding year.

Companies using electrolytic processes for producing magnesium accounted for over 85 per cent of total output, and the ferrosilicon and carbothermic processes accounted for the remaining 15 per cent. Four new plants were put in operation during the year including Dow Magnesium Co. at Marysville, Mich., Amco Magnesium Co. at Wingdale, N. Y., Electro Metallurgical Co. at Spokane, Wash., and Mathieson Alkali Works, Inc., at Lake Charles, La., and all primary plants were virtually completed during 1943. The average annual rate of magnesium output rose from 125,000 tons in January, 1943, to 236,000 tons in December, and reached a peak in January, 1944, when metal was produced at a record rate of 246,000 tons a year. Following this peak, cutbacks were effected during the first half of 1944 totaling about 39 per cent of installed capacity. Thus, it is likely that the high point of magnesium production has arrived and passed and that an output rate comparable to that in January, 1944 (about 84 per cent of total rated annual capacity) may not be reached again for at least a decade.

Of the magnesium-alloy structural products sold or used, the aircraft industry took 50 per cent, incendiary bomb casings 50 per cent, and other industries less than 1 per cent. Of that going into the aircraft industry, 64 per cent was for the manufacture of engines (including propellers), 23 per cent for wheels, 7 per cent for frames, and 6 per cent for accessories. Sand, die, and permanent mold castings comprised 96 per cent of all the magnesium-alloy structural products sold for or used in aircraft.

World production of magnesium in 1943 reached another all-time high mark of more than 269,000 metric tons—92 per cent more than the previous record of 140,000 tons set in 1942, and more than eight times the 1939 output. On the basis of estimates, it is thought that about 28 per cent of the output was under Axis control and 72 per cent under control of the United Nations. Production in 1944 will not greatly exceed that of 1943 inasmuch as all the major expansion programs of the various nations are thought to be virtually complete.

Consumption of Magnesium-base Saructural Products in 1941-43, By Alloy Uses, in Short Tons

	1942	1943
Aircraft—		
Engine	11,815	21,903
Frame	1,319	2,546
Wheel	4,152	7,698
Accessories	648	1,885
Incendiary bomb casings	4,735	33,988
Other industries	109	352
Total	22,788	68,372

SAN FRANCISCO, CAL., CALL-BULLETIN—CIR. 131,050
AUGUST 29, 1944

Slash in Magnesium

Following recent cutbacks in production, another heavy slash is expected to bring the output of magnesium by September 1 to less than 25 million pounds a month, or below 50 per cent of capacity. So far, the cutbacks have apparently been limited to government-owned plants, accounting for about 90 per cent of total magnesium capacity.

KNICKERBOCKER NEWS
Albany, N. Y.
AUG 15 1944

Civilian Goods Ban Eased Under New Nelson Order

Washington—(AP)—Rules which will permit business and labor to swing into civilian production when war contracts are curtailed were ordered into effect by the War Production Board today.

The action by Chairman Donald M. Nelson will permit individual manufacturers—if they have workers and machinery not needed for war—to produce several hundred consumer items whose production has been prohibited since the start of the war and before.

The list, announcel last night, includes a host of office and household articles, but Mr. Nelson noted the continuing stern limitations on manpower and materials will prevent any large increase in civilian goods "for the time being."

He emphasized, instead, the importance to the future economy of creating a mechanism to fill the holes left by war contract cancellations by saying:

"Above everything else, it is vital to arrange the machinery so that in the future, when military demands decline or change, the men, the facilities and the materials which are set free can speedily be put to other uses."

The action was the fourth and final order in the program announced by Mr. Nelson in mid-June. Opposition immediately flared up in the Army, Navy and War Manpower Commission, leading to a major controversy over whether the civilian goods plan would divert labor from war production.

Orders Staggered

The dispute ended with agreement that the orders would issue in staggered sequence, the climactic fourth order being deferred until now. The previous three actions released certain controls on aluminum and magnesium, permitted manufacturers to maxe experimental models of postwar products, and to place orders for machines to be needed in peacetime production.

Still not satisfied the reservoir of munitions workers was protected, War Mobilization Director James F. Byrnes tightened manpower controls by putting rigid ceilings on civilian as well as war plants in labor scarcity areas, and gave WMC representatives authority to veto any increase in civilian production under Mr. Nelson's program.

Subject to that limitation, WPB field offices in all major cities are empowered to make "spot" or local authorizations to manufacturers to go into civilian goods production if they have labor and machinery not needed for war work.

Gets Priority Rating

If an eligible manufacturer can make one of a long list of "preferred" items—those selected by WPB as being scarce and badly needed—he is entitled to a priority rating which will help him get materials.

If he can not make a preferred article, he may apply to produce any of the thousands of other articles whose production has so far been prevented by some 86 WPB limitation orders and conservation orders. Even gambling machines and phonographs thus became possible candidates for a return to production. Officials hastily pointed out, however, field officials will be guided by the supply of materials and parts and will disapprove any completely non-essential goods which would use up needed steel and copper or scarce parts like electric motors.

The list of preferred articles includes vacuum cleaners, electric ranges, gas but not electric refrigerators, wringers and mangles but not washing machines, lawn mowers, electric heaters and heating pads, oil burners, bicycles, virtually all types of enameled and cast iron ware, metal office furniture, sewing machines, church goods, electric fans, water heaters and storage batteries.

Simpler items were named as well, including ash cans, coal hods, funnels, pails and buckets, dinner pails, wash tubs, enameled percolators, egg beaters, clothes hangers, pot scourers, carpet sweepers, wash boards, electric irons, hair pins and bobbie pins.

The field offices will themselves handle all applications from small manufacturers, but will forward to Washington for final decision any application from firms of the following sizes: In the West Coast critical areas, companies employing more than 50 workers; in "acute" or "serious" labor areas elsewhere, firms of more than 100 workers, and in other areas, companies with a payroll of over 250.

BOSTON NEWS BUREAU
"The only daily financial newspaper published in New England."
Boston, Mass.
AUG 15 1944

Stiff Magnesium Cutback

Magnesium capacity, which had been mushroomed to 600,000,000 pounds a year by the Government under the pressure of urgent wartime needs, will be slashed fully 50% as of September 1, it was learned over the week-end, says The Journal of Commerce. Although there are six private factors in the magnesium producing field, fully 90% of the capacity they operate is Government-owned. A number of operators, however, had intended to buy Government facilities after the war. The coming drastic cutback will in some instances determine, in effect, who is to remain in the magnesium producing field after the war.

INDUSTRIAL FINISHING
"Devoted to Product Finishing in the Factory."
Indianapolis, Ind.
AUG 1944

* * *

Era of Light Metals—Magnesium's future is tremendous, says Prof. James E. Dorn of the University of California, because it is one of the few metals offering an unlimited supply; it can be recovered from sea water.

In the opinion of Dr. Dorn, a member of the west coast university's mechanical engineering faculty, magnesium alloys may be too expensive for our small postwar automobiles. He contends, however, that they will be widely used in our peacetime trucks, trailers and streamlined trains. Germany was ahead of the United States in using this metal on military aircraft at the beginning of the war, says Dr. Dorn, but we have been making swift advances in this sphere since Pearl Harbor.

AMERICAN METAL MARKET
"Leading Iron, Steel and Metal Newspaper—Recognized price and market authority."
New York City
AUG 2 1944

Primary Magnesium Production In 1943 Nearly Quadrupled 1942 Output

Production of primary magnesium in the United States in 1943 was nearly four times that in 1942 and for the second straight year exceeded combined domestic output since the founding of the industry in 1915, according to a report prepared by John H. Weitz and M. E. Trought of the Bureau of Mines, U. S. Department of the Interior. Output of primary metal in 1943 totaled 183,584 short tons compared with 48,963 tons in 1942.

Production, Sales, And Apparent Consumption Of Primary Magnesium In The United States, 1939-43, In Short Tons

Year	Production	Sales	Apparent consumption*
1939 ..	3,350	5,325	3,225
1940 ..	6,261	6,411	5,577
1941 ..	16,295	15,528	13,979
1942 ..	48,963	47,420	43,375
1943 ..	183,584	170,267	155,547

* Does not consider fluctuations in consumers' stocks and metal derived from scrap. Withdrawals from producers' stocks totaled 1,975 tons in 1939, and 150 tons in 1940; additions to producers' stocks totaled 767 tons in 1941; 1,543 tons in 1942, and 13,317 tons in 1943.

Companies using electrolytic processes for producing magnesium accounted for over 85% of total output, and the ferrosilicon and carbothermic processes accounted for the remaining 15%. Four new plants were put in operation during the year including Dow Magnesium Company at Marysville, Mich., Amco Magnesium Company, at Wingdale, N. Y., Electro Metallurgical Company, at Spokane, Wash., and Mathieson Alkali Works, Inc., at Lake Charles, La., and all primary metal plants were virtually completed during 1943. The average annual rate of magnesium output rose from 125,000 tons in January, 1943, to 236,000 tons in December, and reached a peak in January, 1944, when metal was produced at a record rate of 246,000 tons a year. Following this peak, cutbacks were effected during the first half of 1944 totalling about 39% of installed capacity. Thus, it is likely that the high point of magnesium production has arrived and passed and that an output rate comparable to that in January, 1944 (about 84% of total rated annual capacity) may not be reached again for at least a decade.

Recovery of secondary magnesium in 1943 totaled 11,404 short tons (including secondary magnesium incorporated in primary magnesium ingot) in 1943 and required the consumption of 13,909 tons of magnesium scrap, virtually all new scrap. Of the quantity recovered, 11,009 tons were as ingot, and 327 tons went into castings, 34 into aluminum alloys, 33 into chemical reagents and metallurgical processes, and one into zinc alloys.

Magnesium remained under allocation control by the War Production Board during 1943 to assure that virtually all of the metal was channeled into military uses for the production of airplanes and incendiary bombs. Apparent consumption totaled 155,547 tons—an increase of 259% over the 43,375 tons used in 1942. Of the primary magnesium shipped or used in 1943 (170,267 tons) approximately 64% was used in the manufacture of magnesium-base alloy structural products; 8% in other alloys, chiefly aluminum; 7% in powder; and 21% for export account (includes 20,911 tons of magnesium-base alloy).

Magnesium-base alloy structural products manufactured and sold or used in the United States increased 200% over 1942. The manufacture of powder sold or used increased 234%. Of the structural products sold or used, sand castings comprised 43%, permanent mold castings 53%, die castings 2%, sheet 1%, and other structural products 1%. The estimated average value of sand castings manufactured in 1943 was $2.11 a pound, permanent mold castings $1.15, die castings $1.96, and all castings $1.59 a pound (compared with $1.87 in 1942).

Of the magnesium-alloy structural products sold or used, the aircraft industry took 50%, incendiary bomb casings 50%, and other industries less than 1%. Of that going into the aircraft industry, 64% was for the manufacture of engines (including propellers), 23% for wheels, 7% for frames, and 6% for accessories. Sand, die, and permanent mold castings comprised 96% of all the magnesium-alloy structural products sold for or used in aircraft.

Consumption Of Magnesium-Base Alloy Structural Products In 1941-43, By Uses, In Short Tons

	1941.	1942.	1943.
Aircraft:			
Engine	3,972	11,815*	21,903
Frame	679	1,319	2,546
Wheel	1,439	4,162	7,698
Accessories .	443	648	1,885
Incendiary bomb casings	8	4,735	33,988
Other industries	297	109	352
Total	6,838	22,788	68,372

* Includes some alloy used in the manufacture of aircraft frame, wheel, and accessories.

World production of magnesium in 1943 reached another all-time high mark of more than 269,000 metric tons—92% more than the previous record of 140,000 tons set in 1942, and more than eight times the 1939 output. On the basis of estimates, it is thought that about 28% of the output was under Axis control and 72% under control of the United Nations. Production in 1944 will not greatly exceed that of 1943 inasmuch as all the major expansion programs of the various nations are thought to be virtually complete.

Magnesium Products (Other Than Ingot) Manufactured In The U. S. And Sold Or Used By The Companies Manufacturing The Products, 1942-43

Product	1942 Short tons	1942 Value	1943 Short tons	1943 Value*
Structural products:				
Castings:				
Sand	16,012	$71,176,648	29,561	$124,748,000
Permanent mold	5,400	9,015,586	35,910	82,593,000
Die	673	2,518,697	1,432	5,613,000
Sheet	438	684,122	840	1,226,000
Structural shapes, rods, tubing (extrusions)	238	342,970	515	916,000
Forgings	22	87,247	113	420,000
Other structural	5	18,958	....	.....
Total structural products	22,788	83,844,228	68,372	215,516,000
Non-Structural products:				
Stick	2,209	1,310,281	†	†
Powder	3,208	5,956,132	10,705	16,057,000
Shavings, wire, ribbon, and sawdust	48	38,013	†	†
Total non-structural products .	5,465	7,304,426	†	†
Grand total	28,253	91,148,654	†	†

* Estimated. † Not available.

News Bureau
Boston, Mass.
AUG 14 1944

BOSTON NEWS BUREAU

URGES RELAXING MAGNESIUM CONTROLS

Industry Should Stand On Its Own Feet, Says Dr. Willard H. Dow, For It Can Supply All Government Needs And Has Built Up A Big Stockpile

Washington, D. C.—Charging that the government was promoting future unemployment by refusing to remove its controls over magnesium and that the recently announced relaxing of controls was deceptive, Dr. Willard H. Dow, president of Dow Chemical Co., in an open letter to Donald M. Nelson, chairman of the War Production Board, asked that the controls be removed at once to prevent the possible destruction of a vast potential industry. "Every day that the government now delays in freeing the industry means a greater delay later on in providing employment," he wrote.

"As matters now stand," said Dr. Dow, "the industry is entirely capable in the ordinary course of production of supplying all possible needs of the government, either for domestic use or for export, and the stockpile is of such proportions as to give ample insurance against any kind of shortage. Therefore, as far as the needs of the war are concerned, there is no longer any reason to keep the magnesium industry under any form of control or allocation."

Dr. Dow declared that the order issued by the War Production Board on July 15, 1944, had been represented to the public as removing controls over magnesium. "That is not true," he stated. "The order M-2-b, while it modifies certain controls over magnesium products, leaves the industry in essential respects under the same control as it was before."

Stockpile Now Large Enough

In outlining the Dow Chemical Company's interest in the magnesium picture, Dr. Dow explained that when the war opened the company was the sole American producer of magnesium and had been for some years, for the reason that no other company had cared to take the risks and the losses of carrying on an industry which, although not new, was undeveloped. Dr. Dow stated that the government eventually, through Defense Plant Corp., expanded the industry from the 18,000,000 pounds a year which Dow was producing early in 1941 to a rated capacity in excess of 600,000,000 pounds a year.

Dr. Dow explained that recently the War Production Board made a series of cut-backs reducing the production to approximately 300,000,000 pounds a year, which reduction had been influenced more by manpower considerations than by costs of production. "There is already," Dr. Dow stated, "a large stockpile—running somewhere in the neighborhood of 100,000,000 pounds. If the present rates of production be maintained, a stockpile of stupendous proportions may be accumulated. If, on the other hand, production be cut to consumption the industry will be on almost a skeleton basis."

Industry Should Stand On Own Feet

"The uses of magnesium in the war, have been impressive. The metal has proven itself. But as yet there has not been the opportunity to promite the peace-time use of the metal. The nation has, I believe, a great industry in the making, and if the industry now had the opportunity, it could go ahead developing markets for peace-time consumption and in so doing would be developing opportunities for the employment of our boys, as and when they return to civilian life.

"The case is clear, and I would respectfully suggest that it is the plain duty of the War Production Board at once to remove all controls from the industry and to permit it to function as a private industry. Such a course would save the people money, because the government could buy magnesium on a competitive basis. Also, and of greater ultimate significance, would be the opportunity for the industry to get on a self-sustaining basis and be ready to meet both the opportunities and the responsibilities of the peace. If this nation is to continue to have a magnesium industry, it will at some time have to be allowed to stand on its own feet. The time, I submit, is now."

BERKELEY, CALIF. GAZETTE
Cir. 11,240
AUGUST 3, 1944

items as heavy trucks, big guns, heavy artillery, and tractors.

Aluminum and magnesium look so much alike that the layman can hardly tell them apart, but the magnesium is one-third lighter than the aluminum.

RIVERSIDE, CAL., PRESS
Cir. 7,687
AUGUST 15, 1944

the probation office.

Magnesium was first produced commercially in the United States in 1915 when the war cut off the former German supply; domestic production was started for the Army for use in tracer bullets, star shells, flares and flashlight powders.

RIVERSIDE, CAL., ENTERPRISE
Cir. 3,606, Sun. Cir. 4,631
AUGUST 12, 1944

tained in Los Angeles.

Magnesium first came into commercial production in Germany in 1896; a 90 per cent magnesium alloy with aluminum, zinc and manganese, 40 per cent lighter than aluminum, was put on the market in 1909 under he name "elecktron."

