

OFFICE OF
DONALD M. NELSON
CHAIRMAN

WASHINGTON, D. C.

June 3, 1942

B. F.
War Production Board

My dear Mr. President:

I am sending you herewith a
Commodity Chart Book which I think you will
x H.C.
find interesting and informative. This gives
us a picture of our material supply and de-
mand.

Respectfully yours,

Donald M. Nelson
Donald M. Nelson

x 4735

The President

The White House

Attachment

x 773

x B. F. Lend Lease

COMMODITY CHART BOOK

Published by the Staff of the Research and Analysis Section,
Materials Branch, Statistics Division, War Production Board.

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War Production Board

Washington, D.C.

1942

WAR PRODUCTION BOARD

WASHINGTON, D. C.

IN REPLY REFER TO:

FOREWORD

The COMMODITY CHART BOOK is the product of the continuing research which is conducted in the Materials Branch of the Statistics Division in relation to the supply and consumption of commodities important to the war effort.

The appraisal of the character of the demands upon commodities which are already known to be short is one phase of the work of this Branch. Another major phase concerns itself with anticipating shortages which may occur in later stages of the war program. In studying future shortages the Materials Branch has under constant surveillance several hundred commodities which, by virtue of their uses, may become critical.

As the outlines of the problems in relation to a particular commodity become sufficiently clear so that a statement of its principal war program relationships is possible, a chart and abstract are prepared for inclusion in the COMMODITY CHART BOOK.

The data on supply and consumption are obtained from the War Production Board Commodity Branches concerned and data on requirements are supplied by the Materials Requirements Section, Statistics Division. Because of the nature of the material it is of the utmost importance that the COMMODITY CHART BOOK be treated as a confidential document and that it be handled only by properly authorized persons. These factors necessarily restrict its circulation.

It is our hope that the COMMODITY CHART BOOK will be useful to persons who are concerned with the commodity problems of the war program. Suggestions which will help us increase its effectiveness will be welcomed.

Stacy May
Stacy May

Director, Statistics Division





THE COMMODITY CHART BOOK

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Tab: INTEGRATED STUDIES

No insert for current week.

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No insert for current week.

THE COMMODITY RT BOOK

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Group Abbreviations: M-M - Metals & Minerals
F-D - Foods & Drugs
Ch - Chemicals
OAF - Other Agricultural & Forest Products

<u>Subject</u>	<u>Group</u>	<u>Date Issued</u>	<u>Subject</u>	<u>Group</u>	<u>Date Issued</u>
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Antimony	M-M	5-29-42			
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Balsa Wood	OAF	5-29-42	Mahogany	OAF	5-18-42
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Beryllium	M-M	5-29-42	Manila Fiber	OAF	5-29-42
Bismuth	M-M	5-29-42	Mercury	M-M	5-18-42
Burlap	OAF	5-29-42	Mica Splittings	M-M	5-18-42
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Cadmium	M-M	5-18-42	Monazite Sand	M-M	5-18-42
Cattle Hides	OAF	5-18-42			
Chlorine	Ch	5-18-42	Nickel	M-M	5-11-42
Chromite	M-M	5-29-42	Nylon	Ch	5-29-42
Cobalt	M-M	5-11-42			
Coconut, Babassu, & Palm			Opium	F-D	5-29-42
Kernel Oils (The					
Lauric Acid Group)	OAF	5-18-42	Palm Oil	OAF	5-18-42
Copper	M-M	5-18-42	Pig Iron	M-M	5-18-42
Cork	OAF	5-18-42	Platinum Metals	M-M	5-18-42
Cotton Linters	Ch	5-29-42			
Cryolite	M-M	5-18-42	Quartz Crystals	M-M	5-11-42
			Quinine	F-D	5-18-42
Diamond Dies	M-M	5-18-42			
			Rapeseed Oil	OAF	5-29-42
Ergot	F-D	5-29-42	Rayon	Ch	5-18-42
Ethyl Alcohol	Ch	5-18-42	Red Squill	F-D	5-29-42
			Rosin	OAF	5-29-42
Ferrosilicon	M-M	5-29-42	Rubber, Crude	OAF	5-18-42
Fluorspar	M-M	5-29-42			
			Silk, Raw	OAF	5-18-42
Glycerin	Ch	5-29-42	Sisal- Henequen	OAF	5-29-42
Graphite	M-M	4-27-42	Sodium Nitrate	Ch	5-18-42
			Steel Ingots	M-M	5-18-42
Henbane-Stramonium	F-D	5-29-42	Steel Plates	M-M	5-18-42
Hog Bristles	OAF	5-29-42	Sugar	F-D	5-18-42
Industrial Diamonds	M-M	5-29-42	Teak	OAF	5-29-42
Iodine	F-D	5-29-42	Tin	M-M	5-18-42
Iron & Steel Scrap	M-M	5-18-42	Titanium Ores	M-M	5-29-42
Iron Ore	M-M	5-29-42	Tung Oil	OAF	5-18-42
			Tungsten	M-M	5-18-42
Jewel Bearings	M-M	5-18-42	Turpentine	OAF	5-29-42
Jute	OAF	5-29-42			
			Vanadium	M-M	5-18-42
Kapok	OAF	5-18-42			
Kyanite	M-M	5-29-42	Wood Pulp	OAF	5-29-42
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WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Date Issued: May 29, 1942
Next List Due: June 5, 1942

Notes on the Character of the Data
Presented in the COMMODITY CHART BOOK

I. PURPOSE.

The purpose of the COMMODITY CHART BOOK is to develop a body of organized information relating to supply, consumption, requirements, allocations, and special problems of commodities vital to the war effort. The single-page form of presentation has been adopted in order to provide a condensed summarization of essentials and to facilitate comparative commodity-group studies.

Continuous surveillance of a large number of materials is necessary in order to assure current data in the commodity analyses in which shortages are evident and to provide bases for anticipating future shortages. Late information is included in the existing charts and abstracts under a three-week revision schedule. As the outlines of the problems affecting previously unreported commodities become clear, they are added to the book. Under this procedure, commodity data, both as to present and anticipated shortages, is made quickly available to the users of the COMMODITY CHART BOOK.

The supply and consumption data of the charts and abstracts form the basis for other presentations for which space is provided at the back of the binder. Summaries of supply and requirements, lists of commodities by relative shortage, integrated studies of the materials problems of selected segments of the war program, and special studies of other primary commodity relationships are among these. This material is designed to aid in the over-all delineation and appraisal of basic commodity problems of the war program.

II. ORGANIZATION AND SOURCES.

The COMMODITY CHART BOOK is a publication of the Materials Branch, Statistics Division, War Production Board. Staff members of the Research and Analysis Section, Materials Branch specialize in the commodity-surveillance studies which result in the final Chart Book presentations. Each member works closely with the Research Advisors who are assigned to the Commodity Branches handling the materials for which he is responsible. The Research Advisor is a staff member of the Materials Section, Materials Branch on permanent assignment to an individual Commodity Branch. The data developed by the Research Advisors have principally to do with current and estimated supply, consumption, allocations and special problems. Data relating to direct military requirements and to the allocation programs of the Division of Civilian Supply are reported by the Materials Requirements Section, Materials Branch.

The Research and Analysis Section receives periodically the individual commodity allocation determinations of the Requirements Committee for inclusion in the published material. Statements of the problems of conservation and substitution are supplied by the Bureau of Industrial Conservation, WPB. Price actions are reported by the Office of Price Administration, and shipping and imports data by the Stockpile, Shipping Imports Branch, Materials Division, WPB.

Other Federal Agencies which are consulted frequently by the Research and Analysis staff are:

GOVERNMENT DEPARTMENTS

Justice - Anti-trust Section.
State - Division of International Communications.
Treasury - Procurement Division, Narcotics Division, Alcohol Tax Unit.
Agriculture - U.S. Forest Service, Bureau of Agricultural Economics, Bureau of Markets.
Interior - Bureau of Mines, Office of Petroleum Coordinator.
Commerce - Bureau of Standards, Bureau of Foreign and Domestic Commerce, Bureau of the Census.
Labor - Bureau of Labor Statistics.

AGENCIES, COMMISSIONS AND BOARDS

Federal Trade Commission	Federal Security Agency, Public Health
U.S. Tariff Commission	Board of Economic Warfare
Federal Loan Agency, R.F.C.	Army-Navy Munitions Board

III. DEFINITIONS.

The following broad definitions guide the presentation of data on supply and consumption -

A. Supply

1. Domestic Production. This figure is the output of the commodity at the stage of operation just prior to primary fabrication, footnoted where necessary, to indicate its precise nature. In those commodities in which a separation can be made between primary and secondary production, both figures are shown. In all cases in which scrap, reclaimed or the equivalent, is customarily counted as part of supply, an attempt is made to show this figure separately. Information is included, where it is available, on the extent to which secondary and scrap may be used to fill military and civilian requirements.

2. Imports. General Imports, i.e., entries for immediate consumption plus entries into warehouses, are used wherever they are obtainable. Imports for consumption, i.e., entries for immediate consumption plus withdrawals from warehouses, are used in lieu of general imports where necessary. Where possible, the details by countries of origin are shown for actual and estimated import totals.

3. Stocks, Government. This figure is usually the balance on hand in the government stockpile at the year end and at the date nearest the revision date. The total stockpile objective, amounts delivered and amounts released may also be shown.

4. Stocks, Industry. This figure represents the stocks of the industry in the stage just prior to primary fabrication. Because of dissimilarities in the fabrication cycle as between metals, chemicals and other products, the stock figure is footnoted to describe its exact nature. In general, year-end and current stocks are shown. Notations are included which show whether they are frozen under M-orders, are under some form of control but not under M-order, or that they are not under Federal control. Estimates of industry stocks should be used with considerable caution. Among the limitations which affect their general statistical usefulness are those relating to data on the quality and location of the materials, their general availability and the minimum working stocks essential to given levels of operation.

5. New Supply. New Supply is generally considered as domestic production, plus secondary and scrap, plus imports.

6. Total Supply. Total supply is generally considered as government stocks, plus industry stocks in the stage just prior to primary fabrication which are frozen under mandatory control orders, plus new supply, except as otherwise specifically noted in the abstract.

B. Consumption

1. Current Consumption. Data on current consumption are compiled in the Commodity Branch on the basis of tabulations of requests and allocations supplemented by occasional special surveys. These data are transmitted by the Research Advisors of the Commodity Branches to the Research and Analysis staff members and are reproduced with reference to the time period they cover.

2. Requirements Committee Allocations. The Requirements Committee allocation data which are routed to the Research and Analysis Section for inclusion in the COMMODITY CHART BOOK represent actual allocation determinations. The date of the meeting at which the determination was made and the period covered by the allocation are shown.

3. Estimates of Requirements. The Materials Requirements Section, Materials Branch, reports the requirements estimates of the Army, Navy, Maritime Commission, Lend-Lease, Board of Economic Warfare, and Division of Civilian Supply. These estimates are in all cases reproduced with reference to the specific programs or schedules to which they refer.

METALS AND MINERALS,
A - L

ALUMINUM

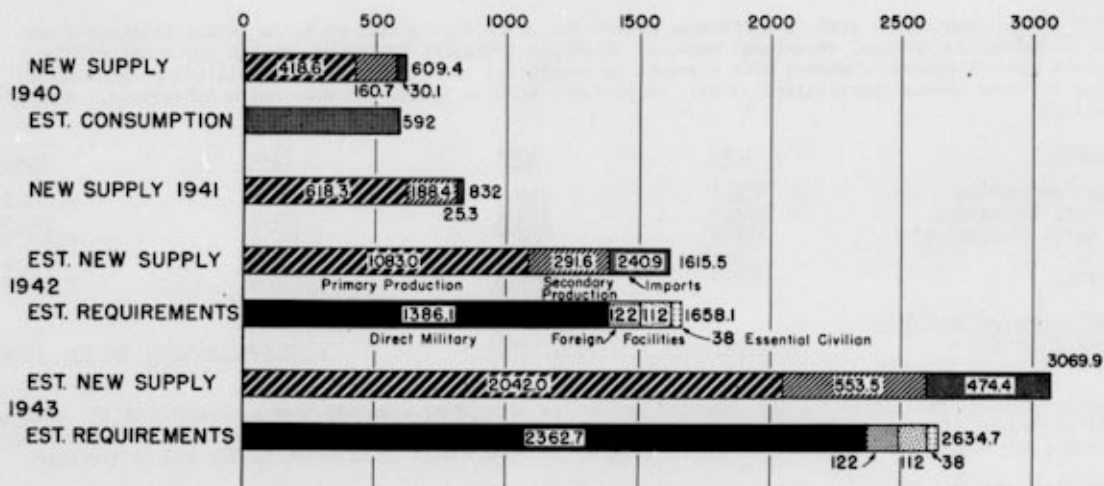
DECLASSIFIED
E.O. 11652, Sec. 3(E) and 5(D) or (E)
Commerce Dept. Letter, 11-15-72
By RHP, Date MAR 14 1973

PRIORITY ACTION

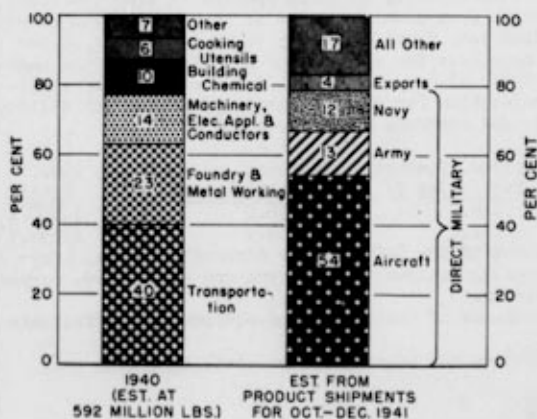
The uses of aluminum are restricted by Orders M-1-d through g, bringing aluminum under full allocation control, prohibiting, with limited exceptions, its use in any but war contracts, providing for tight control of the flow of scrap and its segregation to insure maximum reusability of the metal.

SUPPLY-DEMAND

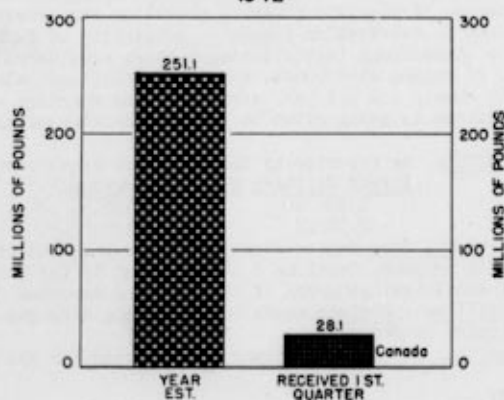
MILLIONS OF POUNDS



USES



IMPORTS 1942



ALUMINUM
(In million pounds)

BACKGROUND: The production of aluminum requires bauxite and abundant sources of electric power. Up to the present, the major portion of our supply of bauxite, the raw material from which aluminum metal is produced, has been imported, chiefly from British Guiana and Surinam. Efforts are being extended toward the expansion of our domestic supply with the aim of meeting 60% of our requirements as compared to approximately 30% and 49% in 1940 and 1941 respectively. In the process of producing aluminum, roughly four tons of bauxite will produce two tons of alumina, which in turn, will produce one ton of aluminum. Although the production of aluminum has been on the increase and is scheduled for much larger increases in 1942 and 1943, it has been necessary to curtail all but the most essential of civilian uses. Even so, the supply in 1942 will probably fall short of requirements.

USES:

1940 (estimated at 592.0 (million) lbs.)		1941 1/	
Transportation	40%	Direct Military	79%
Foundry & Metal Working	23	Aircraft	54
Machinery, Elec. Appliances & Elec.		Army	13
Conductors	14	Navy	12
Building, chemical	10	Exports not elsewhere incl.	4
Cooking utensils	6	All Other	17
Other	7	Total	100%
Total	100%		

1/ Estimated from shipments of aluminum products for Oct.-Dec. 1941.

DEFENSE USES: Aluminum is used in airframes, motors and propellers of aircraft, in tanks, ordnance fuses, radio communication systems, structural parts of ships and transport equipment, and in any other military equipment where lightness combined with strength is necessary. It is used as a deoxidization agent in the casting of other metals, particularly steel, in portable machine tools, patterns and match-plates, chemicals and alloys.

NEW SUPPLY:	1940	1941	1942	1943
Primary Production	418.6	618.3	1,083.0	2,042.0
Secondary Production	160.7	188.4	291.6	553.5
Total Production	579.3	806.7	1,374.6	2,595.5
Imports	30.1	25.3	240.9	474.4
TOTAL	609.4	832.0	1,615.5	3,069.9

IMPORTS--1st Quarter, 1942

Country of Origin	Aluminum metal & alloys, crude	Aluminum, plates, sheets, bars
Canada	24.4	3.7

CAPACITY: Present facilities for the domestic production of primary aluminum have a capacity of 977 million pounds per annum. Two expansion programs are under way, the first providing for an increase of 616 million pounds and the second for 640. A total capacity of about 1600 pounds is expected by the end of the year.

RESTRICTIONS ON USE: The uses of aluminum are restricted by Orders M-1-d-thru-g bringing aluminum under full allocation control, prohibiting, with limited exceptions, its use in any but war contracts, providing for tight control of the flow of scrap and its segregation to insure maximum reusability of the metal.

SPECIAL PROBLEMS: Competition of bauxite imports with other commodities for available shipping bottoms -- need of equipment for additional bauxite mining and dehydrating capacity in South America -- need for abundant sources of electric power -- provision for transportation from alumina plants to ingot reduction plants and thence to fabrication plants -- scheduling of fabrication into forms necessary to meet sequence of demand for these forms (distribution factors considered) -- necessity for erection of new plants for the manufacture of carbon electrodes, cryolite, additional electrolytic plants, and plants for conversion of aluminum into sheet, rod and bar, extrusions and forgings -- competition for skilled labor and managerial ability. Consideration is being given to the substitution of alumite and numerous clays for bauxite.

REQUIREMENTS: As reported by the Materials Requirements Section, Statistics Division, on April 20, 1942.

Year	Direct Military 1/	Foreign	Facilities 2/	Essential Civilian 3/	Total
1942	1,384.1	122.0	112.0	38.0	1,656.1
1943	2,362.7	122.0	112.0	38.0	2,634.7

1/ Direct Military requirements shown are based on objectives of the 8-I Ultimate Aircraft program, Army Supply program, Sections I (4/6/42) and II (4/9/42) covering equipment for ground and air forces, respectively, and latest programs of the Navy and Maritime Commission.

2/ Facilities - minimum needs for the production and maintenance of facilities and equipment to effectuate the military programs.

3/ Essential Civilian - minimum requirements for the production and maintenance of civilian goods.

SUMMARY:	1942	1943
Total Supply	1,615.5	3,069.9
Requirements	1,658.1	2,634.7

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 12, 1942
Abstract issued May 18, 1942

CONFIDENTIAL

ANTIMONY

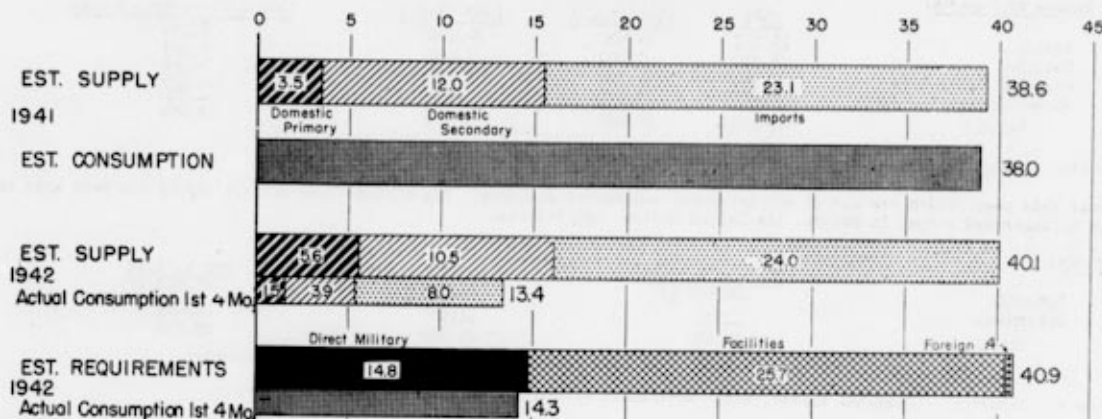
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E.O. 11652, Sec. 3(E) and 5(D) or (6)
Commerce Dept. Letter, 11-15-72
By RHP, Date
MAR 14 1973

PRIORITY ACTION

W.P.B. General Preference Order M-112, effective March 30, 1942, placed antimony in all forms, (except alloys containing less than 50% by weight of antimony) under complete allocation. No deliveries of antimony may be made except as specifically authorized by the Director of Industry Operations. The Order also prohibits the use, in any metal or alloy, of antimony not required by purchasers' specifications. Effective July 1, 1942, the Order prohibits the use of antimony for paints, lacquers, enamels, toys, and ornamental or decorative objects and limits its use in automotive batteries. The use of antimony alloys containing 50% or more of lead was restricted by W.P.B. Order M-38-C (January 10, 1942).

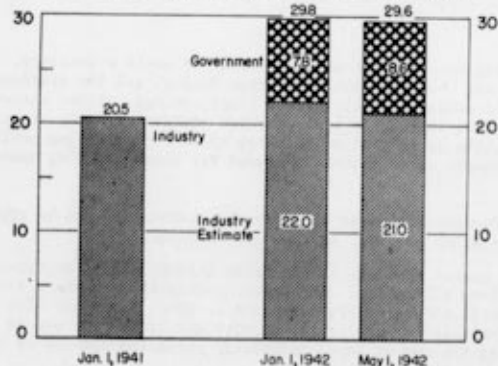
SUPPLY-DEMAND

THOUSANDS OF SHORT TONS OF RECOVERABLE METAL



STOCKS

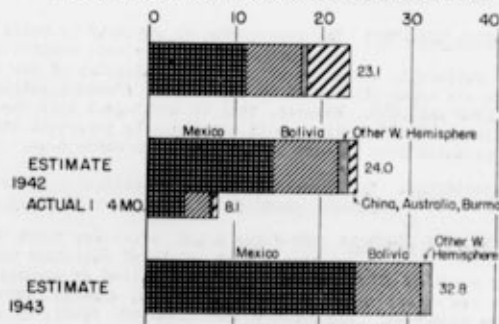
THOUSANDS OF SHORT TONS OF RECOVERABLE METAL



IMPORTS

BY COUNTRY OF ORIGIN

THOUSANDS OF SHORT TONS OF RECOVERABLE METAL



BACKGROUND: Antimony is a "cheap" and widely distributed metal (symbol Sb). Most of the U. S. supply is obtained from antimony ores (mainly imported), small amounts from lead, gold, and silver ores, and the remainder from scrap, chiefly old storage batteries, cable sheathing, and type metal. The figures in this abstract are given in terms of "recoverable" antimony, which equals 92% of the contained Sb in the ore.

USES: Antimony is of considerable importance to the war program. While there are few uses for it in the pure form, it is employed widely in alloys to impart hardness and stiffness to soft metals, particularly to lead; these alloys have important military uses, such as storage batteries, small arms ammunition and bearings. Antimony is also employed in the form of an oxide, particularly for flame-proofing of canvas, which now is the largest single military use. In normal times, one-third or more of the total U.S. consumption of antimony is for storage batteries. The other main civilian uses are enamels and paints, bearings, type metal, cable sheaths, and castings.

CONSUMPTION:

1941 (Est.)	1942 - First Four Months (Est.)				
	Jan.	Feb.	March	April	Total
38,000	3,500	3,500	3,600	3,700	14,300

Source: Tungsten Branch, WPB.

NEW SUPPLY:

	1941	1942 (Est.)	1943 (Est.)	1942 - First Four Months				
				Jan.	Feb.	March	April	Total
Domestic Production								
Primary (Est.)	3,500	5,550	6,500	325	325	350	450	1,450
From scrap (Est.)	12,000	10,500	9,500	1,000	1,000	950	950	3,900
Imports	23,120	24,000	32,800	2,358	1,119	2,937	1,640	8,054
Total	38,620	40,050	48,800	3,683	2,444	4,237	3,040	13,404

Source of Imports:

	1941	1942 (Est.)	1943 (Est.)	1942 - First Four Months				
Mexico	11,107	14,400	24,000				4,172	
Bolivia	6,527	7,400	7,400				3,017	
Other W. Hemisphere	561	1,200	1,400				199	
China, Australia, Burma	4,925	1,000	---				666	
Total	23,120	24,000	32,800				8,054	

Source: Actual Imports -- Department of Commerce; other figures -- Tungsten Branch, WPB.

Until this year, China was one of our principal sources of antimony. The virtual loss of this supply has been more than offset by increased output in Mexico, the United States, and Bolivia.

STOCKS:

	January 1, 1941	January 1, 1942	May 1, 1942
Industry	20,490 ^{1/}	22,000 ^{1/}	21,000 ^{1/}
Government	---	7,822	8,558
Total	20,490	29,822	29,558

^{1/} Do not include stocks in antimonial lead. The 1942 industry figures are preliminary estimates.

Source: Industry -- Tungsten Branch, WPB; Government -- Statistics Division, WPB.

REQUIREMENTS:

	Direct Military ^{1/}	Facilities	Foreign ^{2/}	Total
1942	14,810	25,700	381	40,891
1943	19,491	25,700	381	45,572

^{1/} Army, Navy, Aircraft, and Maritime.

^{2/} Does not include exports of antimony products.

Source: Statistics Division, WPB.

SPECIAL PROBLEMS: The consumption of antimony is being restricted to essential needs in order to avoid a shortage. The elimination of its use from paints, enamels, and other articles beginning July 1, and the decreased demand for automobile batteries owing to the cessation of new automobile production will effect large savings. Other non-essential uses are being eliminated by allocation. Present estimates are that new supply will be about adequate to meet requirements in 1942 and 1943. However, this is contingent upon the availability of sufficient shipping space for importing antimony from Bolivia. The Bolivian ore is particularly important because antimony oxide (which is needed for flame-proofing canvas) can be produced from it more easily than from other ores.

SUBSTITUTION: The opportunities for substituting other metals for antimony seem to be small, although it can be replaced in certain products by calcium or by Frary metal (an alloy of lead, barium, and calcium).

GOVERNMENT CONTROL: WPB Order M-112, effective March 30, 1942, placed antimony in all forms (except alloys containing less than 50% by weight of antimony) under complete allocation. The order practically prohibits the use, in any metal or alloy, of antimony not required by purchasers' specifications. Effective July 1, 1942, the order also prohibits the use of antimony for paints, lacquers, enamels, toys, and ornamental or decorative objects and limits its use in automotive batteries. WPB Order M-36-c (Jan. 10, 1942), by restricting the use of lead, indirectly curtailed the use of antimony.

SUMMARY:

	1942	1943
Estimated Supply	40,050	48,800
Estimated Requirements	40,891	45,572

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 22, 1942
Revised Abstract issued May 29, 1942
Next revision due: June 19, 1942
35245

CONFIDENTIAL

ASBESTOS (Critical Grades)

DECLASSIFIED
E.O. 11652, Sec. 3(E) and 5(D) or (E)
Commerce Dept. Letter, 11-16-78
By RHP, Date

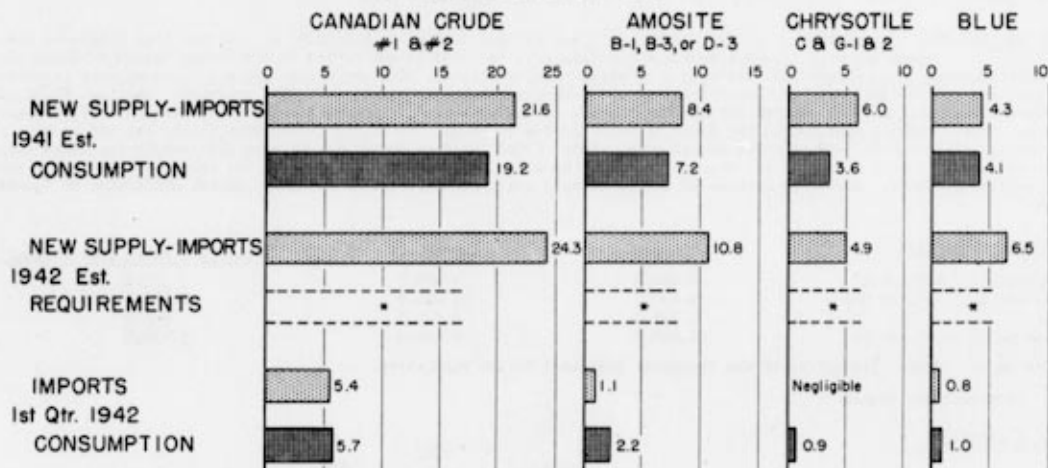
MAR 14 1973

PRIORITY ACTION

Conservation Order M-79 (effective February 1, 1942) restricts the use of fibers from South Africa to defense orders unless otherwise authorized by the Director of Priorities. The use of chrysotile grade C & G-1 & 2 is limited to uses for core rovings to meet Navy specifications; for electrical insulation; tapes and cloth; and nonferrous lapps. Amosite fibers are limited to such defense uses as woven felt blankets and mattresses for turbine insulation for use on naval and maritime ships; fire-proof board, sprayed amosite; 85 per cent magnesia pipe covering and blocks; and pipe and dry pack insulation. In addition, the use of 85 per cent magnesia pipe covering is prohibited except in installations where temperatures of 200° Fahrenheit or over occur.

SUPPLY-DEMAND

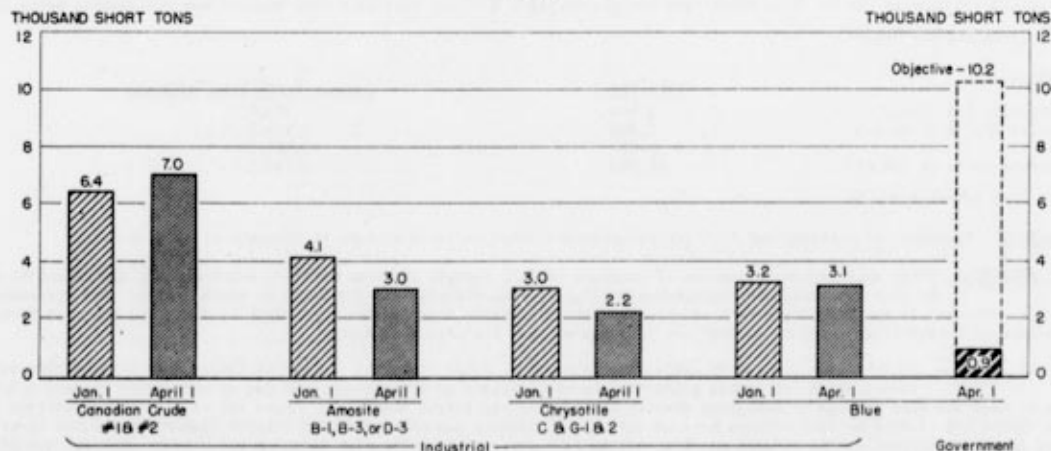
THOUSANDS OF SHORT TONS



* Estimates of military and civilian requirements under revision at date of issuance of this chart.

STOCKS

1942



ASBESTOS (Critical Grades)
(All figures in short tons)

BACKGROUND: Asbestos is a commercial term applied to several varieties of non-inflammable fibrous material which differ in composition and consequent usefulness for certain purposes. There are three commercially important varieties:

<u>Variety</u>	<u>Properties</u>	<u>Uses</u>	<u>Countries of Origin</u>
1. Chrysotile	White, highly fibrous	All textiles (incl. brake lining, clutch facing), certain grades of building materials.	Canada, Southern Rhodesia, Russia
2. Amosite	Gray or brownish, coarse, long fibers	Fire-proof board, high temperature insulation pipe covering, blankets for insulating turbines on combat ships.	Union of South Africa
3. Blue (Crocidolite)	Blue, high iron content, high resistance to acid.	Acid packings, filter cloth, asbestos cement pipe.	Union of South Africa

In addition, there are several minor varieties and "sand and waste," imported in large quantities from Canada, and used principally in asbestos cement building and insulating materials.

The United States produces only about 6 per cent of its required supplies of asbestos. The domestic product, chiefly chrysotile, is produced mainly in Vermont and Arizona. The Vermont fiber is short and is used in paper, compressed sheet packings, and moulded brake linings. The Arizona production includes some long fiber grades which can be substituted for similar imported types. However, relatively high production costs prohibit any material expansion in this area. By far the largest source of supply is Canada, which accounted for about 90 per cent of all asbestos imported in 1941. The materials from Canada, all chrysotile, have averaged about one-half sand and waste used as construction material, and one-half crudes and fibers, the latter being principally the shorter and cheaper grades of fiber, supplies of which are and should continue to be adequate. The remaining source of imports is Africa, which produces the long fiber and acid-resistant grades.

CRITICAL GRADES: The African fibers (chrysotile grades C and G-1 and 2, amosite B-1, B-3, or D-3, and blue asbestos) are critical grades essential for military use and cannot be replaced to any extent by the better grades of Canadian fiber (especially Canadian Crude #1 and #2), the supply of which is also limited. The chrysotile grades, produced only in Rhodesia, have a low iron content and meet Navy specifications for some essential electrical insulating products. Amosite, found only in the Union of South Africa, is essential for the manufacture of insulation and fire proofing for the Navy and U. S. Maritime Commission. Blue asbestos produced in the Union of South Africa is valued for its acid-resistant properties and is used for acid-proof packing, filter cloth, and asbestos cement pipe. None of the Canadian grades can be used effectively for these purposes. Canadian crudes No. 1 and 2 represent the highest grades of Canadian asbestos, and are used in the manufacture of the better qualities of textile products. Annual production of crudes is only about one per cent of the total annual production of Canadian asbestos.

<u>NEW SUPPLY: (Imports) 1/</u>	<u>1941 (Est.)</u>	<u>1942 (Est.)</u>	<u>January - March 1942 (Actual)</u>
Chrysotile, C & G-1 & 2	6,000.0	4,900.0	27.0
Amosite, B-1, B-3, or D-3	8,400.0	10,800.0	1,142.3
Blue	4,380.0	6,500.0	805.9
Canadian Crude #1 and #2	21,600.0	24,250.0	5,426.5

1/ There is no domestic production of the varieties indicated in the tabulation.

Source: Cork-Asbestos Branch.

INDUSTRIAL STOCKS:

	<u>January 1</u>	<u>1942</u>	<u>April 1</u>
Chrysotile, C & G-1 & 2	3,046.6		2,170.0
Amosite, B-1, B-3, or D-3	4,141.8		2,955.0
Blue	3,258.2		3,050.0
Canadian Crude #1 and #2	6,403.2		6,951.0

Note: There is a government stockpile of 895 tons (April 1, 1942) consisting of blue (MS) asbestos only. Stockpile objectives are as follows: chrysotile C & G-1 & 2---4,500 tons; amosite---16,000 tons; and blue asbestos---10,200 tons. An additional 500 tons of VRA No. 2 (a substitute for chrysotile C G-2) and available from England was recommended March 11, 1942.

Source: Cork-Asbestos Branch.

CONSUMPTION:

	<u>1941 (Est.)</u>	<u>January-March 1942 (Actual)</u>
Chrysotile C & G-1 & 2	3,600	903.0
Amosite B-1, B-3, or D-3	7,200	2,156.6
Blue	4,080	1,048.3
Canadian Crude #1 and #2	19,200	5,740.5

Source: Cork Asbestos Branch.

REQUIREMENTS: Estimates of military and civilian requirements under revision at date of issuance of this abstract.

SPECIAL PROBLEMS: Since only African varieties of asbestos satisfy certain critical military requirements, the essential problem is that of maintaining uninterrupted imports from Rhodesia and the Union of South Africa. The seriousness of the problem is reflected in the sharp reduction of stocks of certain grades from January 1 to April 1, 1942, and the fact that, at the present rate of consumption, supplies on hand are adequate at best for less than a year.

GOVERNMENT CONTROL: Conservation Order M-79 (effective February 1, 1942) restricts the use of fibers from South Africa to defense orders unless otherwise authorized by the Director of Priorities. The use of chrysotile grade C & G-1 & 2 is limited to uses for core rovings to meet Navy specifications; for electrical insulation; tapes and cloth; and non-ferrous lapps. Amosite fibers are limited to such defense uses as woven felt blankets and mattresses for turbine insulation for use on naval and maritime ships; fire-proof board, sprayed amosite; eighty-five per cent magnesia pipe covering and blocks; and pipe and dry pack insulation. In addition, the use of eighty-five per cent magnesia pipe covering is prohibited except in installations where temperatures of 200° Fahrenheit or over occur.

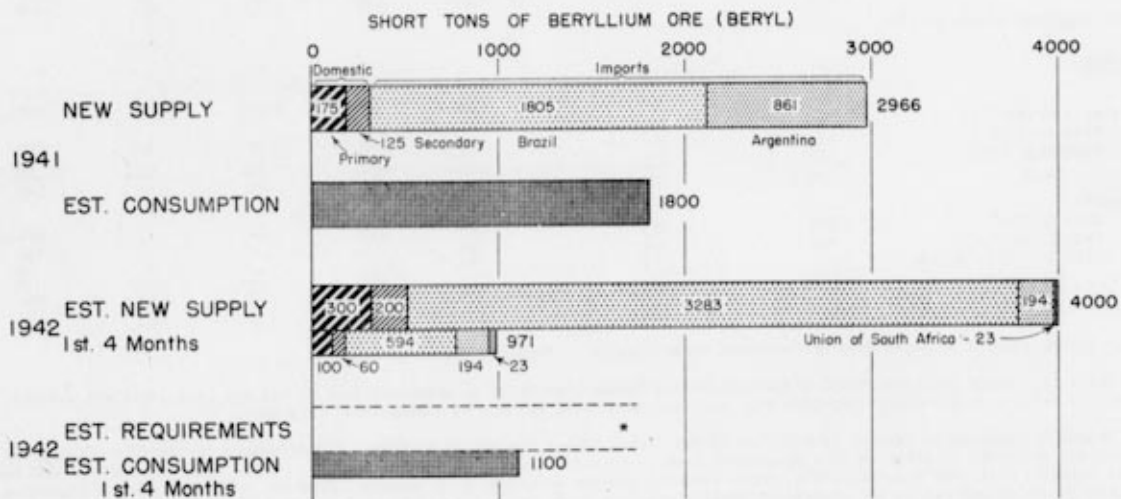
BERYLLIUM

DECLASSIFIED
E.O. 11652, Sec. 3(E) and 5(D) or (E)
Commerce Dept. Letter, 11-15-72
By RHP, Date **MAR 14 1973**

PRIORITY ACTION

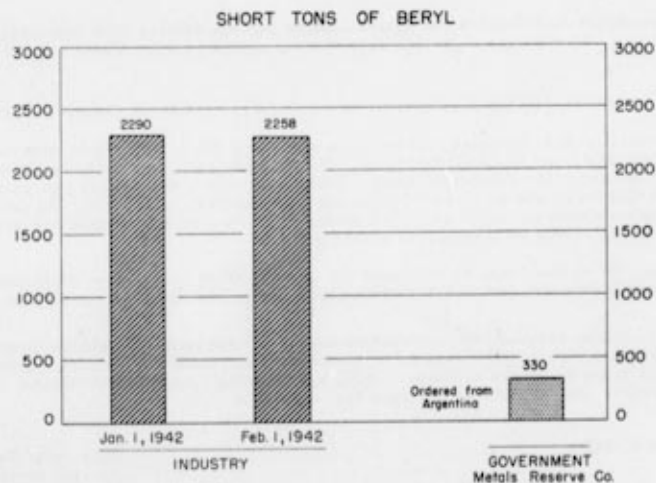
A WPB Order, M-160, placing beryl, beryllium oxide, and the master beryllium-copper alloy under allocation, has been prepared and soon will be issued. Beryl was recently brought under General Imports Order M-63 which gives the U.S. Government complete control over imports of the specified materials.

SUPPLY - DEMAND



* Estimates of military and civilian requirements under revision at date of issuance of this chart.

STOCKS



BERYLLIUM

All figures in short tons of beryllium ore (beryl), averaging about 2% recoverable metal (Be) content.

CONFIDENTIAL

BACKGROUND: The metal beryllium (symbol Be) is found in many minerals but so far has been obtained in commercial quantities only from the ore beryl. In general, the price of beryl is too low to permit production of it alone, and it is obtained as a by-product of other operations such as the mining of mica, feldspar, or gem minerals. The beryllium industry was very small until about 1938, but since then has been growing rapidly.

USES: Beryllium is used mainly as a hardening agent for copper. Over 90% of the supply goes into a "master" copper alloy containing 4% Be which then is used to make various types of beryllium-copper (generally about 2% Be content). Beryllium-copper is light, resistant to fatigue, corrosion, heat, and wear, and has a low surface tension and non-sparking and non-magnetic qualities. It is used largely for springs, diaphragms, bearings, bushings, and other small parts in instruments, airplanes, automobiles, business machines, and household appliances. Other uses include low-sparking safety tools and welding electrodes. The greater part of U. S. production of beryllium-copper now is for military purposes, mainly aircraft and instruments.

Pure beryllium is used in very small amounts for X-ray equipment and laboratory experiments. Beryllium oxide has an important use as a refractory for highest quality spark plugs, etc.

CONSUMPTION:

1941 (Est.)

1,800

Source: Tungsten Branch of WPS.

1942 - First Four Months (Est.)

Jan.	Feb.	March	April	Total
270	270	270	290	1,100

NEW SUPPLY:

1941

1942 (Est.)

1942 - First Four Months

Domestic Production
Primary (Est.)
Secondary (Est.)
Total

175
125
300

300
200
500

Jan.	Feb.	March	April	Total
25	25	25	25	100
15	15	15	15	60
40	40	40	40	160

Imports

From Brazil
From Argentina
From Un. of S. Africa
Total

1,805
861
--
2,666

3,283
194
23
3,500

483	111	--	--	594
194	--	--	--	194
23	--	--	--	23
700	111	0	0	811
740	151	40	40	971

Total Supply

2,966

4,000

740 151 40 40 971

Source: Actual imports -- Department of Commerce; other figures -- Tungsten Branch of WPS.

There is a large amount of beryl within the United States, but it is so scattered that it has not been mined extensively. A deposit of helvite, a low-grade beryllium ore, also has been found and may be worked later this year.

Brazil is expected to provide four-fifths of the United States new supply in 1942. Higher prices for beryl and increased output of the materials of which it is a by-product have increased Brazilian production sharply. Until recently, about 2,000 tons had been expected this year from Argentina, which formerly was the principal U. S. source. However, early in 1942 the Argentine government placed an embargo on all exports of beryl. Although crude beryllium oxide still may be exported, U. S. consumers have been unwilling to accept this. Discussions of the matter now are under way between the two governments, but until it is settled no further imports can be counted upon from Argentina. If shipments are resumed soon, another 1,200 tons may be obtained in 1942.

STOCKS:

Industrial

January 1, 1942

2,290

February 1, 1942

2,258

Source: Tungsten Branch, WPS.

There is no government stockpile at present. The Metals Reserve Co. has ordered from Argentina about 330 tons of ore, none of which has been received yet. It also has a general underwriting agreement with Brazil but has not purchased any beryl so far.

REQUIREMENTS: Estimates of military and civilian requirements under revision at date of issuance of this abstract.

SPECIAL PROBLEMS: The use of beryllium has increased rapidly in recent years and probably will continue to do so as the production of aircraft and other war material increases. On the other hand, the estimate of new supply for 1942 has had to be cut by 1,500 tons because of the Argentine embargo on beryl exports. Moreover, the shipping situation presents a serious problem. The lack of any imports during March and April is believed due to a scarcity of bottoms. Unless sufficient shipping space becomes available, even the import estimate of 3,500 tons will be too high. Stocks now on hand are sufficient for half a year at most. Consequently, there is serious danger of a beryllium shortage.

To prevent such a shortage, it is necessary to eliminate all non-essential uses. Some other materials could be substituted for beryllium in virtually all uses, although such substitutes would be much less satisfactory for the most part.

GOVERNMENT CONTROL: A WPS order, M-160, placing beryl, beryllium oxide, and the master beryllium-copper alloy under allocation, has been prepared and soon will be issued. Although most beryllium now is used for essential purposes, enough may be saved by careful allocation to avert a serious shortage. Beryl was recently brought under General Imports Order M-63 which gives the U. S. Government complete control over imports of the specified materials.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 22, 1942
Revised Abstract Issued May 29, 1942
Next revision due: June 19, 1942

CONFIDENTIAL

BISMUTH

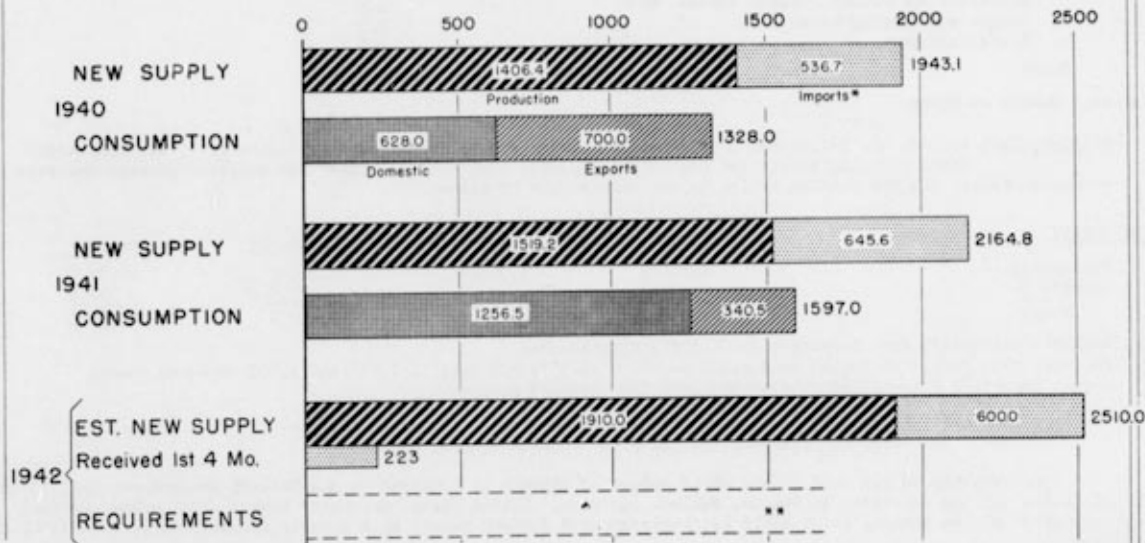
DECLASSIFIED
E.O. 11652, Sec. 3(E) and 5(D) or (S)
Commerce Dept. Letter, 11-16-78
By RHP, Date

PRIORITY ACTION

No priority action

SUPPLY - DEMAND

THOUSANDS OF POUNDS

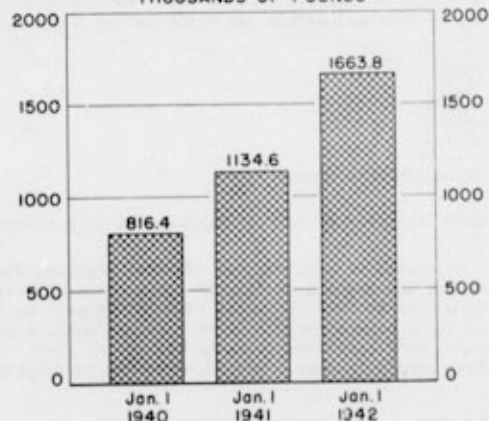


* Entirely from Peru.

** Estimates of military and civilian requirements under revision at date of issuance of this chart.

STOCKS FACTORY AND WAREHOUSE

THOUSANDS OF POUNDS



USE PATTERN 1941

ALLOYS OR METALLURGICAL - 39.7%

Miscellaneous - 2.5%

Mounting airplane propellers for machinery - 8%

Anchoring bearing bushings in machine tools - 2.4%

Anchoring parts & setting dies - 2.8%

Automatic sprinklers, safety valves, etc. - 5.2%

Aluminum alloys & misc. pattern work - 7.0%

Solder and bearing metal - 9.5%

Tube bending and spotting fixtures - 9.5%

PHARMACEUTICAL
60.3%

DECLASSIFIED
E.O. 11652, Sec. 3(E) and 5(D) or (S)
Commerce Dept. Letter, 11-16-78
By RHP, Date MAR 14 1973

CONFIDENTIAL

USES: Bismuth is a metal obtained as a by-product in the smelting and refining of lead, copper, and other non-ferrous ores. In the past the largest use of bismuth has been in compounds for medicinal preparations, including various indigestion remedies and compounds used in treating wounds and venereal diseases. In the industrial field it has numerous applications because of its low melting point and the fact that it expands when passing from the liquid to the solid state. Its most common industrial use is in alloys with other metals, particularly in alloys requiring a low fusing point. A comparatively new development is its use as a substitute for tin in solders.

Use Pattern, 1941:

	<u>Percent</u>
Pharmaceutical	60.3
Alloys or Metallurgical	
Anchoring parts and setting dies	2.8
Tube bending and spotting fixtures	9.5
Aluminum alloys and misc. pattern work	7.0
Mounting airplane propellers for machining	.8
Anchoring bearing bushings in machine tools	2.4
Automatic sprinklers, safety valves, etc.	5.2
Solder and bearing metal	9.5
Miscellaneous	2.5
Total	100.0

Source: Bureau of Mines.

Military Uses include the following: medicinal compounds; for soldering caps to bodies of 37 mm. and larger armor piercing shells and for soldering ammunition packing boxes; for seals on barrage balloons and on oxygen tanks; and for bending tubing in the manufacture of planes.

<u>NEW SUPPLY:</u>	<u>1940</u>	<u>1941</u>	<u>1942(Est.)</u>	<u>1943(Est.)</u>
Production ^{1/}	1,406.4	1,519.2	1,910.0	2,160.0
Imports ^{2/}	536.7	645.6	600.0 ^{3/}	600.0
Total	1,943.1	2,164.8	2,510.0	2,760.0

^{1/} Includes production from foreign ores, chiefly from Mexico.

^{2/} Entirely from Peru. Estimated production for Peru in 1942 and 1943 is 1,250 and 1,500 thousand pounds.

^{3/} Actual imports for the first four months were 223 thousand pounds.

Source: For 1940 and 1941 production figures from Bureau of Mines, and import figures from U. S. Department of Commerce. Estimates for 1942 and 1943 by Mica-Graphite Branch, WPB.

Approximately 80 per cent of the world output of bismuth is produced in the Western Hemisphere, half in the United States and the remainder in Canada, Mexico, and Peru. United States producers have a total annual production capacity of 2,150,000 pounds, which could be increased to 2,750,000 pounds by a greater recovery of bismuth in lead refining.

<u>STOCKS:</u>	<u>January 1</u>	<u>1940</u>	<u>1941</u>	<u>1942</u>
Industrial Stocks		816.4	1,134.7	1,663.9 ^{1/}

^{1/} Does not include 246.5 thousand pounds in bonded warehouses.

Source: Bureau of Mines (Based upon producers' reports)

Note: A stockpile of 500 thousand pounds has been recommended by the Mica-Graphite Branch, WPB. Purchases are expected to start with 300 thousand pounds in May or June and 18 thousand pounds per month during the ensuing year.

<u>CONSUMPTION AND EXPORTS:</u>	<u>1940</u>	<u>1941</u>
Consumption (Shipped or Used)	628.0	1,256.5
Exports	700.0	377.1
Total	1,328.0	1,633.6

Source: Data for 1940 from Bureau of Mines; data for 1941 from Mica-Graphite Branch.

REQUIREMENTS: Estimates of military and civilian requirements under revision at date of issuance of this abstract.

SUPPLY AND DEMAND PROBLEMS: In the absence of adequate official estimates of military and civilian requirements for 1942 and 1943, no comprehensive plan for the control of bismuth can be made at this time. If it can be assumed that the total requirements in the period from 1942 to 1943 inclusive will not exceed, in the aggregate, seven million pounds, an amount taken to represent the total demand for the metal, present maximum capacity, estimated imports (if realized), and existing stocks would provide a sufficient supply until the end of 1943. On the other hand, should total requirements be in excess of seven million pounds, measures for conservation of supplies and additional capacity will be necessary.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 22, 1942
Revised Abstract Issued May 29, 1942
Next revision due: June 19, 1942

CONFIDENTIAL

CADMIUM

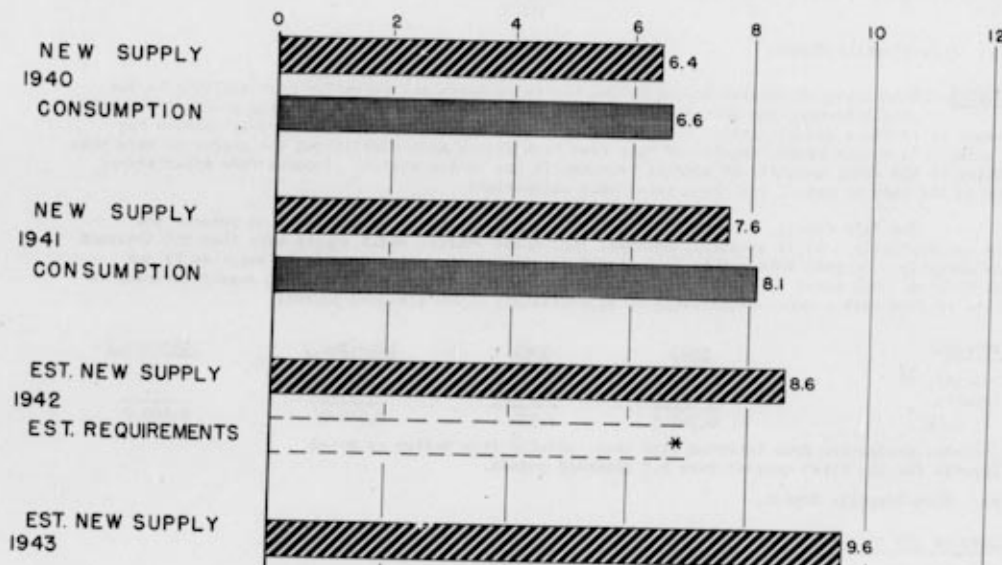
DECLASSIFIED
E.O. 11662, Sec. 3(E) and 6(D) or (4)
Commerce Dept. Letter, 11-16-78
By RHP, Date

PRIORITY ACTION

General Preference Order M-65 (January 17, 1942) directs the delivery of cadmium. Conservation Order M-65-a (January 17, 1942) prohibits, after April 1, 1942, the use of cadmium in an extensive list of items.

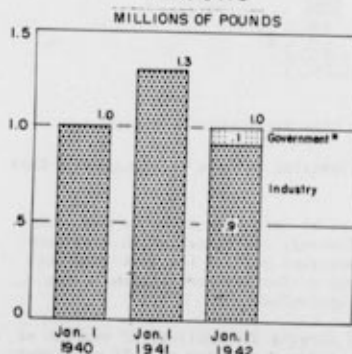
SUPPLY-DEMAND

MILLIONS OF POUNDS



* Estimates of military and civilian requirements under revision at date of issuance of this chart.

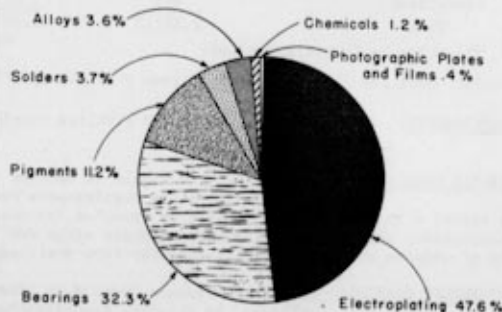
STOCKS



* Government stockpile objective is 12 million pounds.

USES

BASED ON 1941 CONSUMPTION



CADMIUM

(All figures in thousands of pounds)

BACKGROUND: Cadmium is a metal derived chiefly as a by-product of zinc extraction and refining (approximate ratio in zinc ores - 1 part cadmium to 227 parts zinc). Being highly resistant to corrosion, it has an important use as protective coating for metals. This is now of greatest importance for military aircraft (engine parts, bolts, nuts, rods, instruments, etc.). It also is used as bearing metal because it is self lubricant to a high degree and tends to conform well to bearing surfaces. In alloys with other metals, its use in the manufacture of electrical wire, castings for electrical apparatus, safety devices, and other products increases durability, tensile strength, and hardness.

USES: Based on 1941 Consumption.

	Percent
Electroplating	47.6
Bearings	32.3
Pigments	11.2
Solders	3.7
Alloys	3.6
Chemicals	1.2
Photographic plates and films	0.4
	100.0

Source: Mica-Graphite Branch.

PRODUCTION: Production of cadmium in the United States is dependent primarily upon activity in the zinc industry, and secondarily upon the extent to which cadmium-bearing precipitates and flue dust or residues are utilized. Heretofore, less than one-half of the recoverable cadmium has been saved. In recent years, imports of flue dust from Mexico have constituted the source of more than one-third of the total quantity of cadmium produced in the United States. Imports from other areas, mostly in the form of metal, have been relatively unimportant.

The only foreign sources of supply of metal believed to be available at present are Canada and Australia. It is doubtful, however, that these sources could supply more than 250 thousand pounds annually, and even this amount is doubtful in view of the prior demands on supplies by the United Kingdom. The other source of supply is Mexico, which, it is estimated, can supply annually in the form of flue dust a cadmium equivalent of approximately 2,000 thousand pounds.

NEW SUPPLY:	1940	1941	1942(Est.)	1943(Est.)
Domestic ^{1/}	6,364.0	7,452.0	8,600.0	9,600.0
Imports	5.5	147.1	40.0 ^{2/}	---
Total	6,369.5	7,599.1	8,640.0	9,600.0

^{1/} Includes production from imported flue dust, chiefly from Mexico as noted.

^{2/} Imports for the first quarter were 6.8 thousand pounds.

Source: Mica-Graphite Branch.

CONSUMPTION AND EXPORTS:	1940	1941
Domestic Consumption	6,254.0	8,027.9
Exports	385.0	22.1
Total	6,639.0	8,050.0

Source: Mica-Graphite Branch.

STOCKS:	January 1:	1940	1941	1942
Industry		1,017.0	1,306.0	936.0
Government		nll	nll	114.3 ^{1/}
Total		1,017.0	1,306.0	1,050.3

^{1/} Objective is 12 million pounds.

Source: Data for 1940 from U. S. Bureau of Mines and for other years from Mica-Graphite Branch.

REQUIREMENTS: Estimates of military and civilian requirements under revision at date of issuance of this abstract.

SPECIAL PROBLEMS: The estimated new supply of cadmium for 1942 appears at this time to be in fair relation to the expected requirements for the year. However, the situation in 1943 must be viewed with less optimism. With an expected new supply of 9,600 thousand pounds, the most important requirements will not be met unless adequate steps are taken in the way of further restriction in the use of cadmium and more adequate recovery from smelting and refining operations.

GOVERNMENT CONTROL: General Preference Order M-65 (January 17, 1942) directs the delivery of cadmium as follows: to eligible distributors; pursuant to preference rating of A-10 or higher; or on specific authorization by the Director of Priorities. Conservation Order M-65-a (January 17, 1942) prohibits, after April 1, 1942, the use of cadmium in an extensive list of items such as in automotive equipment, building supplies, home furnishings, and textile equipment. Certain uses are largely unrestricted such as in chemicals, fusible alloys, measuring and control instruments for industrial processes. However, these are restricted when substitutes are available.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 8, 1942
Abstract Issued May 18, 1942

CONFIDENTIAL

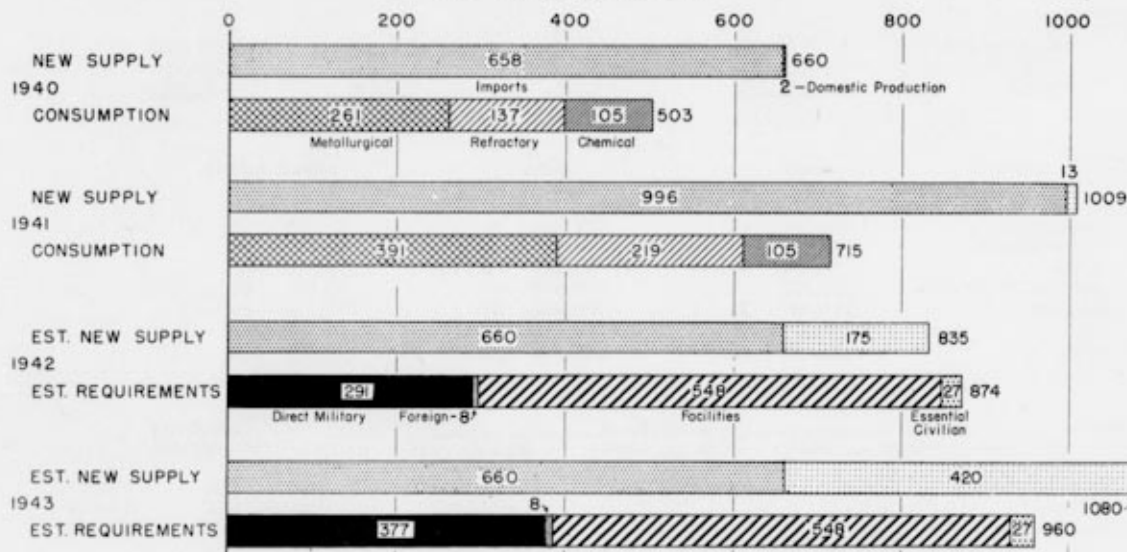
CHROMITE

DECLASSIFIED
E.O. 11652, Sec. 3(E) and 6(D) OF (A)
Commerce Dept. Order, 11-16-77
By RHP, Date

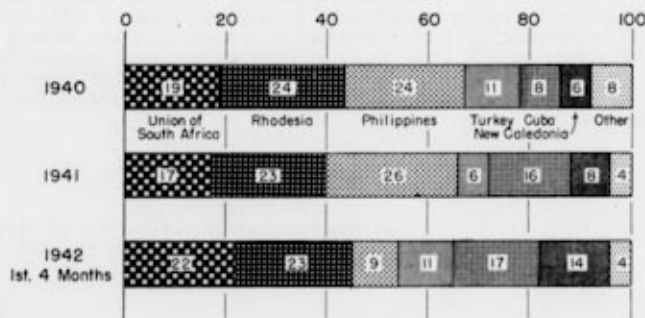
PRIORITY ACTION

July 7, 1941—General Preference Order No. M-18 placed chromium under mandatory control.
November 25, 1941—Amendment to Order No. M-21-a prohibits the manufacture and delivery of alloy iron or steel containing 4% or more chromium except on A-10 or higher preference ratings.
November 29, 1941—Gen. Preference Order No. M-18-a revokes Order M-18 and places with the Director of Priorities direction of all deliveries of chromium.
January 14, 1942—Amendment to Order No. M-18-a prohibits any person from melting more than two tons of ferro-chrome in any one month.
February 4, 1942—Amendment to Order No. M-18-a places chromium, including scrap, under a complete allocations system.
March 26, 1942—Order M-18-b places limitations on the use of chromium in chemicals.

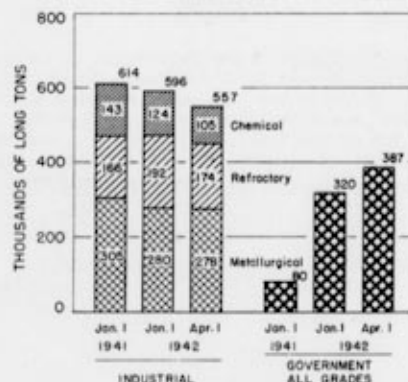
SUPPLY AND DEMAND THOUSANDS OF LONG TONS



IMPORTS BY COUNTRY OF ORIGIN PER CENT



STOCKS



CHROMITE
(Figures in long tons)

CONFIDENTIAL

BACKGROUND: Chromite is the general name given to chromium-bearing ores. In the past, the United States has been almost completely dependent upon foreign sources of supply. Industrial grades of chromite fall into three groups: metallurgical ore, Cr to Fe of 3 to 1, and usually 48% or more Cr_2O_3 , used to make ferrochrome for the production of chromium alloy steels, including stainless steel; refractory ore, low iron and high combined Al_2O_3 and Cr_2O_3 , used for furnace linings in steel and other metal production; chemical ore, as high Cr_2O_3 as possible, iron ratio unimportant, used in manufacture of chromic acid for electroplating, in chemicals for dyeing, tanning, pigments, etc.

Conversion ratio: An average of 2½ tons of metallurgical ore is required to make one ton of ferrochrome. Ferrochrome is approximately 70% chromium.

<u>NEW SUPPLY:</u>	<u>1940</u>	<u>1941</u>	<u>1942 (Est.)</u>	<u>1943 (Est.)</u>
Imports	657,689	995,796	660,000	660,000
Domestic Production	<u>2,662</u>	<u>13,214</u>	<u>175,000</u>	<u>420,000</u>
Total	660,351	1,009,010	835,000	1,080,000

<u>CONSUMPTION:</u>				
Metallurgical	260,679	390,673	509,000	594,000
Refractory	137,088	219,158	250,000	250,000
Chemical	<u>104,836</u>	<u>104,814</u>	<u>116,000</u>	<u>116,000</u>
Total	502,603	714,645	875,000	960,000

<u>IMPORTS:</u>	<u>1940</u>		<u>1941</u>		<u>1942 - 4 mos.</u>	
	<u>Tons</u>	<u>%</u>	<u>Tons</u>	<u>%</u>	<u>Tons</u>	<u>%</u>
Philippines	115,566	24	257,510	26	27,210	9
New Caledonia	42,861	6	80,543	8	42,170	14
Turkey	70,081	11	55,219	6	34,810	11
Union of South Africa	112,812	19	169,378	17	65,901	22
Rhodesia	158,847	24	226,416	23	71,130	23
Cuba	51,955	8	160,664	16	51,702	17
Other	<u>65,567</u>	<u>8</u>	<u>46,066</u>	<u>4</u>	<u>10,974</u>	<u>4</u>
Total	657,689	100	995,796	100	303,897	100

<u>STOCKS:</u>	<u>Industrial</u>			<u>Government</u>	
	<u>Jan. 1, 1941</u>	<u>Jan. 1, 1942</u>	<u>Apr. 1, 1942</u>	<u>(All grades)</u>	
Metallurgical	305,220	280,175	278,101	Jan. 1, 1941	79,957
Refractory	166,443	192,172	173,952	Jan. 1, 1942	320,029
Chemical	<u>142,634</u>	<u>124,041</u>	<u>105,343</u>	Apr. 1, 1942	387,166
Total	614,297	596,388	557,396		

<u>REQUIREMENTS:</u>	<u>Direct</u>			<u>Essential</u>	
	<u>Military</u>	<u>Foreign</u>	<u>Facilities</u>	<u>Civilian</u>	<u>Total</u>
1942	290,700	8,000	548,000	27,000	873,700
1943	377,300	8,000	548,000	27,000	960,300

SPECIAL PROBLEMS: Heavy dependence on foreign sources indicates the clear need of continued shipping availability and protected sea lanes to assure future supply. Present inventories are adequate to meet requirements until mid-1943. Chromium has been under complete allocation since February 4, 1942. No melting or deliveries may be made without specific authorization by Director of Industry Operations. Allocations of ferrochrome, which account for over 90% of the total, at present can satisfy preference ratings only to A-1-j or better. The supply of ferrochrome is limited by electric furnace capacity, which in turn depends upon availability of power, competing demand for furnace use by other ferro-alloys, and other factors.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 20, 1942
Revised abstract issued May 29, 1942
Next revision due: June 19, 1942

CONFIDENTIAL

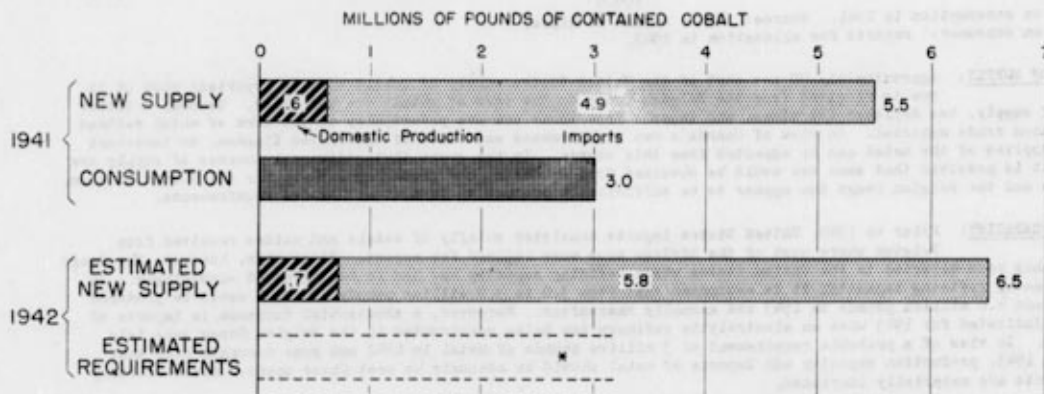
COBALT

EO 11652 DECLASSIFIED
Commerce Sec. 3(E) and 5(D) or 48
By RHP, Date 11-16-78

PRIORITY ACTION

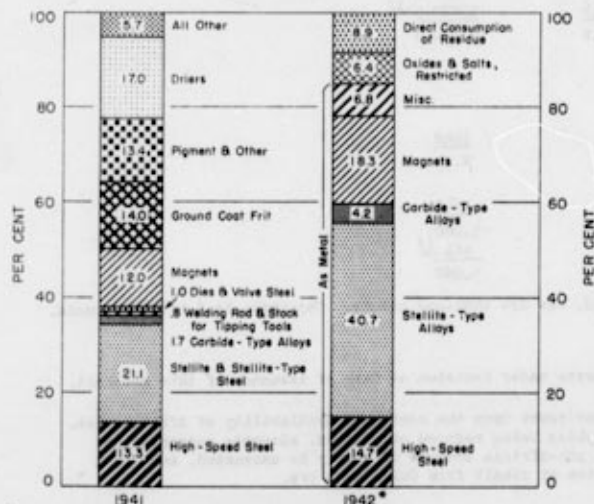
General Preference Order No. M-39 (as amended February 7, 1942) placed cobalt under complete allocation. Conservation Order No. M-39-b, issued February 7, 1942, limited the use of cobalt in pigments for the period from February 1 to April 30, 1942, and prohibited such use beginning May 1, 1942. Limitations were placed on cobalt use in the manufacture of items other than high-speed steel, magnet steel, driers, ground coat frit, and other related items; and in these uses limitations apply when substitutes are available.

SUPPLY - DEMAND



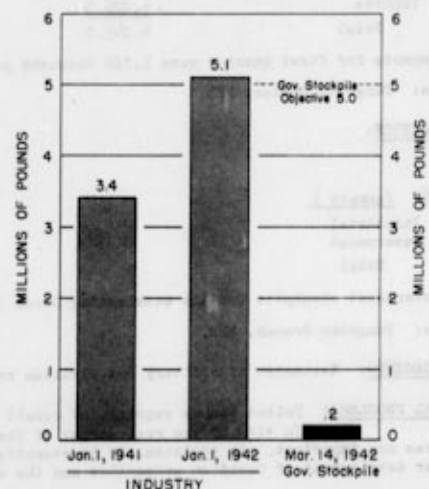
* Estimates of military and civilian requirements under revision at date of issuance of this chart.

USES



* Based upon consumers' reports for allocation in 1942

STOCKS



CONFIDENTIAL

COBALT

(Figures in thousands of pounds of contained cobalt)

BACKGROUND: Cobalt is a highly magnetic metal and resembles nickel in many of its properties. For many years, it was considered useful primarily in the form of oxide or other chemical compounds for use in dyes, in ceramic colors, and as a drier in paints and inks. During the past decade, however, its usefulness in the metallic form has increased rapidly, particularly in permanent magnets and in high-speed cutting steels. In the latter use, cobalt, when added to ordinary tungsten or molybdenum high-speed steels, improves the qualities of the steel when used on very hard and tough material. High-speed cutting tools of this type are essential in aviation engine construction, large-scale production of shells, and naval armament manufacture.

Uses:	1941 ^{1/}	Percent	1942 ^{2/}	Percent
High-speed steel		13.3	As metal:	
Stellite & stellite-type steel		21.1	High-speed steel	14.7
Carbide-type alloys		1.7	Stellite-type alloys	40.7
Welding rod & stock for tipping tools		0.8	Carbide-type alloys	4.2
Dies and valve steel		1.0	Magnets	18.3
Magnets		12.0	Miscellaneous	6.8
Ground-coat frit (binder for enamel ware)		14.0	Total Metal	84.7
Pigments & other uses (glass, enamel, etc.)		13.4	As oxides & salts, restricted	6.4
Driers		17.0	Direct consumption of residue	8.9
All other		5.7	Total	100.0
Total		100.0		

^{1/} Based on consumption in 1941. Source: U. S. Bureau of Mines.

^{2/} Based on consumers' reports for allocation in 1942.

SOURCES OF SUPPLY: Approximately 90 per cent of the United States supply of cobalt must be imported; most of it now is received from the Belgian Congo in the form of cobalt ore and alloy. Canada, a former source of supply, has depleted its mines, and imports from there now are principally in the form of metal refined from African crude material. In view of Canada's own requirements and those of the United Kingdom, no important future supplies of the metal can be expected from this source. In the event that additional sources of supply are needed, it is possible that some ore could be obtained from Rhodesia, now producing largely for the United Kingdom. This area and the Belgian Congo now appear to be sufficiently productive to meet all Allied requirements.

REFINING CAPACITY: Prior to 1940, United States imports consisted chiefly of metals and oxides received from Belgium where most of the African ores were refined for export. Since then, however, the Congo material has been diverted to the United States where refining capacity has had to be increased accordingly. In terms of metal refining capacity, it is estimated that from 3.0 to 3.2 million pounds of metal could be produced in 1942, and 4.0 million pounds in 1943 and annually thereafter. Moreover, a substantial increase in imports of metal is indicated for 1943 when an electrolytic refinery now being constructed in the Belgian Congo goes into operation. In view of a probable requirement of 3 million pounds of metal in 1942 and some increase over that amount in 1943, production capacity and imports of metal should be adequate to meet these needs, unless military requirements are materially increased.

Capacity to convert ore into oxides and salts now is in excess of 1.4 million pounds, which is adequate to meet such demands as are permitted under present control orders.

NEW SUPPLY:	1940	1941	1942 (Est.)
Domestic Production	19.0	575.2	664.0
Imports	4,226.0	4,935.6	5,820.0 ^{1/}
Total	4,245.0	5,510.8	6,484.0

^{1/} Imports for first quarter were 1,780 thousand pounds.

Source: Tungsten Branch, WFB.

CONSUMPTION:	1941	1942
	2,970	N.A.

STOCKS: January 1	1941	1942
Industrial	3,422	5,080
Government	nil	nil ^{1/}
Total	3,422	5,080

^{1/} Government stockpile for the week ending March 14, 1942, was 224 thousand pounds. Objective is 5 million pounds.

Source: Tungsten Branch, WFB.

REQUIREMENTS: Estimates of military and civilian requirements under revision at date of issuance of this abstract.

SPECIAL PROBLEMS: United States supplies of cobalt are contingent upon the continued availability of African ores. In view of the real danger of these supplies being reduced or stopped, adequate conservation measures are important. In addition, it is essential that non-African sources of supply be canvassed, such as a further development of Canadian properties and the extraction of cobalt from Cuban iron ore.

GOVERNMENT CONTROL: General Preference Order No. M-39 (as amended February 7, 1942) placed cobalt under complete allocation. Conservation Order No. M-39-b, issued February 7, 1942, limited the use of cobalt in pigments for the period from February 1 to April 30, 1942, and prohibited such use beginning May 1, 1942. Limitations were placed on cobalt use in the manufacture of items other than high-speed steel, magnet steel, driers, ground coat frit, and other related items; and in these uses limitations apply when substitutes are available.

CONFIDENTIAL

COPPER (Refined)

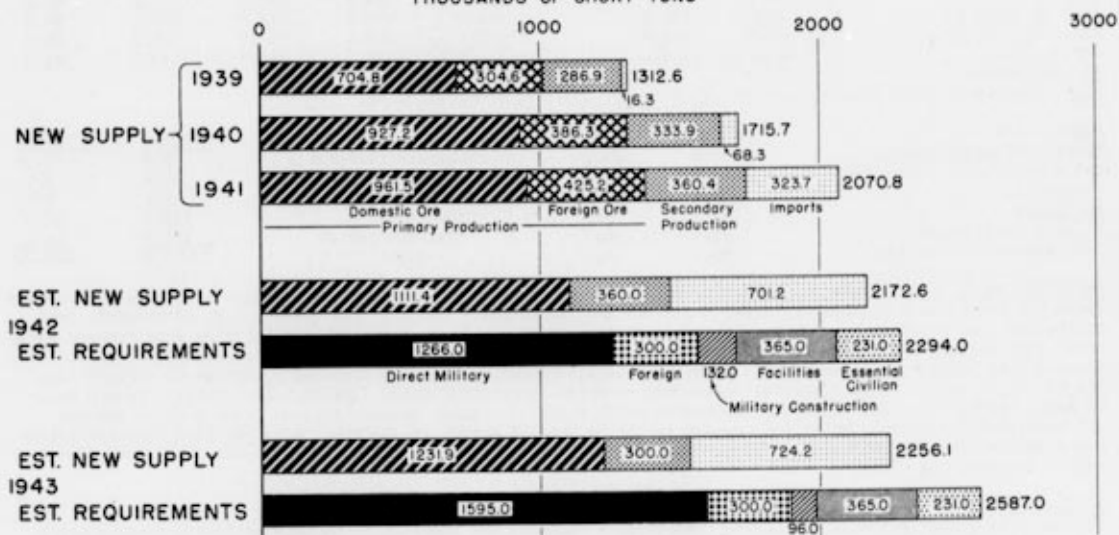
DECLASSIFIED
E.O. 11652, Sec. 3(E) and 5(D) or (G)
Commerce Dept. Letter, 11-15-78
By RHP, Date

PRIORITY ACTION

Copper is subject to allocation and priority regulations as provided in General Preference Order No. M-9-a and supplementary Order No. M-9-b and amendments. Conservation Order M-9-c, as amended, prohibits the use of copper in over two hundred civilian articles. Use of copper in all other items (not elsewhere excepted) prohibited after June 15. Restrictions do not apply to Army, Navy, or Maritime Commission contracts until August 1. Under General Imports Order M-63 as amended all contracts for imports of refined copper are to be handled solely by the RFC.

