Part I. General Summary

REVIEW OF THE MINERAL INDUSTRIES IN 1945

By E. W. Peirson and H. D. Keiser

SUMMARY OUTLINE

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INTRODUCTION

In 1945, for the first time since 1938, the total value of mineral production moved downward. The recession followed three successive peak years, years in which minerals were mined in the United States in unprecedented quantities to meet the demands of war for essential raw materials. Total value in 1945—$8,145,000,000—was 3.3 percent below the 1944 peak of $8,419,000,000 but 47.0 percent above the World War I high value of $5,540,708,000 recorded in 1918 and 16.6 percent more than the prewar high of $6,981,340,000 established in 1920. The decline in total value in 1945 was directly attributable to a decrease in the physical volume of production that more than offset a slight increase in the unit sales realizations of mineral producers.

Production in the mineral industries was again retarded by a shortage of manpower. The total labor force, which in 1944 declined 9 percent compared with 1943, shrank 6 percent in 1945 compared with 1944. Decreased demand for some minerals following termination of war contracts and labor disturbances, principally in the coal industry, resulted in a 10-percent reduction in total man-hours worked in 1945; this reduction continued the trend of 1944, when a 1-percent reduction was registered. Other factors adversely affecting mineral production included the lag in industrial reconversion from wartime to peacetime operations following VJ-day; the difficulty and, oftentimes, inability experienced by mining interests in obtaining necessary supplies and equipment required to replace that worn out in the course of expanded production effort during the war period; increasing costs; and, in the instance of some minerals, the depleted state of ore reserves.

1 In this report the term "billion" is equivalent to 1,000,000,000.
owing to heavy production over the war years without compensating development work to maintain such reserves at prewar level.

Industrial production reached its peak in the latter part of 1943, according to the monthly index of the Federal Reserve Board; the trend since then continued virtually steadily downward through 1944 and 1945. The Board's annual index of mineral production reached its highest level in 1944 and declined 2.1 percent in 1945. Although the consumption of some mineral commodities, particularly the liquid fuels and fertilizer minerals, established new records in 1945, that for many others, including most of the more important metals and coal, dropped appreciably, with the result that total mineral consumption in all probability decreased slightly. Total mineral production likewise declined, the gain made by the fuels as a group and the other nonmetals failing to offset the substantial losses in output suffered by the metals. Both Government and industry stocks were lower at the end of the year, despite increased imports; Government inventories were pared down markedly as the need for war munitions diminished.

Price levels, as reflected by producers' unit realizations, moved upward in 1945; metals and fuels exhibited the more important gains. The increase in producers' price realizations, which was estimated at 2.4 percent over 1944, compared favorably with the 1.7-percent rise in the Bureau of Labor Statistics indexes of wholesale prices for all commodities.

**PRODUCTION**

*Value of mineral output.*—The 3.28-percent decline in the total value of mineral production in 1945 resulted from a 15.60-percent decrease in the value of metallic output. Value of the production of fuels was 0.66 percent higher and that for the other nonmetals 6.10 percent greater. Although metals represented only 24.3 percent of the total value, whereas fuels represented 64.0 percent and other nonmetals 11.7 percent, the sharp drop in metallic valuation more than offset the gains made by fuels and the other nonmetals. Comparative valuation figures in 1944 and 1945, with the 1944 figures in parentheses, were as follows: Total mineral production, $8,143,000,000 ($8,419,000,000); metallic, $1,975,000,000 ($2,340,000,000); fuels, $5,212,000,000 ($5,178,000,000); and other nonmetallic, $956,000,000 ($901,000,000). Trends in the production value of these branches of the mineral industries since 1880 are shown in figure 1.

In marked contrast to the situation in 1944 when minerals scored a 4-percent gain in value that compared favorably with advances made in other parts of the economy, the 3.28-percent decline in mineral value in 1945 compared with a 2.89-percent increase in gross farm income, as reported by the United States Department of Agriculture ($23,893,000,000 in 1944 and $24,584,000,000 in 1945, including Government payments), and with an 0.80-percent increase in gross national product from $197,600,000,000 in 1944 to $199,200,000,000 in 1945. War expenditures comprised 35 percent of gross national product in 1945 and 42 percent in 1944. National income increased 0.19 percent from $160,700,000,000 to $161,000,000,000 (unrevised), according to the
United States Department of Commerce. Compared with 1939 the value of mineral production in 1945 had increased only 66 percent whereas gross farm income increased by 133 percent, gross national product by 123 percent, and national income by 127 percent.

Explanation of the decline in mineral value in 1945, in the face of the aforementioned increases, may be attributed to several factors. Some minerals, notably gold, silver, and certain building materials, were adversely affected by war conditions, and after V-J-day the rate of improvement was so slow in the respective industries that for the year their downward trends of 1944 were continued. Manpower shortages and labor disturbances were outstanding deterrents in the attempt to meet existing demand for some minerals, particularly coal and a number of the metals. Difficulty in obtaining mining supplies and new equipment to replace that worn out during the war period also retarded the execution of plans for reconversion to peacetime operation in many mineral industries. Moreover, as will be shown later, the prices of minerals over the war years advanced much less than those for other commodities; in consequence, upward movement of the total value of mineral production has been impeded.
Trends in physical volume of production.—Figure 2 compares the physical volume of mineral production during the last 46 years with industrial and agricultural production and with population growth, each expressed in terms of an index based upon yearly averages for 1935–39.\(^2\)

During this 46-year period, a steadily upward trend in production has prevailed, with year-to-year and cyclical fluctuations prominent.