EVENING NEWS
Buffalo, N. Y.
SEP 2 - 1944

Magnesium Cutback Coming

WASHINGTON, Sept. 2 (AP). — With magnesium production far outrunning demands, a major reduction in output is being considered. Plans for the cutback were described today as still in a highly preliminary stage. The current production of magnesium is at the rate of about 70,000,000 pounds every three months.

SAN FRANCISCO, CAL., NEWS
Cir. 107,082
AUGUST 5, 1944

S. F. to Get New Light Metals Industry

BY ROBERT C. ELLIOTT

Plans for a new light metals industry in San Francisco were revealed today, calling for a plant that would employ several hundred persons manufacturing aluminum foil into packaging and labels.

A Story About TOMORROW'S JOB

At the same time a move to get the automobile industry or a leader like Henry Ford into the West's new aluminum and magnesium industries came to light.

Figuring in the developments is R. S. Reynolds, a man of terrific energy and daring, a 5-foot-4 gentleman of Tennessee and Virginia, who is 1939 became the first American to break into the production of aluminum against giant Aluminum Co. of America. Mr. Reynolds, a big manufacturer of aluminum foil for packaging and technical purposes, in 1940 mortgaged his 28 plants with Jesse Jones and RFC for 40 million dollars, and built plants in the South, Midwest and West to turn out aluminum all the way from raw bauxite to finished parts for planes. He has a sizeable aluminum refinery at Longview, Wash., a temporary wartime plant in San Francisco, and, what's important, ideas for post-victory expansion.

* * *

A Bay Area packaging and labeling plant is definitely in the planning stage, announced William K. Allen Ferguson, Pacific Coast manager for Reynolds Metals Co. Mr. Ferguson, a production expert, sent from the New Jersey plant to San Francisco last year for the very purpose of expanding the alumninum foil conversion industry here.

He is hunting in San Francisco for a plant with a minimum of 100,000 to 200,000 square feet. The present plant at 345 Ninth-st is making water-proof aluminum packaging for war supplies.

"When the cry of 'Peace!' comes we hope to be able to start a plant which from the outset might employ 100 persons. Then as fast as we develop this growing market, we can expand into 300 and up to 600 workers. We would employ many printers in the rotagravure of labels and packages," Mr. Ferguson said.

"A big Pacific Coast business will be awaiting post-war development in the making of aluminum foil, packages and labels for candy, frozen and dehydrated foods, beer bottles and nearly everything packaged for sale to consumers."

* * *

Entry of the auto industry into [illegible] production is proposed, of all things, by the resourceful Mr. Reynolds himself.

Mr. Reynolds actually believes in good old American free, competitive enterprise, the hard-slugging, pride-reducing kind that creates new jobs and raises standards of living by forcing more efficient production and matching of inventive wits. He doesn't believe in what Henry Kaiser calls "the monotony of monopoly," and apparently he doesn't want an aluminum monopoly split up even between himself and Alcoa.

Leaders of the auto industry say that they would have used enormously greater quantities of aluminum long before this, had there been wide-open competition so that prices would have been set by more than one company. They say the price rise in aluminum after the last war frightened them off.

Mr. Reynolds proposes to cure this. He has advised the Truman Senate committee investigating the war effort that a third major producing company should be created after the war to share the industry now held by the Reynolds Metals and Alcoa. This would prevent the danger of monopolistic price increases and would encourage wider industrial use of the light metals, he says.

So Mr. Reynolds wants to see the entire auto industry or Henry Ford, who once flirted with getting into aluminum, take over some of the Government-owned aluminum and magnesium works.

* * *

Pacific Northwestern aluminum plants would naturally be taken over if the auto industry breaks into the field. This can be very significant for the West. Out of 16 aluminum reduction plants in the United States, five are in Oregon and Washington and two in California. Alcoa owns one at Vancouver, Wash.; Olin Corp. runs one for the Government at Tacoma, and Reynolds has the Longview plant. Thus important aluminum refining is in the West to stay permanently, anchored here by extremely low cost power. Moreover, Spokane has an aluminum rolling mill so vast that it has 3½ miles of aisles and that 40 football games could be played at the same time under one roof.

The next and most important step will be for the Pacific Coast to develop the manufacture of lightweight products, thus using some of our vast capacity to produce aluminum and featherweight magnesium.

The Aluminum Company of America—
through its subsidiary, American Magnesium Corporation, has recently issued a treatise entitled "Background Data of the Post-war Planning Activities of American Magnesium Corporation." This material deals with the post-war planning in magnesium, and while it is realized that war demands come first, it is important to remember that there is now ample aluminum and magnesium in excess of military needs, and the chief limitations on further expansion of civilian uses for both of these metals is that of available manpower.

TIMES
New York, N. Y.
AUG 12 1944

Designers Study Post-War Conversion Of Plants to Output of Consumer Goods

A method of conversion to consumer goods production that would keep factories rolling and provide a large variety of temporary post-war products to the housewife was suggested yesterday by George Kosmak, industrial designer.

To prepare these "interim products," as Mr. Kosmak styled them, he has just joined forces with three other industrial designers whose talents range from architecture to styling and display—Ruth Gerth, Alexander Kostellow and Rowena Reed. With headquarters at 228 East Sixty-first Street, they are engaged on providing "interim products" designs for five companies.

Too much emphasis has been placed on post-war "dream world" products and not enough on the betwixt-and-between era, Mr. Kosmak noted. Though he believes that "pre-war products will be obsolete" he added that many can be improved without radical changes that will delay production.

Having these designs ready, and using materials that are already released or will be soon, the four industrial designers will create articles which some concerns can turn to almost immediately after war work ceases.

Mr. Kosmak illustrated the plan by speaking of clocks. He emphasized their scarcity, due to the fact that clockmakers were engaged in working on precision instruments and mine fuses. Such plants could turn to the manufacture of clocks, he said. He predicted new varieties of paper articles, refrigerators, powder compacts, glassware packaging in transparent plastic. Improvements added to pre-war style refrigerators and toasters, for example, while not the ultimate, will serve until the others come along.

Mr. Kosmak estimated it might take a full year after the war's end before many materials needed for full-time post-war designs become available.

Among materials with which the concern is already working on designs, Mr. Kosmak said, are steel and stainless steel, aluminum and magnesium, and he predicted they will figure largely in the post-war picture.

"Resins will be available for use before plastics," he declared, "Some materials have already been released by the War Production Board. Others will be released gradually. The recent release of irons to the public shows what I mean by the lessening of restrictions on certain products."

The concern, Mr. Kosmak said, is more interested in "working for the present than the future." Miss Gerth, with twenty years' experience as a designer of electrical appliances, radios and silverware, said, "the interim products idea will get products to the consumer in the shortest possible time. Manufacturers will be doing the thing with which they are most familiar, and employes will be kept on the job."

L. V. AGE
8-20-44

Magnesiu mOutpt Greatly Increased

WASHINGTON, Aug. 19—Production of primary magnesium in the United States in 1943 was nearly four times that in 1942 and for the second straight year exceeded the combined domestic output since the founding of the industry in 1915, according to the Bureau of Mines. Output of primary metal in 1943 totaled 183,584 short tons compared with 48,963 tons in 1942 and 3,350 tons in 1939.

The average annual rate of magnesium output rose from 125,000 tons in January, 1943, to 236,000 tons in December and reached a peak in January, 1944, when metal was produced at a record rate of 246,000 tons a year. Following this peak, cutbacks were effected totalling about 39 per cent of installed capacity.

Thus, it is likely that the high point of magnesium production has arrived and passed and that an output rate comparable to that in January, 1944, (about 84 per cent of total rated annual capacity) may not be reached again for at least a decade.

L. V. AGE
9-17-44

Wants Removal of MagnesiumControl

WASHINGTON, Sept. 9. — In an open letter to Production Chief Donald M. Nelson, Dr. Willard H. Dow, president of the Dow Chemical company, asserted that it was the plain duty of the war production board to remove at once all controls from the magnesium industry.

Continuance of present WPB orders carries the threat of unemployment and the possible destruction of a vast potential industry, Dr. Dow said. He asserted that the recent announcement of control was deceptive, leaving producers under virtually the same curbs as before.

Metal trade sources here simultaneously reported that there are plans for a new cutback in magnesium which would reduce material production to 22,000,000 tons a month by September 1 compared with a rated capacity of about 50,000,000 tons monthly.

Cleveland Press
SEP - 6 1944

40 Per Cent Cutback Hits Magnesium Plants

WASHINGTON, Sept. 6—(U.P.)—The War Production Board today announced a 40 per cent cutback in primary magnesium ingot production which will result in gradual release of 4300 workers.

Plants affected are government-owned facilities at Las Vegas and Gabbs, Nev., and at Austin and Velasco, Tex. The curtailments are the result of decreasing military requirements and rapidly growing stockpiles.

WPB said the cutbacks, scheduled to "take place over a period of time," will reduce the current monthly magnesium ingot output from 23,000,000 pounds to a level of about 14,000,000 pounds. They will result in the eventual shutdown of the Basic Magnesium Inc., plants at Las Vegas and Gabbs, and the International Minerals Plant at Austin, officials said. Production at Velasco will be cut 50 per cent.

Commercial-Appeal
Memphis, Tenn.
AUG 20 1944

SURPLUS GOODS BILL FACES HEATED FIGHT

Senate Committee Votes Veto Power Over Disposals

PREDICTS INTENSE BATTLE

By ROSE M'KEE
International News Service Staff Writer

WASHINGTON, Aug. 19.—The Senate Military Affairs Committee voted Saturday to give Congress a veto power over the disposal of billions of dollars worth of war plants—and by this action set in motion a battle that threatens to be intense and prolonged.

The movement for a congressional veto is under way in the House, and is expected to break on the floor in full force when the lower chamber resumes debate on the Colmer Surplus War Property Disposal Bill on Monday.

Wave Of Amendments

Representative Carter Manasco, (D., Ala.) in charge of the Colmer Bill on the House floor, admitted that the tidal wave of restrictive amendments bearing on disposal of plants would be difficult to hold in check.

"The voting," he declared, "is going to be pretty close, because so many members have war plants in their districts and a great many of them intend to offer amendments which would prohibit sale of these plants after the war without congressional approval.

"Enactment of such restrictive amendments would mean, in my opinion, that the plants would not be sold at all. The Government would not get any bids. It would have a lot of white elephants on its hands."

Manasco said he hoped for passage of the Colmer Bill Tuesday, but he was uncertain on this point, owing to the fact that 16 amendments were pending when the House stopped work Friday. The number is expected to increase over the week end.

Curb "Big Inch" Sale

A prohibition against the sale of the "big inch" pipeline without special permission of Congress is one of the matters expected to precipitate a fight on the House floor. Representative Francis E. Walter, (D., Pa.) is author of this amendment.

Other pending amendments would restrict policies with regard to the sale of surplus war goods, the estimated value of which runs into the tens of billions of dollars.

Representative Charles A. Halleck (R., Ind.) is sponsoring an amendment requiring that surplus war goods should be sold through regular trade channels. Manasco said Administration forces hoped to be able to defeat this amendment.

The proposal approved by the Senate Military Affairs Committee would provide that the following categories of plants could not be disposed of until 30 days after Congress had been notified: chemical synthetic rubber, iron and steel, magnesium, aluminum, and aviation gasoline.

The same veto privilege would be extended also to processing techniques and inventions.

The amendment was offered by Senator Joseph C. O'Mahoney (D., Wyo.). The committee also adopted an amendment which would freeze critical and strategic materials and place them in stockpiles.

The Senate plans to take up Tuesday the Surplus War Property Disposal Bill which its Military Affairs Committee is drafting.

The committee has already precipitated one controversy by voting to place control of surplus property in a board. The Colmer Bill would give Surplus War Property Administrator W. L. Clayton broad powers over the disposal of surplus property and plants.

Another phase of the many-sided battle is the Left Wing movement, headed by the National Farmers Union, to oust Clayton as administrator.

The battle over human demobilization legislation rests for the time being. The House Ways and Means Committee plans to resume work Monday on the George States' Rights Bill, passed by the Senate.

NEW YORK, N. Y., TIMES
Cir. 625,227
JULY 30, 1944

GOVERNMENT CUTS MAGNESIUM OUTPUT

Curtails in Four U. S.-Owned Plants, Drops Schedule in One—Other Agency Action

Special to THE NEW YORK TIMES.

WASHINGTON, July 29—The War Production Board announced today that monthly production schedules of four magnesium plants have been reduced and that of a fifth plant terminated in order to bring surplus supplies of magnesium more in line with the nation's stockpile objectives.

The curtailment of these plants, all of them Government-owned, will result in a reduction of 7,517,000 pounds a month in magnesium production. Manpower considerations were the principal criterion in the selection of the plants to be curtailed.

The cutbacks are effective in plants of the Dow Magnesium Corporation at Maryville, Mich., and Velasco, Tex., and at the Magnesium Reduction Company plant at Luckey, Ohio; the Electric Metallurgical Company, Spokane, Wash., and Basic Magnesium, Inc., Las Vegas, Nev.

Other activities by war agencies today included:

RESIGNATION: John W. Iliff has resigned effective Aug. 1 as general counsel for the consumers' durable goods division, WPB, to join the law firm of Moyle & Wanless, Washington, D. C.

BICYCLES: The new national adult bicycle quota for August will be 19,500, an increase of 2,000 as compared with July, OPA announced.

HACKSAWS: Simplification and standardization specifications for hacksaw blades and bandsaws are provided in two new schedules to limitation order L-216, issued by WPB.

OWI: George W. Healy Jr., director of domestic operations, Office of War Information, today announced establishment in the domestic branch of a new graphics bureau, through which all government graphic activities will be coordinated. Mr. Healy also announced today the appointment of an outdoor advertising advisory committee of which Harry Crawford, of the Crawford Advertising Agency, is chairman.

BEANS: OPA announces an increase in the maximum prices of dry edible beans to allow for parity increase since the ceilings were established. The agency also announced a complete revision of the pricing structure for the beans and a slight increase in prices for certain grades of split peas to correct an error made in the original computations. The total increase of 40 cents a 100 pounds in bean prices is the amount certified by the War Food Administrator as necessary to meet the increase in parity. Of this amount, 25 cents is added to the former f.o.b prices and 15 cents is named as a margin for the first handler or dealer. For the three best known types of beans the new f.o.b. ceilings are $6.05 a 100 pounds for processor and $6.20 for dealers. The former ceiling was $5.80.

RUBBER HEELS: OPA ruled that rubber heels being made of higher quality by manufacturers because better materials are now available must be sold at the ceiling prices applicable since Nov. 1, 1943, to lower quality heels.

SUGAR: OPA ruled that consumers may apply to their local ration boards for certificates for use in replacement of sugar that is lost, damaged, destroyed or stolen.

PIGMENTS: Because of increasing war requirements, the pigment ultramarine blue will be made subject to allocation effective Aug. 1, under an amendment to the general allocation order M-300, WPB announced. The small order exemption without use certificate is 25 pounds a person a month.

DRIED FRUIT: OPA ruled that processors may make sales of dried fruits of the 1944 crop to the Government under an "adjustable pricing" order. The order, effective today, permits processors to enter into contracts for immediate deliveries of dried fruits at 1943 ceilings, with the provision that prices may be adjusted to the level of those which will be established by the agency later.

SAN MATEO, CAL., TIMES & LEADER
Cir. 5,598
SEPTEMBER 2, 1944

MAGNESIUM PRODUCTION UP

Primary magnesium production averaged over 11 million pounds a month during the first quarter of 1944, exceeding output of all previous periods.

AMERICAN METAL MARKET
"Leading Iron, Steel and Metal Newspaper—Recognized price and market authority."
New York City
AUG 10 1944

Primary Magnesium Production Declined 9% During May

Shipments Of Most Fabricated Products Also Lower

WASHINGTON.—Production of primary magnesium metal declined to 34,308,000 pounds in May—9% below the previous month, and 18% less than peak production reached in January, 1944—according to data released by the Aluminum and Magnesium Division, War Production Board. The decrease was in line with the recent government-ordered curtailment in magnesium metal production. Secondary recovery was at the high level of 2,814,000 pounds for the month, although considerably below the peak of March, 1944.

Shipments of most fabricated products also dropped from April levels and were substantially below peak rates. Deliveries of extrusions, however, amounted to 381,000 pounds—more than double the previous high of March, 1944—and deliveries of permanent mold castings of 514,000 pounds practically returned to the high of January, 1944. Sand castings and die castings both declined slightly from April. Sheet and forgings showed the most marked contractions.

This is the second in a series of releases on magnesium combining metal production and shipments of fabricated products. The figures on fabricated products do not cover incendiary bomb body castings, extruded sheet stock and forging stock, and sticks.

Primary And Secondary Magnesium Production, As Reported By The Aluminum And Magnesium Division, W.P.B.

