PART I. GENERAL SUMMARY

REVIEW OF THE MINERAL INDUSTRIES IN 1943

By E. W. Pehrson

SUMMARY OUTLINE

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INTRODUCTION

The mineral industry again broke all previous records for total production in 1943 as the value of output soared to $8,056,000,000. The new peak was 6 percent above the previous high of $7,575,700,000 in 1942 and 15 percent above the pre-war record of $6,981,640,000 established in 1920. The rise in value for 1943 resulted from a 2.3-percent advance in the physical volume of production, as measured by Federal Reserve Board indexes, and a 4.5-percent increase in the unit sales realizations of mineral producers.

As in 1942, the mining industry operated under severe handicaps. Scarcity of manpower was the chief hindrance during 1943, but other factors—such as transportation controls, shortage of equipment, increasing costs, shut-down orders for gold and silver mines, and lack of adequate price incentive—also were contributing causes.

Although strict conservation and control measures were continued on a large scale in 1943, many minerals were used in greater quantities than ever before. There were some sharp recessions, however, particularly in the demand for building materials. The net result of these divergent trends was an over-all gain in consumption, which reached a new peak. Heavy imports continued during the year with relative ease as success was achieved in minimizing the effects of enemy submarines. However, shipping space was far from plentiful, as the movement of troops and munitions overseas required a very large proportion of available bottoms. Domestic production and imports again were more than adequate to meet military and essential civilian needs; and there was a small net gain in the Nation's stocks of mineral raw materials.

Price movements in 1943 were generally upward, but except for fuels the gains were inconsequential. An estimated average 4.5-percent gain in price realizations of mineral producers, resulting very largely from increases in coal, petroleum, and petroleum products, compared favorably with the 4.4-percent rise in the general price level as revealed by Bureau of Labor Statistics indexes of wholesale prices.

1 In this report the term "billion" is equivalent to 1,000,000,000.
However, the comparison is decidedly less favorable with 1940. The average unit return on minerals, including premium payments, as estimated by the Bureau of Mines, has increased only 19.9 percent from 1940 to 1943, whereas wholesale prices have advanced 31.2 percent.

PRODUCTION

Value of mineral output.—The value of minerals produced in the United States in 1943 exceeded 8 billion dollars for the first time and for the second consecutive year established a new peak.

Fuels are the principal contributors to the value of mineral production, having supplied $4,589,000,000 or 57 percent of the total in 1943. Metals ranked second, with $2,493,000,000 or 31 percent of the total, and nonmetals (other than fuels) third, with $974,000,000 or 12 percent. The growth in value of these branches of the mineral industries since 1880 is shown in figure 1.

![Figure 1](image)

FIGURE 1.—Trends in value of mineral production in the United States, 1880-1943.

All major divisions of mineral production increased in value of output in 1943 except nonmetals (other than fuels). The 12-percent decline in the value of nonmetallic minerals (other than fuels) showed the reduced demand for building materials that resulted chiefly from the sharp drop in military construction. The value of metals was 5 percent above that of 1942; this increase resulted from a rise in both prices and physical volume of production. The value of fuels advanced 12 percent. Oil and gas wells contributed products valued at $2, 713,-
000,000 in 1943—34 percent of the total mineral value and an increase
of 10 percent over 1942. Hard- and soft-coal production was valued at $1,876,000,000, or 23 percent of the value of all mineral products and 14 percent more than the value of coal produced in 1942.

The 6-percent increase in mineral production in 1943 compares with a 22-percent advance in gross farm income as reported by the United States Department of Agriculture ($18,628,000,000 in 1942 and $22,675,000,000 in 1943, including Government payments) and a 23-percent rise in the gross national product (152.1 billion in 1942 and 186.5 billion dollars in 1943). National income increased from $121,568,000,000 in 1942 to $147,927,000,000 in 1943 (22 percent), according to the United States Department of Commerce. Since 1939 the value of mineral production has gained only 64 percent, whereas gross farm income rose 129 percent, gross national product 110 percent, and national income 109 percent.

Failure of the mineral industry to keep pace with other elements of the national economy may be ascribed to several factors. Some mineral commodities, such as gold, silver, and certain building materials, have been adversely affected by war conditions so that their production has not profited from the general economic improvement. Government controls have restrained civilian and in many instances military consumption of most of the other minerals, and these restraints have been reflected in mining activity. Shortage of manpower, exhaustion or lack of resources, inadequate production capacity, and scarcity of mining equipment have prevented the domestic industry from meeting all war needs of some minerals, and the deficiencies have been made up by abnormally large importations. Copper, lead, and zinc are typical examples of this development. All these factors have retarded the advance in physical volume of mineral production; and in addition, as will be shown later, the rise in the value of mineral production has been impeded by prices that consistently have been substantially below the general level.

**Trends in physical volume of production.**—Figure 2 compares the physical volume of mineral production during the last 44 years with industrial and agricultural production and with population growth, each expressed in terms of an index based upon yearly averages for 1935–39.

The long-time trends of production during this 44-year period have been steadily upward, although year-to-year and cyclical fluctuations have been prominent. Except for the last few years, the production of minerals—the essential raw materials for industry—has been closely correlated with the trend of industrial production, experiencing the same ups and downs, whereas agricultural production has exhibited more moderate fluctuations and a growth line approximating the trend of population increase.

Because production of coal for domestic use and petroleum for automobile fuel, which has a pronounced effect on the trend of mineral output, does not respond proportionately to increases in the rate of manufacturing activity and is more stable, the index of industrial

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1 The U. S. Department of Commerce defines gross national product as the total value of currently produced goods and services flowing to Government, to businesses for gross capital formations, and to consumers. War expenditures comprised 44 percent of the total in 1943 and 33 percent in 1942.

2 The following indexes have been used—volume of farm production, U. S. Department of Agriculture; mineral production, 1900–19, from Warren Persons' Forecasting Business Cycles; mineral production of 1919–20 and industrial production, Federal Reserve Board; total population of the United States, Bureau of the Census.
production tends to exceed that of mineral production in periods of prosperity and to fall below during depressions. This characteristic explains in part the wide gaps between the two indexes from 1941 to 1943. Another contributing factor is the extensive use of imported mineral raw materials in these years, which is reflected in the industrial index but not in the mineral index. It should also be noted that the Federal Reserve Board index of mineral production does not include certain mineral products, such as aluminum and magnesium,

\[ \text{Figure 2.—Comparison of growth of physical volume of mineral production with that of agricultural and industrial production and population, 1900-45.} \]

while the greatly expanded war production of aircraft in which these metals are used is included in the index of industrial production.

The production of many mineral commodities established new records in 1943, although the achievement in this regard is less spectacular than that of 1942. The light metals again made outstanding advances. Magnesium output almost quadrupled; bauxite production increased 140 percent and that of aluminum 77 percent. The quantity of copper mined exceeded the previous peak of 1942 by only 1 percent, whereas the production of lead and zinc decreased in 1943. Sharp declines also were noted in gold and silver mining. Mercury
production advanced again, but the 1943 output was much less than
the record established in 1877. Production of titanium minerals,
chiefly ilmenite, more than doubled and reached a new high. Domes-
tic output of the ferro-alloying metals—tungsten, molybdenum, va-
nadium, and chromium—reached new heights in 1942 by substantial
margins. Manganese-ore production increased over 1942 but was be-
low the 1918 high. Iron-ore output was 6 percent under the record
established in 1942. Production of all the major fuels gained in 1943;
bituminous coal, petroleum, natural gas, and natural gasoline, and
liquefied petroleum gases reaching new peaks. Anthracite output was
only slightly above 1942 and considerably below previous highs.
Reduced building activity in 1943 caused a slump in the production
of cement, clays, gypsum, sand and gravel, and stone. Production
of feldspar and sulfur also declined, but several other nonmetallic
minerals (including asphalt, fluor spar, lime, phosphate rock, potash,
pyrite, and salt) established new records.