![Figure 2](image)

**Figure 2.**—Comparison of growth of physical volume of mineral production with that of agricultural and industrial production and population, 1900–1945.

Mineral production, except for the years of World War II, has kept closely in step with industrial production, reflecting the essentiality of mineral raw materials in the industrial economy. Fluctuations in agricultural production have been over a narrower range, with the

\(^2\)The following indexes have been used: Volume of farm production, U. S. Department of Agriculture; mineral production, 1900–1918, Warren Persons’ Forecasting Business Cycles; mineral production of 1919–45 and industrial production, Federal Reserve Board; total population of the United States, Bureau of the Census.
general upward movement of the growth line exhibiting approximate correlation with the growth in population.

Production of coal for domestic use and of petroleum for automobile fuel is relatively stable and has a decided influence on the trend of mineral output because it does not vary proportionately with changes in the rate of industrial activity. For this reason the index of mineral production tends to fall below the index of industrial production in periods of prosperity and to rise above it during depressions. The marked divergencies between the two indexes from 1941 to 1946 may be attributed in part to this characteristic. Substantial imports of minerals during the same years, to augment domestic supplies in the manufacture of munitions, has had the same general effect, inasmuch as their utilization has been reflected in the index of industrial production but not in the index for domestic mineral production. Further, certain mineral products, notably aluminum and magnesium, are not included in the Federal Reserve Board index of mineral production, whereas the index of industrial production involves the huge expansion in the output of aircraft during the war years that required unprecedented quantities of these two metals.

Notwithstanding a decline in the total production of minerals, new output records were established in 1945 by a number of minerals, particularly among the nonmetals. Barite, feldspar, phosphate rock, potash, and sulfur all advanced to new high levels. Of the fuels, new peaks were recorded for crude petroleum, natural gasoline and liquefied petroleum gases, and natural gas, which gained 2, 11, and 4 percent, respectively. Titanium and nickel were the only metals to reach new heights. Bituminous coal dropped 7 percent from its 1944 peak and anthracite fell 14 percent. Plagued by continuing shortages of manpower and inefficiency of operating forces, mine production of copper, lead, and zinc—of the common metals produced in quantity in the United States—declined in output by 21, 6, and 15 percent, respectively; lead receded to the lowest level since 1938 and copper and zinc to the lowest levels since 1939. Output of virtually all the other metals suffered from the declining rate of war production in the first half of the year and from contract terminations and the lag in industrial reconversion after VJ-day. Arsenic decreased 33 percent; cadmium, 6 percent; chromite, 69 percent; iron ore, 4 percent; manganese ore, 26 percent; molybdenum, 20 percent; tungsten, 45 percent; and vanadium, 16 percent. Both aluminum and magnesium dropped sharply, by 36 and 79 percent, respectively. The position of the precious metals continued to deteriorate; gold decreased 4 percent, thus establishing a new low record since its discovery in California in 1848, and production of silver declined 16 percent. Besides titanium and nickel, increased production was achieved by platinum, selenium, and tellurium. Among the more important nonmetals—in addition to those already mentioned—an increased production in 1945 was recorded for asbestos, cement, clay, gypsum, petroleum asphalt, sand and gravel, and slate; none of these, however, reached a new high level of output. Production of natural asphalt, fluorspar, graphite, lime, magnesite, mica, salt, and stone decreased.
STOCKS

With the end of the war coming near the middle of 1945 and reversion to peacetime operations generally in progress the remainder of the year, the trend of inventories over the 12-month period was far from uniform for most of the more important minerals; however, the predominant change in stocks at the end of the year, compared with levels that prevailed a year earlier, was downward. Government stocks, particularly, were pared down, and about two-thirds of the entire list of more than 50 different minerals so held reflected the effect of decreased or suspended purchasing and the release of stocks to industry. For a group of 11 minerals, both industry and Government stocks declined; this group comprised antimony, arsenic, bauxite, beryllium, bismuth, cadmium, magnesium, mica splittings, platinum, tin, and vanadium. With the exception of bauxite, magnesium, and platinum, the decline in Government holdings of these 11 minerals exceeded, in quantity, the decline in industrial holdings by a substantial margin. Industry inventories of bauxite and platinum declined moderately more than Government inventories, but in the instance of magnesium the decline in industry stocks was much the greater. Inventories of cryolite, Indian kyanite, and tungsten held by industry increased, but the decline in Government holdings of each of the 3 minerals more than offset the industry increases. Although Government stocks of molybdenum increased, a marked decline in industry holdings resulted in a net stock loss for the metal. Net gains in stocks were registered for 12 minerals, including most of the major nonferrous metals. Increases in industry inventories of aluminum (probably), graphite, lead, mercury, and zinc exceeded, in each instance, losses in Government holdings; and, for chromite, the increase in Government holdings exceeded the decrease in industry inventories. Both industry and Government stocks of cobalt, copper, fluor spar, manganese ore, nickel, and titanium increased.

The general trend of industry inventories was also downward for those mineral commodities not held by the Government; this was notably true with respect to the mineral fuels. Stocks of bituminous coal and anthracite and coke decreased, and likewise those of crude petroleum, natural gasoline, and refined oils. Inventories of phosphate rock dropped sharply, whereas more moderate declines were reported for cement, selenium, and sulfur. Slight to moderate gains in stocks were recorded for iron ore, petroleum asphalt, potash, and tellurium.