(In millions of pounds)

	Primary		Secondary	
Month	1943.	1944.	1943.	1944.
Total-Year	368.2	...	22.7	...
Jan.	20.7	42.0	1.1	2.1
Feb.	21.4	40.9	1.2	2.7
Mar.	26.1	41.0	1.5	3.6
April ...	27.2	37.8	1.7	2.3
May	30.3	34.3	1.7	2.8
June	30.2	...	1.6	...
July	33.3	...	1.7	...
Aug.	34.4	...	2.1	...
Sept. ...	32.5	...	2.5	...
Oct.	36.1	...	2.7	...
Nov.	36.8	...	2.7	...
Dec.	39.2	...	2.2	...

SACRAMENTO, CAL. BEE
Cir. 77,049
SEPTEMBER 6, 1944

Cutback Is Ordered In Magnesium Yield

WASHINGTON, Sept. 6 — (AP) — The federal government today began to withdraw from the magnesium production field.

Orders were issued by the War Production Board for a gradual curtailment of operations and eventual shutdown of government owned plants in Austin, Tex., operated by International Minerals and in Las Vegas, Nev., operated by Basic Magnesium, Inc. A feeder plant in Gabbs, Nev., also will shut down as needs in Las Vegas decrease.

Production in Velasco, Tex., will be reduced from 18,000,000 pounds to 9,000,000 pounds each three months; in Las Vegas from 4,000,000 pounds a month to 12,000,000 for the remainder of the year. No quota was set for the Austin plant which employes about 600 men.

The 4,300 workers to be released by the cutback will be urged to take other war jobs. The 3,200 to be released in Las Vegas, the War Manpower Commission said, can be placed readily in west coast plants or in nearby mines and smelters.

WPB said the cutback resulted from changes in the military requirements and a rapidly growing stockpile. For the same reasons, WPB recently ordered a reduction in aluminum production.

From
HERALD-JOURNAL
Syracuse, N. Y.
AUG 27 1944

Government Sale of War Plants Argued

House Measure Calls for an Administrator, Senate Votes Board

Washington, Aug. 26 (UP).—Proceeds from the sale of an estimated $75,000,000,000 to $100,000,000,000 worth of surplus Government property would be used to reduce the national debt under bills regulating the sale of surplus property passed by both houses of Congress this week.

However, House and Senate conferees faced the need for many compromises on widely divergent provisions of the two bills. The final decisions are expected to have an important influence on the orderly transition from war to peace and the establishment of full postwar bproduction.

Four days after the House passed its measure placing property disposal under a single administrator with broad discretionary power, the Senate late yesterday passed another bill putting the disposal machinery under an eight-man board. The House once rejected a proposal to substitute a board for the administrator.

The House bill would give the administrator a free hand within general policy restrictions in disposing of the Government's $15,000,000,000 investment in war plants, except to require reports to Congress on disposal plans for aluminm and synthetic rubber plants and pipelines costing more than $5,000,000. Those plans would be placed in effect if six months elapsed without other provisions being made by Congress.

The House bill also would require the administrator to obtain approval of an 18-man advisory board before disposing of any plants costing more than $1,000,000.

The Senate bill would require reports to Congress on plans for disposal of aluminum, magnesium, rubber, chemical, aviation gasoline and iron and steel plants, pipelines, patents, processes, techniques and inventions. Moreover, it would cut the period in which plants would be frozen pending possible Congressional action to 30 days after receipt of the reports.

While the House would give authority over land disposal to the proposed administrator, the Senate would place the power in the hands of the Interior and Agricultural Departments. Both measures would give priority to former owners and would require disposal of farm land in single-family units whenever possible.

The House would give municipalities priority for purchasing or leasing airports. It rejected proposals to give advantages to institutions or governmental units in the acquisition of surplus property. The Senate, however, authorized donations for public schools and permitted a 50 per cent discount in sales to states, their political subdivisions, cities and tax-supported or non-profit institutions.

Both chambers attempted to safeguard small business. The House measure would require sales in the smallest possible lots and give small business priority in purchasing those lots. The Senate bill would give the smaller war plants corporation power to protect small business, including authority to buy surplus property for resale to little businessmen.

Appointed to represent the Senate in conference with the House were Senators Elbert D. Thomas (D-Utah), Edwin C. Johnson (D-Col.), Lister Hill (D-Ala.), Albert B. Chandler (D-Ky.), Chapman Revercomb (R-W. Va.), Warren R. Austin (R-Vt.) and Chan Gurney (R-S. D.).

COLTON, CALIF., COURIER
Cir. 1,396
SEPTEMBER 8, 1944

Primary magnesium production averaged over 11 million pounds a month during the first quarter of 1944, exceeding output of all previous periods.

AMERICAN TRADE PRESS CLIPPING BUREAU
15 E. 26TH STREET, NEW YORK, N. Y.
Phone LExington 2-5969
This article was clipped from

BALTIMORE, *August, 1944*

Industrial Miscellany

The July report of the Industrial Bureau of the Baltimore Association of Commerce showed three new industries and six expansions of existing local companies, which involved $5,380,000, and will require 1,075 new workers.

Decision of the National Gypsum Company to locate a $4,000,000 plant in Baltimore was the outstanding industrial event locally during July, according to the report. As the first announced postwar project, from an outside national industry, it is especially significant. In addition to furnishing postwar construction and manufacturing employment, the company's operations will also result in an appreciable addition to rail, truck, and ocean borne tonnage.

Announcement made during the month by the Magnesium-Aluminum Division of Revere Copper and Brass, Inc., of a second $1,000,000 addition to the Halethorpe plant will prove of material value in the postwar period. This company is already operating here the largest magnesium plant in the country. The prospect of Baltimore as the nation's center for this metal, which is expected to have a large commercial demand following the end of the war, should tend to improve the city's postwar employment situation.

Other new industries and expansions noted in the following pages include a number of minor enlargements at the Sparrows Point plant of the Bethlehem Steel Company; a new freezing unit by O. W. Wentworth & Company, seafood packers; a new asphalt plant by the Potts and Callahan Paving Company; a third floor to the Boston Street plant of the American Can Company; new construction for a plating department by the Friez Instrument Division of the Bendix Aviation Corporation; an enlargement of a department at the plant of the Davison Chemical Corporation; and a new firm for the manufacture of glassine, wax parchment, etc., bags.

★ ★ ★

ENQUIRER
Cincinnati, Ohio
AUG 28 1944

Approval By Congress Urged For Sale Of Big War Plants; Small Business Supported

Washington, July 27—(AP)—Placing at $103,000,000,000 the probable value of surplus war goods, a Senate subcommittee tonight recommended disposal through "regular trade channels" wherever possible, assuring small business a substantial share.

In a preliminary report, the special small business subcommittee headed by Senator Tom Stewart, Democrat, Tennessee, also proposed that Congress pass upon the disposition of government owned war plants costing $5,000,000 or more. Such plants would be leased for two years by the Surplus Property Administrator, but final sale or disposition would require the lawmakers' approval.

The volume of surplus war materials, facilities and equipment contemplated in the report is roughly 17 times that which remained—about $6,000,000,000 worth—at the end of World War I.

To discourage speculators, the subcommittee composed of Stewart and Senators Robert A. Taft, Republican, Ohio, and James J. Murray, Democrat, Montana, said Congress should direct that surplus property suitable for civilian use be sold in small lots, through regional offices, and that credit terms be made available to established business concerns.

The report suggested that the Smaller War Plants Corporation be authorized to buy surplus supplies and resell to small businesses as a curb on monopolistic trends.

The report suggested preference to veterans who need equipment or supplies for postwar civilian business. Post exchanges and ship's stores for their benefit after the war could be operated, the group added.

Submitted with the report was a proposed bill to set up a surplus War Property Administration within the Office of War Mobilization.

In proposing that disposition of industrial facilities costing above $5,000,000 be left to Congress, the report said this policy should apply especially to aircraft, aircraft parts, synthetic rubber, high octane gasoline, aluminum, magnesium, steel, ships or shipyards, and pipelines.

As a further safeguard the subcommittee said the Attorney General's office also should review all property sales of more than $5,000,000.

Secretary of Commerce Jesse H. Jones cautioned prospective purchasers of government-financed war plants not to "expect bargains," but he assured them of "fair prices."

Jones said "bargains" would be unfair to the purchasers' competitors and to the taxpayers.

He said the Defense Plant Corporation now is making industrial surveys of its many plants for use in considering their disposition and particularly to accelerate their conversion to civilian production.

L. V. AGE
Sunday, September 24, 1944

Magnesium Field May Offer Big Opening for Las Vegas

By AL WEINBERG

Industrialists throughout the nation are beginning to perk up their thinking about magnesium as a peace-time metal rather than a lethal war commodity. These thoughts should be kindled by the people of southern Nevada to the action stage if it is desired to create a demand for the "miracle" metal produced in such great quantities at nearby BMI.

Because of the demands of war production, experiments for turning out magnesium for commercial usages have necessarily been held to a minimum. The vast facilities of the laboratories at BMI have been taxed to capacity to improve the war product. However, permission to conduct certain experiments was received from officialdom some time back. With a delayed green light to go ahead, metallurgical and chemical technicians have delved deep into the hidden properties of the light metal with astounding results. They have practically torn the magnesium atom apart. They have determined its absorption ratios, its repellant ideosyncrasies, its alloying affinities.

Under Aluminum, Steel

Now that certain equipment has been made available at the lab, intensive experiments have been conducted with extrusions, castings and sheet work. It is generally known that magnesium can be milled, worked and drilled for about 2 per cent less cost than aluminum. It can be welded successfully. It takes one-sixth the horsepower to work magnesium as compared with steel. With certain alloys it is strong than aluminum. It can be manufactured profitably from ore to be found in abundance throughout America. Almost anything made of alumium or steel may be made of magnesium at less expense.

Manufacturers of railroad equipment, trucks, refrigerators, washing machines, office furniture, electrical appliances, household utensils and thousands of other commodities in daily use in homes, offices, factories and farms, should be more alive to the value of magnesium than any other development to come out of this war.

Its Uses Many

They should be familiarized with many important factors surrounding the light metal. Magnesium, being so light in weight, will provide for increased pay loads on air planes, freight cars, trucks, busses and street cars. The expense of heavy rails may be reduced in proportion to the weight of the rolling equipment. Additional income is made available from increased pay loads.

The possibilities for inexhaustive use of magnesium for household and electrical appliances are amazing. Office furniture and kitchen ware made of this material will reduce the weight to satisfy the most fastidious housewife and stenographer. Imagine mother pushing the refrigerator or washing machine around with one hand, and picture Tillie, the steno, juggling her melba toast lunch in one hand and carrying her typewriter with the other! That, however, is exactly what may be accomplished in the event magnesium is utilized where it may best serve commercially.

Monopoly Control

It has often been stated that the pre-war production and distribution of magnesium were controlled by a tight monopoly. There has been some confirmation of these statements as a result of congressional investigations. The fact that the British and Germans have used the light metal commercially for years indicates that American industrialists have permitted this alleged monopoly to stifle competition. A profitable industrial bet has been overlooked. Wide awake Americans, always alert for new fields, should be checking foreign as well as domestic markets for the distribution of finished magnesium commodities.

With the groundwork already completed and the world's largest magnesium refinery in her back yard, Las Vegas is in a strategic position to take its place in the limelight of the growing industrial west. Plans for the retention of operating and production facilities at the huge government project at Henderson should be consummated by official Las Vegas before it is too late.

Las Vegas Opportunity

WPB schedules call for the complete shut down of the remaining four BMI metals units by December 31. It is likely that there may be subsequent directives for the discontinuance of the manufacture of chlorine at the plant early next year.

It would appear timely for Las Vegas to gather all the influence it can muster and prevail upon the powers-that-be in Washington to provide a conversion plan for the post-war operations of BMI.

The benefits to be derived by the entire state should prompt every resident of Nevada to support such a movement. The plant is here. It is fully equipped for refining magnesium. At nominal costs, a rolling mill and an extrusion plant may be added. This will afford operating executives an opportunity to turn out the metal from powdered ore to finished sheet. A complete Nevada product. It can be done.

CHICAGO, ILL., NEWS
Cir. 33,204
AUGUST 4, 1944

EDITED BY

MAGNESIUM GROUP.

Perry D. Helser, formerly chief of the magnesium branch of the War Production Board in Washington, has been selected as secretary-director of the newly formed Magnesium Association, with headquarters at 30 Rockefeller Plaza, New York. The membership of this association consists of producers, fabricators, smelters and consumers of magnesium, numbering 33, which represents a substantial portion of the industry. Its purpose is to develop and increase the use of magnesium and its products and to correlate technological progress in the industry. E. S. Christiansen, vice-president, Apex Smelting Co., Chicago, is president.

SEPT. 6, 1944
SHREVEPORT, LA. JOURNAL

U. S. Will Quit Magnesium Field

Washington (AP). — The federal government today began to withdraw from the magnesium production field.

Orders were issued by the war production board (WPB) for gradual curtailment of operations and eventual shutdown of government-owned plants at Austin, Texas, operated by International Minerals, and at Las Vegas, Nev., operated by Basic Magnesium, Inc. A feeder plant at Gabbs, Nev., also will shut down as needs at Las Vegas decrease.

Production at Velasco, Texas, will be reduced from 18,000,000 pounds to 9,000,000 pounds each three months; at Les Vagas from 4,000,000 pounds a month to 12,000,000 for the remainder of the year. No quota was set for the Austin plant which employs about 600 men.

The 4,300 workers to be released by the cutback will be urged to take other war jobs.

WPB said the cutback resulted from changes in the military requirements and a rapidly growing stockpile.

allocation.

SAN FRANCISCO, CAL., NEWS
Cir. 107,082
SEPTEMBER 16, 1944

Berge Urges West to Run Own Plants

BY ROBERT C. ELLIOTT

Western industrialists and investors ought to organize dynamic new local companies to take over and operate most of the billion dollars worth of Government war plants in the West after victory!

Wendell Berge, assistant attorney general in charge of the crusading anti-trust division, today left San Francisco that challenge.

New Western risk-taking corporations were urged by Mr. Berge to runs the 30 million dollars worth of RFC and Defense Plant Corp. steel mills built west of the Rockies, and also the aluminum and magnesium refineries.

Mr. Berge declared the belief that it is vital to expansion of opportunities and jobs in the West to keep the new plants out of the hands of monopolistic Eastern corporations that might close them in time of recession in favor of Eastern operations.

* * *

Western industrial accomplishment, declared the trust-busting Mr. Berge in an interview, "has exceeded our wildest dreams . . . You have produced aircraft, aluminum, aviation gasoline, chemicals, lumber, machine tools, magnesium, paper, steel, synthetic rubber, ships by the thousands, and many other products. If you can keep even a fair percentage of the new industrial capacity, you will become substantially independent and your people will no longer have to pay for the long transportation haul which has been added to the costs of many of the products consumed in the West."

Mr. Berge asserted the West must break its industrial dependence upon the East and "the treatment of the West by Eastern capital in many industries as an economic colony from which to obtain raw materials and in which to sell the finished product after double transportation has been added."

* * *

United States Steel Co. moves to acquire the 200-million-dollar basic steel industry at Geneva, Utah, "would certainly be most carefully scrutinized by the Department of Justice," Mr. Berge asserted.

"U. S. Steel has shown no interest whatever in fighting for better freight rates that would enable Geneva, Utah, steel to be shipped to the West Coast in competition with steel produced in the East. U. S. Steel can ship steel from its Pittsburgh or Birmingham mills cheaper in its own ships than by railroad from Utah. Yet reduction of rail rates will be a major factor in the life or death of the Geneva plant.

"Westerners operating at Geneva, on the other hand, would fight to get the rates down. Whereas U. S. Steel might close Geneva at the first sign of a recession because it would be more profitable to operate at Pittsburgh, Gary or Birmingham, local capital would fight to the bitter end to keep it going."

* * *

Aluminum and magnesium plants likewise ought to be run by Western enterprisers, Mr. Berge asserted.

The Aluminum Co. of America might close refineries in the Northwest and keep Niagara or Tennessee Valley plants in operation of they would make more money, "regardless of local needs and local employment," Mr. Berge said.

The trust-buster condemned the discriminations practiced against the West by reason of such situations which he charged as these: Three companies produce 85 per cent of U. S. copper; "four packers determine the price of the farmers' cattle, sheep and hogs"; "wool bought at Portland goes 5000 to 6000 miles through the canal to Boston, where it is worked into fabrics and later shipped back West as suits." He declared the West "will have to get freight rates down."

* * *

Leasing of war plants to Western industrialists and investors, especially to small companies, was advocated by Mr. Berge.

California must create peacetime jobs for one million persons leaving the services and war plants; Oregon for 130,000 and Washington for 275,000.

"It will be imperative to operate every plant possible and create more jobs than ever in our history," Mr. Berge said.

"This is not a problem of the West against the East, or the East against the West. The East will be better off with a healthy, expanding West.

"You can have the greatest development in your history on the West Coast. But you need many free enterprisers, big and small, like Henry Kaiser.

"But local autonomy of industry is essential. You will be on the way to a real development and more stabilized employment when you have dozens of locally owned packing houses; when local companies process your own fruits and vegetables; when the marketing of fish is no longer in the hands of only three or four great corporations; when the lumber industry is decentralized; when you are operating your own steel, aluminum and magnesium plants; and when local capital is giving jobs to local people."