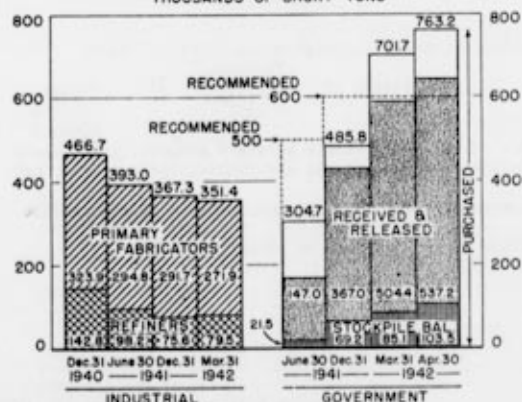
SUPPLY - DEMAND

THOUSANDS OF SHORT TONS



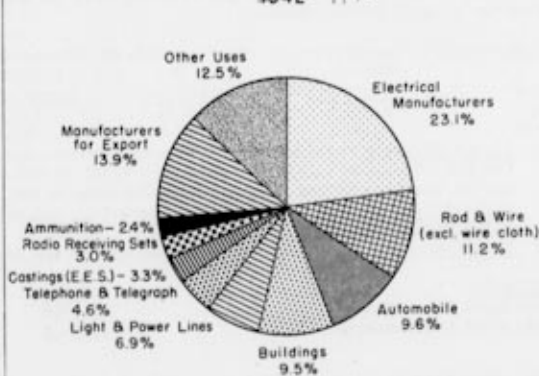
STOCKS

THOUSANDS OF SHORT TONS



USES

1942-1940



COPPER (refined)
(All figures in thousands of short tons)

<u>SUPPLY:</u>	<u>1939</u>	<u>1940</u>	<u>1941</u>	<u>1942</u> <u>Estimate</u>	<u>1943</u> <u>Estimate</u>
Production: Primary - from Domestic Ores	704.8	927.2	961.5	1,111.4	1,231.9
" " Foreign Ores	304.6	386.3	425.2 a/	b/	b/
Secondary 1/	286.9	333.9	360.4	360.0	300.0
Imports - General	16.3	68.3	323.7	701.2	724.2
Total Available Supply	1,312.6	1,715.7	2,070.8	2,172.6	2,256.1
Exports	396.4	439.6 d/	114.6		
Net Available Supply	916.2	1,276.1	1,956.0		

- a/ Includes imports by Metals Reserve Company.
b/ Included in data for Imports - General
c/ Includes Foreign ores and concentrates, etc.
d/ Includes foreign refined copper reexported. Also includes rods.
1/ From old scrap only. Includes copper content of alloys.

REFINING CAPACITY: Present total refining capacity estimated at 1,649.6 thousand tons annually. Facilities for refining an additional 90,000 tons annually are now under construction, to be completed in mid-1942.

<u>STOCKS:</u>	<u>INDUSTRIAL</u>		<u>GOVERNMENT</u>				
<u>Date</u>	<u>Refiners</u>	<u>Prim. Fab.</u>	<u>Recommended</u>	<u>Purchased</u>	<u>Received</u>	<u>Released</u>	<u>Balance</u>
Jan. 1, 1941	142.8	323.9	-----	-----	-----	-----	-----
July 1, 1941	98.2	294.8	500.0 a/	304.7	168.5	147.0	21.5
Jan. 1, 1942 b/	75.6	291.7	600.0 a/	485.8	436.2	367.0	69.2
April 1, 1942 c/	79.5	271.9	600.0 a/	701.7	589.5	504.4	85.1
May 1, 1942	-----	-----	600.0 a/	763.2	640.7	537.2	103.5

a/ Per annum.

b/c/ Government stockpile data as of: b/ Dec. 27, 1941; c/ March 28, 1942.

<u>USES: - 1940</u>	<u>AMOUNT</u>	<u>PERCENT</u>		<u>AMOUNT</u>	<u>PERCENT</u>
Electrical manufactures	247.0	23.1%	Castings (N.E.S.)	35.0	3.3%
Red & wire (excl. wire cloth)	120.0	11.2	Radio Receiving Sets	32.0	3.0
Automobile	103.0	9.6	Ammunition	26.0	2.4
Buildings	102.0	9.5	Other uses	133.6	12.5
Light & power lines	74.0	6.9	Mfrs. for export	148.4	13.9
Telephone and telegraph	49.0	4.6	Total	1,070.0	100.0%

RESTRICTIONS ON USE: Copper is subject to allocation and priority regulations as provided in General Preference Order No. M-9-a and supplementary order No. M-9-b and amendments. Conservation Order M-9-c, as amended, prohibits the use of copper in over two hundred civilian articles. These items include building supplies and hardware; furnishings and equipment; dress accessories; jewelry, gifts, and novelties; burial equipment; automotive, trailer, and tractor equipment; and a miscellaneous list ranging from fire-fighting apparatus to pins to toys. Use of copper in all other items (not elsewhere excepted) prohibited after June 15. Restrictions do not apply to Army, Navy or Maritime Commission contracts until August 1. Under General Imports Order M-63 as amended all contracts for imports of refined copper are to be handled solely by the RFC. A number of limitation orders restrict the use of copper and copper-base alloys in a variety of items ranging from garment closures through radios and plumbing fixtures.

SPECIAL PROBLEMS: Problems of industry are more closely related to expansion of copper mining plants than to increases in copper refining facilities. Additional tonnages are expected to be made available through price adjustments and plans for accelerated amortization or other stimuli. British requirements of U.S. copper may increase owing to the threat to shipping of British copper supplies from Northern Rhodesia and Eastern Africa. Imports from Chile might suffer by competition of other materials for available shipping bottoms, and be endangered by submarine warfare. Although recent agreements have been reached for a 7-day 16-hour week, migration of miners to war industries and the five-day week enforced by labor unions in the past have developed a shortage of experienced miners.

REQUIREMENTS: As reported by the Materials Requirements Section, Statistics Division, on April 20, 1942.

<u>Year</u>	<u>Direct</u> <u>Military</u> 1/	<u>Foreign</u>	<u>Military</u> <u>Construction</u>	<u>Facilities</u> 2/	<u>Essential</u> <u>Civilian</u> 3/	<u>Total</u>
1942	1,266.0	300.0	132.0	365.0	231.0	2,294.0
1943	1,595.0	300.0	96.0	365.0	231.0	2,587.0

1/ Direct Military requirements shown are based on objectives of the S-I Ultimate Aircraft program, Army Supply Program, Sections I (4/6/42) and II (4/9/42) covering equipment for ground and air forces, respectively, and latest programs of the Navy and Maritime Commission.

2/ Facilities - minimum needs for the production and maintenance of facilities and equipment to effectuate the military program.

3/ Essential Civilian - minimum requirements for the production and maintenance of civilian goods.

<u>SUMMARY:</u>	<u>1942</u>	<u>1943</u>
Estimated Total Supply	2,172.6	2,256.1
Estimated Requirements	2,294.0	2,587.0

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 11, 1942
Revised Abstract issued May 18, 1942
35479

CONFIDENTIAL

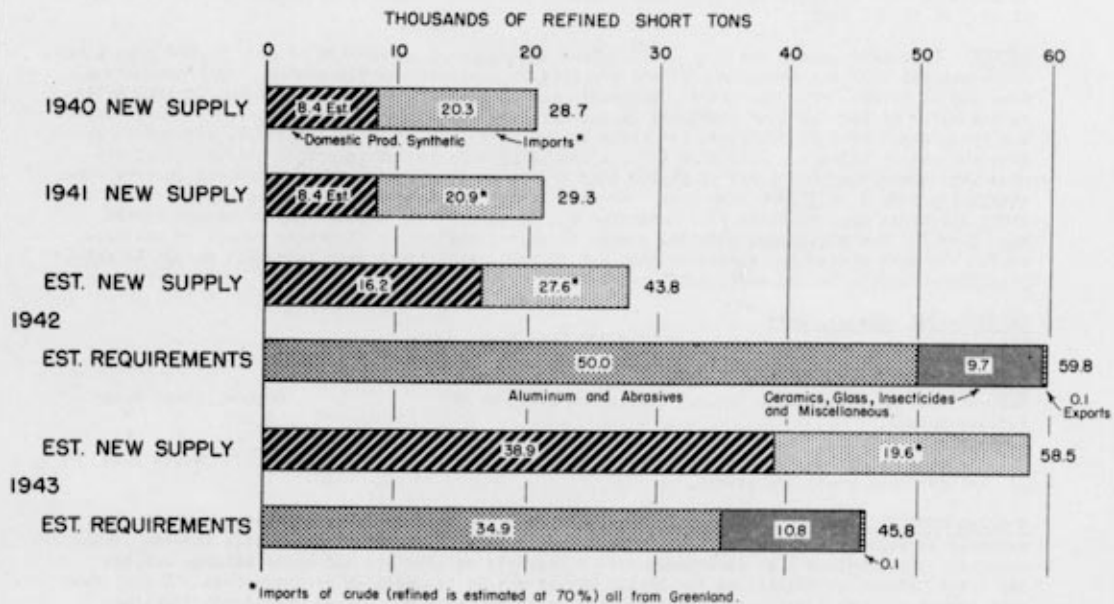
CRYOLITE

DECLASSIFIED
E.O. 11652, Sec. 3(E) and 3(D) or (2)
By RHP, Date 11-15-78
Commerce Dept. Letter, 11-15-78

PRIORITY ACTION

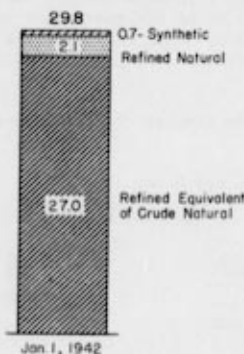
No Priority Action

SUPPLY - DEMAND



INDUSTRY STOCKS

THOUSANDS OF REFINED SHORT TONS



CRYOLITE

(All figures in short tons refined unless otherwise stated)

BACKGROUND: Cryolite is a soft, whitish mineral with a waxy sheen. The natural cryolite occurs in commercial quantity only in Ivigtut, Greenland. It is imported solely by the Pennsylvania Salt Company. Synthetic cryolite, at present produced commercially solely by the Aluminum Company of America, is made from acid fluorspar and other aluminum and sodium-bearing materials. The domestic production of synthetic cryolite now falls far short of U.S. requirements, and it is necessary to use the natural cryolite for needs which could be satisfied by the synthetic, if sufficient quantities were available.

USES: Cryolite is used as a flux in the reduction of aluminum, the natural being considered preferable in the starting of new "pots", after which the synthetic can be used. Only natural cryolite can be used in abrasives. Ceramics, glass, and insecticides can use either the natural or the synthetic.

NEW SUPPLY:	1940	1941	1942 Estimated	1943 Estimated
Estimated Domestic Production (synthetic)	8,400	8,350	16,200	38,900
Imports (natural-refined basis [crude x .70])	20,273	20,921	27,600	19,600
Total	28,673	29,271	43,800	58,500

CAPACITY: Present domestic capacity for the production of synthetic cryolite is approximately 10,000 short tons per annum. Expansion programs under construction, or approved, are expected to increase this capacity by 28,850 tons, raising the total capacity available by the beginning of 1943 to 38,850 tons.

SOURCE: In recent years, the mine at Greenland has produced an average of over 50,000 long tons crude natural cryolite annually (refined cryolite is estimated at 70% crude). 1941 production amounted to 55,000 long tons crude. Shipments are divided between Canada and the United States on the basis of negotiations conducted in the Cryolite Committee at the State Department. During 1942, Canada will probably receive about 20,000 long tons crude, and the U.S. will probably take the entire balance. Intensive efforts are being made to increase 1942 production at the mine well above the 1941 level of 55,000 long tons. On this basis, the U.S. should receive substantially more than 35,000 long tons. However, this cannot be safely counted on in view of the risks attendant upon shipping from that area and in view of the possibility of damage to the mine itself. The mining and shipping season is short; ordinarily shipments cannot be obtained during the late winter and spring months, but climatic conditions were favorable enough to make possible shipments in the early months of 1942.

IMPORTS--1st Quarter, 1942

Greenland 12,800 long tons, crude

INDUSTRY STOCKS 1/1 January 1, 1942

Refined equivalent of Crude Natural (Refined = crude x .70)	26,964	short tons
Refined Natural	2,143	" "
Synthetic	723	" "
Total	29,830	short tons

1/ Refiners' and producers' stocks.

SPECIAL PROBLEMS: It is necessary that capacity for the production of synthetic cryolite be expanded as rapidly as possible. All effort should be made towards accelerating imports of the natural. The cryolite mine in Greenland is vulnerable to sabotage and enemy attack, and the sea lanes between Greenland and the United States are in the theater of operations. Harbor facilities at Ivigtut are limited, accommodating only one ship at a time. Continued supplies depend primarily on the defense of Greenland and the maintenance of the sea lanes between it and the United States. The availability of shipping bottoms is naturally important, but it is understood that ships with tonnages of more than 3300 cannot get into loading positions at Ivigtut. It has been suggested that supplies for the United States garrison at Iceland might be routed in vessels small enough to make a return stop-over at Ivigtut for cryolite. It is necessary that arrangements be made for importation of all the cryolite ore available to the U.S. in 1942. If it develops that the Pennsylvania Salt Company cannot take the entire amount in its own name, then the balance must be imported by the government or with government aid. Full use should be made in this connection of supply ships on the return trip from Iceland. It is also necessary that stringent control be exercised over the use and distribution of both natural and synthetic cryolite.

REQUIREMENTS: Estimates of the Aluminum-Magnesium Branch May 7, 1942.

	1942	1943
Aluminum and Abrasives	49,955	34,891
Ceramics, Glass, Insecticides, and Misc.	9,743	10,800
Exports	120	120
Total	59,818	45,811

SUMMARY:	1941	1942	1943
Estimated New Supply	---	43,800	58,500
Estimated Requirements	---	59,818	45,811
Industry Stocks, Dec. 31	29,830		

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 15, 1942
Abstract issued May 18, 1942

CONFIDENTIAL

DIAMOND DIES

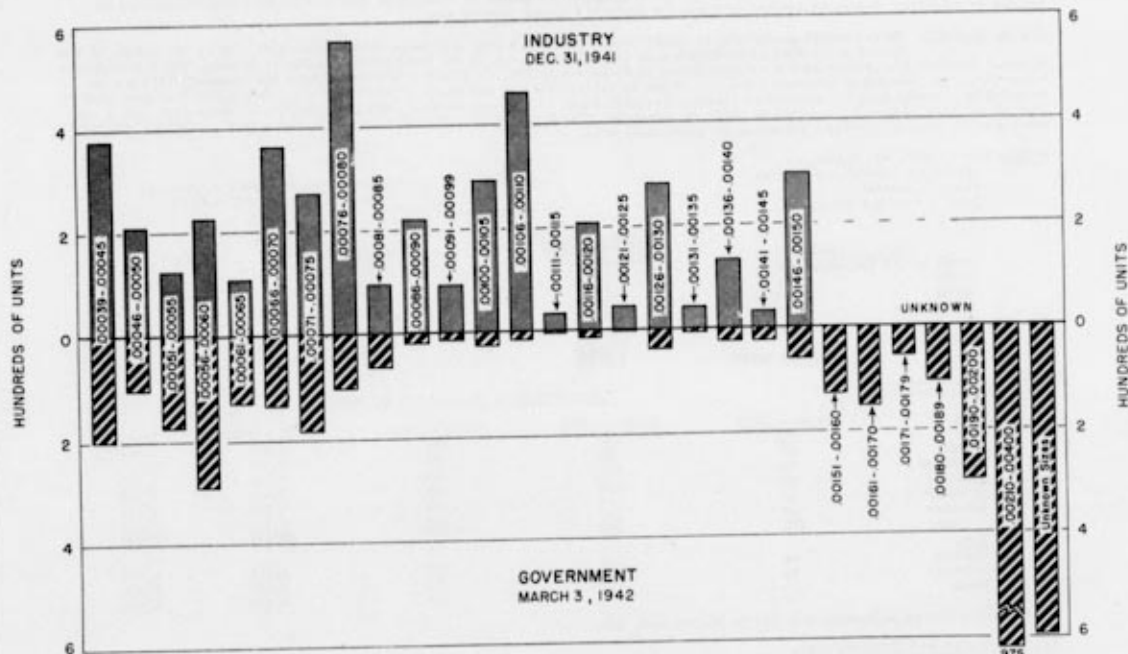
DECLASSIFIED
E.O. 11662, Sec. 3(E) and 5(D) or (2)
Commerce Dept. Letter, 11-16-78
By RHP, Date

PRIORITY ACTION

General Preference Order M-109, effective March 27, 1942, requires reports of stocks, sales, transfers and imports of rough diamonds, including those mounted in unused tools. Diamond dies are included in the order as tools.

STOCKS

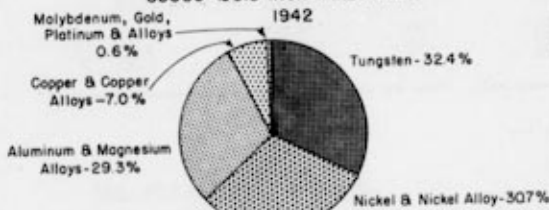
.00039-.00200



USES

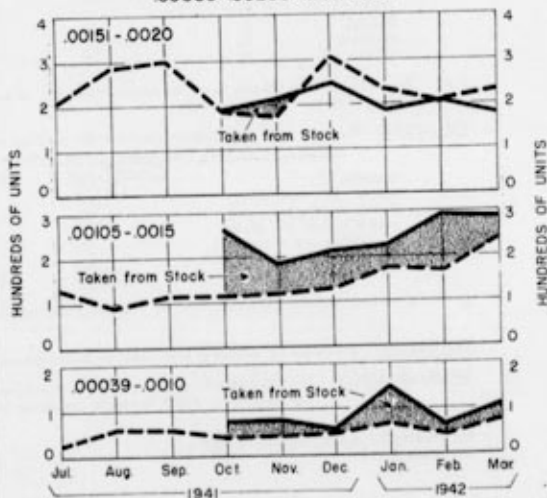
.00039-.0015 INCH WIRE DRAWN

1942



PRODUCTION - CONSUMPTION

.00039-.00200 INCH DIES



DELIVERIES

.00039-.0015 INCH WIRE

100% = 107,480 th units

Other and no ratings

33.4% A-2 to A-10

36.6% A-2 to A-10

30.0% A-A & A-1

MAR. 1942

GOV'T STOCKPILE

ALL SIZES

23 th units Objective

Delivered & released to industry

Balance

MAY 2, 1942

* Approximately 50 percent of this is tungsten wire for electric light bulbs.

DIAMOND DIES (All figures in units of one die)

BACKGROUND: A diamond die is a pierced hole diamond which is mounted in a metal disc about an inch in diameter and varies in thickness according to the machine on which it is mounted. For dies employed in drawing wires of diameter 0.002 inch and larger, hard metal alloys, such as tungsten carbide, may be used; but for the smaller size wires there is no substitute for diamond dies. The wire drawn from small diamond dies is essential for military production of precision instruments for airplanes, machine tools, motors, and radio equipment. Civilian demands are for similar purposes.

All wire is drawn through dies; and constancy in diameter of the wire is absolutely essential for purposes of electrical conductivity, strength constants, etc. It is this constancy which can be supplied only by diamond dies. In drilling of these diamonds, diamond dust and diamond bits are used, a process requiring highly skilled workers, of which there is a shortage in the United States. Prior to the war, France, and to a small extent Belgium, supplied United States needs, especially the small sizes. Since the outbreak of the war, the United Kingdom has developed production in this field; and it is from the RFC that the RFC has purchased its dies. The English producers have insisted, however, upon the purchase of certain quantities of larger dies when they agree to sell the required small size dies. RFC has at hand a sufficient supply of large size dies, but the stockpile in small crucial sizes, .0003 to .0015, is extremely limited. Stocks of small dies held by RFC are being replenished as rapidly as possible. United States has produced for years its larger diamond dies.

SPECIAL PROBLEMS: United States production is insufficient as yet to supply the demand for diamond dies. It is the policy of the RFC to allot dies to producers upon the recommendation of the Miscellaneous Minerals Branch. The Miscellaneous Minerals Branch tries, before such a recommendation is forwarded to RFC, to effect a transfer within the industry; this may be impossible. The holders of critical sizes may refuse to release them on the basis of imminent need. Over 6,000 dies have been released to industry from the government stockpile between March 1, 1941 and April 2, 1942. Production of small dies from a new type of drilling machine is expected to begin in midsummer. The Miscellaneous Minerals Branch believes this production will be sufficient to relieve the tight situation in these small dies.

STOCKS: May 2, 1942, All Sizes

Government Stockpile Objective:
Total Delivered:
Total Government Stockpile:

23,000
9,095
3,016

Released from Stockpile to Industry
as of May 2, 1942--6,939

Size in Inches		Industry Stocks		Government Stocks	
		March 31, 1942		March 3, 1942	
.00039 to and including .00075		2,575		1,223	
.00076 " " " .00099		1,658		201	
.00100 " " " .00150		3,431		212	
.00150 " " " .00200		3,460		728	
	Total Small Sizes	11,124		2,464	
.00210 and over		211,820		975	
	TOTAL ALL SIZES	222,933		3,339	

UNITED STATES PRODUCTION:

Distribution by Size of Die in Inches

	.00039 - .0010	.00105 - .0015	.00151 - .0020	.0021 - .0022	Total
1941					
July	25	134	205	5,141	5,505
August	60	92	286	5,733	6,171
September	53	115	290	5,482	5,940
October	38	112	184	6,492	6,826
November	40	115	174	3,541	3,870
December	43	129	210	5,754	6,136
Total	259	697	1,458	32,116	34,530
1942					
January	64	172	233	5,547	6,016
February	36	167	210	5,445	5,858
March	72	236	229	5,939	6,476

Note: The estimated production for 1942 is 16,000 small dies.

NEW DIES PLACED IN PRODUCTION LINE:

	.00039 - .00075	.00076 - .00099	.0010 - .0015	.0016 - .0020	.0021 - .0022	Total
1941						
October	19	54	261	189	3,058	3,513
November	32	43	188	213	3,557	4,033
December	14	36	212	290	4,005	4,517
Total	65	133	661	692	10,620	12,173
1942						
January	77	66	222	181	4,227	4,773
February	11	51	294	203	4,544	5,103
March	23	79	286	175	4,805	5,368

Note: The life of dies depends upon the metal drawn and varies considerably. There are no data available on the total number of dies in the production line now.

USE PATTERN: The amount of wire drawn indicates the utility of the dies.

.00039 - .0015 Inch Wire Drawn, March, 1942

	Thousands Meters	Percent
Tungsten 1/	36,428	32.4
Copper and Copper Alloy	7,931	7.0
Nickel and Nickel Alloy	34,508	30.7
Gold Platinum and Alloys	52	.1
Molybdenum and Ir. Alloys	567	.5
Aluminum and Magnesium Alloys	33,000	30.0
Total	112,486	100.0

Deliveries .00039 - .0015 Inch Wire, March, 1942

	Thousands Meters	Percent
A-4 to A-1 Ratings	32,285	30.0
A-2 to A-10 Ratings	39,339	36.6
Other and No Ratings 1/	15,856	14.4
Total	107,480	100.0

1/ Most of Tungsten Wire drawn is used by General Electric for bulbs.

1/ Approximately 50% of this is tungsten wire for electric light bulbs.

REQUIREMENTS: Estimates of military and civilian requirements are under revision at the date of issuance of this abstract.

GOVERNMENT CONTROL: General Preference Order M-109, effective March 27, 1942, requires reports of stocks, sales, transfers, and imports of rough diamonds including those mounted in unused tools. Diamond dies are included in the order as tools.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 2, 1942
Revised abstract issued May 16, 1942

CONFIDENTIAL

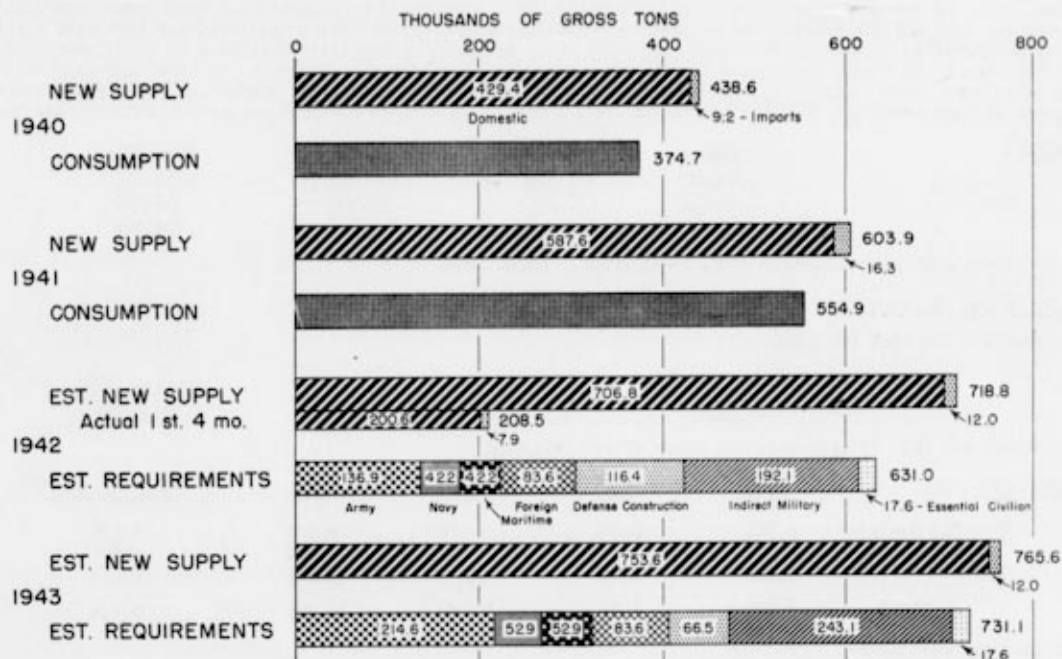
FERROSILICON

DECLASSIFIED
E.O. 11652, Sec. 3(E) and 5(D) or (E)
Commerce Dept. Letter, 11-16-72
By RHP, Date

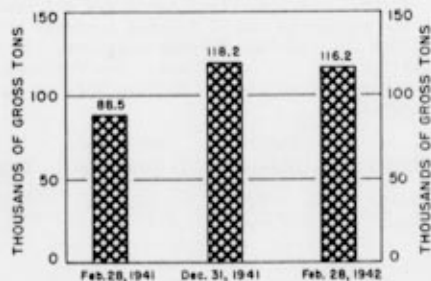
PRIORITY ACTION

Informal allocation of 5-20% grades of ferrosilicon in effect through voluntary action of eight producers.
Consumers' inventories held to approximately 35 days consumption.

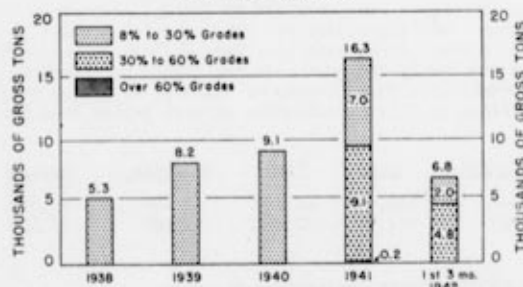
SUPPLY - DEMAND



STOCKS HELD BY PRODUCERS AND USERS



IMPORTS ALL FROM CANADA



FERROSILICON
(All figures in gross tons of ferrosilicon)

CONFIDENTIAL

BACKGROUND: Ferrosilicon is one of the important ferro-alloys used in steel making. Its consumption averages 14.2 pounds for each ton of produced steel. It is prepared in varying ratios of silicon to iron, depending upon the desired silicon content. The lower grades up to fifteen percent are commonly produced in blast furnaces, but those in the higher percentages are virtually always the product of the electric furnace.

Ferrosilicon performs two general functions in steel making: (1) deoxidizing and purifying the steel, producing a sound, clean metal free from blow-holes; (2) adding silicon content to the steel to secure certain desired properties.

Since ferrosilicon is cheaper than manganese, it is used as a preliminary deoxidizer to reduce the quantity of manganese required for this purpose. Silicon metal is included in varying amounts in cast iron, malleable iron, steel, and non-ferrous alloys. In certain amounts it produces a brittle iron, excellent for use in shrapnel, hand grenades, etc. By its action in changing white iron to gray, it makes the production of gray iron commercially practicable. High silicon steels show remarkable resistance to corrosion, wear, and heat, and have many applications as moving parts in automotive motors, engines, etc. Special applications of silicon in tool, stainless, and structural steels, in electrical sheets for magnetic circuits in electrical equipment, in case hardening of steel, and in other uses, also contribute to the importance of silicon in iron and steel production. A significant use of high grade silicon resulting from the war effort has been the generation of hydrogen gas for anti-barrage balloons.

<u>NEW SUPPLY:</u>	<u>1940</u>	<u>1941</u>	<u>1942 Est.</u>	<u>1943 Est.</u>
Domestic	429,493	587,627	706,800 1/	753,600
Imports	<u>9,158</u>	<u>16,305</u>	<u>12,000</u>	<u>12,000</u>
	438,651	603,932	718,800	765,600

1/ Actual production, first four months, 1942: 200,580 gross tons.

<u>CONSUMPTION AND REQUIREMENTS:</u>	374,740	554,940	631,038 1/	731,350 1/
--------------------------------------	---------	---------	------------	------------

1/ Requirements for 1942 and 1943.

<u>STOCKS: 1/</u>	<u>March 1, 1941</u>	<u>January 1, 1942</u>	<u>April 1, 1942</u>
	88,540	118,208	123,515

1/ All stocks are held by producers and users of ferrosilicon.

<u>IMPORTS: 1/</u>	<u>1938</u>	<u>1939</u>	<u>1940</u>	<u>1941</u>	<u>1942 (4 mon.)</u>
8% - 30% Grades:	5,324	8,204	9,158	6,767	3,138
30% - 60% Grades:	0	0	0	9,302	4,807
Over 60% Grades:	<u>0</u>	<u>0</u>	<u>0</u>	<u>236</u>	<u>0</u>
Total	5,324	8,204	9,158	16,305	7,945

1/ All imports from Canada.

SPECIAL PROBLEMS: Demand. The demand for ferrosilicon has increased greatly with expanded steel requirements. In addition, the consumption of ferrosilicon per ton of steel has risen some twenty percent because of its substitutability for other scarce metals, such as manganese and aluminum. Additional war demands for the 75 percent grade are its use in producing hydrogen gas for balloons, and in magnesium plants using the ferrosilicon process.

Supply. The basic raw materials of ferrosilicon production - silica rock, coke, and iron ore - are all available within the United States. The essential problem in expanding the supply is one of furnace capacity and electric power. Other essential ferro-alloys compete with ferrosilicon for existing furnace capacity. This in turn is limited by the unprecedented demand for electric power resulting from the war effort. New furnaces are being constructed where blocks of electric power are available. Furnaces now undergoing repairs will be back in operation by July 1, affording partial relief from the present shortage.

<u>REQUIREMENTS:</u>	<u>Army</u>	<u>Navy</u>	<u>Maritime</u>	<u>Foreign</u>	<u>D.P.C., etc. Construction</u>	<u>Indirect Military</u>	<u>Essential Civilian</u>	<u>Total</u>
1942	136,860	42,190	42,228	83,650	116,420	192,080	17,610	631,038
1943	214,580	52,860	52,880	83,650	66,490	243,080	17,610	731,150

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

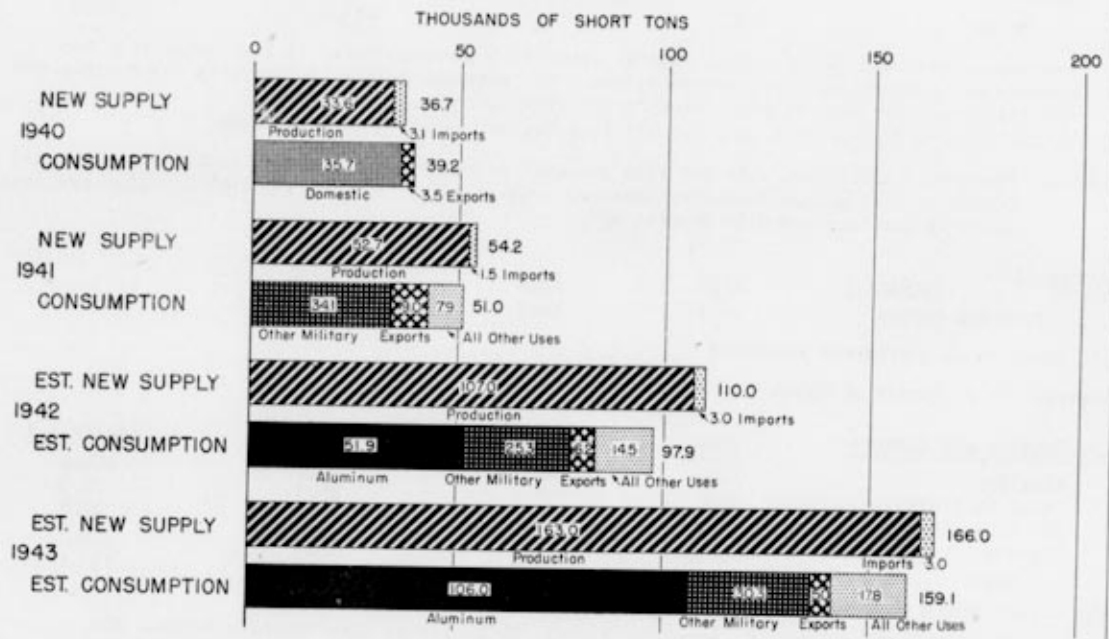
Data as of May 22, 1942
Revised Abstract issued May 29, 1942
Next revision due: June 19, 1942

CONFIDENTIAL

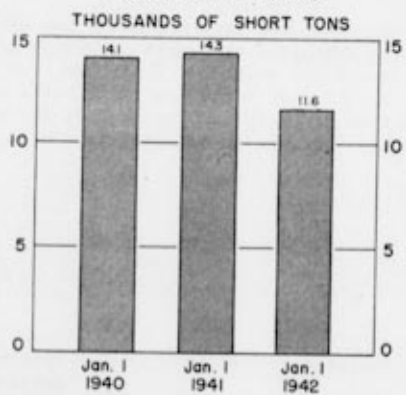
FLUORSPAR ACID GRADE

PRIORITY ACTION
No Priority Action

SUPPLY - DEMAND



INDUSTRIAL STOCKS



DECLASSIFIED
E.O. 11662, Sec. 3(E) and 3(F)
By RHP, Date 11-16-78

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FLUORSPAR - ACID GRADE

(All figures in thousands of short tons)

BACKGROUND: The crude fluorspar of commerce is an ore containing over 45 per cent calcium fluoride (or less, if lead or zinc is present) which is prepared for use by ore-dressing processes. There are three grades of merchantable fluorspar--metallurgical, ceramic, and acid. However, only the acid grade, containing two per cent or less of silica and other impurities, can be used for making hydrofluoric acid, essential to the production of artificial cryolite and aluminum fluoride, both needed in the manufacture of aluminum. The acid grade is used also in the processing of aviation gasoline (100 octane), and for making various fluorine compounds, some of which are more or less essential as war materials.

<u>NEW SUPPLY:</u>	<u>1940</u>	<u>1941</u>	<u>1942(Est.)</u>	<u>1943(Est.)</u>
Production	33.6	52.7	107.0 ^{1/}	163.0
Imports	<u>3.1</u>	<u>1.5</u>	<u>3.0</u> ^{2/}	<u>3.0</u>
Total	36.7	54.2	110.0	166.0

^{1/} Estimated production during first quarter about 20.0 thousand tons. Actual production for January and February was 14.1 thousand tons. The seasonal factor is partially responsible for the relatively low rate of production during first quarter.

^{2/} Actual imports during first quarter, all from Mexico, were 1.1 thousand tons.

Source: Production and import data for 1940 and 1941 as reported by the U. S. Bureau of Mines and the Bureau of Foreign and Domestic Commerce, respectively. Figures for 1942 and 1943 are estimates of the Mica-Graphite Branch, WPB.

<u>STOCKS: ^{1/}</u>	<u>January 1</u>	<u>1940</u>	<u>1941</u>	<u>1942</u>
Industrial Stocks		14.1	14.3	11.6

^{1/} There is no government stockpile

Source: U. S. Bureau of Mines.

<u>CONSUMPTION AND EXPORTS:</u>	<u>1940</u>	<u>1941(Est.)</u>	<u>1942(Est.)</u>	<u>1943(Est.)</u>
Aluminum	NSS	NSS	51.9	106.0
Other Military	NSS	34.1	25.3	30.3
All Other Uses	35.7	7.9	14.5	17.8
Exports	<u>3.5</u>	<u>9.0</u>	<u>6.2</u>	<u>5.0</u>
Total	39.2	51.0	97.9	159.1

NSS -- not shown separately.

Source: Data for 1940 from U. S. Bureau of Mines. Estimates by Mica-Graphite Branch, WPB.

SUBSTITUTES: There is no substitute for fluorspar for the production of hydrofluoric acid.

SUPPLY AND DEMAND PROBLEMS: The fluorspar ore reserves which now are being worked are probably sufficiently extensive to permit expansion of production to meet the increased domestic requirements of all the commercial grades of fluorspar, including, if necessary, the equivalent of the amount imported. However, a number of producers in Illinois are using their reserves at an excessive rate, and the War Production Board intends to request the Metals Reserve Company to purchase fluorspar in Mexico. This new supply would be in addition to the imports which have been estimated.

GOVERNMENT CONTROL: None.

<u>SUMMARY:</u>	<u>1942</u>	<u>1943</u>
Estimated New Supply	110.0	166.0
Estimated Requirements	97.9	159.1

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 22, 1942
Revised Abstract Issued May 29, 1942
Next revision due: June 19, 1942

GRAPHITE STRATEGIC GRADES

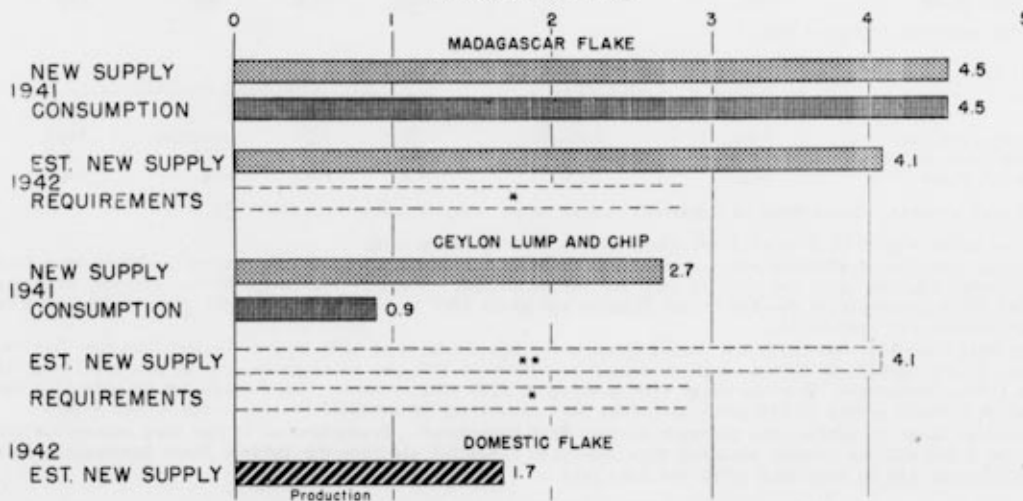
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Commerce Dept. Letter, 11-16-72
By RHP, Date

PRIORITY ACTION

General Imports Order M-63 (Dec. 28, 1941) placed all imports of flake graphite under governmental control. WPB Order M-61 (Feb. 17, 1942) placed the crucible grades of Madagascar flake under complete allocation. Such graphite may be used only for the manufacture of crucibles (with some exceptions.)

SUPPLY AND DEMAND

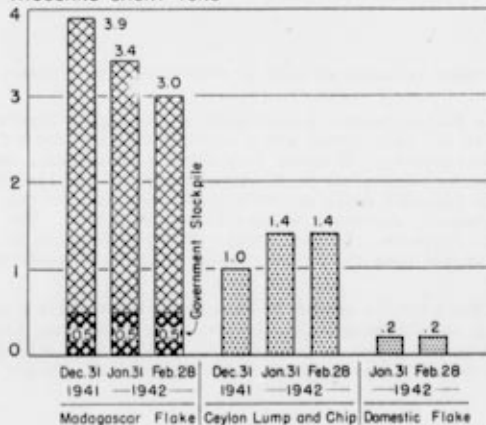
THOUSAND SHORT TONS



* Estimates of military and civilian requirements under revision at date of issuance of this chart.
** Estimated at 1207 to 4100 short tons dependent upon situation developing in Indian Ocean Area.

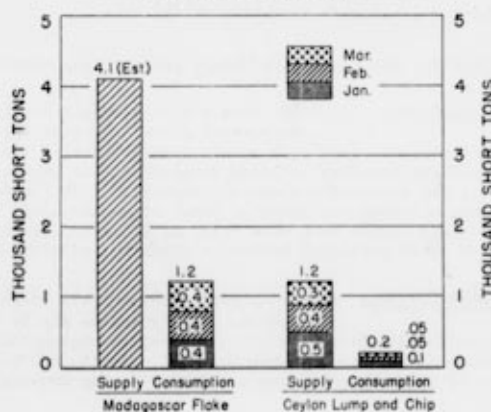
STOCKS

THOUSAND SHORT TONS



SUPPLY AND CONSUMPTION

FIRST QUARTER, 1942



GRAPHITE--STRATEGIC GRADES
(All figures in short tons)

BACKGROUND: Graphite is a form of carbon. There are two main types: crystalline, which is classified as flake, lump, chip or dust; and non-crystalline or amorphous. The various kinds and grades have somewhat different properties and are not entirely interchangeable. Only the better grades (called crucible grades) of flake, lump and chip graphite are of strategic importance, since present indications are that supplies of amorphous and low-grade crystalline graphite will be adequate to meet all requirements. Only the strategic forms are dealt with in this abstract. The crucible grades of flake have come almost entirely from Madagascar, and of lump and chip from Ceylon. There will also be a considerable production of flake graphite in the United States this year.

USES: Graphite has important direct and indirect military uses. Madagascar flake and Ceylon lump and chip graphite now are used principally for the manufacture of crucibles, retorts, and stoppers for metallurgical purposes; the Madagascar flake is also used to a small extent for lubricants and packings. The domestic flake will be used as a substitute for the other forms.

CONSUMPTION:

	1941	1942 - 1st Quarter			
		Jan.	Feb.	March	Total
Madagascar Flake	4508	446	400(Est.)	360(alloc.)	1206
Ceylon Lump and Chip	903	98	47	51(Est.)	196
Domestic Flake	neg.	neg.	neg.	neg.	neg.

Source: Mica-Graphite Branch of WPB.

NEW SUPPLY: 1/

	1941	1942(Est.)	1942 - 1st Quarter			
			Jan.	Feb.	March	Total
Madagascar Flake	4506	4060 2/	0	0	4060(Est.)	4060
Ceylon Lump and Chip 3/	2705	1207-4100 3/	566	364	277	1207
Domestic Flake 4/	neg.	1700	neg.	neg.	neg.	neg.

Source: Actual imports: Department of Commerce; other data: Mica-Graphite Branch of WPB.

- 1/ The three types cannot be totaled since they are not exactly comparable.
- 2/ No further receipts of graphite are expected from Madagascar because the island is controlled by Vichy. Hence, the estimated imports total for 1942 is only the amount already obtained. The shipment received in March also included 550 tons earmarked for the United Kingdom and about 1000 tons of "fines" (flake graphite which is too fine to be used for crucibles).
- 3/ Arrangements have been made with the United Kingdom for the purchase of 4100 tons of Ceylon lump and chip in 1942. However, future imports of Ceylon graphite cannot be estimated with any accuracy because of the uncertain situation in the Indian Ocean area; they may range from nothing to 2900 tons or more. The figures for imports from Ceylon include an unknown amount of low-grade graphite; this amount may be one-half to two-thirds of the total.
- 4/ The domestic flake is similar but inferior to that from Madagascar. Production of it has been negligible since World War I but will be greatly expanded this year with financial aid from the Defense Plant Corporation. However, production will not be important until the last half of 1942.

STOCKS:

	December 31, 1941	January 31, 1942	February 28, 1942
Madagascar Flake	3927 1/	3382 1/	2959 1/
Ceylon Lump and Chip	1038	1398	1418
Domestic Flake	N.A.	166	170

Source: Mica-Graphite Branch of WPB.

- 1/ Includes government stockpile of 453 tons.

REQUIREMENTS: Estimates of military and civilian requirements under revision at date of issuance of this abstract.

SPECIAL PROBLEMS:

The main graphite supply problem in the United States is in regard to the highly important Madagascar flake. No more imports of it are anticipated and present stocks are not sufficient to last two years, even with severe restrictions on its use. Consequently, in order to provide a substitute, the domestic flake industry is being developed; this will be able to meet essential U. S. requirements by the time that stocks of the Madagascar flake are exhausted. The latter can be replaced satisfactorily by the domestic variety in most uses, although the lives of large crucibles would be considerably shortened by complete substitution. The supply situation may become much more critical if Ceylon is lost to the Japanese. In that event, the British would be deprived of their principal source of graphite and might have to depend upon the United States for part of their supply.

GOVERNMENT CONTROL: WPB Order M-61 (February 17, 1942) placed the crucible grades of Madagascar flake under complete allocation. Such graphite may be used only for the manufacture of crucibles (with some exceptions). The Mica-Graphite Branch is trying to reduce consumption of Madagascar flake to 300 tons per month and is urging processors to substitute other types of graphite for it. Under General Imports Order M-63 (December 28, 1941), all imports of flake graphite are controlled by the Government.

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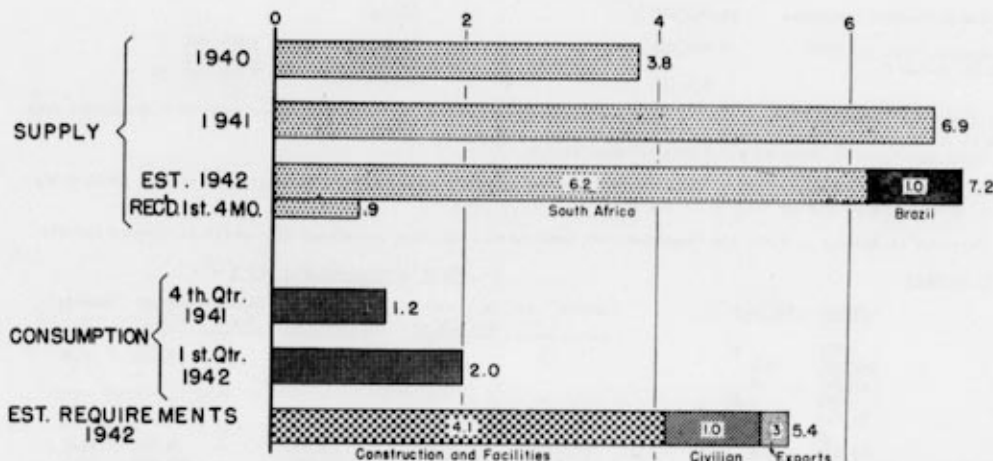
INDUSTRIAL DIAMONDS

DECLASSIFIED
E.O. 11652, Sec. 3(E) and (D)
Commerce Dept. Letter, 11-15-72
By RHP, Date

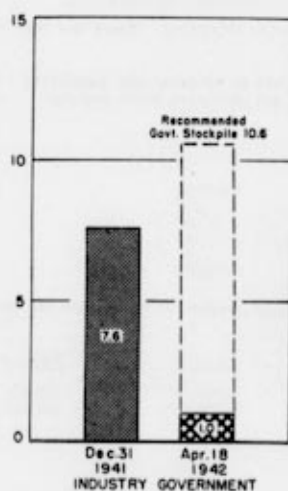
PRIORITY ACTION

Conservation Order M-109 provides for the quarterly reporting of inventory, monthly reporting of sales, transfers, and imports of rough diamonds, both unset and in tools not in use.

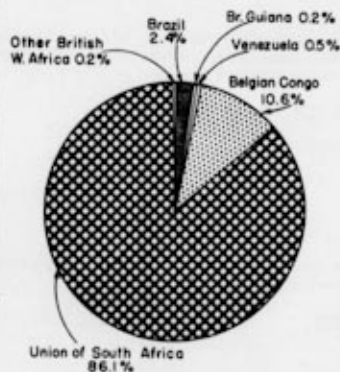
SUPPLY - DEMAND MILLIONS OF CARATS



STOCKS MILLIONS OF CARATS

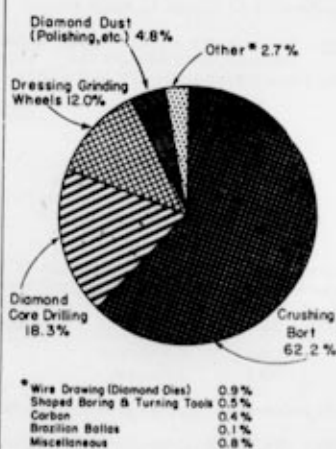


IMPORTS 1941 BY COUNTRY OF ORIGIN



USE PATTERN

SALES, JULY-DEC. 1941
2,007,525 CARATS



INDUSTRIAL DIAMONDS
(All figures in carats)

CONFIDENTIAL

BACKGROUND: Diamonds are essentially pure carbon, and are the hardest substance known. There are four varieties--diamond proper, bort, carbonado, and ballas. Most industrial diamonds are used in the crude form, but some are used in processed form of diamond dies. The primary sources of United States imports are Africa and South America--Belgian Congo, Union of South Africa, and Brazil being the most important. From Africa the United States obtains most of its bort diamonds, imperfectly crystallized, cleavable, but too flawed or colored to be suitable for jewelry purposes. Carbonados are a type of dark or gray opaque diamond having no cleavage and less brittle than bort. Ballas are spherical diamonds possessing a peculiar interlocking crystalline structure which renders them harder and tougher than other industrial stones. These latter types have been in increasing demand. Conservation Order M-109 provides for the quarterly reporting of inventory, and sales; and reporting of sales, transfers and imports of rough diamonds, both unset and in tools not in use, within 10 days or one month depending upon size of transaction.

SPECIAL PROBLEMS: All types of stones are mined from the same deposits and cannot be extracted separately. In the past, mining has been chiefly for jewel-quality diamonds with a consequent accumulation of bort. There probably is a good reserve of bort material in stocks in South Africa and England which can be drawn upon if production in both Africa and Brazil should prove insufficient to supply the demand. Shipment can be made by plane, because of small bulk of material. There has been evidence of smuggling of diamonds from the United States. M-109 is a method of controlling this situation.

STOCKS: Recommended Government Stockpile	10,640,000 ^{1/}	SUPPLY:	
Stocks held by Industry, Dec. 31, 1941	7,580,322	1940	3,809,071
Government Stocks delivered to		1941	6,882,248
May 9, 1942	971,920	1942 (Est.)	7,200,000 ^{2/}

- ^{1/} Of this total 6,000,000 carats are to be crushing bort and 2,393,000 carats of stones, 300,000 per year to be purchased from South America in addition to contracts as of April 10, 1942.
- ^{2/} Estimated at about 1,000,000 from Brazil and 6,200,000 from Africa.

CONSUMPTION: During the fourth quarter of 1941, October thru December, 1,195,579 were used. Consumption (based on preliminary data) for the first quarter of 1942 is estimated at 2,007,523 carats.

SOURCE PATTERN: Previous to January 1, 1941, the Department of Commerce did not have breakdowns of industrial diamond imports.

1941 Imports			First Quarter Imports--1942 ^{3/}				
Source	Actual	Percent	Diamond Bort	Carbonados and Ballas ^{4/}	Industrial Diamonds	Diamond Dies	Actual Total
Mexico	1,018	- ^{1/}	-	-	-	-	-
Brazil	162,855	2.4	-	218	33,506	-	33,724
British Guiana	14,467	.2	-	-	-	-	-
French Guiana	848	- ^{1/}	-	-	-	-	-
Venezuela	36,692	.5	-	-	-	-	-
French Oceania	10	- ^{2/}	-	-	-	-	-
Belgian Congo	727,168	10.6	50,000	-	3,442	-	53,442
Union of South Africa	5,924,006	86.1	193,832	28,041	162,638	-	384,511
Other British West Africa	15,184	.2	-	-	7,173	-	7,173
Other Portuguese Africa	-	-	-	-	1,000	-	1,000
Belgium	-	-	-	-	-	100	-
TOTAL	6,882,248	100.0	243,832	28,259	207,759	100	479,850
			April, 1942: 241,000	-	144,782	-	385,782

- ^{1/} Small
- ^{2/} Negligible
- ^{3/} Imports are erratic. During 1941 over half the total came in during December.
- ^{4/} These figures from the Dept. of Commerce are in process of revision as errors occurred in invoice reporting. There has been no previous indication of ballas in South Africa.

USE PATTERN: Requirements of the national defense program have created no new uses, but have served to increase the quantities required for customary uses. Industrial diamonds are essential to the heavy metal and precision metal working industries, principal consumers being the aircraft and automotive plants.

Sales, July through December, 1941

Total 2,007,523			
Use	Percent	Use	Percent
Diamond Core Drilling	18.3	Brasilian Ballas	.1
Dressing Grinding Wheels	12.0	Crushing Bort	62.2
Shaped Boring and Turning Tools	.5	Diamond Dust (Polishing, etc.)	4.8
Wire Drawing (Diamond Dies)	.9	Other	.8
Carbon	.4		100.0

Carbonados and ballas are preferred for use in core drilling and in working other resistant material because of their superior hardness. Otherwise diamonds are interchangeable for various uses.

REQUIREMENTS:	Year	Total	Army - Navy	Construction & Facilities	Civilian	Exports
	1942	5,540,000	0	4,080,000	1,200,000	260,000
	1943	6,000,000	0	4,680,000	1,200,000	260,000

Source: Miscellaneous Minerals Branch, WFB, May 22, 1942.

SUBSTITUTES: The possibilities for substitutions are insignificant.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

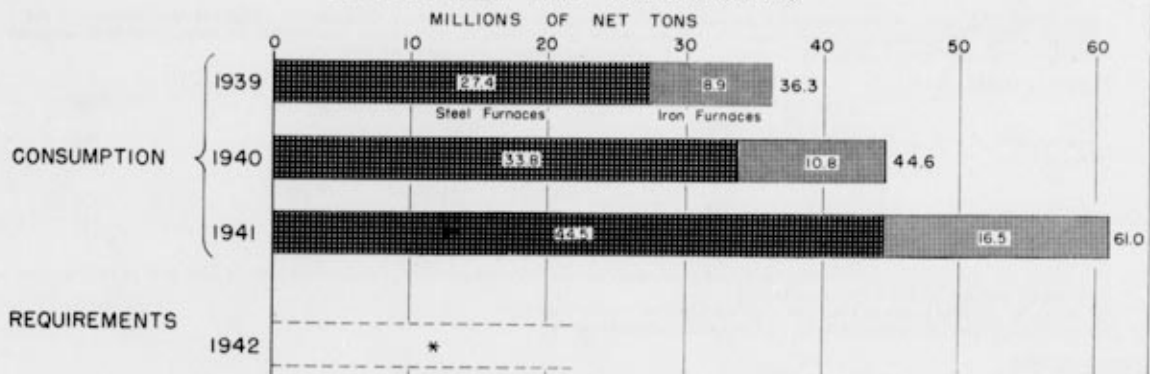
Data as of May 22, 1942
Revised abstract issued May 29, 1942
Next revision due June 19, 1942

IRON AND STEEL SCRAP

PRIORITY ACTION

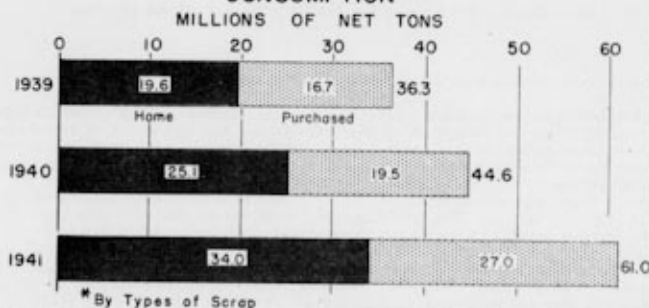
General Preference Order No. M-24, issued October 11, 1941, placed iron and steel scrap under full priority control. Supplementary Order M-24-a, issued March 24, 1942, segregated certain amounts of tinned and definned scrap for the use of copper companies in California.

CONSUMPTION AND REQUIREMENTS

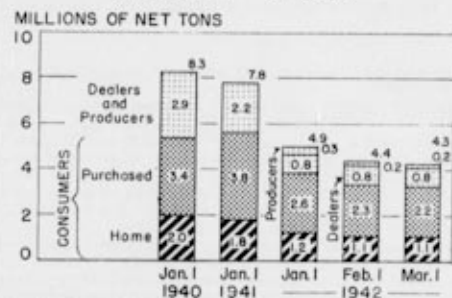


* Estimates of military and civilian requirements under revision at date of issuance of this chart.

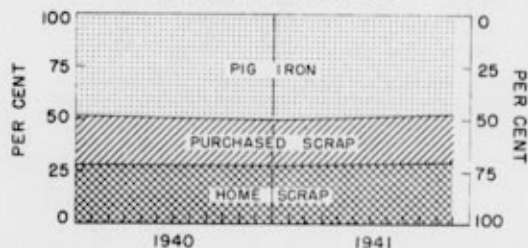
CONSUMPTION*



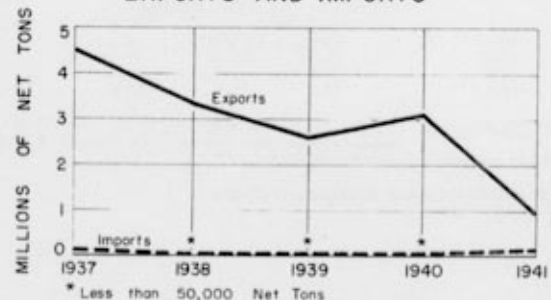
INDUSTRY STOCKS



RELATIVE USE OF SCRAP & PIG IRON IN ALL FURNACES



EXPORTS AND IMPORTS



* Less than 50,000 Net Tons

IRON AND STEEL SCRAP
(Tabular figures in millions of net tons)

BACKGROUND: Iron and steel scrap consists of all ferrous materials, either alloyed or unalloyed, of which iron or steel is the principal component. Scrap is divided into (1) "home scrap" and (2) purchased scrap. The former is the waste of industrial fabrication used within the producing unit or units; the latter consists of both the waste of industrial fabrication purchased by consumers from producers having no use for their waste product and of objects that have been discarded on account of obsolescence, failure, or other reason. Ninety-eight percent of scrap is charged into the blast furnace, steel furnace or cupola to produce new pig iron, steel or castings; two percent is rerolled or otherwise used without remelting.

DOMESTIC CONSUMPTION:

Date	Steel Furnaces			Iron Furnaces			All Furnaces		
	Home	Purchased	Total	Home	Purchased	Total	Home	Purchased	Total
1939	15.3	12.1	27.4	4.3	4.6	8.9	19.6	16.7	36.3
1940	19.7	14.1	33.8	5.4	5.4	10.8	25.1	19.5	44.6
1941	25.4	19.1	44.5	8.6	7.9	16.5	34.0	27.0	61.0
1942 Jan.	2.2	1.5	3.7	.5	.6	1.1	2.7	2.1	4.8
Feb.	2.0	1.4	3.4	.5	.6	1.1	2.5	2.0	4.5

STOCKS:

GOVERNMENT STOCKPILE: A recommendation was made in the Knudsen Stockpile Letter of September 5, 1941, for the purchase of one million long tons of iron scrap per annum. Negotiations are in progress to lift export restriction on scrap from South American countries in order that a stock may be acquired. No stocks have been accumulated as yet.

INDUSTRY STOCKS: 1/

Date	Consumers			Dealers and Producers 2/ 3/			Total
	Home	Purchased	Total				
Jan. 1, 1940	2.0	3.4	5.4		2.9		8.3
Jan. 1, 1941	1.8	3.8	5.6		2.2		7.8
Jan. 1, 1942	1.2	2.6	3.8	Dealers .8	Producers .3	Total 1/ 1.1	4.9
Feb. 1, 1942	1.1	2.3	3.4	.8	.2	1.0	4.4
March 1, 1942	1.1	2.2	3.3	.8	.2	1.0	4.3

1/ Stocks in 1940 and 1941 include stocks in transit. Because of the difficulty and inaccuracy involved in determining this amount, it has been omitted in the 1942 calculations.

2/ Breakdown by producers and dealers for 1940 and 1941 is not available.

3/ Dealers' and producers' stocks consist entirely of purchased scrap.

FOREIGN TRADE:

Year	Exports	Imports
1937	4.5	.1
1938	3.3	- 1/
1939	2.6	- 1/
1940	3.1	- 1/
1941	.9	.1

In 1942, imports for January through April totaled 25,818 net tons. Exports for January and February totaled 18,668 net tons.

1/ Less than 50,000 tons.

REQUIREMENTS: Estimates of military and civilian requirements under revision at date of issuance of this abstract.

SPECIAL PROBLEMS: The current and potential shortage of iron and steel scrap affects expansion in steel output. Every effort is being made to collect dormant scrap. The Bureau of Industrial Conservation has enlisted the aid of the WPA to stimulate the collection and movement of 1,000,000 to 2,500,000 tons of assorted metals from remote rural sources. The Special Projects Salvage Section of the BIC plans the movement of potential scrap tied up by financial, legal or special reasons. The nation's auto graveyards are being emptied of estimated 2,000,000 to 2,500,000 tons by forced scrapping and reconditioning of derelict autos. Allocation of scrap is difficult because of the nature of scrap activities. There are approximately 15,000 dealers and thousands of large producers. Exports of scrap from the United States are restricted by a licensing system. The import duty on scrap to the United States from all countries was suspended on March 13, 1942. The most likely foreign sources of economically available supplies of scrap are Cuba, Argentina and Mexico. However, the governments of these countries have placed restrictions on scrap exports. In addition, ocean facilities for the transportation of bulky iron and steel scrap are inadequate. Freight rates have increased materially, and there is competition for bottoms from such other heavy tonnage commodities as copper, nitrates, and manganese. Scrap shortage can be relieved to some extent by increasing pig iron capacity, since pig iron and scrap are alternative raw materials used in steel production.

RELATIVE USE OF SCRAP AND PIG IRON:

Date	Steel Furnaces			Iron Furnaces			All Furnaces		
	Scrap	Pig Iron		Scrap	Pig Iron		Scrap	Pig Iron	
	Home	Purchased		Home	Purchased		Home	Purchased	
1939	26.4%	21.0%	52.6%	31.7%	33.4%	34.9%	27.4%	23.4%	49.2%
1940	26.6	19.0	54.4	32.0	32.2	35.8	27.6	21.5	50.9
1941	27.4	20.6	52.0	35.3	32.4	32.3	29.0	23.1	47.9

CONTROL MEASURES: General Preference Order No. M-24, issued October 11, 1941, placed iron and steel scrap under priority control. Supplementary Order M-24-a, issued March 24, 1942, segregated certain amounts of tinned and detinned scrap for the use of copper companies in California.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 15, 1942
Revised abstract issued May 18, 1942

CONFIDENTIAL

IRON ORE

DECLASSIFIED
E.O. 11652, Sec. 3(E) and 5(D) or (E)
Commerce Dept. Letter, 11-16-72
By RHP, Date

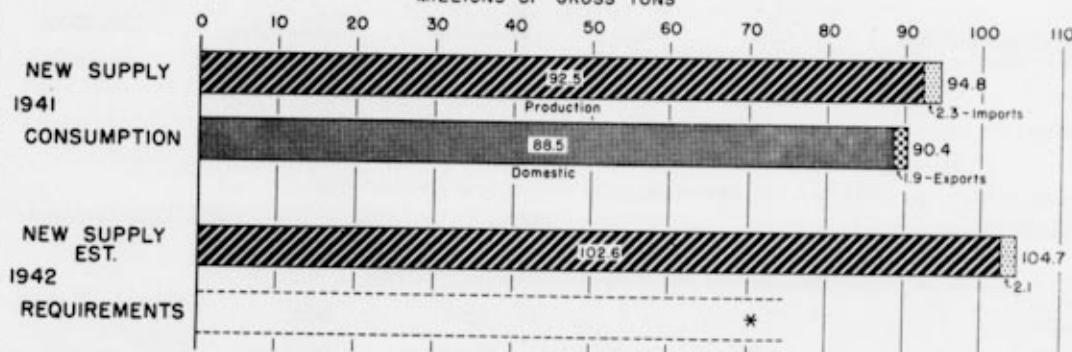
PRIORITY ACTION

NONE TAKEN

On April 8, 1942, OPA established a price ceiling for Lake Superior iron ore (Maximum Price Regulation 113) effective April 10, 1942.

SUPPLY - DEMAND

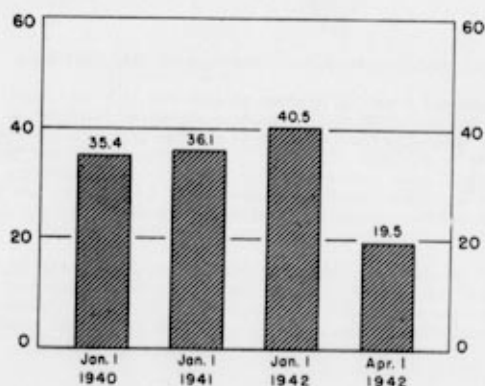
MILLIONS OF GROSS TONS



* Estimates of military and civilian requirements under revision at date of issuance of this chart.

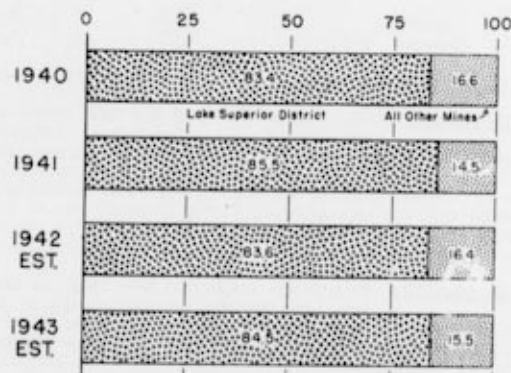
STOCKS OF LAKE SUPERIOR ORE

MILLIONS OF GROSS TONS



PRODUCTION

PER CENT



IRON ORE
(Tabular figures in thousands of gross tons)

CONFIDENTIAL

BACKGROUND: The principal iron bearing minerals are hematite, limonite, magnetite, and siderite. In 1940, ninety-three percent of the iron ore mined in the United States was of the hematite variety. Iron ore is produced from open-pit mines and from underground mines. Ordinarily ores average fifty percent iron but increasing quantities of lower grade ores are being beneficiated each year.

Iron ores are used almost exclusively for making pig iron in the production of iron and steel. Approximately two tons of ore are required for the production of one ton of pig iron. Of the total 73,696 thousand gross tons mined in 1940 in the United States, only 55 thousand tons were shipped for other uses as follows: cement, 31 thousand tons; paint, 9 thousand tons; ferromanganese, 4 thousand tons; flux at non-ferrous smelters, 4 thousand tons; other industries, 8 thousand tons.

There are four large producing areas: the Lake Superior district, the Southeastern and Southwestern districts, the Northeastern district, and the Western district. The Lake Superior district includes Minnesota, Michigan, and Northern Wisconsin. Lake Superior is the largest producing area, normally accounting for 85% of total United States production.

Estimates of ore reserves in 1940 were: Minnesota, 1,200,828 thousand gross tons; Michigan 135,826 thousand; and Wisconsin, 5,500 thousand. A total estimated reserve of iron ore in the Lake Superior district in 1940 was 1,342,154 thousand gross tons.

<u>PRODUCTION AND SHIPMENTS:</u>	<u>1940</u>	<u>1941</u>	<u>1942 (Est.)</u>	<u>1943 (Est.)</u>	<u>1944 (Est.)</u>
Lake Superior District:					
Production:	61,471	79,130	89,500	98,000	99,000
Shipments:	63,950	80,116	-	-	-
Total, All Districts:					
Production:	73,696	92,499	107,000	116,000	125,000
Shipments:	75,198	92,684	-	-	-

Shipments in 1942, Jan.-April from Lake Superior District totaled 8,582 thousand tons.

<u>CONSUMPTION:</u>	<u>1940</u>	<u>1941</u>	<u>1942 (first quarter) 1/</u>
Furnace Consumption of Lake Superior Iron Ore:	62,426	73,336	20,082

1/ 1942 figures do not include Lake Superior ore consumed in Canadian furnaces.

<u>STOCKS:</u>	<u>1940</u>	<u>1941</u>	<u>1942</u>
Industry Stocks of Lake Superior Iron Ore: (January 1)	35,440	36,073	40,457

On April 1, 1942, stocks totaled 19,551 thousand tons, excluding stocks at Canadian furnaces. The sharp decline is due to the restriction of ore shipments on the Great Lakes from early December through March.

Government Stockpile: The Metals Reserve Company has contracted for the output of two developments in New Jersey, estimated at 1,540 thousand long tons. One contract calls for delivery to begin in April, 1942, and to continue for four years. The other contract calls for delivery to begin in April, 1942, and to be completed prior to April, 1944, at the rate of 50 thousand gross tons a year. The Metals Reserve Company has also contracted for 2,250 thousand gross tons from Brazil. Delivery depends upon our ability to send ships to Brazil to collect the ore.

<u>FOREIGN TRADE:</u>	<u>1940</u>	<u>1941</u>	<u>1942 (Est.)</u>	<u>1942 (first quarter)</u>
Imports	2,479	2,321	2,065	315
Exports	1,386	1,908	N.A.	4

REQUIREMENTS: Estimates of military and civilian requirements under revision at date of issuance of this abstract.

SPECIAL PROBLEMS: Lake shipments of iron ore this year must surpass all previous records to keep our iron and steel industry producing at maximum rates. Carrying capacity may limit the tremendous expansion required in ore movement. The fleet worked at capacity in 1941 and was favored by unusually good weather to achieve an 80-million ton record. Fleet capacity will be increased by five large carriers to be launched this year by the Pittsburgh Steamship Company. Sixteen vessels, which are expected to be completed in 1943, have been ordered by the Maritime Commission. These new ships will add approximately 11,000 thousand tons to the fleet's annual capacity. Producers of iron ore in the Lake Superior region were urged to begin lake shipments at the earliest possible moment. To assure cargo space for the preferential movement of iron ore, the CDT has banned all grain movement over the Great Lakes, except by special permit.

CONTROL MEASURES: No priority action has been taken on iron ore. On April 8, 1942, OPA established a price ceiling for Lake Superior iron ore, Maximum Price Regulation 113, effective April 10, 1942. The published or "Lake Erie" season price of \$4.45 per gross ton for Mesabi non-Bessemer ore, 51.50 percent iron content, delivered at Lower Lake ports, is established as the base for relating prices of ores of different grades, as well as a base from which price discounts are calculated.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 20, 1942
Revised Abstract Issued May 29, 1942
Next Revision Due: June 19, 1942

CONFIDENTIAL

JEWEL BEARINGS

DECLASSIFIED

E.O. 11652, Sec. 3(E) and 5(D) or 62

Commerce Dept. Letter, 11-15-72

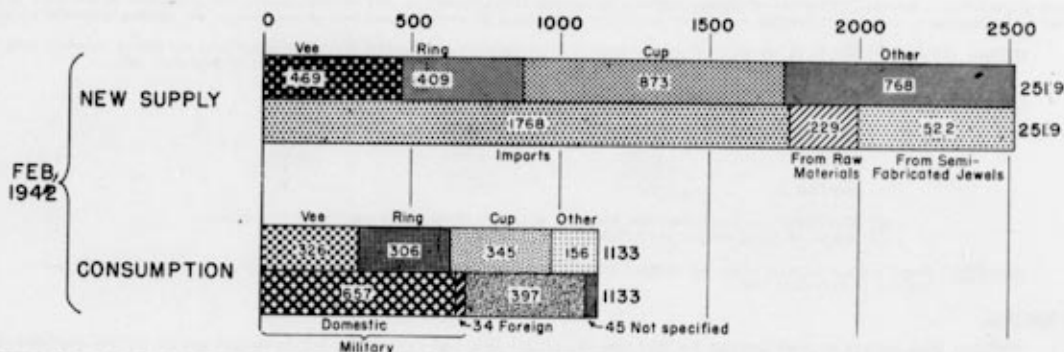
By RHP, Date

PRIORITY ACTION

Conservation Order M-50 and Amendment I, placed jewel bearings under complete allocation, effective March 1, 1942.

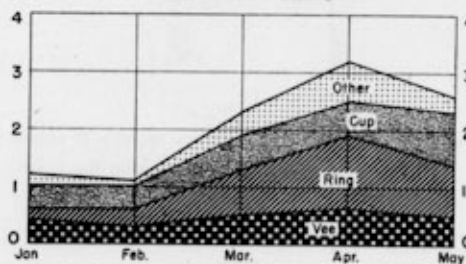
SUPPLY - DEMAND

THOUSANDS OF BEARINGS



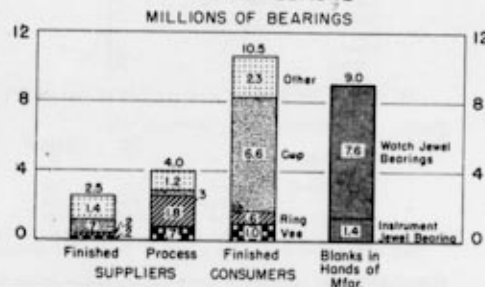
CONSUMPTION

MILLIONS OF UNITS



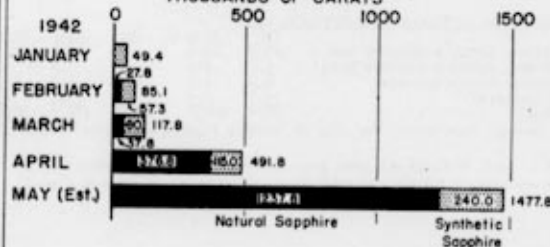
INDUSTRY STOCKS

IN THE U.S. FEB. 1942



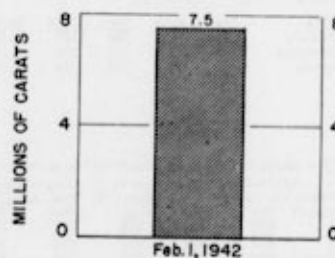
PRODUCTION

JEWEL BEARING MATERIAL



INDUSTRY STOCKS

JEWEL BEARING MATERIAL



INSTRUMENT JEWEL BEARINGS
(Unit: thousands of Jewel Bearings unless otherwise stated)

BACKGROUND: As defined by the M-50 Order Jewel bearings are sapphire and ruby, both natural and synthetic, processed for industrial uses. They are essential for the life and accuracy of precision measuring devices. The largest consumer of these instruments in the war effort is the airplane instrument industry because some planes may have as many as 90 instruments requiring from one to seven jewels. Switzerland, before the early part of 1941, supplied the United States and virtually the world with jewel bearings. On June 19, 1941, the Swiss Government, under pressure of the axis countries, prohibited the shipment of merchandise (jewel bearings) by first class mail, thus effectively routing jewel bearings through Germany, Vichy France and Italy. Some imports are still arriving, but in order to insure independence of this source a jewel bearing industry has been begun in the United States which will be capable of producing enough jewel bearings to satisfy the United States war requirements.

USES: There are approximately 60 basic types of jewel bearings which can be classed into larger groups of vee, ring, cup, anastome, and various others. The ring and vee jewels are the most important as they are the types required by most instruments used in airplanes. Ring jewels are used in mechanical instruments such as altimeters, and vee jewels principally in electrical measuring instruments such as volt-meters. Cup jewels are used in compasses. The use pattern, on the basis of the April allocations is as follows: vee jewels, 20.3%; ring jewels, 36.2%; cup jewels, 19.1% and other types, 22.4%.

SPECIAL PROBLEMS: There has been some difficulty in obtaining materials necessary to complete and service jewel bearing machinery now under construction. In addition to the primary construction of the machinery, the perfecting of the final details of the machines and developing the procedure to eliminate losses and to improve the quality of the jewels coming from the machines requires a period of about two months. One of the most important problems is the training of unskilled labor within a very short period of time to operate these machines with the efficiency equal to that of Swiss workmen who have spent a lifetime at it.

SUBSTITUTES: Hot-formed glass vee bearings have been found satisfactory where pressure and shock to the jewel and the elements supported is light. Substitutes for sapphire vee jewel bearings now are being used for approximately 40% of the total vee jewels used in instruments. Substitution is chiefly in the vee jewels, but some brass and some steel ring bearings are being used. Good quality substitute bearings are now in quantity production, and other substitution possibilities are being investigated continually.

JEWEL BEARING MATERIALS: Jewel bearings have been made out of materials such as diamonds, rubies, sapphires, synthetic sapphires and rubies, garnets, chrysoberyl, spinels, zircons, topazes, rock crystal, and agates. Natural and synthetic sapphire and ruby have been found the most satisfactory. Domestic production of natural sapphire in Montana is sufficient to meet consumption and the production of synthetic sapphire and ruby is increasing to meet the increasing demand for the synthetic material as there is less wastage and loss in the uniform synthetic product.

STOCKS: (in carats) The first report of stocks by suppliers and manufacturers showed a total of 498,441 at the end of January, 1942. The February report, with broader industry coverage, showed a total of 7,462,119 at the end of February, 1942.

PRODUCTION: (in carats)	Natural Sapphire ^{1/2}	Synthetic Sapphire	Total
January	1/	1/	
February	27,750	57,335	49,355
March	37,800	80,000	85,085
April	376,800	115,000	117,800
May (Est.)	1,237,800	450,000	1,477,800

^{1/} The production for January was reported as 10,160 of sapphires and 39,195 of rubies.
^{2/} Canvas of trade was not complete until May.

SHIPMENTS: Jewel bearing material which was shipped to manufacturers of jewel bearings amounted to 92,110 carats in January and to 149,150 in February, 1942.

JEWEL BEARINGS:

IMPORTS: Total imports of jewel bearings for 1940 were 98,771; for 1941 they were 92,547, and in the 1st quarter of 1942 they were 15,147. The Department of Commerce does not report separately instrument bearings and watch bearings.