Goals for Government-owned stock piles were set in June 1945 at 3 months' military requirements as established for the second quarter of 1945. Following VJ-day, Government controls on most raw materials were gradually removed, and stock-pile objectives were practically abandoned. These developments and subsequent action relative to the future disposition of Government stock piles are discussed under the section of this chapter entitled "Government Stock-Piling Activities."
CONSUMPTION

Over-all consumption of mineral commodities in 1945 reflected the lag in reconversion of industry for peacetime purposes from the wartime efforts of the immediately preceding years. Although about the same number of individual increases and decreases in consumption was recorded in a statistical analysis of 74 of the more important minerals, total mineral consumption was in all probability on a decreased scale as compared with 1944. Consumption of each of the major nonferrous metals—copper, lead, zinc, and tin—and of iron ore declined. Petroleum, natural gas, and natural gasoline consumption increased, but the consumption of anthracite and bituminous coal decreased; collectively, the energy supply from these 5 mineral fuels declined 4 percent. Slow improvement in certain categories of the construction industry resulted in decreased consumption of several of the nonmetallic minerals used for construction purposes.

The Federal Reserve Board index of industrial production declined from 235 in 1944 to 203 in 1945 (1935–39 average=100) after advancing to 239 in 1943 from 89 in 1938 and 109 in 1939. The monthly record shows that the peak war production was attained in October and November 1943, when the adjusted index stood at 247; from January to December 1944 the monthly index declined from 243 to 232 and from January to December 1945 from 234 to 163. The durable manufactures index, which was 78 in 1938 and 109 in 1939, rose to 360 in 1943, declined to 353 in 1944, and fell to 274 in 1945. The production index for transportation equipment, including airplanes, automobiles, ships, railroad cars, and locomotives, advanced from less than 100 early in 1939 to a peak of 786 in November 1943, fell back to 709 in December 1944, and dropped to 217 in December 1945.

Undoubtedly, the 14-percent decline in industrial production in 1945, as indicated by the Federal Reserve Board index, was greater than the over-all decrease in mineral consumption, although consumption of a few of the key mineral commodities, including iron ore, lead, and anthracite, declined to about that degree. A lower over-all decrease in mineral consumption would, in the main, be attributable to a less severe effect of contract terminations, in the second half of 1945 following the end of the war, in the raw-material industries than in the processing and finished product industries. Evidence of this lower decrease is seen in the 2-percent decline in 1945 of the mineral production index of the Federal Reserve Board; this index, which applies to the mineral fuels and most of the major metals, stood at 140 for 1944 and 137 for 1945.

Contract terminations, manpower shortages and labor disturbances, difficulties in obtaining necessary equipment and supplies, and other obstacles to expeditious industrial reconversion to peacetime operations were the principal underlying causes of decreased mineral consumption in 1945. Steel production decreased 11 percent, involving a 14-percent reduction in the consumption of iron ore and an 8-percent decrease in the demand for manganese ore. With a decline of 19 percent in the production of alloy steels, a lower level of consumption
was recorded for the major ferro-alloy minerals. The decreased scale of general industrial activity was also reflected in a 13-percent reduction in the consumption of anthracite and a 5-percent decrease for bituminous coal. Lead consumption declined 12 percent; tin, 6 percent; copper, about 10 percent; and zinc, 4 percent. The most precipitous drop in consumption, among the metallic mineral commodities, was that of 67 percent for magnesium; this sharp decrease resulted from a marked falling off in demand for the metal for war purposes. Consumption of bauxite dropped 30 percent, largely because of the reduced rate of production of alumina for the aluminum industry. The more important mineral commodities that achieved new records of consumption in 1945 included petroleum, natural gas, natural gasoline and liquefied petroleum gases, phosphate rock, potash, silver (in the arts and industries), platinum, mercury, titanium, barite, carbon black, and sulfur. On a percentage increase basis; the consumption of mercury was outstanding, demand for the metal increasing 49 percent, principally as the result of its utilization in the manufacture of an improved dry battery which was required in substantial quantities by the armed forces in 1945.

Privately financed construction increased 63 percent in 1945, whereas public construction, owing to completion and suspension of construction for war needs, decreased 16 percent. 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 $4,661,000,000, a 15-percent increase from $4,049,000,000 in 1944 but a 65-percent drop from the peak of $13,498,000,000 in 1942; the value in 1938 was $5,274,000,000. The major increases in 1945 were in private commercial, industrial, and residential construction. As a consequence of these increases, consumption of a number of building materials of mineral origin, including cement, clays, gypsum, sand and gravel, and slate, increased moderately in 1945.

PRICES

For the third consecutive year, average mineral prices in 1945 advanced more than the general price level. An index of producers’ unit realizations on 24 minerals that represented over 97 percent of the value of mineral production, weighted according to 1940 production, showed an average increase of 2.4 percent over 1944. Bureau of Labor Statistics indexes of wholesale prices for all commodities rose 1.7 percent; however, prices for farm products increased 4.0 percent. During the entire war period prices for minerals advanced much less than those of other commodities. Since 1940 unit price realizations for minerals have increased only 25.7 percent, whereas prices for all commodities have risen 34.6 percent and those for farm products 89.4 percent. These computations for minerals include premium prices paid for copper, lead, and zinc but do not include the transportation subsidies paid by the Government on other commodities.

During the war years fuel prices fared better than other mineral prices. Since 1940 the weighted average price realization by producers of 5 mineral fuels has increased 30.1 percent; 1945 averages were 2.4 percent over those in 1944. Average prices for 10 metals rose 21.2
percent from 1940 to 1945 but only 2.5 percent from 1944 to 1945. The index of prices for 9 nonmetallic minerals other than fuels advanced 15.7 percent from 1940 to 1945 and 1.6 percent from 1944 to 1945.