REVIEW-JOURNAL
9-21-44

Wheels Within Wheels

National magazines continue to carry page advertisements predicting a brilliant future for the miracle metal, magnesium.

For a long time the only advertiser was Dow Chemical, most potent figure in the magnesium field and ally of Aluminum Corporation of America.

Now, the Revere Copper and Brass Company of Baltimore, Maryland, joins the chorus, and in the current issue of Time, devotes a page of space to a glowing story of magnesium and its efforts in fabricating the metal.

"We are already producing magnesium plate, sheet, rod, bar, tube, forgings and extruded shapes," says the advertisement. "And in connection with the war effort, we have acquired a vast amount of practical knowledge regarding the strength, safety and workability of this marvelous metal."

The War Production Board says there is no future for magnesium and is shutting down all government-owned plants. Dow Chemical says the U. S. market for magnesium in post-war is a maximum of 40,000 tons a year to support WPB's contention but keeps right on advertising its future in most optimistic terms.

And we hear, apparently from authentic sources, that this metal will be a substantial portion of the airplanes of the future — that they're being designed for use of magnesium.

If the War Production Board is right, why is a firm like Revere Copper and Brass still paying out good money to acquaint the world with the future of this metal?

If Dow Chemical is right in its market estimates upon which WPB bases its decision, why is Dow Chemical continuing to advertise magnesium so extensively?

Only recently WPB ordered closed the one outstanding producer in the United States—the one concern that had exceeded the rated capacity of its plant by a substantial margin AND gave promise of getting the price of magnesium down to a point where it would actually become a competitor in the light metal field—Basic Magnesium, Incorporated.

If magnesium has such a glowing future as Dow and Revere insist, what does the War Production Board mean by throwing away millions of the taxpayers' dollars by closing down a plant that could, if there IS a market for its product, actually return a profit on the investment?

The whole magnesium picture has been difficult to understand from the very start. There have been too many wheels within wheels—too many angles and curves. It still doesn't make sense for the government to abandon a $130,000,000 plant without making any effort at all to give the taxpayers who paid for it with war bonds bought out of savings and income taxes drained out of wages, a run for their money.

One of these days we'll know all the answers. When they're told, we're likely to be very much surprised at the story they tell.

VISALIA, CAL., TIMES-DELTA
Cir. 3,098
SEPTEMBER 5, 1944

Magnesium Production Due For Cutback

WASHINGTON, Sept. 2. (AP)—Tentative plans for a sharp reduction in the production of magnesium called for a "pretty deep cut" at Las Vegas, Nevada, plant of Basic Magnesium, it was learned today.

Other plants will be involved in the production curtailments, but officials declined to name them. The plans for the cut-back called for the maintenance of all major magnesium plants at least on a stand-by basis.

P. D. Wilson, War Production vice chairman in charge of metals, acknowledged that an "overall cut-back" is being discussed, but said "no final decisions" had been reached.

road to totalitarianism.

Weirton Announces It Has Magnesium Rolling Program

Weirton, W. Va.

• • • **Weirton Steel Co., subsidiary** of National Steel Corp., announced this week that it has been rolling magnesium. Weirton claimed to be the first and only steel producer to roll magnesium.

Weirton undertook the rolling of magnesium in January, and magnesium is received by Weirton in 90 lb. slabs, measuring 60 x 9 x 3 in. The slabs are reduced on the 35-in. blooming mill, and then sent to a sheet mill, where by hand work the sheets are reduced to 0.042 in. Finishing operations are conducted at the Steubenville plant, where by precision rolling and burnishing the magnesium sheets are turned out in thicknesses from 0.010 to 0.014 in.

REVIEW JOURNAL
11-18-44

Process Puts Rustless Skin on Magnesium

NEW YORK, Nov. 18.—An electrical process which puts a skin on magnesium metal makes this lightest of all metals more useful in warplanes and in peacetime household articles.

One of the main drawbacks of magnesium has been extreme susceptibility to corrosion. Even air eats magnesium. Paint was only a partial solution, since air and particularly moisture would get through to cause some damage.

Proved at Convair

The new skin-making process was developed by N. H. Simpson and Paul R. Cutter, respectively chief chemist and research chemist for Consolidated Vultee Aircraft Corp. The work was done at Ft. Worth. The process is to be shared with the aircraft industry.

The skin is developed by immersing the magnesium in an alkaline solution and passing electric current through the metal at a temperature of a little more than 170 deg. Fahrenheit. The skin is formed by chemicals which come from the magnesium, mainly carbonates, hydroxides and oxides.

The increased uses for magnesium in warplane include magnesium ribs, control surfaces and stiffeners. The magnesium skin takes a high polish and a permanent finish in any color desired. The metal is harder and has more wear resistance.

In the air the use of magnesium has been limited mainly to parts not exposed to corrosion, including landing gear castings and engine mounts, certain tail castings, instrument panels and seats and general furnishings.

Magnesium Lighter

Magnesium metal is one-third lighter than the duralumin used in airplane construction. But magnesium has not as great tensile strength as duralumin.

However, magnesium will stand repeated blows of heavy vibration 25 per cent longer than aluminum, despite the latter's greater strength.

Magnesium has 19 times more stiffness than steel of the same weight.

Production of Magnesium 18% Below Month's Peak

Washington, Aug. 9. — Primary magnesium metal production was off to 34,308,000 pounds in May, or 8 per cent less than April and 18 per cent less than the January peak, the War Production Board reported today. The decrease was in line with recent curtailment of output, WPB said. Shipments of most fabricated products were less than April levels. Deliveries of extrusions doubled the preceding high set in March, totaling 381,000 pounds. Deliveries of permanent mold castings nearly returned to the high of 514,000 pounds established in January. Sand and die castings declined somewhat. Marked contraductions were shown by sheet and forgings.

TULARE, CAL., ADVANCE-REGISTER
Cir. 1,911
SEPTEMBER 2, 1944

NEW REDUCTION IN OUTPUT OF MAGNESIUM LOOMS

WASHINGTON, Sept. 2. (AP) —With magnesium production far outrunning demands, the production executive committee staff is considering a major reduction in output.

Plans for the cut-back were described today as still in a highly preliminary stage, with no decision reached on what plants would be cut or when the cut would take place. But one official said: A cut-back obviously has to come. Stockpiles are piling up and demands are diminishing."

Many factors are expected to be considered before decisions are reached as to the plants to be affected. Among these are the labor situation in the plant areas and varying production costs.

The largest magnesium plant is Basic Magnesium at Las Vegas, Nev., and the second largest the plant of the Dow Manufacturing Co., at Velasco, Tex. Palo Alto has a plant, Permanente Metals.

The current production of magnesium is at the rate of about 70 million pounds a quarter.

Seattle (Wn) Post-Intelligencer
—September 29, 1944

Boeing Co. Named In $16,817 Suit On War Contract

Suit for $16,817.26, assertedly due from Boeing Aircraft Company, was filed in United States District Court yesterday in an action designed to test constitutionality of the war contracts Renegotiation Act.

Plaintiff in the case is Magnesium Products, Inc., Los Angeles, from whom Boeing allegedly purchased magnesium alley sand castings and subsequently refuesd, on army order, to pay the "agreed price."

The complaint cites a unilateral order issued last June 6 by Robert P. Patterson, undersecretary of war, setting the magnesium company's "excess profits" at $250,000.

Under the renegotiating act, Boeing was then directed to "withhold for the account of the United States all sums of money due" Magnesium Products, Inc.

The Los Angeles company asks the court to decree the Renegotiation Act unconstitutional.

AMERICAN METAL MARKET
"Leading Iron, Steel and Metal Newspaper—Recognized price and market authority."
New York City
AUG 8 1944

Greater Use Of Remelt Magnesium Urged By WPB

Says Metal That Meets Specifications s May Be Used In Military Items

WASHINGTON, Aug. 7. — WPB today requested the assistance of consumers of magnesium metal in absorbing greater amounts of secondary metal made from scrap.

More magnesium scrap is being generated today than ever before, reported George C. Heikes, Director of the Aluminum and Magnesium Division. However, it is not being absorbed by the industry. Because certain forms of magnesium scrap are highly combustible for general conservation reasons, it is in the interest of the war effort, Mr. Heikes said, that all consumers of magnesium metal endeavor to utilize as much magnesium secondary metal as possible.

The magnesium foundry industry offers one area in which consumption can be increased. At a recent special meeting of the magnesium smelters, it was brought out that many magnesium foundry operations felt they were forbidden by the Magnesiub Order M-2-B from buying and using secondary ingot for the casting of aircraft or other products. This was one among a number of reasons given for the reluctance of magnesium foundries to buy secondary metal in place of primary.

Mr. Heikes pointed out that any magnesium that meets the required specifications may be used for military products. Metal from either primary or secondary producers may be purchased and used by foundries merely by requesting authorization in the usual fashion as provided for under Order M-2-B.

Science

Versatile Helium

Look for helium to play an important part in industrial and scientific life after the war. Most people think this rare gas—of which the United States has a virtual monopoly—is good only for filling balloons and dirigibles.

But research is showing helium is valuable as a food preservative, an extinguisher of fires, a cleansing agent to remove impurities from molten metals; in the development of explosion-proof motors; in refrigeration to produce ultra-subzero temperatures; in optical instruments, and as a tracer to determine migrations of underground deposits of natural gas.

Medically, perhaps, helium is destined to play its most important part in man's everlasting struggle against death agencies. It is being used to treat pneumonia, asthma and other respiratory diseases in which helium lessens the burden on weakened lungs. Airplane pilots and passengers who suffer ear troubles are relieved or spared altogether by inhaling a helium-oxygen mixture during altitude changes.

Industry is hailing helium as a new ally in the heliarc process of welding magnesium. Liquid helium will be employed to treat materials such as metals and plastics at extremely low temperatures.

Shellac and Talc Control Removed

Both in List of 16 Items Covered by Amendment to Imports Order

(Bureau of Journal of Commerce)

WASHINGTON, Sept. 25.—Shellac and balsa wood are among the 16 commodities removed from governmental import control through an amendment to General Imports Order M-63, effective October 1, 1944, WPB announced today.

Both of these commodities are now in favorable supply, WPB said.

Other commodities removed from the restrictions of M-63 were a group of ferro-alloys (leaving only chrome and manganese under import control in this type of metals); paper base stock and textile waste (except sisal and henequen processors' mill waste), and the non-metallic minerals—kyanite and sillimanite, talc and China clay.

Copper and brass scrap, tin plate scrap and crude metallic mineral substances were also dropped from control of M-63.

Complete List

Balata, a non-elastic gum imported mainly from Brazil, was added to List III of M-63. Previously, this commodity was imported under a public purchase program of the Rubber Development Corporation, a RFC subsidiary. Since labor used in the production of balata can also be utilized in the natural rubber production program in the same Latin-American area, restrictions through M-63 are necessary to limit the importation of this commodity, WPB said. Balata is used as a covering for golf balls, for conveyor belts, and in electrical insulation.

The complete list affected by this amendment are:

Removed from List I: Columbium ore (columbite) or concentrates; iaccrude, seed, button and stick; rutile; and zirconium ore.

Removed from List II: Balsa wood—logs, sawed boards, planks, deals and sawed timber; copper and brass scrap; kyanite and sillimanite, metallic mineral substances in crude form not otherwise classified (such as drosses, skimmings, residues brass foundry ash, and flue dust); shellac, unbleached and bleached; talc, steatite (magnesium silicate) coating not to exceed 1½ per cent lime and 1½ per cent ferric oxide, crude and unground; tin—tin-plate scrap; tungsten ore and concentrates; vanadium ore.

Removed from List III: China clay or kaolin; paper base stock—rags for paper stock, waste bagging, gunny cloth and bags for paper stock, grasses, fibers, waste, shavings, clippings, etc., for paper stock, not elsewhere specified; textile waste, not elsewhere specified in the order, including jute thread and flax, etc. (except sisal and henequen processors' mill waste).

Added to List III: Balata, not elsewhere specified in the order.

Aluminum Co. of America, Pittsburgh, Pa., recently revealed that there is now ample aluminum and magnesium in excess of military needs, and the chief limitation on further expansion of civilian products in both fabrication and end-use manufacture is that of available manpower. Recent revisions of WPB orders broadened the permissible uses of both metals. "Background Data on the Postwar Planning Activities of American Magnesium Corp., a Wholly Owned Subsidiary of the Aluminum Co. of America", a recent compilation of source material on postwar planning in magnesium, suggests a much wider use of the metal in the chemical, transportation, and electrical industries and in many kinds of portable equipment.

The Aluminum Co., as part of its postwar sales-program recently appointed three assistant general sales managers and four product managers. The former are R. V. Davies, R. B. McKee, and Donovan Wilmot. The new product managers are: Harry L. Smith, Jr., succeeding Mr. Wilmot as product manager of sheet; Hugo T. Wilder, succeeding Mr. Davies as product manager for ingot; R. B. Whidden, succeeding Mr. McKee as product manager for tubing and extrusions, and Wiser Brown, succeeding Mr. Smith as product manager for sand and permanent-mold castings.

Foreign Economic Administration, Washington, D. C., has issued "Current Export Bulletin No. 181: Revision of the General License for Shipments of Limited Value (GLV)", which embraces a wide variety of products including acetic acid, acetone, methyl alcohol, alkyd resins, antimony, automotive replacement parts, belting, chloroprene, cotton duck cloth and yarn, dibutyl phthalate, dimethylaniline, diphenylamine, hexamethylenetetramine and compounds, magnesium, methyl methacrylate, methylamine, mica, naphthalene, polyvinyl chloride, rubber, rubberlike compounds synthetic, unfabricated, including polymers and copolymers of butadiene, acrylonitrile, butylene, styrene, and vinylidene chloride, and zinc.

URGES GOVERNMENT END MAGNESIUM CONTROL

Charging that the Government was promoting future unemployment by refusing to remove its controls over magnesium and that the recently announced relaxing of controls was deceptive, Dr. Willard H. Dow, President of the Dow Chemical Company, in an open letter to Donald M. Nelson, Chairman of the War Production Board, asked that the controls be removed at once to prevent the possible destruction of a vast potential industry. "Every day that the Government now delays in freeing the industry means a greater delay later on in providing employment."

"As matters now stand," said Dr. Dow, "the industry is entirely capable in the ordinary course of production of supplying all possible needs of the Government, either for domestic use or for export, and the stockpile is of such proportions as to give ample insurance against any kind of shortage. Therefore, as far as the needs of the war are concerned, there is no longer any reason to keep the magnesium industry under any form of control or allocation."

Do You Know?

The most extensive lumber resource in Honduras, Central America, is *pine*.

The U. S. *Army Air Force* was 37 years old on Aug. 1 this year.

Tetraethyl lead is contained in all gasoline used by the American air forces.

Copey oaks in Costa Rica sometimes measure eight feet in diameter at breast height and 80 feet up to the first limb.

Aluminum and *magnesium* look so much alike that the layman can hardly tell them apart, but the magnesium is one-third lighter than the aluminum.

Chemical Head Urges Regulations be Eased

Midland, Mich., Aug. 23.—Following the line of his request to Donald M. Nelson a few days ago that the War Production Board remove all of its control from magnesium, because they were no longer necessary for war purposes, Dr. Willard H. Dow today told the stockholders of the Dow Chemical Company at the 47th annual meeting:

"When the war is over, the need for regulations will cease, and even before the war is finished, we should drop such regulations as are no longer necessary for war purposes, for their continuance only delays our transition into the peace. There may be a shock in suddenly dropping the war controls, but not until every control is removed can we have the free, open and competitive market in which the customer rules. That is the only kind of market that will give us a free and prosperous America. The longer we delay stepping forward into freedom, the greater will be the eventual shock. There is no easy way to get out of what we are now in. Let us meet this question squarely and as Americans and not try to pussyfoot around it."

Dr. Dow reported to the stockholders that the sales of the company for the fiscal year ending May 31, 1944 were $85,500,000 above those for the fiscal year 1940, the last real peace year. But he warned them: "This company has been in no sense a war baby, but we must not deceive ourselves by taking all of our rapid growth as natural growth. We have had a forced growth induced by the emergency of war orders."

1500 Years for Sea Magnesium

Officials of the Dow Chemical company at Freeport, Texas, where magnesium is extracted from sea water, recently received one of those famous Washington questionnaires. In this one WPB requested information as to just how long the company's seawater supply would last. Dow officials failed to answer the question because of its obviousness; whereupon they received a curt demand for the information. The answer which was finally sent stated that the supply should last about 1500 years, unless the Atlantic ocean empties into the Gulf of Mexico, in which case all bets on the life of the supply were off.

Rustless Skin On Magnesium Adds To Metal's Usefulness

NEW YORK, Dec. 2.—An electrical process which puts a skin on magnesium metal makes this lightest of all metals more useful in warplanes and in peace time household articles.

One of the main drawbacks of magnesium has been extreme susceptibility to corrosion. Even air eats magnesium. Paint was only a partial solution, since air and particularly moisture would get through to cause some damage.