STOCKS

Inventory-control measures continued in effect throughout 1943,
but in the second half of the year there was a decided trend toward
easing the restrictions that had been imposed earlier in the war. As
enemy submarine attacks became less menacing, emphasis on the
building up of stocks of materials from overseas sources as a safety
measure was relaxed, so that use of ships in moving troops and war
supplies could be intensified. On the other hand, consumption sched-
ules for some commodities were scaled down without equal reductions
in supply, and inventories rose accordingly. The net result of these
developments was a general gain in stocks. For many minerals, a
decline in industry stocks was more than offset by increases in Gov-
ernment stocks. This group included antimony, asbestos, beryllium,
chromite, copper, Madagascar flake graphite, block mica, platinum,
tungsten, and zinc. There were increases in both industry and
Government stocks of aluminum, bauxite, cryolite, industrial dia-
monds, fluor spar, magnesium, mercury, molybdenum, nickel, quartz
crystals, lithium minerals, and ground talc. The net total of industry
and Government stocks declined for Ceylon lump graphite, Indian
kyanite, lead, manganese ore, mica splittings, tin, and vanadium.
Industry stocks of iron ore, iron and steel scrap, bituminous coal, an-
thracite, and ilmenite dropped sharply in 1943, whereas those of pig
iron, cement, and magnesium were larger at the end of the year than
at the beginning; the Government was not stock-piling any of these
commodities. A small increase in industry stocks of crude petroleum
was more than offset by a decline in refined products, but the net de-
cline in these inventories probably was less than the gain in Govern-
ment stocks, indicating a probable net gain in total stocks on hand in
the United States.

The large stocks of raw materials on hand, the tremendous increase
in the inventories of metals and minerals in process and in finished
munitions, and the stocks of battlefield scrap rapidly accumulating at
home and abroad—all of which would weigh heavily on post war
markets—prompted considerable agitation for a permanent stock-
piling program. Developments in this field are discussed under
Government Stock-Piling Activities in this summary.
CONSUMPTION

Consumption of minerals continued its upward trend in 1943, but the diminishing rate of increase during the latter half indicated that the United States was reaching its full industrial stride for successful prosecution of the war. Many new records in mineral consumption were made during the year, although several commodities were used less in 1943 than in 1942; on the average, there was a moderate gain. Even larger quantities could have been consumed had it not been for manpower shortages, which proved to be the principal restraining influence in 1943. Manpower rather than available supplies or markets will likewise dominate the situation in 1944 when no substantial increase in mineral consumption is anticipated and a moderate decline may be expected if the war in Europe is concluded at an early date.

The magnitude of the industrial contribution to this war is revealed by the Federal Reserve Board indexes of industrial activity. The index for total production (1935–39 average = 100) rose from 89 in 1938 to 238 in 1943. The adjusted monthly index reached a peak of 247 in October and November and then receded to 242 in March 1944. The rise in manufacture of durable goods, in which class most of the munitions fall, was more spectacular, the index having advanced from 78 in 1938 to 360 in 1943, and this rise was accentuated by a shift from the production of civilian goods to the manufacture of munitions. The production index for transportation equipment, which reflects the expanded output of airplanes, automobiles, ships, railroad cars, and locomotives, rose from less than 100 early in 1939 to a peak of 786 in November 1943. There has also been a significant though less substantial increase in the production of nondurable goods, the index having advanced from 95 in 1938 to 176 in 1943.

The war program has required metals, fuels, and industrial minerals in unprecedented quantities, and many new records were established in 1943. Consumption of iron ore, iron and steel scrap, and virtually all the alloying metals that are used in steel making rose to new heights; the use of molybdenum, however, declined. Most of the nonferrous metals also were used in record quantities, the light metals showing the largest increases over 1942 and pre-war rates. Zinc consumption was higher than in 1942 but below the peak of 1941, and the use of tin again was reduced by rigid conservation measures. All the fuels except anthracite were burned in larger quantities than ever before, and many of the other major industrial nonmetallic minerals, including asphalt, fluor spar, lime, sulfur, and salt, advanced to new consumption peaks. New records for the fertilizer and soil-conditioning minerals—phosphate rock, potash, and sulfur—showed the buying power of the 23-percent rise in cash farm income.

In contrast to the continued rise in industrial production, construction activity fell abruptly in 1943. According to the United States Department of Commerce, the total value of all new construction put in place in continental United States during the year was $7,868,000,000, a 55-percent decline from $17,379,000,000 in 1942; the value in 1933 was $5,254,000,000. All major branches of construction—residential, industrial, military and naval, and public utility—were curtailed in 1943. As a consequence, consumption of building materials of mineral origin was affected adversely.
PRICES

The weighted composite index of price change in 1943 for 24 mineral commodities that represent 96 percent of the total value of mineral production during the year indicates a 4.5-percent increase over the average unit realization by producers in 1942. Comparison of the 1943 index with that for 1940, the base year, indicates a total rise of 19.9 percent, of which the larger part was in 1941 when the average returns to producers gained 9.3 percent over 1940. The rate of increase lessened appreciably in 1942 after price ceilings were fixed by Government regulation, and the indicated rise in unit realization for the year was 4.9 percent over 1941. In 1943 the average unit return increased over 1942 in each mineral group; however, the gain in the index for the 5 mineral fuels was largest—5.8 percent. For the metals group (9 commodities), the increase was 2.5 percent, and the index for the nonmetals group (10 commodities) indicated a 2.9-percent gain over the unit realization in 1942. The indicated general rise in the 1943 average unit returns resulted from a variety of factors, the principal ones being subsidies paid to producers of high-cost copper, lead, and zinc and regional and local increases permitted in ceiling prices. Another factor of importance in the nonmetals group was the constriction, either by natural economic forces or by Government regulation, of market areas of products sold on a delivered basis, which resulted in less freight absorption and consequently higher average returns to the producer.

The indicated increase in prices received by mineral producers in 1943 was virtually at the same rate as the rise in wholesale prices of all commodities. According to the Bureau of Labor Statistics, the wholesale price index (1926 = 100) of all commodities advanced from 98.8 in 1942 to 103.1 in 1943, a 4.4-percent gain. However, during 1941 and 1942 the average unit realization to mineral producers did not increase nearly as rapidly as wholesale prices, and in 1943 the average unit return on minerals was only 19.9 percent above 1940, whereas the wholesale price index was 31.2 percent higher than in 1940. Wholesale prices for fuels increased appreciably in 1943; the indexes for anthracite and bituminous coal each rose nearly 6 percent and for petroleum and its products 4.5 percent over 1942. The strict regulation of prices was illustrated by the general index for metals and metal products, which was unchanged from 1942 at 103.8. Similarly, prices of nearly all component raw materials and fabricated products making up the iron and steel group were unchanged from 1942; the most important exception was ferromanganese, for which the index showed a gain of nearly 4 percent. The wholesale price level of the nonferrous metals group, which includes some finished products and excludes subsidy payments for copper, lead, and zinc, advanced only slightly over 1942, owing principally to increases in antimony and silver prices. Mercury was the only component of this group for which the index declined. In the building-material group, the general wholesale price index increased from 110.2 in 1942 to 111.4 in 1943. However, the prices of most mineral building materials changed little from 1942; and some, such as cement, plaster, and gypsum lath, declined. Brick and tile and paint prices were slightly higher than in 1942. The general index for chemicals and
allied products, which includes numerous mineral commodities, increased from 97.1 in 1942 to 100.3 in 1943, a gain of 3.3 percent. Wholesale prices of fertilizer materials as a group gained 1.7 percent over 1942, although the indexes for phosphate rock, potash salts, and sodium nitrate declined appreciably from 1942.