SUPPLY: February 1942

	Imports ^{1/}	From Raw Materials	From Semi-fabricated Jewels	Total Produced and Processed	Grand Total
Vee	165	97	207	304	469
Ring	123	21	265	286	409
Cup	868	1	4	5	873
Other	612	110	46	156	768
Total	1,768	229	322	751	2,519

^{1/} Part of the imported material must be reprocessed.

STOCKS: In the United States, February, 1942.

	Vee	Ring ^{1/}	Cup	Other	Total	Blanks in the hands of manufacturers of:
Government	0	0	0	0	0	
Industry	0	0	0	0	0	
Suppliers: Finished	159	207	700	1,396	2,462	Instrument Jewel Bearings 1,375
In Process	709	1,791	337	1,154	3,991	Watch Jewel Bearings 7,608
Consumers: Finished	1,039	637	6,559	2,274	10,509	8,982

^{1/} The figures for ring jewels do not include 4,265,000 large hole jewels held by watch manufacturers designed for use in watches. It may be possible to convert a part of these into instrument jewels, but with a breakage loss of 25 to 50%.

REQUIREMENTS: As reported by the Materials Requirements Section, Statistics Division, on April 6, 1942.

Army and Navy	Vee	Ring	Other	Total
1942	3,957	4,762	1,362	10,081
1943	8,667	8,783	2,535	19,985

CONSUMPTION: 1942 consumption data are based upon January and February consumption and allocation since March 1.

1942	Vee	Ring	Cup	Other	Total	Ultimate Use in Percentages for February, 1942
January	370	252	385	154	1,172	Vee 83.5
February	326	306	345	156	1,133	Ring ^{1/} 28.0
March	672	312	302	211	1,297	Cup 7.4
						Other 27.6
						Total 56.0
						Military, direct & indirect (dom.) 3.0
						Military, direct & indirect (for.) 2.0
						Essential Public Services 5.4
						Not specified 5.1
						Total 100.0

^{1/} January figures used for ring as February figures are subject to revision.

GOVERNMENT CONTROL: March 1, 1942, by Conservation Order M-50 and Amendment I, jewel bearings and jewel bearing material went under complete allocation. The 29 sets of jewel bearing machinery are now being built for the defense plant Corporation Machine Tool Pool. As they are completed the machines are loaned to jewel manufacturers.

Allocations:	Vee	Ring	Cup	Other	Total
March	819	764	858	506	2,947
April	647	1,221	609	715	3,192
May (pre.)	460	968	633	319	2,580

PLANT FACILITIES: Production in April, 1942, was from eight sets of machines in partial production and from a group of small manufacturers. By November, 1942, production from 29 sets of machines is expected. Each set of machines will have a capacity to produce 50,000 jewels per month. These will be produced by nine sets capable of producing 450,000 plus an additional 400,000 from other machinery. Rings will be produced by 16 sets with a capacity of 800,000 and an additional 400,000 from other machines. Four sets of blank producing machinery are expected.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 15, 1942
Abstract issued May 18, 1942

CONFIDENTIAL

KYANITE (INDIAN)

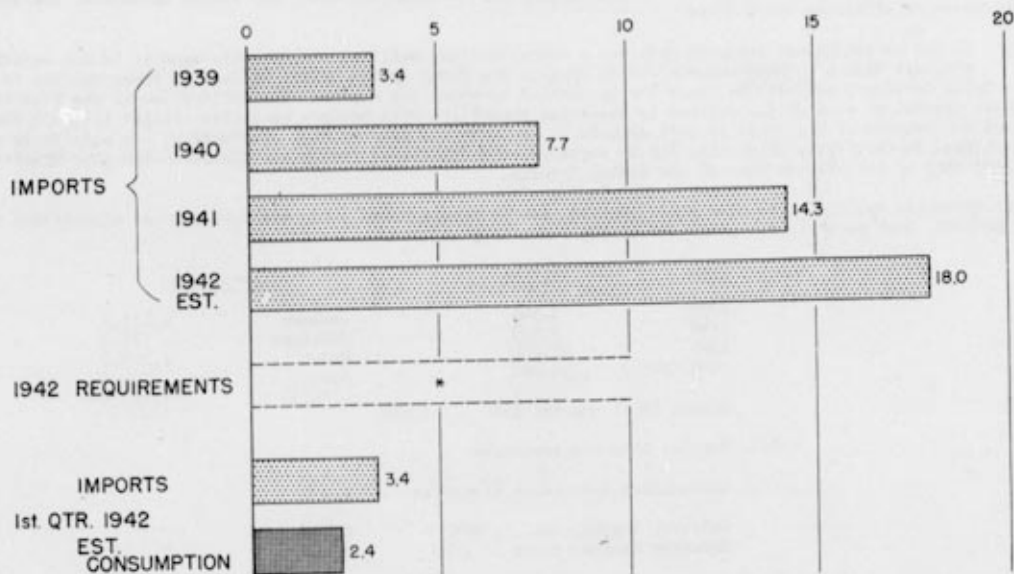
DECLASSIFIED
E.O. 11652, Sec. 3(E) and 5(D) or (K)
Commerce Dept. Letter, 11-15-72
By RHP, Date

PRIORITY ACTION

General Conservation Order M-143 effective May 6, 1942, placed Indian Kyanite under complete control of the Director of Industry Operations. Under General Imports Order M-63, importation and disposition of Indian Kyanite is controlled and 50% of all kyanite imports are held in reserve.

SUPPLY—DEMAND

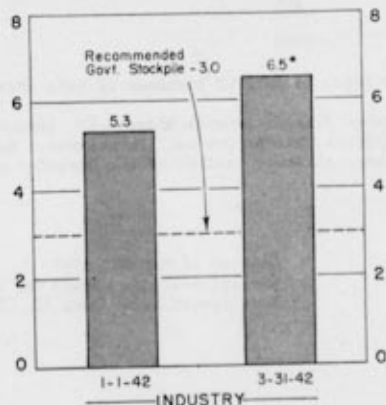
THOUSANDS OF SHORT TONS



* Estimates of military and civilian requirements under revision at date of issuance of this chart.

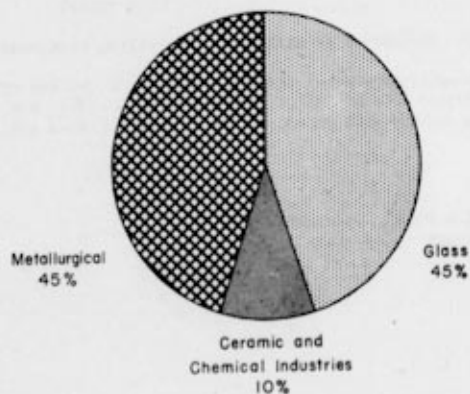
STOCKS

THOUSANDS OF SHORT TONS



* Excludes reported reserves of 454 tons which are held in accordance with M-63 Order.

NORMAL USE PATTERN



KYANITE (INDIAN)
(All figures in short tons)

BACKGROUND: Kyanite, an aluminum silicate, owes its commercial importance to its ability to form heat-resisting bricks. These bricks are used to line steel foundry and glass-producing furnaces. The Indian Kyanite will produce coarse-grained bricks with high tensile strength. Domestic Kyanite will produce only fine-grained bricks and consequently bricks of lower tensile strength. Satisfactory results have been obtained by using the fine domestic material with a plastic bond to fill the interstices of the coarse Indian material.

USES: In the metallurgical industries the chief consumption of kyanite is in electrical furnaces such as the Ajax Wyatt for brass melting, in lining of indirect arc electric furnaces, in the roofs of small direct arc steel melting furnaces and forging furnaces, in combustion tunnels, and cement kiln linings.

SPECIAL PROBLEMS: This critical grade of kyanite is found only in Bihar and Orissa, India, about 100 miles west of Calcutta. The geographic location of Calcutta, at the head of the Bay of Bengal, makes it doubtful whether any shipments of kyanite will get through to us for some time. For that reason a rigid conservation program, reserving 50% of imports, is in effect and efforts are being made to find adequate substitutes in domestic material for the Indian Kyanite. A survey by the American Iron and Steel Institute disclosed that if Indian Kyanite were not available, dislocation in that industry would run as high as 50% of the full operating capacity of some furnaces. The entire situation, therefore, rests on the development of effective substitutes.

SUBSTITUTES: As the metallurgical industry requires a coarse-grained mullite, the domestic kyanite is not suitable. Other minerals with a composition similar to kyanite are found in the United States. A topaz deposit in South Carolina is being developed and will be ready for production in about six months. The sublimation of the fluorine (and the consequent removal of some of the silica) in the topaz conversion will produce qualities similar to the Indian Kyanite. The estimated ore reserve of the topaz deposit amounts to at least two years normal consumption. An andalusite deposit is being developed in California which also may be suitable as a substitute for Indian Kyanite. Domestic kyanite can substitute for many of the plastic uses of the Indian Kyanite.

Satisfactory synthetic mullite, from poor grade bauxite, can be manufactured with, however, a great expenditure of electric power. At present, such power is not available to the refractory industry.

IMPORTS:	Year	Imports	Imports 1942	
	1939	3,381	January	1,471.8
	1940	7,658	February	775.0
	1941	14,286	March	1,129.0
	1942 (Est.)	18,000	April	707.5
			Total	4,083.3

CONSUMPTION: During First Quarter 1942 2,436

Note: Earlier data not available

STOCKS:	Recommended Government Stockpile	3,000
	Industry Stocks, Jan. 1, 1942	5,300
	Industry Stocks, April 1, 1942	6,454 ^{1/}

^{1/} Two companies reported 454 tons held by WPE order. These are excluded from this figure. Most companies canvassed did not report the amount held for WPE, and the companies may have included the WPE reserve in their total.

NORMAL USE PATTERN:		
	Metallurgical	45%
	Glass Industries	45%
	Ceramic and Chemical Industries	10%
	Total	100%

REQUIREMENTS: Estimates of military and civilian requirements under revision at date of issuance of this abstract.

CONTROL: Government control shortly will affect the use of kyanite. Under General Imports Order M-63, importation and disposition of Indian Kyanite is controlled, and 50% of all kyanite imports are held in reserve. General Conservation Order M-143 effective May 6, 1942, placed Indian Kyanite under complete control of the Director of Industry Operations.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 22, 1942
Revised abstract issued May 29, 1942
Next revision due June 19, 1942

CONFIDENTIAL

LEAD

(Including Antimonial Lead)

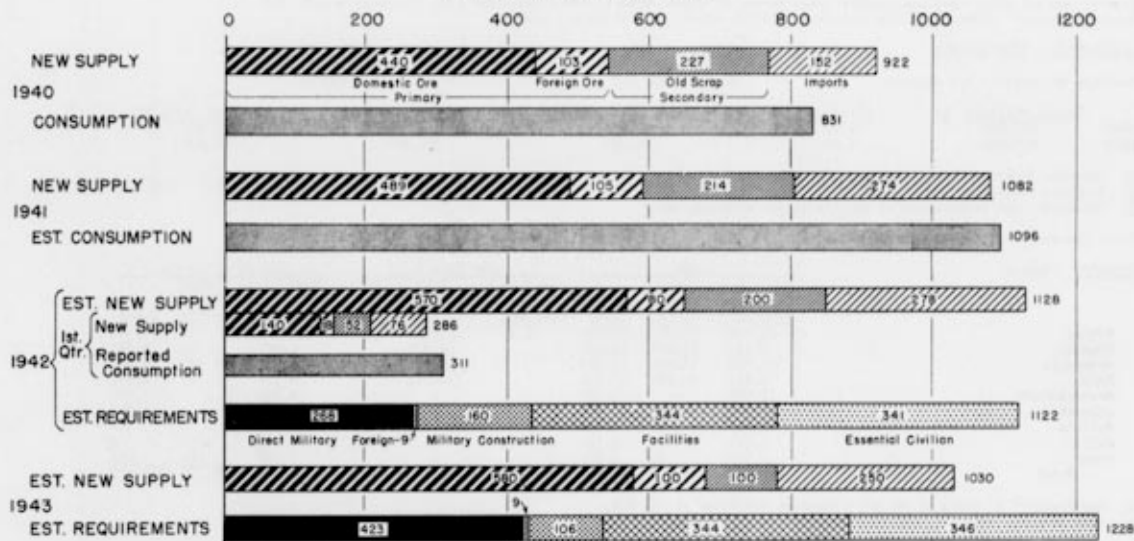
DECLASSIFIED
E.O. 11652, Sec. 3(E) and 5(D) or (E)
Commerce Dept. Letter, 11-15-72
By RHP, Date

PRIORITY ACTION

Lead and lead scrap are under full priority control (Conservation Order M-38 with supplements thereto and M-72). Conservation Order M-38-c restricts the use of lead for certain purposes during the first quarter of 1942 to 50% of a 1941 base period, and prohibits such use entirely after April 1, 1942.

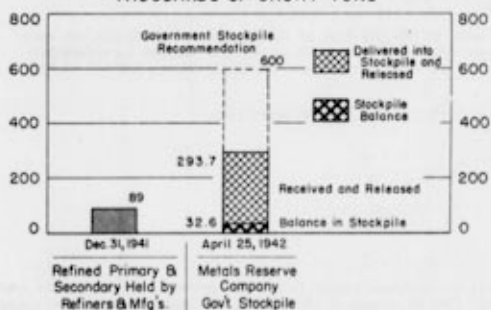
SUPPLY — DEMAND

THOUSANDS OF SHORT TONS

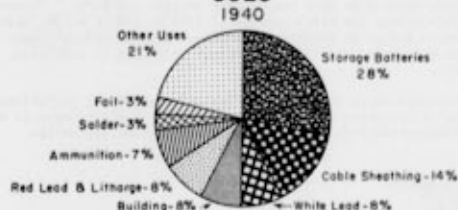


STOCKS

THOUSANDS OF SHORT TONS



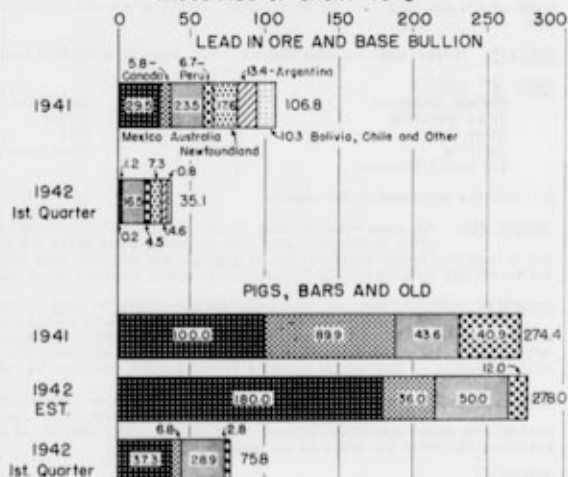
USES



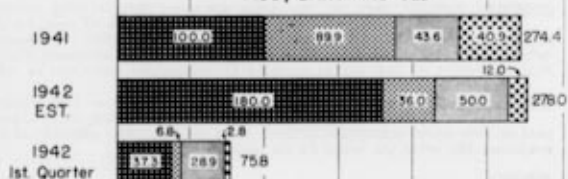
IMPORTS

BY COUNTRY OF ORIGIN

THOUSANDS OF SHORT TONS



PIGS, BARS AND OLD



LEAD
Including Antimonial Lead
(In short tons)

BACKGROUND: The volume of lead production depends more upon mining capacity plus availability of scrap lead than upon refining capacity. Much of the lead ore is mined together with zinc, silver and gold ore, but lead is usually the principal product, and mining operations usually follow demands for lead. The manufacture of storage batteries, the largest single use of lead, requires antimonial lead, a large part of which is salvaged from discarded storage batteries.

NEW SUPPLY:

	1939	1940	1941	1942 (Est.)	1943 (Est.)	Actual 1st Quarter 1942
Domestic Production						
Primary - from domestic ore & base bullion	425,084	440,429	468,500	570,000	580,000	139,859
- from foreign ore & base bullion	66,257	103,137	105,000	80,000	100,000	18,035
Secondary - from old scrap	210,800	226,581	211,674	200,000	200,000	51,957
Total Domestic Production	702,141	770,147	807,274	850,000	880,000	209,851
Imports - General (Pigs, bars & old) 1/	7,132	151,568	274,395	278,000	250,000	75,794
TOTAL NEW SUPPLY	709,273	921,715	1,081,669	1,128,000	1,130,000	285,645

1/ Includes lead for immediate consumption plus material entering the country under bond. Beginning in 1941 includes imports by Metals Reserve Company.

2/ Subject to downward revision because of import difficulties discussed below.

Source: Annual 1939, 1940 and monthly 1942, Bureau of Mines; annual, 1941, 1942, and 1943, Tin-Lead Branch, WPS.
General Imports: January, 13,779; February, 30,639; March, 31,376; April, 19,855.

CONSUMPTION - REQUIREMENTS:

	1939	1940	1941	1942 (Est.)	1943 (Est.)
Domestic consumption and exports	741,392	831,079	1,096,000	1,122,000	1,228,400

	Direct Military 1/	Foreign 2/	Military Construction	Facilities 3/	Essential Civilian
1942	267,800	8,500	160,800	346,000	341,500
1943	423,400	8,500	106,000	346,000	346,500

1/ Includes programs for (a) Aircraft (b) Army (c) Navy (d) Maritime Commission.

2/ Includes lend-lease and other.

3/ Production and maintenance of facilities for military use.

First Quarter 1942, reported consumption 310,293

IMPORTS: General

	1941			1942 (Est.)			1942 (1st Quarter)		
	Lead in Ore & Base Bullion	Pigs, Bars	Total	Lead in Ore & Base Bullion	Pigs, Bars	Total	Lead in Ore & Base Bullion	Pigs, Bars	Total
Mexico	29,497	99,949	129,446	N.A.	180,000	N.A.	219	37,274	37,493
Canada	5,799	89,888	95,687		36,000		1,223	6,820	8,043
Australia	23,469	43,631	67,100		50,000	1/	16,505	28,927	45,432
Peru	6,723	40,868	47,591		12,000		4,514	2,763	7,277
Newfoundland	17,569	-	17,569		-		7,339	-	7,339
Argentina	13,374	-	13,374		-		4,563	-	4,563
Bolivia	7,314	-	7,314		-		372	-	372
Chile	1,384	-	1,384		-		2/	-	2/
Other	1,712	59	1,771		-		108	10	118
Total	106,841	274,395	381,236	N.A.	278,000	N.A.	35,133	75,794	110,927

1/ Represents U.S. share of probable imports; remainder to the U.K.

2/ Less than 0.5 tons.

Source: U.S. Department of Commerce, General Imports for Consumption and entered for Warehouse.

As British imports from Burma are out of the picture, it may become necessary for Britain to increase her demands upon Canadian production, thereby reducing the amount available to the U.S. from that source. Moreover, developments in the Southwest Pacific are such that the prospects of obtaining Australian lead are highly uncertain. The outlook for imports from Peru is none too hopeful because of scarcity of shipping bottoms and priority of scarcer materials for available shipping space.

STOCKS: As of April 25, 1942, the Metals Reserve Company had contracted for a total of 544,379 tons of refined lead of which 293,758 tons had been received. Of the latter amount, 261,116 tons had been released, leaving a balance of 32,642 tons against a recommended total of 600,000 tons. At the end of 1941, stocks of refined primary and secondary in hands of refiners and manufacturers totaled 80,890 tons.

CAPACITY: Present lead refining capacity: U.S. 850,000 - 900,000; North America, 1,400,000 - 1,500,000 short tons.

USES: 1/ 1940

Storage Batteries	25%	Ammunition	7%
Cable Sheathing	14	Solder	3
White Lead	8	Poil	3
Building	8	Other Uses	21
Red Lead & Litharge	8		100%

1/ Includes manufactures for export.

DEFENSE USES: The remarkable increase in the ammunition requirements constitutes the greatest change in the use pattern. In the entire year 1940, 56,000 tons were used for ammunition, while the estimate for 1942 is placed at 180,000 tons of lead for small arms alone. Use of lead in storage batteries and in pigments for civilian uses probably will be decreased. Some essential military uses of lead, such as the tetraethyl lead content of high octane gasoline, absorb a large tonnage of the product.

GOVERNMENT CONTROL: Lead and lead scrap are under full priority control (Conservation Order M-36 with supplements thereto and M-72). Conservation Order M-35-c restricted the use of lead for certain purposes during the first quarter of 1942 to 50% of a 1941 base period, and prohibits such use entirely after April 1, 1942. Producers are required to set aside certain proportions, usually 15%, of their output from month to month to provide a pool from which emergency allocations may be made. In addition, all imported pig lead is allocated. Full allocation of lead may be required if consumption continues to outrun production.

SPECIAL PROBLEMS: Tendency toward substitution of lead and lead alloys for scarcer metals makes necessary the operation of mining properties at their maximum productive capacity and makes urgent the opening of non-producing mines. A 2 3/4¢ per pound premium to be paid on over-quota production of lead until July 1, 1944, probably will produce a substantial stimulation of small mine production as the resultant 9¢ price per pound is the highest in 50 years.

SUMMARY:

	1942	1943	1942 1st Quarter
Estimated New Supply	1,128,000	1,130,000	285,645
Estimated Requirements	1,122,000	1,228,000	310,293

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 13, 1942
Revised abstract issued May 18, 1942

METALS AND MINERALS
M - Z

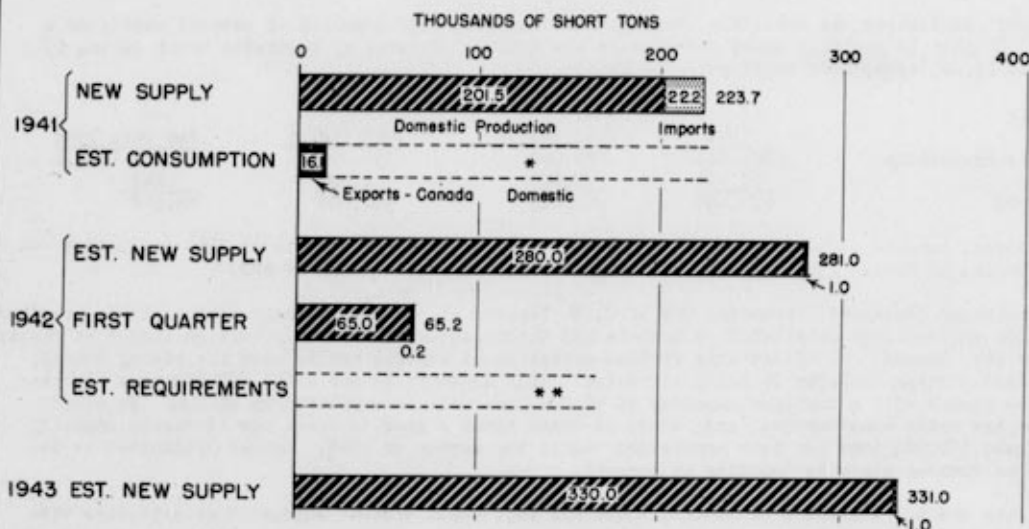
DEAD - BURNED MAGNESITE

PRIORITY ACTION

No Priority Action

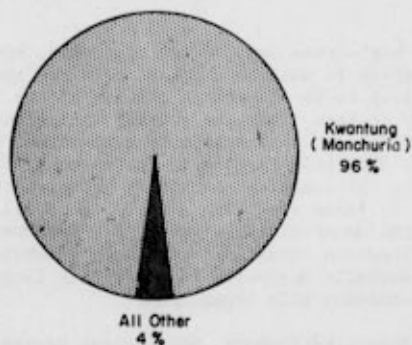
DECLASSIFIED
E.O. 11652, Sec. 8(E) and 8(F) of
Commerce Dept. Letter, 11-18-78
By RHP, Date MAR 14 1973

SUPPLY - DEMAND



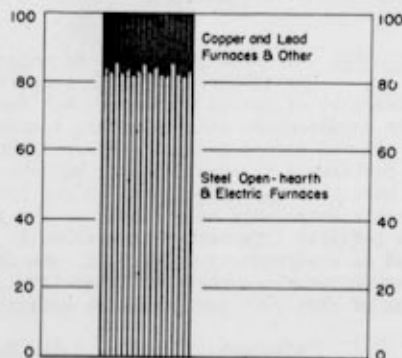
IMPORTS

1941



USES

PER CENT



MAGNESITE - DEAD-1 ED
(All figures in short tons)

BACKGROUND: There are three main types of so-called magnesite: crude, caustic calcined, and dead-burned. Crude magnesite, a carbonate of magnesium with some impurities, is used mainly as the raw material for the other two kinds. Large deposits of it exist in Washington, California, Nevada, and Texas, and the output can be increased easily; hence no shortage of crude magnesite is anticipated.

Dead-burned and caustic calcined magnesites are produced by heating crude magnesite to drive off the carbon dioxide, higher temperatures being required for the dead-burned than for the caustic calcined. The former also is obtained from sea water and from brucite, another magnesium compound. Consumption of the caustic calcined magnesite, which is used mainly in stucco, wall plaster, and other building materials, is much less than consumption of the dead-burned. No shortage of the caustic calcined is likely to occur, since, if necessary, it can be produced in cement kilns; consequently, it will not be considered further in this abstract.

USES: Dead-burned magnesite is employed almost entirely as a refractory or heat-resisting material for lining furnaces. About 80-90% is used in basic open-hearth and electric furnaces by the steel industry, and most of the rest in copper and lead furnaces.

CONSUMPTION: No figures are available, but total consumption over a period of several months or a year is probably about the same as new supply. Exports of magnesite brick during 1941 amounted to 16,141 tons, most of it going to Canada.

NEW SUPPLY:

	1941	1942 (Est.)	1943 (Est.)	1st Qtr. 1942
Domestic Production	201,481	280,000	330,000	65,000 (Est.)
Imports	22,214	1,000	1,000	247
Total	223,695	291,000	361,000	65,247

Source: Actual imports -- Department of Commerce (these are "general imports"); 1941 production -- Bureau of Mines; 1942 and 1943 estimates -- Mica-Graphite Branch of WPB.

Kwantung (Manchuria) provided 96% of U. S. imports of dead-burned magnesite in 1941; previously considerable amounts were obtained from Austria and Czechoslovakia. The only foreign source at present is a minor one, Canada. To offset this virtual cessation of imports and to meet the rising demand, domestic dead-burning capacity is being increased. This capacity is now about 280,000 tons per year, and two new plants with a combined capacity of 50,000 tons will be completed by autumn. No other plants now are under construction; and, since it takes about a year to erect one, domestic capacity cannot exceed 330,000 tons per year appreciably until the summer of 1943. Actual production is believed to be running close to capacity at present.

STOCKS: Data are not available on stocks; these are kept small because magnesite deteriorates with time.

REQUIREMENTS: Estimates of military and civilian requirements under revision at date of issuance of this abstract.

SUBSTITUTION: Since dead-burned magnesite is used entirely for essential purposes, it is not possible to eliminate any uses. There are two possible substitutes, chromite and dolomite. Chromite, however, is in short supply and may have to be replaced by magnesite instead of replacing it. Dolomite is plentiful and easily produced but can be substituted only for the poorer grade of dead-burned magnesite.

SPECIAL PROBLEMS: The main problem is in regard to the high-grade dead-burned magnesite, known as periclase. The high temperature at which it must be calcined requires special kilns. It is difficult to determine whether or not there is likely to be a shortage because of the lack of satisfactory requirements data; however, demand is known to have increased greatly during the past two years owing to the stepping-up of steel production. Ordinarily, consumption of dead-burned magnesite is closely correlated to steel output, but there are two uncertain factors in the present situation. One is the amount of magnesite required per ton of steel. At least one authority believes that this will increase considerably as a result of the low grade of scrap now being used by the steel industry; however, no definite information is available. The second uncertainty is the supply of chromite, which is also used as a refractory. The U. S. can obtain an adequate amount of refractory chromite in Cuba, but the shipping shortage may make it desirable to use domestic magnesite instead. Any large-scale substitution of this sort would require additional dead-burning kiln capacity.

Although officials of the Northwest Magnesite Company, the largest magnesite producer, believe that there is no danger of a shortage, some of the steel producers think there is likely to be one. The uncertainty as to requirements and the fact that the industry is now working close to capacity indicate that the situation should be investigated more carefully.

GOVERNMENT CONTROL: There is no government order covering magnesite.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 9, 1942
Abstract Issued May 18, 1942

CONFIDENTIAL

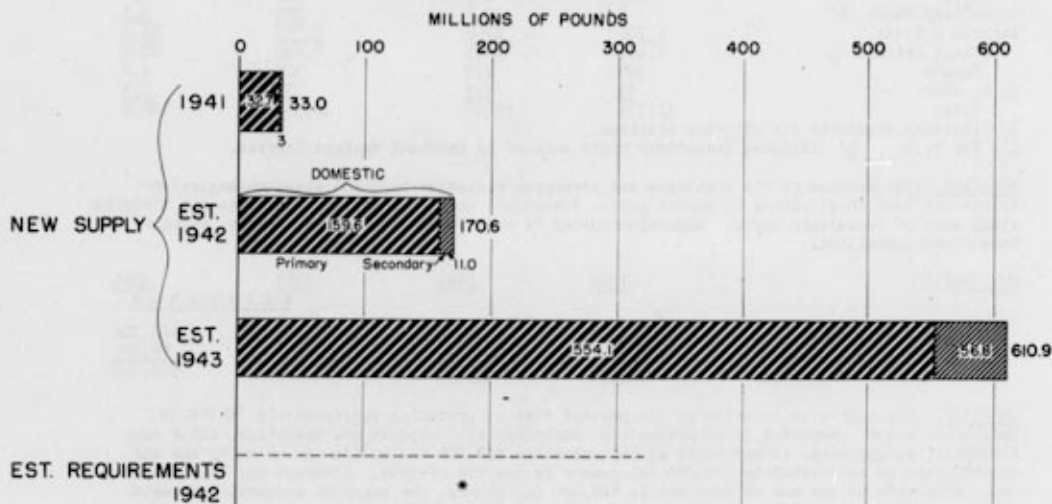
MAGNESIUM

DECLASSIFIED
E.O. 11652, Sec. 3(E) and 5(D) or (K)
Commerce Dept. Letter, 11-16-78
By RHP, Date

PRIORITY ACTION

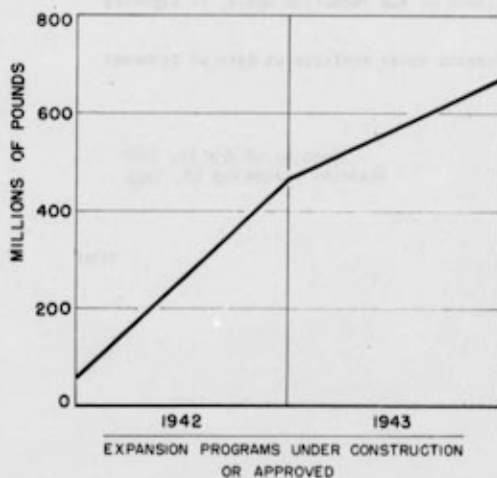
General Preference Order M-2 and supplements a and b place magnesium under complete allocation control until October 31, 1942.

SUPPLY AND DEMAND

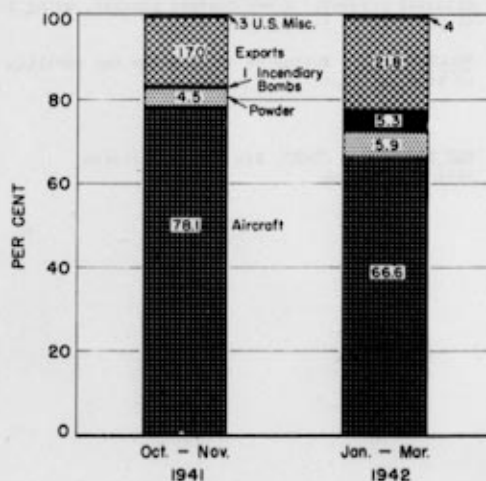


* Estimates of military and civilian requirements under revision at date of issuance of this chart.

CAPACITY



USE PATTERN



MAGNESIUM

(In thousand pounds)

BACKGROUND: Magnesium is a silvery, white metallic element, highly inflammable in powder form and extremely light and strong in alloyed metallic form. It is extracted from magnesite, sea water, dolomite, and brine and potash salts, of which there are abundant supplies. However, the extraction of the metal is difficult, involving intricate processes. The supply situation for 1942 is still quite serious, even after some downward revision in magnesium incendiary bomb requirements, with little relief expected before 1943. However, it is expected that increases in unit weights of magnesium in aircraft will require increasing amounts of the metal at that time.

USE PATTERN: (in thousand pounds)

	Oct-Dec 1941		Jan-Mar 1942	
	Amount	Percent	Amount	Percent
Aircraft ^{1/}	8,710	78.1	11,820	66.6
Powder - Total	100	4.5	1,001	5.3
Army	160	3.2	662	3.9
Navy	140	1.3	339	2.0
Incendiary Bombs ^{2/}	8	0.1	900	5.1
Exports - Total	1,900	17.0	3,700	21.8
Great Britain ^{1/}	1,600	14.3	3,400	20.0
Canada	300	2.7	300	1.8
U. S. Misc.	35	0.3	71	0.4
Total	11,173	100.0	16,962	100.0

^{1/} Includes magnesium for alloying aluminum.

^{2/} For U. S. ^{1/} Includes incendiary bombs shipped by Chemical Warfare Service.

MILITARY USES: Because of its lightness and strength, magnesium base and aluminum-magnesium alloys are used in airplanes in engine parts, frames, and wheels. Magnesium castings are the principal part of incendiary bombs. Magnesium powder is used in tracer bullets, flares, signals, and incendiary ammunition.

NEW SUPPLY:	1940	1941	1942	1943
			<i>Estimated</i>	
Supply				
Domestic - Primary	12,491	32,677	128,200	479,200
- Secondary	---	321	9,000	46,900
Total Supply	12,491	32,998	137,200	526,100

CAPACITY: The magnesium industry at the present time is producing approximately 60,000 (M) pounds per annum. Expected total production, including all projects now operating, under construction, or approved, is estimated at approximately 350,000 (M) pounds per annum by the end of 1942, and at approximately 520,000 (M) pounds by the end of 1943. Although the "rated" capacity of plants at the end of 1943 totals 610,000 (M) pounds, the expected production is estimated as above, to allow for anticipated operational difficulties.

RESTRICTIONS ON USE: General Preference Order M-2 and supplements a and b place magnesium under complete allocation control until October 31, 1942.

SPECIAL PROBLEMS: Magnesium production frequently requires large quantities of electric power. This is not always available where raw materials for additional expansion are located and may, therefore, lead to a transportation problem. Recovery of the metal from raw materials is a complicated process. A new thermic process, using ferro-silicon as the reduction agent, is expected to yield large increases in supply.

REQUIREMENTS: Estimates of military and civilian requirements under revision at date of issuance of this abstract.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 14, 1942
Abstract issued May 18, 1942

CONFIDENTIAL

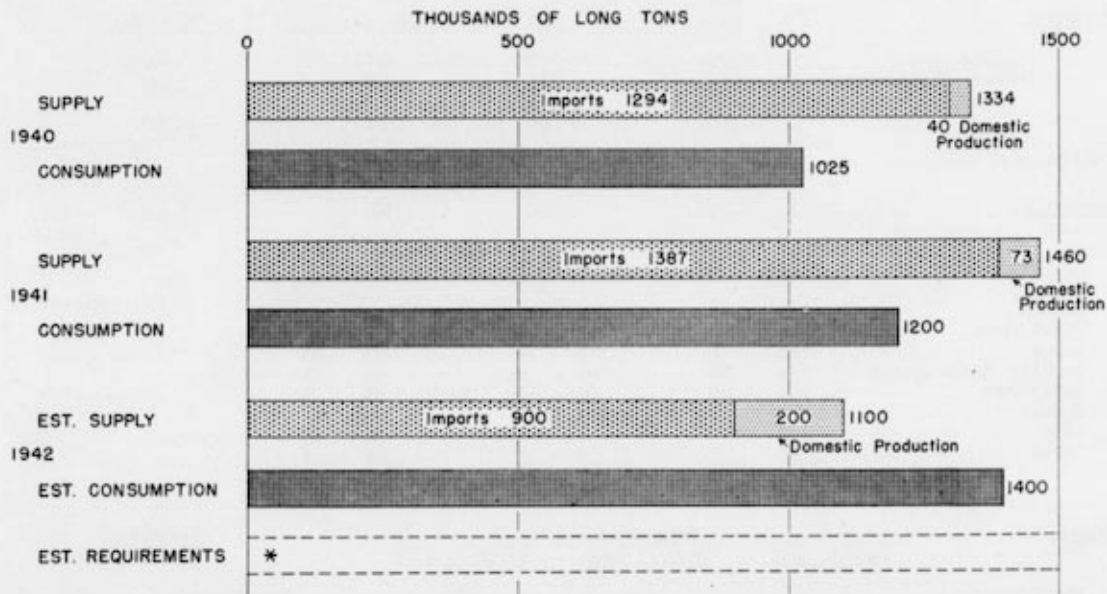
MANGANESE ORE

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E.O. 11652, Sec. 3(E) and 5(D) or (E)
Commerce Dept. Letter, 11-16-72
By RHP, Date

PRIORITY ACTION

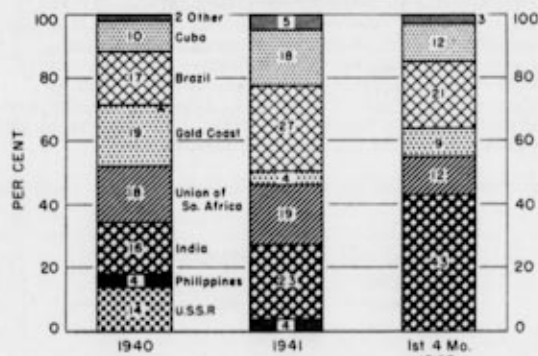
Manganese is subject to the Inventory Control provided in General Metals Order No. 1, effective May 1, 1941.

SUPPLY, CONSUMPTION, AND REQUIREMENTS

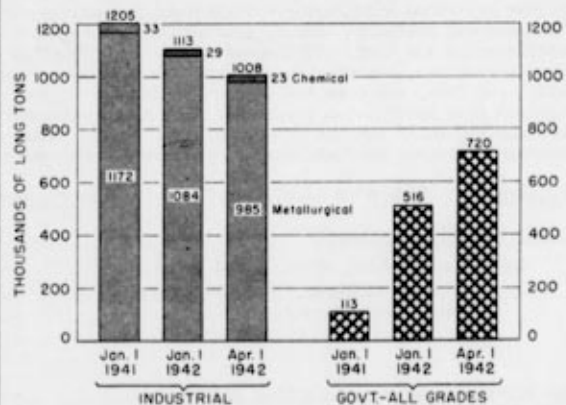


* Military and Civilian Requirements estimates not available at this date.

IMPORTS BY COUNTRY OF ORIGIN



STOCKS



MANGANESE (Ore)
(Tabular figures in thousands of long tons)

CONFIDENTIAL

BACKGROUND: Manganese is an absolute essential in the steel industry. The amount varies with the steel and the process. The total averages about 13 pounds of manganese per short ton of steel. Consumption falls into two principal groups, metallurgical and chemical, in ratio of about 95 percent to 5 percent. Metallurgical Uses: principally as an excellent deoxidizer and desulfurizer, producing sound, clean metal; some in manufacture of special high-manganese alloy steels, in foundry steel, and in other alloys. Chemical Uses: as a depolarizer in the manufacture of dry batteries, requiring high grade manganese dioxide ore; other chemical uses.

Ores: Chemical Ore - 70% manganese dioxide, empirical testing for content; dry battery grades.
Ferro Grade - at least 40% manganese, Mn to Fe ratio of 8:1 - standard ferromanganese. Approximately two tons of ore are required to make one ton of ferromanganese.
Spiegel Ores - from 10 to 35% manganese - production of standard 20% spiegeleisen.
Manganiferous Ores - from 5 to 10% manganese - production of high manganese pig iron.

Substitutes: No generally satisfactory substitute. Emergency measures include lowering of manganese content of alloys and beneficiation processes for domestic low grade ores. Scarcity of other ferro-alloys may result in increased use of manganese.

<u>NEW SUPPLY:</u>	<u>1940</u>	<u>1941</u>	<u>1942 (Est.)</u>	<u>1943 (Est.)</u>
Imports	1,294	1,387	900 1/	900 1/
Domestic Production	40	73	200	400
Total	1,334	1,460	1,100	1,300

1/ Estimate of Manganese-Chrome Branch, WPB. No country breakdowns available.

<u>CONSUMPTION:</u>	1,025	1,200	1,400	1,514
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<u>IMPORTS:</u>	<u>1940</u>		<u>1941</u>		<u>1942 - 4 mos.</u>	
	<u>Quantity</u>	<u>%</u>	<u>Quantity</u>	<u>%</u>	<u>Quantity</u>	<u>%</u>
U.S.S.R.	176	14	0	0	0	0
Philippines	44	4	58	4	0	0
India	212	16	322	23	223	43
Union of South Africa	238	18	260	19	65	12
Gold Coast	241	19	62	4	48	9
Brazil	221	17	376	27	109	21
Cuba	130	10	243	18	64	12
Other	23	2	55	5	12	3
Total	1,285	100	1,376	100	521	100

<u>STOCKS:</u>	<u>Industrial</u>			<u>Government</u>	
	<u>Jan. 1, 1941</u>	<u>Jan. 1, 1942</u>	<u>April 1, 1942</u>	<u>(All Grades)</u>	
Metallurgical	1,172	1,084	985	Jan. 1, 1941	113
Chemical	33	29	23	Jan. 1, 1942	516
Total	1,205	1,113	1,008	Apr. 1, 1942	720

SPECIAL PROBLEMS: Present accumulated stocks of manganese ore are adequate for approximately fifteen months at the present rate of consumption. The manganese problem is, therefore, the two-fold task of stepping up domestic production and insuring a continued flow of imports from relatively safe foreign sources. The domestic expansion program has shown encouraging results, and the supply estimates shown above indicate the probabilities for the next year and one-half. Since, however, domestic ores are predominantly of low grade, costs of concentration and beneficiation are high. To increase domestic production much beyond a third of estimated annual requirements would result in a substantial increase in the price of concentrated manganese. Western Hemisphere sources, mainly Brazil and Cuba, could be relied upon to furnish another third of annual requirements. The remainder must be supplied from accumulated stocks and from areas outside the western hemisphere. Heretofore, Africa and India have been the two chief sources of such supply. India alone has furnished almost one-half of total 1942 imports to date. Continued shipping availability and protected sea lanes are highly imperative for the near future.

REQUIREMENTS: Estimates of military and civilian requirements under revision at date of issuance of this abstract.

SUPPLY-CONSUMPTION SUMMARY:

Annual consumption rates, based upon:	Annual new supply estimates:		
a. January to March, 1942, consumption	1,381	1942	1,100
b. March 1942 consumption	1,572	1943	1,300
c. Estimated steel production, 1942	1,410		

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 15, 1942
Revised Abstract issued May 18, 1942

CONFIDENTIAL

MERCURY

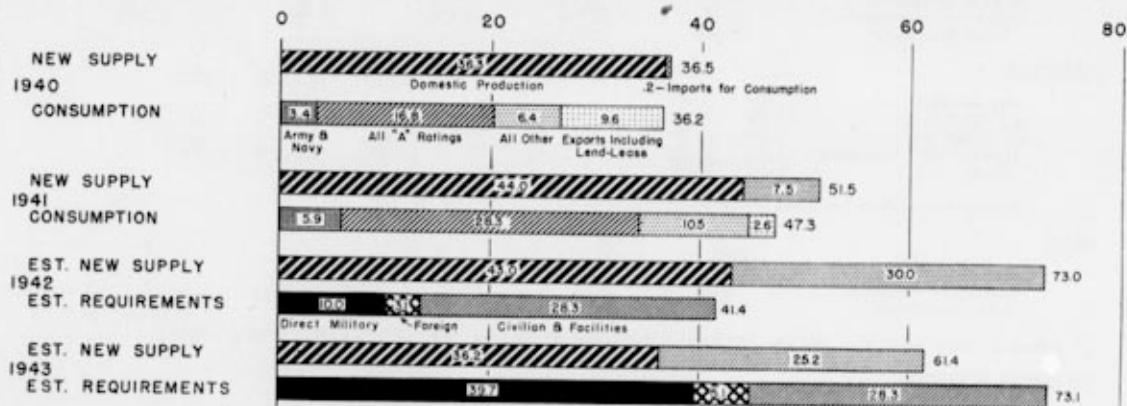
DECLASSIFIED
E.O. 11652, Sec. 3(E) and 5(D) or (G)
Commerce Dept. Letter, 11-16-72
By RMP, Date

PRIORITY ACTION

Conservation Order No. M-78, January 23, 1942, effective April 1, 1942, prohibited the use of mercury in some cases and limited its use in others, unless specifically authorized by the Director of Priorities.

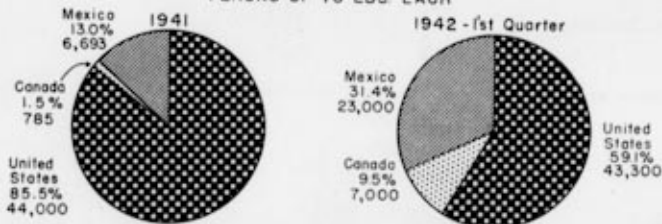
SUPPLY, CONSUMPTION AND REQUIREMENTS

THOUSANDS OF FLASKS
76 lbs. per flask

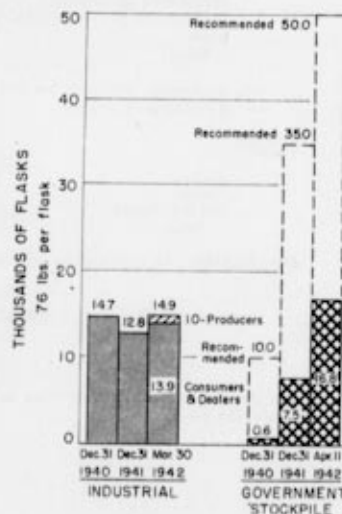


SOURCES

FLASKS OF 76 LBS. EACH

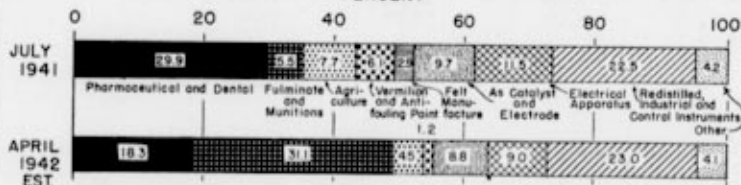


STOCKS



USES

PERCENT



MERCURY
(All figures in flasks, 76 lbs. per flask)

BACKGROUND: Mercury is a silver white metal, liquid at ordinary temperatures. It is obtained by roasting in air the ore, cinnabar (HgS), and condensing the volatile mercury. Essential uses of mercury are in anti-fouling paint, blasting caps, pharmaceuticals, chemicals, instruments, electrical apparatus, and as fulminate and celomel in munitions. Conservation Order No. M-78, January 23, 1942, effective January 15, 1942, prohibited the use of mercury for some purposes and limited its use for others.

SPECIAL PROBLEMS: Volume of production and price in mercury are related closely. The extent of the ore reserves which may be tapped at various price levels is an unknown quantity, but production is limited in duration at any price level, however high. With the exception of a few large mines, exhaustion of each mine usually occurs within a few years after production is begun, thus making necessary continual new discoveries to ensure a certain production level. United States production in 1942, even at a high price level, is estimated below the 1941 level; and estimates indicate depletion within a few years if production remains at the 1941 level. Spanish mercury may be available to the United States at a much higher price than the ceiling set by CPA.

SUBSTITUTION: Possibilities of substitutes are restricted, since the particular properties which make mercury applicable for its many uses, especially its liquid condition at ordinary temperatures, are not found in other metals. Non-defense detonators may use lead azide, but the required aluminum for the lead azide casings is not available. Substitutes for mercury salts are used in felt manufacture. Substitutes for anti-fouling paints are being used to some extent. The use of mercury in cathodes and for the production of vermilion has been limited or eliminated in some cases. Mercury boiler use is purely a matter of economy, and large amounts could be dispensed with in case the amount so freed is equal in importance to the loss of power resulting. Mercury is retained for defense purposes because of its extreme efficiency in each of its uses; and in most cases substitutes with the same degree of efficiency do not exist.

<u>SUPPLY:</u>	<u>1940</u>	<u>1941</u>	<u>1942</u>	<u>1943</u>	<u>1st Quarter 1942</u>
Domestic Production	36,300	44,000	43,000	36,200	11,200
Imports for Consumption	171	7,478	30,000	25,200	8,246
Total New Supply	36,471	51,478	73,000	61,400	19,446

<u>CONSUMPTION:</u>	<u>1940</u>	<u>1941</u>		<u>Deliveries 1942</u>	
				<u>January</u>	<u>February</u>
Army and Navy	3,458	5,890			
All "A" Ratings	16,758	28,255	A-1 to A-1	780.8	655.0
All Other Demand	6,380	10,560	A-2 to A-10	798.0	841.0
Exports Incl. Lend-Lease	9,600	2,640	All Other	1,230.5	1,051.0
Total	36,196	47,345	Total	2,809.3	2,547.0
					March
					1,241.5
					737.1
					882.3
					2,860.9

Monthly consumption for 1942: January, 3,800; February, 3,000; March, 3,500.

<u>STOCKS:</u>	<u>End of 1940</u>	<u>End of 1941</u>	<u>1942</u>
Recommended Stockpile	10,000	35,000	50,000 (March)
Government Stockpile	550	7,458	16,834 (April 11, 1942)
Industrial Stocks	14,700	12,840	14,857 (March 30, 1942) 1/

1/ Bureau of Mines estimate; includes 13,900 with Consumers and Dealers, and 957 Producers' Stocks.

USE PATTERNS OF MERCURY:

	<u>July 1941</u>	<u>Per Cent April 1942 (Est.)</u>
Pharmaceutical and Dental	29.9	18.3
Fulminate and Munitions	5.5	31.1
Agriculture	7.7	4.5
Vermilion and Anti-fouling Paint	6.1	1.2 2/
Felt Manufacture	2.9	
As Catalyst and Electrode in Preparation of Chlorine, Caustic Soda, Acetic Acid, etc.	9.7	8.8
Electrical Apparatus	11.5	9.0
Redistilled 1/, Industrial and Control Instruments	22.5	23.0
Other	4.2	4.1
Total	100.0	100.0

1/ Virgin mercury, which is redistilled, is subsequently used mostly in industrial and control instruments.

2/ Anti-fouling paint only.

SOURCES:

	<u>1941</u>	<u>Per Cent</u>	<u>1942</u>	<u>Per Cent</u>
	<u>Flasks</u>		<u>Flasks</u>	
Mexico	6,693	13.0	23,000	31.4
Canada	785	1.5	7,000	9.5
United States	44,000	85.5	43,000	59.1
Total	51,478	100.0	73,000	100.0

REQUIREMENTS: As reported by the Materials Requirements Section, Statistics Division on May 15, 1942.

<u>Year</u>	<u>Direct Military (Except Construction)</u>	<u>Foreign</u>	<u>Civilian and Facilities</u>	<u>Total</u>
1942	9,999	3,118	28,308	41,425
1943	39,633	5,118	28,308	73,059

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 2, 1942
Revised abstract issued May 18, 1942

CONFIDENTIAL

MICA - SPLITTINGS

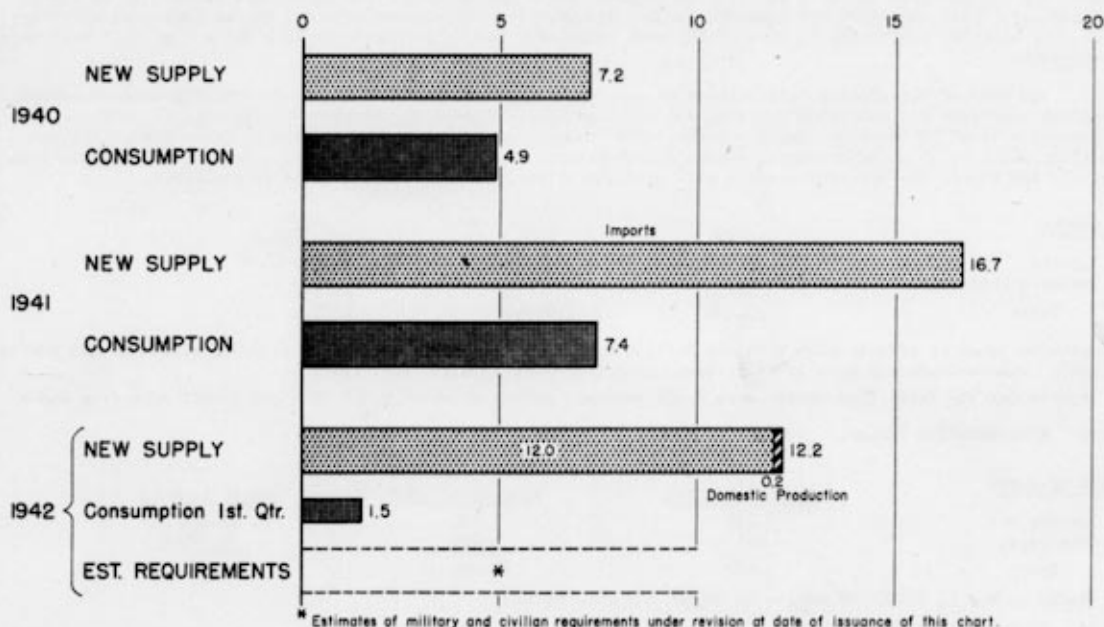
DECLASSIFIED
E.O. 11652, Sec. 3(E) and 5(D) or (6)
Commerce Dept. Letter, 11-16-78
By RHP, Date

PRIORITY ACTION

No Priority Action

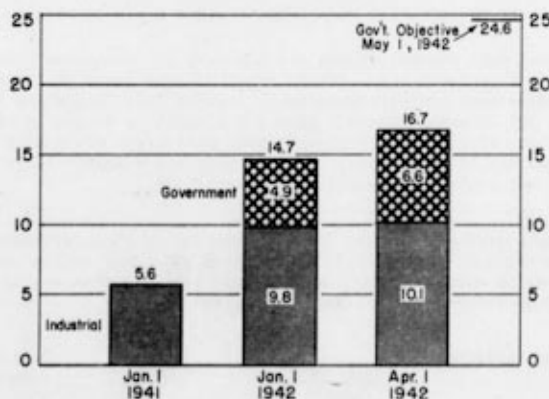
SUPPLY - DEMAND

MILLIONS OF POUNDS



STOCKS ON HAND

MILLIONS OF POUNDS



MICA - SPLITTINGS

(In thousands of pounds)

BACKGROUND: Mica is a mineral the most characteristic property of which is its capacity of being split easily into very thin, tough, flexible, and generally transparent sheets. This, in addition to being a non-conductor of electricity, renders it valuable for electrical insulation purposes. The consumption of mica is confined largely to two varieties: muscovite (white mica) and phlogopite (amber). Commercially, mica has two principal forms: block mica and splittings, which may be either white or amber. Splittings are sheets of mica 0.0012 inches or less in thickness obtained by splitting blocks or waste material. Splittings are used entirely in making built-up mica which is a combination of alternate layers of insulating cement and irregularly arranged and shaped mica splittings. Built-up mica is used for commutator segments and V-rings for motors and generators, in high temperature windings, in transformers and other electrical appliances, and equipment essential in war production.

PRODUCTION AND SOURCES OF SUPPLY: The splitting of mica requires cheap hand labor which is not available in the United States. As a result, domestic production has been negligible. The principal source of United States imports is British India, which accounted for 94 per cent of total new supplies in 1941 and 93 per cent in 1940. Small amounts have been obtained from Madagascar (6 per cent in 1940), and Canada. The product from India is entirely white mica, while the material from Canada and Madagascar is amber. In splittings, these varieties are interchangeable, although for certain purposes one may be preferred over the other. For example, amber mica is more costly than white mica but is preferred in uses where high heat resistance is important.

In view of the growing difficulties of securing foreign supplies, some effort is being made to develop mechanical processes for splitting domestic and Canadian mica. Domestic production is expected to increase from the present rate of 12 thousand pounds a month to 20 thousand pounds a month beginning in June, 1942. However, production still is in an experimental stage, and no material increase from this source can be expected for some time. In any event, the imported product will continue to be preferred as long as it is available.

<u>NEW SUPPLY:</u>	<u>1940</u>	<u>1941</u>	<u>1942 (Est.)</u>
Imports	7,204	16,729	12,000 ^{1/} _{2/}
Domestic Production	nil	12	200
Total	7,204	16,741	12,200

1/ Estimate based on arrangements with the British Ministry of Supplies to furnish 14,000 thousand pounds during 1942. The estimate may have to be revised later depending upon war developments.

2/ Imports for the first four months were 6,036 thousand pounds of which 5,294 thousand pounds were from India.

Source: Mica-Graphite Branch.

<u>STOCKS ON HAND:</u>	<u>January 1, 1941</u>	<u>January 1, 1942</u>	<u>April 1, 1942</u>
Industrial	5,632	9,746	10,104
Government	nil	4,928	6,620 ^{1/}
Total	5,632	14,674	16,724

1/ Stocks on May 1, 1942. Objective is 24,600 thousand pounds

Source: Mica-Graphite Branch

<u>CONSUMPTION:</u>	<u>1940</u>	<u>1941</u>	<u>January - March 1942</u>
	4,919	7,406	1,506

Source: Mica-Graphite Branch.

REQUIREMENTS: Estimates of military and civilian requirements under revision at date of issuance of this abstract.

SPECIAL PROBLEMS: It is estimated that present stocks are adequate for about two years. However, the long range situation is not so favorable. Future supplies from India are contingent upon uninterrupted shipping. Supplies from Madagascar also are problematical. Imports from Canada are likely to increase over present levels of around 250 to 300 thousand pounds a year. A project in Mexico is expected to augment supplies in the future, but serious problems of labor and transportation will limit production in this area. Another possibility is a proposed development in Porto Rico. This country has suitable labor and is favorably situated from the standpoint of shipping and domestic transportation facilities.

GOVERNMENT CONTROL: There is no conservation order limiting the use of mica splittings. However, in effect, splittings are used almost entirely in "high priority" number products, such as electric motors or in the ignition systems of other motors. It has been suggested that splittings be limited as soon as possible to products being manufactured for military purposes.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Date as of May 15, 1942
Abstract Issued May 18, 1942

CONFIDENTIAL

MOLYBDENUM

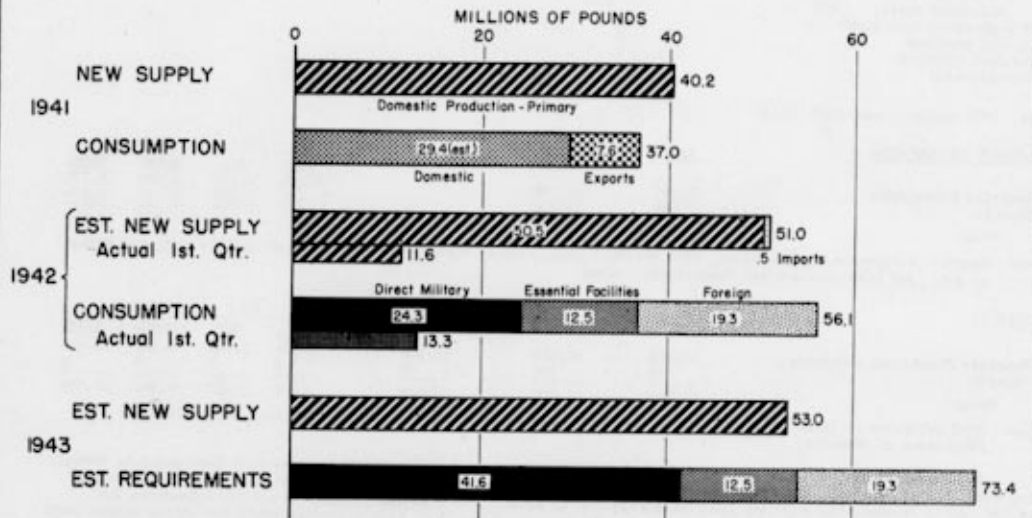
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E.O. 11652, Sec. 3(E) and 5(D) or (H)
Commerce Dept. Letter, 11-16-78
By RHP, Date

PRIORITY ACTION

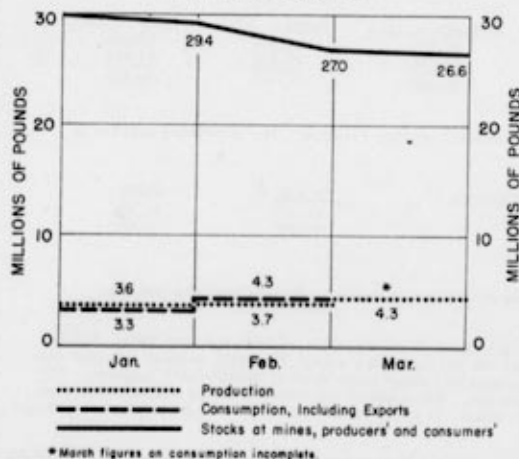
WPB Order M-14 (June 11, 1941) divided high-speed steel into two types: Class A, containing over 3% molybdenum but not over 7% tungsten; and Class B, containing over 12% of tungsten. It required Class A steel to be used wherever possible. The order, as amended on November 29, 1941 also provided that the Class A types must constitute at least 75% of each customer's orders for high-speed steel. This order had the effect of conserving tungsten but increasing the use of molybdenum.

WPB Order M-110 (March 18, 1942) placed deliveries of molybdenum under an allocation system. However, actual allocation by the Tungsten Branch did not begin until May 1.

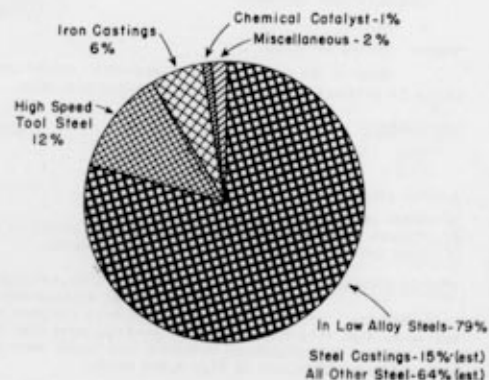
SUPPLY-DEMAND



PRODUCTION-CONSUMPTION 1ST QUARTER 1942



USE PATTERN OCTOBER, 1941



CONFIDENTIAL

MOLYBDENUM

(All figures in 1000 lbs. of contained metal)

BACKGROUND: Molybdenum is obtained mainly from the ore molybdenite, which, although widely distributed throughout the world, is found only rarely in commercial quantities. The ore or concentrate usually is converted into molybdenum oxide, ferro-molybdenum or calcium molybdate, which then is used to make rough stock steels. In both conversion steps, there are small losses in the molybdenum content, but it is believed that these will be nearly balanced in 1942 by secondary recovery. Hence, to simplify the abstract, neither the losses nor the scrap has been considered.

USES: Over 90% of the U. S. molybdenum supply is used to impart hardness and toughness to steel alloys, principally the low-alloy steels. It often is used in conjunction with or as a substitute for chromium, nickel, manganese, tungsten, or vanadium. The low-alloy molybdenum steels have many uses: these now include castings, anti-friction bearings, armor plate, gun barrels, armor-piercing projectiles, and various parts for airplanes, locomotives, petroleum equipment, machine tools, etc. The high-alloy molybdenum steels are used mainly for high-speed cutting tools. Pure molybdenum has minor uses in radio, electrical, and X-ray equipment.

USE PATTERN: Based on reports for October, 1941.

	Percent
In low-alloy steels	79
Steel castings	15%
All other steel	64%
In high-speed tool steel	12
In iron castings	6
Chemical catalyst	1
Miscellaneous	2
	100

Source: WFB report, January 30, 1942.

CONSUMPTION AND REPORTS:

	1941	1942(Est.)	1942 - 1st Quarter			
			Jan.	Feb.	March	Total
Domestic Consumption	29,360	36,756	2,804	2,755	3,220	8,779
Exports	7,640	19,300	527	1,505	2,482	4,514
Total	37,000	56,056	3,331	4,260	5,702	13,293

Source: Exports -- Department of Commerce; 1942 domestic production -- Bureau of Mines; 1941 estimate -- Tungsten Branch of WFB. For 1942 details, see Requirements below.

NEW SUPPLY:

	1941	1942(Est.)	1943(Est.)	1942 - 1st Quarter			
				Jan.	Feb.	March	Total
Domestic Production - Primary	40,162	50,500	53,000	3,567	3,650	4,342	11,559
Imports	86	500	0	0	0	0	0
Total	40,248	51,000	53,000	3,567	3,650	4,342	11,559

Source: 1942 estimates -- Tungsten Branch of WFB; domestic production(actual) -- Bureau of Mines; imports(actual) -- Department of Commerce.

The United States produces about 90% of the world supply of molybdenum. Small amounts have been mined in Norway, Chile, Peru, Mexico, Morocco, and other countries. About 3/4 of domestic production is controlled by the Climax Molybdenum Co., which recently has expanded its yearly capacity by about 5,000 thousand pounds. Plans for increasing the Climax output by an additional 10,000 thousand pounds are under consideration; this expansion could not affect supply until 1944, however. Another mine, having an annual capacity of possibly 1,500 thousand pounds, will be reopened late this year with financial assistance from the EPC. The other one-fourth of U. S. production is almost entirely recovered from copper mining operations; this amount is a function of the copper output. The United States has agreements with Chile and Mexico for the purchase of molybdenum. It is believed that some of this ore may be shipped directly to the other United Nations under Lend-Lease.

STOCKS:

	January 1, 1942	February 1, 1942	March 1, 1942	April 1, 1942
Ores and Concentrates at the Mines	17,348	16,530	13,910	13,142
Producers' and Consumers'	12,652	12,896	13,109	13,449
Total	30,000	29,426	27,019	26,591

Source: Bureau of Mines.

Much of the producers' and consumers' stocks represents necessary working reserves. The continuing decline in stocks is evidence of the unfavorable supply situation.

REQUIREMENTS:

	Direct Military 1/	Essential Facilities 2/	Foreign 3/	Total
1942	24,756	12,500	19,300	56,056
1943	41,637	12,500	19,300	73,437

Source: Statistics Division of WFB.

1/ Army, Navy, Aircraft, and Maritime.

2/ Minimum needs for the production and maintenance of facilities and equipment essential to the military program.

3/ Does not include export of molybdenum products.

SPECIAL PROBLEMS: Present indications are that new supply will fall short of requirements in both 1942 and 1943. The entire needs of the United Nations must be met by the United States except for small amounts obtained from Latin America. Molybdenum is being used more and more as a substitute for other alloy metals, particularly tungsten. It now seems that this substitution process may have been carried too far. The tungsten situation recently has improved somewhat, whereas the molybdenum situation has become more critical. Hence, it might be advisable now to use somewhat more tungsten and less molybdenum in high-speed steel.

GOVERNMENT CONTROL: WFB Order M-14 (June 11, 1941) divided high-speed steel into two types: Class A, containing over 3% molybdenum but not over 7% tungsten; and Class B, containing over 12% tungsten. It required Class A steel to be used wherever possible. The order, as amended on November 29, 1941, also provided that the Class A types must constitute at least 75% of each customer's orders for high-speed steel. The order had the effect of conserving tungsten but of increasing the use of molybdenum. WFB Order M-110 (March 18, 1942) made deliveries of molybdenum subject to allocation which actually began in May. The amount allocated for May was 2,807 thousand pounds.

SUMMARY:

	1942	1943
Estimated Supply	51,000	53,000
Estimated Requirements	56,056	73,437

CONFIDENTIAL

MONAZITE SAND

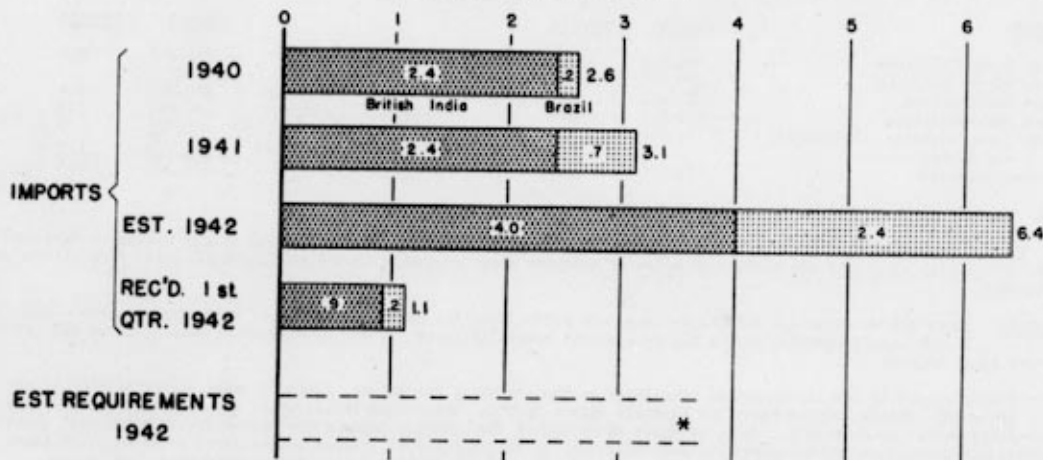
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E.O. 11652, Sec. 3(E) and 8(D)
Commerce Dept. Letter, 11-16-78
By RHP, Date

PRIORITY ACTION

None Taken

SUPPLY-DEMAND

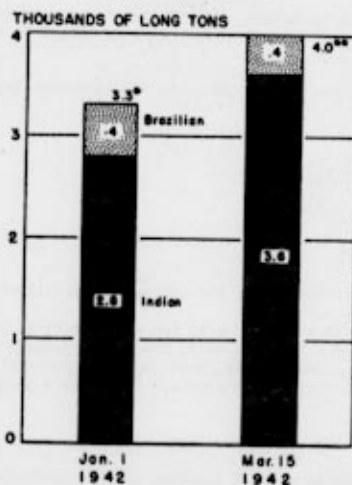
THOUSANDS OF LONG TONS



* Estimates of military and civilian requirements under revision at date of issuance of this chart.

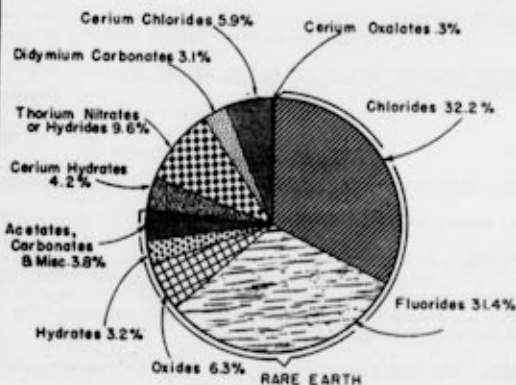
STOCKS IN UNITED STATES

THOUSANDS OF LONG TONS



* Does not include stocks of refined material equivalent to 500 tons of ore.
** Estimated to equal 13 months' consumption at the estimated February rate.

SALES-1941



MONAZITE SAND

BACKGROUND: Monazite sand is a yellowish brown mineral found in commercial quantities in certain black sand deposits in conjunction with zircon and ilmenite from which it is separated by electro-magnetic machines. Monazite is largely cerium phosphate, but usually contains about 9% thorium, 15% lanthanum, and 20% of the other rare earths, praseodymium, neodymium, samarium, etc., and some silica. Three to four grams of the radio-active mesothorium are present in 1,000 tons of monazite, theoretically, with recovery at about 2½ grams.

USES: Monazite sand is the source of rare earth fluorides and rare earth oxides. These rare earth fluorides and oxides are essential to the manufacture of the cores for positive carbons such as are used in military searchlights, moving picture projectors, and floodlights, and to a minor extent for other photographic and therapeutic uses. It has been found that the rare earths make the most brilliant light, next to sunlight. The old plain carbons gave a flickering light. Also, by use of fluoride or oxide or both together, the color of the light can be controlled. In addition, monazite is the source of thorium and cerium salts. Cerium sparking metal is used in tracer bullets, in Navy welding operations, and in cigarette lighter flints. Mesothorium is used in luminous compounds for instrument dials, etc., and is superior to radium for this purpose. Cerium, thorium, rare earth hydrates, and didymium oxide are used in special glasses to absorb ultra-violet rays, etc. Cerium sulphate is employed in the manufacture of sulphuric acid by the contact process, and in photography. Cerium is used as a reducing agent in the production of metallic zirconium and thorium. Thorium nitrate, formerly the most important material derived from monazite, still is being used for mantles of gas lamps. Rare earth acetates are used in waterproofing and mildew proofing of materials. Thorium hydroxide is being used as a catalyst to recover oil from coal in Germany, Japan, and China. Thorium metal is used in the filaments of radio tubes.

1941 SALES:	Pounds	Percent		Pounds	Percent
Rare Earth Chlorides	1,025,858	32.2	Thorium Nitrates	306,144	9.6
Rare Earth Fluorides	1,000,000	31.4	or Hydrides		
Rare Earth Oxides	201,581	6.3	Didymium Carbonates	100,000	3.1
Rare Earth Hydrates	100,393	3.2	Cerium Chlorides	185,220	5.9
Rare Earth Acetates, Carbonates, and Miscellaneous	119,438	3.8	Cerium Oxalates	9,375	.3
Cerium Hydrates	132,760	4.2	Cerium Amm. Nitrate	570	- 1/2
			Total	3,182,359	100.0

1/ Less than .05 per cent.

Notes: About 1.6 ounces of rare earth fluoride or oxide is needed per positive carbon. About 45% of cerium or rare earth fluoride or oxide by weight is recovered from a ton of monazite sand, producing approximately 10,000 cores from one ton of monazite sand.

SUBSTITUTES: There are no known substitutes for the rare earth fluorides and oxides obtained from monazite sand. Monazite is the only commercial source for rare earths available to us. A cerite deposit in Sweden is the only other known rare earth source.

SOURCE: Monazite sand occurs in commercial quantities on the coasts of Travancore, India, in many of the islands of the Netherlands Indies, and in Bahia and Espereto Santo, Brazil. Netherlands Indies never supplied the United States with any large amount of materials. India produces about 80% of the material used in the United States and Brazil about 20%. Brazilian production can be raised without difficulty to the 1900 - 1910 average annual level of about 4,000 tons. There are some small deposits of monazite in Florida and the Carolinas, but these are without commercial importance.

IMPORTS OF MONAZITE SAND: (Figures in long tons)

From:	1940	1941	1942 (Est.)	1st. Quarter 1942	
				Actual	Percent
British India	2,470	2,467	4,000	881	83.7
Brazil	179	667	2,400	172	16.3
	<u>2,649</u>	<u>3,134</u>	<u>6,400</u>	<u>1,053</u>	<u>100.0</u>

Note: Imports from India are subject to seasonal variations and are expected to be very small during the second and third quarters of 1942. Contracts have been made for 1,200 tons of the Brazilian production in 1942, with an option on all additional production.

GOVERNMENT CONTROL: In November 1941, a stockpile recommendation for 1,800 long tons of monazite was withdrawn because domestic supplies seemed adequate to meet all visible requirements.

STOCKS OF MONAZITE SAND IN THE UNITED STATES: (Figures in long tons)

	Jan. 1, 1942	March 15, 1942
Indian	2,834	3,569
Brazilian	430	405
	3,264 1/2	3,974

1/ Does not include stocks of refined material equivalent to 500 tons of ore.

Note: Stocks on March 15, were estimated equal to about thirteen months' consumption at the estimated February rate.

PROCESSING: Five hundred pounds of monazite sand are baked with 500 pounds of sulphuric acid for eight hours to break down the sand; thorium comes out as a solid. The solutions contain all the rare earth fluorides, oxides, and hydrates as well as cerium, neodymium and lanthanum. All the sludge is treated to thorium nitrate stage, and then to thorium, with mesothorium coming off half way along the thorium processing. The treatment of the solutions and sludge is a lengthy process, requiring many months in some instances.

EXPORTS: The United States still exports large quantities of thorium salts for use in gas mantles.

REQUIREMENTS: Estimates of military and civilian requirements under revision at date of issuance of this abstract.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 14, 1942
Abstract issued May 16, 1942

CONFIDENTIAL

NICKEL

(EXCLUDING MONEL METAL)

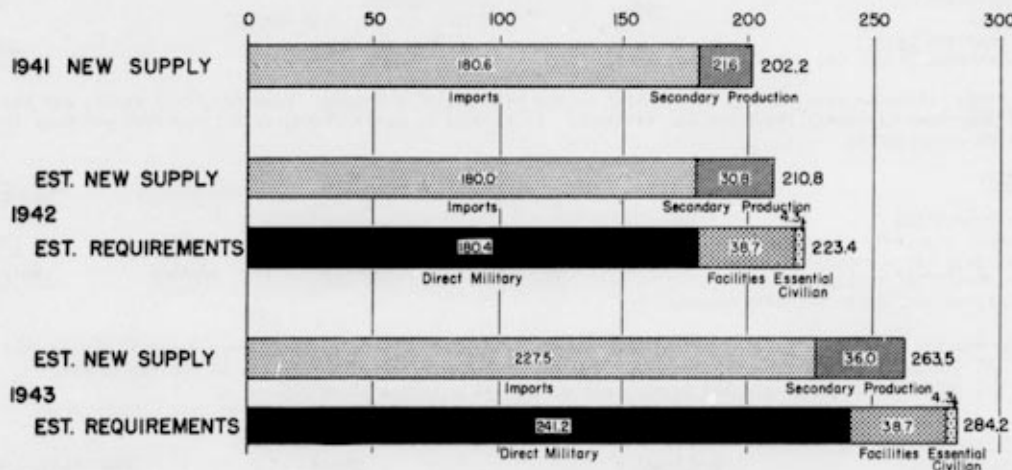
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EO 11652, Sec. 3(E) and 5(D) or (F)
Commerce Dept. Letter, 11-15-72
By RHP, Date

PRIORITY ACTION

Nickel is under complete allocation control through General Preference Order M-6a through M-6c. This includes solutions, concentrates, and residues from which the metal is recoverable, and nickel salts, oxides, and carbonates. Control of the segregation of nickel scrap is prescribed. All nonessential civilian uses of nickel have been eliminated.