Aids Aircraft Industry

The new skin-making process was developed by N. H. Simpson and Paul R. Cutter, respectively chief chemist and research chemist for Consolidated Vultee Aircraft Corporation. The work was done at Fort Worth. The process is to be shared with the aircraft industry.

The skin is developed by immersing the magnesium in an alkaline solution and passing electric current through the metal at a temperature of a little more than 170 degrees Fahrenheit. The skin is formed by chemicals which come from the magnesium, mainly carbonates, hydroxides and oxides.

The increased uses for magnesium in warplanes include magnesium ribs, control surfaces and stiffeners. The magnesium skin takes a high polish and a permanent finished in any color desired. The metal is harder and has more wear resistance.

In the air the use of magnesium has been limited mainly to parts not exposed to corrosion, including landing gear castings and engine mounts, certain tail castings, instrument panels and seats and general furnishings.

Magnesium Durable

Magnesium metal is one-third lighter than the duralumin used in airplane construction. But magnesium has not as great tensile strength as duralumin.

Magnesium Metal Is Said Abundant

Highlighting the first formal meeting of the newly formed Magnesium Association in New York recently was the statement that "magnesium is the natural and inevitable material of construction for anything that moves," made by Dr. Willard H. Dow, president of Dow Chemical Company.

Declaring the United States has shown it can produce magnesium limitless for war and "had our military and naval authorities awakened earlier to the need for magnesium," the industry could have been built in businesslike fashion, saving a lot of money.

Dr. Dow said there is no sentiment in the industry for the provision by the government of "feather beds on which we might curl up after the war," and that the industry did not intend to stay on the public payroll after the war.

Government Will Help Magnesium Industry

The American magnesium industry—a problem child of U. S. economy because consumption has jumped from 15 million pounds a year prewar to better than 500 million pounds, and may fall off just as fast unless helped—is being assisted by WPB. Several civilian uses are being actively promoted, including buses, trucks, railway cars, vacuum sweepers, stepladders, furniture, kitchen utensils.

Further Decline In Primary Magnesium Production In June

Shipments Of Sand Castings Lower But Extrusions And Permanent Mold Castings At New Peaks

WASHINGTON—Shipments of magnesium sand castings dropped to 5,722,000 pounds in June—about 25% below the peak of March, 1944, and about 14% below the May level—according to data released on Saturday by the Aluminum and Magnesion Division, W.P.B. This was the lowest amount delivered by the industry since October 1943 and reflects the continued declines in the requirements of aircraft consumers.

Production of primary magnesium decreased in June for the fifth successive month in line with Government-ordered curtailments. June output of 29,372,000 pounds was 15% below May and 30% below the January 1944 peak of 42,000,000 pounds. Secondary recovery, amounting to 2,076,000 pounds, was also at the lowest level in five months.

Shipments of extrusions and permanent mold castings reached new peaks, however. Deliveries of extrusions of 755,000 pounds showed the most marked increase, amounting to almost twice the previous peak achieved in May and four times the preceding peak rate reached in March 1944. Permanent mold castings, where shipments were 572,000 pounds, exceeded the January peak by 7%.

(Continued on page 9)

Sell Magnesium Plants

WASHINGTON, Feb. 27 (AP) The government should dismantle, sell or lease the aluminum and magnesium plants it does not need after the war, a WPB official said today.

Dr. W. Y. Elliot, war production vice chairman, told a special senate committee that "the less the government perpetuates itself in fields which can be adequately handled by private enterprise, the better it will be."

The committee began hearings to explore postwar opportunities for small business in the production and use of aluminum and magnesium. The government is now the largest owner of light metal plants in the world.

"Because I do not believe that aluminum and magnesium are in their nature a public utility, I am not recommending that they retain and operate any of these plants in competition with private business," Dr. Elliot said.

GOVERNMENT ENDS MAGNESIUM METAL OUTPUT AT PLANTS

Washington, D. C. — Production of magnesium metal will cease in practically all government owned plants by Jan. 1, the war production board says.

Closing of two more government plants has been scheduled, the agency reported, because of decreasing military demand for the metal, used chiefly in the manufacture of aircraft and of incendiary bombs, and because surplus stocks already are double the amount of the safety reserve. About 1200 workers will be released.

These two plants are operated by the Dow Magnesium Co. at Velasco, Texas, and Electrometallurgical Co. at Spokane, Wash. Partial curtailment at the Diamond Magnesium plant at Painesville, Ohio, also has been ordered.

WPB started reducing the output of magnesium last March. Since then work has been stopped at government owned plants, including those of the Dow Magnesium Co., Marysville and Ludington, Mich.; Amco Magnesium Co., Wingdale, N. Y.; Mathieson Alkali Works Inc., Lake Charles, La.; Permanente Metals Corp., Manteca, Cal.; Basic Magnesium Inc., Las Vegas, Nev.; Ford Motor Co., Dearborn, Mich.; and International Minerals & Chemicals Corp., Austin, Texas.

Importance of BMI

The great stimulus to mining in Nevada has come about in the field of the heretofore minor strategic metals, with magnesium easily of the greatest importance, followed by tungsten, manganese and mercury.

All in all, the increased production from the state's leading industry of mining has resulted in a 25% increase in population and general prosperity, with the state now free of any bonded debt.

By A. E. Cahlan

Is magnesium really a drug on the market? Have we enough on hand to last for several years as WPB's Arthur Bunker and Phil Wilson told us when BMI was ordered to shut down? Dow Chemical knows about magnesium and Dow isn't playing it that way. Listen to the most recent advertisement carrying the Dow signature:

"More and more manufacturers of portable tools are going to take maximum advantage of lightweight magnesium—the metal of motion. These tools will make jobs easier for workers, and Dow is ready NOW with magnesium fabrication experience and facilities to help these manufacturers."

And don't forget that BMI was prepared to produce finished metal for seven cents a pound BENEATH Dow's cost. But BMI was NEVER allowed to proceed with fabrication or obtain the facilities to help manufacturers, despite the low cost and the $130,000,000 the American taxpayers invested in getting the giant industry under way. Dow's tune has changed since BMI's closing assured the complete removal of its ONLY rival in the field.

Magnesium Fate Is Assured, Say Magcasco Chiefs

An industry which is destined to take its place among the permanent factories in the Las Vegas area, was described to members of the Las Vegas chamber of commerce at the regular meeting of the group on Tuesday.

Officials of the Magcasco company, which is manufacturing numerous implements from magnesium at Henderson, explained what they were doing with the industry and reported that prospects were bright for a permanent, medium-sized establishment here.

Earl McGee, president of the group, said that there was a big job ahead and that the local firm had just started. He predicted a large field for magnesium in the light metal industry.

He described the products of the company, including the making of artificial limbs, frying pans, movie projectors and other items which, he said would open a new field because of the light weight of the material used.

He said that the main idea of the company was not just to cast magnesium but to give complete magnesium service to those industries desiring it.

Dick Palmer, consulting engineer of the firm, said he had been in the light metal industry for 25 years and predicted that, for the next 10 years, magnesium would enjoy the same growth that aluminum has in the past 10.

He said that magnesium was not a cure-all but that the lightness of the metal was an excellent quality. He also pointed out that the rigidity of the metal was another feature which many people had overlooked.

"With the acceptance of magnesium as a structural portion of construction, the metal will go forward," Palmer said.

MAGNESIUM TO BE ORPHAN OF WESTS' MANY WAR BABIES

WASHINGTON, Feb. 12 (AP)—At this point it looks as though magnesium may be the only orphan among the war babies of the west.

The past week saw evidence of interest by both shipbuilder Henry Kaiser and United States Steel corporation in the great Geneva, Utah, steel plant.

Aluminum Company of America has publicly avowed a desire to continue and expand its western operations.

But, so far, there has been no sign of a foster-father for the magnesium industry says Sam Husbands, chairman of Defense Plant corporation, which owns the magnesium plant at Las Vegas. But Husbands has not given up hope. He said he has compiled a "whole list" of firms that might be interested in the government's light metals plant and was inviting them all to investigate.

Billion in Magnesium Plant

WASHINGTON, Feb. 28 (AP) More than one billion dollars has been invested in the aluminum and magnesium industries by the defense plant corporation.

DPC President Hans A. Klagsbrunn yesterday told a senate special committee that $670,658,000 was devoted to aluminum and $389,299,000 to magnesium. The total figure — $1,059,957,000 —went into the first day's record of hearings being held by the committee to determine postwar opportunities for small business in those industries.

Nevada Magnesium Is Used on Coast

The Sierra Magnesite company, owned jointly by Westvaco Chlorine Products Corporation of Newark, Calif., and Henry J. Kaiser and his associates of Oakland, mined magnesium during the past year from the Segerstrom property and other claims near Luning, the crude mineral being shipped to Newark and San Jose, Calif., for calcining.

At Newark the material is caustic-calcined for oxychloride cement and chemical use, whereas at San Jose it is caustic-calcined for domestic uses and for export, and dead-burned for refractory use.

JOURNAL OF COMMERCE
"America's Leading Business Newspaper"
New York City
JUL 17 1944

TEXT OF WPB ORDERS EASING CURBS ON ALUMI

Permit Wider Use for Essential Products

PART 921—ALUMINUM AND MAGNESIUM DIVISION SUPPLEMENTARY ORDER M-1-i, AS AMENDED JULY 15, 1944

Section 921.11 (Supplementary Order M-1-i) is hereby amended to read as follows:

(a) **Use of aluminum allowed for certain specific purposes.** Any person may use aluminum for any purpose mentioned in List A at the end of this order.

(b) **Use of aluminum .n repairs.** Aluminum may be used in making specific repairs for a used article, or in making repair parts for a specific used article in need of repair.

Substitutes

(c) **Use of aluminum as substitute for other metal.** (1) In addition to the uses mentioned in List A, any person may use aluminum as a substitute for any other metal in the manufacture of any article (including parts, components and sub-assemblies) if he does not make more units for civilian purchase orders in any quarter than the number of units of the same size he lawfully made out of other metal for civilian purchase orders in the second quarter of 1944. Also, without regard to second quarter production, aluminum may be used as a substitute for any other metal allowed by WPB orders in the following cases:

(2) A person whose output of an article is expressly limited to a specific number of units per quarter or a specified dollar amount (either under a WPB order or by an authorized production schedule under the Controlled Materials Plan or Priorities Regulation 11-B) may use aluminum in place of other permitted metal as long as he does not exceed these limits.

(3) A person whose output is not restricted by a specific unit or dollar limit but is covered by a WPB order restricting his use of other metal during a given period to a specified percentage of his previous use, may use aluminum as a substitute for other metal as long as the total number of units of the article which he makes during the period, and the size of the units, is not greater when he uses aluminum for all or part of his production than it could be under the WPB order if he used other metal exclusively. (For example under Order L-73 no one may use in the manufacture of certain types of office supplies more iron and steel in any quarter than 12½ per cent of the total weight of all metals used by him during 1940. As applied to a particular manufacturer of steel calendar stands, this has the effect of restricting his production to 200,000 per quarter. If he wants to make some or all of his calendar stands out of aluminum, he still may not make a total of more than 200,000 per quarter, including those made of aluminum, and he may not make them any bigger than they would be if he made them of steel.)

Scrap, Pigments

(4) A person whose output is not restricted in any of the ways mentioned in (2) or (3) above, and who has been specifically allotted steel or copper for the third quarter of 1944 to make an article under CMP, may use aluminum to take the place of the allotted steel or copper as long as he does not increase his total production in the quarter (including aluminum, copper and steel) over the number of units of the same size he could have made with the allotted steel or copper only. In the fourth quarter of 1944 and subsequent quarters, his production will be controlled by the size of his allotments of controlled materials (including aluminum), determined in accordance with regular WPB procedures.

(d) **Restrictions in other orders on use of aluminum superseded, but scrap, pigment and composition not affected.** All restrictions in other orders of the WPB as to the use of aluminum (whether referred to by name or as a metal) no longer apply. However, restrictions as to the quantity of an article which may be made remain applicable even if it is made of aluminum as permitted by this order. Also this order does not affect aluminum scrap, which is defined in and controlled by Order M-1-d, or aluminum pigment and composition, which are defined in and controlled by Order M-1-g.

(e) **Other uses of a aluminum.** No one may use aluminum for a purpose not allowed by paragraphs (a), (b) and (c) above without the specific authorization in writing of the WPB. If a person wants such authorization, and does not need an exemption from any order of the WPB (or an authorized production schedule) governing the manufacture of the article he wishes to make, he may apply by letter to the Aluminum and Magnesium Division, War Production Board, Washington 25, D. C., Reference M-1-i. The letter should be filed in duplicate and should contain substantially the information, numbered as shown below:

(1) Weight, form and alloy of aluminum, for which authorization to use is requested.

(2) The number of nonths the quantity of aluminum requested will cover estimated requirements.

(3) The part to be fabricated, or other use to be made of the aluminum requested.

(4) The product into which such part will be incorporated, and end-use of the product.

(5) If previous requests for this use have been authorized or denied, give reference number of most recent authorization or denial.

(6) Manpower information on form WPB-3820, or, if granting the authorization will not involve any increase in number of production employes in applicant's plant, a statement to that effect.

(f) **Appeals for relief from quantity restrictions.** If a person wants to use aluminum as a substitute for other metal to make an article in greater quantity than is allowed by paragraph (c) of this order, and believes that his case involves exceptional conditions warranting relief, he may appeal to the WPB as explained in Priorities Regulation 16. The appeal should be filed with the Aluminum and Magnesium Division as an app al from this order except that if he also wants relief from quantity restrictions imposed by another order of the WPB governir e article he is making, he shou appeal from the other order.

(g) **How to get aluminum.** Aluminum may be obtained as explained in CMP Regulations. Allotments may be of the deferred kind described in Direction 54 to CMP Regulation 1 in cases where aluminum is to be used for purposes not previously permitted and in other cases where the WPB considers deferred allotments desirable to prevent possible interference with war requirements.

(h) **Reports.** All persons shall file such inventory and other reports as may be prescribed from time to time by the War Production Board. The reporting requirements of this order have been approved by the Bureau of the Budget under the Federal Reports Act of 1942.

(i) **Delivery for unlawful uses forbidden.** No person shall deliver any aluminum if he knows or has reason to believe that it is to be used in violation of the terms of this order.

(j) **Definitions.** For the purpose of this order:

(1) "Aluminum" means any material the principal ingredient of which by either weight or volume is metallic aluminum, which material is in ingot or similar raw form or in the form of finished or semi-finished parts, assemblies or products of any kind, but not including any material in the form of aluminum scrap (which is defined in and controlled by Order M-1-d), or aluminum pigment or aluminum composition (which are defined in and controlled by Order M-1-g).

(2) "Use aluminum in manufacture" means to melt, roll, forge, cast, extrude, draw, turn, spin, fabricate or process in any other way, or assemble or incorporate in assemblies, or to consume or otherwise use in the course of manufacture, any aluminum; but does not include the installation of a finished product or repair part for the ultimate consumer.

(3) "Civilian purpose order" means any purchase order for an article which is not to be delivered directly or indirectly to the United States Army or Navy, the Maritime Commission, the War Shipping Administration, or any foreign country under the Lend-Lease Act.

(k) **Violations.** Any person who wilfully violates any provision of this order, or who, in connection with this order, wilfully conceals a material fact or furnishes false information to any department or agency of the United States is guilty of a crime, and upon conviction may be punished by fine or imprisonment. In addition, any such person may be prohibited from making or obtaining further deliveries of, or from processing or using material under priorities control and may be deprived of priorities assistance.

(l) **Applicability of regulations.** This order and all transactions affected thereby are subject to all applicable regulations of the War Production Board as amended from time to time.

Issued this 15th day of July, 1944.
WAR PRODUCTION BOARD
By J. JOSEPH WHELAN,
Recording Secretary.

List A

The use of aluminum is specifically permitted for the following purposes, including manufacture of the items listed below and parts, components and sub-assemblies of such items:

(1) Products and equipment prescribed for use by and produced for the Army and Navy of the United States, the Maritime Commission, or the War Shipping Administration or the army or navy of a foreign country.

(2) Aircraft, in addition to those described in subparagraph (1) above.

(3) Alloys.

(4) Aluminizing or calorizing.

(5) Aluminum to be exported in any of the forms and shapes described as a controlled material in CMP Regulation No. 1.

(6) Anhydrous aluminum chloride.

(7) Anodizing equipment.

(8) Automotive busses, trucks and truck trailers.

Use in Cans

(9) Cans. The receipt and use of aluminum cans is subject to the quota provisions of Order M-81 except in the case of cans authorized under Direction 4 to Order M-81.

(10) Carbometer wire.

(11) Cathodes for the electrolytic refining of zinc and cadmium.

(12) Cauls for use in the manufacture of plywood.

(13) Chemical processing equipment for use in manufacturing plants.

(14) Closures for parenteral solutions and blood.

(15) Closures of aluminum sheet or strip for glass containers. The use of glass container closures made of aluminum is subject to the quota provisions of Order L-103-b.