Aside from a number of regional and individual-company adjustments, principally among the nonmetals, there were relatively few changes in ceiling prices in 1945. Of particular significance, however, were those for coal, granted largely as a result of wage increases, and those for pig iron to compensate for increased over-all production costs. Ceilings for copper, lead, and zinc were maintained at 1944 rates, but a larger proportion of the domestic production of all three metals came under premium prices. The average price of lead realized by producers in 1945 increased 0.6 cent per pound compared with 1944, and that for zinc advanced 0.1 cent; the average price of copper was unchanged. The average value of petroleum at the well was slightly higher in 1945 than in 1944, whereas the average value for natural gas at points of consumption and that for natural gasoline at producing plants were both slightly lower. With the exception of peat and crude and ground feldspar, prices of which declined, producers of nonmetals generally received slightly higher or the same unit returns in 1945 as in 1944.

The Bureau of Labor Statistics index (1926=100) of wholesale prices for all commodities rose from 78.6 in 1940 to 104.0 in 1944 and 105.8 in 1945. The index for farm products was 67.7 in 1940, 123.3 in 1944, and 128.2 in 1945 and showed the greatest rise during the war period of any major group of commodities. The fuel and lighting index increased from 71.7 in 1940 to 83.0 in 1944 and 84.0 in 1945, and the index for anthracite rose from 95.6 in 1944 to 99.0 in 1945, for bituminous coal from 120.3 to 128.1, for coke from 130.3 to 139.5, and for petroleum and its products from 63.5 to 64.3. The metals and metal products index was 104.7 in 1945 and 103.8 in 1944 compared with 95.8 in 1940; fabricated products weigh heavily in the computation of indexes for this group. In the building materials field, the group index showed a slightly better than average rise in 1945—117.8 compared with 115.5 in 1944 and 94.8 in 1940. The price index for fertilizer materials was 81.6 in 1945, 81.3 in 1944, and 69.4 in 1940.

EMPLOYMENT

Manpower was scarce at mineral operations; and labor shortages, which had become progressively more acute since 1942, were continued through 1945. However, the continued downtrend in the number of men working daily was reversed soon after midyear and by the end of the year the labor-shortage problem had been eased to some extent. In the forepart of the year the labor supply had continued to shrink as Selective Service requirements for men for the armed forces were enlarged and production requirements for mineral raw materials were maintained at a high rate. The prompt termination of war contracts, the closing of munitions, armament, ship-building and other war-fostered industries, and the release of men from the armed forces shortly after the end of the Pacific war were factors in the uptrend in the number of men working during the latter part of the year. The easement of the labor shortages was greater in some
mineral industries than was indicated by the uptrend in the labor force owing to the declining demand for many mineral raw materials as war contracts were voided and the mineral-consuming industries were converted to peacetime production. Demand for raw materials was reduced further toward the close of 1945 by the wave of strikes that virtually closed several important mineral-consuming industries. Despite these factors fostering an abatement of the labor supply problem, manpower shortages were prevalent in the mineral industries at the end of 1945.

Concomitant with the easing of the labor-supply problem, war controls on manpower were relaxed or abandoned. Selective Service requirements were reduced to a minimum, and the labor priority referrals (established in 1944) and other controls of the War Manpower Commission on the movement of labor were discarded soon after the end of the Pacific war.

Labor-management relations during 1945 were stable in each of the mining industries except coal, in which three major work stoppages—two in bituminous-coal and one in anthracite mines—as well as numerous minor shut-downs resulted from industrial disputes. A total of 670 work stoppages started during 1945 in all mining industries and caused a loss of slightly more than 614 million man-days of work, according to the United States Department of Labor. Virtually all of this economic loss was in the coal industry, where 598 stoppages at bituminous-coal mines caused idleness for 5 million man-days and 43 stoppages at anthracite mines resulted in a loss of nearly 114 million man-days. The Solid Fuels Administration stated that 30 million tons of bituminous coal and nearly 4 million tons of anthracite were lost through strikes during 1945. In petroleum refining, 30 work stoppages during the year caused a loss of 429,000 man-days of work. A widespread 20-day stoppage resulting from a wage dispute was ended on October 4, when the major refining plants were seized and operated by the Federal Government.

In the coal industry, the major work stoppage at bituminous-coal mines on April 3 and that at anthracite mines on May 1 resulted from labor-management disputes on the so-called "fringe issues" (portal-to-portal pay, shift differentials, vacation pay, welfare fund, etc.) of the wage contracts. In both strikes, the Federal Government seized the mines to continue operations until agreements were reached by compromise between labor and the mine owners. The bituminous-coal mines were returned in small groups to the owners over a period of several months, and the anthracite mines were released for owner operation on June 23 after a majority of the anthracite workers had resumed their jobs on May 21. A second major stoppage at bituminous-coal mines started about September 21 at a few coal mines and spread rapidly until more than 200,000 mine workers were idle. The dispute was concerned with recognition of a supervisory employees' union and the privilege of this class of employees to unionize. Union officials terminated the strike, and mining was resumed on October 22. Several new issues were introduced in the 1945 coal disputes.

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Mine safety became a consideration of prime economic importance, and the union demanded a miners' health and welfare fund to be subsidized by a royalty on production. Although these issues and the right of supervisory employees to unionize were not parts of the final settlements, they did foretell union aims in future demands and negotiations.