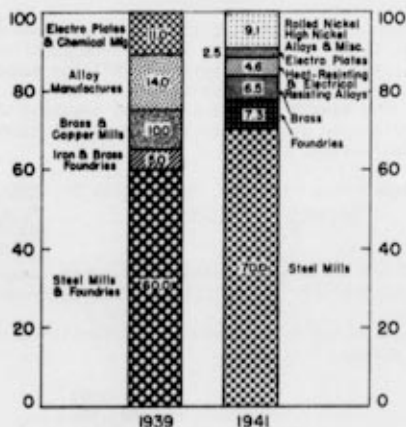
SUPPLY-DEMAND

MILLIONS OF POUNDS



USES

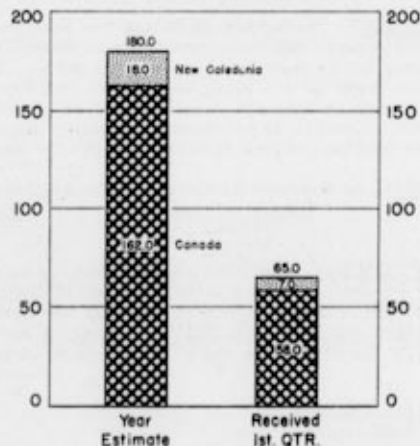
BY MILLS, FOUNDRIES, AND MANUFACTURES
PER CENT



IMPORTS

1942

MILLIONS OF POUNDS



NICKEL (excluding Monel metal)
Unit: 1000 pounds

BACKGROUND: Nickel is a hard, malleable, ductile, metallic element, nearly silver white, capable of a high polish, and resistant to oxidation. It is corrosion-resistant to a remarkable degree and is capable of an extremely large angle of twist before fracture. As a commercially pure element, nickel is used as an alloying element, to plate other metals, to build up worn parts by the deposition of heavy nickel plate, as one of the active chemical constituents of storage batteries, to clad iron and steel when corrosion resistance is essential, and as a catalyst in chemical processings.

USES: A comparison of 1939 and 1941 use patterns indicates a shift of the use of steel towards steel mills and foundries.

1939 1/	Percent	1941 2/	Percent
Steel Mills & Steel Foundries	60%	Steel Mills	70.0%
Iron & Brass Foundries	5	Foundries	7.3
Brass & Copper Mills	10	Brass	6.5
Alloy manufacturers	14	Heat-resisting & electrical-resisting alloys	4.6
Electro plates & chemical manufacturers	11	Electroplates	2.5
Total	100%	Rolled nickel, high nickel alloys & misc.	9.1
		Total	100.0%

1/ ABMS Yearbook 1939.

2/ International Nickel Co. annual report, 1941.

DEFENSE USES: Nickel's chief use is as an alloy in the production of various types of nickel steel, and imparts to steel increased hardness, toughness and strength. It is used in armor plate, recoil springs, and many items of military construction.

NEW SUPPLY:

	1940	1941	1942 (est.)	1943 (est.)
Imports	148,000	180,501	180,000	227,500
Domestic Production				
Primary (by-prod. of copper refining)	1,108	1/	1/	1/
Secondary (from purchased scrap)	16,800	21,500	30,750	35,000
Total New Supply	169,908	222,201	210,750	263,500

1/ A small amount, exact quantity unknown.

SOURCE OF SUPPLY: The major portion of the U.S. supply of nickel will be imported from Canada. During 1942, 152,000 (M) pounds will come from this source. New Caledonia is expected to provide 18,000 (M) pounds. Efforts are being extended towards the development of Cuba as a source of supply.

IMPORTS--1st Quarter, 1942 (gross weight)

Country of Origin	Ore & Matte	Oxide	Pig, bars, ingots, etc.
Canada	14,953	6,142	36,674
New Caledonia	7,209	---	---
Total	22,167	6,142	36,674

RESTRICTIONS ON USE: Under General Preference Order M-6-a-thru-c, nickel was placed under complete allocation control, the definition of nickel including also solutions, concentrates, and residues from which the metal is recoverable, and nickel salts, oxides and carbonates; control of the segregation of nickel scrap was prescribed. All non-essential civilian use of nickel has been eliminated.

SPECIAL PROBLEMS: Production in Canada has been rushed to the limit of present mining and smelting capacity. An expansion program has been undertaken by International Nickel Co. to be completed in 1943. Some additions to our supply can be made by recovery from scrap. It has been estimated that approximately 15 million pounds of nickel in scrap is not being returned to primary consumers. Various substitutes for nickel can be used in some cases, such as standard steel instead of nickel steel, alloys with lesser amounts of nickel together with such alloying elements as molybdenum, chromium and vanadium, heavier copper plate under lighter nickel plate for electro-plating, silver electro deposits for chrome plating undercoating.

REQUIREMENTS: As reported by the Materials Requirements Section, Statistics Division, as of April 20, 1942.

Year	Direct Military 1/	Facilities 2/	Essential Civilian 2/	Total
1942	180,441	36,700	4,300	221,441
1943	241,221	38,700	4,300	284,221

1/ **Direct Military:** requirements shown are based on objectives of the S-I Ultimate Aircraft program, Army Supply Program, Sections I (4/6/42) and II (4/9/42) covering equipment for ground and air forces, respectively, and latest programs of the Navy and Maritime Commission.

2/ **Facilities and Essential Civilian:** minimum needs for the production and maintenance of (a) facilities and equipment to effectuate the military programs and (b) civilian goods.

SUMMARY:

	1942	1943
Estimated Total Supply	210,750	263,500
Estimated Requirements	223,441	284,221

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 2, 1942
Abstract issued May 11, 1942

CONFIDENTIAL

PIG IRON

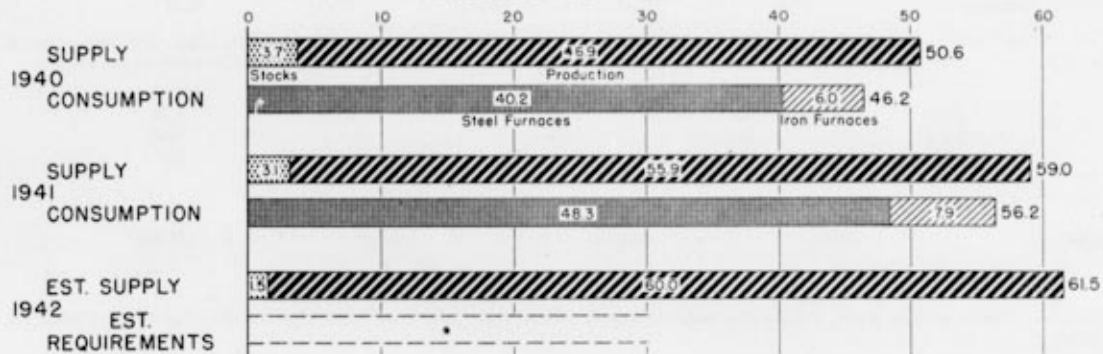
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E.O. 11652, Sec. 3(E) and 5(D) or (E)
Commerce Dept. Letter, 11-15-72
By RHP, Date

PRIORITY ACTION

General Preference Order No. M-17, issued on August 1, 1941, placed pig iron under complete allocation. Subsequent amendments and extensions have increased the scope of control.

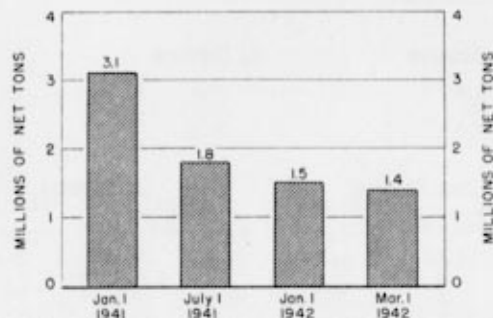
SUPPLY, CONSUMPTION, AND REQUIREMENTS

MILLIONS OF NET TONS

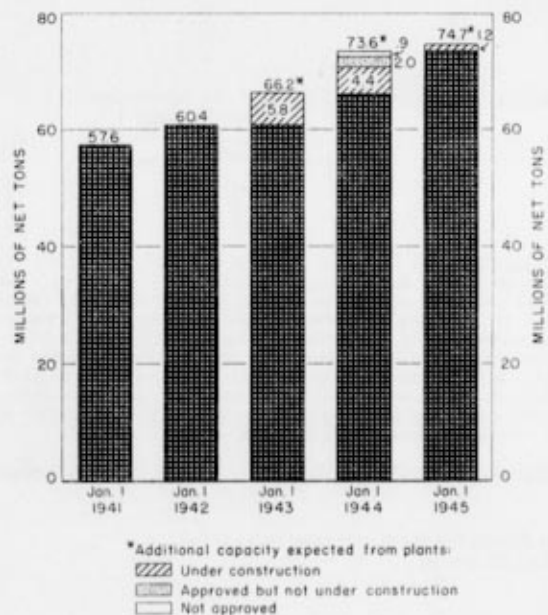


*Estimates of military and civilian requirements under revision at date of issuance of this chart.

STOCKS (ON HAND)

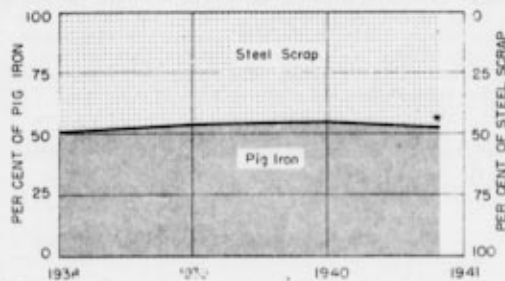


CAPACITY (ESTIMATED)



USES

RELATIVE USE OF PIG IRON AND SCRAP IN STEEL FURNACES



PIG IRON
(Tabular figures in millions of net tons)

CONFIDENTIAL

BACKGROUND: Pig iron is the term applied to iron produced by the reduction of iron ore in a blast furnace. The iron so produced may be used to make iron castings or other pig iron products, or may be converted into steel by the usual refining and purification process. When used for making steel, the pig iron is usually mixed in the furnace with varying quantities of steel scrap. In 1940, 87 percent of pig iron was consumed in steel-making furnaces, 9.8 percent in iron-making furnaces, and 3.2 percent in direct castings. Since sufficient quantities of steel could not be produced without it, pig iron is an absolute essential for the steel industry.

The physical properties of pig iron vary widely, depending upon its composition, rate of cooling, and heat treatment subsequent to casting. It is made in many grades classified according to raw material content, use, and chemical composition.

<u>ESTIMATED CAPACITY:</u> 1/	<u>1941</u>	<u>1942</u>	<u>1943</u>	<u>1944</u>	<u>1945</u>
January 1	57.6	60.4	66.2	73.5	74.7

Included in above figures are the following estimates of additional capacity in 1942, 1943, and 1944 expected from (A) plants under construction (B) approved projects not under construction and (C) projects under negotiation:

	(A)	(B)	(C)	Total
1942	5.8	-	- 2/	5.8
1943	4.4	2.0	.9	7.3
1944	1.2	-	-	1.2

1/ Includes coke furnaces (pig iron and ferro-alloys) and charcoal pig iron furnaces.

2/ Less than .05 million tons.

<u>STOCKS:</u> 1/	<u>Date</u>	<u>Amount</u>	<u>Date</u>	<u>Amount</u>
	Jan. 1, 1941	3.1	Jan. 1, 1942	1.5
	July 1, 1941	1.8	March 1, 1942	1.4

1/ Stocks on hand at consumers, suppliers, and producers. Stocks in transit are included in 1941 figure, excluded for 1942.

<u>PRODUCTION:</u>	<u>1940</u>	<u>1941</u>	<u>1942 1/</u>	<u>1943</u>
	46.9	55.9	60.0	65.0 2/

1/ Actual production in January and February, 1942, totaled 9.5 million tons.

2/ Tentative estimate of Iron and Steel Branch, WPB.

<u>CONSUMPTION:</u>	<u>Steel Furnaces</u>	<u>Iron Furnaces</u>	<u>All Furnaces</u>
1939	30.4	4.8	35.2
1940	40.2	6.0	46.2
1941	48.3	7.9	56.2

RELATIVE USE OF SCRAP AND PIG IRON: (In percentages)

<u>Date</u>	<u>Steel Furnaces</u>		<u>Pig Iron</u>	<u>Iron Furnaces</u>		<u>Pig Iron</u>	<u>All Furnaces</u>		<u>Pig Iron</u>
	<u>Home</u>	<u>Purchased</u>		<u>Home</u>	<u>Purchased</u>		<u>Home</u>	<u>Purchased</u>	
1939	26.4%	21.0%	52.6%	31.7%	33.4%	34.9%	27.4%	23.4%	49.2%
1940	26.6	19.0	54.4	32.0	32.2	35.8	27.6	21.5	50.9
1941	27.4	20.6	52.0	35.3	32.4	32.3	29.0	23.1	47.9

SPECIAL PROBLEMS: Pig iron and iron and steel scrap are, within wide limits, alternative raw materials used in steel making in approximately equal amounts. Normally, the price differential between the two is the chief factor determining changes in the relative proportions of each in steel furnaces. In the iron and steel industry, pig iron is produced both by some steel companies and by merchant blast furnaces. The merchant furnaces do not make steel themselves but sell the pig in the open market, as do some other producers. Although a scarcity was first experienced in scrap, the demand for pig iron has increased greatly under the impact of the defense program and the amount available on the open market has diminished. The result of this trend is that some steel plants and foundries which have to buy pig iron on the market have not been able to obtain enough to meet their requirements for war production and essential civilian needs. Pig iron, therefore, has been placed under complete allocation in order that the product may be distributed in such a way that steel plants and foundries may secure their essential war-time needs.

REQUIREMENTS: Estimates of military and civilian requirements under revision at date of issuance of this abstract.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 15, 1942
Revised Abstract issued May 18, 1942

CONFIDENTIAL

PLATINUM METALS

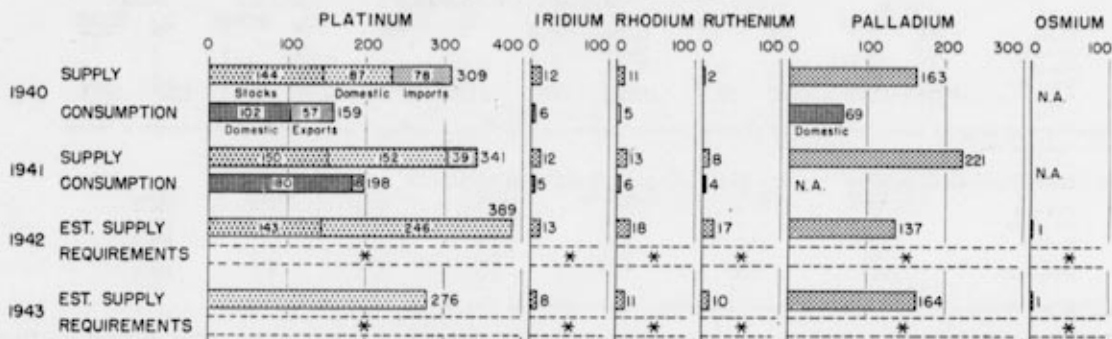
DECLASSIFIED
E.O. 11652, Sec. 3(E) and 5(D) or
Commerce Dept. Letter, 11-15-72
By RHP, Date

PRIORITY ACTION

Conservation Order M-49 prohibited the use of iridium in jewelry after December 12, 1941.
Conservation Order M-95 bars the use of rhodium in jewelry effective March 11, 1942.

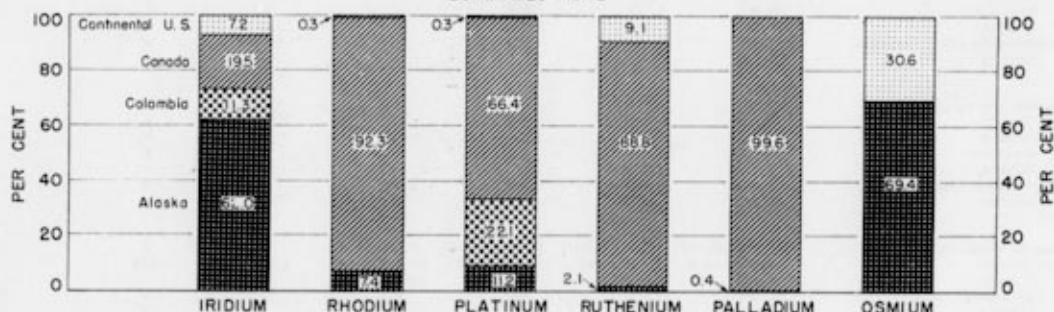
SUPPLY-DEMAND

THOUSANDS OF TROY OUNCES

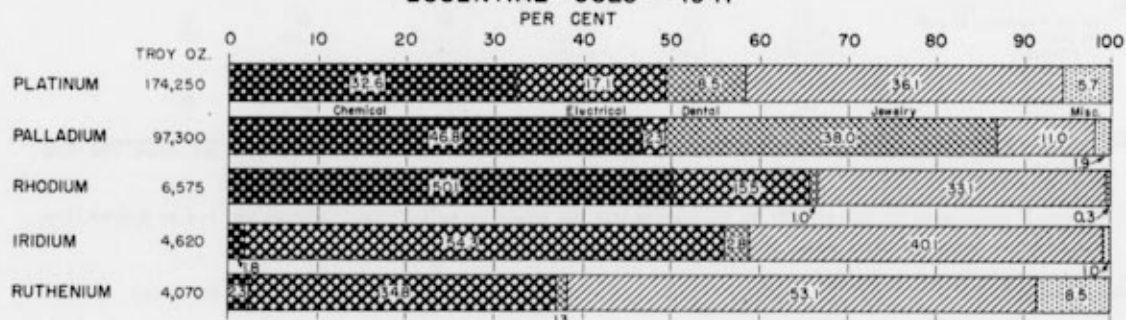


*Estimates of Military and Civilian Requirements under revision at date of issuance of this chart.

SOURCES ESTIMATED 1942



ESSENTIAL USES — 1941



PLATINUM METALS GROUP

BACKGROUND: The platinum group encompasses the metals platinum, palladium, iridium, rhodium, ruthenium, and osmium. These six metals occur together in varying quantities in native ores and in residues of nickel, copper, and gold ore refining. South Africa, Russia, Colombia, Canada, and Alaska are the chief producers. United States consumption now is from ores and crudes of Canada, Alaska, and Colombia, and continental United States, which are refined in the United States.

The platinum metals are characterized by high melting points, great resistance to acid and alkali attack (except for palladium), and capacity to act as catalytic agents. Uses are chiefly as metallurgical alloys except for rhodium in searchlight reflectors.

SPECIAL PROBLEMS: New supply and industry stocks of iridium appear adequate at present rate of requirement, but any increase in demand will deplete stocks quickly. Conservation Order M-49 prohibited the use of iridium in jewelry after December 12, 1941. There seems, however, to be a voluntary restriction of the metal to magneto contact points of airplanes and tanks. The shipping situation may become tight but the proposed highway to Alaska will lessen or eliminate the danger to the chief source of supply. Conservation Order M-95 bars the use of rhodium in electroplating jewelry, effective March 11, 1942. Amendment 1 to M-95 prohibits its use for jewelry effective April 17, 1942.

IMPORTS: New supply in troy ounces, first quarter, based on breakdowns of crude imports, estimated secondary recovery, and actual imports of refined metal is: platinum, 93,619; iridium, 1,631; ruthenium, 2,921; palladium, 58,478 and rhodium, 6,654.

	Iridium		Rhodium		Platinum		Ruthenium		Palladium		Osmium	
	Cr.	Percent	Cr.	Percent	Cr.	Percent	Cr.	Percent	Cr.	Percent	Cr.	Percent
Alaska	3,024	52.0	381	7.4	18,150	11.8	-	-	57	.1	739	69.4
Colombia	553	11.3	-	-	35,063	22.1	-	-	221	.3	1	.1
Canada	549	19.5	4,747	92.3	108,240	66.4	1,899	88.8	74,052	90.6	-	-
Cont. U.S.	351	7.2	11	.3	416	.3	195	0.1	-	-	325	30.5
	4,877	100.0	5,141	100.0	152,859	100.0	2,138	100.0	74,340	100.0	1,065	100.0

1/ Department of Commerce import data of crude platinum imports, broken down on basis of refiners' estimates of metal content of crudes from various countries.

USUAL USE PATTERN OF PLATINUM METALS:

	Troy Ounces	Sales to Principal Consuming Industries 1941						Total
		Chemical	Electrical	Dental	Jewelry	Misc.		
Platinum	174,250	32.6	17.1	8.5	36.1	5.7		100.0
Palladium	97,300	46.8	2.3	38.0	11.0	1.9		100.0
Rhodium	6,975	50.1	15.5	1.0	33.1	.3		100.0
Iridium	4,620	1.8	54.3	2.8	40.1	1.0		100.0
Ruthenium	4,070	2.3	34.8	1.3	53.1	8.5		100.0

REQUIREMENTS: Estimates of military and civilian requirements under revision at date of issuance of this abstract.

SUBSTITUTES: An apparent voluntary substitution of ruthenium for iridium is being made in the electrical industry to free the supply of iridium for airplane and tank magneto contact points. Palladium is being substituted for rhodium in jewelry.

SUMMARY OF PLATINUM METALS:

	Platinum	Iridium	Rhodium	Ruthenium	Palladium	Osmium
1940						
Stocks beginning of year	144,010	9,460	5,329	2,400	82,900	3/
New Supply	165,250	2,940	4,796	-	79,600	-
Primary	39,000	1,500	250	-	-	-
Secondary	48,000	1,200	960	-	-	-
Imports	78,250	240	3,586	-	-	-
Consumption (incl. exports)	159,120	5,500	4,700	-	69,300	-
Exports	56,800	-	50	-	300	-
1941						
Stocks beginning of year	150,140	6,900	6,425	7,800	93,200	-
New Supply	190,860	4,492	6,325	-	127,900	-
Primary	116,400	2,000	3,595	4,470	-	-
Secondary	35,700	1,200	960	-	-	-
Imports	38,760	1,292	1,770	-	-	-
Consumption (incl. exports)	196,000	4,695	5,750	4,070	-	-
Exports	18,950	170	50	-	-	-
1942						
Stocks beginning of year	141,000(90,670)	6,700 (3,678)	7,000 (3,610)	7,400 (6,020)	2/	-
New Supply	246,000 ref.	6,600 ref.	11,000 1/ref.	10,000 ref.	136,600	670
Primary	210,000	5,400	10,040	9,200	-	-
Secondary	36,000	1,200	960	800	-	-
Imports	-	-	-	-	-	-
Requirements	4/	4/	4/	4/	4/	4/
Exports	14,600	4/	4/	4/	4/	4/
1943						
Stocks beginning of year	5/	5/	5/	5/	5/	5/
New Supply	275,000	7,800	11,000	10,000	163,920	800
Primary	240,000	6,600	10,040	9,200	-	-
Secondary	36,000	1,200	960	800	-	-
Imports	-	-	-	-	-	-
Requirements	4/	4/	4/	4/	4/	4/
Exports	18,000	1,200	-	-	-	-

Source: R.M.B.

- 1/ 10,000 troy ounces of Canadian stocks of rhodium made available to U.S. - estimated supply for 1942 and 1943, 11,000 ounces; 1942 about 3,640, 1943 about 3,400 ounces.
- 2/ Stocks known to be increasing.
- 3/ No complete information available on Osmium, but supply appears to be adequate.
- 4/ Estimates of requirements for 1942 and 1943 are not shown at this time because of revisions now in process; they will be included later.
- 5/ Stocks for 1943 are not estimated because of the lack of requirements data.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 1, 1942
Revised abstract issued May 4, 1942

CONFIDENTIAL

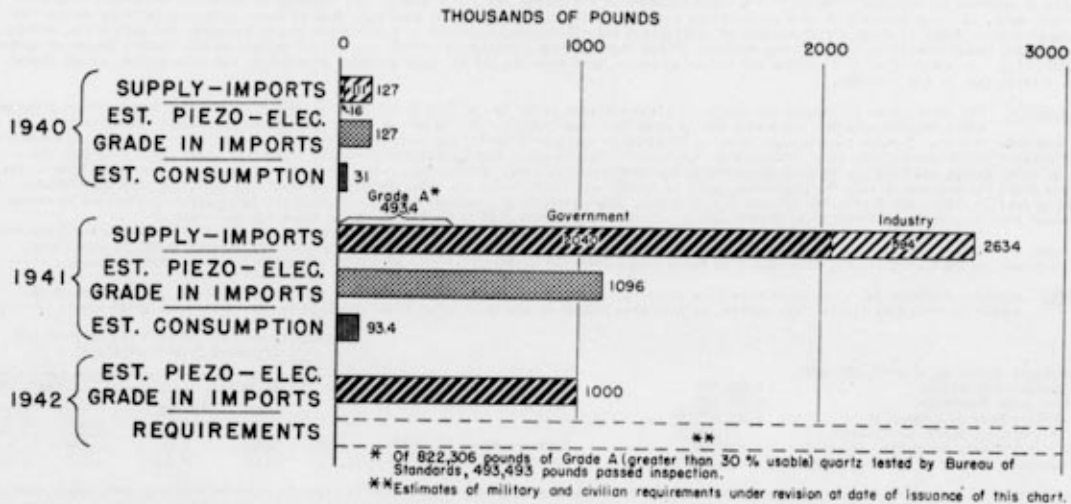
QUARTZ CRYSTALS PIEZO-ELECTRIC GRADE

PRIORITY ACTION

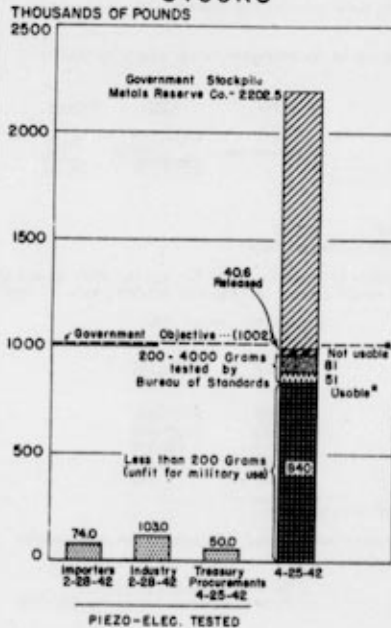
No priority action

DECLASSIFIED
E.O. 11652, Sec. 3(E) and 5(D) or (K)
Commerce Dept. Letter, 11-16-78
By RHP, Date

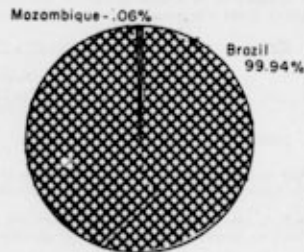
SUPPLY-DEMAND



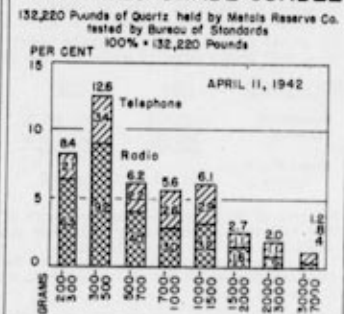
STOCKS



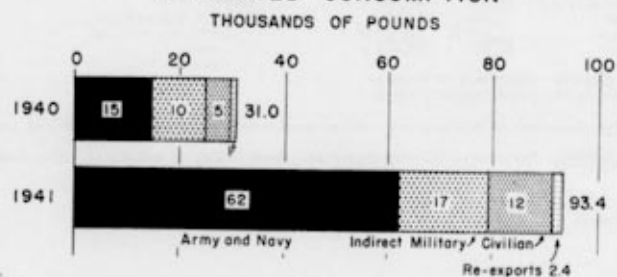
SOURCE OF SUPPLY IMPORTS



PIEZO-ELEC. GRADE USABLE



ESTIMATED CONSUMPTION



QUARTZ CRYSTALS (ROCK CRYSTAL)
(Piezo-Electric Grade)
All figures in pounds

BACKGROUND: Quartz is essential to the manufacture of radio oscillators and filters, telephone resonators and other sound equipment. Quartz, SiO₂, is one of the most common and widely distributed minerals. Brazil is the only commercial source of crystals weighing at least 1/2 pound, at least 30% usable by volume. The usable portion must be free from any inclusions, cracks, needle bubbles, or other flaws such as twinning. Only such good crystals are suitable in the manufacture of piezo-electric devices. The piezo-electric effect, a generating of electric potential when the crystal is under stress, is characteristic of all quartz, but piezo-electric devices to be used in radio transmitters and receivers, telephone resonators, submarine sounding devices, airplane and submarine detectors, etc., can be fabricated only from crystals or portions of crystals free from twinning, cracks, and inclusions. As these defects are almost universal only a small portion of the Brazilian quartz actually is suitable for the manufacture of these small precisely cut plates. Rock crystal is also essential for the lenses and prisms widely used in optical instruments, and when fused is employed in the chemical-electric trades. Skilled workers are necessary to produce the various control plates which require an extremely high degree of accuracy in cutting. Because of the rapid increase in the demand for quartz plates, the training of unskilled workers, taking from three to six weeks, is being hastened as much as possible, while the construction of complex machinery such as X-ray equipment is being accelerated by the Signal Corps. There is still a wide variety of inefficient and old-fashioned methods of fabrication in the industry, but problems of speeding up production are being cleared up by the Flying Squadron of the Signal Corps. This group of men consists of experts in the various phases of quartz plate fabrication. In addition to this service the larger companies have released all of their methods, procedures, and blue prints, to the Signal Corps for distribution in the industry.

SPECIAL PROBLEMS: The question as to whether our supply of piezo-electric grade quartz from Brazil will be sufficient to meet United States requirements depends upon the increasing use to which the small crystals can be put as almost 1/3 of the government stockpile is in crystals of less than seven ounces. The one manufacturer is using crystals as small as 1/2 pound, but the average minimum size ranges between 1 to 1 1/2 pounds, all, by specification, of 30% usable material. Estimates of the usable piezo-electric quartz from the Brazilian production range from 4 to 200. On February 9, 1941, Brazil reserved its exports of quartz to the American countries. Because the major production of Brazilian quartz had gone to Japan in previous years, it was feared that the production level in Brazil would not remain the same and thus would cut the supply of high grade quartz. As a result, on June 12, 1941, the United States entered into a preclusive purchasing agreement to buy virtually all of Brazilian production in excess of the amount sold to private purchasers (4,000,000 pounds minimum). A new arrangement for purchasing is now being discussed. The inaccessibility of much of the Brazilian quartz mining areas, some being 1800 miles from the point of shipment with 1/2 the trip by pack mule, is a delaying factor to expediting the production of quartz. In the past there has been a preliminary grading in Brazil with X-ray grading performed in the United States; most quartz is being graded entirely in Brazil in view of the necessity to decrease shipping space.

SUBSTITUTES: Although Rochelle Salts and Tourmaline have piezo-electric properties, Rochelle Salts are affected by moisture; and the Tourmaline supply is even more limited than quartz, so that possibility of substitution of other minerals for piezo-electric grade quartz is slight.

STOCKS:

Government Stocks as of April 25, 1942:

Government Objective	1,002,000
Government Stockpile	2,252,455
Metals Reserve Company 1/	2,202,470 2/
Procurement Division, Treasury	49,985 3/
Industry Stocks as of Feb. 26, 1942	103,000
Importers' Stocks of Feb. 26, 1942	74,000 4/

Quantity and Type of Material Released and Inspected from Stockpile 2/

Radio Quartz			Telephone Quartz	
Gross	5/ Usable	Percent of Total	Actual	Percent of Total
5,946	3,398	39.2	2,768	32.8
113,213	32,133	28.1	19,007	16.7

- 1/ Purchases by Metals Reserve Company are tested by Bureau of Standards, testing being restricted to crystals which appear from preliminary examination to be usable for piezo-electric purposes.
- 2/ Of this quantity 639,966 pounds weighed less than seven ounces per crystal and are considered unfit for piezo-electric purposes. The entire stock of M.R.C. was purchased with Brazilian inspection. Inspection of 132,220 pounds has since been performed by Bureau of Standards.
- 3/ Crystals purchased by Procurement Division, Treasury, are tested by the Bureau of Standards, and those selected for stockpile purposes consist of Bureau of Standards Grade "A" quartz.
- 4/ Includes 2,000 pounds rejected by a number of consumers because of low usability.
- 5/ The tested quantity of the stockpile cannot be assumed to be a true sample of the stockpile quality as the shipments differ widely in quality. 10 to 100% usable material included. The industry checks its purchases on actual quantity.

IMPORTS - SUPPLY:	1940	1941	1942	1943	1st Qtr. 1942
Government	15,576	2,039,833 4/	-	-	386,264
Industry	110,324	554,475 5/	-	-	79,093
Piezo-Electric Quartz 1/	126,500	2,634,308	-	-	467,357
	126,500	1,095,800	1,000,000	1,200,000	

SOURCES:	1941	Percent
Brazil	2,632,558	99.4
Mozambique	1,750 2/	.66
	2,634,308	100.00

- 1/ Estimate of Miscellaneous Minerals Branch of the amount of Piezo-Electric grade in total imports.
- 2/ This quantity was undoubtedly high grade quartz because quartz was inspected at point of shipment before purchase.
- 3/ Mozambique quartz is low-grade quartz.
- 4/ It is reported that on January 15, 1942, the M.R.C. had on hand in the United States 827,306 pounds of Brazilian Grade "A" quartz; after Bureau of Standards inspection 60% of this material remains as inspected U.S. Grade "A" greater than 30% usable quartz, leaving only 493,383 pounds of over 30% usable quartz.

ESTIMATED CONSUMPTION:	1940	1941
Army and Navy	15,000	60,000
Indirect Military	10,000	17,000
Civilian	5,000	12,000
Re-exports	1,000 2/	2,410 1/
Total	31,000	93,410

Total, all uses
Export
Domestic consumption:
Total, all ratings
AA-1
AA-2
A10
Other or none

PRODUCTION:	March, 1942
Plates	Unfilled
Total	180,113
Export	4,186
Domestic consumption:	175,926
AA-1	141,753
AA-2	718
A10	399
Other or none	13,096

- 1/ Actual quantity, Department of Commerce
- 2/ Estimated by the Miscellaneous Minerals

REQUIREMENTS: Estimates of military and civilian requirements under revision at date of issuance of this abstract.

GOVERNMENT CONTROL: Division of Industry Operations, Order M-146, issued May 18, 1942, exercises strict control over the products for which quartz crystals may be used.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Date as of April 25, 1942
Revised abstract issued May 11, 1942

CONFIDENTIAL

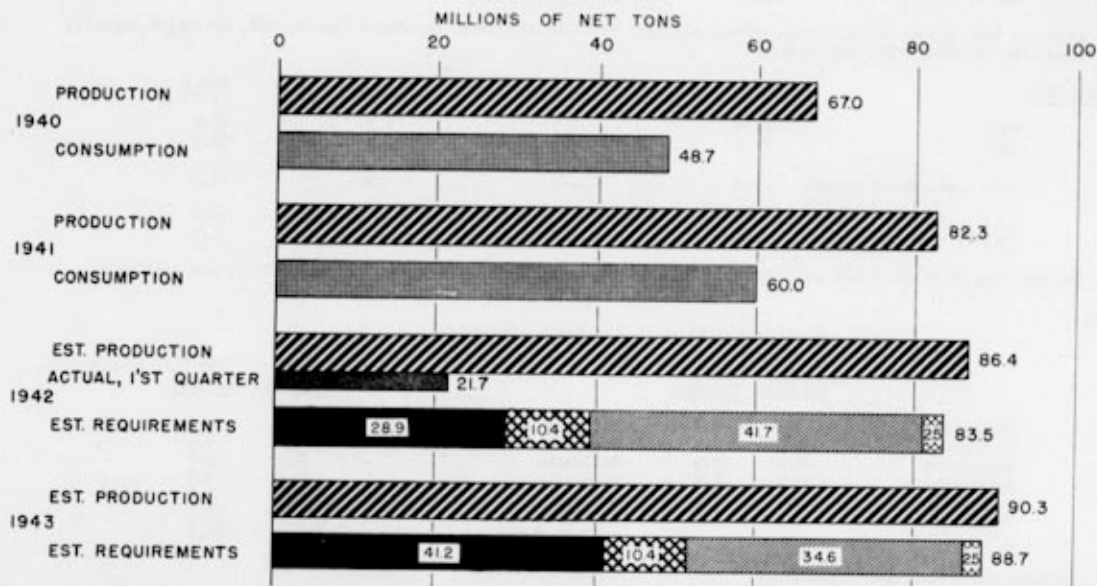
STEEL INGOTS

DECLASSIFIED
E.O. 11652, Sec. 3(E) and 5(D) or (G)
Commerce Dept. Letter, 11-16-72
By RHP, Date

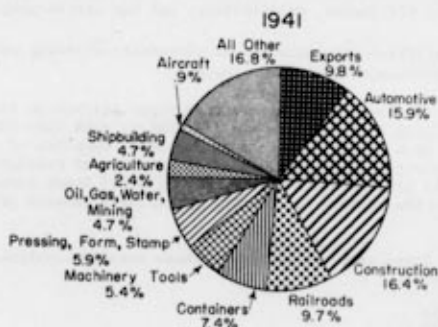
PRIORITY ACTION

General Preference Order M-21 issued August 9, 1941 placed steel in all forms under full priority control.

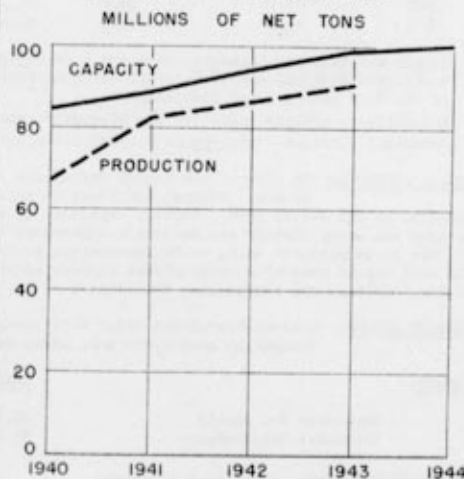
SUPPLY- DEMAND



STEEL DISTRIBUTION BY CONSUMING INDUSTRIES •



CAPACITY - PRODUCTION



STEEL INGOTS

(All figures in millions of net tons)

BACKGROUND: Over ninety-nine percent of all steel produced appears basically in ingot form, cast steel amounting to less than one percent of the total. Steel ingots are produced in the open hearth, the bessemer, or the electric furnace. Steel in the liquid state is poured or made to flow into metal molds of a size and shape suitable to the work in hand and allowed to solidify to form an ingot. When the metal in the mold has wholly or partly solidified, the mold is removed, and the ingot is wrought to the form desired by rolling, hammering, or pressing. Ingots usually are worked into intermediate or semi-finished products, known as slabs, blooms, billets, sheet bar, and forging rounds. The loss from ingot to finished steel averages about thirty percent.

<u>CAPACITY:</u> 1/	<u>Open Hearth</u>	<u>Bessemer</u>	<u>Electric</u>	<u>Total</u>
End of 1940	74.5	7.0	2.6	84.1
End of 1941	78.1	6.8	3.7	88.6
End of 1942	82.6	6.8	4.7	94.1
End of 1943	86.6	6.8	5.7	99.1
End of 1944	87.6	6.8	5.7	100.1

1/ American Iron and Steel Institute, actual capacity in 1940-1941; Iron and Steel Branch, WFB, estimated capacity expansion in 1942, 1943, and 1944.

<u>PRODUCTION:</u>	<u>Open Hearth</u>	<u>Bessemer</u>	<u>Electric</u>	<u>Total</u>
1940	61.6	3.7	1.7	67.0
1941	74.4	5.6	2.3	82.3
1942 (Jan.-March actual)	19.3	1.5	.9	21.7
1942 (est.) 1/	-	-	-	86.4
1943 (est.) 1/	-	-	-	90.3

1/ Estimates by Iron and Steel Branch, WFB. Breakdown by open hearth, bessemer, and electric is not available.

USES:

Steel Distribution by Consuming Industries

	1940 Percent	1941 Percent		1940 Percent	1941 Percent
Agriculture	3.3	2.4	Oil, gas, water, mining	3.9	4.7
Aircraft	0.2	0.9	Pressing, form., stamp 1/	4.7	5.9
Automotive	16.4	15.9	Railroads	8.3	9.7
Construction	14.3	16.4	Shipbuilding	2.1	4.7
Containers	6.3	7.4	Exports	16.6	9.8
Machinery, tools	4.8	5.4	All other	19.1	16.8
			Total	100.0	100.0

1/ Includes furniture and furnishings.

REQUIREMENTS: Reported by the Materials Requirements Section, Statistics Division, on April 14, 1942.

	<u>Direct Military</u> 1/	<u>Exports</u>	<u>Total</u>	<u>Facilities</u> 2/	<u>Essential Civilian</u> 3/	<u>Grand Total</u>
1942	28.9	10.4	39.3	41.7	2.5	83.5
1943	41.2	10.4	51.6	34.6	2.5	88.7

1/ Direct military requirements are based upon objectives of the 8-I Ultimate Aircraft Program; the Army Supply Program, Sections I (4/6/42) and II (4/9/42) covering equipment for ground and air forces, respectively; and the latest program of the Navy and Maritime Commission.

2/ Facilities - minimum needs for the production and maintenance of facilities and equipment to effectuate military programs.

3/ Essential Civilian - minimum requirements for the production and maintenance of civilian goods.

SPECIAL PROBLEMS: In view of the urgent demand for virtually all kinds of steel, the pressure upon ingot production is severe. Planned additions to capacity of over 10 million tons annually are expected to come into full operation by the end of 1944. Further expansion of capacity is limited by a number of important factors. Supplies of pig iron and scrap already are seriously threatened by shortage, and the possibility of an ultimate shortage of available iron ore is in prospect owing to transportation problems. In addition to these considerations, expansion of ingot capacity much beyond presently contemplated figures would be confronted with the problem of securing an adequate balance of forging, rolling, and fabricating facilities.

PRIORITY ACTION: General Preference Order M-21 issued August 9, 1941, placed steel in all forms under priority control. Subsequent amendments have increased the scope of control.

<u>SUMMARY:</u>	<u>1942</u>	<u>1943</u>
Estimated New Supply	86.4	90.3
Estimated Requirements	83.5	88.7

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 15, 1942
Revised abstract issued May 18, 1942

CONFIDENTIAL

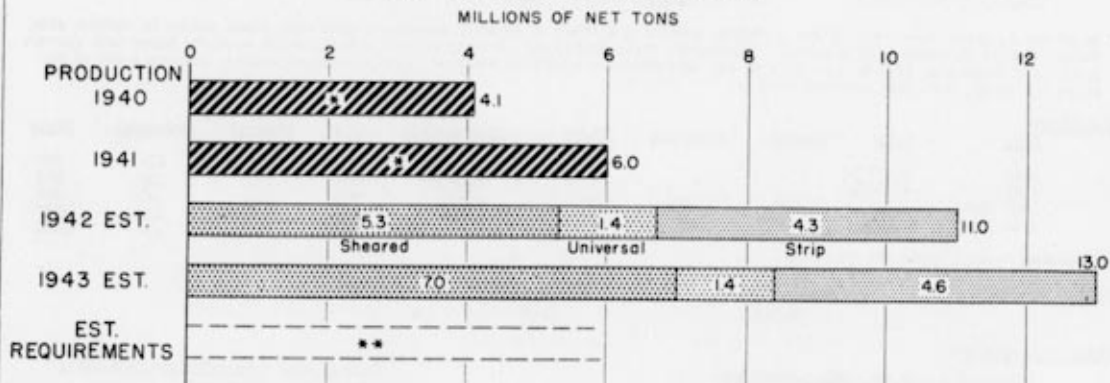
STEEL PLATES

DECLASSIFIED
EO 11652, Sec. 3(E) and 8(D) or 8(F)
Commerce Dept. Letter, 11-15-72
By RHP, Date

PRIORITY ACTION

General Preference Order M-21 August 10, 1941, placed steel in all forms under full priority control.
General Allocation Order No. 1-December 1, 1941, placed steel plates under complete allocation. Supplementary Order M-21-C March 9, 1942, includes stainless steel plates in allocation program.

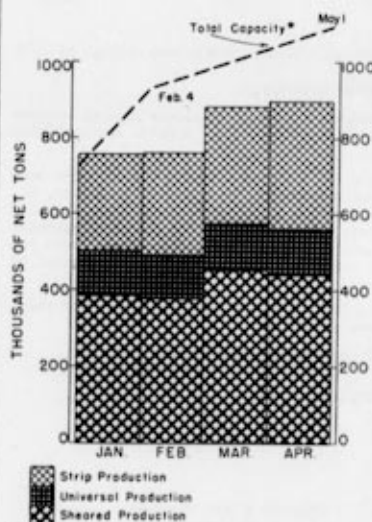
PRODUCTION-REQUIREMENTS



*Breakdown by mill types not available.

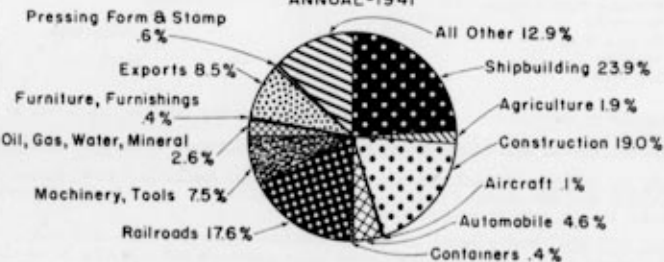
**Estimates of military and civilian requirements under revision at date of issuance of this chart.

CAPACITY-PRODUCTION MONTHLY 1942

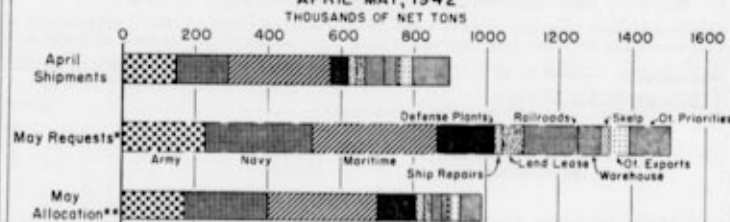


*Total sheared, universal and strip capacity.

CONSUMPTION PATTERN BY CONSUMING INDUSTRIES ANNUAL-1941



CONSUMPTION PATTERN BY MAJOR DEFENSE CATEGORIES APRIL-MAY, 1942



*Requests by consumers from producers for May deliveries.

**Determined by WPB Requirements Committee.

STEEL PLATES
(Figures in thousands of net tons)

CONFIDENTIAL

BACKGROUND: Steel plate is one division of a large class of finished steel products known as flat hot rolled steel. Plates are classified as sheared and universal according to the kind of mill in which they are rolled. Sheared plates are rolled between horizontal rolls and sheared on all edges to the dimensions required. Universal plates are rolled between horizontal and vertical rolls to thicknesses and widths required, and sheared only on the ends to the lengths desired. Strip mills are being converted to plate production, some such mills now being able to roll plate up to 90" in width, others up to 1½" in thickness. Plates are classified according to composition as carbon steel plates, low metalloid plates, alloy steel plates, and stainless steel plates.

CAPACITY: (Monthly) 1/	Total	Sheared	Universal	Strip
January 1, 1942	725	325	114	286
February 1, 1942	932	401	125	406
May 1, 1942	1,092	472	142	478
January 1, 1943 (Est.)	1,112	482	142	498

1/ As of May 1, 1942, there were thirty companies operating a total of 88 mills capable of producing steel plates in various size. These comprise 31 sheared plate mills, 30 universal plate mills, and 27 strip mills. Monthly rated capacity takes into account probable distribution of orders as to size and specification of plates required, available steel supply, competing demand for sheet and strip, and other relevant factors.

PRODUCTION:	Year	Total	Sheared	Universal	Strip	1942 Monthly	Total	Sheared	Universal	Strip
	1940	4,128 1/				January	754	382	122	250
	1941	6,038 1/				February	759	378	112	269
	1942 (Est.)	11,000	5,250	1,400	4,350	March	879	450	123	306
	1943 (Est.)	13,000	7,000	1,400	4,600	April	896	437	122	337
						Total (4 mos.)	3,288	1,647	479	1,162

1/ Breakdown by mill types not available.

INVENTORY:	March 1, 1942	April 1, 1942
	1,943	1,638

CONSUMPTION PATTERN:

Annual 1941 - By consuming industries			Current 1942 - By major war categories		
	Tonnage	Percent		April Shipments	May Requests 1/
Agriculture	114	1.9	Army	148.0	236.9
Aircraft	3	0.1	Navy	141.2	284.0
Automobile	283	4.6	Maritime	281.8	346.3
Construction	1,162	19.0	Defense Plants	50.2	157.0
Containers	25	0.4	Ship Repairs	21.6	21.6
Furniture, Furnishings	22	0.4	Lend-Lease	23.1	59.8
Machinery, Tools	459	7.5	Railroads	51.3	146.4
Oil, Gas, Water, Mineral	160	2.6	Warehouse	37.5	61.6
Pressing Form & Stamp	35	0.6	Skelp	6.7	25.1
Railroads	1,076	17.6	Other Exports	35.7	51.1
Shipbuilding	1,451	23.9	Other Priorities	98.2	116.3
Exports	521	8.5	Total	896.0	1,506.7
All Other	794	12.9			
	6,115	100.0			983.6

1/ Requests by steel plate consumers from producers for May delivery, supported by allocation orders or preference ratings of A-10 or higher.

2/ Determination as established by WPB Requirements Committee. Producers' schedules revised accordingly.

EXPORTS AND IMPORTS: No exclusive export data on plates available. U. S. Bureau of Foreign and Domestic Commerce reports exports of slightly over 405 thousand tons of plates, sheets, skelp, and strip over 1/10 inch in thickness in 1941. Imports are negligible, amounting to less than 75 tons in 1941.

SPECIAL PROBLEMS: Rising demand had so far exceeded capacity by late 1941 that on December 1, steel plates were placed under complete allocation. On January 1, 1942, steel plate producers had a backlog of unfilled orders amounting to 4,586 thousand tons, or more than three-fourths of entire 1941 production. The greatest shortage has been in heavy armor plate produced on sheared mills and urgently needed by the Army, Navy, and Maritime Commission. In order to release sheared plate capacity for the most important uses, specifications are being revised wherever possible, to utilize medium and light plate from converted strip mills. Plate production from these mills has now reached a rate of 350 thousand tons per month. Further expansion in this direction is limited by the demand for sheet and strip, also urgently required by the war program.

Additional plant capacity of from three to four million tons annually, principally of the sheared mill type, is scheduled to come into operation over the next year and a half. In the meantime, current pressure upon inventories and production is severe.

REQUIREMENTS: Estimates of military and civilian requirements under revision at date of issuance of this abstract.

SUPPLY-CONSUMPTION SUMMARY:

Annual consumption rates, based upon:

a. January to April shipments:	9,864
b. April shipments:	10,752
c. May allocation:	11,844

Annual supply estimates:

1942:	11,000
1943:	13,000

CONFIDENTIAL

TIN

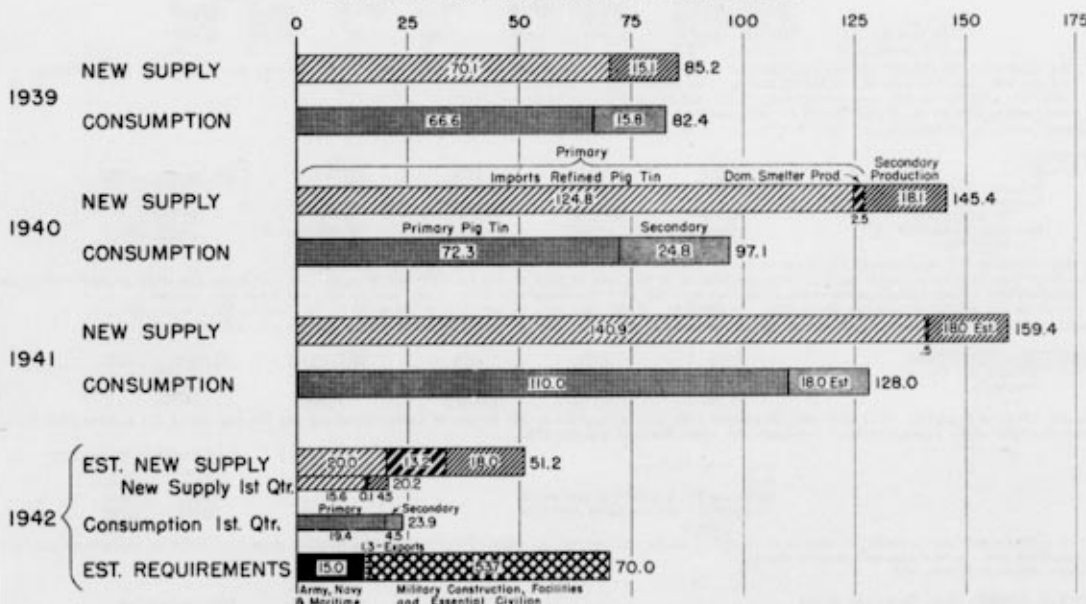
DECLASSIFIED
E.O. 11652, Sec. 3(E) and 5(D)
Commerce Dept. Letter, 11-15-72
By RHP, Date

PRIORITY ACTION

WPB issued Order M-43-a Dec. 31, 1941 limiting use of tin, Jan. 1, 1942 through March 31, 1942 in making certain items to 50 per cent of consumption in the like 1940 period; effective April 1, 1942, consumption in these items is prohibited entirely. For items not specified, consumption after April 1 must be reduced to 40 per cent of the use in 1940. Content in solder, tubes and terne for terne plate has been limited. Allocations of available supplies of primary tin are made monthly.

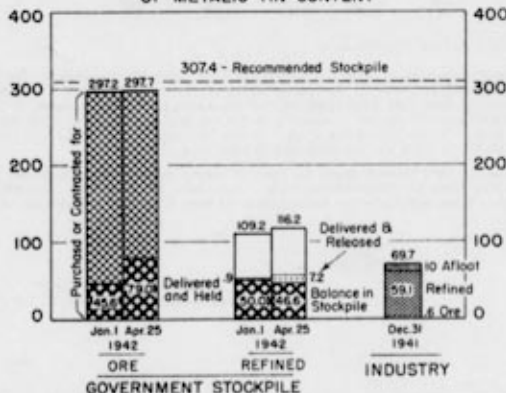
SUPPLY - DEMAND

THOUSANDS OF LONG TONS OF METALIC TIN CONTENT



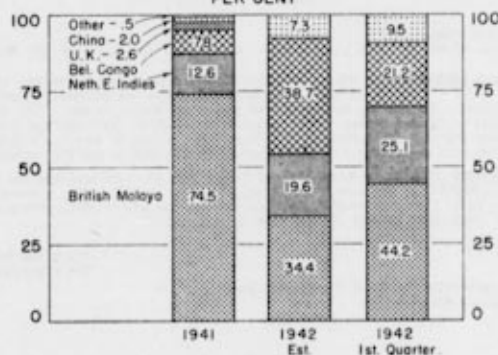
STOCKS

THOUSANDS OF LONG TONS OF METALIC TIN CONTENT



SOURCE OF IMPORTS

PIGS, BARS AND BLOCKS PER CENT



CONFIDENTIAL

TIN
(All figures metallic tin content in long tons)

BACKGROUND: Tin comes from an oxide ore, cassiterite, which often is shipped great distances for smelting. Very little tin is used in pure metallic form. The metal is valuable in modern life because it provides thin, smooth, non-corrosive coatings for sheet steel and to a lesser extent for copper and brass goods. It is used also as an alloy in bronze for bearings and various strong castings. Mixed with lead, it makes solder, foil and collapsible tubes.

Since tin is found in very limited areas, its production has been controlled strictly in recent years, and hence limited stocks have been accumulated. U.S. imports of raw metal have been cut about 80% by war, and the most productive areas are now controlled by Japan. The United States heretofore has had no tin smelter capacity although this country consumes over half of the world production. Before the Malay States were invaded, smelting was extensive there; other large capacity smelters are located in England, where the Bolivian and part of the African tin concentrates have been smelted in the past. Holland and Belgium formerly smelted tin from the East Indies and Africa. The United States has financed the building of a smelter at Texas City west, with a capacity to treat 50,000 tons of concentrate a year and produce 18,000 long tons of fine tin. It will process Latin American and other ores. Production was started in April, when 900 long tons were produced; 1000 tons is the expected production for May. Equipment is now on order to enlarge the capacity to produce 50,000 tons of fine tin annually.

STOCKS: Stocks, industrial and government, necessarily must carry the United States through 1942, or until domestic smelter capacity at Texas City can attain capacity production.

Recommended Government stockpile 307,434 tons of refined tin (including 100,000 long tons to be purchased per annum).

Government Stock Position as of Jan. 1, and April 25, 1942

	Purchased or Contracted For		Delivered		Released for Use		Balance	
	Jan. 1	Apr. 25	Jan. 1	Apr. 25	Jan. 1	Apr. 25	Jan. 1	Apr. 25
Ore 1/	297,195	297,715	45,572	78,971	0	0	45,572	78,971
Refined 2/	109,179	116,179	50,944	53,806	905	7,220	50,039	46,586
Cast Metal 3/	0	293	0	0	0	0	0	0

1/ The contracts with Bolivia include 249,560 tons of concentrates with tin content of 117,837 tons. This contract encourages full production in Bolivia and exclusive sale to the United States, from other than the Patiño properties.

2/ Contracts with far eastern countries total 53,639 and are not likely to be realized.

3/ Contracts placed in the United States for expected recoveries from scrap on the conservation program.

Industry stocks as of December 31, 1941, U.S. Bureau of Mines: Ore 615; Refined 59,085; Afloat 10,000.

NEW SUPPLY:

	1939	1940	1941	1942 (Est.)	1st Quarter - 1942
Primary					
Imports refined pig tin 1/	70,102	124,810	140,873	20,000	15,568
Domestic Smelter production 2/	-	2,480	546	13,200	97
Total Primary	70,102	127,290	141,421	33,200	15,665
Secondary production 3/	15,024	16,111	16,000 (Est.)	16,000 (Est.)	4,500 (Est.)
Total Tin	85,126	143,401	157,421	51,200	20,165

1/ Not including tin concentrates purchased by Metals Reserve Company and stored at Texas City for smelting.

2/ Mostly from foreign concentrates (U.S. mine production in 1939 was 34 tons of tin and 1940 was 44 tons; 1941 was 40 tons whereas imports of foreign concentrates (other than for government stockpile) were 500 tons tin content in 1939, 3,000 tons in 1940 and 5,424 tons in 1941.

3/ Includes tin recovered from old scrap only. In addition, 10,982 tons were recovered from new scrap in 1939 and 11,371 tons in 1940.

Monthly imports of pigs, bars and blocks in 1942, U.S. Dept. of Commerce: January 5,376; February 6,214; March 3,978; April 2,216.

CONSUMPTION - REQUIREMENTS:

	1939	1940	1941	1942 (Est.)	1st Quarter - 1942
Primary pig tin	66,583	72,324	109,969	52,000	19,375
Secondary	15,845	26,630	16,000 (Est.)	16,000	4,500
	82,428	97,154	127,969	70,000	23,875

Sources: Figures for 1939, 1940, 1941 and 1st quarter 1942 are as reported by the Bureau of Mines indicating the tin content of all manufactured products after the first stage of manufacture. Estimate for 1942: Tin-Lead Branch, WPB

	1942 (Est.)	1942 Reported Consumption
Army, Navy, Maritime	15,000	Jan. 6,985
Exports	1,500 1/	Feb. 7,604
Remaining for military construction, facilities, and essential civilian	53,700	Mar. 1,286
Total	70,000	April 1,162
		31,037

1/ This figure does not include tin content of babbitt, solder and bronze, nor that of tin plate to be shipped abroad; it likewise calls manufactured tin products and tin in containers shipped abroad.

Source: Tin-Lead Branch, WPB

SOURCE OF IMPORTS: Pigs, Bars, and Blocks

	1941		1942 (Est.)		1942 1st Quarter	
	Amount	Percent	Amount	Percent	Amount	Percent
British Malaya	104,871	74.5	6,876	34.4	6,876	44.2
Netherlands East Indies	17,739	12.6	3,912	19.6	3,912	25.1
Belgian Congo	11,030	7.8	7,729	38.7	3,897	21.2
United Kingdom	3,641	2.6	-	-	-	-
China	2,846	2.0	1,477	7.3	1,477	9.5
Other	746	.5	4	.1	4	.1
	140,873	100.0	20,000	100.0	15,568	100.0

1/ Less than 0.1%
Imports of Tin Ore, 1st Quarter 1942: Netherlands East Indies, 6,229; Bolivia, 6,000; Mexico, 13; Other, 2.

SPECIAL PROBLEMS: The use of old scrap by drossing. It is estimated, would salvage 4,130 long tons of tin during the first year if a quarter of the tin cans were drossed. Five drossing plants are planned, but are only "on paper" at present. The installation of electrolytic tin plate facilities in place of the hot-dip method is both economical and efficient. U.S. Steel expects to save over 3,000 long tons of tin annually by this process to be installed in several cities. This corporation will also institute the chemical treatment of blackplate to substitute for tin plate; this substitute can safely be used where the acid content of food is low. This will save 1,675 long tons a year. If the entire tin plate industry were converted to the electrolytic process, the saving would be approximately 19,200 tons on the tin content of tin plate for 1942 estimated at 32,000 long tons.

GOVERNMENT CONTROL: WPB issued Order M-43-a Dec. 31, 1941 limiting use of tin, Jan. 1, 1942 through March 31, 1942 in making certain items to 50 per cent of consumption in the like 1940 period; effective April 1, 1942, consumption in these items is prohibited entirely. For items not specified, consumption after April 1 must be reduced to 40 per cent of the use in 1940. Content in solder, tubes and terms for terms plate has been limited. Allocations of available supplies of primary tin are made monthly.

SUMMARY:

Total New Supply	1942
Total Requirements	70,000

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 11, 1942
Revised Abstract issued May 18, 1942.

TITANIUM ORES (ILMENITE AND RUTILE)

DECLASSIFIED
E.O. 11652, Sec. 3(E) and 5(D) of (a)
Commerce Dept. Letter, 11-16-78
By RHP, Date

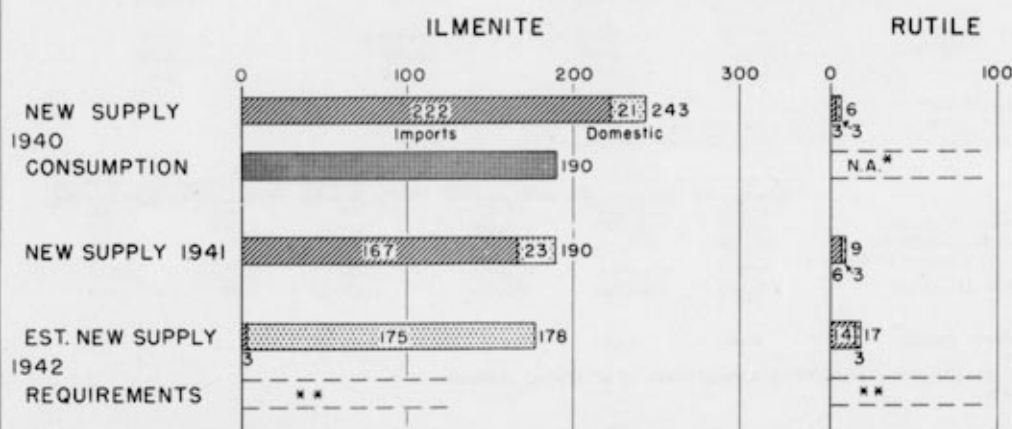
PRIORITY ACTION

General Preference Order M-44 and amendments established a defense pool of all titanium dioxide for pigment purposes.

Ilmenite is the chief source of titanium dioxide, containing from 40% to 60% TiO_2 . Rutile, or titanium oxide, contains 88% to 96% TiO_2 .

SUPPLY, CONSUMPTION AND REQUIREMENTS

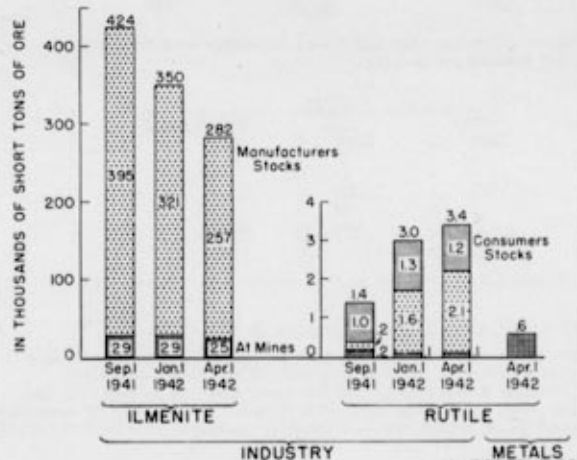
IN THOUSANDS OF SHORT TONS OF ORE



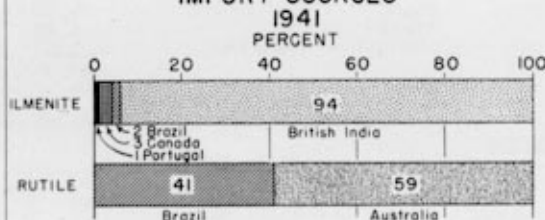
*Data on consumption of rutile inadequate. Bureau of Mines estimates 2,800 tons were consumed during last five months of 1941.

**Estimates of military and civilian requirements under revision at date of issuance of this chart.

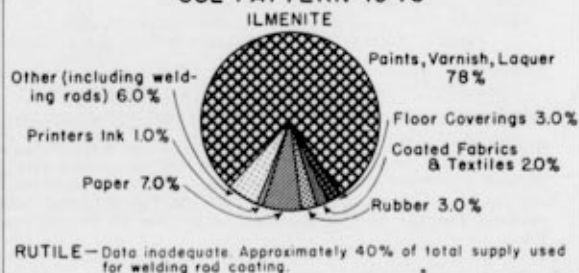
STOCKS



IMPORT SOURCES



USE PATTERN-1940



TITANIUM ORES

Ilmenite and Rutile

(All figures in short tons of ore)

CONFIDENTIAL

BACKGROUND:

Ilmenite, the double oxide of iron and titanium, is the chief source of titanium dioxide, containing from 40% to 60% TiO_2 according to grade of ore. Titanium dioxide has a wide and increasing variety of uses, chiefly in titanium pigments, but a small percentage is used as an alloy in steel production. It is used as an opacifier in paints and decorative coatings, partially supplementing lead and zinc; as filler in paper making, giving color, opacity, and brightening; as an ingredient in rayon, imparting luster; as a non-toxic whitener in cosmetics, especially face powder, lotions, and soap; and in rubber as a color compound. As ferro-titanium, and ferro-carbon titanium, it is used for imparting strength, ductility, and hardness to steel, and as a partial substitute for manganese, vanadium, tungsten, and molybdenum. Titanium compounds are used also as mordants in dyeing, as chemical catalysts, and for smoke screens in warfare.

Rutile, or titanium oxide ore, contains 88% to 96% TiO_2 . Its chief use is in the coating of welding rods for improving the steadiness of the electric arc and eliminating oxygen from the weld. Such welding rods are used in tank and ship construction, and more generally, in industrial repair work. Synthetic rutile processed from ilmenite and manufactured TiO_2 , made from ilmenite, have been successfully used as welding rod coating. Increasing replacement of natural rutile in this use is anticipated. Rutile-derived TiO_2 also is used in the production of ferro-titanium and other alloys. A substantial amount of rutile has been used in ceramics for improving the acid resistance of ceramic glaze, but ceramic uses are declining in the face of war demands for rutile for other purposes.

NEW SUPPLY:		1940	1941	1942 (Est.)	1943 (Est.)
Ilmenite:	Imports	221,641	166,846	2,500 1/	0
	Domestic	21,100	23,489	175,000	370,000
	Total	242,741	190,335	177,500	370,000
Rutile:	Imports	2,500 2/	6,000 2/	13,820 3/	N.A.
	Domestic	2,600	3,130	2,600	2,600
	Total	5,100	9,130	17,420	N.A.

- 1/ Actual four months imports, 1942: 2,139 tons. Few additional imports anticipated.
 2/ Includes rutile content of "sirconium ores" imports, as estimated by Bureau of Mines.
 3/ Shipping arranged by Maritime Commission: 8,820 tons from Australia; 5,000, Brasil.

STOCKS:

Industrial:	ILMENITE			RUTILE		
	Sent. 1, 1941	Jan. 1, 1942	Apr. 1, 1942	Sent. 1, 1941	Jan. 1, 1942	Apr. 1, 1942
At Mines	28,935	29,352	25,370	168	56	161
Manufacturers of Alloys	7,400	10,677	9,422	249	1,668	2,092
Manufacturers of Pigments	387,738	310,779	247,224	0	0	0
Consumers of Titanium Products	1/	1/	1/	993	1,260	1,246
Total Industrial	424,073	350,808	282,016	1,410 2/	2,984	3,499
Government:						
Metals Reserve Company	none	none	none	none	31	588

- 1/ Consumers of ilmenite are classified as manufacturers of alloys and pigments.
 2/ Data incomplete.

CONSUMPTION:

Industry	1939		1940	
	Short Tons of Ilmenite	Per Cent	Short Tons of Ilmenite	Per Cent
Paints, Varnish and Lacquer	119,393	78	147,996	78
Floor Coverings	4,664	3	6,340	3
Coated Fabrics and Textiles	4,830	3	4,840	2
Rubber	5,248	4	5,367	3
Paper	11,130	7	12,357	7
Printers Ink	1,592	1	1,777	1
Other (Incl. Welding Rods)	5,717	4	11,374	6
	152,574	100	190,051	100

RUTILE:
 Data on consumption of rutile inadequate. Bureau of Mines estimates that 2,800 tons of rutile were consumed in last 5 months of 1941. The bulk of this was used for welding rod coating.

IMPORTS:

	ILMENITE				RUTILE			
	1940	1941	1942 (4 mos.)		1940	1941	1942 (4 mos.)	
	Tons	Tons	Tons	%	Tons	Tons	Tons	%
Portugal	0	0	0	0	6	0	0	0
Canada	0	0	5,725	3	0	0	0	0
Brasil	2	-	3,709	2	128	5	2,448	41
British India	221,637	100	156,079	94	0	0	0	0
Australia	2	-	364	-	2,400 1/ 25	3,500 1/ 59	2,209 1/ 62	
Total	221,641	100	166,846	100	2,534	100	5,948	100

- 1/ Estimate, based on inclusion of rutile content of Australian "sirconium ores". These ores contain approximately 60% sirconium, 20% rutile, 10% ilmenite, and 10% gangue.

REQUIREMENTS: Estimates of military and civilian requirements under revision at date of issuance of this abstract.

SPECIAL PROVISIONS: With the virtual cessation of imports, expansion of domestic production must be relied upon to meet future requirements. General Preference Order H-44 as amended establishes a defense pool of 20 per cent of all titanium dioxide currently produced for pigment purposes. Expansion of domestic ilmenite production is rapidly under way. It is expected that one plant, the government-financed mine (Du Pont-National Lead) in Essex County, New York, will account for the bulk of domestically produced ilmenite in 1942 and 1943. A portion of any possible shortage of rutile may be covered by increasing use of manufactured TiO_2 .

CONFIDENTIAL

TUNGSTEN

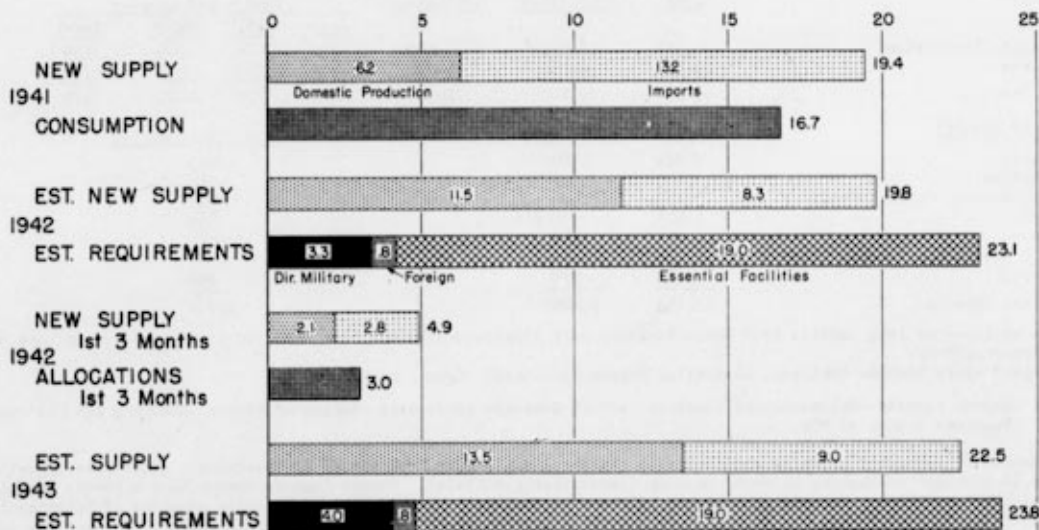
DECLASSIFIED
E.O. 11652, Sec. 3(E) and 5(D) of 40
Commerce Dept. Letter 11-16-73
By RHP, Date

PRIORITY ACTION

WPB Order M-14 (June 11, 1941) divided high-speed steel into two types: Class A, containing over 3% molybdenum but not over 7% tungsten; and Class B, containing over 12% tungsten. It required that at least 50% (since Nov. 29, 75%) of each customer's order must be for the low-tungsten type. This has reduced the proportion of tungsten in high-speed steels from about 18% to less than 7%. WPB Order M-29 (Aug. 30, 1941) placed tungsten under allocation. M-29-b (February 14, 1942) restricted or prohibited the use of tungsten for various minor articles.

SUPPLY-DEMAND

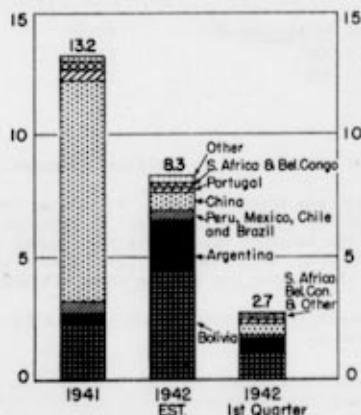
MILLIONS OF POUNDS OF CONTAINED METAL



IMPORTS

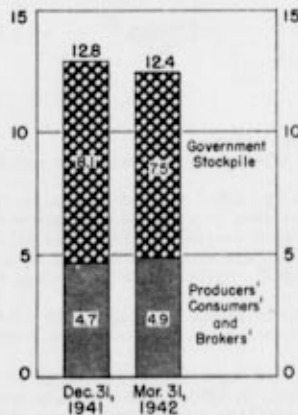
BY COUNTRY OF ORIGIN

MILLIONS OF POUNDS OF CONTAINED METAL



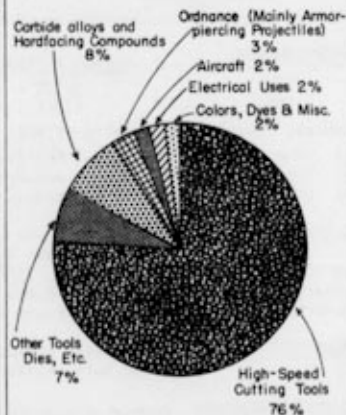
STOCKS

MILLIONS OF POUNDS OF CONTAINED METAL



USES

FEB. 1942



(1000 lbs. of contained molybdenum)

BACKGROUND: Tungsten is a metal (symbol W) used principally in high-speed tool steels. It imparts hardness and toughness to the steels. Cutting tools made of these tungsten alloys retain their edges much better than tools made of ordinary carbon steels, particularly at high speeds. Tungsten is usually shipped from the mines in the form of a concentrate (60% WO₃) of which 47.5% is metallic tungsten.

USE PATTERN, February 1942:

	Percent
High-speed cutting tools	76
Other tools, dies, etc.	7
Carbide alloys and hard-facing compounds	8
Ordnance (mainly armor-piercing projectiles)	3
Aircraft	2
Electrical uses (filaments for radio tubes, light bulbs, etc.)	2
Colors, dyes and miscellaneous	2
All uses	100

Source: Estimated by Tungsten Branch of WPB on basis of consumers' reports.

CONSUMPTION:

	1941	1942 1/	1942 (Allocations)				
			Jan.	Feb.	March	April	Four Months
	16,700	23,090	1066	821	1124	1223	4234

Source: Tungsten Branch of WPB.

1/ Estimated 1942 requirements; see details below.

NEW SUPPLY:

	1941	1942 (Est.)	1943 (Est.)	1942 - 1st Quarter			
				Jan.	Feb.	March	Total
Domestic Production	6,222	11,540	13,500	726	644	765	2135
Imports	13,153	8,260	9,000	958	787	995	2740
Total	19,375	19,800	22,500	1684	1431	1760	4875

Source of Imports:

	1941	1942 (Est.)	1942 - 1st Quarter			
Bolivia	2,324	4,500			1,093	
Argentina	443	2,000			568	
Peru, Mexico, Chile, Brazil	463	400			103	
China	9,017	750 1/			559	
Portugal	355	200			112	
South Africa and Belgian Congo	388	150			47	
Other 2/	163	260			258	
All imports	13,153	8,260			2,740	

1/ The estimate of 1942 imports from China includes only tungsten which has been received or is believed to have been shipped already.

2/ "Other" areas include Thailand, Australia, French Indo-China, Egypt, Malaya.

Source: Actual imports--Department of Commerce; actual domestic production--Bureau of Mines; 1942 and 1943 estimates--Tungsten Branch of WPB.

Domestic production is being expanded with financial assistance from the U. S. Government, which also is making efforts to increase production in South America (particularly Bolivia). Import figures assume that adequate shipping space will be available. Furnace capacity is believed sufficient for converting prospective supplies of tungsten into ferro-tungsten in 1942. However, furnaces are generally interchangeable among various ferro-alloys, so that the demand for all of these must be considered in evaluating conversion capacity.

STOCKS:

	January 1, 1942	April 1, 1942
Producers', consumers', and brokers'	4,731	4,897
Government stockpile	8,117	7,458
Total	12,848	12,355

Source: Industry stocks--Bureau of Mines; government stocks--Tungsten Branch of WPB.

REQUIREMENTS:

	Direct Military 1/	Foreign 2/	Essential Facilities 3/	Total
1942	3,338	747	19,005	23,090
1943	4,011	747	19,005	23,763

Source: Statistics Division of WPB.

1/ Army, Navy, Aircraft, and Maritime.

2/ For materials as such -- Lend-Lease and other.

3/ Minimum needs for the production and maintenance of facilities and equipment essential to the military programs.