Collapsible Tubes

(16) Collapsible tubes. The use of aluminum collapsible tubes is subject to the quota provisions of Order M-115.

(17) Cooking utensils to the extent allowed by orders in the L-30 series.

(18) Commercial radio equipment and all wire communications equipment, but only where aluminum, copper or copper base alloy was used in commercial production in the United States during 1939, 1940 or 1941. The above partial restriction on the use of aluminum does not apply to electronic equipment, as defined in Order L-265, manufactured pursuant to subparagraph (25) below.

(19) Data and instruction plates.

(20) Electric bus bars, electrical conductors, and current-carrying accessories for conductors.

(21) Electric condensers.

(22) Electric conduit fittings and wiring devices, but only where aluminum was used in commercial production in the United States during 1939, 1940 or 1941.

(23) Electric motors.

(24) Electric switch gear equipment.

(25) Electronic equipment, as defined in Order L-265.

(26) Fire fighting equipment, protective signal and alarm equipment, but only where aluminum, copper or copper base alloy was used in commercial production in the United States during 1939, 1940 or 1941.

(27) Food processing machinery for bakeries, canneries, dairies, dehydrating plants and packing plants.

(28) Foundry equipment, the following items only: Bottom boards, core boxes, core dryers, flasks, match plates and patterns. Damaged and obsolete equipment listed in this paragraph may be remelted for the production of new items listed in this paragraph without a CMP application or authorization pursuant to Order M-1-d. (See Direction 1 to CMP Regulation No. 5).

(29) Galvanizing, for addition to bath.

(30) Hydraulic brake pistons.

Industrial Fans

(31) Industrial type fans and blowers and fans and blowers manufactured for incorporation into other machinery or devices, but only where aluminum, copper or copper base alloy was used in commercial production in the United States during, 1939, 1940 or 1941.

(32) Industrial machinery and attachments therefor but only where aluminum, copper or copper base alloy was used in commercial production in the United States during 1939, 1940 or 1941. "Industrial machinery" as used in this subparagraph means machinery designed for use in manufacturing and chemical processing on a commercial basis; construction machinery, packaging machinery; conveyors for use in connection with manufacturing and chemical plants and in connection with construction; laundry, drycleaners' and tailors' pressing machines, and shoe repair machinery. The above partial restriction on the use of aluminum does not apply to food processing machinery if manufactured pursuant to subparagraph (27) above.

(33) Industrial spray guns and grease guns, but only where aluminum, copper or copper base alloy was used in commercial production in the United States during 1939, 1940 or 1941.

Instruments

(34) Instruments, machanical and electrical. Dials, scales and panels for all types of such instruments. Other parts of only the following mechanical or electrical instruments:

(i) Drafting machines.
(ii) Engineering instruments.
(iii) Geophysical instruments.
(iv) Industrial instruments for measuring, recording or controlling industrial processes.
(v) Laboratory instruments.
(vi) Safety controls and heating controls.

(35) Internal combustion engines.

(36) Jigs and fixtures for use in manufacturing processes.

(37) Lighting equipment of the following types only:

(i) Aviation ground lighting equipment.
(ii) Hospital operating room lighting equipment.
(iii) Industrial type lighting equipment.
(iv) Miners' lamps.
(v) Reflectors for dry cell lights.

(38) Molds for the manufacture and repair of rubber products.

(39) Orthopedic, medical, dental, ophthalmic and surgical instruments and equipment designed exclusively for orthopedic, medical, dental, ophthalmic and surgical use.

(40) Portable electric and pneumatic tools.

(41) Portable power-driven tree felling saws.

(42) Pots and pans. See cooking utensils, subparagraph (17) above.

(43) Repair and maintenance parts for mechanical or electrical equipment.

(44) Refrigeration and heating coils and fins.

Research Materials

(45) Research, development or experimental activities, including the making of experimental models to the extent permitted by applicable orders and regulations. 1/

(46) Safety equipment as defined in Limitation Order L-114, but only where aluminum, copper, or copper base alloy was used in commercial production in the United States during 1939, 1940 or 1941.

(47) Scales (weighting), but only where aluminum, copper or copper base alloy was used in commercial production in the United States during 1939, 1940 or 1941.

(48) Steel deoxidizer.

(49) Stove and range top burner heads.

(50) Thermit reaction, for use in the manufacture of thermit powders and ferro-alloys only.

(51) Welding rod and metallizing wire.

(52) X-ray equipment, infra-red and ultra-violet lamps.

1/ Aluminum in controlled material forms may be ordered for research, developmental and experimental activities by placing an order bearing the controlled material symbol V-9 and the standard CMP certification, all as provided in Order P-43.

PART 921 — ALUMINUM AND MAGNESIUM DIVISION
(General Preference Order M-2-b as Amended July "", 1944)

Section 921.16 (General Preference Order M-2-b) is amended to read as follows:

921.16 General Preference Order M-2-b (a) **Definitions.** For the purposes of this order:

(1) "Unfabricated magnesium" means any metal in ingot or other raw form, including sticks, the principal ingredient of which by weight is the element magnesium.

(2) "Magnesium products" means any basic forms (such as, but not limited to, castings, extrusions (other than sticks), sheet, strip, plate, forgings, and powder the principal ingredient of which by weight is magnesium.

Magnesium Scrap

(3) "Magnesium scrap" means any scrap material (except sawings, grindings, sweepings, and similar fines), the principal ingredient of which by weight is magnesium, generated in the course of any industrial process, or any discarded magnesium products, which must be remelted to be of value for further use. The term "magnesium scrap" also includes any dross or sludge resulting from melting magnesium or magnesium scrap, when the dross or sludge contains at least 20 per cent of magnesium by weight.

(4) "Producer" means any person who makes unfabricated magnesium, in whole or in part, from a non-metallic raw material.

(5) "Approved smelter" means one of the smelting plants listed on Exhibit A.

(6) "Fabricator" means any person, including pattern shops, foundries, and powder grinders, who make magnesium products.

(7) "Civilian purchas order" means any purchase order for an article which is not to be delivered directly or indirectly to the United States Army or Navy, the Maritime Commission, the War Shipping Administration, or any foreign country under the Lend-Lease Act.

(b) **Delivery and use of unfabricated magnesium.**

(1) Except as provided in paragraph (m) with respect to dead stock, no person shall deliver, accept delivery of or use unfabricated magnesium without the written specific authorization of the War Production Board.

(2) A person who seeks the specific authorization of the War Production Board to accept unfabricated magnesium and to use it, and who seeks specific authorization for his supplier to deliver unfabricated magnesium, should apply monthly by letter in duplicate stating the form, alloy and other specifications of the unfabricated magnesium required, the amount in pounds of each type of unfabricated magnesium, the magnesium product to be made from each type of unfabricated magnesium or other use to which it is to be put, and the month in which, and the address to which the unfabricated magnesium is to be shipped. Such applications should be made by the 10th of the month preceding the month of requested delivery.

(c) **Use of magnesium products permitted on military and aircraft orders.** Magnesium products may be used in making any items prescribed for use by and produced for the United States Army or Navy, Maritime Commission, the War Shipping Administration, or the Army or Navy of any foreign country, and in making any aircraft or aircraft components or airborne equipment.

(d) **Use of magnesium products for experimental purposes.** Magnesium products may be used for research, development, or experimental purposes, including the making of experimental models, to the extent permitted by applicable WPB orders and regulations.

Use as Substitute

(e) **Use of magnesium products as substitute for other metal.** (1) In addition to the uses mentioned above, any person may use magnesium products as a substitute for any other metal in the manufacture of any article (including parts, components and sub-assemblies) if he does not make more units for civilian purchase orders in any quarter than the number of units of the same size he lawfully made out of other metal for civilian purchase orders in the second quarter of 1944. Also without regard to second quarter production, magnesium products may be used as a substitute for any other metal allowed by WPB orders in the following cases:

(2) A person whose output of an article is expressly limited to a specific number of units per quarter or a specified dollar amount (either under a WPB order or by an authorized production schedule under the Controlled Materials Plan or Priorities Regulation 11-B) may use magnesium products in place of other permitted metal as long as he does not exceed these limits.

(3) A person whose output is not restricted by a specific unit or dollar limit but is covered by a WPB order restricting his use of other metal during a given period to a specified percentage of his previous use, may use magnesium products as a substitute for other metal as long as the total number of units of the article which he makes during the period, and the size of the units, is not greater when he uses magnesium products for all or part of his production than it could be under the WPB order if he used other metal exclusively.

(4) A person whose output is not restricted in any of the ways mentioned in (2) or (3) above, and who has been specifically allotted steel, copper or aluminum for the third quarter of 1944 to make an article under CMP, may use magnesium products to take the place of the allotted steel, copper or aluminum as long as he does not increase his total production in the quarter (including production from magnesiur. as well as from steel, copper and aluminum) over the number of units of the same size he could have made with the allotted steel, copper and aluminum only. In the fourth quarter of 1944 and subsequent quarters, his production will not be restricted except as may be otherwise provided.

(f) **Restrictions in other orders on use of magnesium superseded.** All restrictions in other WPB orders as to the use of magnesium products (whether referred to by name or as a metal) no longer a ply. However, magnesium products obtained with priorities assistance for a particular purpose may not be used for other purposes except as permitted in applicable Priorities R ulations.

(g) **Other uses of magnesium products.** Except as stated above, no person may use magnesium products without the specific authorization in writing of the WPB. Authorization to accept a delivery of magnesium products for a particular purpose is equivalent to authorization to use it for that purpose. Anyone who wants specific authorization of the WPB to use magnesium products for a purpose not permitted above and does not need an exemption from any order of the WPB (or an authorized production schedule), may apply by letter to the Aluminum and Magnesium Division, War Production Board, Washington 25, D. C., Reference M-2-b. The letter should be filed in duplicate and should contain substantially the information numbered as shown below:

(1) Weight, form and alloy of magnesium products for which authorization to use is requested.

(2) The number of months the quantity of magnesium products requested will cover estimated requirements.

(3) The part to be fabricated or other use to be made of the magnesium product requested.

(4) The article into which such part will be incorporated and end use of the article.

(5) Manpower information on form WPB-3820, or, if granting the authorization will not involve any increase in number of production employes in applicant's plant, a statement to that effect.

Appeals for Relief

(h) **Appeals for relief from quantity restrictions.** If a person wants to use magnesium products as a substitute for other metal to make an article in greater quantity than is allowed by paragraph (e) of this order, and believes that his case involves exceptional conditions warranting relief, he may appeal to the WPB as explained in Priorities Regulation 16. The appeal should be filed with the Aluminum and Magnesium Division as an appeal from this order except that if he also wants relief from quantity restrictions imposed by another order of the WPB governing the article he is making, he should appeal from the other order.

(i) **How fabricators fill orders for magnesium products.** Every fabricator shall fill, in preference to all other orders, those orders for magnesium products which he is specifically authorized in writing by the WPB (or, in the case of certain deliveries for aircraft products, by the Aircraft Scheduling Unit of the Aircraft Resources Control Office) to deliver before October 1, 1944. All orders for magnesium products which are not so authorized shall be filled according to preference ratings as provided in Priorities Regulation 1.

(j) **Prohibition against alloying, contamination, and debasement.** No person shall alloy, contaminate or debase unfabricated magnesium except as the War Production Board may specifically authorize in writing.

(k) **Collection, segregation, and use of scrap.** (1) Each person owning or generating magnesium scrap shall collect it, place it in containers, label the containers so as to identify the scrap, and otherwise prepare all such scrap for reprocessing. All magnesium scrap shall be kept free of contamination by other metals and materials, and otherwise handled in such manner so that it will be of acceptable quality for reprocessing.

(2) In addition, each person generating more than 1,500 pounds of magnesium scrap in any month beginning with December, 1943, shall thereafter segregate all magnesium scrap unless specifically authorized in writing by the War Production Board to do otherwise. Such scrap shall be segregated by alloys in accordance with the alloy designation of the American Society for Testing Materials. Commercially pure magnesium, and magnesium scrap of each alloy not described by such designations, shall be kept segregated.

Scrap Segregation

(3) Each person receiving segregated magnesium scrap must keep such scrap segregated prior to its use to the same extent as when received by him, and if he redelivers such scrap, he shall do so segregated to the same extent as when it was received by him.

(4) Any fabricator may use any magnesium scrap generated in his plant (or any casting of his own manufacture rejected or spoiled by another person) but only (i) if the scrap is remelted and refabricated in such plant into products for the production of which the fabricator is currently obtaining deliveries of unfabricated magnesium in conformity with this order and (ii) if, in estimating, applying for, and ordering such magnesium, the fabricator reduces his requirements by an amount which represents a reasonable anticipation of the amount of magnesium scrap which will be recoverable for re-use under this paragraph.

(l) **Disposition of all scrap.** (1) Except as the War Production Board may specifically authorize in writing, any person, other than a producer or approved smelter, owning any magnesium scrap, shall sell or deliver for processing on toll all such scrap at reasonable intervals to a producer or approved smelter and shall not use or dispose of it in any other way. However, a person who has found a new magnesium casting to be defective or has spoiled it, may deliver the casting back to the foundry which produced it.

(2) Except as specifically authorized in writing by the War Production Board, no producer or approved smelter shall mix two or more alloys during the remelting of scrap.

(3) Unless specifically authorized by the War Production Board in writing, no person other than a producer or approved smelter shall accept delivery of any magnesium scrap except that a foundry may accept delivery of a casting of its own manufacture which has been rejected or spoiled in machining.

(m) **Dead Stock.** All unfabricated magnesium and magnesium products which are not being used in, or which are in excess of reasonable needs for, the manufacture of items approved by written specific authorization, may be sold subject to the restrictions of Priorities Regulation No. 13.

Authorizations

(n) **Requests for authorization and other communications.** All requests for authorizations under this order shall be filed in duplicate and shall give the relevant facts, including any information specifically called for above. All such requests and other communications regarding this order should be addressed to the War Production Board, Aluminum and Magnesium Division, Washington 25, D. C., Reference M-2-b.

(o) **Special directions.** The War Production Board may issue special d ctions with respect to the ordering, production, delivery, and receipt and use of magnesium and magnesium products.

(p) **Report of operations.** Any person who in any calendar month has had in inventory any unfabricated magnesium, magnesium products, or magnesium scrap, shall file such reports as may be required from time to time by the War Production Board, subject to approval by the Bureau of the Budget under the Federal Reports Act of 1942.

(q) **Intra-company deliveries.** The provisions of this order with respect to deliveries prohibit or restrict deliveries not only to other persons, including affiliates and subsidiaries, but also deliveries from one branch, division, or section of a single enterprise to another branch, division, or section of the same or any other enterprise under common ownership or control.

(r) **Applicability of regulations.** This order and all transactions affected thereby are subject to all applicable regulations of the War Production Board, as amended from time to time.

(s) **Violations.** Any person who wilfully violates any provision of this order or who, in connection with this order, wilfully conceals a material fact or furnishes false information to any department or agency of the United States is guilty of a crime, and upon conviction may be punished by fine or imprisonment. In addition, any such person may be prohibited from making or obtaining further deliveries of, or from processing or using, material under priority control and may be deprived of priorities assistance.

Issued this 15th day of July, 1944.
WAR PRODUCTION BOARD,
By J. JOSEPH WHELAN,
Recording Secretary.

EXHIBIT A—APPROVED SMELTERS

Aluminum and Magnesium, Inc., 1 Huron St., Sandusky, Ohio.
American Smelting & Refining Co., Federated Metals Division, Barber, N. J.
Apex Smelting Co., 2537 West Taylor St., Chicago, Illinois.
Berg Metals Corp., 2652 Long Beach Ave., Los Angeles Calif.
Gallagher Smelting Co., 1820 Tenth St., Oakland, California.
National Smelting Co., 6700 Grant Ave., Cleveland 5, Ohio.

Direction 54

PART 3175—REGULATIONS APPLICABLE TO THE CONTROLLED MATERIALS PLAN DIRECTION NO. 54 to CMP REGULATION NO. 1

DEFERRED ALLOTMENTS FOR ALUMINUM

(a) **General.** This direction describes the operation of deferred allotments for aluminum. These allotments and authorized controlled material orders based on them are identified with the letter "Z" either as the sole allotment symbol or as a prefix to the regular allotment symbol. Deferred allotments and authorized controlled material orders based on them are exactly the same as regular allotments and authorized controlled material orders, except as provided in this direction or as may be provided under other regulations.

(b) **Identification of deferred allotments.** Any consumer receiving an allotment identified with the symbol "Z," either as the sole allotment symbol or as a prefix to the regular allotment symbol, must place the same identification on every allotment which he passes on under the allotment received by him, as well as on every authorized controlled material order placed by him based on that allotment.