**EMPLOYMENT**

The severe labor-supply problems that all mining activities had experienced in 1941 and 1942 were continued in 1943 but became less critical as war demands were lowered for virtually all major minerals except coal. Employment continued to decrease because of migration from the mining centers, but the loss of manpower was largely counterbalanced by a general increase in man-hours worked. The number of men employed in the mineral industries in 1943, according to preliminary figures, was 732,600—a 9-percent recession from 1942; man-hours of employment declined less than 0.5 percent. The reasons for manpower losses were largely the same as in previous years, and only strenuous efforts by Government, industry, and labor prevented the situation from becoming critical during 1943.

The major Government employment efforts during 1943 were directed toward replacing lost manpower, preserving vital occupational skills from Selective Service withdrawals, and increasing the utilization of the labor still employed in mining. For virtually the entire year recruitment of labor for metal mining received highest priority from the United States Employment Service in the Western States. Considerable progress was made as a result of this sustained recruiting program, but by midyear it was obvious that the results were insufficient. It was necessary once more for the Army to release soldiers to the mines to make up the deficit. In August and September 1943 the 9th Service Command of the United States Army released 4,500 soldiers to copper, zinc, and molybdenum mines. These soldiers did not have the occupational skills most in demand, but their release aided considerably in meeting the general labor-supply requirements of the mines. Changes in war demands for these metals and the Army’s urgent need for young, able-bodied soldiers resulted in the recall of all furloughed soldiers in the age bracket of 18 to 25 during March to June 1944.

Another important step taken by the Government in June 1943 to overcome metal-mining labor-supply problems was the setting up of a Minerals Classification List by the War Production Board for the use of the United States Employment Service in directing referrals and transferring labor from one mine to another. This list set up a system of priorities wherein the various mines were rated by productivity per man.

Class I operations, listed within metals or minerals, are those operations which are considered at the time of issuance of each classification list to be the most critical to the war economy and are the operations upon which first efforts in recruitment should be concentrated.

Class II operations, listed within metals or minerals, are essential operations to which referrals may be made of applicants for employment who do not accept employment in class I operations whether for reasons of working conditions, location of domicile, climatic conditions, or other reasons. Certificates of availability are to be denied to employees of these operations, except in unusual cases wherein the transfer desired is to a class I operation.
Class III operations, not listed, are all operations not classified as 1, 2, or 4. Although no direct recruitment of employees from these operations is to be allowed, certificates of availability are to be granted to all voluntary withdrawals, provided the applicant is willing to accept referral to class 1 or class 2 establishments.

Class IV operations, listed as to operations, are operations whose contribution to the war effort is minor in proportion to the manpower and material utilized. Recruitment campaigns among workers at operations in this class is encouraged when such recruitment are for operations in class 1 and class 2.

In general, it is desired that no certificates of availability be granted to workers in any mines, mills, smelters, or refineries (class 1, 2, 3, or 4) except for work at other mines, mills, smelters, or refineries, and except for such transfers as are mandatory under the rulings of the stabilization order. It is urged that every measure be taken to tighten the issuance of certificates of availability to workers who plan to leave the mining industry.

The War Manpower Commission has reported that the use of this list has resulted in increased employment in all class I and II mines, whereas employment in the low-productivity mines of classes III and IV declined.

The employment-stabilization program for the nonferrous metal-mining industry of the 12 Western States, which was set up by the War Manpower Commission in September 1942, was continued throughout most of 1943. In January 1943, Government, management, and labor representatives of the nonferrous mining industry conferred in Denver; at that time a complete review of experience resulted in agreement to continue the program. However, enforcement problems and the great geographical area covered by the industry-stabilization program resulted in the industry type of control being replaced by an area-stabilization program on August 16, 1943 (War Manpower Commission Regulation 7). Reports are in general agreement that turn-over and outmigration were reduced by the stabilization orders, but at best these were only a part of the over-all problem.

Selective Service policies on mining labor were revised during 1943 and resulted in decreased withdrawals for military service. Local boards were instructed to give all mining workers the most serious consideration for occupational deferment, regardless of the degree of skill and whether or not a formal request for deferment of the worker had been made. Selective Service also authorized the transfer of appeals to the area in which the worker was employed rather than in the area of original registration.

Early in 1943 the War Manpower Commission ordered a minimum workweek of 48 hours established for all metal-mining workers in the Western States. Virtually all large operations had already established a 48-hour week, and this order merely made the practice uniform throughout the industry.

Wage increases were prominent only in fluorspar and coal mining during 1943. Loss of workers from fluorspar mines is said to have been halted as a result of a wage-rate increase effected in July. In coal mining the wage increases followed some of the most serious strikes in the Nation's history. With war demands for coal increased to high levels, the industry faced wage controversies which seriously threatened the entire war program. Wage rates were not raised, but the "take-home" was increased by the award of pay for the time spent in traveling to and from the working face (portal to portal) and the raising of the workweek to 48 hours.
By the end of 1943, the mining industry’s employment problems, save in coal mining, were largely those of maintenance of production at established levels. In coal mining the problem was still complicated by rising demand and continued, although lowered, losses of manpower through retirements, accidents, and other normal causes, plus the difficulty of training new workers, especially in the more highly mechanized mines.

SAFETY

The combined safety record of the mineral industries of the United States, considered from the standpoint of workers exposed to occupational hazards, was favorable. Although the volume of labor performed was greater (except for 1942) than in any previous year since 1931, when records of man-hours worked first became available, and although the pressure for more war production continued, the accident frequency in relation to the number of man-hours worked did not rise in 1943; on the contrary, the rate was slightly more favorable than in 1942. According to preliminary figures, the fatality rate for the mineral industries was 1.18 per million man-hours worked, which compares favorably with 1.21 for 1942 and 1.26 a decade ago. The 1943 nonfatal-injury rate was 59.11 per million man-hours, a substantial reduction from 61.24 in 1942 and 73.48 in 1933.

According to present reports, accidents during 1943 resulted in injury to 92,740 employees—about 3,600 fewer injuries or 4 percent less than in 1942—although the number of man-hours of exposure to occupational hazards decreased less than 1 percent. Fatalities declined 3 percent—from 1,861 in 1942 to 1,813 in 1943. Seven major disasters (disasters causing 5 or more deaths) in which 161 men lost their lives occurred in 1943, all in bituminous-coal mines. Six were due to explosions of gas or dust, and one resulted from a mine fire. In 1942, 132 lives were lost in major disasters.