GOVERNMENT CONTROL: WPB Order M-14 (June 11, 1941) divided high-speed steel into two types: Class A, containing over 3% molybdenum but not over 7% tungsten; and Class B, containing over 12% tungsten. It required that at least 50% (since November 29, 75%) of each customer's order must be for the low-tungsten type. This has reduced the proportion of tungsten in high-speed steels from about 18% to less than 7%. WPB Order M-29 (Aug. 30, 1941) placed tungsten under allocation. M-29-b (February 14, 1942) restricted or prohibited the use of tungsten for various minor articles.

SUBSTITUTION: There is little possibility of replacing tungsten by other materials to a greater extent than now is being done; the main substitutes, molybdenum and vanadium, also are scarce.

SPECIAL PROBLEMS: Present estimates are that requirements for tungsten will exceed new supply by 3290 thousand lbs. in 1942 and by 1263 thousand lbs. in 1943. Unless supply proves larger than anticipated, the deficits will have to be met by cutting into stocks or by curtailing some important use of tungsten. One such use may be armor-piercing projectiles; the Army is considering the advisability of eliminating tungsten from all but a few types of ammunition.

SUMMARY:

	1942	1943
Estimated New Supply	19,800	22,500
Estimated Requirements	23,090	23,763

CONFIDENTIAL

VANADIUM

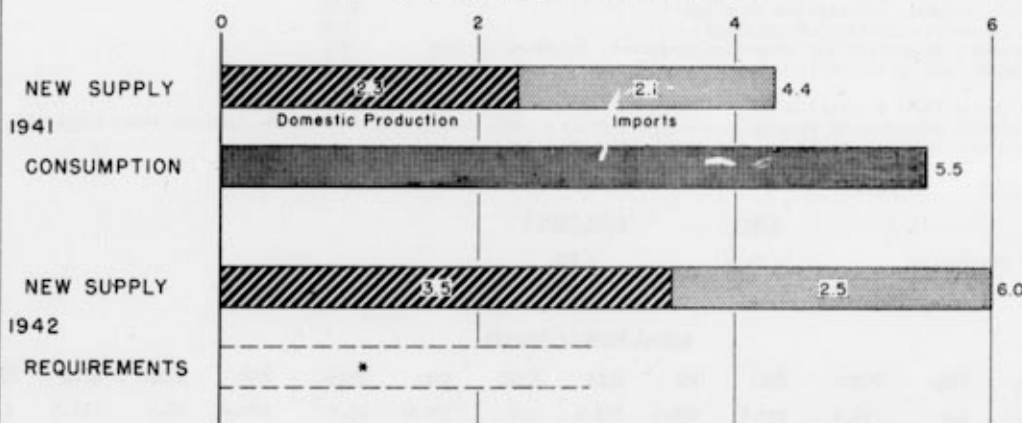
DECLASSIFIED
E.O. 11652, Sec. 3(E) and 5(D) of (44)
Commerce Dept. Letter, 11-18-78
By RHP, Date

PRIORITY ACTION

WPB Order M-23-a (December 20, 1941) placed Vanadium under complete allocation.
General Imports Order M-63 gives the U.S. Government control over imports.

SUPPLY-DEMAND

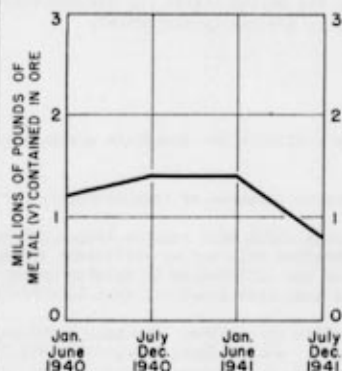
Millions of Pounds of Metal (V) Contained in Ore



*Estimates of military and civilian requirements under revision at date of issuance of this chart.

ACTUAL IMPORTS

PRACTICALLY ALL FROM PERU



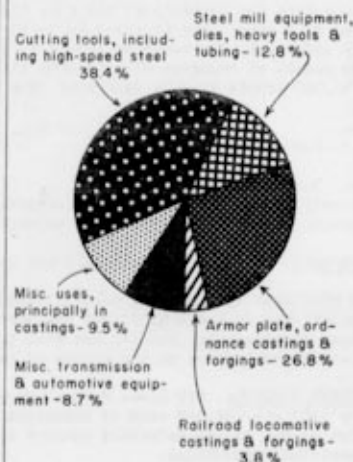
STOCKS

U.S. INDUSTRIAL
JAN 1, 1942



USES

SEPTEMBER, OCTOBER 1941



VANADIUM

(All figures in 1000 pounds of metal V contained in ore)

BACKGROUND: Vanadium is a silvery white metal which is usually shipped from the mines in the form of vanadium pentoxide (V_2O_5 - 56% metal V content) contained in ores or concentrates.

USES: Vanadium is used principally to improve the high-tensile strength, hardenability, and shock-resisting qualities of steel. Over 95% of United States consumption is normally for the manufacture of ferro-vanadium which is then converted into steel alloys; the remainder is used as a catalyst or reagent in the chemical industry.

Vanadium is essential for high-speed steels the standard formula of which has long been 18% tungsten, 4% chromium and 1% vanadium. This is largely being replaced under WPB Order M-14 by a high-speed steel formula specifying less tungsten and more molybdenum and vanadium (about 1.5 percent of the latter). There is considerable disagreement over the most effective proportions of vanadium to use in armor plate and various other products. Formulas for such uses have varied sharply in the past.

USE PATTERN 1/ September and October, 1941

Uses	Per Cent
Cutting tools, including high-speed steel	38.4
Steel mill equipment, dies, heavy tools and tubing	12.8
Armor plate, ordnance castings and forgings	26.8
Railroad locomotive castings and forgings	3.8
Miscellaneous transmission and automotive equipment, including springs	8.7
Miscellaneous uses, principally in castings	9.5
	100.0

Source: SPAB report (L-V) on vanadium.

1/ Based on reports submitted by consumers; does not include a small amount used outside the iron and steel industry. The proportion used for cutting tools is now much higher than shown here.

CONSUMPTION, 1941: 5,540

	1941	1942 (Est.)
Domestic Production	2,300.4	3,500
Imports	2,138.6 1/	2,500
Total	4,439.0	6,000

Actual Monthly Imports

Date	Jan.	Feb.	March	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1941	153.4	0.0	246.8	250.6	420.6	293.5	0.0	340.0	15.9	204.3	46.5	167.0	2,138.6
1942	135.0	0.0											

Source: Actual imports: Stockpile & Shipping Branch of WPB;
Other data: Tungsten Branch of WPB.

1/ Practically all from Peru.

The expected increase in domestic output of vanadium during 1942 will result mainly from the completion of several new projects for milling and concentrating ore in Utah and Colorado. These projects are being partly financed by the U. S. Government. Only a relatively small increase is expected in Peruvian production, which is entirely controlled by the Vanadium Corporation of America; it is difficult to expand the output of this rich ore because of transportation difficulties, labor shortages, etc., resulting from the location of the mine high in the Andes. It should be noted that the monthly rate of imports since July, 1941 has been only about half as great as in the preceding year, due probably to a lack of shipping space. Unless imports are greatly increased, the vanadium supply in 1942 will fall short of present expectations. The Tungsten Branch expects that about 100,000 pounds of vanadium will be obtained this year from lead vanadate deposits in the United States and Southwest Africa, also about 40,000 pounds will be recovered from petroleum ash (these amounts are included in the supply estimates).

STOCKS: Jan. 1, 1942
U. S. Industrial stocks 1/ 2,675

Source: Tungsten Branch of WPB.

1/ Largely in the form of ores and concentrates at the mines. Supplies of vanadium available for immediate consumption were negligible. There is no government stockpile.

REQUIREMENTS: Estimates of military and civilian requirements under revision at date of issuance of this abstract.

DEMAND PROBLEMS: The greater part of vanadium consumption is now for high-speed steels which will require larger proportions than heretofore in order to offset the decreased tungsten content. The supply of vanadium will not be sufficient to satisfy all other requirements; and its use will have to be carefully restricted. In view of the differences of opinion among technologists themselves as to the merits of vanadium, it should be easier than usual to keep specifications down to a minimum.

GOVERNMENT CONTROL: WPB Order M-23-a (December 20, 1941) placed vanadium under complete allocation. The amount allocated in January 1942 was 405,000 tons of contained V; in February 345,000; in March, 424,000; and in April (proposed), 418,000. Vanadium is one of the materials covered by General Imports Order M-53 which gives the U. S. Government control over imports of the specified commodities.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of April 7, 1942
REVISED ABSTRACT ISSUED MAY 8, 1942
NEXT REVISION DUE: MAY 29, 1942
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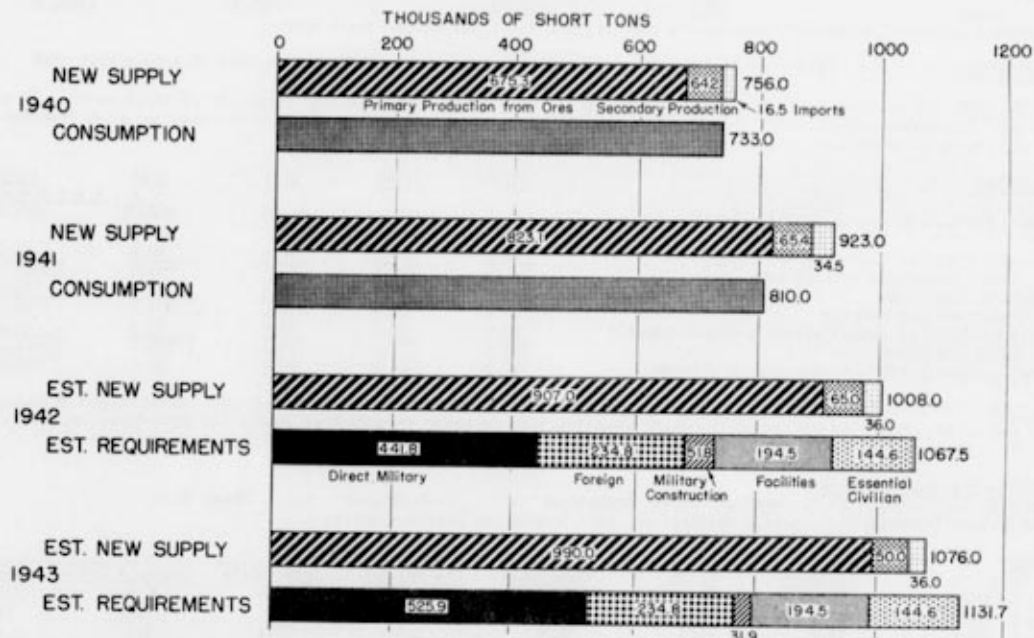
ZINC (SLAB)

DECLASSIFIED
E.O. 11662, Sec. 3(E) and 5(D) or 402
Commerce Dept. Letter, 11-15-72
By RHP, Date

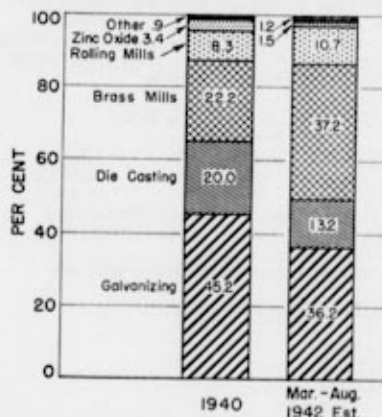
PRIORITY ACTION

General Preference Order M-11 as amended places metallic zinc under complete allocation control beginning June 1, 1942, to supersede the present partial allocation control. Under General Imports Order M-63 as amended, imports of refined zinc are controlled solely by Metals Reserve Company.

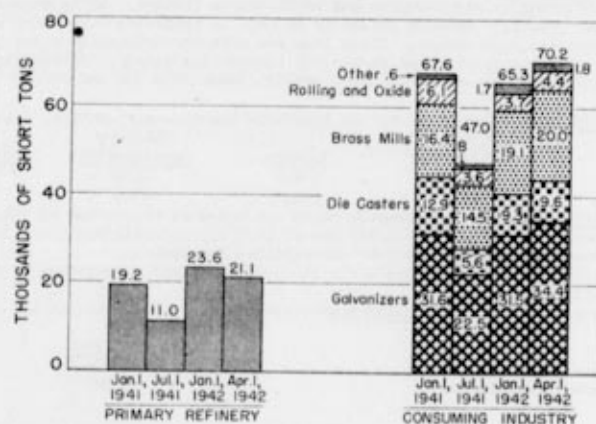
SUPPLY AND DEMAND



USE PATTERN



STOCKS



ZINC (slab)
(All figures in thousand short tons)

BACKGROUND: Zinc is a bluish-white, non-corrosive metal, frequently mined jointly with lead, in which case, lead is the principal product. The U.S. is the world's largest producer and consumer of zinc, which constitutes an average of 30% of the metal content of brass. In peace-time, its principal use is as a rust-proof coating for iron and steel. Slab zinc is marketed in six grades - special high grade, high grade, intermediate, brass special, selected, and prime western (in descending order of purity). The manufacture of brass, the principal war-time consumer of zinc, requires high grade. Die castings, another important use, also requires high grade zinc.

USE PATTERN:	1940		March-August 1942 ^{1/}	
	Amount	Percent	Amount	Percent
Galvanizing	331.2	45.2	175.0	36.2
Die Casting	146.7	20.0	64.0	13.2
Brass Mills	162.6	22.2	180.0	37.2
Rolling Mills	60.6	8.3	52.0	10.7
Zinc Oxide	25.3	3.4	7.0	1.5
Other	6.6	.9	6.0	1.2
Total	733.0	100.0%	484.0	100.0%

^{1/} Bureau of Mines' estimate of consumer's requirements for zinc, March-August 1942.

CONSUMPTION: 1940: 733 1941: 810 1942 (1st Quarter): 194

DEFENSE USES: As an important component of brass, zinc finds its principal military use in cartridge cases. It is also used in galvanizing of steel sheets, wire, and naval equipment. Zinc die castings are used in motor vehicles and in forming dies for use in the manufacture of airplane parts.

NEW SUPPLY:	1939	1940	1941	1942 Estimated	1943
Primary Production - from Domestic Ores	491.1	590.0	659.0	700.0	990.0
" " - from Foreign Ores	16.2	85.3	164.1	207.0	
Secondary Prod. of slab from old scrap	14.2	26.8	22.4	30.0	20.0
Total Production of slab zinc	521.5	702.1	845.5	937.0	1,010.0
Imports of slab zinc	30.2	16.5	34.5	36.0	36.0
Total new slab supply	552.4	718.6	880.0	973.0	1,046.0
Secondary Prod. of copper alloys - zinc content	30.9	37.4	41.0	35.0	30.0
Total New Supply	583.3	756.0	921.0	1,008.0	1,076.0
(Total Secondary Production - slab & alloyed)	45.1	64.2	65.4	65.0	50.0)

CAPACITY: The capacity of Primary Zinc Plants in the United States at the beginning of 1942 was about 915 thousand short tons per annum. Capacity for an additional 96 thousand tons is under construction permitting additional production during the latter part of 1942, and increasing the capacity at the beginning of 1943 to 1,011 thousand tons.

IMPORTS--1st Quarter, 1942:

Zinc Ores -- Canada: 14.5, Mexico: 45.9, Argentina: 16.9, Newfoundland: 3.2. Total 80.5.
Refined Zinc (blocks, pigs, bars & sheets) -- from Canada and Mexico totaling 8.9.

STOCKS: ^{1/}	Primary Refinery	Consuming Industry					
Date		Total	Galvanizers	Die Casters	Brass Mills	Rollg. & Oxide	Other
Jan. 1, 1941	19.2	57.6	31.6	12.9	16.4	6.1	.6
July 1, 1941	11.0	47.0	22.5	5.6	14.5	3.6	.8
Jan. 1, 1942	23.6	65.3	31.5	9.1	19.1	3.7	1.7
April 1, 1942	21.1	70.2	34.4	9.6	20.0	4.4	1.8

^{1/} As reported by Bureau of Mines; stocks of consuming industries exclude stocks in transit.

SPECIAL PROBLEMS: Military requirements are largely for high grade zinc in which there is a more stringent shortage than indicated by total supply and requirements figures. It is necessary that both mining and smelting capacity be expanded jointly. Premium prices to be paid to producers for output over and above the 1941 level is expected to help increase mine output. Since lead and zinc are frequently mined jointly, similar premium to be paid for increased lead production is expected further to augment the supply. Strong competition exists between zinc plants and nearby war plants for the available labor supply, especially for mechanical labor in the Tri-State District.

REQUIREMENTS: As reported by the Materials Requirements Section, Statistics Division, on April 20, 1942.

Year	Direct Military ^{1/}	Foreign	Military Construction	Facilities ^{2/}	Essential Civilian ^{3/}	Total
1942	441.8	234.8	51.8	194.5	144.6	1,067.5
1943	525.9	234.8	31.9	194.5	144.6	1,131.7

^{1/} Direct Military requirements shown are based on objectives of the S-1 Ultimate Aircraft program, Army Supply Program, Sections I (4/6/42) and II (4/9/42) covering equipment for ground and air forces, respectively, and latest programs of the Navy and Maritime Commission.

^{2/} Facilities - minimum needs for the production and maintenance of facilities and equipment to effectuate the military programs.

^{3/} Essential Civilian - minimum requirements for the production and maintenance of civilian goods.

SUMMARY:	1942	1943
Estimated Total New Supply	1,008.0	1,076.0
Estimated Requirements	1,067.5	1,131.7

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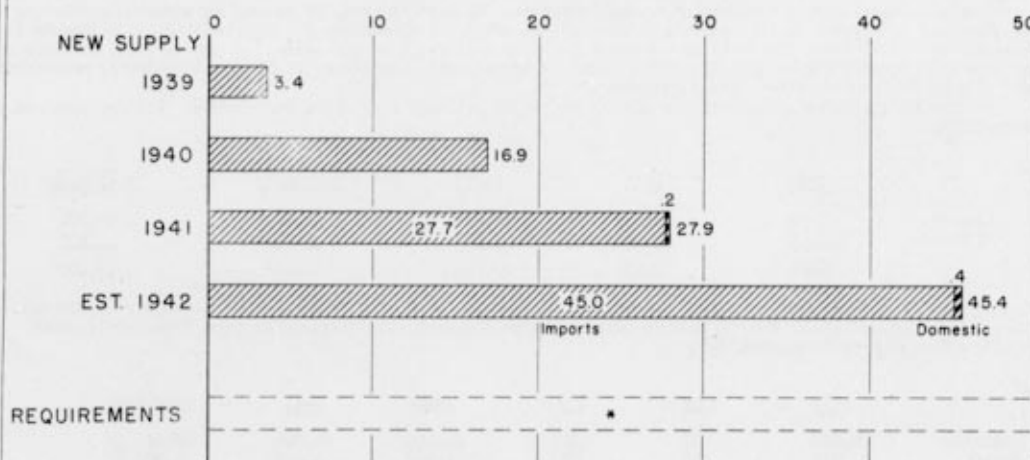
ZIRCONIUM ORES

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E.O. 11652, Sec. 8(E) and 8(D) at []
Commerce Dept. Letter, 11-16-72
By RHP, Date

NO PRIORITY ACTION

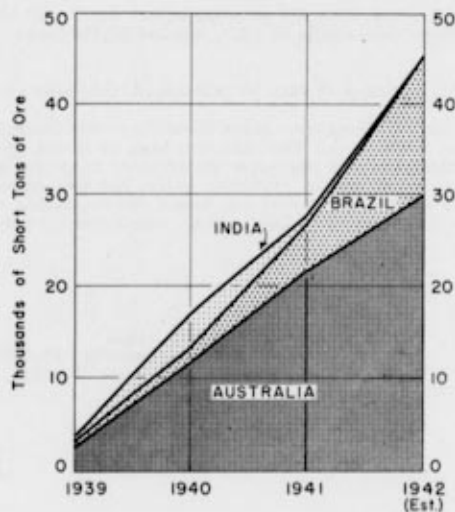
SUPPLY-REQUIREMENTS

Thousands of Short Tons of Ore

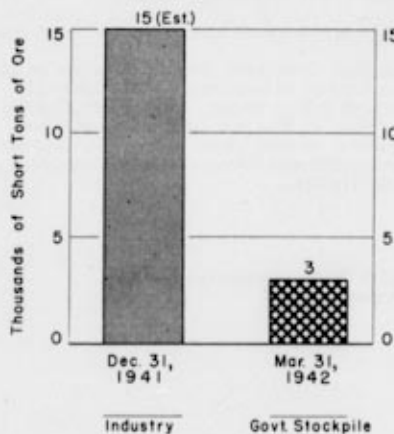


* Estimates of military and civilian requirements under revision at date of issuance of this chart.

IMPORTS



STOCKS



ZIRCONIUM ORESCONFIDENTIAL

(All figures in short tons of ore)

BACKGROUND: Zirconium, one of the most versatile metallic elements, is found chiefly in two ores: zircon (zirconium silicate), and baddeleyite (native ZrO_2 , usually impure). Zirconium compounds are widely used as opacifiers in enamels, supplanting antimony and tin oxide; as ingredients in special porcelains and glasses, such as chemical equipment, giving resistance to shock, heat, and corrosion; as a non-poisonous coating in tin cans to resist corrosion of citrous fruits; in the manufacture of abrasives, spark plugs, and electric heating units; in gas mantles, "calcium lights," and X-ray photography; and in the rubber, dyeing, and tanning industries.

In steel production, use of ferro-zirconium is increasing as a deoxidizer and scavenger, removing oxygen, nitrogen, and non-metallic inclusions; as an alloy, controlling grain size and resistance to tearing while rolling, and in improving the surface of high sulphur steel. An early and important consumption of zirconium ores has been as cement and brick in refractory crucibles and furnace linings. It is also used in special molding sands for stainless steel and alloy castings.

Zirconium metal serves a number of unusual purposes. In ductile form, it is used as a vacuum-perfecting and -maintaining "getter" in electric bulbs and radio tubes; in the making of electrodes for spot welding; in filaments in Nernst lamps; and as a substitute for platinum compounds in strip decorating of glassware. In powder form, it finds use in blasting caps and primers; and because of its high luminosity and rapid oxidation, in flashlight powders, commercial and military flares, tracer ammunition, and fireworks.

The use of zirconium in appreciable amounts had developed only within the past decade. New applications are being made rapidly.

NEW SUPPLY:

	<u>1939</u>	<u>1940</u>	<u>1941</u>	<u>1942 Est.</u>	<u>1943 Est.</u>
Imports	3,433	16,845	27,674	45,000	45,000
Domestic	<u>0</u>	<u>60</u>	<u>180</u>	<u>400</u>	<u>400</u>
	3,433	16,905	27,854	45,400	45,400

STOCKS: Data on past stocks of zirconium ores are meager. WFB Manganese-Chrome Branch estimates roughly 15,000 tons privately held at the end of 1941. Metals Reserve Company has subsequently purchased 3,000 tons of privately owned Australian zircon for government stockpile.

IMPORTS: 1/

	<u>1937</u>	<u>1938</u>	<u>1939</u>	<u>1940</u>	<u>1941</u>	<u>1942 Est.</u>
Australia	7,448	72	2,486	11,644	21,709	30,000 2/
Brazil	720	756	705	1,591	5,002	15,000 2/
India	758	1,266	242	3,610	963	0
All Other	<u>1</u>	<u>3</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
	8,927	2,097	3,433	16,845	27,674	45,000

1/ Source of past import data: U. S. Bureau of Foreign and Domestic Commerce.

Zirconium dioxide content of imported ores varies. Australian ores average 55% ZrO_2 , Brazilian baddeleyite 65% to 85% ZrO_2 .

2/ Shipping space has been specifically arranged with the Maritime Commission by WFB Shipping Branch for 29,980 tons of Australian ore, and 5,000 tons of Brazilian ore. Imports for first four months of 1942, totaled 12,836 tons: Brazil, 3,525; India, 112; Australia, 9,199.

REQUIREMENTS: Estimates of military and civilian requirements under revision at date of issuance of this abstract.

SPECIAL PROBLEMS: From 1928 to 1940 there was no domestic production of zirconium. Since domestic production will probably continue to be negligible, and receipts of Australian ores conjectural, Brazilian ores must be relied upon to meet the bulk of future needs. Special purification required of Brazilian ores may raise the price of zirconium and products. Stocks on hand are apparently sufficient to meet a year's requirements. Priority action has been considered but not applied: special steels using Brazilian baddeleyite are under strict control; and demand for Australian ores is expected to decline considerably with the curtailment of refrigerators, household stoves, etc., heretofore consuming the bulk of white enamels.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 20, 1942
Revised Abstract Issued May 29, 1942
Next revision due: June 19, 1942

CHEMICALS

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AMMONIA, ANHYDROUS

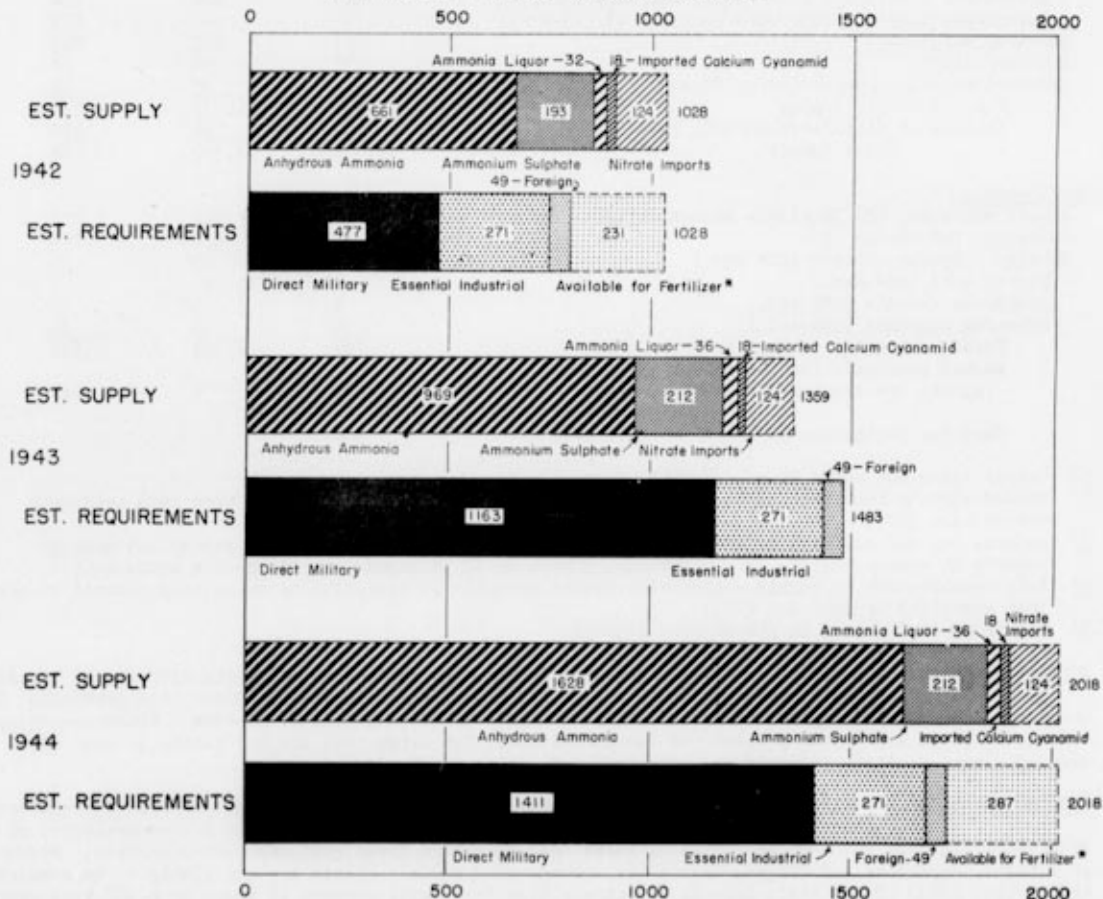
PRIORITY ACTION

Anhydrous Ammonia is used for many of the same purposes as other nitrogen materials such as sodium nitrate, ammonium sulphate and ammonia liquor.

February 1, 1942.—General Preference Order No. M-62 placed deliveries of sodium nitrate under authorization of Director of Priorities. Under this provision, WPB Chemicals Branch is attempting to accumulate a stockpile of 150,000 tons of nitrate.

SUPPLY-DEMAND

THOUSAND SHORT TONS OF AMMONIA EQUIVALENT



* This total compares with 500,000 tons used in Crop Year 1940.

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WAR PRODUCTION BOARD, Statistics Division
Materials Branch

E.O. 11652, Sec. 3(K) and 4(D) of (S)
Commerce Dept. Letter, 11-15-78
By RHP, Date MAR 14 1973

Data as of May 22, 1942
Revised Chart Issued May 29, 1942
Next Revision Due: June 19, 1942
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AMMONIA, ANHYDROUS (All figures in thousand short tons)

SOURCES: Anhydrous ammonia is a combination of atmospheric nitrogen and pure hydrogen, the latter obtained by treating hot coke with water, or by cracking natural gas or petroleum.

USES: It is used principally in military explosives; also in making fertilizer, in industrial explosives, in manufacture of nitric and sulphuric acids, in ice manufacture, and in bleaches. Anhydrous ammonia is used for many of the same purposes as other nitrogen materials such as sodium nitrate (mined in Chile), ammonium sulphate and ammonia liquor (by-product in coke production) and cyanamid.

SUPPLY-DEMAND SUMMARY: Supply and requirements of nitrogen materials, expressed in 1,000 short tons of ammonia equivalent, are shown here:

	1942	1943	1944 1/
Supply, including imports of nitrate			
Anhydrous Ammonia			
Private plants now in operation	543	543	543
Government plants approved before February 13, 1942	118	426	606
Government plants recommended February 13, 1942 2/	-	-	479
Ammonium sulphate	193	212	212
Ammonia liquor	32	36	36
Imported calcium cyanamid (from Canada)	18	18	18
Total Domestic Supply	904	1,235	1,894
Imports of nitrate at 1940-41 rate 3/	124	124	124
Total Supply	1,028	1,359	2,018
Requirements			
Direct military, WPB Chemicals Branch estimate 4/	477	1,163	1,411
Essential industrial 5/	271	271	271
Foreign: Sodium nitrate (BEW est.)	10	10	10
Nitric acid (BEW est.)	-	-	-
Anhydrous ammonia (BEW est.)	5	5	5
Ammonium sulphate (BEW est.)	34	34	34
Total, exclusive of fertilizer	797	1,483	1,731
Amount available for fertilizer if nitrate imports are continued at 1940-41 rate	231	0	287
Used for fertilizer in fiscal year 1940-41	500		

- 1/ Twelve times estimated December, 1943, rate.
- 2/ Recommended by Requirements Committee February 13, 1942. Plants would not come into operation before late 1943.
- 3/ Imports may not continue at the 1940-41 level owing to shipping shortage. Actual 1st quarter imports of sodium nitrate were 162 thousand tons or 32 thousand tons of ammonia equivalent.
- 4/ Army requirements to supply explosives; plants actually in operation or definitely planned to come into operation in 1942 and 1943.
- 5/ Cut from 321,000 tons in fiscal year 1940-41.

CONTROL MEASURES: Under M-62, effective February 1, 1942, no deliveries of sodium nitrate may be made without specific authorization of Director of Priorities. Under this provision, WPB Chemicals Branch is attempting to accumulate a stockpile of 150,000 tons of nitrate. Plans are being made to adopt an allocation program for industrial uses, but large cuts are not likely as most uses are for direct military purposes and essential industrial needs.

SPECIAL PROBLEMS: Construction of new plants requires compressors of types required also for synthetic rubber and aviation gasoline program, and forged crank shafts for compressors, of the type requiring same forging facilities as those used in making large guns and marine engines. Because of limited compressor and forging facilities, recommended ammonia plants are not likely to be completed before late 1943. To maintain imports of nitrate from Chile will require 16 ships of 6,500 tons carrying capacity operating continuously. To cut fertilizer consumption would affect adversely agricultural output of grains, cotton, vegetables and fruits which use nitrogen fertilizers.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 22, 1942
Revised abstract issued May 29, 1942
Next revision due June 19, 1942

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CHLORINE

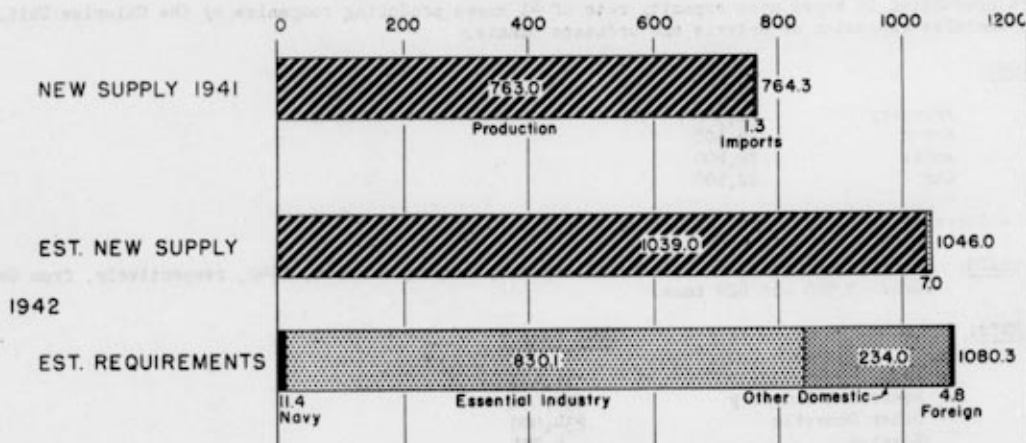
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E.O. 11652, Sec. 3(E) and 5(D) or (2)
Commerce Dept. Letter, 11-15-78
By RHP, Date

PRIORITY ACTION

General Preference Order M-19 restricts deliveries by producers to those purchases for which direct authorization has been made by WPB Director of Industry Operations. General Limitation Order L-11 restricts the use of chlorine in the manufacture of pulp, paper and paperboard.

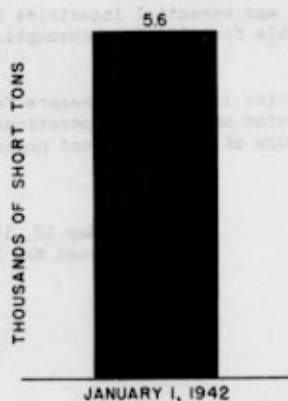
SUPPLY AND DEMAND

THOUSANDS OF SHORT TONS



PRODUCERS STOCKS*

JAN. 1, 1942

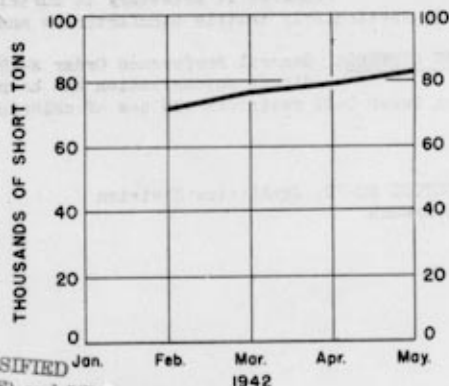


*41 out of 47 known producers.

ALLOCATIONS

COMPLETE-EFFECTIVE FEBRUARY 1, 1942

THOUSANDS OF SHORT TONS



DECLASSIFIED
E.O. 11652, Sec. 3(E) and 5(D) or (2)
Commerce Dept. Letter, 11-15-78
By RHP, Date

CHLORINE
(All figures in short tons)

BACKGROUND: Chlorine is a very active element, never occurring free in nature but found abundantly as chlorides. Sodium chloride, the commercial source of chlorine, is widely distributed as salt brines underground, in sea water, and in rock salt deposits. Chlorine is produced commercially by electrolysis of sodium chloride.

USES: Chlorine normally is used principally as a bleaching agent and disinfectant. However, its war-time uses are much more varied. These include many compounds manufactured from chlorine, for example: degreasing solvents, anti-freeze agents, many plastics, and tetraethyl lead. Smokeless powder made from cotton linters requires chlorine. United States military bases and army camps use chlorine in water and sewage treatment.

STOCKS: Stocks of '41 out of 47 known producers January 1, 1942, were: 5,600

<u>NEW SUPPLY:</u>	<u>1941</u>	<u>1942 (Est.)</u>
Production	762,947	1,039,000
Imports	1,320	7,000
	<u>764,267</u>	<u>1,046,000</u>

Estimated production is based upon capacity rate of 41 known producing companies by the Chlorine Unit, WPB, and includes expansion of private and ordnance plants.

<u>ALLOCATIONS:</u>	<u>1942</u>
February	71,500
March	76,800
April	78,600
May	82,800

Complete allocation of chlorine was effective February 1, 1942.

FOREIGN TRADE: Actual first quarter imports and exports, January - March, 1942, respectively, from Canada were: 1,580 and 620 tons.

<u>REQUIREMENTS:</u>	<u>1942 (Est.)</u>
Navy	11,403
Essential Industry	830,096
Other Domestic	234,000
Foreign	4,751
	<u>1,080,250</u>

<u>SUPPLY - DEMAND SUMMARY:</u>	<u>1942</u>
Estimated New Supply	1,046,000
Estimated Requirements	1,080,250

SPECIAL PROBLEMS: The great demand for chlorine by the Army, Navy, and essential industries has rendered it necessary to curtail supplies available for civilian consumption. This will affect particularly textile manufacturers and laundries.

GOVERNMENT CONTROL: General Preference Order M-19 restricts deliveries to those purchasers for which direct authorization has been made by WPB Director of Industry Operations. General Limitation Order L-11 restricts the use of chlorine in the manufacture of pulp paper and paperboard.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 12, 1942
Abstract issued May 18, 1942

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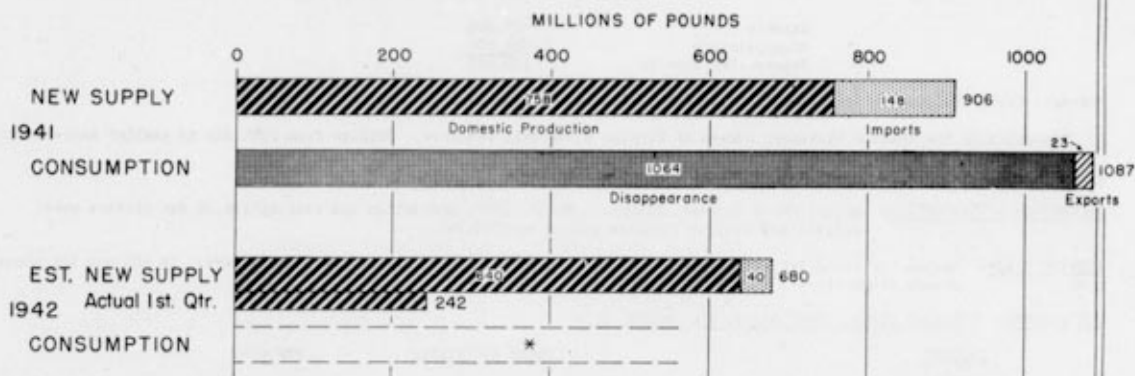
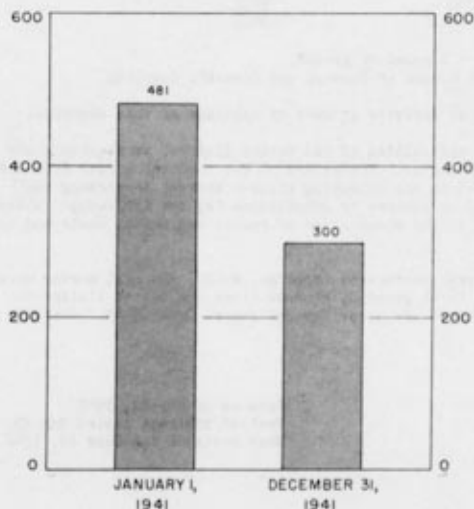
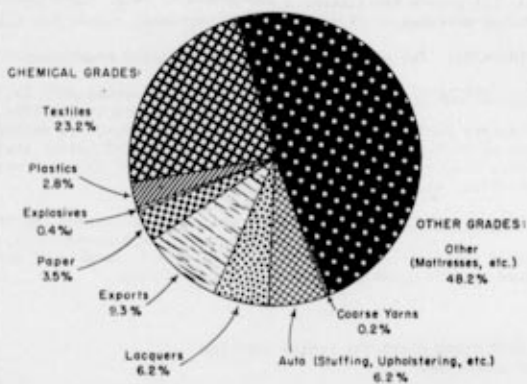
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COTTON LINTERS

PRIORITY ACTION

General Preference Order No. M-12 provides that "No mill making more than one delinting of cottonseed shall, in the first process, produce first cut cotton linters to a higher proportion than 20 per cent of its total cut." Imports of cotton linters are under General Import Order M-63.

SUPPLY AND DEMAND

STOCKS
MILLIONS OF POUNDS1939 USE PATTERN
ALL GRADES

DECLASSIFIED
E.O. 11652, Sec. 3(E) and 5(D) or (4)
Commerce Dept. Letter, 11-15-72
By RHP, Date

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BACKGROUND: Cotton linters are the short fibers that cling to the cottonseed after ginning. These linters subsequently are removed by a delinting process in the cottonseed oil mills. They are graded according to physical form, numbered one to seven plus one descriptive grade, Hull Fiber. Grade one is often referred to as spinnable linters; grades 2, 3, and 4, as felt or batt grades; and grades 5, 6, and 7, as chemical grades. The manufacture of explosives from the "chemical grades" is the only direct military application. Approximately 60% of the production of raw linters are of the chemical grades. In August all cotton linters produced will be chemical grades.

USES: Cotton linters of the first four grades are used mostly for cotton batting, wadding, stuffing, etc., while the "chemical grades", having been purified, bleached, and converted into cotton pulp, are used in the manufacture of rayon, plastics, and explosives.

SUPPLY SUMMARY:

	<u>Raw Linters</u>	
	<u>1941</u>	<u>1942 (Est.)</u>
Stocks, January 1	481,000	300,000
Domestic Production	758,000	640,000 ^{1/}
Imports	148,000	40,000 ^{2/}
Total	1,387,000	980,000
Exports	23,000	
Disappearance	1,064,000	
Stocks, December 31	300,000	

Source: (1941) Textile Division, Tariff Commission, from commercial data.

- 1/ Estimated by the Textile Division, Bureau of Foreign & Domestic Commerce. Decline from 1941 due to smaller domestic cotton crop.
2/ U.S. and U.K. have purchased entire Brazilian crop of linters.

PRODUCTION - CONSUMPTION: Actual first quarter, January - March, 1942, production and consumption of raw linters were: 227,116 and 221,758 thousand pounds respectively.

FOREIGN TRADE: Actual first quarter, January - March, 1942, imports and exports of raw linters were: 14,566 and 168 thousand pounds respectively.

USE PATTERN: CHEMICAL GRADE, OTHER GRADE, ALL GRADES, 1939

<u>PRODUCT</u>	<u>LINTER EQUIVALENT</u>	<u>PER CENT</u>
Textiles	132,000	23.2
Plastics	16,000	2.8
Explosives	2,000	.4
Paper	20,000	3.5
Exports	53,000	9.3
Lacquers	35,000	6.2
Total "chemical grades"	258,000	45.4
Auto (Stuffing, upholstering, etc.)	35,000	6.2
Coarse yarns	1,000	.2
Other (Mattresses, etc.)	274,000	48.2
Total "other grades"	310,000	54.6
Total all grades	568,000 ^{1/}	100.0

Note: 133 pounds raw linters = 100 pounds of pulp; 0.585 pounds pulp = 1 pound of powder.

1/ Total consumption figure of 568,000 thousand pounds for 1939, from Bureau of Foreign and Domestic Commerce.

REQUIREMENTS: Estimates of military and civilian requirements are under revision at date of issuance of this abstract.

SPECIAL PROBLEMS - SUBSTITUTES: The WFB is concerned with the proper utilization of the cotton linters, particularly the lower grades used in plastics and explosives. Production of the chemical grades from the raw linters available can be controlled by adjustment of machinery used in the delinting process thereby increasing the amount of chemical grades produced. Consumption of cotton linters may be reduced by substitutes for the following: bleached sulphite wood in the manufacture of plastics; some types of wood pulp in the manufacture of rayon; and cotton waste and low grade cotton in upholstery and mattresses.

GOVERNMENT CONTROL: Cotton linters are under government control, General Preference Order No. M-12. "No mill making more than one delinting of cottonseed shall, in the first process, produce first cut cotton linters to a higher proportion than 20% of its total cut." Imports of cotton linters are under General Import Order M-63. Cotton linters will be under complete allocation in July.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 22, 1942
Revised abstract issued May 29, 1942
Next revision due June 19, 1942

CONFIDENTIAL

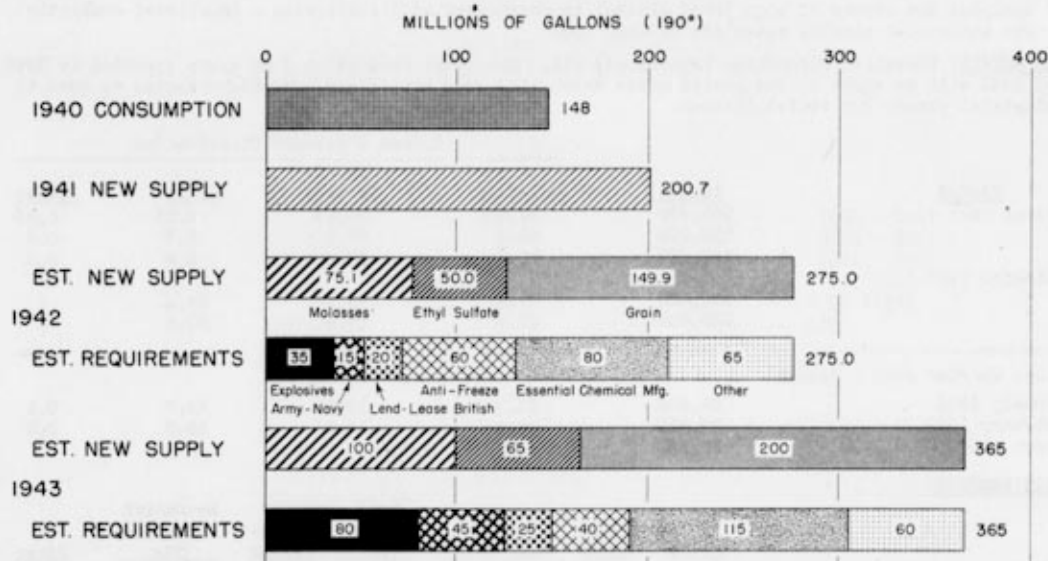
ETHYL ALCOHOL (FOR INDUSTRIAL PURPOSES)

DECLASSIFIED
E.O. 11652, Sec. 3(E) and 5(D) or (S)
Commerce Dept. Letter, 11-16-72
By RHP, Date

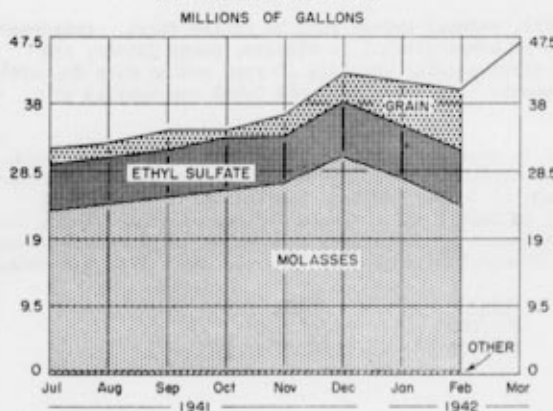
PRIORITY ACTION

Under M-3 (issued Aug. 21, 1941), defense orders must be filled first. Amendment No. 3 to M-30, issued Jan. 24, 1942, limited use of ethyl alcohol in vinegar, candy glazes, and various toilet articles to 70 % of amount used in corresponding quarters of year ending June 30, 1941. However, the alcohol thus affected probably represents less than 5 % of the total consumption of industrial alcohol in 1942.

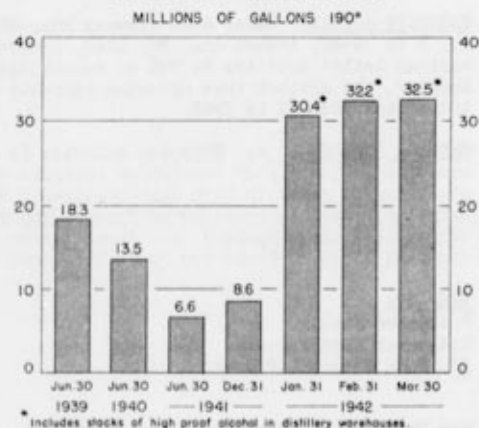
SUPPLY - DEMAND



PRODUCTION OF 190° BY MATERIALS USED



STOCKS 190° IN BONDED WAREHOUSES



ETHYL ALCOHOL (for industrial purposes)
Unit: Thousand gallons (231 cu. in.) 190°

BACKGROUND: Since prohibition, the production of ethyl alcohol for industrial purposes has, by law, been separated from the production of alcohol for beverages. Raw materials used in making industrial alcohol include molasses, ethyl sulfate, grain and minor amounts of other materials. Two-thirds of the production usually comes from plants equipped to use molasses, which is particularly scarce at the present time owing to shipping difficulties. More than 80% of the distillery production comes from plants equipped to use grain, which is readily available, but the production of most distilleries is less than 190°, the purity generally needed for industrial purposes. In order to facilitate the use of distillery production for industrial purposes, the following legal steps have been taken: (1) Act of Jan. 24 - Plants classified as distilleries, permitted to produce high proof alcohol as required for industrial use. (Relatively few distillers are so equipped.) (2) Act of Mar. 27 - Distilleries permitted to transfer alcohol of less than 190° (known to distilleries as high wine) to other plants where it can be redistilled to required proof. (Opens up the entire distilling capacity to increased industrial alcohol production, but presents a heavy transportation problem).

STOCKS: 190° in bonded warehouses

June 30 1939	June 30 1940	June 30 1941	Dec. 31 1941	Jan. 31 1942	Feb. 28 1942	Mar. 31 1942
18,341	13,517	6,564	8,639	30,365 1/	32,159 1/	32,532 1/

1/ Includes the stocks of high proof alcohol in warehouses of distilleries - considered available for industrial alcohol under Act of Jan. 24.

NEW SUPPLY: Domestic production; imports are nil. The large production from grain expected in 1942 and 1943 will be shown in the period after March 1942 when distillery production begins to move to industrial plants for redistillation.

Source - Percent Distribution					
<u>Period</u>	<u>Amount</u>	<u>Molasses</u>	<u>Ethyl Sulfate</u>	<u>Grain</u>	<u>Other</u>
Fiscal year 1938 - 1939	105,799	67.6%	23.9%	7.7%	0.8%
1939 - 1940	128,378	68.6	25.1	5.7	0.6
1940 - 1941	157,287	70.4	23.4	5.9	0.3
Calendar year 1941	200,736				
" " (est) 1942	275,000	27.3	18.2	54.5	-
" " 1943	365,000	27.4	17.8	54.8	-
First Quarter 1942 - Actual					
January 1942	22,456	67.2	19.0	13.7	0.1
February 1942	22,236	68.1	19.4	12.3	0.2
March 1942	25,630				

REQUIREMENTS:

	Total	Explosives	Other Army & Navy	Lend Lease British	Anti-Freeze	Essential Chemical Mfg.	Other
1940 Consumption	148,000	9,000	(in "other")	0	21,000	(in "other")	118,000
1942 (est - Chem. Branch)	275,000	35,000 1/	15,000	20,000	60,000	80,000	65,000
1943 (est - Chem. Branch)	365,000	80,000	45,000 2/	25,000	40,000	115,000	60,000

1/ Requirements Section estimates 42 million.

2/ Requirements Section estimates 25 million.

PRIORITY ACTION: Under M-30 (issued Aug. 21, 1941), defense orders must be filled first. Amendment No. 3 to M-30, issued Jan. 24, 1942, limited use of ethyl alcohol in vinegar, candy glasses, and various toilet articles to 70% of amount used in corresponding quarters of year ending June 30, 1941. However, the alcohol thus affected probably represents less than 5% of the total consumption of industrial alcohol in 1942.

SPECIAL PROBLEMS: 1. Shipping molasses in order to make the best use of present industrial alcohol equipment. (Supply of blackstrap molasses in the Caribbean is sufficient to render unnecessary further diversion of sugar to high test molasses. Shortage of ships, however, has led the Stockpile and Shipping Branch to consider no further imports of molasses, and the substitution of sugar, which involves less cargo space.) 2. Facilitating the shipment of distillery production (high wines) to industrial alcohol plants for redistillation. 3. Developing production in areas nearest to the consumer.

SUMMARY:

	1942	1943
Estimated Supply	275,000	365,000
Estimated Requirements	275,000 1/	365,000 1/

1/ From Chemical Branch

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 15th, 1942
Abstract issued May 18, 1942

CONFIDENTIAL

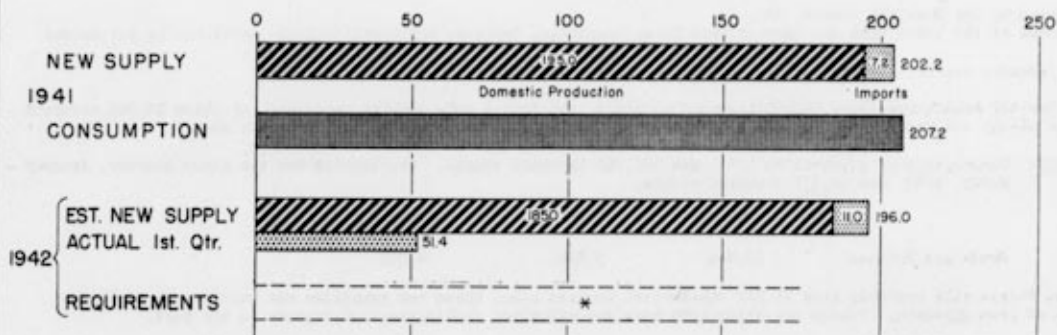
GLYCERIN

PRIORITY ACTION

General Preference Order No. M-58 restricts the use and inventory of glycerin; it also places general restrictions on deliveries effective May 1, 1942.
General Preference Order No. M-60, with respect to high lauric acid oils, limits the amount of glycerin in the end product to 1.5 per cent.

SUPPLY AND DEMAND

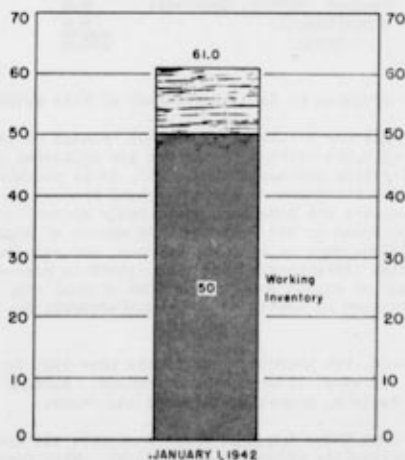
MILLIONS OF POUNDS



* Estimates of military and civilian requirements under revision at date of issuance of this chart.

INDUSTRY STOCKS *

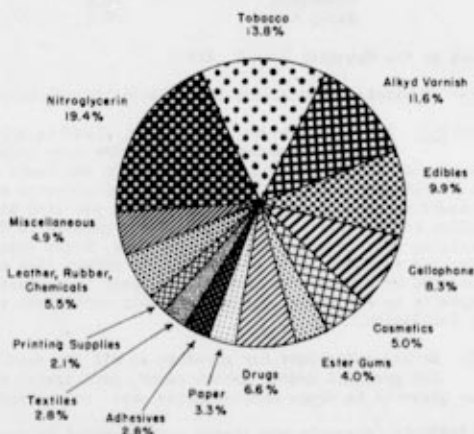
MILLIONS OF POUNDS



* No government stocks

USE PATTERN *

1942 ESTIMATE



* Estimated by Chemicals Branch, WPB

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 22, 1942
Revised Chart issued May 29, 1942
Next Revision Due June 19, 1942

SEE OTHER SIDE FOR ABSTRACT

DECLASSIFIED

E.O. 11652, Sec. 3(E) and 5(D) of
Commerce Dept. Letter, 11-16-72
By RHP, Date

A

CONFIDENTIAL

GLYCERIN

(All figures in thousands of pounds)

BACKGROUND: Glycerin is a by-product of the soap and fatty acid industries. When an alkali is added to a fat, soap is formed; the glycerin and certain impurities are left in the water solution. The soap undergoes further treatment and washes, each wash solution containing less glycerin. The glycerin solutions are treated with chemicals, filtered, and concentrated in vacuum stills to crude 80 per cent glycerin.

USES: The principal uses are in the manufacture of nitroglycerin for dynamite in mining and road building, in tobacco, in the production of alkyd resins, cellophane, and ester gums. It also is consumed in pharmaceuticals, medicines, soft drinks, soaps, and printing inks. An increased demand is apparent for alkyd resin surface coatings. Glycerin is not used in military explosives in this country, but it is used in Canada and Russia in the manufacture of "cordite".

UNITED STATES NEW SUPPLY:

	1941	1942 (Est.)
Domestic Production	195,000	185,000 1/
Imports	7,211	11,000 2/
Total	202,211	196,000
Actual First Quarter Production, 1942		49,562
Actual First Quarter Imports, 1942		1,824

1/ Estimated by the Chemical Branch, WFB.

2/ Estimated on the basis that all imports from Cuba, Argentina, Uruguay, and Brazil will be available to the United

STOCKS: Industry stocks, January 1, 1942, 61,000 1/; April 1, 1942, 67,000.

1/ The Chemical Branch considers 50,000 thousand pounds as the lowest safe working inventory, of which 18,000 thousand pounds always are unavailable for use since this constitutes minimum manufacturing "pipeline stock".

CONSUMPTION: Consumption of glycerin in 1941, was 207,150 thousand pounds. Consumption for the first quarter, January - March, 1942, was 50,937 thousand pounds.

EXPORTS:

	1940	1941	1942 (Est.)
Crude and Refined	12,464	9,584	34,000

Canada and Russia will probably come in for substantial amounts since these two countries use cordite, an explosive manufactured from glycerin. Canada and Japan have been the principal destinations of exports in the past.

USE PATTERN: 1942 (Estimated) 1/

Product	Percent	Product	Percent
Nitroglycerin	19.4	Drugs	6.6
Tobacco	13.8	Paper	3.3
Alkyd Varnish	11.6	Adhesives	2.8
Bibles	9.9	Textiles	2.8
Cellophane	8.3	Printing Supplies	2.1
Cosmetics	5.0	Leather, Rubber, Chemicals	5.5
Ester Gums	4.0	Miscellaneous	4.9
		Total	100.0

1/ Estimated by the Chemical Branch, WFB.

REQUIREMENTS: Estimates of military and civilian requirements are under revision at date of issuance of this abstract.

SPECIAL PROBLEMS: The total amount of potential glycerin solution available for treatment is limited because of its by-product character. In 1941, the soap industry consumed 2,144 million pounds and the splitting industry 230 million pounds of fats and oils from which, on the basis of reported yields for each fat and oil, it is calculated that, theoretically at least, 240,000 thousand pounds of glycerin could have been recovered as against actual production of 195,000 thousand pounds. Soap production in 1941 was very high, and producers and consumers undoubtedly accumulated stocks; 1942 production is likely to be below 1941. The problem is further complicated by the fact that the amount of high glycerin-yielding oils imported from the Far East, South America, and Africa, such as coconut, babassu, and palm kernel, available for the soap kettle is declining. To offset this decline of high glycerin-yielding oils, glycerin production can be stimulated by further recoveries from spent lyes, further "washing" of boiled soap, withdrawal of cold soap from which no glycerin is recovered, and use of fatty acids from which glycerin now is wasted by soap manufacturers who have no recovery facilities.

SUBSTITUTES: No one substitute for glycerin in all its uses has been found, but numerous substitutes have been developed for specific uses. Invert sugar, corn syrup, and glucose are substitutes for plasticizers. Several substitutes for glycerin in drugs and cosmetics are: sodium and potassium lactate, magnesium butyrate and others.

GOVERNMENT CONTROL: Glycerin was placed under control by General Preference Order No. M-58 which restricts its use and inventory; it also places general restrictions on deliveries effective May 1, 1942. High lauric acid oils are under control of General Preference Order M-60 which limits the amount of glycerin in the end product to 1.5 percent.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 22, 1942
Revised abstract issued May 29, 1942
Next revision due June 19, 1942

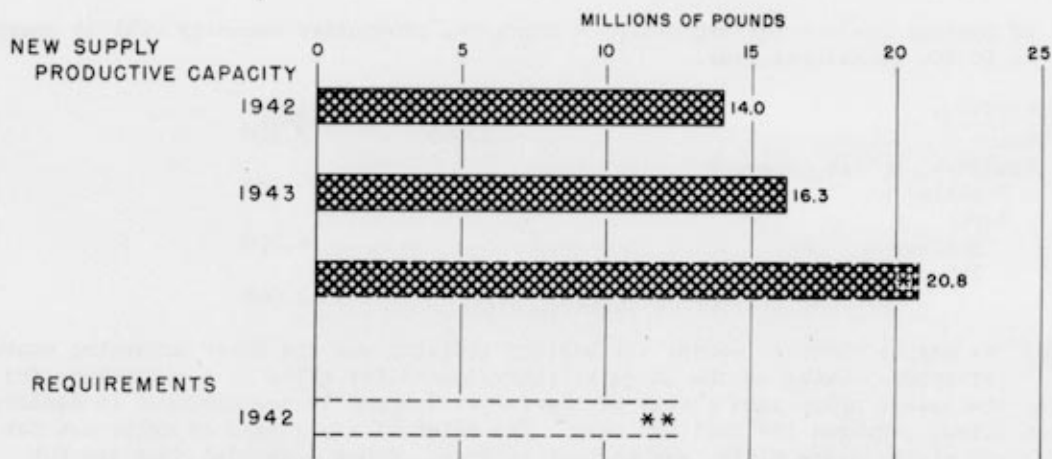
CONFIDENTIAL

NYLON

PRIORITY ACTION

No Priority Action

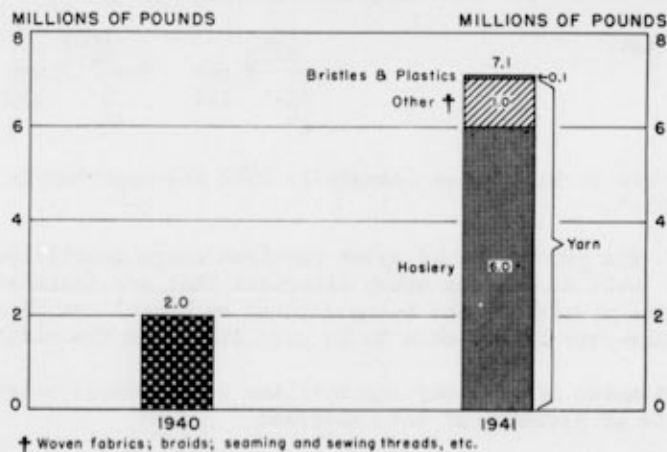
SUPPLY-DEMAND



* Capacity if present expansion project is approved.

** Estimates of military and civilian requirements under revision at date of issuance of this chart.

CONSUMPTION



DECLASSIFIED
E.O. 11652, Sec. 8(a) and 8(b)
By RHP, Date 11-16-78

NYLON
(All figures in thousand pounds)

CONFIDENTIAL

BACKGROUND: Nylon is the generic name the duPont Company has given to a class of materials developed by its chemical research laboratories. Officially defined, nylon is a "man-made protein-like chemical product (polyamide) which may be formed into fibers, bristles, sheets, and other forms which are characterized when drawn by extreme toughness, elasticity and strength." Because of these qualities, nylon is considered the best available substitute for natural silk and as such is a most important strategic material.

<u>NEW SUPPLY:</u>	<u>1942</u>	<u>1943</u>
Estimated productive capacity	14,000	16,300 1/

1/ If present project for expansion is approved, productive capacity will be increased to 20,800 pounds per year.

<u>CONSUMPTION:</u>	<u>1940</u>	<u>1941</u>
Total	2,000	7,100
Breakdown by end product:		
Bristles and Plastics		100
Yarn:		
Hosiery		6,000
Other (woven fabrics, and braids, seaming and sewing threads, etc.)		1,000

USES: As may be observed above, the hosiery industry was the chief peacetime consumer of nylon. Owing to the large military demand for nylon as a substitute for silk, the entire nylon yarn output of the duPont Company is now produced in deniers (yarn sizes) required for military uses. The chief military uses of nylon are for parachute cloth, flare cloth, and medical sutures. Other essential uses are for electrical insulation and bristles. (The latter is regarded as an essential use because of the shortage of hog bristles.) Hosiery and other manufactures formerly using nylon are now using rayon filament yarn and other substitutes.

EXPORTS OF NYLON YARN AND FLAKE: Shipments outside of the United States and possessions to date have been limited to Canada and the British Isles. The amount of these shipments in 1940 and 1941 is shown below:

U. S. shipments to:	<u>1940</u>	<u>1941</u>
	Yarn Flake	Yarn Flake
British Isles	51 112	1 436
Canada	24 -	65 7

STOCKS: Nylon stocks on hand as of January 1, 1942 are reported to have been "negligible".

SPECIAL PROBLEMS: The production of nylon requires large quantities of phenol, as well as various other materials that are included in the "critical" category. The nylon plants are now being changed so benzol can be used in place of phenol. This change-over is expected to be complete about the middle of 1942.

REQUIREMENTS: Estimates of military and civilian requirements under revision at date of issuance of this abstract.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 21, 1942
Revised abstract issued May 29, 1942
Next revision due: June 19, 1942

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CONFIDENTIAL

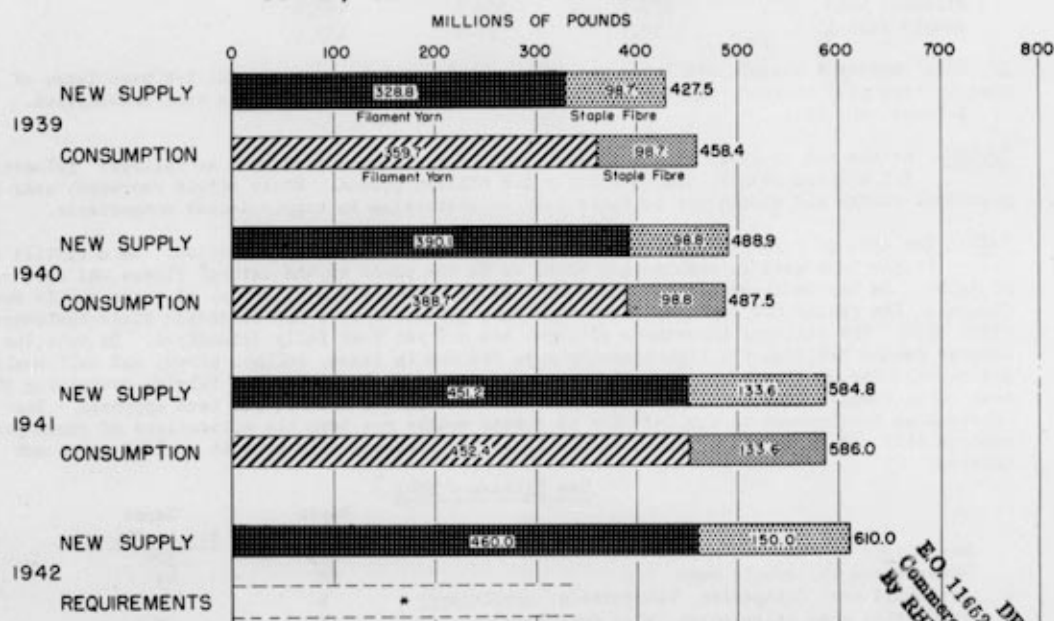
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RAYON

PRIORITY ACTION

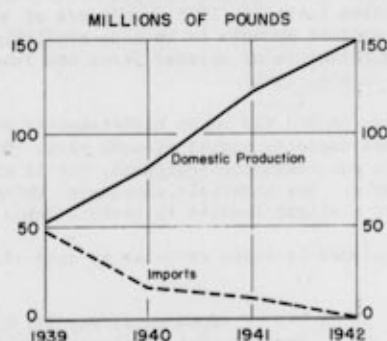
Rayon producers are required to set aside specified percentages of their daily yarn output, after military and export requirements are met, for a government pool from which allocations are made to former silk and nylon users (M-37). Producers of viscose staple fiber are required to set aside each month specified amounts to be made available to worsted manufacturers for blending with wool in the manufacture of worsted yarns and fabrics (Amendment No. 1 to M-73, as amended and extended to July 4, 1942).

SUPPLY, CONSUMPTION AND REQUIREMENTS



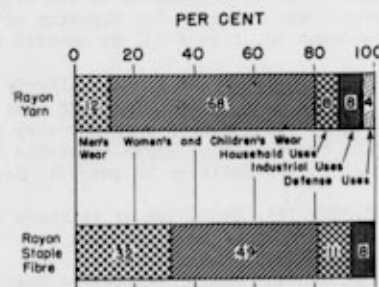
* Estimates of military and civilian requirements under revision at date of issuance of this chart.

PRODUCTION AND IMPORTS STAPLE FIBER



* Filament yarn imports negligible.

USE PATTERN 1941



RAYON
(All figures in million pounds)

CONFIDENTIAL

<u>NEW SUPPLY:</u>	<u>Rayon Filament Yarn</u>			<u>Rayon Staple Fiber</u>		
	<u>Total</u>	<u>Domestic Production</u>	<u>Imports</u>	<u>Total</u>	<u>Domestic Production</u>	<u>Imports 1/</u>
1939	328.8	328.6	.2	98.7	51.3	47.4
1940	390.1	390.1	2/	98.8	81.1	17.7
1941	451.2	451.2	2/	133.6	122.0	11.6
1942	460.0	460.0	-	150.0	150.0	-

1/ Includes both staple fiber and spun rayon yarn.

2/ Less than 50 thousand pounds.

Source: "Rayon Organon", Vol. XIII-No. 2, January 22, 1942, except for 1942; data for the latter year are estimates prepared by WFB, Statistics Division, Textiles Research Section.

<u>CONSUMPTION:</u>	<u>1939</u>	<u>1940</u>	<u>1941</u>
Filament yarn	359.7	388.7	452.4
Staple yarn 1/	98.7	98.8	133.6

1/ Data represent amounts available for consumption. Although no account has been taken of stock changes from year to year, the totals shown are believed to approximate actual consumption.

Source: op. cit.

STOCKS: At the end of 1941, stocks in the hands of rayon producers were as follows: filament yarn - 3.8 million pounds; staple fiber - 1.8 million pounds. These totals represent near minimum practical stocks and should not be taken into consideration in supply-demand comparisons.

USES: The uses of rayon are much the same as those of silk, wool, and cotton. As a textile fiber, it has been used in combination with, or in the place of, the natural fibers and more recently of nylon. As may be observed from the table below, normally, the chief use of rayon was in wearing apparel. The demand for rayon has been such that producers have had to ration their customers since 1938. The military importance of rayon has not yet been fully determined. To date, the chief defense demand has been for high-tenacity yarn for use in tires, balloon cloth, and self-sealing gas tanks. The Quartermaster Corps has conducted experiments on uniform fabrics containing 30 percent rayon staple fiber and 70 percent wool, but this fabric has not yet been approved. The outstanding development in the industry in recent months has been the allocations of rayon yarn to replace silk and nylon and of rayon staple fiber for blending with wool in worsted yarns and fabrics.

Use Pattern - 1941

	<u>Rayon Yarn</u>	<u>Rayon Staple Fiber</u>
Men's wear	12%	32%
Women's and Children's wear	68	49
Household uses (draperies, bed-spreads, upholstery)	8	11
Industrial uses (tire cords, wire coverings)	8	8
Defense uses	4	-
	<u>100%</u>	<u>100%</u>

GOVERNMENT CONTROL: Since August, 1941, rayon producers have been required to set aside specified percentages of their daily yarn output after military and export requirements have been met (M-37). Stocks thus set aside are reserved for a government pool from which allocations are made to former silk and nylon users. Effective March 16, 1941, producers of viscose staple fiber were required to set aside each month specified amounts to be made available to worsted manufacturers for blending with wool in the manufacture of worsted yarns and fabrics (Amendment No. 1 to M-73, as amended and extended to July 4, 1942).

SPECIAL PROBLEMS: It is not unlikely that the military demand for rayon high-tenacity yarn may call for more than twice the present capacity output of such yarn. This increase can be accomplished by a change-over from regular yarn manufacturing equipment, but it will further reduce the amount of rayon available to normal consumers. Raw materials shortages, which are a threat to the industry in general, have already caused a slight decline in acetate rayon production.

REQUIREMENTS: Estimates of military and civilian requirements under revision at date of issuance of this abstract.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 13, 1942
Revised abstract issued May 18, 1942

CONFIDENTIAL

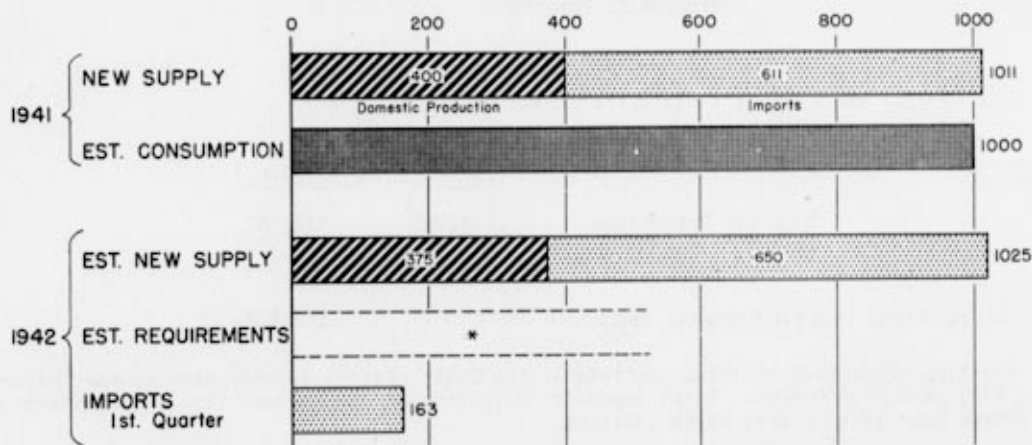
SODIUM NITRATE

PRIORITY ACTION

General Preference Order M-62 controls the supply and directs distribution.

SUPPLY-DEMAND

THOUSANDS OF SHORT TONS

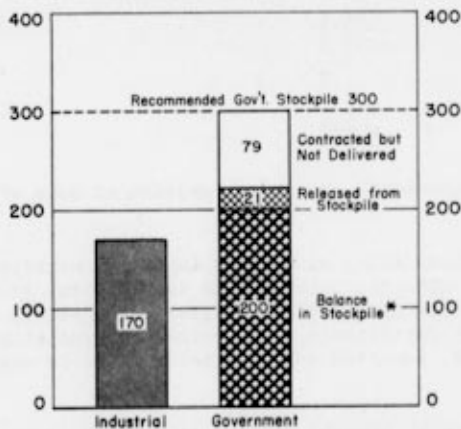


* Estimates of military and civilian requirements under revision at date of issuance of this chart.

STOCK POSITION

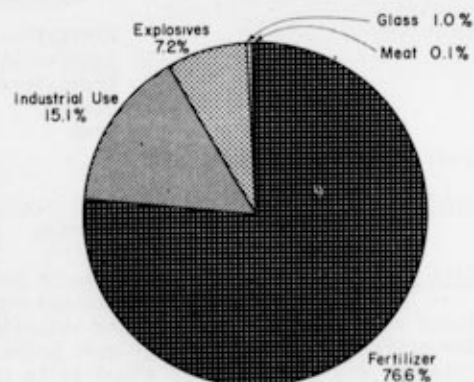
JAN. 1, 1942

THOUSANDS OF SHORT TONS



* Held in Chile

NORMAL CONSUMPTION PATTERN



DECLASSIFIED
E.O. 11652, Sec. 3(E) and 5(D) or (6)
Commerce Dept. Letter, 11-15-72
By RHP, Date

SODIUM NITRATE
(All figures in short tons)

BACKGROUND: Sodium nitrate is a white crystalline salt occurring naturally in vast quantities in Chile in an ore known as caliche, and made synthetically in the United States from nitric acid and soda ash. Commercial grades average about 98 per cent sodium nitrate. Sodium nitrate is mined by the open-cut method, the caliche transported to the treatment plant, where the nitrate is recovered by leaching with water, decantation, and crystallization, with side processes for recovery of potassium nitrate and other salts.

USES: The principal use of sodium nitrate is as a nitrogenous fertilizer for direct application to the soil. It is used to a limited extent as an ingredient in mixed fertilizers. The more important industrial uses of sodium nitrate include the manufacture of nitric acid, potassium nitrate, industrial explosives, glass, and industrial chemicals. Sodium nitrate is an ingredient of high explosives used normally in mining, quarrying, and road making.

STOCK POSITION:

	<u>1942</u>
Industrial, January 1	170,077
Government, January 1	200,000 ^{1/}

^{1/} Held in Chile.

The WPB has recommended a stockpile of 300,000 short tons

NEW SUPPLY:

	<u>1941</u>	<u>1942 (Est.)</u>
Domestic Production	400,000	375,000
Imports	611,000	650,000
	<u>1,011,000</u>	<u>1,025,000</u>

Actual first quarter imports, January - March 1942: 162,802

Capacity production of sodium nitrate in the United States is estimated by the Chemicals Branch, WPB, at 1,00,000 tons. Total capacity production at the present time is not possible since nitric acid is in a very tight position.

Source: Chemicals Branch, WPB

CONSUMPTION: Domestic consumption in normal years approximated about 1 million tons annually, of which about 15 per cent was consumed by industry and consisted of the domestic synthetic production; the remaining 85 per cent was consumed by agriculture and consisted of the natural product imported principally from Chile.

<u>Product</u>	<u>Per cent</u>
Fertilizer	76.6
Industrial Use	15.1
Explosives	7.2
Glass	1.0
Meat	0.1
	<u>100.0</u>

Source: Chemicals Branch, WPB

REQUIREMENTS: Estimated military and civilian requirements are under revision at date of issuance of this abstract.