(c) **Treatment by an aluminum producer of authorized controlled material orders based on deferred allotments.** (1) An aluminum producer must accept or reject an authorized controlled material order identified by the symbol "Z" in the same way that he must accept any other authorized controlled material order under Direction 23 to CMP Regulation No. 1. However, if after accepting orders identified by a "Z" symbol, he receives authorized controlled material orders (other than "Z" orders) or "AM" order which he would be unable to accept because of the provisions of Direction 23, he must remove his most recently accepted "Z" orders from his schedule to the extent necessary and accept the other authorized controlled material order.

(2) An aluminum producer must defer production of his most recently accepted "Z" orders to the extent necessary to make deliveries on time on other authorized controlled material orders and "AM" orders.

(3) Whenever an aluminum producer finds that he will be unable to fill a "Z" order within the month promised, he must promptly notify the customer stating approximately when he expects to make delivery.

(d) **Reports to WPB.** Producers shall treat "Z" orders separately on all reports filed with the Aluminum and Magnesium Division of WPB.

Issued this 15th day of July, 1944.
WAR PRODUCTION BOARD
J. JOSEPH WHELAN,
Recording Secretary.

NON-FERROUS METALS

. . . News and Market Activities

Magnesium Production Fosters Use

• • • **The use of fabricated magnesium** products in the postwar market should be encouraged by the quantity of metal available. Prior to the war the nation was producing at a rate slightly over 6,000,000 lb. per year. Under the impetus of British and French aircraft orders, the magnesium industry began to expand production facilities, and government plants also were constructed. By 1941 production had grown to approximately 33,000,000 lb. per year. Production figures have soared higher and higher until now about 36,000,000 lb. of magnesium are being produced in the United States every month. If peak production is achieved in 1944, the figure may exceed 500 million lb. annually.

The price of magnesium ingot has dropped as markets and production facilities increased. From $5.00 per lb. in 1915, ingot fell to 27c. per lb. in 1939, and in 1943, dropped to 20½c. per lb. Weight for weight, magnesium is more costly than the other common commercial metals. Nevertheless, the price per unit of volume gives magnesium an edge over some competitive metals because of its light weight.

Magnesium is produced by 11 firms that operate 15 plants, each of which utilizes one of three basic processes. Magnesium is produced by the electrolytic reduction of fused magnesium chloride recovered from brine, sea water, magnesium salts, and magnesite. Other processes employ the direct reduction of magnesium oxide by using either carbon or ferro-silicon as a reducing agent.

The number of magnesium fabricators in the United States has multiplied 25 times since 1939. In that year there were only four major fabricators and today there are nearly 100. Of these, approximately 67 are producing sand castings, permanent mold castings, die castings and extrusions; 18 are producers of magnesium powder, and 14 are making incendiary bomb casings.

•

Cleveland

• • • **Magnesium production** took a serious blow here about 10 days ago when one plant of National Smelting was burned out. This affected the largest producer of magnesium ingots east of the Rockies. With this unit seriously limited in production temporarily the local market for magnesium scrap has gone begging. Good supply has been reported and this backlog is currently building up. National reports that its operations are about 2/3 restored but that an additional two weeks will be required before anything like normal operations can be expected.

The magnesium market as a whole appears to be very easy and the government is taking advantage of this easiness to cut off most of the high cost producers. Three reductions in magnesium capacity have been made recently, mostly among high cost operations, the latest being a reduction of 7,000,000 lb. per month made last week. This means of balancing supply and demand is resorted to while additional demand is being encouraged through WPB solicitations to use magnesium in other than war products and generally to expand its use.

This particular effort is not making much headway since the WMC has put the crimp on almost all concerns which might consider the use of magnesium for expanded use through manpower halters. WPB on one hand dangles the fat prize of a new material which can be obtained for civilian production and WMC withholds the right to use the metal by declaring insufficient manpower for production without affecting the war effort.

Aluminum scrap is also reported plentiful and will probably continue to be as war uses of the metal are expanded while smelting is being reduced in an effort to stabilize the market. Here again the differences of the WPB and WMC are restraining the use of now excess aluminum in civilian products on the plea of manpower stringencies.

One vacuum cleaner firm in this area has been actively contacting WPB in an effort to get a go ahead on making some vacuum cleaner parts and assemblies on a limited "spare time" basis. Plenty of aluminum is available but the green light has been withheld since the spare time angle in a Class I labor shortage area is hard to prove to WMC. The fact of the matter is that all plants have a certain amount of spare time which unavoidably occurs between setups, while waiting for material or components and for a number of reasons.

Copper Statistics Reported by the Copper Institute, July, 1944

In Tons of 2000 Pounds

U. S. Duty Free Copper	Production		Deliveries to Customers			Refined Stocks (C)	Stock Increases or Decreases		
	Crude (A)	Refined	Domestic (B)	Export	Total	End of Period	Blister (D)	Refined	Total
Year 1941	1,016,996	1,065,667	1,545,541	307	1,545,848	75,564	D 48,671	D 67,208	D 115,879
Year 1942	1,152,344	1,135,708	1,635,236		1,635,236	65,309	I 16,636	D 10,255	I 6,391
Year 1943	1,194,699	1,206,871	1,643,677		1,643,677	52,121	D 12,172	D 13,188	D 25,360
7 Mos. 1944	654,665	660,495	956,622		966,622	43,050	D 5,830	D 4,071	D 9,901
February 1944	95,713	87,128	124,532		124,532	36,469	I 8,585	D 9,311	D 726
March 1944	101,289	99,118	156,093		156,093	37,259	I 2,171	I 770	I 2,941
April 1944	92,779	95,280	155,877		155,877	38,382	D 2,501	I 1,123	D 1,378
May 1944	94,624	98,580	165,714		165,714	37,074	D 3,956	D 1,308	D 5,264
June 1944	89,102c	93,958	140,932		140,932	42,467	D 4,856c	I 5,393	I 537c
July 1944	85,734	93,650	121,705		121,705	48,050	D 7,916	I 5,583	D 2,333

(A)—Mine or Smelter Production or Shipments, and Custom Intake including Scrap.
(B)—Beginning March, 1941, includes Deliveries of Duty Paid Foreign Copper for Domestic Consumption.
(C)—At Refineries, on Consignment and in Exchange Warehouses, but not including Consumers' Stocks at their Plants or Warehouses.
(D)—Computed by difference between Mine and Refined Production.
c—Corrected.

AS THE EDITOR VIEWS THE NEWS

in history. Wages have been manipulated by government influence to the point where the actual work performed by the individual is a minor factor.

We look forward to the day when employe and employer can mutually arrive at rates more consistent with services rendered and received. —p. 84

° ° °

OUTPUT MAINTAINED: American industry is working under a terrific handicap of uncertainty. Industrial executives and government officials know that the war in Europe may end almost anytime. They feel keenly the necessity and the plain duty of producing to the utmost until the signal to ease off is given, but at the same time they are under strong pressure to get set for a quick shift.

Considering these circumstances, industrial production is being maintained remarkably well. Most barometers of activity are down slightly from a week, a month or a year ago. An exception is petroleum output which is at a peak. Electric power output, freight car loadings and steel ingot output are off, but not alarmingly. In fact, steel output in August, while below that of July and of August last year, brings the total for eight months in 1944 to 60,005,971 tons, exceeding the 58,880,791 tons produced in the like period of 1943.

Under current restrictions, this is an exceptionally good record. —pp. 82, 106

° ° °

MAKING "SWARF" PAY: Every manufacturing plant in which considerable machinery work is done has a problem of collecting and disposing of the metal removed by turning, boring, drilling, milling and other operations. The British call these cuttings "swarf." The value of "swarf" as usable scrap depends largely upon how carefully it has been segregated and how well it has been prepared for use.

The Warner & Swasey Co., Cleveland, has developed an efficient system for handling this problem. It embraces not only a smooth-running organization for collecting, segregating and shipping the metal, but also facilities for briquetting certain types of material. Briquetted cast iron borings are used in the cupolas of its own foundry. Under certain conditions certain turnings of steel and other metals are briquetted to advantage.

Systems of this type are desirable for two reasons: They make for "good housekeeping" in that no great amount of waste metal is permitted to accumulate around machines. They increase the value of the scrap, for own use and for sale. —p.112

17 CENTS PER DEATH: In writing this, we are venturing far from our accustomed editorial beat. Our excuse for digressing is that we believe you will be interested.

Speaking before the convention of the American Association for the Advancement of Science at Cleveland, Dr. Henry S. Simms, Columbia University, presented the following data on money spent in medical research. In 1940, for each death resulting from infantile paralysis, $525 was spent in research on that affliction; for every death from infectious diseases, $4 was spent; for every death from cancer, $2.18; kidney diseases, 38 cents; and for every death from heart and artery ailments, 17 cents.

More industrialists die in the prime of life from heart, artery and kidney ailments than from any other cause, yet medical research in these fields is woefully inadequate. This is something important to remember the next time you are allocating personal or corporate contributions to medical research.

° ° °

CANADA LOOKS AHEAD: It is estimated that since the outbreak of the war plants and equipment representing an expenditure of approximately $1,200,000,000 have been added to Canada's production capacity. With these greatly expanded facilities, the dominion will enter the postwar period with capacities in certain lines—notably aluminum, magnesium and shipbuilding—which exceed the highest peacetime demand of the past by large margins.

Canada will attempt to utilize her new facilities and experience to the best advantage. Already Canadian shipbuilders have proposed that the government restrict its coastal trade to ships of dominion register or hereafter built in Canada and that future navy work be done in Canadian shipyards. They also suggest that "if necessary" Canadian shipowners engaged in foreign trade be subsidized.

In seeking to be more self-contained economically, Canada is doing exactly what every other Allied industrial nation will do after the war. To insure equal opportunities for all deserving nations will be a major postwar problem. —p. 101

E. L. Shaner

EDITOR-IN-CHIEF

AMERICAN METAL MARKET
"Leading Iron, Steel and Metal Newspaper—Recognized price and market authority."
New York City
FEB 3 1944

Magnesium Association To Hold Meeting In Chicago February 9th

CHICAGO. — A general meeting of the newly formed Magnesium Association will be held in the Club Building Lounge of the Palmer House at 10 o'clock Wednesday, February 9th. E. S. Christiansen of the Apex Smelting Co., Chicago, is president of the association.

AMERICAN METAL MARKET
"Leading Iron, Steel and Metal Newspaper—Recognized price and market authority."
New York City
MAR 21 1944

Mondays and days

Magnesium Ass'n Formed At Chicago —Officers Elected

E. S. Christiansen Named President — Post-War Program Planned

CHICAGO.—To assure the future of magnesium alloys and to foster the development of fabrication techniques industry members (producers and fabricators) have formed "The Magnesium Association." One of the purposes will be to give members and the public authentic information as to the properties and advantages of magnesium alloys, as well as to the suitable type of applications.

The amazing increase in production of magnesium metal in this country is one of the outstanding achievements of industrial and governmental cooperation during the war. The output has been increased more than one hundredfold in five short years and now stands at an annual volume approximating 500,000,000 pounds.

Magnesium metal is no longer thought of in terms of incendiary bombs, tracer bullets or other pyrotechnic applications. Among other uses of magnesium alloys one of the largest is for integral parts of airplane construction. Right now, many hundred different sizes and types of magnesium alloy castings are used in airplane engines, airframes and many other applications such as landing wheels, brackets and miscellaneous parts.

Outstanding uses of magnesium alloys in the future will be for applications where ease of machining is important or where light weight can increase portability of equipment or permit increased pay loads of transportation facilities. A few of these many applications are the following:

Portable tools; truck parts; railroad car parts; radio parts; conveyors; wheels; office equipment; dockboard; exhaust fans and household appliances.

There are today in excess of 100 companies engaged in the fabrication of magnesium and its alloys, taking the form of drawing, forging, rolling, extruding, sand casting, permanent mold and die casting and powder manufacture. A number of other firms are investigating this modern strong light metal with a view toward engaging in its fabrication or incorporating its use in post-war products.

The value of magnesium has been clearly demonstrated by the war—its future important place in civilian economy is assured. The members of this industry are confident that the Association will contribute materially in the establishment of magnesium as a strong post-war industry. The aim of the Magnesium Association is expressed in its stated purpose ". . . to promote the general welfare of the magnesium industry, of the members of the Association, and all others affected thereby, and to develop and increase the use and acceptance of magnesium and its products".

(Continued on page 3)

AMERICAN METAL MARKET
"Leading Iron, Steel and Metal Newspaper—Recognized price and market authority."
New York City
MAR 21 1944

Elected President Of Magnesium Association

EDWARD S. CHRISTIANSEN

Steel Operations In Pittsburgh Scheduled At 95% Of Capacity

PITTSBURGH, Mar. 20. — With the district's steel mills scheduled for an indicated average of 95% of rated capacity for the second consecutive week, it is expected that March steel ingots and steel for castings production will rank among the high records of the war. At least one producer here expects to set a new high individual steel production record in March. Although percentage wise the current operations are running behind the Nation's average, the present district rate reflects sharply higher rating adjustments made in some plants here early in the year. It is reported that there are no unusual shutdowns for repairs at this time.

Flatrolled steel units here are under heaviest pressure, with sheet strip mills turning out plate, sheets and strip for tinning, all items in vital demand. Less pressure is noted on some hot rolled bar mills. One cold finished bar producer is planning to cut out one turn by the end of second quarter and hopes to meet the increasing stringency in manpower supply by engaging the workers affected by the reduced operating schedules as replacements on the other two turns.

IRON AGE
Philadelphia, Pa.
MAR 23 1944

Producers and Fabricators Form Magnesium Association

Chicago

• • • To assure the future of magnesium alloys and to foster the development of fabrication techniques, producers and fabricators have formed *The Magnesium Association*. One of the purposes will be to give members and the public authentic information as to the properties and advantages of magnesium alloys, as well as to the suitable type of applications.

Edward S. Christiansen, vice-president of Apex Smelting Co., was elected president of the association at an organizational meeting held in Chicago. C. C. Loomis, president of the New England Lime Co. was elected vice-president, and C. E. Larson, operations manager of the White Metal Rolling & Stamping Co., was elected treasurer. Temporary offices are at 2537 W. Taylor Street, Chicago 12.

The membership of the association is representative of the magnesium

AMERICAN METAL MARKET
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New York City
APR 7 1944

Magnesium Association Forms Three Committees

CHICAGO, April 6. — A general meeting of the newly formed Magnesium Association was held at the Paalmer House here. General organization work was the order of business with E. A. Christiansen, vice president of the Apex Smelting Company, Chicago, president of the Association, presiding.

The Board of Directors of the Magnesium Association named three committees as follows; Technical, Safety and Post-War Planning, the chairmen named are: temporary chairman, Technical Committee, A. Cristello, Eclipse Pioneer Division, Bendix Aviation Corporation, Teterboro, N. J.; Safety Committee chairman, W. M. Clark, National Eire Works, Inc., West Hanover, Mass.; chairman Post-War Planning Committee, Frank O. Case, Basic Magnesium Company, Inc.

STEEL
Cleveland, Ohio
APR 10 1944

Magnesium Association Is Organized at Chicago

Formation of the Magnesium Association for the purpose of promoting the magnesium industry recently was effected at an organizational meeting at the Palmer House, Chicago. Edward S. Christiansen, vice president, Apex Smelting Co., Chicago, was elected president of the new organization, C. C. Loomis, president, New England Lime Co., vice president, and C. E. Larson, operations manager, White Metal Rolling & Stamping Co., treasurer.

Offices of the association are at 2537 W. Taylor street, Chicago. Membership in the association is representative of the magnesium industry in all its phases.

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New York City
MAY 27 1944

Sand Cast Division Of Magnesium Association To Meet On June 8th

CHICAGO, May 26.—A meeting of teh Sand Cast Division of the Magnesium Association will be held Thursday, June 8th at 10:30 A.M. in Jansen Suits, Waldorf-Astoria Hotel in New York City, it was announced by Dan W. Moll, Hilla McCanna Company, chairman of the San Cast Division.

The meeting is open to members and non-members of the Magnesium Association engaged in sand casting magnesium alloys. The subjects to be discussed at the meeting are as follows:

A report from C. A. Brantingham, Ebaloy Foundries, Inc., on O.P.A. Ruling 125; a report from Mr. Brantingham, chairman of the committee to investigate test bar procedure; a report from Oscar Blohm, Hills-McCanna Company, chairman of the Grain Size Committee pertaining to grain size of magnesium alloy and castings; Manley Brooks, foundry metallurgist of the Dow Chemical Company, will speak regarding melting and superheating magnesium alloys in sand cast foundries: E. R. Coyle, sales manager of the Diamond Magnesium Company, will speak regarding alloying of magnesium.

S. F., CAL., PACIFIC PURCHASER
Cir. 1,933
MAY 1944

Magnesium Association Formed

To assure the future of magnesium alloys and to foster the development of fabrication techniques, producers and fabricators of America's lightest structural metal have formed "The Magnesium Association." One of the purposes will be to give members and the public authentic information as to the properties and advantages of magnesium alloys, as well as to the suitable type of applications.

Outstanding uses of magnesium alloys in the future will be for applications where ease of machining is important or where light weight can increase portability of equipment or permit increased pay loads of transportation facilities. A few of these many applications are the following: portable tools, radio parts, conveyors, office equipment, household appliances. pulleys, portable equipment, printing frames, and spools.