Chief among the mining industries that reported more favorable accident rates in 1943 than in 1942 were bituminous-coal mining and Pennsylvania anthracite mining. Special significance attaches to a reduction in the rates for these two groups, because together they include approximately two-thirds of the total number of employees in all mineral industries combined. Metal mines, considered as a group, made progress in accident prevention in 1943. Several members of the group, however, such as copper mines, lead-zinc mines in the Mississippi Valley States where production was being pushed, and gold-silver mines (operating on reduced employment), reported higher rates. Special credit is due the group of mines that produced such war-needed metals as tungsten, manganese, mercury, and other so-called minor metals for effecting a large reduction in accidents. The stone-quarrying industry operated with an accident-frequency rate that was slightly higher than in 1942 but lower and more favorable than that in 1941. Beehive-coke ovens reported an accident rate that was virtually the same as in 1942; byproducts oven continued to operate with especially low rates, although a fraction higher than in 1942. Mills and concentrating plants reported a reduction in accident frequency. The rate for smelters increased slightly.

A special study, begun 2 years ago, of accidents reported by companies engaged in the production of petroleum was continued through 1943. The study, as far as it had progressed at this writing, revealed
an accident-frequency rate of 20.32 per million man-hours worked. This rate was not as favorable as that of 1942, which was 18.27 as shown by final figures, but it was almost the same as the rate finally reported for 1941—20.40.

GOVERNMENT STOCK-PILEING ACTIVITIES

Recent experience in the procurement of mineral raw materials for war production and the desire to avoid the deflationary effects on post-war markets that would result from dumping surplus mineral stocks at the close of the war have stimulated considerable interest in a national stock-piling program. On June 3, 1943, a bill (S.1160) was introduced in the Senate of the United States:

To stimulate production of strategic and critical minerals for the present war effort and to assure an adequate supply of such minerals for any future emergency by continuance, intact, in the post-war period of all stock piles surviving the present war and by necessary augmentation thereof primarily from domestic sources, and for other purposes.

After public hearings on the bill a revised version, S.1582, was introduced on December 8, 1943. Wide divergence of opinion developed on many features of these bills, but there was substantial support for two of the objectives of the proposed legislation—the creation of stock piles for national defense and the freezing of stocks at the end of the war to provide the nucleus for permanent stock piles and to prevent undue dislocation of post-war markets. Several other bills along similar lines subsequently were introduced in Congress, and the executive departments initiated a study of the problem with a view to suggesting a program that would reflect the views of the Executive Branch. As of July 1, 1944, however, no positive action had been taken by either branch of the Government. Interest in permanent stock-piling legislation appeared to have waned temporarily because of the pressure for legislation to facilitate reconversion of industry from a wartime to a peacetime basis.

From the viewpoint of the mineral industries, the freezing of surplus stocks of minerals and metals (including scrap) at the close of the war should be a prerequisite of any program designed to cushion the effects of sudden termination of war production. This is supported by experience following the last war, when the inadequately controlled liquidation of metal and scrap stocks brought on a deflation of the metal markets which resulted in widespread unemployment due to forced curtailment of production from 1920 to 1922. On the other hand, consumers point out that there should be no restraints on raw-material supplies if industry is to meet the tremendous demand for goods that many anticipate will follow the termination of World War II. Freezing of war stocks might retard the production of goods for civilian consumption or induce inflationary tendencies in the raw-material fields that would be inimical to the maintenance of post-war stability. Both viewpoints emphasize the necessity for providing sound controls on the distribution of war-end surpluses in any reconversion program that may be adopted.

During the war the Government has fostered a gigantic purchasing and stock-piling program for strategic and critical materials. This activity was inaugurated in 1939 following the passage of the Strategic Materials Act, Public 117, 76th Congress, which was approved on June 7, 1939. The law authorized the appropriation of
$100,000,000 to be used over a period of 4 years for the purchase and stock-piling of strategic and critical materials; of that sum, Congress actually appropriated only $70,000,000. Collapse of the Allied armies in Europe in May 1940 resulted in a tremendous increase in the defense program of the United States and also focused attention on the need for greatly expanding the procurement of raw materials. On June 25, 1940, Public 664, 76th Congress, was approved, authorizing the Reconstruction Finance Corporation to engage in extensive national defense activities, including the purchase and carrying of strategic and critical materials, as defined by the President. A very large part of all raw material acquired by the Government since 1940 has been procured under the authority granted by this act. As of September 1943 the list of minerals and mineral products that had been declared strategic or critical by the President and the Army and Navy Munitions Board was as follows:

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<th>Commodity 1</th>
<th>Designation 2</th>
<th>Designated by</th>
<th>Date</th>
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<td>C</td>
<td>A and NMB</td>
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<td>S and C*</td>
<td>President</td>
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<td>President</td>
<td>June 24, 1940</td>
</tr>
<tr>
<td>Cyneticite</td>
<td>S and C*</td>
<td>President</td>
<td>Sept. 3, 1942</td>
</tr>
<tr>
<td>Diamond, industrial (and bor and diamond dies)</td>
<td>S and C*</td>
<td>President</td>
<td>Aug. 27, 1940</td>
</tr>
<tr>
<td>English china clay</td>
<td>S and C*</td>
<td>President</td>
<td>Jan. 25, 1940</td>
</tr>
<tr>
<td>Flint spar</td>
<td>S and C*</td>
<td>President</td>
<td>Jan. 30, 1940</td>
</tr>
<tr>
<td>Gasoline, aviation (100 octane)</td>
<td>S and C*</td>
<td>President</td>
<td>Jan. 30, 1940</td>
</tr>
<tr>
<td>Glass, optical</td>
<td>S and C*</td>
<td>President</td>
<td>Jan. 30, 1940</td>
</tr>
<tr>
<td>Graphite</td>
<td>C*</td>
<td>A and NMB</td>
<td>May 22, 1941</td>
</tr>
<tr>
<td>Indium</td>
<td>S and C*</td>
<td>President</td>
<td>July 3, 1941</td>
</tr>
<tr>
<td>Iodine</td>
<td>S and C*</td>
<td>President</td>
<td>July 3, 1941</td>
</tr>
<tr>
<td>Iron (and ore)</td>
<td>S and C*</td>
<td>President</td>
<td>April 22, 1941</td>
</tr>
<tr>
<td>Iron and steel</td>
<td>S and C*</td>
<td>President</td>
<td>May 22, 1941</td>
</tr>
<tr>
<td>Jewel bearings</td>
<td>S and C*</td>
<td>President</td>
<td>May 22, 1941</td>
</tr>
<tr>
<td>Kyanite</td>
<td>C*</td>
<td>A and NMB</td>
<td>Feb. 6, 1942</td>
</tr>
<tr>
<td>Lead (and ore)</td>
<td>S and C*</td>
<td>President</td>
<td>June 24, 1941</td>
</tr>
<tr>
<td>Lithium minerals</td>
<td>S and C*</td>
<td>President</td>
<td>Dec. 11, 1940</td>
</tr>
<tr>
<td>Magnesium</td>
<td>S and C*</td>
<td>President</td>
<td>Feb. 6, 1942</td>
</tr>
<tr>
<td>Magnesium, ferrograde (and ore)</td>
<td>S and C*</td>
<td>President</td>
<td>May 20, 1941</td>
</tr>
<tr>
<td>Mercury (and ore)</td>
<td>S and C*</td>
<td>President</td>
<td>Sept. 3, 1941</td>
</tr>
<tr>
<td>Mica</td>
<td>S</td>
<td>A and NMB</td>
<td>Jan. 30, 1940</td>
</tr>
<tr>
<td>Molybdenum (and ore)</td>
<td>S and C*</td>
<td>President</td>
<td>May 20, 1941</td>
</tr>
<tr>
<td>Monazite ore</td>
<td>S and C*</td>
<td>President</td>
<td>Dec. 4, 1940</td>
</tr>
<tr>
<td>Nickel (and ore)</td>
<td>S and C*</td>
<td>President</td>
<td>Dec. 4, 1940</td>
</tr>
<tr>
<td>Nitrogen compounds (including ammonia, nitric acid, and Chilean nitrates)</td>
<td>S and C*</td>
<td>President</td>
<td>Oct. 24, 1941</td>
</tr>
<tr>
<td>Osmium</td>
<td>S and C*</td>
<td>President</td>
<td>Do.</td>
</tr>
<tr>
<td>Palladium</td>
<td>S and C*</td>
<td>President</td>
<td>July 9, 1943</td>
</tr>
<tr>
<td>Petroleum and petroleum products</td>
<td>S and C*</td>
<td>President</td>
<td>Nov. 6, 1942</td>
</tr>
<tr>
<td>Petroleum coke</td>
<td>S and C*</td>
<td>President</td>
<td>Jan. 30, 1940</td>
</tr>
<tr>
<td>Platinum (and platinum group) and ores</td>
<td>C*</td>
<td>President</td>
<td>July 3, 1941</td>
</tr>
<tr>
<td>Quartz crystal</td>
<td>S and C* = President</td>
<td>Oct. 24, 1941</td>
<td></td>
</tr>
<tr>
<td>Rhodium</td>
<td>S and C*</td>
<td>President</td>
<td>Apr. 22, 1941</td>
</tr>
<tr>
<td>Ruthenium</td>
<td>S and C*</td>
<td>President</td>
<td>Apr. 22, 1941</td>
</tr>
<tr>
<td>Rutile</td>
<td>S and C*</td>
<td>President</td>
<td>Apr. 22, 1941</td>
</tr>
<tr>
<td>Scrap iron and steel</td>
<td>S and C*</td>
<td>President</td>
<td>Apr. 2, 1942</td>
</tr>
<tr>
<td>Sillimanite</td>
<td>S and C*</td>
<td>President</td>
<td>Apr. 2, 1942</td>
</tr>
<tr>
<td>Steatite talc</td>
<td>S and C*</td>
<td>President</td>
<td>Apr. 2, 1942</td>
</tr>
</tbody>
</table>