SPECIAL PROBLEMS: Sodium nitrate should be considered along with other important nitrogen compounds. Estimated supply of nitrogen materials is insufficient to meet military and essential requirements without a substantial cut in fertilizer consumption. Natural sodium nitrate imports should be used primarily for fertilizers, thus releasing synthetic ammonia for war uses. In the event it is necessary, imported sodium nitrate could be used as a source for nitric acid.

GOVERNMENT CONTROL: Sodium nitrate is under control by General Preference Order M-62 to conserve the supply and direct the distribution.

BELLADONNA

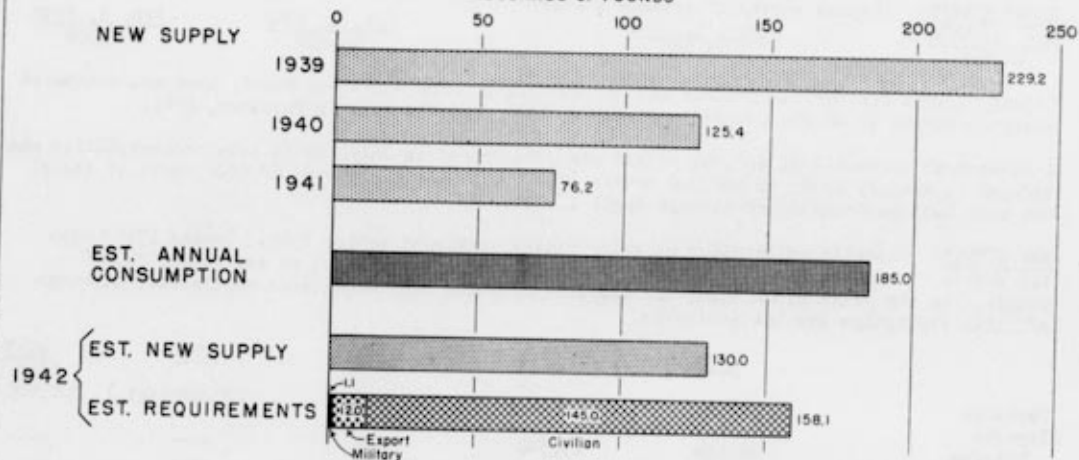
A DRUG - THE DRIED LEAVES AND ROOTS OF THE ATROPA BELLADONA PLANT

PRIORITY ACTION

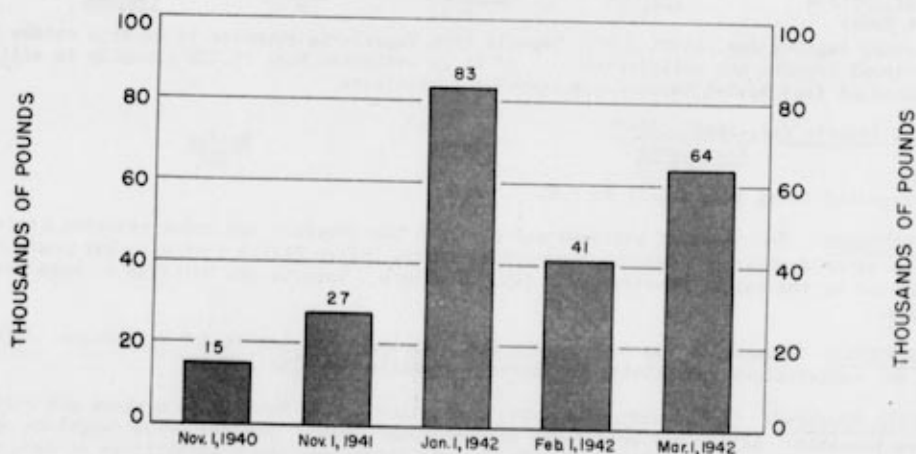
No priority action.

SUPPLY AND DEMAND

THOUSANDS OF POUNDS



STOCKS CENSUS SURVEY



WAR PRODUCTION BOARD, Statistics Division
Materials Branch

SEE OTHER SIDE FOR ABSTRACT
DECLASSIFIED

E.O. 11652, Sec. 3(E) and 5(D) of
Commerce Dept. Letter, 11-16-74
By RHP, Date MAR 14 1973

Data as of May 27, 1942
Revised Chart Issued May 29, 1942
Next Revision Due June 19, 1942

77700 A

BELLADONNA
(All figures in pounds)

BACKGROUND: Belladonna is a drug, the dried leaves and roots of the plant *Atropa Belladonna*, which is a native of Europe and is cultivated successfully in other areas, including the United States. Different amounts of the principal alkaloids (atropine, hyoscyamine, and scopolamine) are found in the leaves (0.3-0.5%) and roots (0.4-0.7%). Because of their difference in strength, the drug trade consider the roots and leaves as separate articles, although they are commonly referred to as one item (e.g. official import figures).

Belladonna is widely used in medical practice, and considered almost indispensable. More important uses: pharmaceutically for checking secretions, stimulating circulation and respiration; locally to relieve pain and to dilate the pupil of the eye.

KNOWN STOCKS: (Census survey of private stocks)

<u>Nov. 1, 1940</u>	<u>Nov. 1, 1941</u>	<u>Jan. 1, 1942</u>	<u>Feb. 1, 1942</u>
14,912	26,802	83,460	40,952

Census figures for earlier periods are not available. The Munitions Board, however, estimated domestic stocks at 40,000 pounds in November, 1940, and the same in November, 1941.

A government stockpile of 800,000 pounds was recommended in July, 1941; this recommendation was reduced in January 1942, to 260,000 pounds (200,000 pounds of leaves, 60,000 pounds of roots) but none had been accumulated through April 1, 1942.

NEW SUPPLY: Domestic cultivation is being widely developed during 1942. During 1917, when the source of imports was also cut off, domestic production reached an estimated 188,000 pounds. In the years since then, the domestic crop has been considered negligible, although official statistics are not available.

	<u>1939</u>	<u>1940</u>	<u>1941</u>	<u>1942</u>	<u>1943</u> (est.)
Domestic	N.A.	N.A.	N.A.	100,000(est.)	200,000
Imports					
Belgium	24,634	13,540	-----	-----	-----
Bulgaria	4,240	-----	17,637	-----	-----
Hungary	11,189	33,310	7,462	-----	-----
Italy	104,715	23,764	1	-----	-----
Yugoslavia	84,468	31,278	16,290	7,055 1/	-----
India	-----	-----	31,312	20,160 1/	20,000
Other	-----	23,502	3,486	2,780 1/2/	----- 1/
Total Imports	<u>229,246</u>	<u>125,394</u>	<u>76,189</u>	<u>29,995 1/</u>	<u>20,000</u>
Grand Total	N.A.	N.A.	N.A.	129,995	220,000

1/ Actual imports Jan.-April 1942. Imports from Yugoslavia reported to be from stocks in U.K.
Additional imports not anticipated. 2/ It is estimated that 25,000 annually in addition might be obtained from Soviet Union - not included in estimate.

Actual Imports Jan.-April, 1942:

<u>Spain</u>	<u>Yugoslavia</u>	<u>India</u>	<u>Mexico</u>	<u>Total</u>
2,339	7,055 1/	20,160	441	29,995

1/ Reported to be from stocks in U.K.

REQUIREMENTS: Estimates of military and civilian requirements are under revision at date of issuance of this abstract. Annual consumption in the United States during recent years has been estimated by the Tariff Commission at 185,000 pounds. Exports are believed to have been small, if any.

SUBSTITUTES: Stramonium and henbane are the principal substitutes for belladonna. However, there are no satisfactory substitutes for certain specific medicinal uses.

SPECIAL PROBLEMS: (1) Encourage domestic production. (2) Substitute henbane and stramonium where possible. Action has been taken to meet both points. However, with regard to domestic production upon which 1942 new supply is largely dependent, the possibilities of crop failures are particularly serious.

PRIORITY ACTION: None

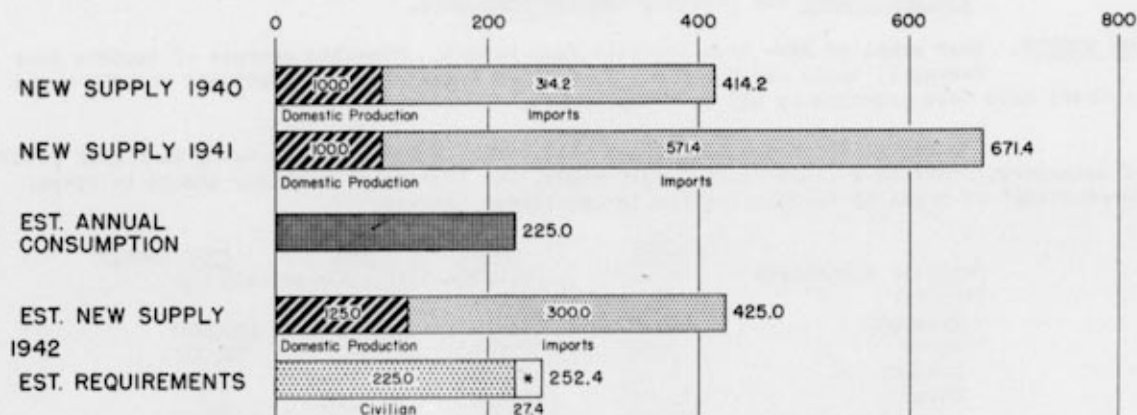
ERGOT

PRIORITY ACTION

No Priority Action

SUPPLY-DEMAND

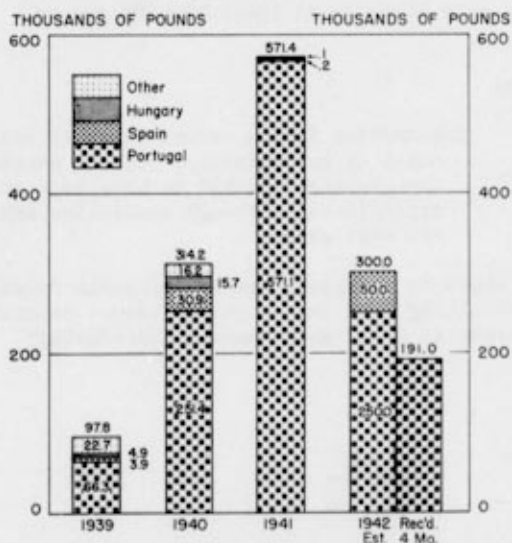
THOUSANDS OF POUNDS



* 1.3 Thousand Pounds - Military
26.1 Thousand Pounds - Export

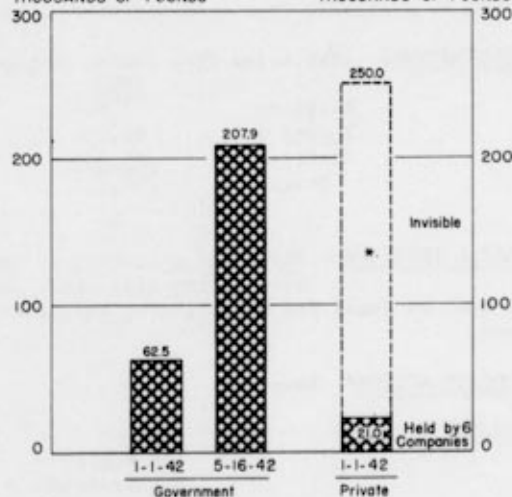
IMPORTS

BY COUNTRY OF ORIGIN



STOCKS

THOUSANDS OF POUNDS



* All private stocks unknown. However, large imports in 1940 and 1941 indicate possible stocks of 250,000 lbs. or more.

ERGOT
(All figures in pounds)

BACKGROUND: Ergot is a fungus that sometimes takes the place of the grain in rye and other grasses. Rye growers do not seek to increase ergot output but rather to reduce it, since it injures the grain crop. Ergot is used medicinally, primarily in obstetric practice to prevent hemorrhage. It is also used to stimulate circulation.

STOCKS:		<u>Oct. 1, 1941</u>	<u>Jan. 1, 1942</u>	<u>May 16, 1942</u>
	Government	None	62,454	207,938 <u>1/</u>

1/ Represents the completion of planned stockpile of 200,000 pounds.

Private: Except for small amounts reported to the Census by six pharmaceutical companies (21,000 pounds on Jan. 1, 1942), private stocks of ergot are unknown. Large imports during 1940 and 1941 indicate, however, stocks of at least 250,000 pounds and possibly considerably more.

NEW SUPPLY: Most supplies have been imported from Europe. Possible sources of imports are: Portugal, Spain and U.S.S.R. Imports of ergot extracts (dutiable whereas ergot is free) have been practically nil in recent years.

The gathering of domestic ergot will probably be increased owing to higher prices. If necessary, domestic sources could supply needs, but because of possible damage to crops, "production" of ergot by inoculating rye is considered inadvisable.

	<u>1939</u>	<u>1940</u>	<u>1941</u>	<u>1942 (est.)</u>
Domestic Production	N.A.	100,000(est)	100,000(est)	125,000
Imports:				
Portugal	66,302	251,414	571,068	250,000
Spain	3,840	30,924	---	50,000
Hungary	4,925	15,692	240	---
Other	22,703	16,189	120	<u>1/</u>
Total Imports	<u>97,770</u>	<u>314,219</u>	<u>571,428</u>	<u>300,000</u>
Total New Supply	N.A.	414,219	671,428	425,000

1/ Probably 50,000 will be available annually in Soviet Union, but imports from this source are not counted on.

Imports for the first 4 months of 1942: 190,994 pounds, all from Portugal. Domestic production, 1942 to date, unknown.

Estimates of 1943 supply have not been made although at least 125,000 pounds should be available from domestic sources alone.

REQUIREMENTS: (Estimates from Health Supply Branch)

	<u>1942</u>
Military	1,264
Export	26,130
Civilian	<u>225,000</u>
Total	<u>252,394</u>

Consumption during recent years is estimated at approximately 225,000 pounds. Exports are believed to have been insignificant, although statistics are not available.

SPECIAL PROBLEMS: Encourage gathering of domestic ergot to safeguard against probable reduction in imports. This implies obtaining only such ergot as occurs naturally and not, at least for the present, inoculation of domestic grain as a means of "producing" ergot.

PRIORITY ACTION: None

SUMMARY:

New Supply
Requirements

<u>1942</u>
425,000
<u>252,394</u>

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

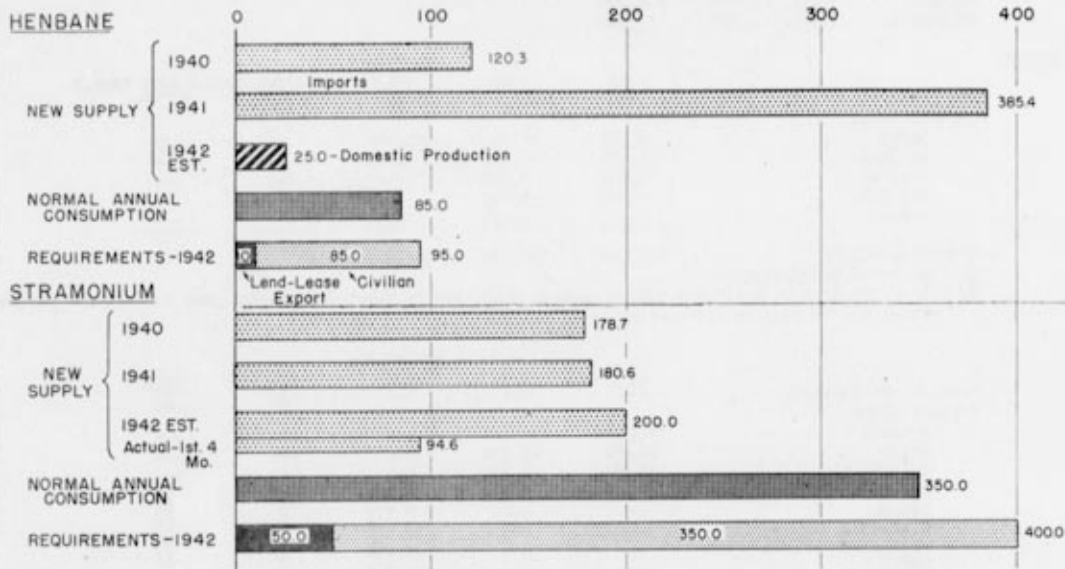
Data as of May 21, 1942
Revised abstract issued May 29, 1942
Next revision due: June 19, 1942

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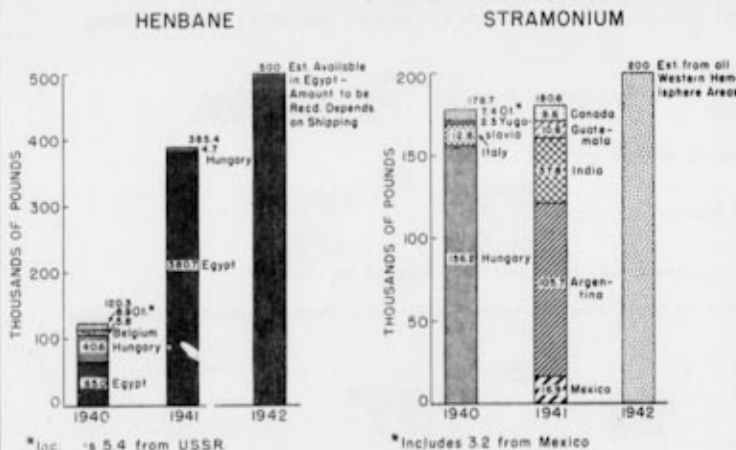
HENBANE AND STRAMONIUM

NO PRIORITY ACTION

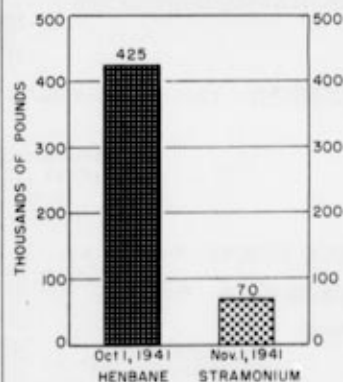
SUPPLY - DEMAND THOUSANDS OF POUNDS



IMPORTS



STOCKS INDUSTRY ESTIMATES



HENBANE AND STRAMONIUM

(All figures in pounds)

BACKGROUND: Henbane and stramonium are crude drugs used for many of the purposes for which belladonna is employed, and are important substitutes for that drug. Henbane consists of dried leaves and tops of the *Hyoscyamus niger*, and the *Hyoscyamus muticus*. The former variety, listed in the pharmacopoeia, is a native of Europe and Asia; was introduced and grows wild in the United States. The second type grows wild in Egypt. Stramonium consists of the dried leaves and flowering tops of *Datura stramonium* or Jimson weed found throughout the temperate parts of the world. Henbane and stramonium are profitably cultivated in the United States only under conditions of relatively high prices. During the World War, some henbane cultivation was reported in California and Montana; production this year is estimated at 25,000 pounds.

Uses: Though less active, henbane and stramonium are used as substitutes for belladonna; as sedatives and anti-spasmodics. They are also used as raw materials for the principal alkaloids found in belladonna; atropine; hyoscyamine; scopolamine.

STOCKS: Official statistics not available. Industry estimates:

Henbane	Oct. 1, 1941	425,000
Stramonium	Nov. 1, 1941	70,000

NEW SUPPLY:

	1939	1940	Henbane 1941	1942 (Est.)	1943 (Est.)
Domestic Production	1/	1/	1/	25,000	25,000
Imports from:					
Egypt	71,502	64,955	380,700	2/	2/
Hungary	36,076	40,558	4,669	---	---
Belgium	7,888	5,814	---	---	---
U.S.S.R.	6,172	5,413	---	---	---
Other	---	3,532	---	---	---

Total New Supply	121,638	120,272	385,369		
------------------	---------	---------	---------	--	--

1/ Estimated as negligible.

2/ Tariff Commission estimates 500,000 pounds available in Egypt during each year of which an unknown amount may be received, depending on shipping.

	1939	1940	Stramonium 1941	1942	1943
Domestic Production	---	---	---	1/	1/
Imports from:					
Hungary	391,590	156,190	---	---	---
Italy	61,731	12,773	---	---	---
Yugoslavia	56,915	2,303	---	---	---
Mexico	---	3,209	16,864	2/	2/
Canada	---	---	9,533	2/	2/
Guatemala	---	---	10,573	2/	2/
Argentina	---	---	105,636	2/	2/
India	---	---	37,819	---	---
All Other	6,976	4,259	220	---	---

Total New Supply	517,219	178,734	180,645	200,000	2/ 200,000
------------------	---------	---------	---------	---------	------------

1/ If necessary, and if prices were sufficiently high, domestic production could be expanded to take care of all requirements now being served by the imports.

2/ Estimated annual imports during 1942 and 1943 from all Western Hemisphere areas combined.

ACTUAL IMPORTS JAN.-APRIL 1942

Henbane		Stramonium			
Egypt	Guatemala	Argentina	Egypt	India	Total
257,260	5,587	64,800	6,711	17,480	94,578

REQUIREMENTS: (Estimates from Health Supply Branch)

	Henbane	1942	Stramonium
Lend-Lease and Export	10,000		50,000
Civilian 1/	85,000		350,000
Total	95,000		400,000

1/ Military requirements are small and are included in civilian.

SPECIAL PROBLEMS: Maintain imports. Keep in touch with the possibilities of increased domestic production.

PRIORITY ACTION: None.

SUMMARY:

	Henbane	1942	Stramonium
New Supply	257,260	1/	200,000
Requirements	95,000		400,000

1/ Actual imports for 4 months in 1942.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 21, 1942
Revised abstract issued May 29, 1942
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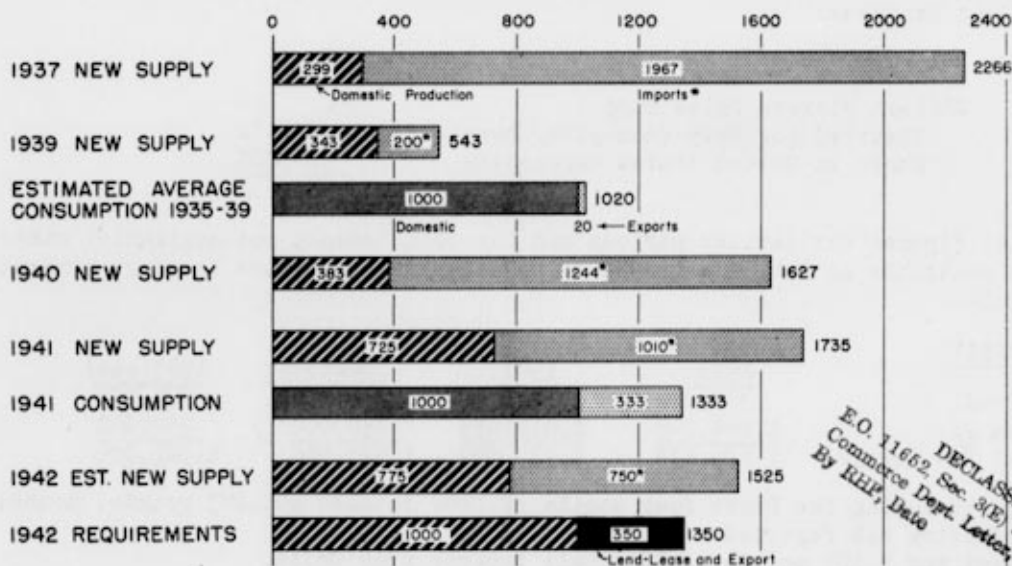
IODINE

PRIORITY ACTION

None

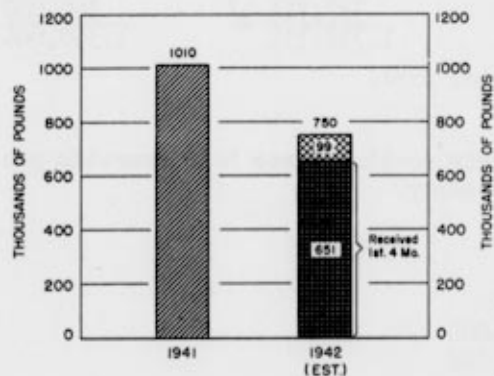
SUPPLY - DEMAND

THOUSANDS OF POUNDS



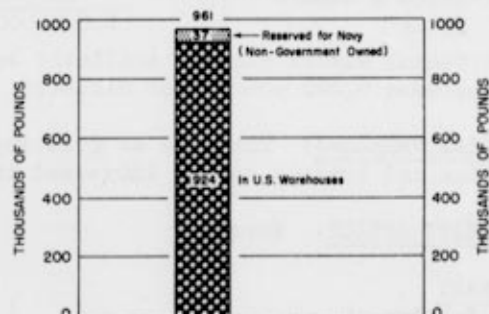
DECLASSIFIED
E.O. 11652, Sec. 3(E) and 5(D) of 1967
By RHP, Date 11-15-78

IMPORTS



STOCKS

CHILEAN NITRATE SALES CORP.
FEBRUARY 1, 1942



IODINE
(All figures in pounds)

BACKGROUND: As a pure element, iodine is a black, crystalline solid; crude iodine of commerce averages 99.6% in pure element. During 1941, domestic production of iodine was greatly increased, thus producing a very favorable supply situation. Additional imports from Chile should continue to be available. United States production is from the salt brine of petroleum wells. Chilean production is from Caliche, and is produced as a by-product of sodium nitrate. Iodine is used primarily as an antiseptic, in potassium iodide, in photographic film, and as an ingredient in foods.

STOCKS: Feb. 1, 1942

Chilean Nitrate Sales Corp.:

Reserved for Navy (non-govt. owned)	37,431
Other in United States warehouses	924,000
	961,431

Official figures for earlier periods and for total stocks not available, other stocks available on Feb. 1 believed to be significant. There is no government stockpile.

NEW SUPPLY:

	1940	1941	1942(est)	1943(est)
Dom. Prod.	382,692	725,000	775,000	775,000
Imports 2/	1,244,146	1,010,039	750,000 1/	750,000
Total New Supply	1,626,838	1,735,039	1,525,000	1,525,000

1/ Imports during the first four months of 1942 totaled 641,243 pounds; domestic production not reported.

2/ Except for 4,107 pounds in 1937, all imports from Chile.

REQUIREMENTS: (From Health Supply Branch)

	Consumption		Requirements
	1935 - 1939	1941	1942
	Est. Average	(Est.)	(Est.)
Domestic	1,000,000	1,000,000	1,000,000 2/
Lend-Lease & Export	20,000	332,711 1/	350,000
Total	1,020,000	1,332,711	1,350,000

1/ Official export figures available beginning 1941.

2/ Includes 6,000 pounds for military.

SPECIAL PROBLEMS: There is no pressing supply problem since both domestic production and imports can be increased if necessary.

PRIORITY ACTION: None

SUMMARY

	1942
New Supply	1,525,000
Requirements	1,350,000

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 21, 1942
Revised abstract issued May 29, 1942
Next revision due: June 19, 1942

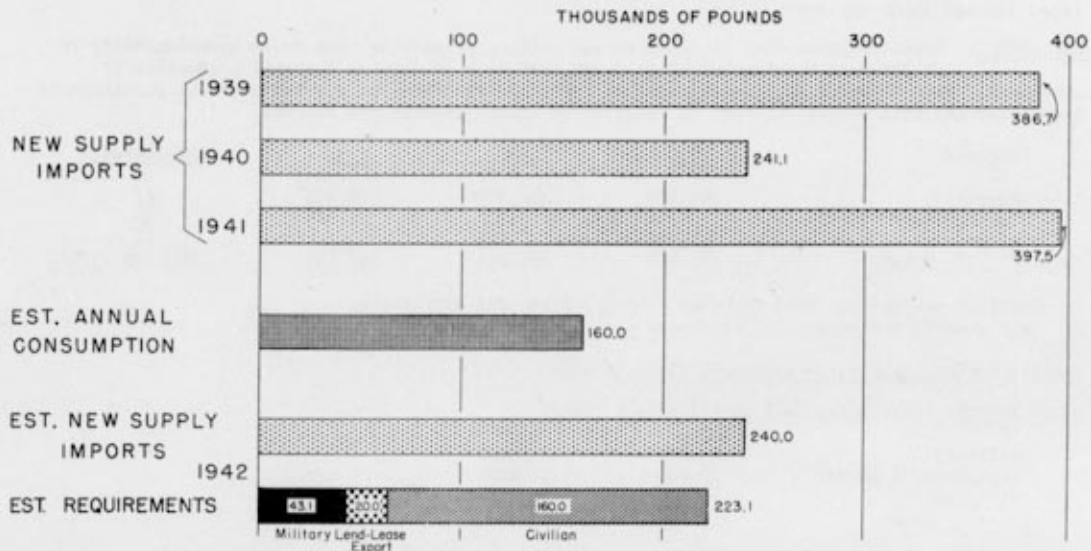


OPIUM

PRIORITY ACTION

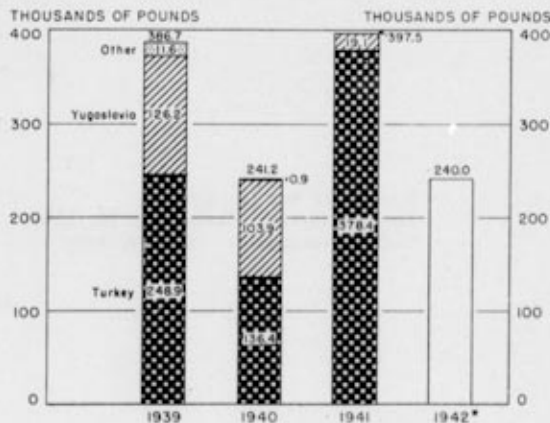
No Priority Action

SUPPLY-DEMAND



IMPORTS

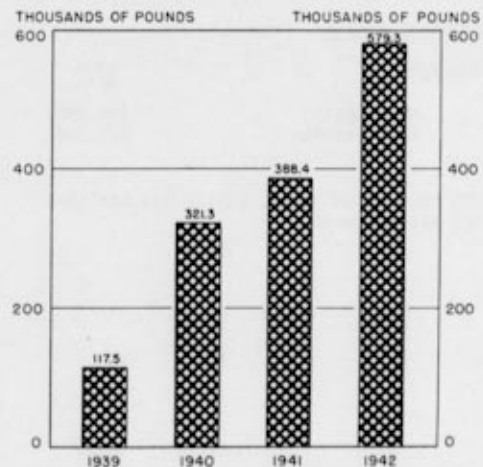
BY COUNTRY OF ORIGIN



* Possibly from Turkey, Iran and Afghanistan. Only imports for Government stockpile (240,000 pounds recommended) are expected.

PRIVATE STOCKS

IN BONDED WAREHOUSES



WAR PRODUCTION BOARD, Statistics Division
Materials Branch

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E.O. 11652, Sec. 3(E) and 5(D) or (G)
Commerce Dept. Letter, 11-16-78
By RHP, Date MAR 14 1973

SEE OTHER SIDE FOR ABSTRACT

Statistics of May 21, 1942
Revised Chart Issued May 29, 1942
Next Revision Due June 19, 1942
39810

OPIUM
(All figures in pounds)

BACKGROUND: The crude drug, opium, is the dried milky exudation obtained from the unripe capsule of the opium poppy. Opium is used in various tinctures and is the source of the alkaloids, morphine and codeine. Opium is used medicinally for the relief of pain and as a sedative. There is no effective substitute for opium medicinals. The importing, distributing, and exporting of opium and its derivatives are under the control of the Bureau of Narcotics, Treasury Department.

STOCKS: January 1

	<u>1939</u>	<u>1940</u>	<u>1941</u>	<u>1942</u>
Private (in bonded warehouses)	117,478	321,306	388,418	579,272

A government stockpile of 240,000 pounds was recommended in January 1942, but none had been accumulated through April 25, 1942.

NEW SUPPLY: Domestic production is nil although opium poppies have been grown experimentally in Vermont and Washington. Plans have been made to develop domestic production if necessary. Such production, however, must be under strict supervision which makes it particularly expensive, and this source will not be resorted to unless imports are cut off.

	<u>1939</u>	<u>1940</u>	<u>1941</u>	<u>1942 (Est.)</u>
Imports				
Turkey	248,909	136,370	378,451	1/
Yugoslavia	126,254	103,907	19,085	--
Other	11,559	876	--	--
Total	386,722	241,153	397,536	240,000 1/2/

1/ Possible sources for 1942 imports: Turkey, Iran, and Afghanistan.

2/ Only imports for government stockpile are expected during 1942.

Imports during the first 4 months of 1942: None.

REQUIREMENTS: (Estimates from Health Supply Branch)

	<u>1942</u>	<u>1943</u>
Military	43,094	77,387
Lend-Lease & Export	20,000	20,000
Civilian	160,000	160,000
Total	223,094	257,387

Annual domestic consumption in the United States during recent years is estimated at 160,000 pounds.

SPECIAL PROBLEMS: To continue to build up stocks while producing areas are comparatively easy to reach. In making plans for future supply, the cost of supervision and the uncertainty of domestic production must be balanced against shipping difficulties and costs of importing foreign-grown opium. The WPE Health Supply Branch questions the advisability of setting so low a goal as 240,000 pounds for the proposed government stockpile.

PRIORITY ACTION: None

SUMMARY:

	<u>1942</u>
New Supply	240,000
Requirements	223,094

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Date as of May 21, 1942
Revised abstract issued May 29, 1942
Next revision due: June 19, 1942

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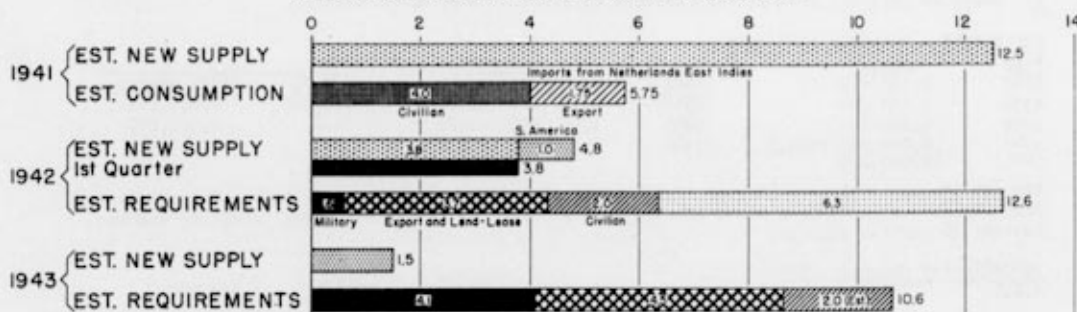
QUININE

PRIORITY ACTION

Conservation Order M-131 issued April 4, 1942, restricts the use of quinine to anti-malaria uses.

SUPPLY - DEMAND

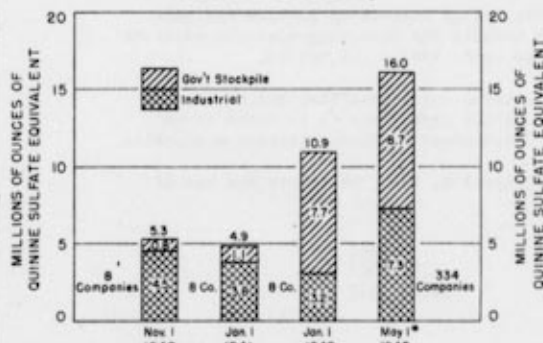
MILLIONS OF OUNCES OF QUININE SULFATE EQUIVALENT



IMPORTS



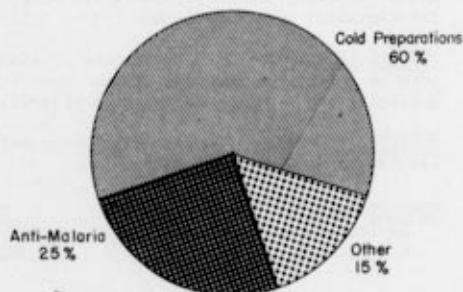
KNOWN STOCKS



* Preliminary results of industry survey under M-131

USES

Estimated



DECLASSIFIED
E.O. 11652, Sec. 3(E) and 5(D) or (E)
By RHP, Date

Date as of May 15, 1942

Revised Chart Issued May 18, 1942

20010 A

QUININE

(All figures in ounces of quinine sulfate or other quinine equivalent)

BACKGROUND: Quinine, an alkaloid extracted from the root and bark of the cinchona tree, is particularly valuable in the treatment of malaria. Ninety percent of the world's supply originates in the Netherlands East Indies, the balance mainly in South America and British India. It is usually extracted as quinine sulfate, although many other salts are also prepared. It is imported in the bark as well as in various extracted forms. Composite figures in terms of quinine sulfate are to an extent estimated, based on the expected percent yield from the cinchona bark. Uses of quinine in the United States as estimated by the Health Supply Branch, WPB, are: Anti-malarial, 25%; cold preparations, 60%; other, 15%.

KNOWN STOCKS:	Nov. 1, 1940	Jan. 1, 1941	Jan. 1, 1942	May 1, 1942
Gov't. Stockpile	800,000	1,100,000	7,700,000	8,700,000
Industrial (8 firms)	4,500,000	3,800,000	3,200,000	(334 firms) 7,300,000 1/
Total	5,300,000	4,900,000	10,900,000	16,000,000

1/ Computed (5/7/42) from partial returns of questionnaire under M-131.

NEW SUPPLY - IMPORTS, 1937-1944

Year	Amount	Year	Amount and Source	
1937	4,343,000	1942	Total	N.E.I. South America
1938	3,138,000	1943	4,797,000 (est.)	3,797,000 1,000,000
1939	4,858,000	1944	1,500,000 (est.)	--- 1,500,000
1940	6,000,000 (est.)		2,000,000 (est.)	--- 2,000,000
1941	12,500,000			

Imports through 1941 were limited almost entirely to quinine originating in the Netherlands East Indies. Imports from South America will probably be in cinchona bark, yielding approximately 2% quinine sulfate.

IMPORTS--1st Quarter, 1942

N.E.I.	3,797,000 oz.	South America	40,000	Total	3,837,000
--------	---------------	---------------	--------	-------	-----------

REQUIREMENTS: Estimates of requirements are subject to marked change depending on the intensity of the anti-malarial program. Treatment of cases affected (approximately 0.2 oz. per case) requires relatively small amounts compared with preventive doses for the entire population, particularly the troops in malaria-infested areas (preventive doses for season of from 3 to 6 months require from 1.2 to 2.5 oz. per person).

(Requirements estimates from Health Supply Branch)

	1941	1942	1943	1944
				(6 mos.)
Military (Inc. in civ.)	616,336	4,114,912	5,611,216	
Exports & Lend-Lease	1,750,000	3,723,472	4,500,000	
Civilian (est.)	4,000,000	2,000,000 1/	2,000,000 1/	
Total	5,750,000	6,339,808	10,614,912	

1/ One-half for anti-malarial purposes and other for cold preparations, etc. already in stock prior to M-131. Quinine in such preparations not included in known stocks shown above.

SUBSTITUTES: A synthetic drug, atabrine, is believed to be a satisfactory substitute for quinine in the treatment of malaria. It is produced only by the Winthrop Chemical Company under German patents. It is expected that Merck & Company will process some of the material. All supplies necessary for the preparation of atabrine are available in the United States, although some are scarce. Current rate of production: 56,000 pounds, equivalent in therapeutic doses to 2,987,000 ounces of quinine; and as a prophylactic to 6,272,000 ounces of quinine.

It is expected that atabrine will be substituted in increasing amounts for quinine. However, the requirements listed above do not include the following specific requests for atabrine: Military (Army) 1943 - 3,520 oz.; Lease-lend, 1942 - 168,584 oz.

SPECIAL PROBLEMS: (1) Substitution of atabrine for quinine where possible, and the assurance of sufficient supplies of the substitute. The Justice Department is reported to be examining the Winthrop monopoly in this field. (2) Development of South American production.

GOVERNMENT CONTROL: Conservation Order M-131, issued April 4, 1942, restricts the use of quinine to anti-malarial uses.

SUMMARY:

	1942	1943
Estimated New Supply	4,797,000	1,500,000
Estimated Requirements	6,339,808	10,614,912

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 15, 1942
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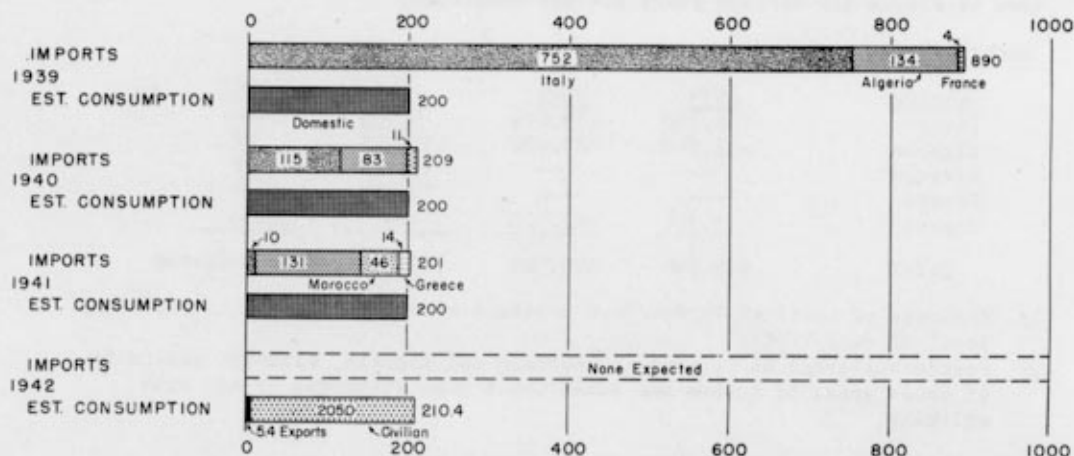
RED SQUILL

AN INGREDIENT OF RODENTICIDES

PRIORITY ACTION
No priority action to date.

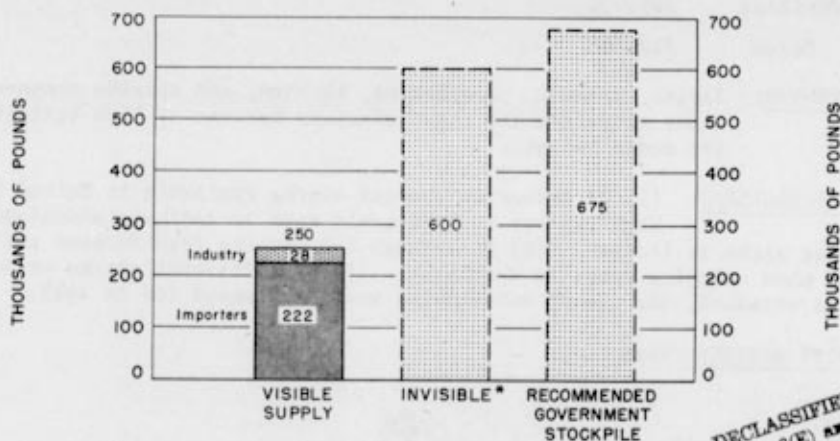
SUPPLY-DEMAND

THOUSANDS OF POUNDS



STOCKS

JAN 1, 1942 ESTIMATE



* Extremely large imports in 1939 would indicate an invisible stock.

RED SQUILL
(All figures in pounds)

BACKGROUND: Red squill, an ingredient of rodenticides, is the dried bulb of the red squill plant, which grows along the Mediterranean coasts of Europe and Africa. It is valuable as an exterminator of rodents primarily because, unlike possible substitutes, it is not poisonous to humans and most domestic animals.

STOCKS: Jan. 1, 1942. Stocks have been estimated at 250,000 pounds, of which 222,000 pounds is known to be in the hands of two importers. However, extremely large imports in 1939 would indicate additional invisible stocks of approximately 400,000 pounds. A Government stockpile of 675,000 pounds was recommended in August 1941, but none was accumulated through January 1942. Figures on stocks for earlier years are not available.

IMPORTS - 1939-1943 1/

Country	1939	1940	1941	1942
Italy	752,120	115,176	9,757	---
Algeria	133,840	83,092	131,528	2/
Morocco	---	---	45,770	2/
Greece	---	---	14,429	---
France	3,704	11,112	---	---
Total	889,644	209,380	201,484	None Expected

- 1/ Analysis of invoices in New York custom district - believed to represent total of such trade.
- 2/ Possible sources at present are Morocco and Algeria, although proximity of these areas to active war zones would make shipments of any size unlikely.

ACTUAL IMPORTS JAN.-APRIL 1942: None.

REQUIREMENTS: (Estimates from Health Supply Branch)

	1942	
Military	---	Domestic consumption for recent years
Export	5,400	estimated at 200,000 pounds.
Civilian	205,000	
Total	210,400	

SUBSTITUTES: Barium, arsenic, phosphorous, thorium, and cyanide compounds: these materials are unsatisfactory because of high toxicity for human beings.

SPECIAL PROBLEMS: (1) To determine present stocks available in United States. High imports in 1939 would seem to indicate additional supplies might be located. (2) To arrange for imports from Morocco and Algeria if and when shipping space is available. (3) If additional stocks or imports are not obtained, the use of substitutes must be planned for in 1943.

PRIORITY ACTION: None

SUMMARY:

	1942
New Supply Requirements	210,400

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

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SUGAR

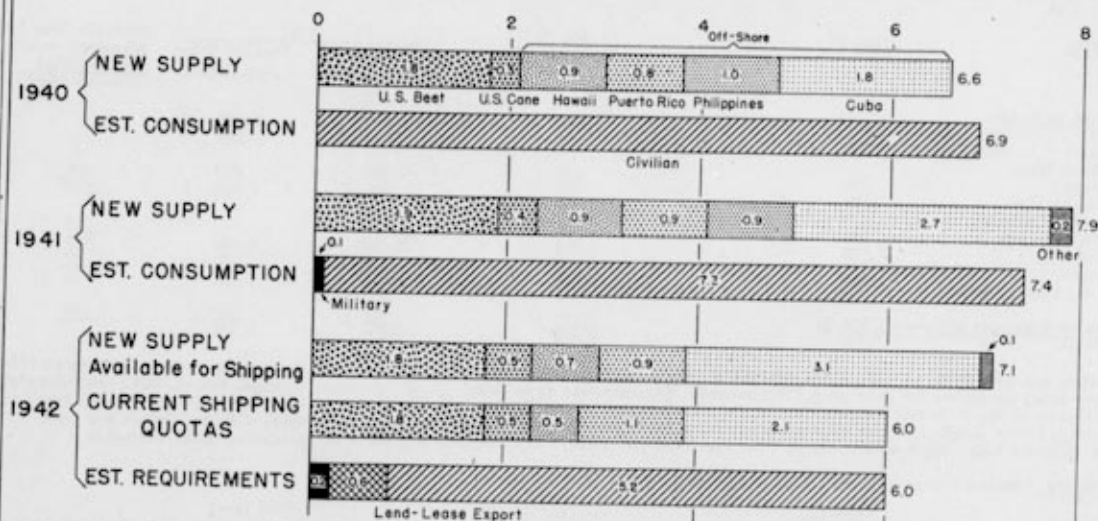
PRIORITY ACTION

General Preference Order M-55, Dec. 13, 1941, limited receipts by manufacturers and distributors to amount used or resold during the same month of 1940, later amended to 80% of the amount used or resold for months of February - April. Stocks over 60 days' supply applied against quotas.

Rationing Order No. 3, April 21, 1942, effective April 28, limited home consumption to $\frac{1}{4}$ pound per person per week and allowed a 5-pound maximum for home canning; limited industrial users to 70% of amount used during 1941 except canners and meat packers, who were allowed 100%. Restaurants and other eating places limited to 50% of amount used in 1941.

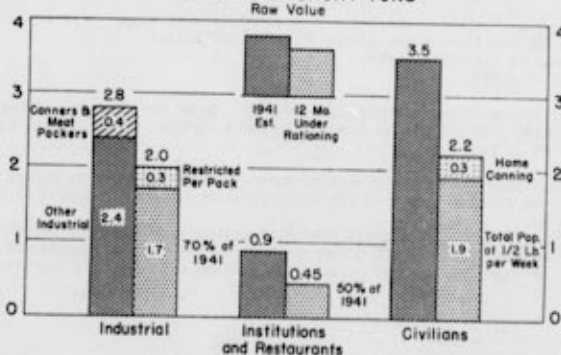
SUPPLY-DEMAND

MILLIONS OF SHORT TONS, RAW VALUE



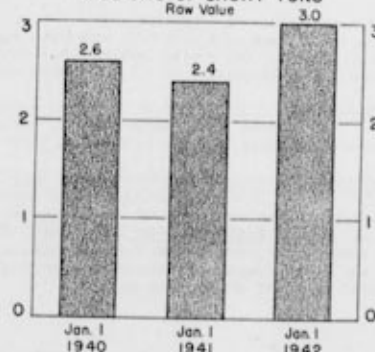
CONSUMPTION AND RATIONING

MILLIONS OF SHORT TONS



STOCKS

MILLIONS OF SHORT TONS



WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 15, 1942
Revised Chart Issued May 18, 1942

SEE OTHER SIDE FOR ABSTRACT

DECLASSIFIED

E.O. 11652, Sec. 3(E) and 5(D) of (S)
Commerce Dept. Letter, 11-16-78
By RHP, Date

30479 A

CONFIDENTIAL

SUGAR

(All figures in thousands of short tons, raw value;
1.07 - approximately 1.0 refined)

BACKGROUND: The major sources of sugar are sugar beets and sugar cane. A by-product called blackstrap molasses is produced in the grinding of beets and cane. The principal use of molasses is in the production of industrial alcohol. Sugar cane is diverted to what is called high test molasses when the need for industrial alcohol so requires.

During recent years, sugar has faced three successive major problems. 1. Over-production. Beginning in 1934 a quota system was applied to domestic and off-shore areas. (Off-shore areas have provided approximately 70% of our supplies). 2. Shortage of sugar to meet increased demands began to develop seriously in 1941. Among the factors responsible for this were (a) increased purchasing power, (b) sugar cane diverted to high test molasses, (c) lend-lease and other export requirements, (d) to an extent, industrial and household hoarding, (e) finally loss of the Philippines (source of 14% of our supplies) and reduced production in Hawaii because of war activities. 3. Shipping difficulties. In spite of these factors, the sugar situation during the first months of 1942 showed signs of developing favorably owing to the larger production of sugar in Cuba, scaling down of original export requirements, and the substitution of grain for sugar as a source of industrial alcohol. However, almost simultaneously the shipping problem became more acute due to submarine activity. The supply of sugar in sight is sufficient to meet normal American and expected lend-lease requirements; the problem is now one of moving sugar to the United States. Because of the uncertainty of the availability of sugar, nation-wide rationing was put into effect on April 28.

During 1942, domestic production of sugar may increase slightly over the estimates shown, but the scarcity of farm labor competing crops, and the need for new machinery using scarce materials are expected to prevent any significant increase.

<u>STOCKS:</u>	<u>Jan. 1, 1940</u>	<u>Jan. 1, 1941</u>	<u>Jan. 1, 1942</u>
	2,612	2,358	2,957 ^{1/4}

^{1/} Includes 0.8 thousand tons of sugar estimated to be in hands of industrial users and households, including 500 thousand tons frozen under M-55.

<u>NEW SUPPLY:</u>	<u>1940 ^{1/}</u>	<u>1941 ^{1/}</u>	<u>1942</u>		<u>Arrivals from off-shore areas 1st Qtr. 1942 (Preliminary)</u>
			<u>Available for Shipment</u>	<u>Current Shipping Quotas</u>	
<u>Supplied as sugar</u>					
Continental U.S. Beet Sugar	1,802	1,945	1,800	1,800	
Continental U.S. Cane Sugar	302	401	484	484	
<u>Off-Shore Areas</u>					
Hawaii	941	903	700	500	88
Puerto Rico	798	933	900	1,100	140
Virgin Islands	-	5	5	-	
Philippines	981	855	-	-	23
Cuba	1,750	2,699	3,074	2,100	495
Other	17	189	100	70	20
<u>Total, supplied as sugar</u>	<u>6,591</u>	<u>7,930</u>	<u>7,063</u>	<u>6,054</u>	<u>766 ^{2/}</u>
<u>Supplied as high test molasses</u>	<u>431 ^{3/}</u>	<u>1,123 ^{3/}</u>	<u>567 ^{4/}</u>	<u>567 ^{4/}</u>	<u>180</u>
<u>Grand Total</u>	<u>7,022</u>	<u>9,430</u>	<u>7,630</u>	<u>6,621</u>	

^{1/} Charges against quota. ^{2/} Total arrivals from off-shore 1st Quarter, 1942: 766 thousand short tons compared to present off-shore shipping quotas for year of 3,770 thousand. ^{3/} Shipments from Cuba. ^{4/} Although Chemical Branch, WFB, has requested diversion of sugar to high test be stopped, Cuba authorities indicate that 795 thousand short tons (700 thousand Spanish tons) of high test have nearly all been made as agreed upon in March 1942. Of the 795 thousand short tons, U.K. and Canada may take 225 thousand tons, sugar value, direct from Cuba, and the balance will replace shipments of blackstrap until exhausted.

REQUIREMENTS: Excludes amounts diverted to high test molasses as shown above

	<u>1940 (est)</u>	<u>1941 (est)</u>	<u>1942 (est)</u>
	<u>Consumption</u>	<u>Consumption</u>	<u>Requirements</u>
Military	-	145	200 ^{1/}
Lend-Lease, Export	2/	2/	610 ^{1/}
Civilian	6,890	7,285	5,183 ^{3/}
<u>Total</u>	<u>6,890</u>	<u>7,431 ^{4/}</u>	<u>5,981</u>

^{1/} Report to Requirements Committee, April 10. Additional lend-lease supplies available from America-owned sugar held in Cuba.
^{2/} Exports in 1940 and 1941 made from non-quota sugar: 1940 - 178,000 short tons; 1941 - 55,000 short tons.
^{3/} Based on 3 months' deliveries, estimate for April, and balance on rationing basis.
^{4/} 1941 estimated consumption of 7,431 compares with deliveries of 8,094.

SPECIAL PROBLEMS: 1. Shipping from Caribbean areas. 2. Distribution of sugar within the country. Sugar is plentiful in some areas of the United States, but scarce in others, particularly in the Northwestern regions. Supplies for this area are now moved first by ships to Southern ports and then North by rail.

GOVERNMENT CONTROL: General Preference Order M-55, Dec. 13, 1941, limited receipts by manufacturers and distributors to amount used or resold during the same month of 1940; later amended to 80% of the amount used or resold for months of February - April. Stocks over 60 days' supply applied against quotas.
Rationing Order No. 3, April 21, 1942, effective April 28, limited home consumption to $\frac{1}{2}$ pound per person per week and allowed a 5-pound maximum for home canning; limited industrial users to 70% of amount used in 1941 except canners and meat packers, who were allowed requirements on a restricted quantity of sugar per unit of pack. Institutions and public eating places were limited to 50% of amount used in 1941.

SUMMARY:

Domestic Supply & current shipping quotas
Requirements (present rationing basis)

1942
6,054
5,981

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 15, 1942
Revised. Abstract issued May 18, 1942

OTHER AGRICULTURAL &
FOREST PRODUCTS

BALSA WOOD

DECLASSIFIED
E.O. 11652, Sec. 3(E) and 4(D) of
Commerce Dept. Letter, 11-14-78
By RHP, Dab

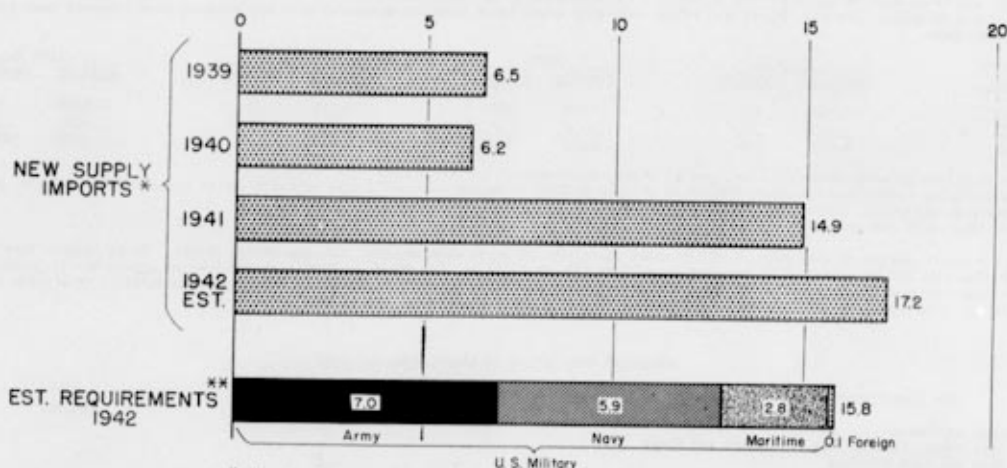
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PRIORITY ACTION

An M order has been prepared and probably will be issued within a short time.

SUPPLY - DEMAND

MILLIONS OF BOARD FEET

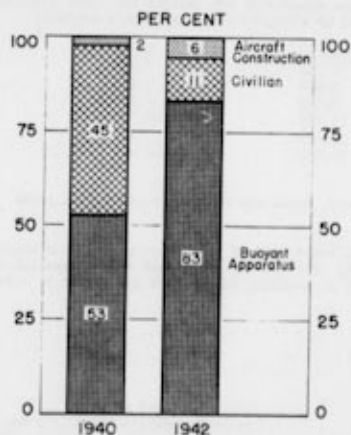


* Almost all imports from Ecuador.

** Exclusive of 3,000,000 board feet of aircraft grade and 500,000 board feet of heavier balsa to be shipped on British Empire account.

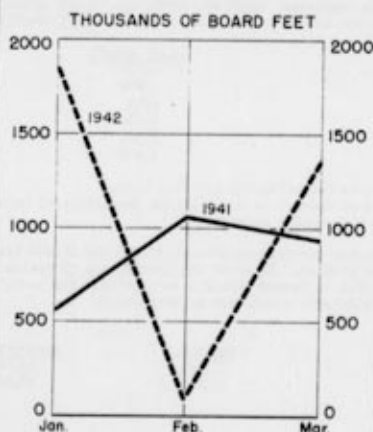
USES

ESTIMATED CONSUMPTION



IMPORTS *

1941-1942

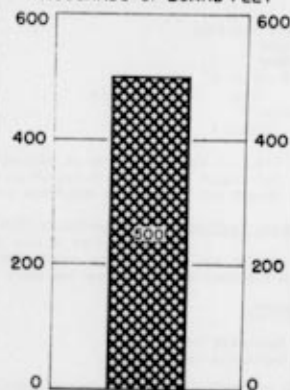


* Mostly from Ecuador.

STOCKS

HELD BY IMPORTERS AND DEALERS *

THOUSANDS OF BOARD FEET



* All stocks, as well as imports, are to be frozen under the pending general conservation M order.

BALSA WOOD

(All figures in thousands of board feet)

BACKGROUND: Balsa is the wood of a large tree of tropical America. It is one of the lightest of woods, having only about one-fourth of the weight of spruce. The uses of balsa fall into three major groups: (1) buoyant apparatus, (2) aircraft construction, and (3) model airplanes and other civilian uses. To a certain extent, these demands at present are supplementary rather than conflicting. Balsa for use in aircraft construction must not exceed 8½ pounds per cubic foot, while wood weighing from 8½ to 12, or even 15 pounds per cubic foot, is satisfactory for most floatation purposes. In some cases, the medium weights are preferred for life rafts because of the added strength. For each of these purposes, the wood must have structural consistency and be free from defects (principally worm holes), and should be artificially dried to arrest a reinfestation. In contrast, air-dried balsa, heavier than 12 pounds per cubic foot, and shorts, scraps, and rejects are satisfactory for model airplane and other civilian uses.

An entirely new type of combat plane to be manufactured by the United Kingdom has greatly increased the demand for high-grade balsa weighing less than 8½ pounds. Shortage of cork and kapok, which are the only natural materials other than balsa satisfactory for floatation purposes, has greatly increased the demand for balsa for marine life-saving apparatus. The all-time record imports during 1941 reflected the great rise in demand, and were achieved in part by increasing the weight and decreasing the quality of the wood.

NEW SUPPLY: No balsa is produced in the United States. The amounts imported during recent years together with estimates for 1942 are listed under "Imports".

STOCKS: Stocks of balsa held by importers and dealers in the United States are estimated at 500 thousand board feet. All stocks, as well as imports, are to be frozen under the pending general conservation M order.

IMPORTS: All balsa wood is imported from Ecuador, with the exception of small quantities from Nicaragua, Guatemala, Costa Rica, Panama and Colombia. Imports, summarized below, represent saved balsa with the exception of a few thousand feet imported each year in the form of logs.

Country of Origin	1939		1940		1941		1942 Est. 1/	
	Quantity	Percent	Quantity	Percent	Quantity	Percent	Quantity	Percent
Ecuador	6,462	100	6,200	100	14,737	99	16,900 2/	99
Other 1/	5	4/	12	5/	159	1	250	1
Total	6,467	100	6,212	100	14,896	100	17,150 2/	100

1/ Includes some material which will not meet military requirements.

2/ Not including 3,500 thousand board feet to be shipped on British Empire account, a part of which may be transhipped from U. S. ports.

3/ Nicaragua, Guatemala, Costa Rica, Panama and Colombia.

4/ Less than .5 of one percent.

During the first quarter of this year, 3,383 thousand board feet of balsa were imported into the United States. These imports were all from Ecuador with the exception of 15 thousand board feet from Costa Rica. The first quarter total for 1942 is approximately 30 percent greater than that for the like period of 1941. Recommendations are being placed before the War Shipping Administration to arrange ship schedules to lift a minimum of 2,000 thousand board feet monthly from June through the balance of the year.

USES:ESTIMATED CONSUMPTION OF BALSA, 1940 and 1942

Use classification	1940		1942	
	Quantity	Percent	Quantity	Percent
Buoyant apparatus				
Life rafts, floats, life preservers and buoys	47			
Ship and boat building	6			
Total buoyant apparatus	53		83	
Model airplane and other civilian uses				
Model airplane material	40			
Protective packing and insulating material, boxes, etc.	5			
Total civilian uses	45		11 1/2	
Aircraft construction	2		6	
Total all purposes	100		100	

1/ After government control becomes effective, civilian needs, including model airplanes, will be supplied out of waste and heavier material inadvertently included with the lighter grades.

REQUIREMENTS: Estimates of the Requirements Committee, April 26, 1942, are listed below. These amounts do not include the 3,000 thousand board feet of aircraft grade and 500 thousand feet of heavier balsa which are to be shipped on British Empire account.

	Light Weight	Medium Weight	Total
Direct Military			
Army	1,000	5,050	7,050
Navy	800	5,120	5,920
Maritime 1/	None	2,815	2,815
Total - U. S. military	1,800	13,965	15,765
Foreign 2/	None	120	120
Total	1,800	14,085	15,885

The Civilian Supply has made no official claim for balsa for civilian needs.

1/ The amount required will depend in a large measure on the relative quantities of balsa, cork, kapok and rubber used in marine goods.

2/ Canada not included in shipments on British Empire account.

SPECIAL PROBLEMS: It is estimated that Ecuador can produce between 20,000 and 24,000 thousand board feet of balsa during 1942, but shipping is the crux of the balsa problem. To avoid the possibility of choice grades of balsa being diverted to nonessential uses, an M order has been prepared and probably will be issued within a short time. The possibility of securing substantial quantities of balsa from tropical American countries other than Ecuador should not be overlooked.

	1942	
	Maximum	Conservative
Estimated new supply	21,000	13,000
Estimated requirements	15,885	15,885

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 22, 1942
Revised abstract issued May 29, 1942
Next revision due: June 19, 1942

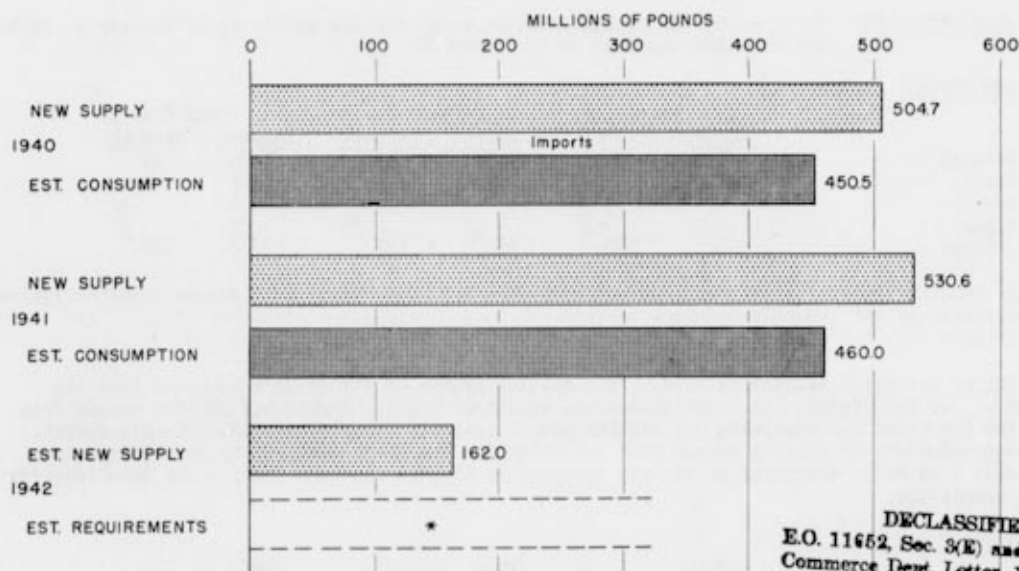
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BURLAP

PRIORITY ACTION

Burlap and burlap products are controlled under Conservation Order No. M-47, which requires importers and importing bag manufacturers to set aside two-thirds of the burlap they receive for a government stockpile, such stocks to be used only if needed to fill orders on hand bearing a preference rating of A-1-j or higher, the remaining one-third to be sold, delivered, or processed for agricultural bags only. M-47 also sets forth conservation measures designed to prolong the lifetime of burlap bags and calls for prompt return or sale of such bags for re-use through existing channels.

SUPPLY-DEMAND

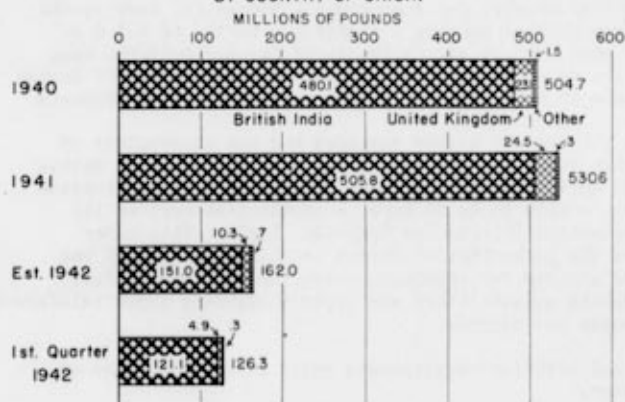


* Estimates of military and civilian requirements under revision at date of issuance of this chart.

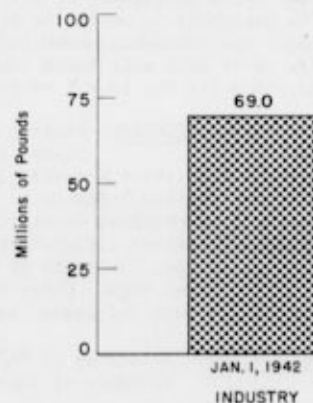
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E.O. 11652, Sec. 3(E) and 5(D) of (S)
Commerce Dept. Letter, 11-15-72
By RHP, Date

IMPORTS

BY COUNTRY OF ORIGIN



STOCKS



BURLAP
(All figures in million pounds)

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BACKGROUND: Burlap is a heavy jute cloth which the U.S. imports in finished form, as there is no domestic burlap weaving industry. (In the absence of a high protective tariff, it has been impossible to compete with Indian and other foreign mills.) Besides being the world's leading burlap producer, India is the chief source from which the other burlap producing countries obtain the requisite supplies of raw jute. Because of recent developments affecting India and its sea lanes, the prospects of receiving new supplies of burlap other than shipments that are already afloat must be considered doubtful.

USES: Burlap is used principally to make bags and sacks for agricultural products, food supplies, chemicals, etc. It is also used extensively as a baling or covering material for a great variety of commodities. In addition, it has numerous minor uses, but the latter are quantitatively small. The military demand for burlap is principally for sandbags, bags for supplies, and camouflage cloth.

STOCK POSITION: Total stocks of burlap amounted to 69 million pounds as of January 1, 1942, all of which was held by the industry.

NEW SUPPLY: Imports 1/

	1940		1941		1942 (Est.)	
	Amount	Percent	Amount	Percent	Amount	Percent
British India	480.1	95	505.8	95	151.0	93
United Kingdom	23.1	5	24.5	5	10.3	7
Brazil	.2	2/	.2	2/	.2	2/
Other	1.3	2/	.1	2/	.5	2/
Total	504.7	100	530.6	100	162.0	100

1/ General imports. Data for 1940 and 1941 from U.S. Department of Commerce; 1942 estimates prepared by WPB, Textile Research Section.

2/ Less than 0.5 percent.

During the first quarter of 1942, 126.3 million pounds of burlap were imported into the U.S. Of this total, 121.1 million pounds came from British India, 4.9 million pounds from the U.K., and the remaining 0.3 million pounds from all other countries. Of this amount, approximately 25 million pounds were set aside for the government stockpile, under amendment 1 of M-47, according to reports received by the WPB from the Textile Bag Manufacturers Association.

CONSUMPTION: 1/

1939	1940	1941
497.4	450.5	460.0

1/ Source: Estimates prepared by the Textile Bag Manufacturers Association.

GOVERNMENT CONTROL: Burlap and burlap products are controlled under Conservation Order No. M-47 which requires importers and importing bag manufacturers to set aside two-thirds of the burlap they receive for a government stockpile, such stocks to be used only if needed to fill orders on hand bearing a preference rating of A-1-j or higher, the remaining one-third to be sold, delivered, or processed for agricultural bags only. M-47 also sets forth conservation measures designed to prolong the lifetime of burlap bags, and calls for prompt return or sale of such bags for re-use through existing channels.

SUBSTITUTION PROGRAM: Because of the shortage of burlap supplies and the uncertainty of future shipments, steps have been taken to replace burlap by cotton osenaburges and cotton bag sheeting. On April 20, 1942, the War Production Board instructed the Cotton Textile Industry to convert, within 30 to 60 days, a substantial part of its capacity from civilian to military production (Limitation Order No. L-99). This order includes provisions designed to double the production of cotton osenaburges and cotton bag sheetings to meet the needs of the war program for sandbags, camouflage cloth, and food and agricultural bags. Other substitution possibilities are paper (including paper reinforced with fiber); bulk shipments; wooden cases and barrels.

REQUIREMENTS: Estimates of military and civilian requirements under revision at date of issuance of this abstract.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 22, 1942
Revised abstract issued May 29, 1942
Next revision due: June 19, 1942

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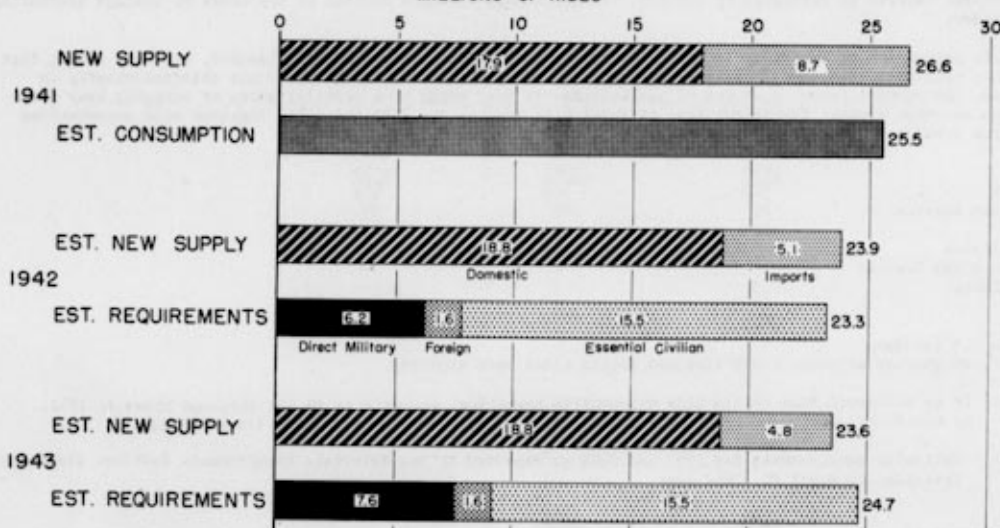
CATTLE HIDES

PRIORITY ACTION

Imports of cattle hides are controlled by General Import Order M-63. Cutters of sole leather are required under M-80 to set aside each day all innersoles and outsoles and repair taps of military weight and quality which they cut. The sale or use of soles thus set aside is forbidden except to manufacturers filling orders for military use. An order for the control of domestic hides is now in preparation. This, in conjunction with M-63 control of foreign hides, will bring the total supply of cattle hides under control.

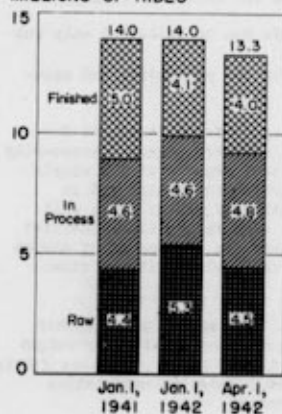
SUPPLY AND DEMAND

MILLIONS OF HIDES



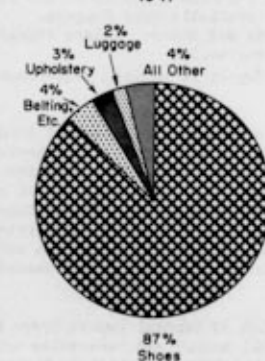
STOCK POSITION

MILLIONS OF HIDES



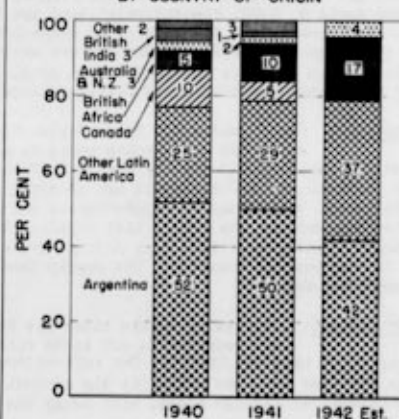
CIVILIAN USES

1941



IMPORTS

BY COUNTRY OF ORIGIN



WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 14, 1942
Revised Chart Issued May 18, 1942

SEE OTHER SIDE FOR ABSTRACT

DECLASSIFIED

E.O. 11652, Sec. 3(E) and 5(D) or (G)

Commerce Dept. Letter, 11-16-72

By RHP, Date

A

CATTLE HIDES
(All figures in thousand hides)

CONFIDENTIAL

USES: The term "cattle hides", as used commercially, includes cow, steer, and bull hides, i.e., the skins of adult bovines. The leather produced from these hides is used largely for the manufacture of shoes, but other essential cattle hide leathers include industrial belting, harness, and saddlery. Civilian uses of cattle hides in 1941 were as follows: shoes - 87 percent; belting, etc. - 4 percent; upholstery - 3 percent; luggage - 2 percent; and all other - 4 percent.

STOCK POSITION: 1/

	Total	Raw	In Process	Finished
January 1, 1941	13,998	4,454	4,586	4,958
January 1, 1942	14,021	5,330	4,622	4,069
April 1, 1942	13,318	4,523	4,833	3,962

1/ Stocks in all hands. Source: Tanners Council of America.

NEW SUPPLY:

	1941	1942	Estimates	1943
Domestic Production 1/	17,860	18,800		18,800
Imports 2/	8,738	5,100		4,800
Total	26,598	23,900		23,600

1/ Data for 1941 are from the Tanners Council of America; estimates for 1942 and 1943 prepared by WFB, Leather & Shoe Research Section.

2/ Data for 1941 are imports for consumption as reported by the Department of Commerce. For 1942 and 1943 figures represent general imports as estimated by the WFB, Leather & Shoe Research Section on the basis of tonnage allocations for cattle hides.

IMPORTS: U.S. production of raw hides is inadequate to meet domestic requirements for leather, with the result that this country is customarily a large importer of foreign hides. Although these are obtained chiefly in South America, the current import position of cattle hides is poor owing to a redistribution of shipping away from South America to other areas. The percentages of total hide imports for 1940 and 1941, together with expectations for 1942, from specified sources are shown below:

	1940	1941	Est. 1942
Argentina	52%	50%	42%
Other Latin America	25	29	37
Canada	10	5	1/
British Africa	5	10	17
Australia & New Zealand	3	2	4
British India	3	1	-
Other	2	3	-
Total	100%	100%	100%

1/ Less than 0.5 percent.

During the first quarter of 1942, 1,500 thousand cattle hides were imported.

CONSUMPTION: It is estimated that cattle hide consumption (wettings) amounted to 25,520 thousand hides in 1941. In the first quarter of 1942, consumption amounted to approximately 7,200 thousand hides.

REQUIREMENTS: Estimated requirements for 1942 and 1943 as reported by the Materials Requirements Section, Statistics Division, on April 20, 1942 are:

	1942	1943
Direct Military 1/	6,800	7,600
Foreign 2/	1,600	1,600
Essential Civilian 3/	15,500	15,500
Total	23,900	24,700

1/ Estimates are based on the S-I Ultimate Program and on Sections I and II of the revised War Munitions Program (April 6 and April 9, 1942, respectively), and the latest available Navy Program.

2/ Foreign requirements are for leather as such--Lend-Lease and other. (These requirements can be satisfied only out of grades and weights not suitable for our own military program.)

3/ Civilian - Rough estimate by the Division of Civilian Supply of minimum requirements for the production and maintenance of industrial facilities and civilian goods.

SPECIAL PROBLEMS: Cattle hides are by-products; their availability is dependent largely on domestic slaughter for meats and on shipping space to transport foreign hides. The increased military program necessarily will affect the quantity and quality available for civilian use. In addition to the military aspects of the supply and demand problem, the limitation in use of civilian rubber soles and heels and of rubber fabric belting and in general the return to leather by manufacturers who had been using products other than leather in recent years will increase the pressure on the cattle hide supply. The situation is complicated further by shipping problems involved in bringing in tanning materials from foreign sources, and may be affected by the curtailment in the amount of chrome allocated to the tanning industry. The supply-demand relationship also is influenced by the availability of other leather-supplying skins.

GOVERNMENT CONTROL: Imports of cattle hides are controlled by General Import Order M-63. Cutters of sole leather are required to set aside each day all inner- and outsoles and repair taps of military weight and quality which they cut (M-80). The sale or use of soles thus set aside is forbidden except to manufacturers filling orders for military use. An order for the control of domestic hides is now in preparation. This, in conjunction with M-63 control of foreign hides, will bring the total supply of cattle hides under control.