A difficult employment problem was posed in 1945 by the obvious antipathy of the younger men to entering or returning to mining as a permanent occupation. The principal means employed by the companies to combat this reluctance was the establishment or the expansion of training schools for new or returned employees to provide skilled men for underground work. It was evident, however, that additional inducements were needed so long as higher-paying or less arduous work was available in other industries.

The uptrend in manpower in the latter part of the year was not of sufficient magnitude to affect the drastic withdrawals in the first half, and the average number of men working in the mining and refining industries during 1945 fell to 639,800, a 6-percent decline from 1944. This skeletonized labor force worked approximately 1½ billion man-hours, or 10 percent less than in 1944, owing principally to the reduced demand for some minerals and the work stoppages in the coal industry. All mineral operations in the country were active an average of only 273 days (13 less than in 1944), and the average employee worked 2,169 hours in 1945 compared to a workyear of 2,264 hours in 1944. The average length of shift in 1945—7.94 hours—was relatively unchanged from 1944.

The monthly pattern of employment in the mineral industries during 1945 probably followed that shown by a monthly review of the average number of men at work daily in bituminous-coal mines. In this series employment declined irregularly from 369,000 in January to 357,000 in August and turned upward to reach a total of 369,000 in November. The average for December declined to 365,000 owing probably to greater than usual absenteeism over the holidays. For 1945, the average number of men in bituminous-coal mines totaled 363,000 or 4 percent below 1944. In the anthracite industry, employment declined to 74,000 men and was the principal factor limiting production during 1945. At metal mines the average number of men working fell 12 percent from 1944 to a total of 62,200 in 1945. The labor shortage in some metal-mining industries was offset partly by increased activity at open pits, which have a higher productivity per man-hour than underground mines. Employment in the nonmetal mining and quarrying industries advanced over 1944 to respective totals of 12,200 and 59,400 in 1945. These gains indicated rapidly increasing employment in the closing months of the year, following removal of war restrictions on construction which materially affected demand and activity in important segments of these industries. At coke plants the number of men declined moderately to a total of 28,100 in 1945. Employment at metallurgical plants (ore-dressing mills and nonferrous smelters, refineries, etc.) fell sharply to 45,900 men in 1945, owing principally to the closing of Government-owned plants before and after the end of the war and to the general shortage of labor.
SAFETY

Safety at mineral operations in the United States continued to improve in 1945, and the over-all injury experience as measured by frequency per million man-hours of exposure to hazards was better than in any year since the start in 1931 of complete injury statistics on mining and quarrying. The more favorable safety record in 1945 was attained despite such adverse factors as the heavy production requirements (which necessitated more than usual days of work at longer hours per day with a skeletonized labor force through the first half of the year) and, in the latter part of the year, general relaxation of the workers (which made accident-prevention work more difficult after the end of the war when pressure for production was less urgent). The easing of the critical labor shortage indicated in the last 4 months of the year probably helped reduce the frequency of injuries at mineral operations. The greater number of men at work doubtless lowered the worker-fatigue that had been induced by the long work week in the fore part of the year.

Injuries in the mineral industries occurred at a rate of 55.69 per million man-hours in 1945—a slight reduction from a frequency of 56.61 in 1944. Fatalities happened at a rate of 0.93 per million man-hours of working time and for the first time since the statistical series started in 1931 were at a frequency of less than 1 per million man-hours. There was a slight improvement in nonfatal injury experience in 1945, and the frequency of occurrence was reduced to 54.76 per million man-hours from a corresponding rate of 55.59 in 1944.

Accidents in mineral operations during 1945 resulted in a total of 77,290 injuries, of which 1,285 were fatal and 76,005 were nonfatal lost-time injuries that disabled the injured person for longer than the day of the accident. Although this represented a marked reduction from the total of 87,242 injuries in 1944, the frequency rate per million man-hours was improved only slightly in 1945 owing to the shorter time of exposure of the workers to hazards. The average of 639,800 men, who reported daily, worked or were exposed to hazards for a total of slightly more than 1½ billion man-hours in 1945, an appreciable reduction from the 1½ billion hours of exposure in 1944.

Five major disasters occurred during 1945, all in bituminous-coal mines. Four of the disasters were mine explosions which caused a total loss of 63 lives, and 1 was a roof fall that killed 5 men. In 1944, 4 major mine disasters resulted in a loss of 94 lives—22 in mine explosions and 72 in mine fires. In 1944 disasters occurred only in bituminous-coal mines.

Injury experience in 1945 was improved in each of the mineral-industry groups except metallurgical plants, where the safety record was slightly less favorable than in 1944. The improvement was greatest in the nonmetal-mining group, in which the frequency of injuries was reduced to 42.99 per million man-hours in 1945 from 50.47 in 1944. In the metal-mining group a substantial improvement was made, and the 1945 frequency of injuries was lowered to 51.04. However, this more favorable showing was effected in part by greatly increased activity at open-cut metal mines and lessened activity at underground mines. At quarries and coke plants, injury experience in 1945 was
slightly improved over 1944, the rate of occurrence declining to 32.75 per million man-hours for quarries and 13.02 at coke plants. The slight betterment in the safety record at coal mines resulted from reductions in the rates of occurrence of fatal and nonfatal injuries in bituminous-coal mines and of fatal injuries at anthracite mines. These improved rates more than compensated for the slightly less favorable frequency rate of nonfatal injuries at anthracite mines. The combined rate of occurrence of fatal and nonfatal injuries at all coal mines was 66.77 per million man-hours in 1945 compared with a frequency of 67.12 in 1944.