Footnotes at end of table.
Strontium minerals .............................................. S and C* President Sept. 3, 1942
Tantalum .......................................................... S and C* Apr. 15, 1942
Tin (and ores) ................................................. S Jan. 30, 1940
Topaz ore ......................................................... S and C* President Apr. 13, 1943
Tungsten (and ores) ........................................... S Jan. 30, 1940
Vanadium (and ores) ........................................... C do Mar. 21, 1941
Zine (and ores and zine concentrates) ....................... C* do Apr. 23, 1941
Zirconium (and ores) ......................................... S and C* President Apr. 23, 1941

1 Materials in parentheses are included by implication.
2 S—Strategic; C—Critical; S and C—Strategic and critical.

*Designated for purposes of procurement under 15 USC 606 (Public Law 664).
#Designated for purposes of procurement under 50 USC 296 (Public Law 117).

Since 1940 the strategic and critical material procurement program of the Government has been designed to build up substantial stock piles, in addition to supplying current needs, to provide a margin of safety for possible extreme emergencies. For some commodities, supplies of which were or could be threatened by enemy action, stock-pile goals originally were set as high as a 3-year supply. As the military outlook improved, stock-pile objectives were reduced, and during 1943 most plans called for the accumulation of not over a year’s requirements. Early in 1944 the War Production Board established a formula for further reducing its stock-pile recommendations. Except where special considerations were involved, the formula calls for stock piles equal to 3 months of peak wartime consumption, or 1 year’s war consumption minus the amount produced in North America, whichever is greater. The reserve stocks so determined are in addition to normal working inventories required by industry.

On March 6, 1944, the Army and Navy Munitions Board approved the following revised definition of strategic and critical materials:

Strategic and critical materials are those materials required for essential uses in a war emergency, the procurement of which in adequate quantities, quality, and time is sufficiently uncertain for any reason to require prior provision for the supply thereof.

Formerly strategic and critical materials had been defined separately as follows:

Strategic materials are those essential to national defense, for the supply of which in war defense must be placed in whole or in substantial part, on sources outside the continental limits of the United States; and for which strict conservation and distribution control measures will be necessary.

Critical materials are those essential to national defense, the procurement problems of which in war would be less difficult than those of strategic materials either because they have a lesser degree of essentiality or are obtainable in more adequate quantities from domestic sources; and for which some degree of conservation and distribution control will be necessary.

The new simplified definition reflects war experience, which has shown that it is extremely difficult to differentiate between strategic and critical materials under the old formulas. Moreover, Congress had not recognized any distinction between them in the various laws it had passed to facilitate procurement of raw materials. The new formula, it should be noted, deemphasizes dependence on “sources outside the continental limits of the United States” as a factor in determining the strategic or critical nature of raw materials. Although the geography of mineral occurrence will continue to be the principal reason for uncertainty of supply in a war emergency, the revised definition permits classification of commodities as strategic and
critical for other reasons, such as lack of production capacity. Magnesium, for example, is abundantly available at home in the mineral form, but the peacetime production capacity proved to be grossly inadequate for war requirements. Thus at the outset of the defense program its procurement became a major problem, and eventually magnesium achieved strategic status of a high order.

Strategic and critical raw materials differ in essentiality and availability. All are indispensable or highly essential for war needs. For some, however, substitutes can be used at not too great a sacrifice in cost and efficiency. These factors must be considered in procurement planning. For those materials not available domestically, stockpiling is the only means of guaranteeing emergency supplies. Where existing domestic resources or substitutes can be developed for war use at acceptable costs in manpower, materials, and money, stockpiles may be needed only for the period required to get production or substitution under way. For perishable strategic and critical materials procurement planning is especially complicated.

Recognizing these basic differences the Army and Navy Munitions Board has divided strategic and critical materials under its new definition into three groups, according to the practicability of stock-piling, as follows:

Group A comprises those strategic and critical materials for which stock-piling is deemed the only satisfactory means of insuring an adequate supply for a future emergency.

Group B comprises additional strategic and critical materials, the stock-piling of which is practicable. The Army and Navy Munitions Board recommends their acquisition only to the extent they may be made available for transfer from Government agencies because adequacy of supply can be insured either by stimulation of existing North American production or by partial or complete use of available substitutes.

Group C comprises those strategic and critical materials which are not now recommended for permanent stock-piling because in each case difficulties of storage are sufficient to outweigh the advantages to be gained by this means of insuring adequate future supply.

The Army and Navy Munitions Board lists of materials as determined under the new definitions are not available for inclusion in this report. It may be stated, however, that minerals comprise a substantial part of the commodities classified in each of the three groups. Such lists are of course subject to revision because they must indicate technologic changes in our industrial economy, changing techniques in warfare, and broad shifts in military strategy. In the field of minerals, discovery of new deposits and depletion of known ones, as well as technologic progress, are additional factors that will bring about revisions in the strategic and critical lists.

GOVERNMENT ORGANIZATION FOR WAR

Recent editions of Minerals Yearbook have presented a brief summary of the Government agencies administering the war program with a view to preserving a chronological record of the major changes in organization and key personnel that affect the mineral industries. Minerals Yearbook, 1942, presented the story up to July 1, 1943, and this review carries the record forward to June 1944. Details of the various actions taken by these agencies are given in the commodity chapters of this volume.