	1942	1943
Estimated new supply	23,900	23,600
Estimated requirements	23,300	24,700

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 14, 1942
Revised abstract issued May 18, 1942

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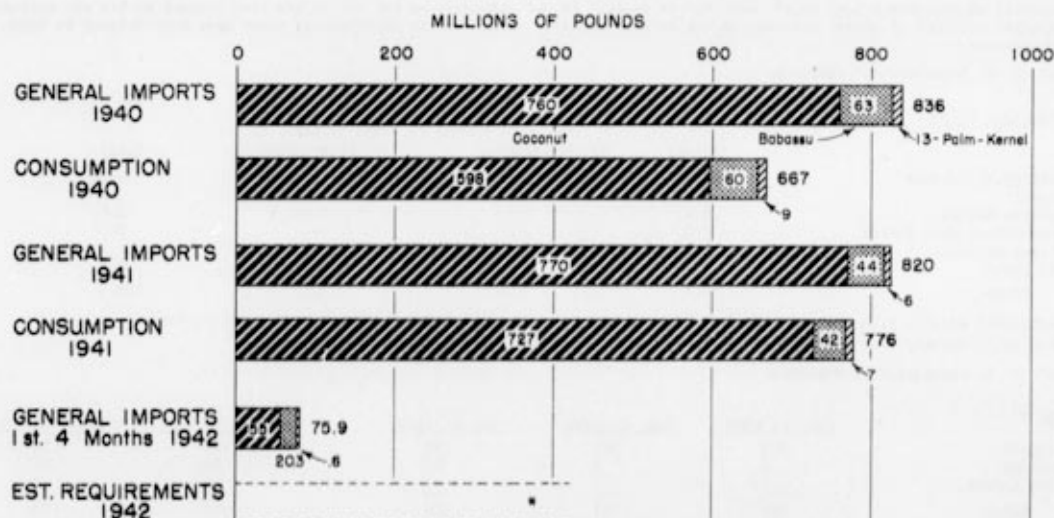
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COCONUT, BABASSU, AND PALM-KERNEL OILS THE LAURIC ACID GROUP

PRIORITY ACTION

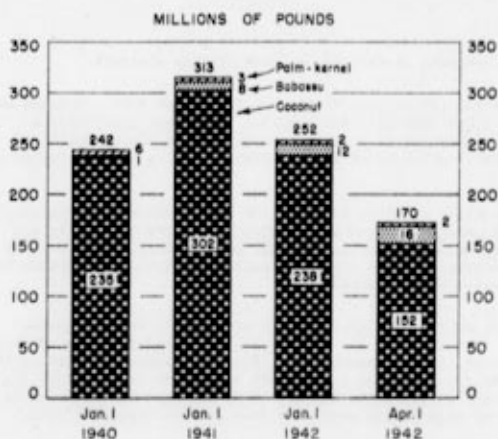
General Preference Order M-60, effective March 20, 1942, restricted the use of coconut, babassu, palm-kernel and all other oils having a lauric acid content of 35 per cent or higher to manufactures wherein glycerin is obtained as a by-product. In effect, this limited their use to soap manufacture. Amendment No. 1 (effective May 11, 1942) liberalized the order by permitting all manufacturers of edible food products the limited use of high lauric acid oils from June to September 1942.

SUPPLY - DEMAND

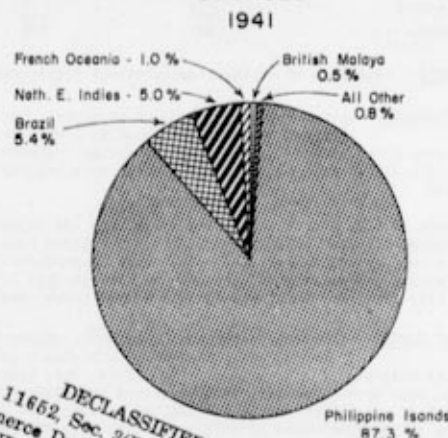


* Military and civilian requirements under revision at date of issuance of this chart.

STOCKS



SOURCES



DECLASSIFIED
E.O. 11662, Sec. 3(E) and 5(D) or (F)
Commerce Dept. Letter, 11-16-72
By RHP, Date

COCONUT, BABASSU, & PALM-KERNEL OILS: THE LAURIC ACID GROUP

(All figures in millions of pounds)

BACKGROUND: Oils derived from copra (the fleshy part of the coconut), palm kernels, and the Brazilian babassu nut differ from most other fat oils in that they have a high lauric acid content. Soap manufacturers value these oils because of their quick lathering properties, and take annually over three-fourths of total supplies. The remainder is used largely in food products. The United States is dependent entirely upon imports for its supplies of these oils.

MILITARY USES: Ninety-three per cent of the supply of glycerin is a by-product of soap manufacture. The average recovery of glycerin is from 1 1/2 to 1 3/4 per cent for coconut, babassu, and palm-kernel oils, while the average recovery is 10 per cent for all other fats and oils used. Because of the relatively high glycerin content of lauric acid oils, and the fact that they account for approximately 25 per cent of all fats and oils used in soap manufacture, it is estimated that they contribute about one-third of the total supplies of glycerin.

GENERAL IMPORTS:

	1940	1941	1942			
			Jan.	Feb.	March	April
Coconut ^{1/}	760	770	17.6	11.1	19.3	7.0
Babassu ^{2/}	63	44	9.6	6.1	1.8	2.8
Palm-kernel ^{2/}	13	6	--	0.3	0.3	--
Total	836	820	27.2	17.5	21.4	9.8

- ^{1/} Imported approximately half as oil and half as copra. In the computations the latter has been reduced to its oil equivalent.
^{2/} Imported entirely or almost entirely in the form of seeds or nuts. In the computations these have been reduced to their oil equivalents.

Source: U. S. Department of Commerce.

SOURCES, 1941 SUPPLY:

	(Percent of total supply)			Total
	Coconut	Babassu	Palm-kernel	
Philippine Islands	87.3%	--	--	87.3%
Brazil	--	5.4%	--	5.4
British Malaya	0.1	--	0.4%	0.5
Netherlands East Indies	5.0	--	--	5.0
French Oceania	1.0	--	--	1.0
All Other	0.7 ^{1/}	--	0.1 ^{2/}	0.8
Total	94.1	5.4	0.5	100.0

- ^{1/} Negligible amounts from British Malaya, Ceylon, French Indo China, Africa, British Oceania, and Mozambique.

- ^{2/} Negligible amounts from Cuba, Brazil, Ecuador, China, Philippine Islands, and Australia.

Source: U. S. Department of Commerce.

STOCKS: ^{1/}

	Jan. 1, 1940	Jan. 1, 1941	Jan. 1, 1942	April 1, 1941	April 1, 1942
Coconut	235	302	238	226	152
Babassu	6	8	12	13	16
Palm-kernel	1	3	2	5	2
Total	242	313	252	244	170

- ^{1/} A government stockpile of 220 million pounds of coconut oil has been recommended, but there has been no activity to date.

TOTAL CONSUMPTION:

	1940	1941
Coconut	598	727
Babassu	60	42
Palm-kernel	9	7
Total	667	776

REQUIREMENTS: Estimates of military and civilian requirements under revision at date of issuance of this abstract.

SPECIAL PROBLEMS: Approximately 95 per cent of imports have now been cut off because of the war in the Far East. Babassu nuts, imported from Brazil, which in 1941 accounted for 5 per cent of total supplies, have been considered a likely source from which to make up the deficiency. Although Brazil's capacity to produce babassu nuts is almost unlimited, certain difficulties of production and limited shipping facilities give small hope of any immediate solution of the problem of replacement.

The shortage of high lauric acid oils, aside from its effect on the quality of soap, need not seriously reduce glycerin supplies. While efficiency in the production of glycerin will be reduced in the proportion that soap manufacturers are obliged to use relatively more grease, tallow, and edible fats in production, supplies sufficient to satisfy all requirements can be secured through maximum conservation of glycerin as a by-product in soap manufacture. This might necessitate withholding supplies of fats and oils from soap manufacturers who do not effect maximum conservation of glycerin.

GOVERNMENT CONTROL: General Preference Order M-60, effective April 1, 1942, restricted the use of coconut, babassu, palm-kernel, and all other oils having a lauric acid content of 35 per cent or higher to manufactures wherein glycerin is obtained as a by-product. In effect, this limited their use to soap manufacture. However, limited quantities for uses other than where glycerin is obtained was permitted from March to May 1942, but in no event could such uses include the manufacture of any margarine, shortening, or cooking fat. Amendment No. 1 (effective May 11, 1942) liberalized the Order by permitting all manufacturers of edible food products the limited use of high lauric acid oils from June to September 1942.

WAR PRODUCTION BOARD, Statistics Division
 Materials Branch

Data as of May 15, 1942
 Revised Abstract Issued May 18, 1942

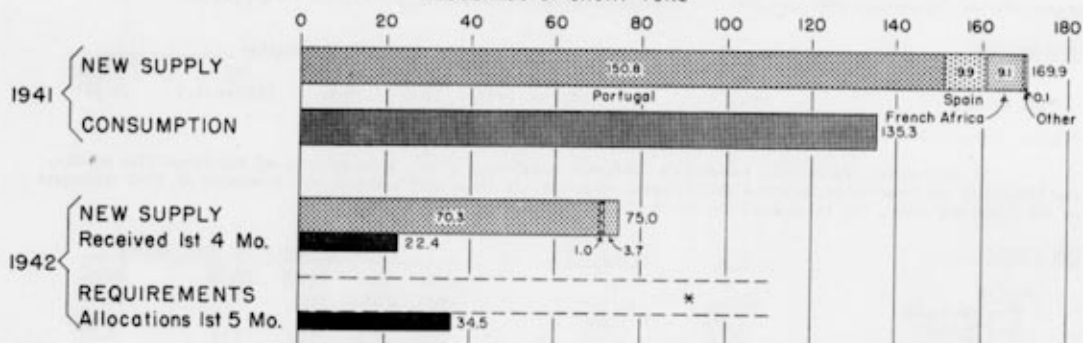
CONFIDENTIAL

CORK UNMANUFACTURED

PRIORITY ACTION

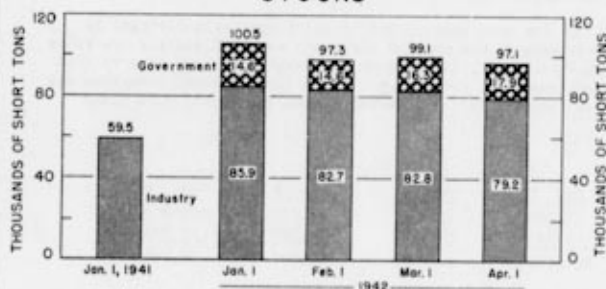
W.P.B. Order M-8 (May 31, 1941) required all suppliers to set aside their stocks of cork and cork products in whatever form as a reserve for the fulfillment of defense orders and of civilian orders as directed. This order was amended on September 30, 1941 (W.P.B. Order M-8-A) to limit the use of corkboard to defense and food preservation uses and to restrict the delivery of beverage crowns to one months' supply.

SUPPLY - DEMAND THOUSANDS OF SHORT TONS

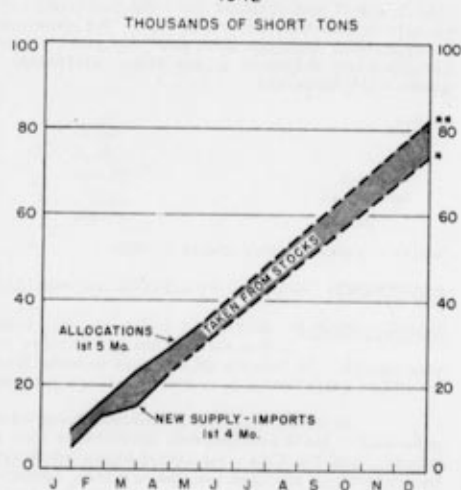


* Estimate of military and civilian requirements under revision at date of issuance of this chart.

STOCKS



NEW SUPPLY - CONSUMPTION 1942 THOUSANDS OF SHORT TONS



* 1942 Estimate - Problematical as shipments may be cut off at any time.

** 1942 Estimate if average rate of allocation for 1st 5 months continues.

USE PATTERN



WAR PRODUCTION BOARD, Statistics Division

DECLASSIFIED

SEE COVER SIDE FOR ABSTRACT
EO 1.152, SEC 1.41 AND 1.42 or (E)
Commerce Dept. Letter, 11-15-72
By RHP, Date

Date as of May 12, 1942
Revised Chart Issued May 18, 1942

2007

2

CORK -- UNMANUFACTURED
(All figures in short tons)

BACKGROUND: Cork is the bark of an oak tree grown commercially only in countries around the Western Mediterranean. Raw cork is divided roughly into three grades: corkwood, milling cork, and grinding cork. Corkwood is the best grade of the natural bark and is the most valuable variety, although it accounts for only a small part of total consumption. Milling cork is made up of small pieces held together by a binder. Grinding cork is the lowest grade of corkwood.

USE PATTERN:

Product	Type of Cork Used	1940	March 1942 ^{1/}	May 1942 ^{1/}
Insulation board	Grinding	50%	49%	41%
Other insulation products	Grinding	5	1	4
Crown & screw cap liners	Milling	15	19	18
Gaskets & washers	Milling	15	20	20
Linoleum	Grinding	10	4	2
Natural cork products (chiefly stoppers & marine goods) ^{2/}	Corkwood	3	5	10
Other products	Milling	2	2	5
		100%	100%	100%

Source: Cork-Asbestos Branch of WPB.

^{1/} Use pattern for March based on actual allocations, for May on preliminary allocations.

^{2/} Much of this is recovered and made into milling cork.

Military uses include corkboard for naval vessels, army cantonnements, and refrigerating equipment; life preservers and buoys; gaskets; stoppers for gasmasks; catwalks, closures, and floats for airplanes.

CONSUMPTION:

	1941	1942 Allocations				
		Jan.	Feb.	March	April	May
All grades	135,300	8872	7299	6626	5631	6086(prel.)
						34,514

Source: Cork-Asbestos Branch of WPB.

If consumption during the balance of 1942 were maintained at the average rate of the first five months, the total for the year would be about 82,600 tons. However, if consumption during the remainder of 1942 continued at the April-May rate, the total would be about 75,500 tons.

NEW SUPPLY:

	1941	1942(Est.)	1942 Actual - 1st Four Months				
Imports			Jan.	Feb.	March	April	Total
From Portugal	150,799	70,277	4437	5074	1581	7026	18,118
From Spain	9,856	1,000	282	232	--	--	514
From French Africa	9,131	3,723	499	2854	197	173	3,723
Other	137	--	--	--	--	--	--
Total Imports	169,923	75,000	5218	8160	1778	7199	22,355

Source: Actual imports--Department of Commerce; 1942 estimates--Cork-Asbestos Branch of WPB.

The U. S. is entirely dependent upon imports for its cork supply, 89% of which came from Portugal in 1941. Almost one-fifth of the 1942 first-quarter imports were in the form of corkwood; special efforts are being made to obtain this important type. The estimate of 1942 new supply is based on the assumption that imports from Portugal will continue throughout the year. This is problematical, for changes in the international situation may cut off these shipments at any time. Additional imports from French North Africa cannot be counted upon under present circumstances.

STOCKS:

	1941	1942			
	Jan. 1	Jan. 1	Feb. 1	Mar. 1	Apr. 1
Industry	59,471	85,880	82,675	82,779	79,242
Government	--	14,621	14,621	16,328	17,906
Total	59,471	100,501	97,296	99,107	97,148

Source: Cork-Asbestos Branch of WPB.

REQUIREMENTS: Estimates of military and civilian requirements under revision at date of issuance of this abstract.

SPECIAL PROBLEMS: Government allocation has reduced the rate of cork consumption about 60% in the past 12 months. But even at the present low rate, stocks of raw cork would last only about 16 months if imports were halted. If imports do not meet expectations, it may become necessary to enforce reductions in cork uses or to employ substitutes to a greater extent than now.

Although cork insulation board now is manufactured primarily for war orders, it can be replaced by other materials. There are numerous substitutes such as rockcork, rockwool, fibrous glass, sintered glass, Palmetex, Celotex, and Zenolite. No satisfactory substitute has been developed yet for cork liners of beverage crowns. This is primarily a civilian use and has been curtailed somewhat. Greater restrictions on the use of cork for crowns have been considered inadvisable because of the resulting injury to the bottling and beverage industries.

GOVERNMENT CONTROL: WPB Order M-8 (May 31, 1941) placed all cork, whether stocks or new supplies, under allocation. WPB Order M-8-a (September 30, 1941) prohibited the manufacture of corkboard except for defense orders or for food preservation (later defined as meaning low temperature insulation only) or when specifically authorized. In practice, raw cork is being allocated only for priority ratings of A-10 or higher, except for stoppers and beverage crowns. These two products are not restricted to specific uses, but allocations of raw cork for them have been reduced.

CONFIDENTIAL

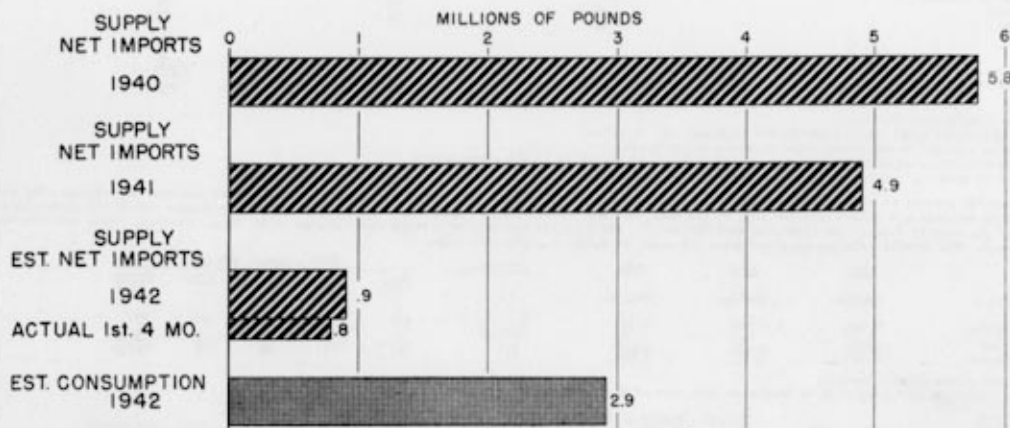
HOG BRISTLES

DECLASSIFIED
EO 11652, Sec. 3(E) and 6(D) or 6(E)
Commerce Dept. Letter, 11-16-72
By RHP, Date

PRIORITY ACTION

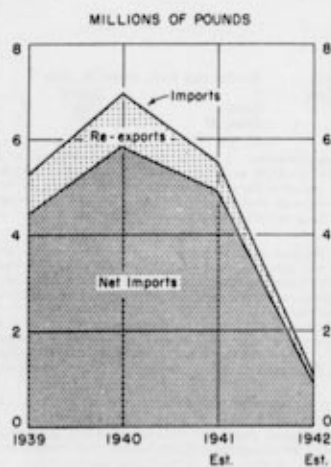
General Preference Order M-51 limits the use of bristles of 3 inches and over to products for War purposes released against priorities. Paint brushes for indirect military uses and containing bristles of 3 inch lengths and over are limited to a 55-45 ratio of bristle to horsehair.

SUPPLY AND REQUIREMENTS



* Consumption at March 1942 Rate.

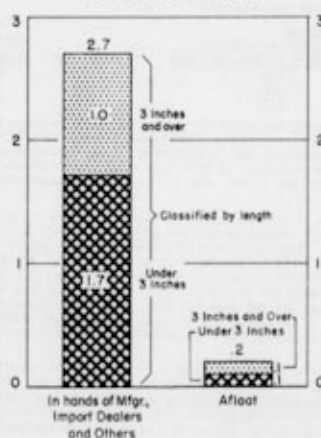
SUPPLY



STOCKS

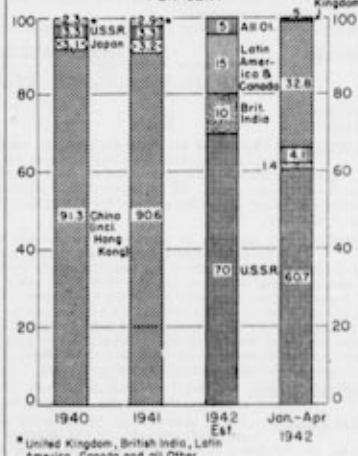
APRIL 1, 1942

MILLIONS OF POUNDS



SOURCES OF SUPPLY

PER CENT



* United Kingdom, British India, Latin America, Canada and all Other.

CONFIDENTIAL

HOG BRISTLES
(All figures in thousand pounds)

BACKGROUND: Bristles are the long hairs obtained from the backs of a semi-wild strain of hogs, chiefly produced in China and in other Asiatic countries. American hogs are of a different variety and are usually slaughtered while young, before the bristles grow long and stiff. Moreover, packing-house methods of de-hairing produce a mixture of bristles and hair, while cheap labor for sorting, washing, and bunching is not available in the United States. The best bristles are those grown in cold climates; the Siberian product is of the best quality.

Hog bristles are the most satisfactory known material in the manufacture of brushes, particularly for paint and varnish purposes. The bristles are measured in quarter inches, and range from 3" to 6" or more. The long, soft bristles are preferred for the manufacture of paint brushes, and those over 3" are most in demand. Substitutes have not been found that possess the tapered, split ends which absorb and hold the paint, nor do other natural fibers and hairs have such resiliency and durability. Another important use of bristle brushes is in the wool manufacturing industry where they are used in the combing process. The chief direct military use is that of army and navy paint brushes.

STOCKS: The recommended government stockpile is 500 thousand pounds. 76 thousand were placed on commitment in May, but none has been delivered.

Bristle Stocks in Hands of Manufacturers, Importers, Dealers and Other Firms, April 1, 1942

	Under 3"	3" and Over	Total
Sorted bristles			
Not in process	1,507	761	2,268 1/2
In process			
Not mixed or banded	237	153	390
In mixtures	2/	56	58
In blends	2/	20	20
Unsorted			
Raw			17
Reclaimed			44
Total Stocks	1,744 1/2	1,018 1/2	2,762 1/2
Afloat	146	88	234

1/ 63% Chinese; 13% Russian; 4% other.

2/ Quantities of bristle under 3" in mixtures and in blends not reported.

3/ Totals exclude unsorted bristles and those in mixtures and blends.

4/ 65% in hands of brush manufacturers and others; 35% in hands of importers, dealers and agents.

Source: Summary of industry reports to Textile Branch, WPB (from PD-217)

NEW SUPPLY: Domestic production of hog bristles now is on an experimental basis. One meat packer has been asked to slaughter old hogs separately. The long stiff bristles are pulled from the skin of the back, and are packed with the flag ends all in one direction. A sample run of 500 pounds indicated that 4 1/2 were 3" and over in length; the remainder were 2 1/2 to 3". The bristles are sent to a brush manufacturer in St. Paul, Minnesota where they are hand-sorted and dressed. The careful handling required makes the cost of domestic production high.

	1939	1940	1941	1942 (Est.)	1942 - Actual (Gross)
Domestic Production	Neglig.	Neglig.	Neglig.	10	Jan. 0.5, Feb. -
Net imports 1/					Mar. -
Refined Bristles	4,399	5,825	4,797	(900 2/)	530 79 52 122 764
Crude Bristles	N.A.	27	72	17	17 4 6 5 32
Total Supply	4,399 1/	5,852	4,869	930	547.5 83 58 127 816.5

1/ Total excludes crude bristle imports.

2/ 80 thousand pounds to be re-exported to Canada in 1942, out of the 1,000 pounds expected.

SOURCES OF IMPORTS:

General Imports of Bristles, Sorted, Bunched or Prepared

Country of Origin	1939	1940	1941	1942 (Est.)	1942 - Jan.-April
	Quantity Percent	Quantity Percent	Quantity Percent	Quantity Percent	Quantity Percent
China (incl. Hong Kong)	4,665 90.5	6,264 91.3	4,987 90.6	-	258 32.6
Japan	155 3.0	212 3.1	176 3.2	-	-
U.S.S.R.	180 3.7	229 3.3	182 3.3	700 2/	476 60.7
United Kingdom	43 .8	40 .6	27 .5	-	3 .5
British India	46 .9	40 .6	74 1.4	100 10.0	11 1.4
Latin America & Canada	106 2.1	13 .2	41 .7	150 15.0	32 4.1
All Other	106 2.1	42 .6	15 .3	50 5.0	4 0.5
Total Imports	5,183 100.0	6,860 100.0	5,902 100.0	1,000 100.0	784 100.0

1/ Probably of Chinese origin.

2/ Approximately 600 thousand of Chinese origin, the remainder Russian

3/ Insignificant percentage.

4/ Chiefly from Poland. Many of which were dressed in France and Germany.

CONSUMPTION:

Average Monthly Consumption

	Prior to M-Order	Subsequent to M-Order	1942 (Est.)	Stocks will last at March rate -
	Oct. 31, 1941 to Dec. 31, 1941	Dec. 31, 1941 to Mar. 31, 1942	March, 1942	At March Rate
Under 3"	294	175	175	2,103
3" and Over	152	60	60	831
All lengths	446	235	234	2,934

REQUIREMENTS: Estimates of military and civilian requirements are under revision at date of issuance of this abstract. A record of unfilled orders, of the Army Navy and Maritime Commission, as of late April, called for 137 thousand pounds of bristles 44% of which were less than 3", and 56% less than 3 1/2" long. This is a much higher proportion of short bristles than has been anticipated. These contracts may not constitute a fair sample of the length of bristles in the total requirements. It is expected that military requirements in 1942 will total approximately 600 thousand pounds of bristles. An earlier study indicated that 90% of the bristles required for military uses were 3" and over in length; such demand for the long bristles would take 50% of the present stocks of those 3" and over.

SUBSTITUTES: The practice is to blend horsehair andistle (a Mexican vegetable fiber) with hog bristles in cheaper quality brushes. This lessens the effectiveness and durability of the brush. Little of various grades can be used in other than paint and varnish brushes, and horsehair can be used as a blend in paint brushes without too unsatisfactory results. Government specifications formerly called for 100% pure bristle in paint brushes but the Army and Navy recently have agreed to the use of a 55-45 ratio of bristle to horsehair in paint brushes. Nylon bristles, a DuPont product, have been found practical for use as gun brushes; they also are being substituted in more than 22 industries where durability is the prime requisite, as in the mechanical washing of milk bottles, and also in toilet brushes of various kinds. Experiments in tapering the ends to make them suitable for paint brush use have resulted in an order for 150 thousand pounds to be used exclusively for paint brushes for the Army and Navy. The Devco-Reynolds Company has experimented with a chemically treated textile bristle for paint brushes which is claimed to be superior to horsehair and is suitable for rough paint work. Spray gun and dipping processes have replaced brushes in the automobile and furniture industries. Cases requiring close control of the paint do not lend themselves to this practice. It is claimed also that paint sprayed on rough surfaces tends to blister.

GOVERNMENT CONTROL: General Preference Order M-51 limits the use of bristles of 3" and over to products for war purposes released against priorities. Paint brushes for indirect military uses and containing bristles of 3" and over are limited to a 55-45 ratio of bristle to horsehair.

SPECIAL PROBLEMS: (1) To increase the use of spray and dip methods of painting and enameling for military and naval uses, (2) To encourage the adaptation of synthetic bristles of all types to the more critical uses, (3) To salvage old bristles, (4) To encourage collection of crude bristles in Latin America, (5) To induce packing houses to collect bristles by segregation of old swine, and to use the necessary special care in handling the bristles

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 22, 1942
Revised abstract issued May 29, 1942
Next revision due: June 19, 1942

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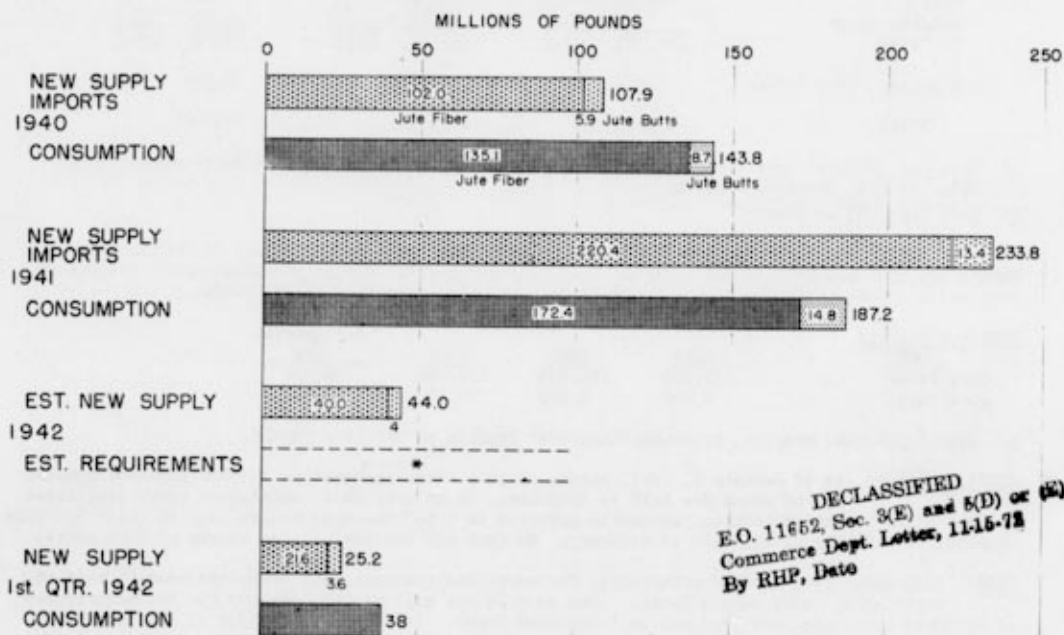
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JUTE

PRIORITY ACTION

Conservation Order No. M-70 placed jute fiber under full governmental control and allocation. On April 16, 1942 M-70 was amended to forbid the sale or use of raw jute except to fill government orders.

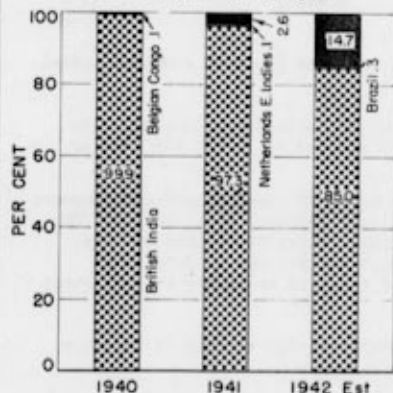
SUPPLY AND DEMAND



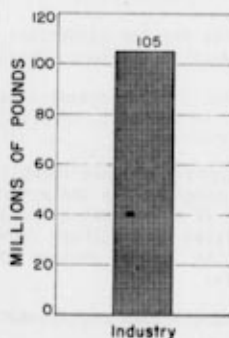
* Estimates of military and civilian requirements under revision at date of issuance of this chart.

DECLASSIFIED
E.O. 11652, Sec. 3(E) and 5(D) or (6)
Commerce Dept. Letter, 11-16-78
By RHP, Date

IMPORTS-JUTE FIBER BY COUNTRY OF ORIGIN



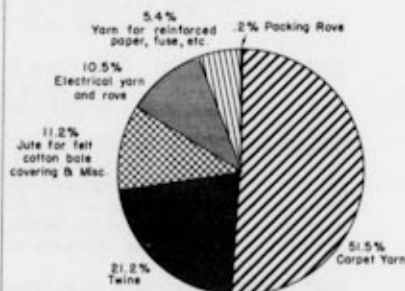
STOCKS JUTE FIBER* JAN. 1, 1942



* No data available on jute butts.

USES

BY END USE
1941



JUTE

(All figures in thousand pounds)

BACKGROUND: Virtually our entire supply, and in fact the bulk of the world supply, of raw jute (long fiber and butts) is obtained from British India, principally Calcutta. As this source now must be discounted, present expectations are that jute imports other than amounts now afloat will be negligible.

NEW SUPPLY: General Imports 1/

<u>Jute Fiber:</u>	<u>1940</u>		<u>1941</u>		<u>1942 (Est.)</u>	
	<u>Amount</u>	<u>Percent</u>	<u>Amount</u>	<u>Percent</u>	<u>Amount</u>	<u>Percent</u>
British India	101,958	99.9	214,417	97.3	34,000	85.0
Netherlands East Indies	2	2/	224	0.1	—	—
Brazil	—	—	27	2/	100	0.3
Belgian Congo	65	0.1	5,781	2.6	5,900	14.7
Total	102,025	100.0	220,450	100.0	40,000	100.0
<u>Jute Butts: (Br. India)</u>	<u>5,923</u>		<u>13,391</u>		<u>4,000</u>	
TOTAL	107,948		233,841		44,000	

1/ Data for 1940 and 1941 from the U. S. Department of Commerce. 1942 estimates prepared by WFB, Textile Research Section.

2/ Less than .05 percent.

During the first quarter of 1942, imports of long jute fiber totaled 21,600 thousand pounds (20,100 from British India; 1,500 from Belgian Congo). During the same period, imports of jute butts aggregated 3,609 thousand pounds, all of which came from British India.

CONSUMPTION: 1/

	<u>1939</u>	<u>1940</u>	<u>1941</u>	<u>1st Quarter 1942</u>
Jute Fiber	131,200	135,100	172,400	38,000
Jute Butts	8,600	8,700	14,800	N.A.

1/ Amount put into process, from manufacturers' reports on WFB Form PD-315.

STOCK POSITION: As of January 1, 1942, stocks of jute fiber amounted to 105,000 thousand pounds, all of which was held by industry. As of that date, cumulative total deliveries of jute fiber for the government stockpile amounted to 1,500 thousand pounds, all of which had been released to industry at the time of delivery. No data are available as to stocks of jute butts.

USES: Long jute fiber is used principally for yarns and rovings; jute butts are used in bagging material to cover cotton bales. (Raw jute is not used in this country for the manufacture of burlaps; the latter are imported in fabricated form). In the past, the bulk of the jute yarns were used as a backing in wool carpets and rugs, but this use has been discontinued except to the extent necessary to fill government orders. The following is a breakdown of 1941 consumption of jute by end use:

Carpet Yarn	51.5%	Yarns for reinforced paper, fuse, etc.	5.4
Twine	21.2	Packing Rove	.2
Electrical Yarn and Rove	10.5	Jute for felt, cotton bale covering, & misc.	11.2
			100.0%

Principal military uses of jute are for electrical yarn and rove (used in electric cable), packing rove and twine, and yarn for reinforced paper, fuse, etc.

GOVERNMENT CONTROL: Jute fiber is under full governmental control and allocation (Conservation Order No. M-70). On April 16, 1942, M-70 was amended to forbid the sale or use of raw jute except to fill defense orders.

SPECIAL PROBLEMS: To date, the investigation of jute substitutes has been directed primarily toward the problem of substituting for the principal jute product, i.e., burlap. The problem of obtaining adequate supplies of alternatives for jute bagging for the cotton crop is being given consideration. It is reported that various fibers suitable for use as jute fiber substitutes are produced in Latin America, but at present none of these is available in sufficient quantities to ease the shortage in jute.

REQUIREMENTS: Estimate of military and civilian requirements under revision at date of issuance of this abstract.

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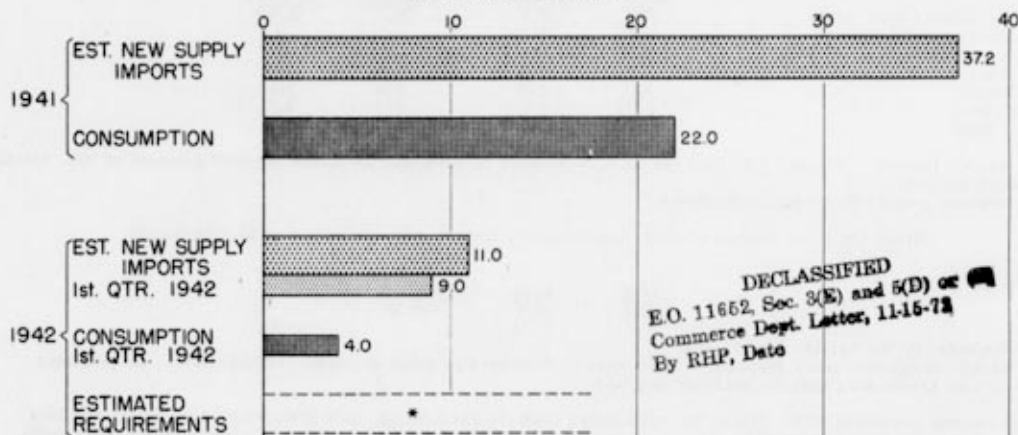
KAPOK

PRIORITY ACTION

The supply of kapok (except imports originating from South and Central America) has been set aside for military and specified essential civilian uses.

SUPPLY AND DEMAND

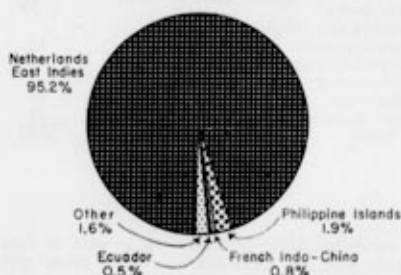
MILLIONS OF POUNDS



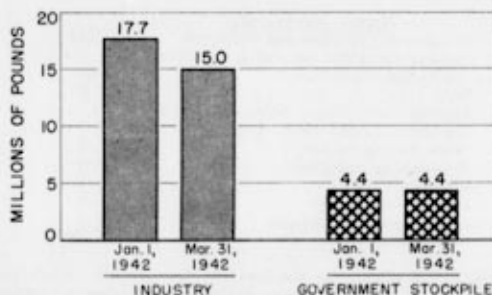
DECLASSIFIED
E.O. 11652, Sec. 3(E) and 5(D) or
Commerce Dept. Letter, 11-15-72
By RHP, Date

SOURCES

1941



STOCKS

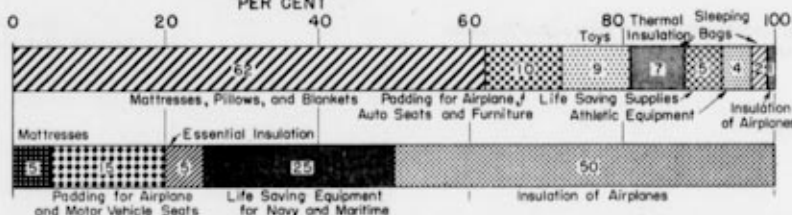


USE PATTERN

PER CENT

NORMAL PEACE TIME

Feb. - Dec., 1941 MILITARY USES ONLY



KAPOK
(All figures in million pounds)

CONFIDENTIAL

BACKGROUND: Kapok is a soft, floss-like material obtained from the seed pods of the Kapok tree, which grows in the tropics. Its special characteristics are lightness, resiliency, buoyancy, resistance to water penetration, and capacity for thermal and sound insulation. Moreover, it is not a prey to rodents, vermin, or bacteria. The major source of the world's supply - Java - has been cut off. Small amounts are expected to be received from South and Central America in 1942 and 1943.

STOCK POSITION:

	Jan. 1, 1942	April 1, 1942
Government Stockpile	4.4	4.4
Industry Stocks	17.7	15.0
Total Stocks on Hand	22.1	19.4

NEW SUPPLY: Imports 1/

	1941 2/		1942 (Est.)	
	Amount	Percent	Amount	Percent
Netherlands East Indies	35.4	95.2	10.0	91.0
Philippine Islands	0.7	1.9	--	--
French Indo-China	0.3	0.8	--	--
Ecuador	0.2	0.5	0.4	3.6
Brazil	0.2	0.5	0.4	3.6
Other	0.4	1.1	0.2	1.8
Total	37.2	100.0	11.0	100.0

1/ General Imports. Data for 1941 from the U. S. Department of Commerce; estimates for 1942 prepared by WFB, Textile Research Section.

2/ Includes government stockpile purchases.

During the first quarter of 1942, kapok imports totaled approximately nine million pounds.

CONSUMPTION: 1/

	1940	1941	1st Quarter 1942
	20.0	22.0	4.0 2/

1/ Estimated by the Textile Branch, WFB.

2/ Normal consumption until February 4, 1942, date of Conservation Order No. M-85. Of this total, an estimated 2.5 million pounds were used for military purposes.

USES: Normal peacetime uses: filler for upholstery, cushions and bedding, life preservers, life belts, and life jackets; padding or stuffing for sports equipment; for sound and heat insulation. Conservation Order M-85, effective February 4, 1942, limited civilian use of kapok to insulation. The stuffing of air tanks of boats and rafts was stopped March 23, 1942, and use as insulation was forbidden April 30, 1942. Beginning May 1, 1942, only specified military uses of kapok are allowed.

Use Pattern

Normal (Peacetime)		Feb. - Dec. 1942 (Military Uses Only)	
Mattresses, pillows and blankets	62%	Mattresses	5%
Padding for airplane and automobile seats and furniture	10	Padding for airplane and motor vehicle seats	15
Toys	9	Essential insulation	5
Thermal insulation, refrigeration in trucks, freight cars, industrial and home refrigeration	7	Life saving equipment for Navy and Maritime	25
Life saving equipment	5	Insulation of airplanes	50
Sleeping bags	2	Total	100%
Athletic equipment	4		
Insulation of airplanes	1		
Total	100%		

SPECIAL PROBLEMS: On the basis of the present restrictions, it is estimated that the kapok supply will be sufficient to cover military requirements through 1943. Balsa wood and cork, the only known practicable substitutes for kapok where buoyancy is required, also are in short supply.

REQUIREMENTS: Estimates of military and civilian requirements under revision at date of issuance of this abstract.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 15, 1942
Revised abstract issued May 18, 1942

CONFIDENTIAL

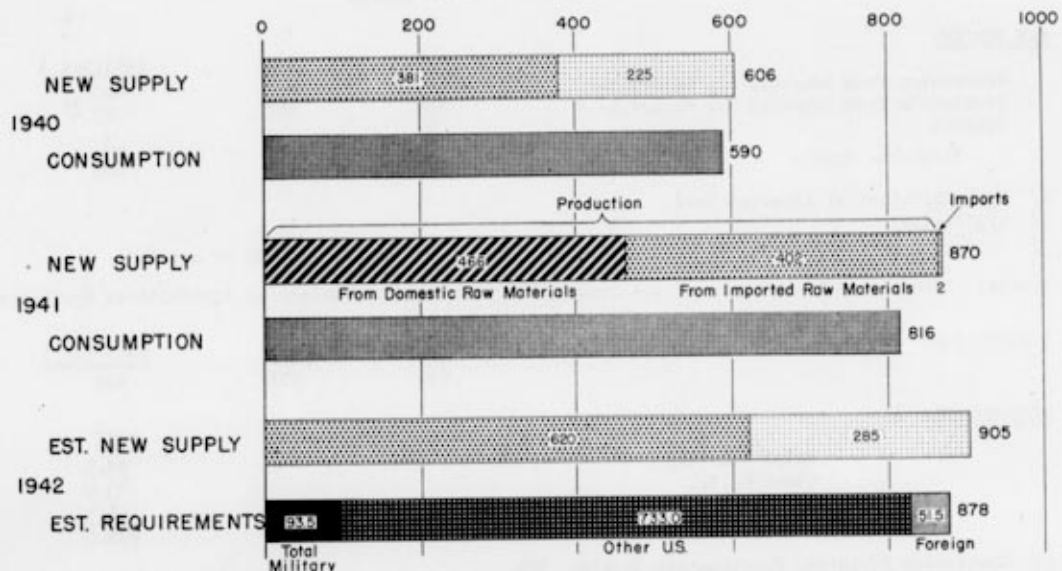
LINSEED OIL

PRIORITY ACTION

No Priority Action

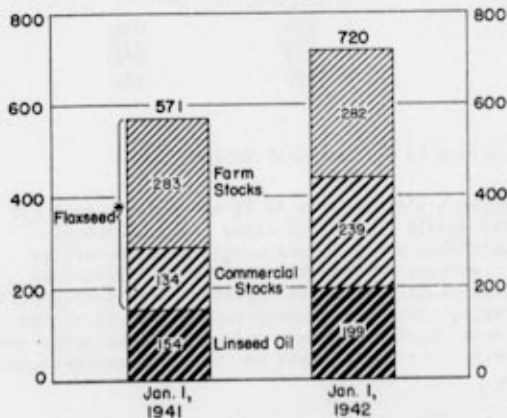
SUPPLY-DEMAND

MILLIONS OF POUNDS



STOCKS

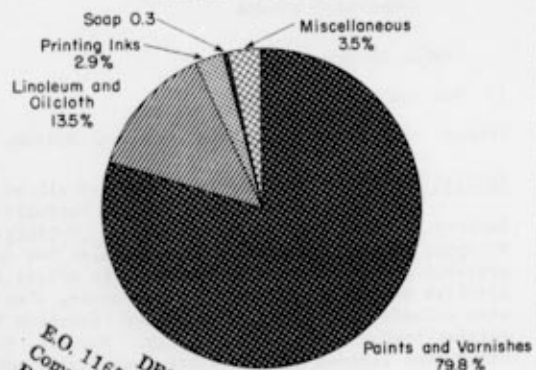
MILLIONS OF POUNDS



* Oil equivalent of seed.

USES

1941
BUREAU OF CENSUS DATA



DECLASSIFIED
E.O. 11652, Sec. 3(E) and 4(D) or
Commerce Dept. Letter, 11-16-78
By RHP, Date

LINSEED OIL

(All figures in millions of pounds)

BACKGROUND: Linseed oil is obtained from the crushing of flaxseed, which yields about 34 per cent of oil by weight. Flaxseed is grown commercially in many countries, but Argentina supplies most of the United States' requirements not fulfilled by domestic production. Linseed oil is important as the most serviceable of the drying oils. It is used in the manufacture of paints, varnishes, linoleum, oilcloth, and printing ink. The increasing use of paints and varnishes for protective coatings on ships, tanks, guns, airplanes, and shells, and the paint requirements of a huge shipbuilding program make linseed oil an important war material.

USES: (Based on Bureau of Census data for 1941)

Paints and varnishes	79.8%
Linoleum and oilcloth	13.5
Printing Inks	2.9
Soap	.3
Miscellaneous	3.5
	100.0%

NEW SUPPLY:

	1940	1941	1942(Est.)
Production from Domestic Raw Materials	381	466	620
Production from Imported Raw Materials ^{1/}	225	402	285 ^{3/}
Imports	2/	2	-
Total New Supply	606	870	905

^{1/} Oil equivalent of imported seed.

^{2/} Negligible.

^{3/} January - April 1942 seed imports were equivalent to 107 million pounds of oil.

Source: 1940 and 1941 -- Bureau of the Census; 1942 estimates -- Bureau of Agricultural Economics.

CONSUMPTION:

	1940	1941	1942(Est.)
	590	816	878

REQUIREMENTS: ^{1/}

	1942
Total Military	93.5
Other U. S.	733.0
Foreign	51.5
Total	878.0

^{1/} Statistics Division, Requirements Section, WPB.

STOCKS: January 1

	1941	1942
Linseed oil	154	199
Flaxseed ^{1/}		
Commercial stocks	134	239
Farm stocks	283	282
Total Stocks	571	720

^{1/} Oil equivalent of seed.

Source: Bureau of the Census; Chemical Branch, WPB; Bureau of Agricultural Economics.

SPECIAL PROBLEMS: The supply of linseed oil at the present time appears to be adequate to meet the demand, but certain variable factors should be kept in mind. Curtailment of imports of flaxseed from South America probably is inevitable owing to the necessity of diverting shipping to more important war materials, but further increase in domestic production of flaxseed probably can be accomplished in 1943 to offset the anticipated decline in imports. Some decrease in civilian demand for linseed oil for drying also is likely, since the consumption of the oil varies with building activity and the sharp reduction in private construction may reduce civilian paint and varnish requirements substantially. However, the overall shortage of fats and oils may necessitate using some linseed oil for other than drying purposes.

GOVERNMENT ORDER: There is no government order affecting linseed oil.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

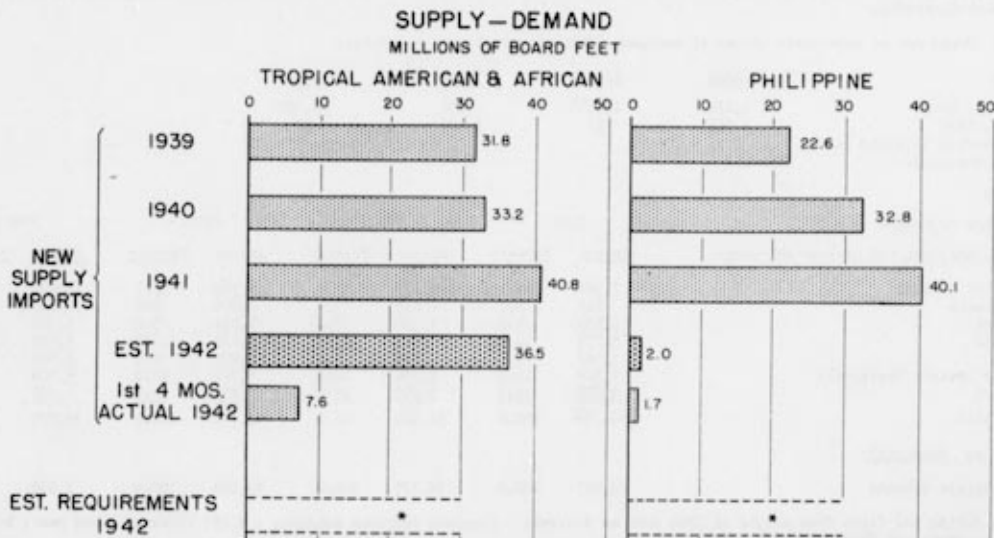
Data as of May 14, 1942
Abstract Issued May 18, 1942

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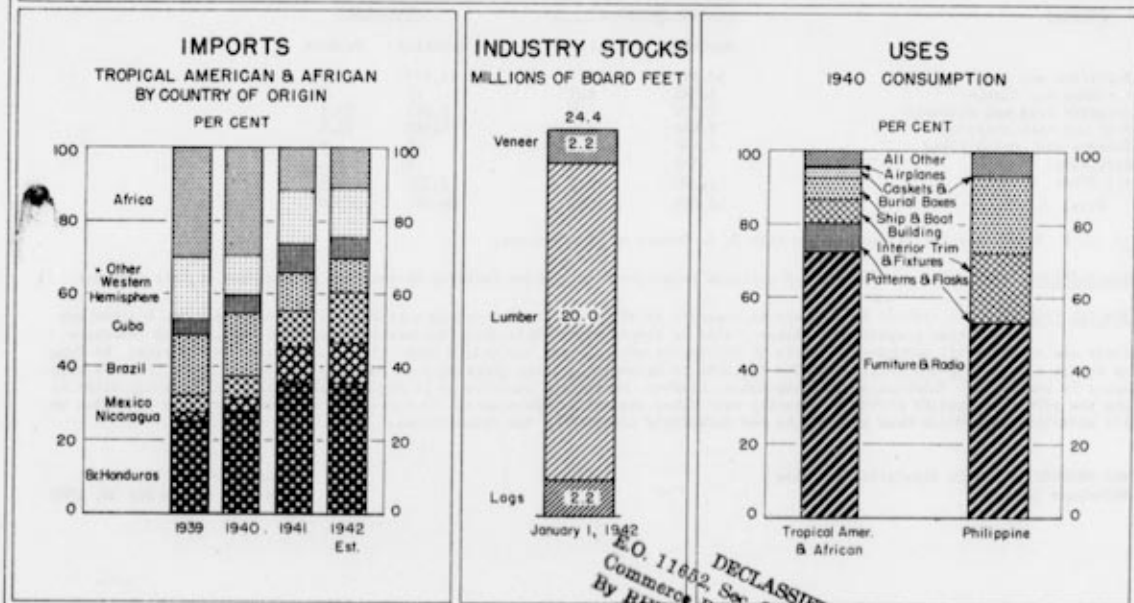
MAHOGANY

PRIORITY ACTION

An M order has been prepared and probably will be issued soon to control imports and to conserve existing stocks of mahogany logs, lumber and veneer which are suitable for military use.



* Estimates of military and civilian requirements under revision at date of issuance of this chart.



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E.O. 11652, Sec. 3(E) and 5(D) of
Commerce Dept. Order, 11-15-73
By RHP, Date

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MAHOGANY

(All figures in thousands of board feet)

BACKGROUND: Mahogany, a choice cabinet wood, is now of military importance in the construction of airplanes and high-speed naval crafts. The name "mahogany" is applied commercially to a variety of woods. All "true" mahogany comes from tropical areas of the Americas. The other two groups which are of commercial importance, "African mahogany" and "Philippine mahogany", derive their names from the countries of origin. For the purpose of this summary, the African mahogany is merged with the tropical American mahogany for the reason that the two are similar in quality and use. "Philippine mahogany" is shown separately.

The amount of mahogany required for military purposes is not known definitely but it is probable that select grades of mahogany will be available for only a small part of the war uses for which it is preferred. For most purposes, other woods can be substituted satisfactorily.

STOCKS: There are no government stocks of mahogany. Industry stocks are as follows:

Date	Logs	Lumber	Veneer 1/	Total
January 1, 1942	2,171	19,986	2,250	24,407
April 1, 1942	4,383	2/	3,100	2/
1/ Converted to board feet.				
2/ Not available.				

IMPORTS:

Country of Origin	1939		1940		1941		1942 Est.	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
Tropical American and African Mahogany:								
British Honduras	7,987	25.1	9,270	27.9	14,560	35.7	13,000	35.6
Nicaragua	705	2.2	1,285	3.9	4,006	9.8	4,000	11.0
Mexico	1,513	4.6	1,924	5.8	4,011	9.8	5,000	13.7
Brazil	5,271	16.6	5,669	17.1	4,268	10.5	3,500	9.5
Cuba	1,322	4.2	1,725	5.2	3,285	8.1	2,000	5.5
Other Western Hemisphere	5,344	16.8	3,376	10.2	5,797	14.2	5,000	13.7
Africa	2,626	30.3	9,930	29.9	4,871	11.9	6,000	11.0
Total	31,768	100.0	33,179	100.0	40,798	100.0	36,500	100.0

***Philippine Mahogany:**

Philippine Islands	22,577	100.0	32,775	100.0	40,103	100.0	2,000	100.0
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Imports during the first four months of 1942 were as follows: Tropical American mahogany - 5,736 thousand board feet; African - 1,869 thousand; and Philippine 1,683 thousand.

USES: Consumption of mahogany in 1940 1/

Purpose	Tropical American and African Mahogany		*Philippine Mahogany*	
	Quantity	Percent	Quantity	Percent
Furniture and radio cabinets	30,354	72.1	11,017	53.0
Patterns and flasks	3,348	8.0	19	.1
Interior trim and fixtures	2,736	6.5	3,941	18.9
Ship and boat building	2,482	5.9	4,380	21.1
Caskets and burial boxes	1,134	2.7	62	.3
Airplanes	140	.3	0	-
All Other	1,900	4.5	1,381	6.6
Total	42,094	100.0	20,800	100.0

1/ U. S. Forest Service in cooperation with U. S. Census of Manufactures.

REQUIREMENTS: Estimates of military and civilian requirements are under revision at the time of issuance of this abstract.

SPECIAL PROBLEMS: To control imports and to conserve existing stocks of mahogany suitable for military use, an M order has been prepared and probably will be issued soon. This order defines war grades of mahogany and restricts their use to essential purposes. Imports of Philippine mahogany are limited to quantities afloat early in the year. As long as access to the tropical sections of the Americas is maintained, large quantities of mahogany can be imported, provided cargo space is available. Shortage of shipping space, however, raises the question as to whether mahogany is sufficiently vital to the war effort to justify giving it priority over other essential commodities. In any event, shipment should be continued until substitute materials have been tested and definitely accepted by the armed forces.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 13, 1942
Abstract issued May 18, 1942

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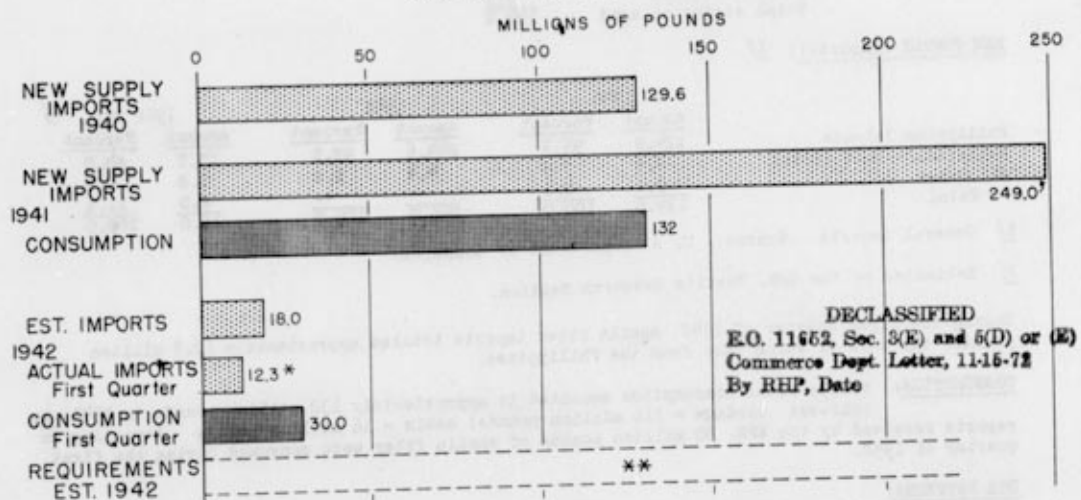
MANILA FIBER

(ABACA)

PRIORITY ACTION

Under General Preference Order M-36 and amendments thereto, the distribution and use of manila fiber and manila cordage were placed under full government control. Restrictions on the processing of manila fiber and on the sales and deliveries of manila cordage are in effect.

SUPPLY - DEMAND

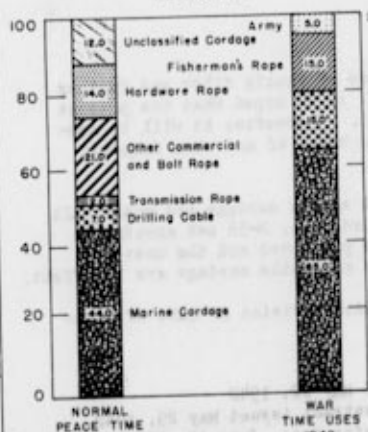


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E.O. 11652, Sec. 3(E) and 5(D) or (E)
Commerce Dept. Letter, 11-15-72
By RHP, Date

* Mostly from Philippines
** Estimates of military and civilian requirements under revision of date of issuance of this chart.

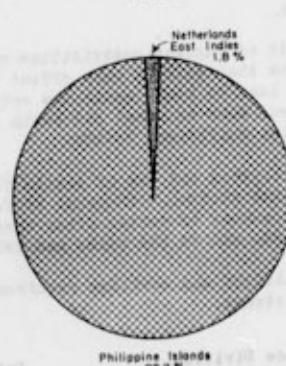
USES

PER CENT



IMPORTS

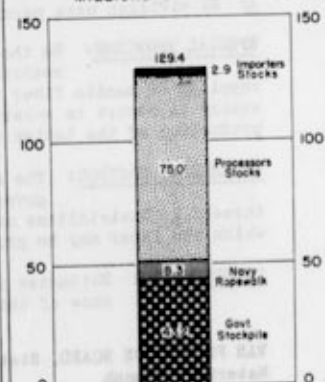
1941



STOCKS

ON HAND JAN. 1, 1942

MILLIONS OF POUNDS



MANILA FIBER (ABACA)
(All figures in million pounds)

CONFIDENTIAL

BACKGROUND: Manila fiber, a hard fiber obtained from the abaca plant, is characterized by high tensile strength, lightness, and resistance to salt water, qualities which account for its preeminence as a marine rope, cordage, and cable fiber. In the past, the United States has obtained practically all of its supplies of this fiber from the Far East, notably the Philippine Islands--the major abaca-growing area of the world. The plant now is being grown experimentally in Central America, but only small supplies can be expected from this source in the next two years.

STOCK POSITION: January 1, 1942

Government stockpile	43.2
Navy Ropewalk	8.3
Processors' stocks	75.0
Importers' stocks	2.9
Total stocks on hand	<u>129.4</u>

NEW SUPPLY (Imports): 1/

	1940		1941		1942 Est. ^{2/}	
	<u>Amount</u>	<u>Percent</u>	<u>Amount</u>	<u>Percent</u>	<u>Amount</u>	<u>Percent</u>
Philippine Islands	124.9	96.4	244.6	98.2	15.2	84.5
Netherlands East Indies	4.6	3.5	4.4	1.8	0.8	4.4
All Other	0.1	0.1	--	--	2.0	11.1
Total	<u>129.6</u>	<u>100.0</u>	<u>249.0</u>	<u>100.0</u>	<u>18.0</u>	<u>100.0</u>

1/ General imports. Source: U. S. Department of Commerce.

2/ Estimated by the WFB, Textile Research Section.

During the first quarter of 1942, manila fiber imports totaled approximately 12.3 million pounds, the bulk of which came from the Philippines.

CONSUMPTION: Manila fiber consumption amounted to approximately 132 million pounds in 1941, as follows: cordage - 116 million pounds; cable - 16 million pounds. According to reports received by the WFB, 30 million pounds of manila fiber were consumed during the first quarter of 1942.

USE PATTERNS:

<u>Normal Peace Time Uses</u>		<u>War Time Uses (1942) ^{1/}</u>	
Marine Cordage	44%	Marine cordage	65%
Drilling cable	7	Drilling cable	15
Transmission rope	2	Fishermen's rope	15
Other commercial & bolt ropes	21	Army	5
Hardware rope	14		<u>100.0%</u>
Unclassified cordage	<u>12</u>		
	<u>100.0%</u>		

1/ No civilian uses permitted.

SPECIAL PROBLEMS: On the basis of current restrictions on the use of manila fiber and further restrictions that will go into effect shortly, it is hoped that the present supplies of manila fiber will last at least until the end of 1943. Thereafter it will be necessary to resort to substitutes, such as sisal and North American hemp, if and when domestic production of the latter attains sufficient volume.

GOVERNMENT CONTROL: The distribution and use of manila fiber and manila cordage are under full governmental control. (General Preference Order No. M-36 and amendments thereto.) Restrictions on the amount of manila fiber that may be processed and the uses for which the fiber may be processed, and on the sales and deliveries of manila cordage are in effect.

REQUIREMENTS: Estimates of military and civilian requirements under revision at date of issuance of this abstract.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 22, 1942
Revised abstract issued May 29, 1942
Next revision due: June 19, 1942

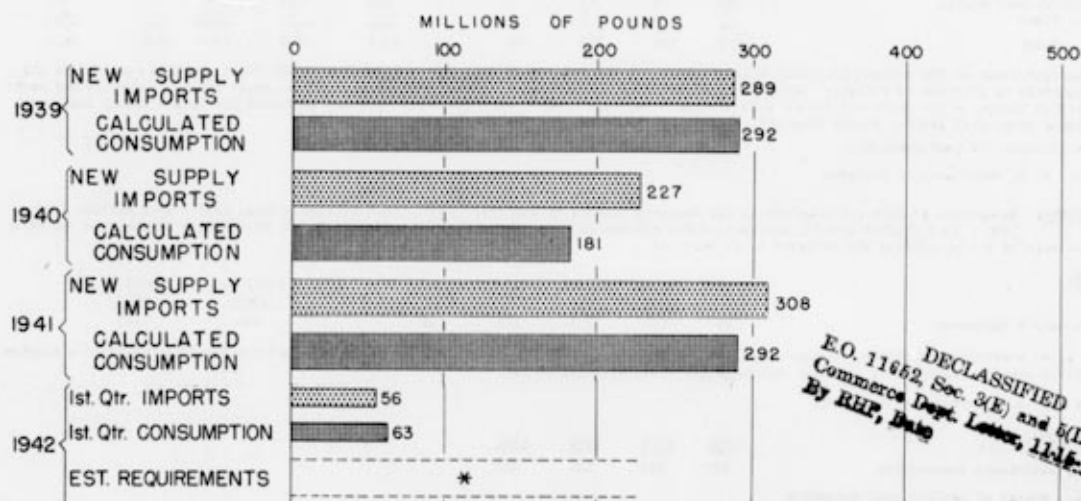
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PALM OIL

PRIORITY ACTION

General Preference Order M-59-(a), effective April 1, 1942, limits the use of palm oil to the manufacture of tin and terne plate, and to any manufacturing process in which glycerine is produced and where the amount of glycerine remaining in the product does not exceed one and five-tenths percent and where the remainder of the glycerine is at least ninety percent recovered.

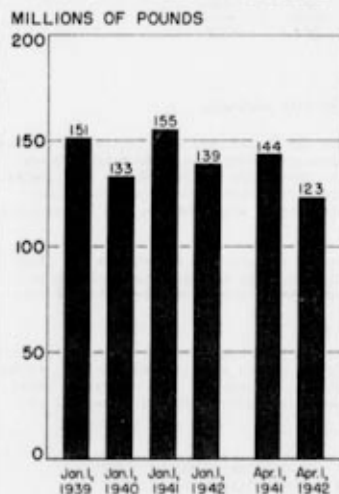
SUPPLY, CONSUMPTION AND REQUIREMENTS



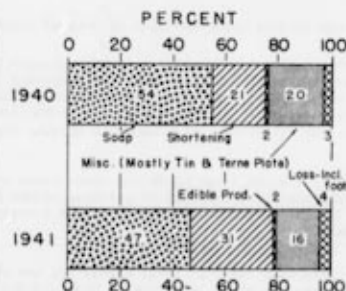
* Estimates of military and civilian requirements under revision at date of issuance of this chart.

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By RHP, Date 11-16-78

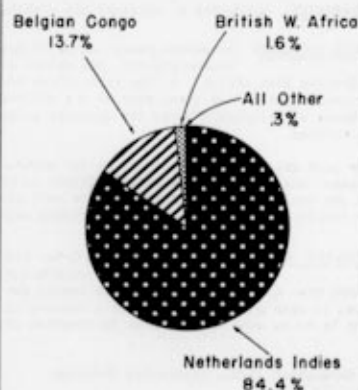
STOCKS FACTORY AND WAREHOUSE



FACTORY CONSUMPTION BY INDUSTRIES



IMPORTS PRINCIPAL SOURCES 1941



PALM OIL

(All figures in millions of pounds)

BACKGROUND: Palm oil is a semisolid fat obtained from the outside fleshy part of the fruit of the oil palm. (Palm-kernel oil is derived from kernels of the same species of palm tree.) The U. S. is dependent entirely upon imports for its supplies of this oil.

Palm oil use in the United States is principally in the production of soap, shortening, and tin plate. It has little direct military use. In soap manufacture, where palm oil accounts for five to ten per cent of the oils and fats used, other oils may be substituted insofar as technical requirements are concerned. In shortening, palm oil, which has accounted for about three to ten per cent of all oils used, competes with other fats and oils, notably cottonseed, soybean, corn, and peanut oils.

Palm oil is the only oil employed commercially in large quantities in tin andterne plate manufacture. Here it serves as a lubricating medium; for protective coating, and in the application of tin or terne coatings to produce glass and to facilitate distribution of the protective metal. In such uses, it generally is considered technically superior to hydrogenated soybean, cottonseed, and marine animal oils.

EXPORTS:	From: 1/	1937	1939	1940	1941	1942 2/				
						January	February	March	April	January-April
	Netherlands Indies	286	237	180	260	21.9	11.1	5.0	2.6	40.6
	Belgian Congo	50	33	33	42	1.8	7.1	8.3	-	17.2
	British West Africa	63	16	13	5	0.1	0.6	-	-	0.7
	All Other	13	3	1	1	-	-	0.1	-	0.1
	Total	412	289	227	308	23.8	18.8	13.4	2.6	58.6

1/ The importance of the several producing areas in terms of the percentage that each contributed to the total supplies exported to all countries in 1937 was as follows: Netherlands East Indies, 40 per cent; British West Africa, 30 per cent; Belgian Congo, 14 per cent; British Malaya, 8 per cent; and French West Africa, 4 per cent. The remaining 4 per cent was accounted for by the French Cameroons, French Equatorial Africa, French Togoland, Angola, Sierra Leone, and the Gold Coast.

2/ No estimate for year available.

Source: U. S. Department of Commerce.

RE-EXPORTS: Re-exports of palm and palm-kernel oil combined totaled as follows: 1937 - 10.6 million pounds; 1939 - 13.9 million pounds; 1940 - 23.9 million pounds; and 1941 - 32.3 million pounds. The official statistics do not distinguish between the two oils, but the bulk of the re-exports are believed to be palm oil.

STOCKS:	Jan. 1.	Jan. 1.	Jan. 1.	Jan. 1.	Jan. 1.	April 1.	April 1.
	1937	1939	1940	1941	1942	1941	1942
Factory & Warehouse	94	151	133	155	139	144	123

There is no government stockpile. A recommendation was made by the GPM on October 20, 1941, that the Defense Supplies Corporation acquire 67 million pounds. However, no purchase contracts have been arranged as yet.

Source: U. S. Department of Commerce.

<u>CONSUMPTION:</u>	<u>1937</u>	<u>1939</u>	<u>1940</u>	<u>1941</u>
Total calculated consumption	339	292	181	292

Source: Bureau of Agricultural Economics.

Reported Factory Consumption by Industries

Industry	1937	1939	1940	1941	First Quarter	
					1941	1942
Soap	141	102	85	130	N. A.	N. A.
Shortening	124	113	33	86	"	"
Edible products other than shortening	2	1	3	6	"	"
Misc. (principally tin & terne plate)	33	30	32	44	"	"
Loss, including foots	31	25	4	12	"	"
Total Factory Consumption	331	271	157	278	99	63

Source: Bureau of the Census.

REQUIREMENTS: Estimates of military and civilian requirements under revision at date of issuance of this abstract.

SPECIAL PROBLEMS: In recent years, about 75 per cent of palm oil supplies have been brought in from the Netherlands East Indies. With this source cut off, the United States is largely dependent upon the remaining principal producing areas, the Belgian Congo and British West Africa. In the past, these areas have accounted for the bulk of imports other than those from the Netherlands East Indies. Increased imports from these sources are unlikely because of (a) existing primitive production methods incapable of rapid expansion, (b) shortages of acceptable goods for exchange purposes, (c) relatively large supplies already contracted for by Great Britain, and (d) shipping difficulties.

Since palm oil is a preferred oil in the manufacture of tin and terne plate and since other oils are as satisfactory as palm oil for other purposes, the tin and terne plate industry is properly the first claimant to existing stocks of palm oil. The stocks of palm oil now on hand are considered to be sufficient to meet about 3 years' normal requirement of this industry. In view of curtailed consumption of tin, this estimate is subject to a corresponding adjustment.

GOVERNMENT ORDER: General Preference Order M-55-a, effective April 1, 1942, limits the use of palm oil to the manufacture of tin and terne plate, and to any manufacturing process in which glycerine is produced and where the amount of glycerine remaining in the product does not exceed one and five-tenths per cent and where the remainder of the glycerine is at least ninety per cent recovered. Provision is made for the creation of a reserve of 20 per cent of any amount held by any person in excess of 30,000 pounds, the disposal of which is to be made upon express instruction of the Director of Industry Operations.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 15, 1942
Revised Abstract Issued May 18, 1942

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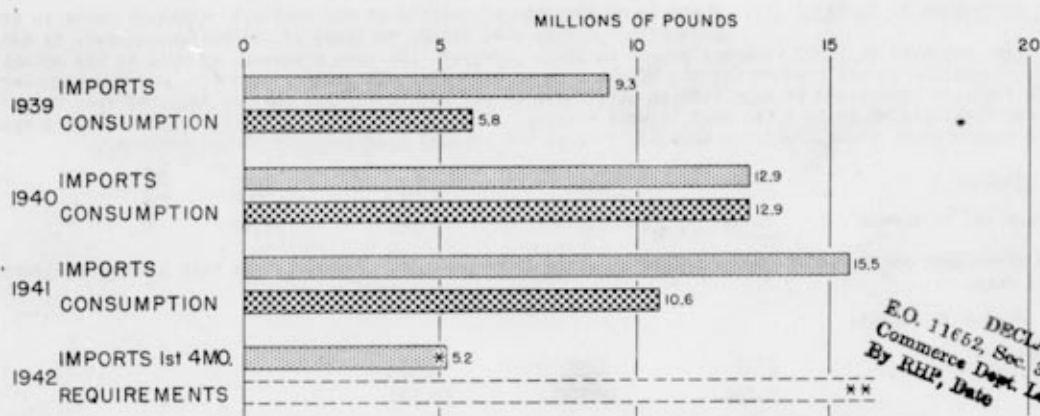
RAPESEED OIL

(Colza, Etc.)

PRIORITY ACTION

General Preference Order M-77, effective April 1, 1942, limits the use of rapeseed oil to the manufacture of marine oils, heavy machine engine lubricating oils, pneumatic tool oils, and as a factice for compounding rubber. Processors and distributors of rapeseed oil are required to confine deliveries to the named uses. Persons other than processors holding stocks in excess of 50,000 pounds are subject to named quotas and to the allocation of stocks held in excess of such quotas. Import Order M-63-a3 places rapeseed oil under full import control.

SUPPLY-DEMAND

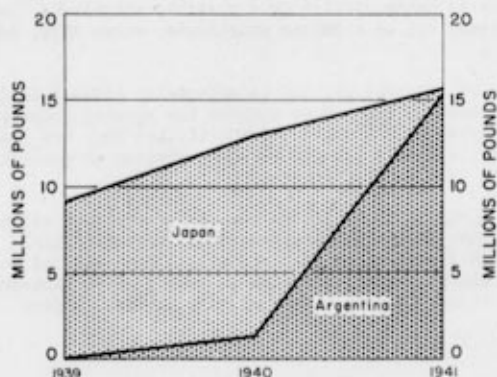


* All from Argentina.

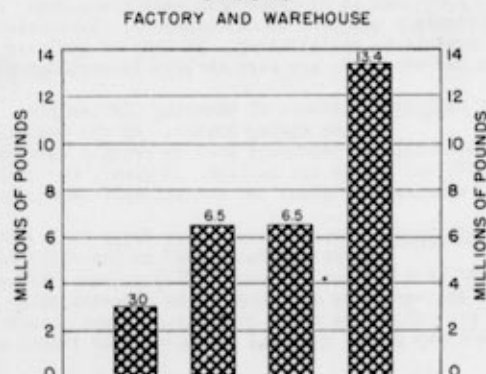
** Estimate of military and civilian requirements under revision at date of issuance of this chart.

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Commerce Dept. Letter, 11-16-78
By RHP, Date

IMPORTS



STOCKS



RAPESEED OIL (COLZA, ETC.)
(All figures in thousands of pounds)

CONFIDENTIAL

BACKGROUND: Rapeseed oil is an edible, lubricating, and illuminating vegetable oil, obtained from the seeds of several varieties of the turnip. The United States is entirely dependent upon imports for its supplies of the oil which, until 1941, were secured mainly from Japan. Since then, however, Argentina has become the principal supplier. The chief use of rapeseed oil is in the manufacture of heavy machine oils, and it is particularly important as a lubricant in marine reciprocating engines. It also is used as a rubber substitute (for incorporation with rubber and for art gum erasers), and in paints and varnishes.

<u>IMPORTS:</u> 1/		1942						
	1939	1940	1941	Jan.	Feb.	March	April	Total
Argentina	-	1,324	15,343	Nil	647	3,184	1,340	5,171
Japan	9,311	11,595	141	Nil	Nil	Nil	Nil	Nil
All Other	9	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Total	9,320	12,919	15,484	Nil	647	3,184	1,340	5,171

1/ Includes both denatured and natural rapeseed oil.

Source: U. S. Department of Commerce.

DOMESTIC PRODUCTION OF RAPESEED OIL: There is no domestic production of rapeseed oil, although there is some production of rape seed which, in terms of its oil equivalent, is estimated to have amounted to 1,500 thousand pounds in 1941. However, the seed produced, as well as the amount imported, ordinarily is not crushed for oil but is used as bird seed, for bakery products, and for planting. The small domestic production of rape seed is attributed to the relatively low cost of imported seed rather than to any inability to produce the seed in this country. The Department of Agriculture has indicated that rape seed can be grown successfully in many sections of the country, particularly in the Northwest.

<u>STOCKS:</u> January 1	1939	1940	1941	1942
Factory and Warehouse	2,959	6,528	6,545	13,421

Note: A government stockpile of 10,000 thousand pounds is recommended. However, there have been no deliveries to date.

Source: Bureau of Census.

<u>TOTAL CONSUMPTION:</u>	1939	1940	1941
	5,752	12,902	10,580

Source: Bureau of Agricultural Economics.

REQUIREMENTS: Estimate of military and civilian requirements under revision at date of issuance of this abstract.

SUBSTITUTES: The Navy Department reports that there are a number of possible substitutes for rapeseed oil for use in reciprocating marine engines. Among these, blown peanut oil and mustard seed oil have been definitely accepted as satisfactory. Cottonseed oil now is being studied as a possible substitute, and is believed to be satisfactory. In some of the uses of rapeseed oil as a rubber substitute, other oils, such as corn and soy bean, are more or less interchangeable.

SPECIAL PROBLEMS: Because of shipping difficulties, imports of rapeseed oil may be materially reduced during the coming months. At the same time, the need of lubricants wherein the special properties of rapeseed oil are important will be greatly increased. In view of the number of substitutes that are available, this may not be too serious. However, the cost of substitution calls for the conservation of existing stocks, adequate for about one and one-half year's use at the 1941 rate of consumption.