The value of magnesium has been clearly demonstrated by the war—its future important place in civilian economy is assured. The members of this industry are confident that the Association will contribute materially in the establishment of magnesium as a strong postwar industry. The aim of the Magnesium Association is expressed in its stated purpose—"to promote the general welfare of the magnesium industry, of the members of the Association, and all others affected thereby, and to develop and increase the use and acceptance of magnesium and its products."

Edward S. Christiansen, vice-president of Apex Smelting Company, was elected president of the new Association at an organizational meeting recently, held at the Palmer House in Chicago.

MACHINERY
"Read by Production Executives in all Machine Shop Industries."
New York City
MAY 1944

Magnesium Association Recently Formed

To foster the use and development of magnesium alloys and to increase the knowledge of fabrication methods among producers and fabricators, the Magnesium Association, 2537 W. Taylor St., Chicago 12, Ill., has been formed. Magnesium promises to find ever increasing applications in peacetime industry, and for that reason, the formation of a permanent association was found advisable. There are today over one hundred companies engaged in the fabrication of magnesium and its alloys. A number of other firms are investigating the properties of the metal with a view to engaging in its fabrication or incorporating its use in post-war products.

MINING JR'L
PHOENIX ARIZ
5/15/44

Corporation.

F. O. Case, general manager of Basic Magnesium, Inc., at Henderson and Gabbs, Nevada, was appointed chairman of the Postwar Planning Committee of the Magnesium Association at the April meeting. Numerous committees were appointed by the new organization in an effort to provide better technical service for members of the association.

HOUSE FURNISHING REVIEW
"Completely Covering All Hardwares, Electrical Housefurnishings & Bathroom Furnishings."
New York City
MAY 1944

Magnesium Association Formed

Magnesium Association has been formed in Chicago by producers and fabricators of magnesium. Aim of the group is to foster developments in the industry whose production has been greatly fostered by wartime uses. Strength and light weight of magnesium may provide appliance manufacturers with valuable material.

PURCHASING
"Since 1915, the National Magazine for Purchasing Agents."
New York City
MAY 1944

PURCHASING

PLAN EDUCATIONAL PROGRAM ON MAGNESIUM

To assure the future of magnesium alloys and to foster the development of fabrication techniques industry members (producers and fabricators) have formed "The Magnesium Association." One of the purposes will be to give members and the public authentic information as to the properties and advantages of Magnesium alloys, as well as to the suitable types of applications.

The amazing increase in production of magnesium metal in this country is one of the outstanding achievements of industrial and governmental cooperation during the war. The output has been increased more than one hundredfold in five short years and now stands at an annual volume approximating 500,000,000 pounds.

Magnesium metal is no longer thought of in terms of incendiary bombs, tracer bullets or other pyrotechnic applications. Among other uses of magnesium alloys one of the largest is for integral parts of airplane construction. Right now, many hundred different sizes and types of magnesium alloy castings are used in airplane engines, airframes and many other applications such as landing wheels, brackets and miscellaneous parts.

Many Applications

Outstanding uses of magnesium alloys in the future will be for applications where ease of machining is important or where light weight can increase portability of equipment or permit increased pay loads of transportation facilities. A few of these applications are the following:

Portable Tools	Pulleys
Truck Parts	Aircraft and automotive engines
Railroad car parts	Sawing machines
Radio Parts	Portable equipment
Conveyors	Printing frames
Wheels	Spools
Office Equipment	Textile machinery
Dockboard	Artificial limbs
Exhaust fans	Foundry flasks and core boxes
Household appliances	

There are today in excess of one hundred companies engaged in the fabrication of Magnesium and its alloys, taking the form of drawing, forging, rolling, extruding, sand casting, permanent mold and die casting and powder manufacture. A number of other firms are investigating this modern strong light metal with a view toward engaging in its fabrication or incorporating its use in postwar products.

Mr. Edward S. Christiansen, Vice-President of Apex Smelting Company was elected President of the new Association at an organizational meeting held at the Palmer House in Chicago; Mr. C. C. Loomis, President of the New England Lime Company was elected Vice-President, and Mr. C. E. Larson, Operations Manager of the White Metal Rolling and Stamping Company was elected Treasurer. Temporary offices of the Association are at 2537 W. Taylor Street, Chicago 12, Illinois.

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Outstanding uses of magnesium alloys in the future will be for applications where ease of machining is important or where light weight can increase portability of equipment or permit increased pay loads of transportation facilities. A few such applications include these important uses:—

Portable Tools, Truck Parts, Railroad car parts, Radio Parts, Conveyors, Wheels, Office Equipment, Dockboard, Exhaust fans, Household appliances, Pulleys, Aircraft and automotive engines, Sewing machines, Portable equipment, Printing frames, Spools, Textile machinery, Artificial limbs, Foundry flasks and core boxes.

There are today in excess of 100 companies engaged in the fabrication of Magnesium and its alloys, taking the form of drawing, forging, rolling, extruding, sand casting, permanent mold and die casting and powder manufacture.

HITCHCOCK'S MACHINE TOOL BLUE BOOK
"The Digest of the Machine Tool Field. Its Quality Circulation of 30,000 Covers the Best Buyers the Country Over."
Chicago, Ill.
MAY 1944

MAGNESIUM ASSOCIATION

To assure the future of magnesium alloys and to foster development of fabrication techniques industry members (producers and fabricators) have formed "The Magnesium Ass'n." Temporary offices are at 2537 W. Taylor St., Chicago 12, Ill. One of the purposes will be to give members and the public authentic information as to the properties and advantages of Magnesium alloys, as well as to the suitable types of applications.

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(Continued from first page)

Edward S. Christiansen, vice president of Apex Smelting Company, was elected president of the new Association at an organizational meeting held at the Palmer House in Chicago; C. C. Loomis, president of the New England Lime Company, was elected vice president, and C. E. Larson, operations manager of the White Metal Rolling and Stamping Company, was elected treasurer. Legal counsel is James B. Wescott of the firm of Miller, Gorham, Wescott & Adams. Temporary offices of the Association are at 2537 W. Taylor St., Chicago 12, Ill.

The Board of Directors includes:

E. S. Christiansen, Apex Smelting Co.; E. A. Canning, Allison Division, General Motors Corporation; W. H. Osborne, Acme Aluminum Foundry Co.; F. O. Case, Basic Magnesium, Inc.; W. G. Brown, Bohn Aluminum & Brass Corporation; C. J. Amick, Century Metalcraft Corporation; C. A. Brantingham, Ebaloy Foundries, Inc.; A. Cristello, Eclipse-Pioneer Division Bendix Aviation Corporation; R. D. Taylor, Federated Metals Division, American Smelting & Refining Co.; D. W. Moll, Hills-McCanna Co.; D. A. Merson, Magnesium Reduction Co.; P. J. Watry, Metal-Mold Magnesium Corporation; B. Sandell, Stewart Die Casting Co.; F. S. Wellman, Wellman Bronze . Aluminum Co., and C. E. Larson, While metal Rolling & Stamping Co.

The membership of the association is representative of the magnesium industry in all of its phases. Four major groups are represented: producers and smelters of ingot; sand, permanent mold and die casters; wrought products; and magnesium powder manufacturers.

At the last meeting of the Magnesium Association held on February 9th in Chicago, a Sand Cast Division was formed to consider the specific problems peculiar to that portion of the industry. Dan W. Moll of the Hills-McCanna Co. is chairman. The first meeting of this division was held on February 29th at the Union League Club, Chicago, and the next meeting will be held on Thursday, April 6, 1944 at the Club Building Lounge, Palmer House, here.

The next general meeting of the Magnesium Association will be held on Wednesday, April 5, 1944, also at the Palmer House. Provision has been made for technical and consumer group committees which will concentrate on the many operations and uses which can be better served in years ahead, through the use of magnesium alloys. Exhibits of articles fabricated of magnesium are planned as part of the Association annual meetings. The general public will be invited to these exhibits.

THE FOUNDRY
"Established in 1892"
Penton Publishing Co.
Cleveland, Ohio
AUG 1944

Perry D. Helser has been named secretary-director of the Magnesium Association, with headquarters at 3239 RCA building, New York. For the past 2½ years Mr. Helser was chief of the Magnesium Products Branch, Aluminum and Magnesium Division, WPB, Washington. Previously he was associated for about 10 years with the General Ceramics Co., New York, first as executive vice president and general manager and later as president. Mr. Helser was graduated from Ohio State University in 1917 and, following army service as a lieutenant in the Chemical Warfare Division, he engaged for a number of years in ceramic engineering work with various companies. Prior to joining the General Ceramics Co. he was for 4 years vice president in charge of manufacturing of the Eljer Co., Ford City, Pa.

AMERICAN METAL MARKET
"Leading Iron, Steel and Metal Newspaper—Recognized price and market authority."
New York City
AUG 4 1944

Secretary-Director Of The Magnesium Ass'n

PERRY D. HELSER

NEW YORK, Aug. 3. — Perry D. Helser, formerly chief of the Magnesium Branch of the War Production Board in Washington, has been selected as secretary-director of the newly-formed Magnesium Association, with headquarters at 30 Rockefeller Plaza, New York.

The membership of this Association consists of producers, fabricators, smelters, and consumers of magnesium, numbering 33, which represents a substantial portion of the industry. Its purpose is to develop and increase the use of magnesium and its products, and to correlate technological progress in the industry.

The production of magnesium before the war was 6,000,000 pounds per year, whereas the present capacity is 600,000,000 pounds. E. S. Christiansen, vice president, Apex Smelting Company, Chicago is president; C. C. Loomis, president, New England Lime Company, Canaan, Connecticut is vice president; and C. E. Larson, manager of operations, White Metal Rolling & Stamping Corporation, Brooklyn, is treasurer.

NEW YORK, N. Y., HERALD TRIBUNE
Cir. 366,512, Sun. 539,023
AUG 1 1944

Under rule, ww With warrants. out warrants. war Warrants.

Helser Gets Magnesium Post

Perry D. Helser has been selected as secretary-director of the newly-formed Magnesium Association, with headquarters at 30 Rockefeller Plaza, New York. Mr. Helser formerly was chief of the magnesium branch of the War Production Board in Washington. The purpose of the association is to develop and increase the use of magnesium and its products, and to correlate technological progress in the industry.

IRON AGE
Philadelphia, Pa.
JUL 27 1944

Magnesium Group In Interesting Meeting On Technical Advances

Chicago

• • • A well attended meeting of the Magnesium Association here July 12 heard a stimulating discussion of the place of magnesium in today's and tomorrow's technology, developed by six experts from Battelle Memorial Institute, Columbus, Ohio.

Papers were given by Clyde E. Williams, Battelle director, who spoke on the advantages of lightweight metals and industrial applications as compared with older methods; V. H. Schnee, assistant to the director, who outlined seven research programs now in process on magnesium throughout the country; John D. Sullivan, who spoke of earlier pre-war production and described the four magnesium-making processes in use in this country; L. R. Jackson, who discussed sheet research; J. C. De Haven, who compared present American alloys of magnesium with continental alloys and spoke of forging progress; and C. H. Lorig, who talked on sand cast alloys.

A general discussion was held in which further information was brought out by the company members present. Represented at the meeting were three Canadian firms.

It was announced that the Magnesium Association has set up new offices in New York City at 3239 R.C.A. Building, 30 Rockefeller Plaza. These are under the direction of a new secretary-director, Perry D. Helser, formerly Chief of the Magnesium Division of the War Production Board.

The next meeting of the sand cast division of the association, it was announced, will be held at the Hotel Cleveland, Cleveland, Ohio; on August 9. The next meeting of the Magnesium Association itself will take place October 4 in New York City, preceded by a directors' meeting at the offices of the association on October 3.

FM & TELEVISION
NEW YORK
8/44

Schoning, P. O. Box 5070A, Chicago 80.

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LECTRONICS

AMERICAN TRADE PRESS CLIPPING BUREAU
15 E. 26TH STREET, NEW YORK, N. Y.
Phone LExington 2-5969
This article was clipped from
TEXTILE WORLD
"The monthly magazine for management and production men in every branch of textile manufacturing, finishing and dyeing."
McGraw-Hill, 330 W. 42nd St., New York City
SEP 1944

The Magnesium Association, New York, will hold its first annual meeting on Oct. 3 and 4 in New York at the Waldorf-Astoria Hotel. Outstanding leaders of industry will address the meeting. Perry D. Helser is secretary-director of the association.

AMERICAN METAL MARKET
"Leading Iron, Steel and Metal Newspaper—Recognized price and market authority."
New York City
AUG 22 1944

AMERICAN METAL MARKET

Magnesium Ass'n To Hold Its First Annual Meeting On October 3rd And 4th

NEW YORK, Aug. 21.—The first annual meeting of The Magnesium Association will be held on October 3rd and 4th in New York at the Waldorf-Astoria Hotel.

Outstanding leaders of industry will address the first session of the meeting, to be held Tuesday forenoon, October 3rd. The afternoon will be devoted to a business session of the Association, which is also open to members and guests.

On Wednesday, October 4th, the Sand Cast Division, which has been very active, is planning an especially interesting program for the entire day.

THE FOUNDRY
"Established in 1892"
Penton Publishing Co.
Cleveland, Ohio
SEP 1944

Magnesium Founders Discuss Costs

Over 40 members and guests attended a meeting of the Sand Cast Division of the Magnesium Association held at the Cleveland Hotel, Cleveland, Aug. 9. Dan W. Moll, Hills-McCanna Co., Chicago, presided and was assisted by Perry D. Helser, secretary-director.

Discussion topic of the meeting was cost methods, and was opened by Mr. Moll who pointed out that two important considerations will have to be undertaken by the magnesium casting industry after the war. One is to educate consumers on the advantages and applications of magnesium castings, and the other is to develop methods for producing castings at a lower cost to enhance their competitive position.

Mr. Moll then proceeded to describe the costing system employed by his firm. He said that the castings were divided into three classes metallurgically, following the British and Canadian systems. The first class was that in which the failure of a single part might result in loss of life and such castings were subject to 5 per cent minimum x-ray examination; the second class was that in which failure of two or more castings might result in loss of life, and the third class was non-structural castings.

In general, costs are determined under five departments including melting, molding, coremaking, cleaning and inspection. Burden or overhead is determined and distributed to the various departments as a rate per hour. According to Mr. Moll, best procedure is to charge all direct and indirect labor against the specific job so that the true cost can be ascertained. Scrap developed is divided into two classes and charged against the job according to origin. First or rough scrap is that found at the shakeout, and the second or final scrap is that occurring after cleaning and inspection.

Mr. Moll said that a bonus system was used in such departments as melting, molding, coremaking and cleaning. In the melting department the bonus is paid in the pounds of metal handled or melted per hour. In molding, the bonus is paid on molder productivity, and the same procedure is employed in coremaking. In the cleaning department, a collective bonus is paid for direct labor, and a certain percentage of that for indirect labor. Cost of heat treating is determined on a pound basis, since that is easy to ascertain. In conclusion, Mr. Moll called attention to the advisability of maintaining a close check on core losses, such as broken, mashed and otherwise defective cores. He stated that these may run much higher than one might suspect, resulting in high costs.

Joseph B. Meier, OPA, Washington, discussed importance of proper costing in pricing castings. He said there was a wide range of casting prices in the different branches of the foundry industry, but not as great in magnesium foundries. He stated that several fundamental considerations are required in establishing cost systems, including: No method is better than the cost facts behind it. There is no need for an elaborate system for a small plant, so each should be tailored to the size of the foundry. The cost system cannot be a substitute for sound common sense or judgment.

He pointed out that to establish good costing procedure, it is necessary to know the volume of business. Where possible, a good year, a bad year and an average year should be selected to ascertain the normal volume. He indicated that departmentalized costing is the best procedure, that indirect labor can be tied to direct labor by a percentage factor, and such general manufacturing costs which can not be allocated directly can be added as a percentage.

To illustrate a possible error in finding proper metal cost in the casting Mr. Meier used the blackboard to indicate the proper method. Taking 100 pounds of metal as charged into the crucible at 23 cents a pound, or $23 for total metal cost; the weight of good castings was 30 pounds; weight of bad castings, gates and risers, and pigged metal was 43 pounds; weight of spills, grindings, etc. was 23 pounds, and oxidation losses 4 pounds. Weight of the bad castings, gates and risers, and pigged metal could be reused in the foundry as primary metal and its value was set at 23 cents a pound while the spills and grinds being unusable are sold for 10 cents a pound. Total value of metal in those items comes to $12.19, which subtracted from the original $23 leaves $10.81 for the value of the metal in the 30 pounds of good castings, or 36 cents a pound instead of 23 cents. Similarly if the cost of melting is 3 cents a pound, total cost of melting 100 pounds of metal is $3. However, the good castings weigh only 30 pounds, so the cost of melting per pound is 10 cents instead of 3 cents. Hence, actual cost of metal and melting per pound of casting is 46 cents instead of 26 cents.