Although there were many internal changes in organization and personnel of the war agencies in the latter half of 1943 and the first
half of 1944, on the whole the Government's war organization has remained relatively stable during the past year. The Office of Emergency Management continued as an administrative agency of the Executive Offices designed to maintain liaison between the President and the war agencies. The Office of War Mobilization is the top policy-making agency under the President and is responsible for coordinating and unifying the various war activities of the Government. It also acts in an adjudicating capacity to settle differences that develop among the war groups.

By Executive Order 9425 of February 21, 1944, there was created in the Office of War Mobilization a Surplus War Property Administration, to which was given general supervision and direction of the handling and disposition of surplus war property. In view of the uncertain status of post-war mineral stocks that now constitute a threat to the stability of the mineral markets, the actions of this agency will be watched with interest by the mineral industry. W. L. Clayton, formerly Assistant Secretary of Commerce, was named Administrator, and G. Temple Bridgman, former Executive Vice President of Metals Reserve Co., was appointed Deputy Administrator.

Another significant development was the creation of the Foreign Economic Administration, to which all foreign economic operations of the Government, including the development and procurement of foreign minerals, were transferred. The new agency is discussed briefly under a separate heading in this section and in the chapter entitled "International Aspects of War Mineral Procurement."

In addition to the Foreign Economic Administration, the major direction of the war program in minerals was lodged in the War Production Board, Petroleum Administration for War, Solid Fuels Administration for War, Coal Mines Administration, and Office of Price Administration. Major changes in these agencies during the past year are recorded in the discussion that follows.

War Production Board.—The War Production Board is the chief Government agency concerned with industrial production for war, including war administration of metals and the nonmetallic minerals other than fuels. The organization of the Board, as of July 1, 1943, was described in Minerals Yearbook, 1942, but since that time many changes have been made. The most notable of these with respect to the metals and minerals programs was the creation on December 27, 1943, of the Office of Vice Chairman for Metals and Minerals. Arthur H. Bunker, Director of the Aluminum and Magnesium Division since August of 1941, was named to the new post. The Steel, Copper, and Aluminum and Magnesium Divisions, the Minerals Bureau, except the Mining Division, the Minerals Resources Coordinating Division with its subsidiary committees, and the Premium Price Quota Committee were made responsible to the Metals and Minerals Vice Chairman. Early in 1944 Howard I. Young became Deputy Vice Chairman for Production of Metals and Minerals, and Samuel W. Anderson became Deputy Vice Chairman for Distribution of Metals and Minerals. At the same time the Minerals Bureau was abolished, and its component divisions, including the Mining Division, were made directly responsible to the Metals and Minerals Vice Chairman. The Office
of Vice Chairman for Metals and Minerals thus included the following industry divisions:

- Aluminum and Magnesium Division
- Copper Division
- Cork, Asbestos, and Fibrous Glass Division
- Mica and Graphite Division
- Mining Division
- Miscellaneous Minerals Division
- Steel Division
- Tin and Lead Division
- Zinc Division

Various shifts in mineral personnel took place during the past year. Hildred G. Batcheller, who served as Director of the Steel Division from September 1942, was appointed Operations Vice Chairman in June 1943, replacing Donald Davis. He resigned and was succeeded by L. R. Boulware in November, at which time the Minerals Bureau and related committees were transferred to the Vice Chairman for Metals and Minerals. In November 1943, the Mining Division announced a western mining service designed to expedite handling of mine problems through eight field offices in addition to headquarters in Denver. J. Reed Lane was placed in charge of the project. Michael Schwartz succeeded H. O. King as Director of the Copper Division on February 1, 1944. Norman W. Foy replaced John T. Whiting as Director of the Steel Division in April 1944 and was later succeeded as Deputy Director by W. T. Todd. Several other major changes in personnel occurred during the year.

A further change in organization took place in May 1944. On May 8 William Y. Elliott, Director of the Division of Stock-Piling and Transportation, succeeded Arthur D. Whiteside as Vice Chairman for Civilian Requirements. The Division of Stock-Piling and Transportation became the Stock-Piling and Transportation Bureau, with Edward Browning, Jr., as Director. On May 27 Samuel W. Anderson succeeded J. A. Krug as Program Vice Chairman. His place as Deputy Vice Chairman for Metals and Minerals was not filled. May 25 saw the organization of a Production Executive Committee Staff under the direction of Executive Vice Chairman Charles E. Wilson, "to handle readjustments that grow out of changes in military production programs." Early in June Arthur H. Bunker became Vice Chairman of the Production Executive Committee and Director of the Production Executive Committee Staff. His place as Metals and Minerals Vice Chairman was taken by Philip D. Wilson, Director of the Aluminum and Magnesium Division.

As of July 1, 1944, the members of the War Production Board and the organization units and staff dealing with policy or administration affecting the mineral industries were as follows:

**War Production Board**

*Members*

Chairman—Donald M. Nelson
Secretary of War—Henry L. Stimson
Secretary of the Navy—James V. Forrestal
Secretary of Commerce—Jesse H. Jones
Secretary of Agriculture—Claude R. Wickard
Lieutenant General in Charge of War Department Production—William S. Knudsen
REVIEW OF THE MINERAL INDUSTRIES IN 1943

Administrator, Office of Price Administration—Chester Bowles
Foreign Economic Administrator—Leo T. Crowley
Special Assistant to the President—Harry L. Hopkins
Chairman, War Manpower Commission—Paul V. McNutt
Director, Office of Defense Transportation—J. Monroe Johnson
Petroleum Administrator for War—Harold L. Ickes
War Food Administrator—Marvin Jones