GOVERNMENT ORDER: General Preference Order M-77, effective April 1, 1942, limits the use of rapeseed oil to the manufacture of marine oils, heavy machine engine lubricating oils, pneumatic tool oils, and as a factice for compounding rubber. Processors and distributors of rapeseed oil are required to confine deliveries to the named uses. Persons other than processors holding stocks in excess of 50 thousand pounds are subject to named quotas and to the allocation of stocks held in excess of such quotas. Import Order M-63-a3 places rapeseed oil under full import control.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 22, 1942
Revised Abstract issued May 29, 1942
Next Revision due June 19, 1942

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ROSIN

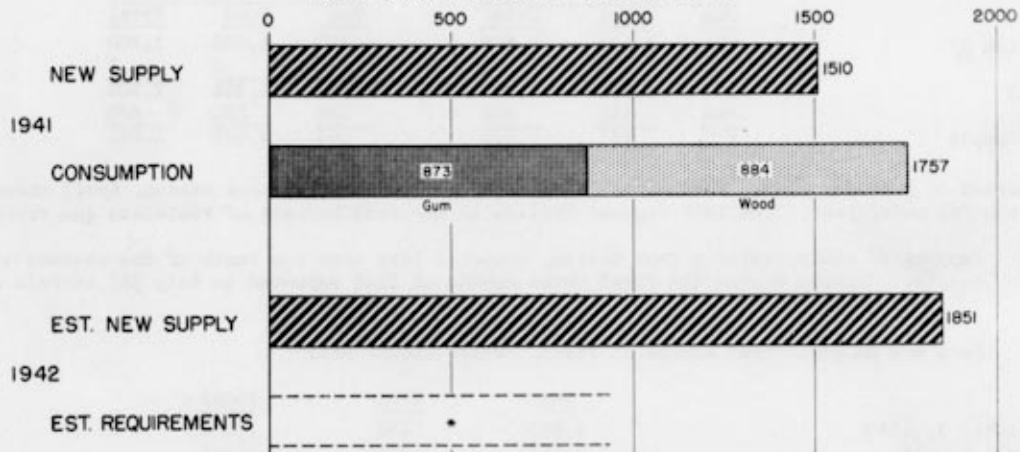
PRIORITY ACTION

No Priority Action

EO. 11652 DECLASSIFIED
Commerce Dept. Letter, 11-16-78
By RHP, Date

SUPPLY AND DEMAND

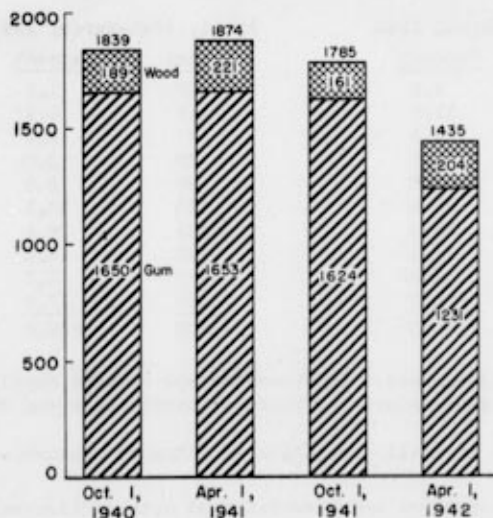
THOUSANDS OF BARRELS OF 500 LBS GROSS



*Estimates of military and civilian requirements under revision at date of issuance of this chart.

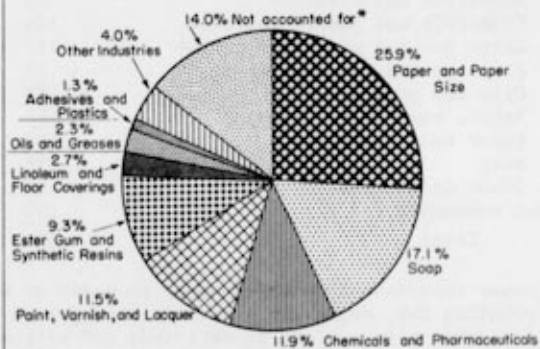
STOCKS

THOUSANDS OF BARRELS OF 500 LBS. GROSS



INDUSTRIAL USE

APRIL 1940 - MARCH 1941



* Principally distributed through retailers who sell in small quantities to ultimate consumers.

CONFIDENTIAL

ROSIN

(All figures in thousands of barrels of 500 lbs. gross)

BACKGROUND: Rosin is obtained by (1) distilling the sap taken by tapping southern pine trees and (2) wood distillation. The former is known as "gum rosin" in contrast to "wood rosin" which is produced primarily by steam distillation. The latter classification includes "sulphate wood rosin" obtained in the manufacture of sulphate wood pulp. Wide variation in factors affecting the two types of production make it advisable to distinguish between gum rosin and wood rosin in analyzing output although the two are almost identical in use.

NEW SUPPLY:

	1941			1942 Est.		
	Gum	Wood	Total	Gum	Wood	Total
Production 1/	995	1,102	2,097	1,035	1,265	2,300
Imports	2	0	2	1	0	1
Total	997	1,102	2,099	1,036	1,265	2,301
Exports	348	241	589	230	220	450
Net Supply	649	861	1,510	806	1,045	1,851

1/ Adjusted to calendar year. Production is reported for the naval stores season, April through March of the following year. The 1941 figures include 13 thousand barrels of reclaimed gum rosin.

IMPORTS: Imports of rosin, chiefly from Mexico, comprise less than one tenth of one percent of the new supply. Imports during the first three months of 1942 amounted to only 357 barrels of gum rosin.

STOCKS: There are no government stocks of rosin. Other stocks are:

	Gum	Wood	Total
October 1, 1940	1,650	189	1,839
April 1, 1941	1,653	221	1,874
October 1, 1941	1,624	161	1,785
April 1, 1942	1,231	204	1,435

CONSUMPTION: Total apparent consumption of rosin during the calendar year 1941 was: gum, 873 thousand tons; wood, 884 thousand; total, 1,757 thousand. The relative magnitude of various uses is indicated below:

Industrial Use:	April, 1939-March, 1940		April, 1940-March, 1941	
	Amount	Percent	Amount	Percent
Adhesives and plastics	18	1.3	17	1.3
Chemicals and pharmaceuticals	164	11.9	116	8.9
Ester gum and synthetic resins	127	9.3	127	9.7
Linoleum and floor covering	37	2.7	39	3.0
Oils and greases	31	2.3	30	2.3
Paint, varnish and lacquer	157	11.5	158	12.1
Paper and paper size	356	25.9	328	25.1
Soap	235	17.1	191	14.6
Other industries 1/	55	4.0	72	5.5
Not accounted for 2/	193	14.0	228	17.5
Total	1,373	100.0	1,306	100.0

1/ Other important industrial uses, in order of magnitude, are: in foundries and foundry supplies, printing ink, asphaltic products, shoe polish and shoe materials, rubber, insecticides and disinfectants, matches, and in railroads and shipyards.

2/ Principally distributed through retailers who sell in small quantities to ultimate consumers.

REQUIREMENTS: Estimates of military and civilian requirements under revision at date of issuance of this abstract.

SPECIAL PROBLEMS: Shortages of labor, tires, and trucks limit expansion of production and may result in lowered output.

CONFIDENTIAL

RUBBER

Crude and General-Purpose Synthetic

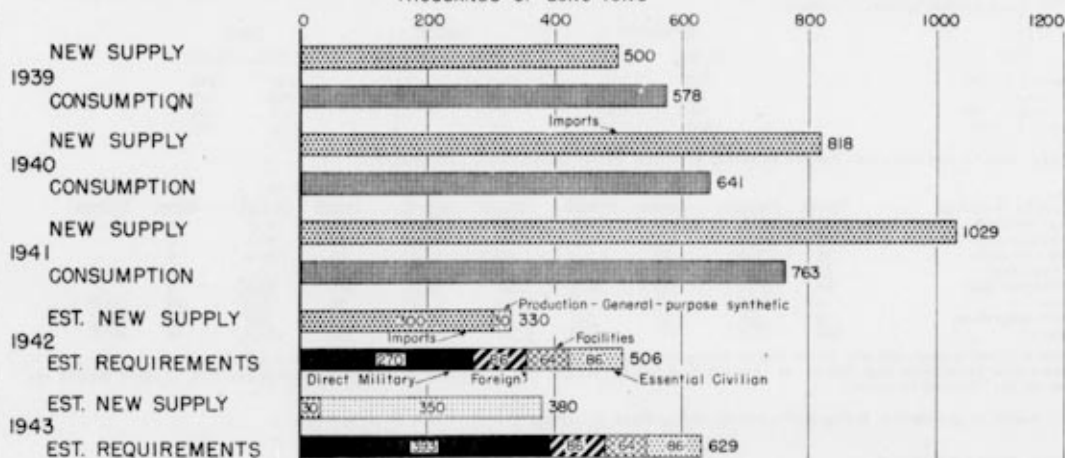
DECLASSIFIED
E.O. 11652, Sec. 3(E) and 3(D) at 003
Commerce Dept. Letter, 11-14-78
By RHP, Date

PRIORITY ACTION

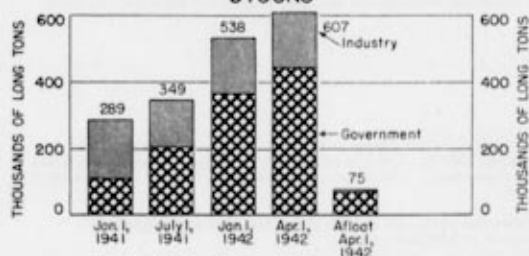
Under Supplementary Order No. M-15b as amended, use of crude rubber is authorized in three ways: (1) for products to be delivered to Army, Navy, Lend-Lease, etc., or for products which will be physically incorporated in products so delivered, (2) products in which crude rubber may be consumed without specific authorization of WPB, provided current consumption does not exceed a specified percentage of consumption during the base period, and (3) products in which rubber may be used provided specific tonnage authorization is obtained from WPB. Under Amendment No. 1 to M-13, all deliveries of synthetic rubber are subject to authorization by WPB.

SUPPLY-DEMAND

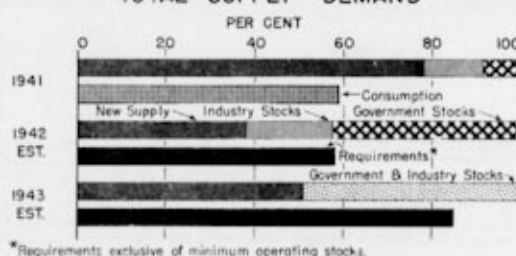
THOUSANDS OF LONG TONS



STOCKS

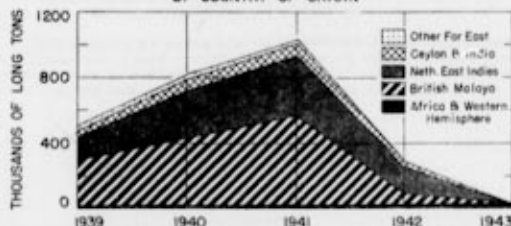


TOTAL SUPPLY - DEMAND



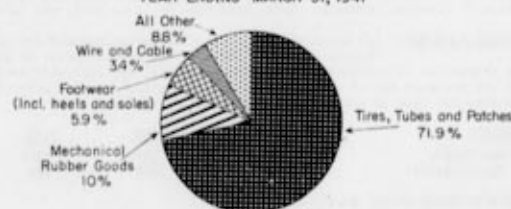
IMPORTS

BY COUNTRY OF ORIGIN



USES

YEAR ENDING MARCH 31, 1941



RUBBER
Crude and General-purpose Synthetic
(All figures in thousands of long tons)

BACKGROUND: Approximately 96 percent of the crude rubber imported into the United States during recent years has originated in the Far East. Ceylon and India are the only countries in this area now accessible to the non-Axis nations. In recent years from 6 to 8 percent of the total imports into the United States have originated in these two countries, but it is open to question whether shipments can be continued throughout 1942. With imports from the Far East practically shut off, the supply of crude rubber is limited largely to stocks on hand and afloat. General-purpose synthetic rubber and reclaimed rubber will have to be used to supplement crude. For this reason, estimated production of general-purpose synthetic rubber is considered in connection with crude rubber. Oil-resistant synthetic rubber is not included for the reason that the specific demands for these special-purpose synthetics are large and increasing, with the result that they are not available to use as substitutes for crude rubber.

NEW SUPPLY: No crude rubber is produced in this country although there is a possibility of obtaining small quantities of guayule in southwestern United States. General-purpose synthetic rubber was produced for the first time in 1941.

	1939	1940	1941	1942 Est.	1943 Est.	1944 Est.
Imports - crude rubber	500	818	1029	300	10	40
Production - general-purpose synthetic	0	0	1	10	10	700
New supply	500	818	1029	310	20	740

1/ Negligible.

CONSUMPTION:	1939	1940	1941	1942 Est.	1943 Est.
	578	641	763	506 1/	628 1/

1/ Requirements itemized below. Consumption during first quarter of 1942 amounted to 105 thousand tons.

STOCKS: The following data comprise crude rubber only. Only a few tons of general-purpose synthetic rubber were held in plants producing oil-resistant synthetic rubber.

Date	Government		Industry		Total	
	On Hand	Afloat	On Hand	Afloat	On Hand	Afloat
January 1, 1941	113	36	176	150	289	186
July 1, 1941	206	12	143	190	349	202
January 1, 1942	166	118	170	11	336	129
April 1, 1942	447	72	160	3	607	75

IMPORTS: Imports comprise crude rubber, primarily in smoked ribbed sheets, latex, and guayule.

Country of Origin	1939		1940		1941		1942 Est.		1943 Est.	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
British Malaya	278	55.6	421	51.4	552	53.7	82	27.3	0	-
Netherlands East Indies	145	28.6	288	35.2	369	35.9	151	50.4	0	-
Ceylon and India	38	7.6	59	7.3	62	6.1	43	14.3	0	-
Other Far East	27	5.4	12	1.5	24	2.3	0	-	0	-
Total Far East	488	97.2	800	97.7	1,007	98.0	276	92.0	0	-
Africa	6	1.2	7	.9	11	1.0	15	5.0	16	5.3
Western Hemisphere	8	1.6	11	1.4	11	1.0	9	3.0	14	4.7
Total	500	100.0	818	100.0	1,029	100.0	300	100.0	30	100.0

Imports of crude rubber into the United States during the first four months of 1942 totaled 241 thousand long tons. These include 124 thousand from Netherlands East Indies, 88 thousand from British Malaya, and 19 thousand from Ceylon. The larger part of these imports was afloat at the first of the year.

USES: (Based on consumption during twelve months ending March 31, 1941).

	<u>Percent</u>		<u>Percent</u>
Tires, Tubes, and Patches	71.9	Wire and Cable	3.4
Mechanical Rubber Goods		All Other	8.6
Footwear (incl. heels and soles)		Total	100.0

REQUIREMENTS: Estimated requirements for 1942 and 1943 as reported by the Materials Requirements Section, Statistics Division, on April 20, 1942, are:

	1942	1943
Direct Military	1/	270.7
Foreign	2/	85.5
Facilities	3/	64.0
Essential Civilian	4/	85.0
Total		506.2

1/ Direct Military requirements shown are based upon objectives of the: (a) Aircraft - S-1 Ultimate Aircraft Program; (b) Army - Army Supply Program, Sections I (4/6/42) and II (4/9/42) covering equipment for ground and air forces, respectively; (c) Navy - latest available program on a war basis; (d) Maritime Commission - ship-building programs of approximately 8 million dead weight tons in 1942 and 15 million dead weight tons in 1943.

2/ Foreign requirements are for materials as such -- lend-lease and other.

3/ Facilities - minimum needs for the production and maintenance of facilities and equipment to effectuate the military program.

4/ Essential Civilian - Minimum requirements for the production and maintenance of civilian goods.

PRIORITY ACTION: Under Supplementary Order No. M-15b as amended, use of crude rubber is authorized in three ways: (1) for products to be delivered to Army, Navy, Lend-Lease, etc., or for products which will be physically incorporated in products so delivered. (2) products in which crude rubber may be consumed without specific authorization of WPB, provided current consumption does not exceed a specified percentage of consumption during the base period, and (3) products in which rubber may be used provided specific tonnage authorization is obtained from WPB. Under Amendment No. 1 to M-13, all deliveries of synthetic rubber are subject to authorization by WPB.

SPECIAL PROBLEMS: (1) Keep open sea lanes from Ceylon and Africa. (2) encourage production and exportation of wild rubber from Mexico and Central and South America. (3) establishment of guayule plantations in Mexico and southwestern United States. (4) expedite the production of synthetic rubber-like materials. (5) full utilization of existing reclamation plants and adequate collection of scrap rubber, and (6) restrict use of rubber without crippling the military motor transport and combat vehicle program or without shutting down war industries for lack of truck tires, mechanical goods, etc.

SUMMARY:	1942	1943
New Supply	330	380
Requirements	506	628

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 12, 1942
Abstract issued May 18, 1942

CONFIDENTIAL

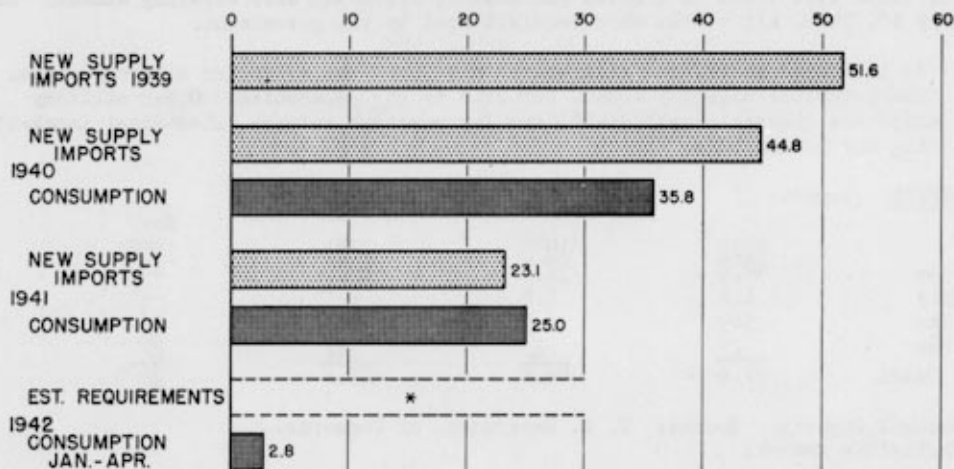
RAW SILK

PRIORITY ACTION

On July 26, 1941, (M-22) public warehouse stocks were frozen. Restrictions on the processing of raw silk from mill stocks became effective August 2, 1941. On February 10, 1942, all stocks were requisitioned by the government.

SUPPLY-DEMAND

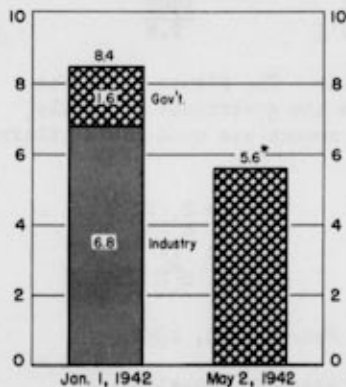
MILLIONS OF POUNDS



* Estimates of military and civilian requirements under revision at date of issuance of this chart.

STOCKS

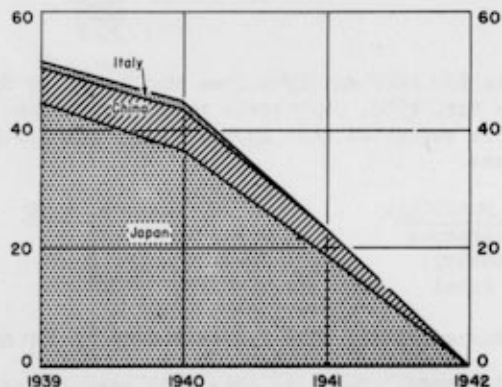
MILLIONS OF POUNDS



* Industry stocks requisitioned Feb. 10, 1942

IMPORTS

BY COUNTRY OF ORIGIN
MILLIONS OF POUNDS



SILK - RAW
(All figures in million pounds)

CONFIDENTIAL

BACKGROUND: There is no domestic production of raw silk in the U.S. In the past, Japan, China, and Italy supplied virtually all the raw silk imported into the United States, Japan greatly predominating. Thus, the freezing of Japanese credits, on July 25, 1941, and the subsequent cessation of imports from that country, in effect stopped the flow of raw silk to this country.

For all practical purposes, the silk problem is one of conservation and substitution. Silk conservation measures were initiated on July 26, 1941, when public warehouse stocks were frozen. Restrictions on the processing of raw silk from mill stocks became effective August 2, 1941, at which time it was ordered that all unopened bales of raw silk were to be reserved to fill government contracts. Processing of bales opened prior to August 2 was not restricted as to usage, but the rate of processing was limited to that of the week ending July 26. Thereafter, various steps were taken to tighten the control exercised over existing stocks. On February 10, 1942, all stocks were requisitioned by the government.

USES: As indicated above, raw silk stocks have been set aside for military usage.

The principal military demand for silk is for parachutes. Other military uses, which are quantitatively small, are for surgical sutures, electrical insulation, and lacing for powder bags.

NEW SUPPLY: Imports 1/

	1939	1940	1941	Est. 1942
Japan	44.6	36.4	19.0	—
Italy	1.1	1.5	—	—
China	5.9	6.9	4.1	2/
Other	2/	2/	2/	2/
Total	51.6	44.8	23.1	2/

1/ General Imports. Source: U. S. Department of Commerce.

2/ Negligible amount.

Imports of raw silk are expected to be negligible in 1942. No shipments were received in the first quarter, but April arrivals of some twenty thousand pounds of Chinese silk are reported.

CONSUMPTION: 1/

	1940	1941	Jan. - Apr. 1942
	35.8	25.0 2	2.8

1/ Data for 1940 and 1941 from the Commodity Exchange, Inc. The figure shown for Jan. - Apr. 1942, represents total allocations made from the government stockpile.

2/ It is estimated that approximately one-fifth of this amount was used for military purposes.

STOCK POSITION:

	Jan. 1, 1942	May 2, 1942
Government	1.6	5.6
Industry	6.8	1/
Total	8.4	5.6

1/ Industry stocks were requisitioned by the government February 10, 1942.

SUBSTITUTIONS: Nylon is generally regarded as the only adequate substitute for silk for parachutes. Nylon and high-tenacity rayon can replace silk for practically all other military usages. (In its nonessential uses, silk has been replaced largely by rayon and cotton.)

REQUIREMENTS: Estimates of military and civilian requirements under revision at date of issuance of this abstract.

CONFIDENTIAL

SISAL-HENEQUEN (Agave sisalana-agave fourcroydes)

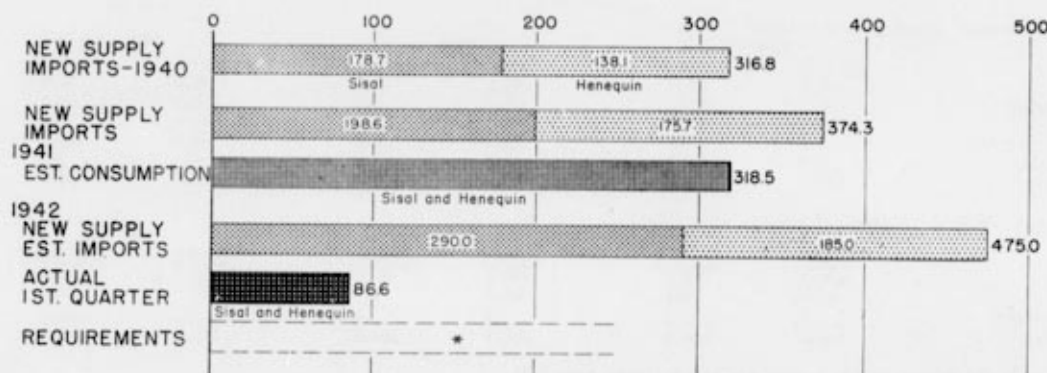
EO 11652 DECLASSIFIED
Commerce Dept. Sec. 3(E) and 4(D)
By RHP, Data Center, 11-16-78

PRIORITY ACTION

General Preference Order M-84, dated February 20, 1942 authorizes governmental control of stocks of agave fiber, and agave cordage and twine. This order and supplements thereto impose restrictions on the delivery and processing of sisal and henequen, on the purchase and sale of wrapping twine, and on the purchase, sale and use of binder twine.

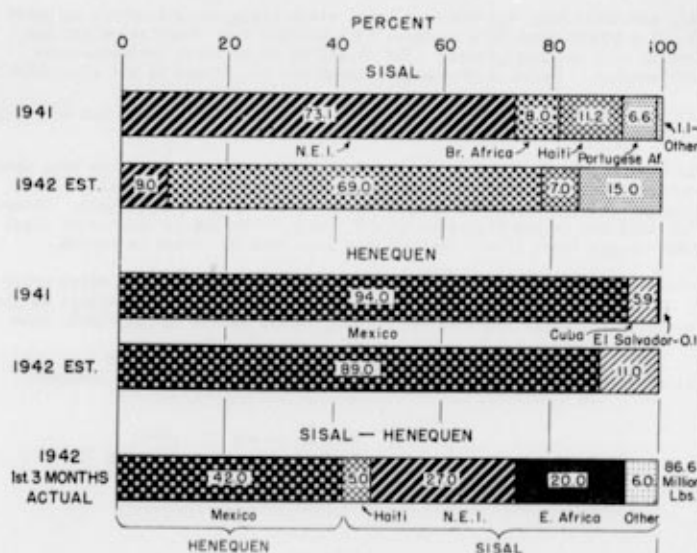
SUPPLY-DEMAND

MILLIONS OF POUNDS



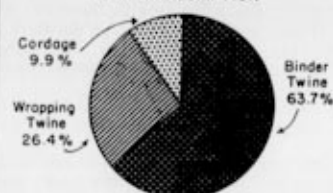
* Estimates of military and civilian requirements under revision at date of issuance of this chart.

IMPORTS BY COUNTRY OF ORIGIN



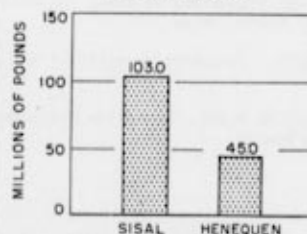
USES

TOTAL COMBINED SISAL-HENEQUEN 1941 CONSUMPTION *



* WPB Textile Research Section estimate.

INDUSTRY STOCKS JANUARY 1, 1942



SISAL - HENEQUEN
(All figures in million pounds)

CONFIDENTIAL

BACKGROUND:

Sisal fiber is a hard fiber obtained from the leaves of the agave sisalana, grown principally in the coastal areas of Java, Sumatra, Tanganyika, and Kenya. In the past, approximately two thirds or more of the total U.S. imports of sisal originated in the Netherlands Indies. The loss of this source, together with the increasing demand for sisal as a substitute for manila fiber, has placed a severe strain on U.S. sisal supplies.

Henequen fiber is a hard fiber obtained from the leaves of another member of the agave family (agave fourcroydes). Like sisal, it is not produced in the U.S., but unlike the former, it grows abundantly in nearby countries. Mexico is the largest henequen-producing area of the world, but Cuba also produces substantial quantities of this fiber. Henequen is often referred to as sisal, but is generally coarser and more brittle than true sisal. It has been suggested that if henequen were prepared as carefully as sisal, the two fibers could probably be employed interchangeably for many uses. The growing scarcity of other hard fibers and our accessibility to henequen supplies serve to heighten the importance of this fiber.

NEW SUPPLY - IMPORTS: Imports of sisal and henequen are recorded in an inclusive total. It may be assumed, however, that of the total sisal-henequen imports, those originating in Mexico, Cuba, and El Salvador are henequen, and those originating in other countries are sisal.

A. Sisal: General Imports, by Country of Origin

	<u>1940</u>		<u>1941</u>		<u>1942 (Est.)</u>	
	Amount	Percent	Amount	Percent	Amount	Percent
N.E.I.	115.6	64.7	145.1	73.1	25.0	9.0
Br. Africa	40.9	22.9	15.8	8.0	200.0	69.0
Haiti	17.6	9.9	22.3	11.2	20.0	7.0
Portuguese Africa	3.8	2.1	13.1	6.6	45.0	15.0
All Other	0.8	0.4	2.3	1.1	-	-
Total	178.7	100.0	198.6	100.0	290.0	100.0

B. Henequen: General Imports, by Country of Origin

	<u>1940</u>		<u>1941</u>		<u>1942 (Est.)</u>	
	Amount	Percent	Amount	Percent	Amount	Percent
Mexico	112.1	81.2	165.1	94.0	165.0 1/	89.0
Cuba	25.6	18.5	10.4	5.9	20.0	11.0
El Salvador	.4	.3	.2	.1	2/	...
Total	138.1	100.0	175.7	100.0	185.0	100.0

1/ Including 25 million pounds carry-over binder twine from 1941.

2/ Negligible amount.

C. Combined Total Sisal-Henequen Imports:

	<u>1940</u>	<u>1941</u>	<u>1942 (Est.)</u>
	316.8	374.3	475.0

Total sisal-henequen imports in the first quarter of 1942 amounted to 86.6 million pounds. (Mexico 42%; Haiti 5%; N.E.I. 27%; Brit. East Africa 20%; all other countries 6%.)

CONSUMPTION: The WFB Textile Research Section estimates that the combined total sisal-henequen consumption amounted to 318.5 million pounds in 1941, of which 31.5 million pounds went into cordage; 34.0 million into wrapping twine; and 203.0 million into binder twine, including exports of 8 million pounds. (The data from which these estimates were projected do not distinguish between sisal and henequen. Hence, a breakdown between the two fibers is not available.)

STOCKS: As of January 1, 1942, industry stocks of sisal and henequen fibers totaled 103.0 million pounds and 45.0 million pounds, respectively. To date the government has not acquired either fiber for stockpile.

USES: The principal use of sisal has normally been in the manufacture of wrapping twine, while henequen has been used chiefly in binder twine. In the past, comparatively small amounts of sisal were used in the manufacture of rope and cordage, but the demand for sisal rope and cordage has been increased greatly by the scarcity of manila fiber. Formerly sisal was used as a rug and carpet material but this use is now forbidden by WFB. Also forbidden is the use of sisal or henequen fibers as stuffing or padding materials except those fibers that measure less than 20 inches in length.

GOVERNMENT CONTROL: Control of stocks of various types of agave fiber (including sisal and henequen) was taken under General Preference Order M-84, dated February 20, 1942. This order and supplements thereto impose restrictions on the delivery and processing of sisal and henequen, on the purchase and sale of wrapping twine, and on the purchase, sale and use of binder twine.

REQUIREMENTS: Estimates of military and civilian requirements under revision at date of issuance of this abstract.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 22, 1942
Revised abstract issued May 29, 1942
Next revision due: June 19, 1942

CONFIDENTIAL

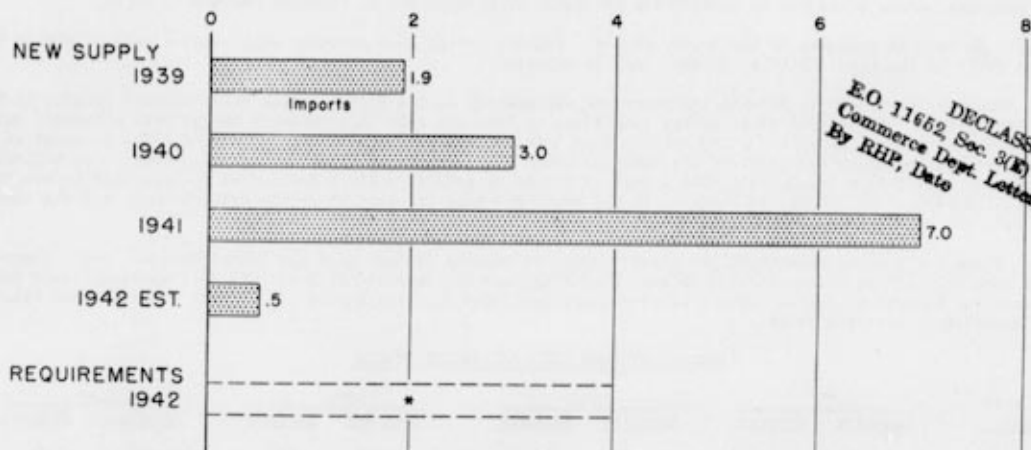
TEAK WOOD

PRIORITY ACTION

General Preference Order M-83, issued March 5, 1942, restricts the use of teak to Navy and other military purposes.

SUPPLY-DEMAND

MILLIONS OF BOARD FEET

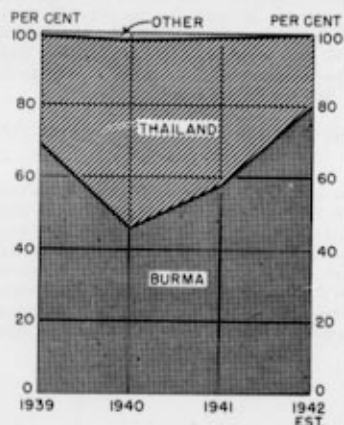


* Estimates of military and civilian requirements are under revision at date of issuance of this chart.

DECLASSIFIED
E.O. 11662, Sec. 3(E) and 5(D)
By RHP, Date 11-15-78

IMPORTS

BY COUNTRY OF ORIGIN



STOCKS

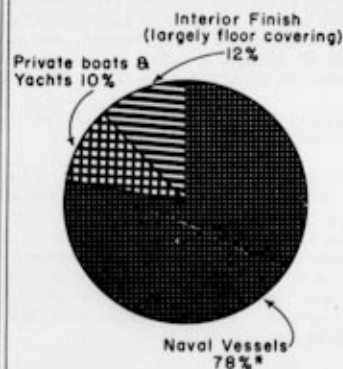
HELD BY IMPORTERS & WHOLESALERS
ON JANUARY 1, 1942



* A survey is being made of stocks in private ship and Navy Yards.

USES

1940



* It is probable the 1941 percentage is 90.

TEAK WOOD

(All figures in thousands of board feet)

CONFIDENTIAL

BACKGROUND: Teak is a dense hardwood which is a native of the Indian peninsula, Burma, and Thailand, but it is also found in the Philippine Islands, in Java and elsewhere in the Malaya Archipelago. It is similar to oak in weight and appearance, and has a high degree of resistance to wear, water absorption, decay and insect attack. Teak is used chiefly for decking of naval vessels, especially battleships and cruisers. Small quantities are required for rails, ladders and fittings. Civilian uses are relatively unimportant. The principal demand is for cabin interiors and rails of small pleasure boats, ships and yachts; interior finish (especially parquet flooring) in fine residences, club rooms, and bank buildings; Venetian blinds; and Pullman car finish. Teak is also used to a limited extent in furniture, musical instruments and specialty items.

Teak was designated a critical material by the Army-Navy Munitions Board September 24, 1941. A stockpile of 5 million board feet was recommended on November 3, 1941. Under General Preference Order MS3, issued March 5, 1942, the use of teak is restricted to Navy and other military purposes. The world supply of high-quality teak is produced in Burma, Thailand, Netherlands East Indies and French Indo-China. Inasmuch as access to these areas has been cut off, the present and future supply of teak is largely limited to stocks on hand and afloat. India produces teak, generally of low quality, for home consumption and it is possible that some high-grade timber can be obtained from this source. For most purposes, other woods can be substituted for teak, as pointed out in "Special Problems", below.

NEW SUPPLY: No teak is produced in the United States. Imports during 1942 probably will consist only of timber that was afloat early in the year. Little, if any, teak is exported.

STOCKS: Stocks of teak held by private importers and wholesalers in the United States are estimated roughly at 500 thousand board feet. In addition considerable quantities of teak are held in government and private shipyards but a reliable estimate is not available. It is well to note that imports during 1941 were more than twice as large as in previous years. A stockpile objective of five million board feet was set up November 6, 1941; however, no deliveries have been made. There is a possibility that a part of stocks of several million board feet of teak held in the United Kingdom will be shipped to the United States. In any event the teak required to repair British naval vessels should be supplied from the United Kingdom's stocks.

IMPORTS: Burma and Thailand have been the chief sources of imports of teak into the United States. Small quantities have come from French Indo-China, British Malaya, Hong Kong, and the Netherlands East Indies. Imports of teak during recent years are summarized below. Over 7 million board feet were imported during 1941, which was more than twice the quantity imported in previous years.

IMPORTS OF TEAK INTO THE UNITED STATES

Country of Origin	1939		1940		1941		1942	
	Quantity	Percent	Quantity	Percent	Quantity	Percent	Quantity	Percent
Burma	1,294	69	1,368	46	4,108	58	400	80
Thailand	562	30	1,558	52	2,876	41	100	20
Other ^{1/}	22	1	61	2	59	1	---	---
Total	1,878	100	2,989	100	7,043	100	500	100

^{1/} French Indo-China, British Malaya, and Netherlands East Indies.

During the first quarter of this year, 349 thousand board feet of teak were imported into the United States. Of this amount 283 thousand board feet were received from Burma and 66 thousand from Thailand.

USES: An analysis of the amount of teak consumed in manufacturing establishments, private shipyards and Navy yards indicates that in 1940 approximately 78 percent of the teak was used in naval vessels, 10 percent in private boats and yachts and 12 percent in interior finish, largely in the form of flooring. The amounts consumed in the manufacture of furniture, musical instruments, and specialty goods comprised about one-tenth of one percent. It is probably that at least 90 percent of all teak consumed in 1941 was used in naval vessels. The percentage will be even higher in 1942 for the reason that effective March 5, 1942 the use of teak is restricted to naval and other military purposes.

REQUIREMENTS: Estimates of military and civilian requirements are under revision at the time of issuance of this abstract.

SPECIAL PROBLEMS: Since little, if any, high-quality teak will be exported to non-Axis nations, it is imperative that (1) existing stocks in both the United States and the United Kingdom be used to the maximum advantage and (2) substitutes be found which are available in sufficient quantities to take the place of teak. Douglas fir, longleaf pine and white oak of our native woods can be used as substitutes for teak. Large amounts of Douglas fir now are being used for battleship decking, in part because Douglas fir is more readily available in the quantities needed than are the select grades of longleaf pine and white oak. Each of the native woods shrinks and swells much more than teak with changes in moisture content. Douglas fir and longleaf pine are not so hard nor so strong as teak or oak and may form splinters on the surface. Oak is heavier than the other woods and the tannin which it contains corrodes iron and steel in contact with it.

CONFIDENTIAL

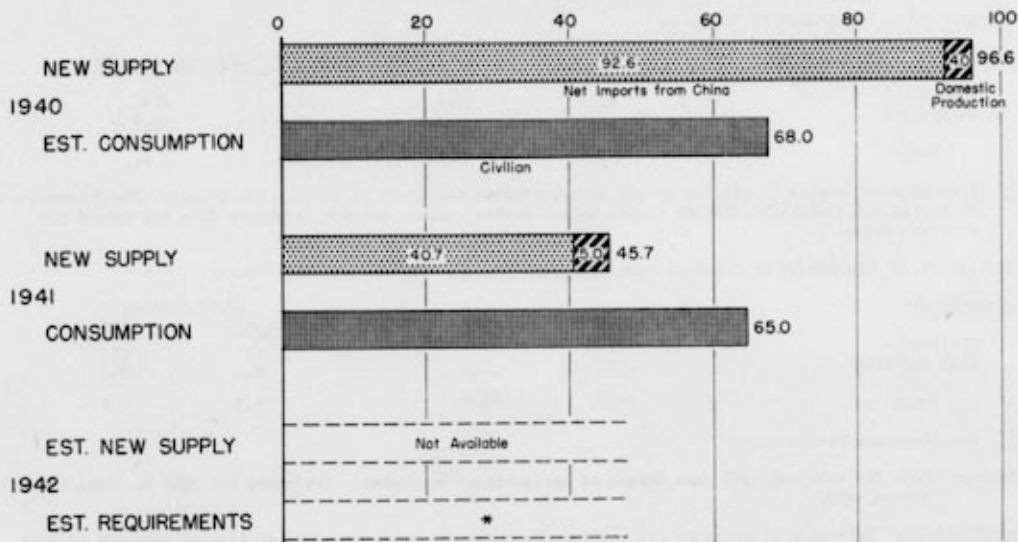
TUNG OIL

PRIORITY ACTION

General Preference Order M-57 as amended (March 19, 1942) restricts the use of tung oil to war orders having preference ratings of A-2 or better, to orders placed by Defense Supplies Corporation, and to orders for the manufacture of can linings for food containers including the manufacture of outside can coatings where wood oil is essential to withstand normal food processing. In addition, the use of tung oil is permitted when specifically required by law in effect prior to December 1, 1941.

SUPPLY, CONSUMPTION AND REQUIREMENTS

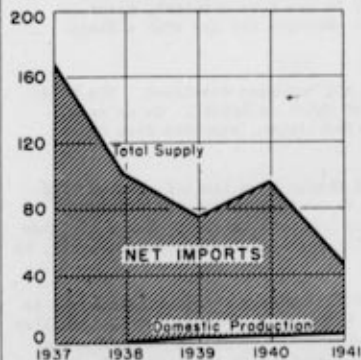
MILLIONS OF POUNDS



* Estimates of military and civilian requirements are under revision at date of issuance of this chart.

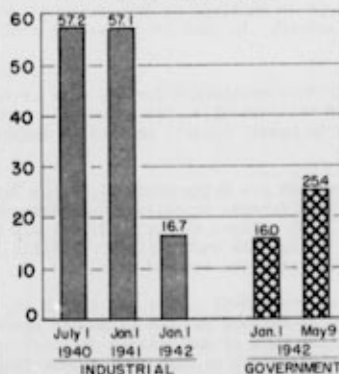
SUPPLY

MILLIONS OF POUNDS



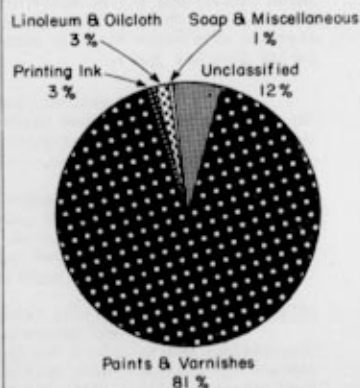
STOCKS

MILLIONS OF POUNDS



USES

1940



TUNG OIL

(All figures in millions of pounds)

BACKGROUND: Tung oil, also known as China wood oil, is obtained from the kernel of the tung nut. Tung trees, which produce the nuts, have been grown in China for centuries and China has long been the world's main source of tung oil. Commercial plantings have been made in recent years in the United States, but production of the oil has been very small relative to imports and domestic consumption.

USES: Tung oil is one of the most valuable of the "drying oils" for use in paints, enamels, varnishes, and lacquers. It also is used in linoleum and oil cloth, printing inks, coating tinware, electrical insulation, water-proofing textiles, and brake linings. Its military uses include protective coatings on ships, airplanes, shells, gun stocks, and in brake linings and electrical insulation.

NEW SUPPLY:	1940	1941	1942 (Est.)	1943 (Est.)
Net Imports ^{1/}	92.6	40.7	N.A. ^{2/}	N.A.
Domestic Production	4.0	5.0	5.0 ^{3/}	5.0 ^{3/}
Total	96.6	45.7	N.A.	N.A.

^{1/} Imports for consumption, minus re-exports. The latter have varied from 4 to 6 million pounds in recent years.

^{2/} Imports in April were 2.2 million pounds. No imports prior to April.

^{3/} Estimate by Chemicals Branch, WPB. Production first quarter of 1942 was 1.4 million pounds as against 1.0 million pounds in first quarter of 1941.

Source: U. S. Department of Commerce.

STOCKS:	July 1, 1940	January 1, 1941	January 1, 1942	May 9, 1942
Industrial	57.2	57.1	16.7	N.A.
Government	---	---	16.0	25.4 ^{1/}
Total	57.2	57.1	32.7	N.A.

^{1/} Inventory of Navy is 16 million pounds and government stockpile is 9.4 million pounds. The Government is buying all available supplies in the United States, which, however, probably does not exceed 5.0 million pounds.

Source: U. S. Department of Commerce, and Chemicals Branch, WPB, for stockpile data.

CONSUMPTION:	1940	1941	First Quarter	
	68.0	65.0	1941	1942
Civilian	---	---	1/	1/
Army and Navy	---	---	---	---
Total	68.0	65.0	14.3	4.2

^{1/} Breakdown not available.

Source: Data for 1940 and 1941 from Bureau of Agricultural Economics. Estimates for 1942 by Chemicals Branch, WPB.

REQUIREMENTS: Estimates of military and civilian requirements under revision at date of issuance of this abstract.

SPECIAL PROBLEMS: With imports of tung oil cut off, fully 95 percent of our source of supplies is lost. The problem then is one of increasing domestic production, conserving existing stocks, or developing adequate substitutes. Increasing domestic production, which would call for the planting of more trees, is impractical since it would take several years for the trees to reach maturity. Conservation of existing stocks is important. Present stocks are perhaps sufficient for two years under an existing allocation order which limits tung oil to military use and for use as coating in metal food containers. In this connection, there is some opinion that stocks should be confined to the latter use which is the most critical, since no adequate substitute for this purpose exists. In that event, stocks could be extended for use over a longer period than two years.

No entirely satisfactory substitute for all uses of tung oil has been developed. The best replacements are dehydrated castor and citicica oils, the principal source of which is Brazil. Owing to a current crop failure of citicica nuts in Brazil as well as limited shipping facilities, supplies from this source are now problematical.

Castor beans can be, and are being produced in the United States to a limited extent. The Department of Agriculture has asked Texas farmers to raise enough this year to produce 30 million pounds of oil, which, even if accomplished, will not relieve the quick drying oil situation particularly. Since civilian requirements for the preferred quick drying oils such as tung, citicica, and dehydrated castor cannot be met, it is clear that they must be supplied from fish and linseed oils.

GOVERNMENT CONTROLS: General Preference Order M-57 as amended (March 19, 1942) restricts the use of tung oil to war orders having preference ratings of A-2 or better; to orders placed by Defense Supplies Corporation; and to orders for the manufacture of can linings for food containers including the manufacture of outside can coatings where wood oil is essential to withstand normal food processing. In addition, the use of tung oil is permitted when specifically required by law in effect prior to December 1, 1941.

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TURPENTINE

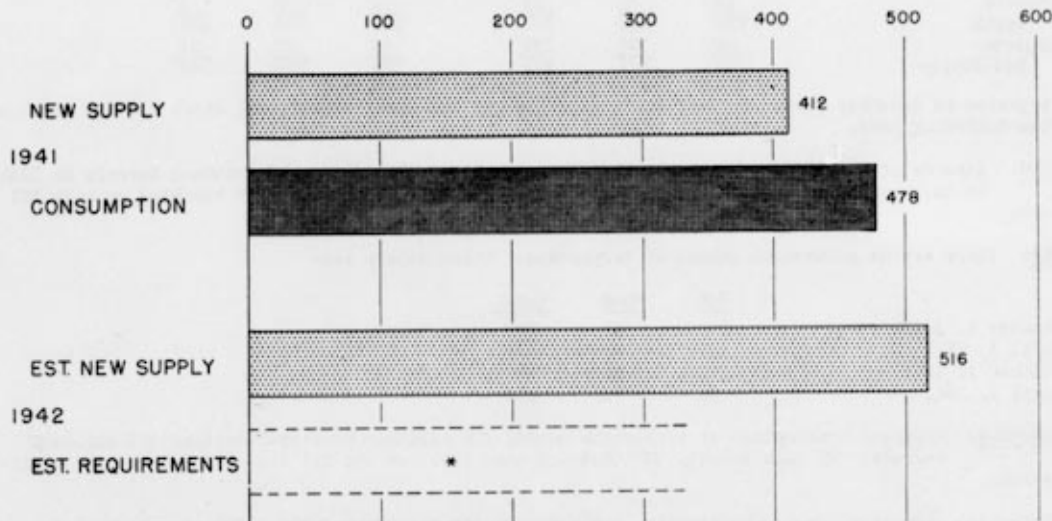
PRIORITY ACTION

No action taken.

DECLASSIFIED
E.O. 11662, Sec. 3(E) and 5(D) or 6(D)
By RHP, Date 11-15-78

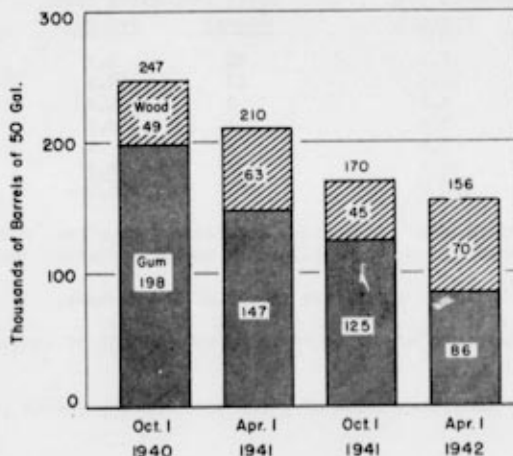
SUPPLY - DEMAND

THOUSANDS OF BARRELS OF 50 GALLONS



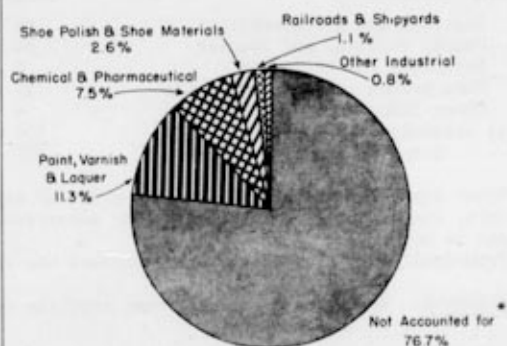
* Estimates of military and civilian requirements under revision at date of issue of this chart.

STOCKS



INDUSTRIAL USE

APRIL 1940 - MARCH 1941



* Principally distributed through retailers who sell in small quantities to ultimate consumers.

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TURPENTINE

(All figures in thousands of barrels of 50 gallons)

BACKGROUND: Turpentine is produced by (1) distilling the sap obtained by tapping southern pine trees and (2) wood distillation. The former is known as "gum turpentine" in contrast to "wood turpentine" which is produced by wood distillation or as a by-product in the manufacture of sulphite wood pulp. Wide variation in factors affecting the two types of production make it advisable to distinguish between gum turpentine and wood turpentine in analyzing output, although the two are almost identical in use.

NEW SUPPLY:

	1941			1942 Est.		
	Gum	Wood	Total	Gum	Wood	Total
Production 1/	286	248	534	300	300	600
Imports	13	0	13	1	0	1
Total	299	248	547	301	300	601
Exports	99	36	135	65	20	85
Net Supply	200	212	412	236	280	516

1/ Adjusted to calendar year. Production is reported for the naval store year, April through March of the following year.

IMPORTS: Imports of turpentine, which are relatively small, declined from 18 thousand barrels in 1939 to 13 thousand in 1941. Imports during the first three months of 1942 amounted to only 357 barrels.

STOCKS: There are no government stocks of turpentine. Other stocks are:

	Gum	Wood	Total
October 1, 1940	198	49	247
April 1, 1941	147	63	210
October 1, 1941	125	45	170
April 1, 1942	86	70	156

CONSUMPTION: Apparent consumption of turpentine during the calendar year 1941 totaled 478 thousand barrels. Of this amount, 267 thousand came from gum and 211 thousand was from wood distillation.

The principal industrial uses of turpentine are shown in the following table. The amount shown for "paint, varnish, and lacquer" substantially understates the use of turpentine as a paint and varnish solvent and thinner, because the larger part is used by the applying consumer rather than by the manufacturer. The quantity of turpentine used by ultimate consumers is indicated by the large proportion of total demand which is not for industrial uses.

Industrial Use	April 1939-March 1940		April 1940-March 1941	
	Amount	Percent	Amount	Percent
Chemical and pharmaceutical	36	7.5	41	8.7
Paint, varnish, and lacquer	54	11.3	52	11.1
Railroads and shipyards	5	1.1	6	1.3
Shoe polish and shoe materials	12	2.6	12	2.7
Other industries 1/	4	0.8	4	.9
Not accounted for 2/	366	76.7	348	75.3
Total apparent consumption	477	100.0	463	100.0

1/ Other important industrial uses, in order of magnitude, are: in foundry and foundry supplies, furniture, insecticides and disinfectants, adhesives and plastics, automobiles and wagons, printing ink, and in rubber.

2/ Principally distributed through retailers who sell in small quantities to ultimate consumers.

REQUIREMENTS: Estimates of military and civilian requirements are under revision at the date of issuance of this abstract.

SPECIAL PROBLEMS: Shortages of labor, tires, and trucks limit expansion of production and may result in lowered output.

WAR PRODUCTION BOARD, Statistics Division
Materials Branch

Data as of May 20, 1942
Abstract issued May 29, 1942
Next revision due: June 19, 1942

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WOOD PULP

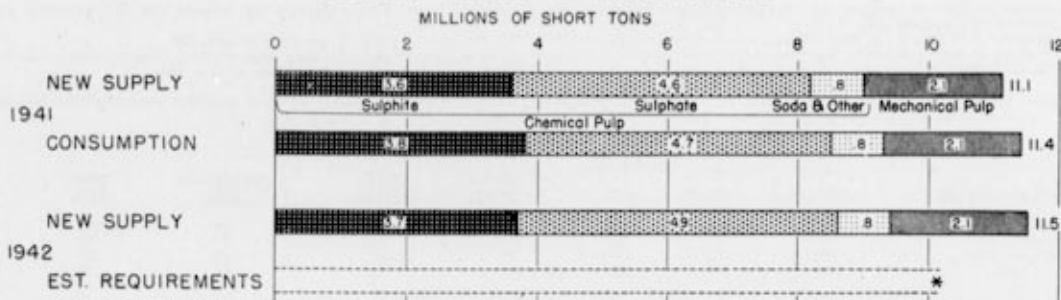
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Commerce Dept. Letter, 11-15-78
By RHP, Date

PRIORITY ACTION

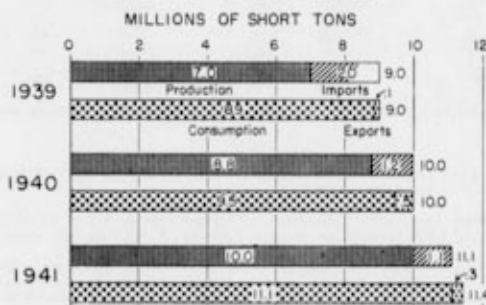
General Preference Order M-93 was issued March 12, 1942 and will be in full operation on May 1, 1942. Under this order no producer shall make, and no person shall accept delivery of wood pulp without approval by the Director of Industry Operations.

SUPPLY, DEMAND & REQUIREMENTS

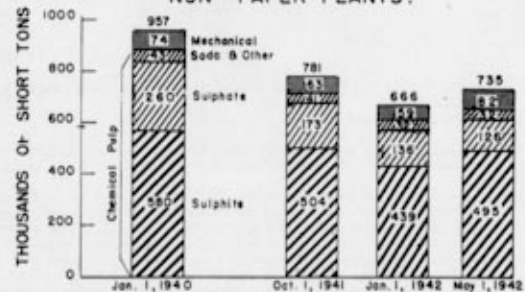


*Military and civilian requirements under revision at date of issuance of this chart.

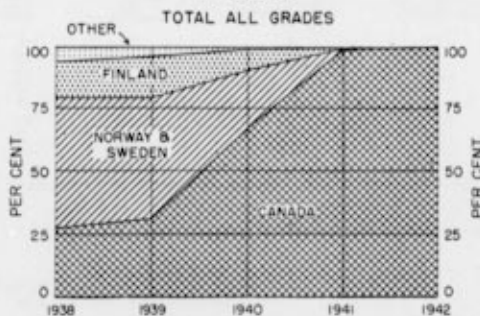
SUPPLY - DISPOSITION



STOCKS IN ALL PAPER AND PULP MILLS & NON-PAPER PLANTS.

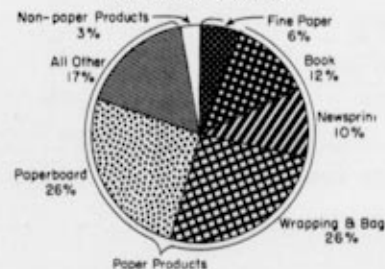


IMPORTS



CONSUMPTION 1939-40

CONSUMED IN MANUFACTURE OF PAPER AND OTHER PRODUCTS



WOOD PULP (All figures in thousands of short tons)

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BACKGROUND: Wood pulp consists of the fibrous material obtained from wood, and is used alone or mixed with waste paper, rag pulp, and other materials in the manufacture of many kinds of paper, paperboard and related products. High grade writing, printing, and white wrapping papers are made from bleached sulphite pulp. Highly purified grades of bleached sulphite also are used in the production of explosives, rayon, and various cellulose compounds. Sulphate pulp is used primarily in paperboard and strong wrapping papers. Soda pulp is used largely in high grades of printing paper, and mechanical pulp is the chief constituent of newsprint.

The anticipated shortage of wood pulp will occur largely in the sulphite and sulphate grades. The supply of soda pulp appears to be adequate, and the production of mechanical, or ground wood, can be increased more readily than can the output of chemical pulp. The allocation of wood pulp is concerned with the substitution of various grades of pulp, as well as with savings through restriction of less essential uses.

NEW SUPPLY: The supply of wood pulp available in 1941 is summarized by major grades in the accompanying table. The 1941 production was larger than that of previous years, but imports were smaller than in the preceding years. Allowance for these changes are incorporated in the estimates for 1942.

	Chemical Pulp, by major grades						Mechanical pulp or ground wood		Total wood pulp all grades	
	Sulphite 1/	Sulphate	Soda and Other	Total Chemical			1941	1942 est.	1941	1942 est.
Production 2/	2,897	3,000	4,388	4,800	826	800	2,111	2,600	1,867	1,900
Imports	762	675	176	175	16	16	964	866	204	160
Total new supply	3,659	3,675	4,564	4,975	842	816	3,075	3,466	2,071	2,060
Exports	184	282	115	125	2	1	101	145	5	6
Net new supply	3,475	3,423	4,429	4,780	840	815	2,974	3,321	2,066	2,054

1/ Includes pulp used in rayon and for other non-paper purposes - (in thousands of tons) 1941 production 215, imports 122; 1942 estimated production 300, imports 133.

2/ Data for 1941 from U. S. Pulp Producers Association. Estimates for 1942 prepared by the Pulp and Paper Branch, WPS.

3/ Production during the first three months of 1942 totaled 2,757 thousand, which was 17 percent larger than the 1941 first quarter production. Recent output of each of the major grades of pulp was consistently above that of the corresponding month of last year.

STOCKS: The following tonnages of wood pulp "on hand" in all pulp mills, paper mills, rayon plants and other non-paper establishments include quantities of pulp in transit or stored in warehouses and on wharves.

Stocks on Hand in All Pulp and Paper Mills and Non-Paper Plants

Date of Inventory	Chemical Pulp				Mechanical Pulp	Total Pulp
	Sulphite	Sulphate	Soda	Semi-chemical and Other		
January 1, 1941	580	260	32	11	74	957
October 1, 1941	904	173	25	16	63	781
January 1, 1942	419	136	24	8	59	666
May 1, 1942	455	126	17	15	82	735

IMPORTS: Prior to 1940 nearly two-thirds of the wood pulp imported into the United States came from Scandinavian countries. As shown in the accompanying table, this percentage dropped to 32% in 1940 and to 1% in 1941. Imports from Canada have increased consistently during recent years, and will constitute the only significant source of foreign pulp during the current year.

Country of origin	Imports of Wood Pulp - Total All Grades					
	1939		1940		1941	
	Quantity	Percent	Quantity	Percent	Quantity	Percent
Canada & Newfoundland	638	31	828	68	1,145	99
Sweden	873	43	279	23	2/	---
Finland	337	17	94	8	13	1
Norway	95	5	17	1	---	---
Other	63	3	7	---	2/	---
Total	2,026	100	1,325	100	1,158	100

1/ Imports during the first four months of 1942 totaled 430 thousand tons, comprised as follows: sulphite, 287; sulphate, 49; soda, 6; and mechanical, 88.

2/ Less than 200 short tons.

In 1939, sulphite pulp comprised 56% of total imports. By 1941, this proportion had increased to 69%. Imports of sulphate pulp declined from 32% to approximately 16%. Mechanical wood pulp increased from 10% to more than 17% of the total in 1941.

USES: Consumption of wood pulp during 1941 is estimated at 11,068 thousand short tons, which indicates a withdrawal from stocks of more than 290 thousand tons. Consumption by grades of pulp during 1941 was: sulphite, 3,501 thousand short tons; sulphate, 4,527 thousand; soda, 633 thousand; semi-chemical, 230 thousand; and mechanical 2,077 thousand tons.

Approximately 350 thousand short tons of wood pulp, primarily sulphite, are consumed in non-paper products including explosives, rayon, and other cellulose compounds. The quantity of the several grades of wood pulp used in the manufacture of various kinds of paper is not definitely known. The following, however, is fairly indicative of consumption in recent years. The change in specifications and the use of substitute types of pulp will change materially the percentage of pulp required for the various products in 1942.

Estimated Percentages of Wood Pulp Consumed in the Manufacture of Paper and Other Products, 1939-40 1/

Used in	Chemical Pulp					Mechanical Pulp	Total Pulp
	Sulphite	Sulphate	Soda	Semi-chemical	Total Chemical		
Paper							
Fine	17	1	-	-	8	-	6
Book	17	2	95	-	14	3	12
Newsprint 2/	6	-	-	-	2	14	10
Wrapping and bag	19	15	-	-	31	7	26
Paperboard	11	49	-	100	31	5	26
All other paper	23	3	5	-	11	40	17
Non-paper products	7	-	-	-	1	1	3
Total	100%	100%	100%	100%	100%	100%	100%

1/ Paper estimates based on U. S. Census, 1939, with adjustments by U. S. Pulp Producers Association; non-paper from survey, Pulp and Paper Branch, WPS.

2/ Newsprint manufactured in United States. Does not include imported newsprint.

REVISIONS: Estimates of military and civilian requirements are under revision at the date of issuance of this abstract.

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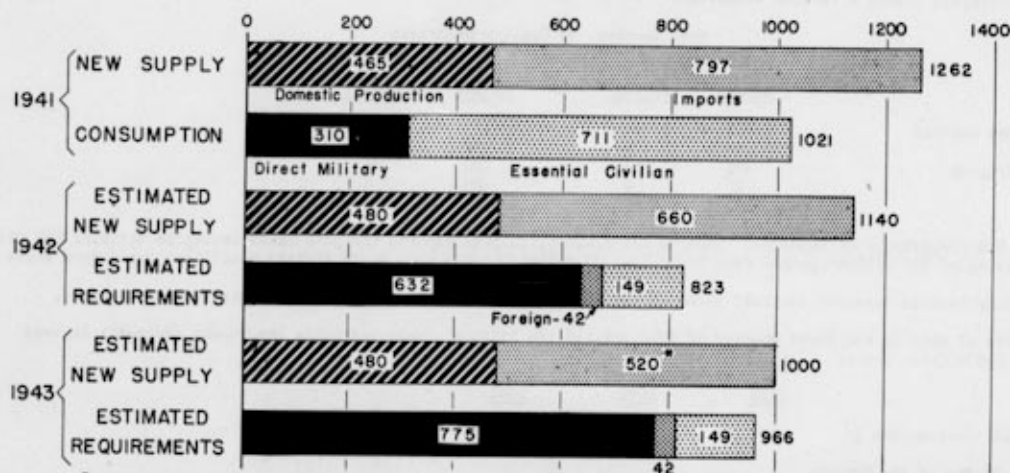
RAW WOOL Apparel Wool

PRIORITY ACTION

Conservation Order No. M-73, dated January 3, 1942, and amendments and extensions thereto curtail civilian consumption of wool during the first half of 1942. On April 17, 1942 it was ordered that no more wool should be put into process for floor coverings, drapery and upholstery except to the extent necessary to fill orders for floor coverings for the Army, the Navy and the Maritime Commission.

SUPPLY-DEMAND

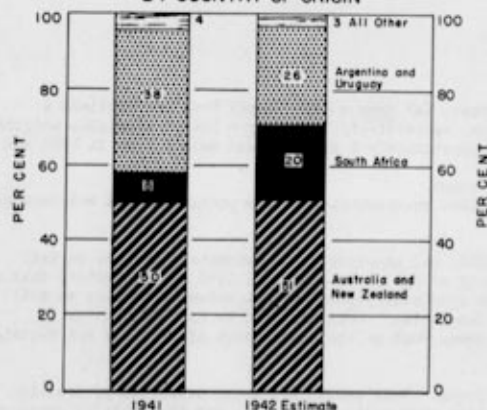
MILLIONS OF POUNDS



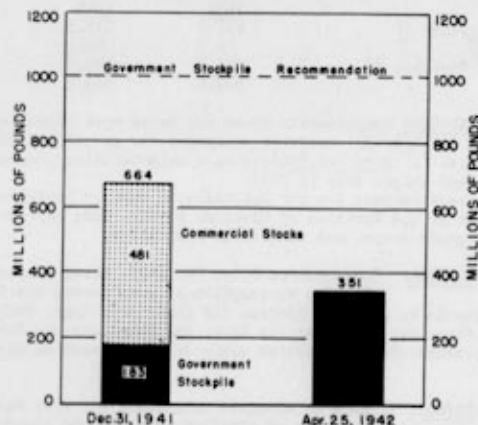
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E.O. 11652, Sec. 3(E) and 5(D) or (G)
Commerce Dept. Letter, 11-15-72
By RHP, Dite

IMPORTS

BY COUNTRY OF ORIGIN



STOCKS ON HAND



WOOL - RAW
(Apparel Wool)
(All figures in million pounds, greasy basis)

USES: The primary use of apparel wool is for clothing purposes. Apparel grades of wool have various specialized industrial uses, but the latter account for only a minor part of total consumption both for military and civilian purposes.

STOCKS ON HAND: At the end of 1941, stocks of raw wool in all hands totaled 664 million pounds as follows: government stockpile - 183 million pounds; commercial stocks - 481 million pounds. The government stockpile wool report for the week ending April 25, 1942 showed deliveries of 351 million pounds and floats of 35 million pounds.

<u>NEW SUPPLY:</u>	<u>1941</u>	<u>1942 (Est.)</u>	<u>1943 (Est.)</u>
Domestic Production	465	480	480
Imports	797 ^{1/}	660 ^{2/}	520 ^{2/}
Total New Supply	1,262	1,140	1,000

- ^{1/} Imports for consumption plus imports for government stockpile.
^{2/} Includes imports for government stockpile.

IMPORTS: The United States normally depends on imports of foreign wool to supply a considerable portion of its domestic consumption of wool. Despite the restrictions that have been placed on civilian consumption, it will be necessary to import large quantities of wool to meet essential demands. It is estimated that in 1942 the domestic clip will provide only about three-fourths of the amount needed for military purposes alone. The loss of any of the major sources listed below would therefore create a serious situation.

Wool Imports, by Country of Origin

	<u>1941 ^{1/}</u>		<u>1942 (Est.) ^{2/}</u>	
	<u>Amount</u>	<u>Percent</u>	<u>Amount</u>	<u>Percent</u>
Australia & New Zealand	401	50	335	51
South Africa	64	8	130	20
Argentina & Uruguay	306	38	170	26
All Other	26	4	25	3
Total	797	100	660	100

^{1/} Source: U.S. Department of Commerce. Imports for consumption plus imports for government stockpile totaling 183 million pounds, consisting of 158 million pounds from Australia; 20 million pounds from South Africa; 5 million pounds from South America.

^{2/} Estimated by Textile Research Section, based on lowest expectations; includes imports for government stockpile.

General imports of wool in the first quarter of 1942 totaled 284 million pounds, including government stockpile imports amounting to 116 million pounds.

<u>CONSUMPTION:</u>	<u>1939</u>	<u>1940</u>	<u>1941</u>
Domestic Mill Consumption ^{1/}	674	683	1021 ^{2/}

- ^{1/} Source: Bureau of the Census.
^{2/} Military - 310; Civilian - 711.

REQUIREMENTS: Estimated requirements for 1942 and 1943 as reported by the Materials Requirements Section, Statistics Division, on April 20, 1942 are:

	<u>1942</u>	<u>1943</u>
Direct Military ^{1/}	611.6	775.3
Foreign ^{2/}	42.5	42.5
Essential Civilian ^{3/}	148.5	148.5
Total	822.6	966.3

^{1/} Direct Military requirements shown are based upon objectives of the: (a) Army - Army Supply Program, Sections I (4/6/42) and II (4/9/42), covering equipment for ground and air forces, respectively; (b) Navy - latest available program on a war basis; (c) Maritime Commission - ship-building programs of approximately 8 million dead weight tons in 1942 and 15 million dead weight tons in 1943.

^{2/} Foreign requirements are for materials as such -- lend-lease and other.

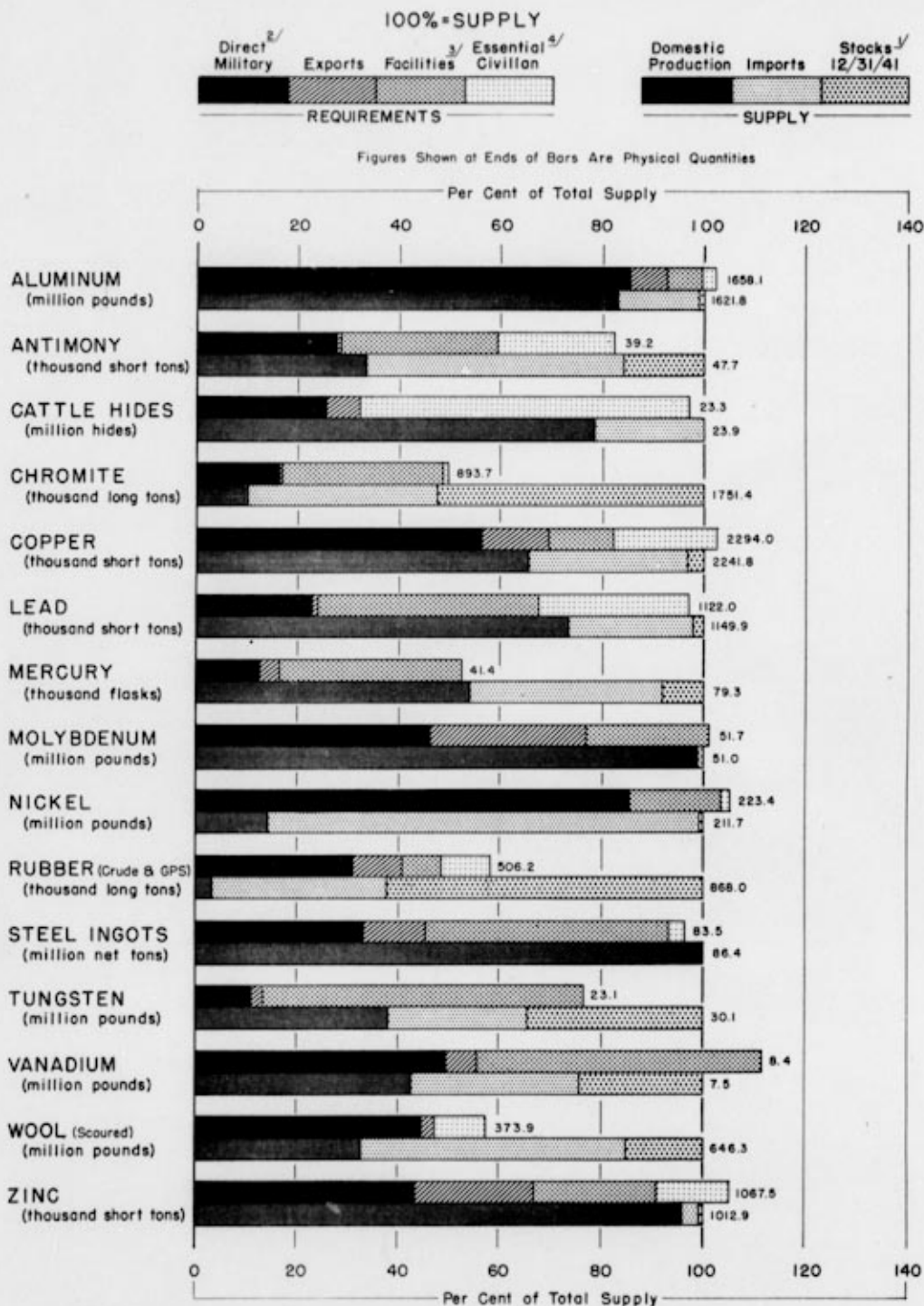
^{3/} Estimated by the Division of Civilian Supply, WPS; represents minimum requirements for the production and maintenance of civilian goods proper and industrial facilities.

GOVERNMENT CONTROL: Conservation Order No. M-73, dated January 3, 1942, and amendments and extensions thereto curtail civilian consumption of wool during the first half of 1942. On April 17, 1942, it was ordered that no more wool should be put into process for floor coverings, drapery and upholstery except to the extent necessary to fill orders for floor coverings for the Army, the Navy, and the Maritime Commission. Consideration is now being given to diverting present stocks of carpet wools to more essential civilian uses, such as the manufacture of blankets and clothing fabrics.

SPECIAL PROBLEMS: To date no adequate substitute for wool has been found. Wool stocks are being conserved by drastic curtailment of civilian uses, by the blending of wool with cotton and rayon, and by utilizing reprocessed and re-used wool from wool rags and clips.

<u>SUMMARY:</u>	<u>1942</u>	<u>1943</u>
Est. New Supply	1,140	1,000
Est. Requirements	823	966

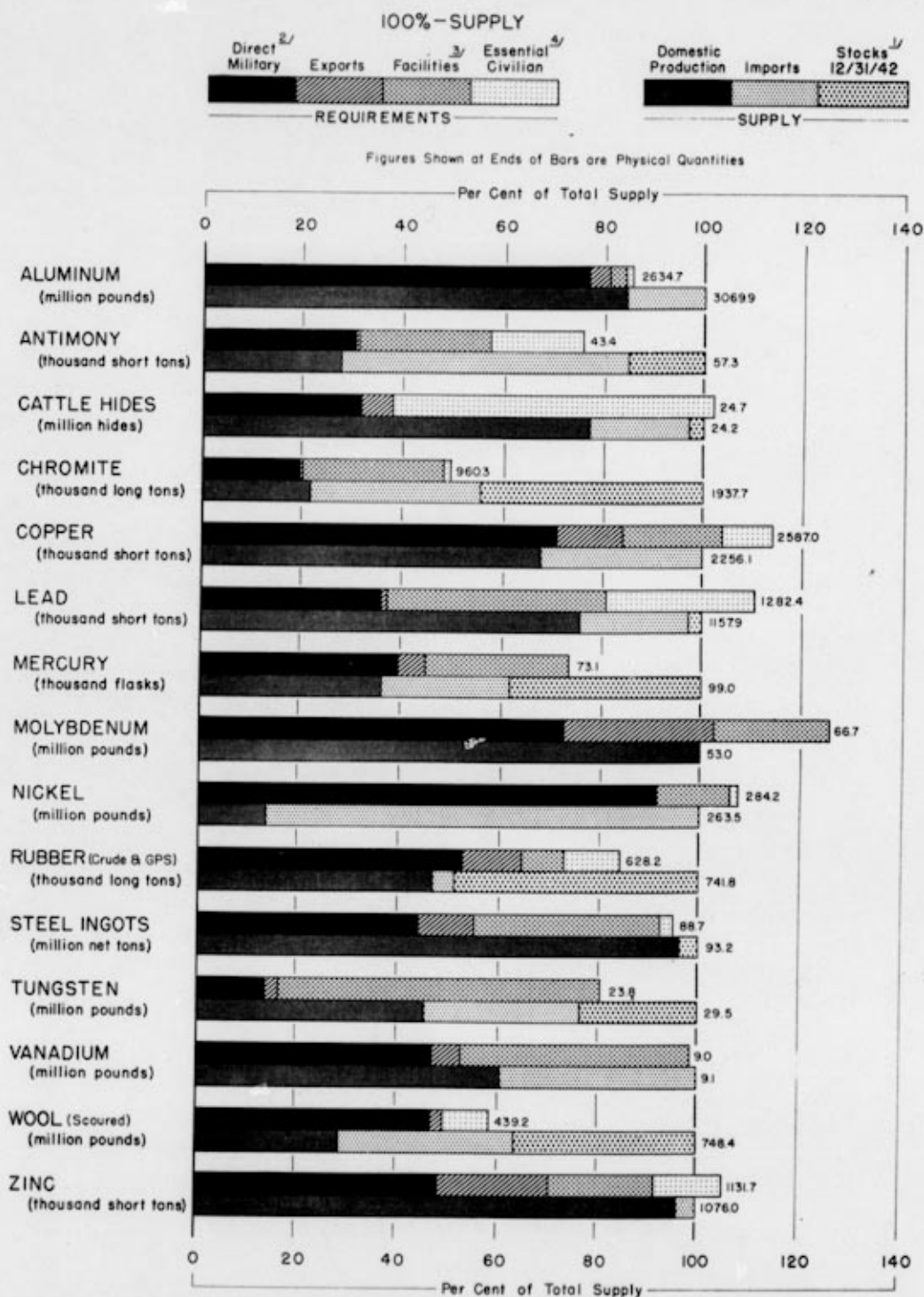
SUPPLY AND REQUIREMENTS OF CRITICAL MATERIALS, 1942



- ^{1/} Stocks include Dec. 31, 1941 Government stocks and those subject to allocation control or frozen by M-orders as of Dec. 31, 1941.
- ^{2/} Direct Military requirements shown are based upon objectives of the S-1 Ultimate Aircraft Program, Army Supply Program, Sections I, April 6, 1942 and II, April 9, 1942 covering equipment for ground and air forces, respectively, and latest programs of the Navy and Maritime Commission, included in Materials Requirements Section Report of April 20, 1942. (Mercury data transmitted May 15, 1942).
- ^{3/} Facilities—minimum needs for the production and maintenance of facilities and equipment to effectuate the military program.
- ^{4/} Essential Civilian—minimum requirements for the production and maintenance of civilian goods.

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EO. 11652, Sec. 3(X) and 5(D) or (E)
Commerce Dept. Letter, 11-16-72
By RHP, Date MAR 14 1973

SUPPLY AND REQUIREMENTS OF CRITICAL MATERIALS, 1943



- 1 Stocks at beginning of 1943 are estimated residuals.
- 2 Direct Military requirements shown are based upon objectives of the B-1 Ultimate Aircraft Program, Army Supply Program, Sections I, April 6, 1942 and II, April 9, 1942 covering equipment for ground and air forces respectively, and latest programs of the Navy and Maritime Commission, included in Materials Requirements Section report of April 20, 1942. (Mercury data transmitted May 15, 1942.)
- 3 Facilities: minimum needs for the production and maintenance of facilities and equipment to effectuate the Military Program.
- 4 Essential Civilian: minimum requirements for the production and maintenance of civilian goods.

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 EO 11652, Sec. 5(e) and (d) of
 Commerce Dept. Order 114-72
 By RHP, Date MAR 14 1973