GOVERNMENT STOCK-PILING ACTIVITIES

Stock-piling for war.—Subsequent to August 1943, Government stock-pile objectives for the emergency were gradually reduced as the supply situation and the outlook for successful conclusion of the war improved. In June 1945 Government-owned stock-pile goals were set at only 3 months' military requirements as established for the second quarter of 1945. Following VJ-day virtually all stock-pile objectives were abandoned, as controls on most raw materials were gradually removed. As of August 1, 1946, public purchasing for emergency purposes had been discontinued on all but a few minerals that were in short supply—antimony, tin, lead, copper, and corundum. Buying of these was geared to reconversion needs, and the building up or maintenance of emergency stocks was no longer part of the procurement program.

Surplus-property transfers.—Section 22 of the Surplus Property Act of 1944 (see Minerals Yearbook, 1944, p. 12), directed the transfer of the surplus stocks of strategic and critical materials on hand at the close of the war to the permanent military stock piles of the Government. However, the act also directed the Surplus Property Board to withhold such transfers to the extent that the War Production Board determined that available supplies were deficient for the current needs of industry over a 6-month period. Uncertainties as to future requirements and budgetary complications retarded action under the bill, so that as of August 1946 the addition of war surpluses to the permanent stock piles of the Government were relatively small in terms of ultimate objectives.

SPA Regulation 17, governing transfers under the act, was promulgated November 16, 1945. The transfer provisions of the Strategic and Critical Materials Stock-Piling Act, passed in July 1946, superseded those of the Surplus Property Act of 1944, and on August 16, 1946, the War Assets Administration issued revised regulations; these were printed in the Federal Register (vol. 11, No. 170, August 30, 1946, p. 9573).

Stock-pile legislation.—Late in 1945 and early in 1946 the Military Affairs Committees of the United States Senate and the House of Representatives conducted hearings on various stock-piling bills pending in Congress. On July 9, 1946, the Congress passed S. 752, entitled the "Strategic and Critical Materials Stock-Piling Act." The bill, which was approved by the President July 23, 1946, is desig-
nated as Public Law 520—79th Congress, Chapter 590—2d Session, and reads as follows:

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Act of June 7, 1939 (53 Stat. 811), as amended, is hereby amended to read as follows:*

That the natural resources of the United States in certain strategic and critical materials being deficient or insufficiently developed to supply the industrial, military, and naval needs of the country for common defense, it is the policy of the Congress and the purpose and intent of this Act to provide for the acquisition and retention of stocks of these materials and to encourage the conservation and development of sources of these materials within the United States, and thereby decrease and prevent wherever possible a dangerous and costly dependence of the United States upon foreign nations for supplies of these materials in times of national emergency.

Sec. 2. (a) To effectuate the policy set forth in section 1 hereof the Secretary of War, the Secretary of the Navy, and the Secretary of the Interior, acting jointly through the agency of the Army and Navy Munitions Board are hereby authorized and directed to determine, from time to time, which materials are strategic and critical under the provisions of this Act and to determine from time to time, the quality and quantities of such materials which shall be stock-piled under the provisions of this Act. In determining the materials which are strategic and critical and the quality and quantities of same to be acquired the Secretaries of State, Treasury, Agriculture, and Commerce shall each designate representatives to cooperate with the Secretary of War, the Secretary of the Navy, and the Secretary of the Interior in carrying out the provisions of this Act.

(b) To the fullest extent practicable the Secretary of War, the Secretary of the Navy, and the Secretary of the Interior, acting jointly, shall appoint Industry advisory committees selected from the industries concerned with the materials to be stock-piled. It shall be the general function of the Industry advisory committees to advise with the Secretary of War, the Secretary of the Navy, and the Secretary of the Interior and with any agencies through which they may exercise any of their functions under this Act with respect to the purchase, sale, care, and handling of such materials. Members of the Industry advisory committees shall receive a per diem allowance of not to exceed $10 for each day spent at conferences held upon the call of the Secretary of War, the Secretary of the Navy, and the Secretary of the Interior, plus necessary traveling and other expenses while so engaged.

Sec. 3. The Secretary of War and the Secretary of the Navy shall direct the Secretary of the Treasury, through the medium of the Procurement Division of his Department, to—

(a) make purchases of strategic and critical materials with due regard to the objectives set forth in section 1 of this Act and pursuant to the determinations as provided in section 2 hereof, which purchases (1) shall be made, so far as is practicable, from supplies of materials in excess of the current industrial demand and (2) shall be made in accordance with title III of the Act of March 3, 1933 (47 Stat. 1520), but may be made without regard to section 3709 of the Revised Statutes. A reasonable time (not to exceed one year) shall be allowed for production and delivery from domestic sources and in the case of any such material available in the United States but which has not been developed commercially, the Secretary of War and the Secretary of the Navy may, if they find that the production of such material is economically feasible, direct the purchase of such material without requiring the vendor to give bond;

(b) provide for the storage, security, and maintenance of strategic and critical materials for stock-piling purposes on military and naval reservations or other locations, approved by the Secretary of War and the Secretary of the Navy;

(c) provide through normal commercial channels for the refining or processing of any materials acquired or transferred under this Act when the Secretary of War and the Secretary of the Navy deem such action necessary to convert such materials into a form best suitable for stock piling, and such materials may be refined, processed, or otherwise beneficiated either before or after their transfer from the owning agency;
(d) provide for the rotation of any strategic and critical materials constituting a part of the stock pile where necessary to prevent deterioration by replacement of acquired stocks with equivalent quantities of substantially the same material with the approval of the Secretary of War and the Secretary of the Navy;