Staff

Executive Office of the Chairman
Office of War Utilities, Director—Edward Palek
   Power Division, Director—B. J. Sickler
   Manufactured-Gas Division, Director—Alexander Macomber
   Natural-Gas Division, Director—Paul R. Taylor
Vice Chairman for Civilian Requirements—William Y. Elliott
   Metals and Minerals Division, Director—Carroll Burton
Vice Chairman for Smaller War Plants—Maury Maverick
Executive Vice Chairman—Charles E. Wilson
   Deputy Executive Vice Chairman—Arthur H. Bunker
Program Vice Chairman—S. W. Anderson
   Requirements Committee, Chairman—S. W. Anderson
   Program Bureau, Director—Lincoln Gordon
   Orders and Regulations Bureau, Director—Thomas C. Blaisdell, Jr.
   Production Controls Bureau, Director—Harold Boeschenstein
   Director, Bureau—W. J. Logan
   Bureau of Stock Piling and Transportation, Director—Edward Browning, Jr.
Vice Chairman—Donald D. Davis
   Deputy Vice Chairman for Field Operations—Harcourt Amory
   Facilities Bureau, Director—John B. McGirr
   Office of Production Research and Development, Acting Director—Donald
   B. Keyes
   Procurement Policy Division, Director—Tudor Bowen
   Bureau of Planning and Statistics, Director—Stacey May
Vice Chairman (International Supply)—William L. Batt
Vice Chairman for Labor Production—Joseph D. Keenan
   Plant Productivity Division, Director—George W. Brooks
   Raw Materials Section, Chief—William Munger
Vice Chairman for Manpower Requirements—Clinton S. Golden
   Labor Requirements Division, Acting Director—David Ziskind
   Raw Materials Branch, Chief—Allen Buchanan
Operations Vice Chairman—L. R. Bouleware
   Deputy Vice Chairman for Operations—Wade T. Childress
   Office of Industry Advisory Committees, Director—John C. Whitridge, Jr.
   Office of Product Assignments, Director—G. A. Stuart
   Conservation Division, Director—Howard Conoley
   Redistribution Division, Director—Col. Charles R. Baxter
   Salvage Division, Director—Herbert M. Faust
   Chemicals Bureau, Director—D. P. Morgan
   Consumers Hard Goods Bureau, Acting Director—Wade T. Childress
   Equipment Bureau, Director—William K. Frank
Vice Chairman for Metals and Minerals—P. D. Wilson
   Deputy Vice Chairman for Production—Howard I. Young
   Aluminum and Magnesium Division, Acting Director—Thomas E. Covell
   Copper Division, Director—Michael Schwartz
   Mineral Resources Coordinating Division, Director—Howard I. Young
   Minerals and Metals Advisory Committee, Chairman—Howard I. Young
   War Department—Lt. Col. John A. Church
   Navy Department—Comdr. J. W. Falen
   Bureau of Mines—R. S. Dean
   Reconstruction Finance Corporation—Simon D. Straus
   Geological Survey—Donnel F. Hewett
   Foreign Economic Administration—Alan M. Bateman
   Bureau of Foreign and Domestic Commerce—Walter Janssen
   Office of Civilian Requirements—Carroll Burton
   Office of Production Research and Development—C. K. Leith
   Facilities Bureau—Ellsworth R. Bennett
Office of Manpower Requirements—Clinton S. Golden
State Department—C. E. Gamper
Bureau of Stock-Piling and Transportation—Edward Browning, Jr.
Minerals Resources Operating Committee, Chairman—Howard L. Young
Bureau of Mines—R. S. Dean
Foreign Economic Administration—Alan M. Bateman
Reconstruction Finance Corporation—H. DeWitt Smith
Office of Production Research and Development—Donald B. Keyes
Steel Division, Director—Norman W. Foy
Deputy Director—W. T. Todd
Asst. Director for Raw Materials and Facilities—H. J. French
Plant Facilities Branch, Chief—H. W. Bryant
Metallurgical Branch, Chief—E. J. Hergenrother
Raw Materials Branch, Chief—Alex Miller
Asst. Director for Production—C. H. Longfield
Asst. Director for Program and Distribution—S. A. Crabtree
Asst. Director for Manpower (Acting)—P. J. Clowes
Asst. Director for Ferro-Alloys—E. Franklin Hatch
Cork, Asbestos, and Fibrous Glass Division, Director—William T. Meloy
Mica-Graphite Division, Director—M. H. Billings
Mining Division, Director—Arthur S. Knosen
Miscellaneous Minerals Division, Director—Richard J. Lund
Tin and Lead Division, Director—Erwin Vogelsang
Zinc Division, Director—James Douglas

Office of Price Administration.—The Stabilization Act of 1944 extended the authority for price controls 1 year to June 30, 1945. The act provided for some procedural changes and minor shifts in policies applicable to specified commodities. No changes in regard to mineral price policies were involved. However, moderate increases in selling prices for solid and liquid fuels were granted during the year. Very few increases were authorized for other minerals. The premium-price plan for copper, lead, and zinc continued in effect throughout 1943.
Chester A. Bowles succeeded Prentiss M. Brown as Administrator in October, and in August 1943 James F. Brownlee replaced Donald H. Wallace as Deputy Administrator for Price. As of July 1, 1944, the following units and executives of the Price Department were administering prices for minerals:

Industrial Materials Price Division:
  Director—John S. Clement
  Office of Metal Mining Analysis, Director—Jesse L. Maury
  Building Materials Branch, Price Executive—Karl Mathiason
  Nonferrous Metals Branch, Price Executive—Karl L. Anderson
  Iron and Steel Branch, Price Executive—Warren M. Huff
Industrial Manufacturing Price Division, Director—John S. Clement
  Chemicals and Drugs Branch, Acting Price Executive—Lester V. Chandler
Fuel Price Division, Director—Sumner Pike
  Petroleum Branch, Price Executive—Orville Judd
  Solid Fuels Branch, Price Executive—G. G. Johnson

Petroleum Administration for War.—This agency has continued to operate under the provisions of Executive Order 9276 of December 2, 1942; hence the primary purpose of administrative changes since January 1943 has been to adapt the organization to new conditions as they became apparent.
The most significant internal change in 1943 was a decentralization of authority by which power was delegated to the five district directors to act upon many operating problems. Under this system the judgment of men who are intimately acquainted with local conditions
prevails with respect to questions of essentially local importance, and much of the delay and expense to operators attendant upon direct dealing with Washington has been eliminated.

Growing emphasis upon the foreign oil situation led to the creation of three divisions concerned with this field—The Production, Refining, and Supply and Transportation Divisions—in place of the old Foreign Division. Close relations are maintained with the Petroleum Board and the Foreign Petroleum Committee, both of which are interagency groups established in February 1943 to aid in the formulation and coordination of Government policy with respect to petroleum. A Foreign Operating Committee, similarly constituted, is concerned with the immediate problems involved in the supply of petroleum and products from foreign sources for the Allied armed forces.

The organization and principal officials of the Petroleum Administration for War on June 1, 1944 were as follows:

Administrator—Harold L. Ickes
Deputy Administrator—Ralph K. Davies
Assistant Deputy Administrator—Bruce K. Brown
Assistant Deputy Administrator and Chief Counsel—J. H. Marshall
Executive Officer—E. L. Kohler
Director of Organization Planning—W. H. Newman
Labor-Maneuver Counselor—F. H. Harbison
Production Division—D. R. Knowlton, Director
Refining Division—E. D. Cumming, Director
Supply and Transportation Division—G. A. Wilson, Director
Distribution and Marketing Division—W. Hochuli, Director
Natural Gas and Natural Gasoline Division—J. E. Pew, Director
Foreign Production Division—W. B. Heroy, Director
Foreign Refining Division—C. S. Snodgrass, Director
Foreign Supply and Distribution Division—W. D. Crampton, Director
Materials Division—C. P. Parsons, Director
Facility Security Division—W. K. McCoy, Director
Research Division—E. B. Swanson, Director
Public Relations Division—S. W. Robinson, Director
Construction Division—George Gibson, Director
Program Division—S. P. Coleman, Director

In fulfilling its responsibilities to the armed forces and United States civilians the Petroleum Administration for War has guided the activities of the petroleum industry and integrated its policies and supply problems with the Nation's war program. The method by which supply and demand are coordinated is briefly sketched below.

To determine the total prospective demand for petroleum, the several cognizant agencies of Government certify monthly to the Petroleum Administration the future needs for petroleum products of the consuming activities controlled by each. The Petroleum Administration allocates the anticipated supply to the various consuming groups with necessary adjustments favoring the types of use regarded as most important to the prosecution of the war. The discrepancy indicated by forecasts of demand and supply is translated into operating adjustments within the petroleum industry designed to produce the quantity and quality of products required for all essential war purposes.

Solid Fuels Administration for War.—This agency was established within the Department of the Interior by Executive Order 9332 on April 19, 1943, to centralize the Government's programs and policies
covering the supply of anthracite, bituminous coal, and lignite for essential war and civilian requirements. It succeeded the Office of Solid Fuels Coordinator for War (so designated on May 25, 1942), which had succeeded the Office of Solid Fuels Coordination for National Defense set up at the request of the President to the Secretary of the Interior on November 5, 1941.

On December 1, 1943, the War Production Board by Directive 33, together with a later amendment, delegated to the Solid Fuels Administration for War authority to regulate coke for distribution as a domestic fuel.