(e) dispose of any materials held pursuant to this Act which are no longer needed because of any revised determination made pursuant to section 2 of this Act, as hereinafter provided. No such disposition shall be made until six months after publication in the Federal Register and transmission of a notice of the proposed disposition to the Congress and to the Military Affairs Committee of each House thereof. Such notice shall state the reasons for such revised determination, the amounts of the materials proposed to be released, the plan of disposition proposed to be followed, and the date upon which the material is to become available for sale or transfer. The plan and date of disposition shall be fixed with due regard to the protection of the United States against avoidable loss on the sale or transfer of the material to be released and the protection of producers, processors, and consumers against avoidable disruption of their usual markets; Provided, That no material constituting a part of the stock piles may be disposed of without the express approval of the Congress except where the revised determination is by reason of obsolescence of that material for use in time of war. For the purposes of this paragraph a revised determination is by reason of obsolescence if such determination is on account of (1) deterioration, (2) development or discovery of a new or better material or materials, or (3) no further usefulness for use in time of war.

Sec. 4. The Secretary of War and the Secretary of the Navy shall submit to the Congress, not later than six months after the approval of this Act, and every six months thereafter a written report detailing the activities with respect to stock piling under this Act, including a statement of foreign and domestic purchases, and such other pertinent information on the administration of the Act as will enable the Congress to evaluate its administration and the need for amendments and related legislation.

Sec. 5. The stock piles shall consist of all such materials heretofore purchased or transferred to be held pursuant to this Act, or hereafter transferred pursuant to section 6 hereof, or hereafter purchased pursuant to section 3 hereof, and not disposed of pursuant to this Act. Except for the rotation to prevent deterioration and except for the disposal of any material pursuant to section 3 of this Act, materials acquired under this Act shall be released for use, sale, or other disposition only (a) on order of the President at any time when in his judgment such release is required for purposes of the common defense, or (b) in time of war or during a national emergency with respect to common defense proclaimed by the President, on order of such agency as may be designated by the President.

Sec. 6. (a) Pursuant to regulations issued by the War Assets Administration or its successor, every material determined to be strategic and critical pursuant to section 2 hereof, which is owned or contracted for by the United States or any agency thereof, including any material received from a foreign government under an agreement made pursuant to the Act of March 11, 1941 (55 Stat. 31), as amended, or other authority, shall be transferred by the owning agency, when determined by such agency to be surplus to its needs and responsibilities, to the stock piles established pursuant to this Act, so long as the amount of the stock pile for that material does not exceed the quantities determined therefor pursuant to section 2 hereof. There shall be exempt from this requirement such amount of any material as is necessary to make up any deficiency of the supply of such material for the current requirements of industry as determined by the Civilian Production Administration or its successor. There shall also be exempt from this requirement (1) any material which constitutes contractor inventory if the owning agency shall not have taken possession of such inventory, (2) such amount of any material as the Army and Navy Munitions Board determines (i) are held in lots so small as to make the transfer thereof economically impractical; or (ii) do not exist or cannot economically be converted to meet, stock pile requirements determined in accordance with section 2 of this Act. The total material transferred to the stock piles established by this Act in accordance with this section during any fiscal year beginning more than twelve months after this Act becomes
law shall not exceed in value (as determined by the Secretary of the Treasury on the basis of the fair market value at the time of each transfer) an amount to be fixed by the appropriation Act or Acts relating to the acquisition of materials under this Act.

(b) Any transfer made pursuant to this section shall be made without charge against or reimbursement from the funds available under this Act, except that expenses incident to such transfer may be paid or reimbursed from such funds, and except that, upon any such transfer from the Reconstruction Finance Corporation, or any corporation organized by virtue of the authority contained in the Act of January 22, 1932 (47 Stat. 5), the Secretary of the Treasury shall cancel notes of Reconstruction Finance Corporation, and sums due and unpaid upon or in connection with such notes at the time of such cancellation, in an amount equal to the fair market value as determined by the Secretary of the Treasury of the material so transferred.

(c) Effective whenever the Secretary of the Treasury shall cancel any notes pursuant to subsection (b) of this section, the amount of notes, debentures, bonds, or other such obligations which the Reconstruction Finance Corporation is authorized and empowered to have outstanding at any one time under the provisions of existing law shall be deemed to be reduced by the amount of the notes so canceled.

(d) Subsection (b) of section 14 of the Act of October 3, 1944 (58 Stat. 765), is hereby amended to read as follows:

(b) Subject only to subsection (c) of this section, any owning agency may dispose of—

(1) any property which is damaged or worn beyond economical repair;
(2) any waste, salvage, scrap, or other similar items;
(3) any product of industrial, research, agricultural, or livestock operations, or of any public works construction or maintenance project, carried on by such agency;

which does not consist of materials which are to be transferred in accordance with the Strategic and Critical Materials Stock Piling Act, to the stock piles established pursuant to that Act.

(e) Section 22 of the Act of October 3, 1944 (58 Stat. 765), is hereby repealed:

Provided, That any owning agency as defined in that Act having control of materials that, when determined to be surplus are required to be transferred to the stock piles pursuant to subsection (a) hereof, shall make such determination as soon as such materials in fact become surplus to its needs and responsibilities.