The Secretary of the Interior, as Solid Fuels Administrator for War, is authorized by the Executive order establishing S. F. A. W. to establish policies and formulate plans and programs to assure the most effective wartime distribution, conservation, and utilization of solid fuels, to issue necessary policy and operating orders, to appoint any necessary industry, committees, or councils; and to take appropriate steps for stimulating increased production.

The Solid Fuels Administration for War collects data from the solid fuels industries and other sources, both private and Government and, upon the basis of such data, makes recommendations to other Government agencies concerning prices, equipment, manpower, and transportation for the solid fuels industries.

The Administrator also has the power to determine the times and areas within which rationing of solid fuels should become effective; and he exercises, with respect to solid fuels and subject to the direction of the Chairman of the War Production Board, the allocation and rationing power of the President conferred by the Second War Powers Act, 1942.

Field offices have been established by the Solid Fuels Administration for War at key points throughout the major coal consuming areas to enable it to keep closely advised of the adequacy of the coal supply throughout the country in time to take any corrective action necessary.

Charles J. Potter succeeded Howard A. Gray (retired) as Deputy Administrator in November 1943, and in May 1944 the Economics and Statistics Division was transferred to the Bureau of Mines.

As of July 1, 1944, the organization of the Solid Fuels Administration was as follows:

Administrator—Harold L. Ickes
Deputy Administrator—Charles J. Potter
Consultant—Thomas J. Thomas
Consultant—James W. Morgan
Assistant Deputy Administrator for Transportation—Fred K. Prosser
Assistant Deputy Administrator for Coke—Harlen M. Chapman
Assistant Deputy Administrator for Prices, Manpower and Administration—
Dan H. Wheeler

Special Assistant to the Deputy Administrator—Arnold Levy
Head Administrative Officer—John E. Mac Donald
Chief, Anthracite Distribution Division—Robert F. Duemler
Chief, Bituminous Distribution Division—William F. Hahman
Chief, Coke Distribution Division—Samuel Weiss
Chief, Compliance Division—Charles H. Hayes
Chief, Conservation Division—Allen W. Thorson
Chief, Field Office Division—N. O. Wood, Jr.
Director of Information—Leonard W. Mosby
General Counsel—Jesse B. Messitte
Advisory bodies providing counsel to the Solid Fuels Administration include the following:

Solid Fuels Advisory War Council
National Anthracite Distribution Committee
Regional Anthracite Distribution Committees
Producer Advisory Boards for the 22 bituminous coal production districts
Lake Dock and Tidewater Dock Advisory Committees
National Advisory Coke Committee
National Committee on Local Distribution
Area Advisory Committees on Local Distribution
Community Committees on Emergency Distribution

Coal Mines Administration.—This agency was set up in July 1943 to supervise the operation of the anthracite and bituminous-coal mines in Government possession. The Secretary of the Interior, acting under authority of Executive Order 9340, on May 1, 1943, took over in behalf of the Government the coal-mining properties of 259 anthracite companies and 2,182 bituminous companies. These companies owned mines producing 50 tons or more per day and strikes had either halted or threatened to interrupt their output. During the initial period of Government possession the supervision of the mines was handled by the Solid Fuels Administration for War. Then the Secretary of the Interior established the Coal Mines Administration and transferred mine supervision to that agency.

The first period of Government possession was concluded on October 12, 1943, when all the mines then remaining in Government possession were returned.

Under authority of Executive Order 9393, the Secretary of the Interior again took possession of 3,223 mines belonging to 2,173 companies on November 1, 1943, after another Nation-wide series of strikes, and on November 3 concluded a Memorandum of Agreement with the United Mine Workers of America for the period of Government possession. After new agreements had been effectuated between the mine owners and mine labor, Government possession of the mines was gradually terminated, and on June 21, 1944, all the mines then remaining in Government possession, with the exception of two which belonged to one bituminous company, were turned back to their private owners.

Organization of the Coal Mines Administration during late 1943 and early 1944 was as follows:

Administrator—Harold L. Ickes
Deputy Coal Mines Administrator—Charles J. Potter
Assistant Deputy Administrator—Dan H. Wheeler
Assistant Deputy Administrator and Acting Associate Director Health and Safety Division—J. W. Morgan
Consultant—Harry G. Kennedy
Head Administrative Officer—J. E. MacDonald
General Counsel—Arnold Levy
Consultant, Labor Relations—Oral L. Garrison
Health and Safety Division—R. R. Sayers, Director
Health and Safety Division—Harrison Combs, Associate Director
Finance and Accounting Division—Joseph J. Mansolf
Information Division—Leonard W. Mosby, Chief

Foreign Economic Administration.—This agency, which was created by Executive Order 9380 issued on September 25, 1943, directs the vast foreign economic activities of the United States Government, including the procurement of minerals from abroad. The establishment of this agency culminated a series of consolidations, one of the
most important of which was Executive Order 9361, issued on July 15, 1943, which merged in an Office of Economic Warfare the former Board of Economic Warfare, the Export-Import Bank, and various procurement subsidiaries of the Reconstruction Finance Corporation. The Office of Economic Warfare, the Office of Lend-Lease Administration, and other units dealing with foreign economic operations subsequently were brought together to form the Foreign Economic Administration. Leo J. Crowley was designated as Administrator.

The agency operates through two major bureaus—a Bureau of Supplies of which Sidney H. Scheuer is Executive Director and a Bureau of Areas directed by James L. McCamy. Mineral procurement is carried on in a Foreign Procurement and Development Branch, of which Paul H. Nitze is Director.

Negotiation of foreign minerals procurement contracts is handled by the F. E. A., and purchases are made in the name of its fiscal agent, United States Commercial Co., a United States Government-owned corporation. This has been true since September 1943 when the foreign procurement functions of Reconstruction Finance Corporation were transferred to United States Commercial Co. In general, Metals Reserve Co., an R. F. C. subsidiary, agreed to purchase foreign metals and minerals from United States Commercial Co. ex dock at United States ports of entry or f. o. b. cars at border points and to undertake the sale and distribution of such materials. This transfer signalized the completion of the withdrawal of the R. F. C. from the foreign minerals procurement field, with the exception of continued responsibility for several large development projects, financed by the Defense Plant Corporation.

With this exception, actual operations in the foreign minerals procurement field are conducted by the Metals and Minerals Divisions of the Foreign Procurement and Development Branch in the F. E. A. Key officials on the technical staff of these two divisions and of the associated Technical Services Division were as follows on July 1, 1944:

Associate Director of Foreign Procurement and Development Branch—Alan M. Bateman
Metals Division, Chief—Spencer S. Shannon
  Copper Section, Chief—Mahlon Miller
  Zinc-Lead Section, Chief—Vacancy
  Tin, Mercury, Antimony, Bauxite Section, Chief—Clarence E. Peterson
  Ferro-Alloy Section, Chief—Horace J. Fraser
  Scrap Metals Section, Chief—Benjamin Schwartz
Minerals Division, Chief—David C. Sharpstone
  Minerals Division, Assistant Chief—Hugh E. McKinstry
  Mica-Graphite Section, Chief—Richard H. Vail
  Quartz-Optical Calcite Section, Chief—Carl Tolman
  Asbestos, Fluorspar, Diamonds Section, Chief—Henry A. Behre
  Rare Minerals Section, Chief—James S. Baker
  Alloy Minerals Section, Chief—Vacancy
Technical Services Division, Chief—Vacancy
  Economic and Area Liaison Section, Chief—John W. Evans
  Engineering Analysis and Commodity Section, Chief—Robert K. Warren
  Service and Supply Section, Chief—Paul Hendrick