Sec. 7. (a) The Secretary of the Interior, through the Director of the Bureau of Mines and the Director of Geological Survey, is hereby authorized and directed to make scientific, technologic, and economic investigations concerning the extent and mode of occurrence, and development, mining, preparation, treatment, and utilization of ores and other mineral substances found in the United States or its Territories or insular possessions, which are essential to the common defense or the industrial needs of the United States, and the quantities or grades of which are inadequate from known domestic sources, in order to determine and develop domestic sources of supply, to devise new methods for the treatment and utilization of lower grade reserves, and to develop substitutes for such essential ores and mineral products; on public lands and on privately owned lands, with the consent of the owner, to explore and demonstrate the extent and quality of deposits of such minerals, including core drilling, trenching, test-pitting, shaft sinking, drifting, cross-cutting, sampling, and metallurgical investigations and tests as may be necessary to determine the extent and quality of such deposits, the most suitable methods of mining and beneficiating them, and the cost at which the minerals or metals may be produced.

(b) The Secretary of Agriculture is hereby authorized and directed to make scientific, technologic, and economic investigations of the feasibility of developing domestic sources of supplies of any agricultural material or for using agricultural commodities for the manufacture of any material determined pursuant to section 2 of this Act to be strategic and critical or substitutes therefor.

Sec. 8. For the procurement, transportation, maintenance, rotation, storage, and refining or processing of the materials to be acquired under this Act, there is hereby authorized to be appropriated, out of any money in the Treasury not otherwise appropriated, such sums as the Congress, from time to time, may deem necessary to carry out the provisions of this Act. The funds so appropriated, including the funds heretofore appropriated, shall remain available to carry out
the purposes for which appropriated until expended, and shall be expended under the joint direction of the Secretary of War and the Secretary of the Navy.

Sec. 9. Any funds heretofore or hereafter received on account of sales or other dispositions of materials under the provisions of this Act, except funds received on account of the rotation of stocks, shall be covered into the Treasury as miscellaneous receipts.

Sec. 10. This Act may be cited as the "Strategic and Critical Materials Stock Piling Act."

The act is an amended version of the Strategic Materials Act of June 7, 1939. It authorizes the procurement of stocks of strategic and critical materials by purchase, by transfer of surplus war stocks owned by the United States Government, and by reverse lend-lease payments from foreign Governments. Except for rotation to prevent deterioration and disposal resulting from a revised determination of stock-pile quantities because of obsolescence of a material for use in time of war, the stock piles are frozen and can be released for use only in an emergency with respect to the common defense.

Section 7 (a) of the new bill directs the Secretary of the Interior, through the Directors of the Bureau of Mines and the Geological Survey, to make scientific, technologic, and economic investigations of domestic resources with a view to developing domestic sources of supply of those minerals which are essential to the common defense or the industrial needs of the United States but which are not produced in sufficient quantities to meet domestic requirements. This provision also was included in the act of 1939.

Section 7 (b) directs the Secretary of Agriculture to make similar studies of strategic and critical agricultural commodities; this provision was not included in the previous stock-piling act.

The old and new laws direct that purchases for the stock piles shall be made in accordance with the Buy American Act. In a message issued at the time he approved the bill, the President made the following statement regarding this provision of the law:

I have today signed the Strategic and Critical Materials Stock-Piling Act because it is important to the national interest that this Government have the power to acquire stock piles.

It is only because of the overriding importance of this purpose that I am able to overcome my reluctance to signing a bill which reaffirms the application to stock-pile purchases of the provisions of Title III of the Act of March 3, 1933 (47 Stat. 1520), known as the Buy American Act. These provisions will not only materially increase the cost of the proposed stock piles but will tend to defeat the conservation and strategic objectives of the bill by further depleting our already inadequate underground reserves of strategic materials. Furthermore, there can be a serious conflict between those provisions and the foreign economic policy which this Government is actively pursuing. It also seems to me that the application of the Buy American Act may frequently hamper the effective achievement of the essential purpose of the legislation which is to enlarge the stock of vital raw materials available within our borders in time of possible emergency.

The Buy American Act requires that only articles produced or manufactured from materials originating in the United States shall be purchased for public use. However, the Act also provides that exceptions to this rule may be made when Buy American purchases are determined "to be inconsistent with the public interest or the cost to be unreasonable." This provision clearly indicates that the stock-piling program should not be used as a means of generally subsidizing those domestic producers who otherwise could not compete successfully with other domestic or foreign producers. Furthermore, to insure that the necessary stock piles are accumulated as rapidly as deemed advisable and with a minimum cost to the public, this Act should not be used as a device to give domestic interests
an advantage over foreign producers of strategic materials greater than that provided by the tariff laws.

It is the policy of this Government to work for international action to reduce trade barriers. We have proposed to other countries a set of principles governing trade, and look forward to the successful conclusion of broad international arrangements embodying the essential principles of these proposals. Pending the conclusion of such arrangements, it is the policy of this Government to avoid taking measures that will raise barriers to trade or prejudice the objectives of the forthcoming discussions. We are asking other countries to follow similar policies.

The United States is opposed to governmental policies fostering autarchy, for itself as well as for others. Encouragement of uneconomic domestic production and unjustified preferential treatment of domestic producers destroys trade and so undermines our national economic strength. A large volume of soundly based international trade is essential if we are to achieve prosperity in the United States, build a durable structure of world economy and attain our goal of world peace and security.

GOVERNMENT ORGANIZATION FOR WAR

Beginning with Minerals Yearbook, 1942, a brief summary has been presented under the foregoing heading 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. Similar summaries were presented in Minerals Yearbook, Review of 1940, and Minerals Yearbook, 1941, under the heading National Defense Activity. Minerals Yearbook, 1944, presented the record up to July 1945, and this review carries the record forward to July 1946. Details of the various actions taken by these agencies are given in the commodity chapters of this volume.

With the sudden cessation of World War II hostilities early in August 1945, the Government agencies faced the necessity for a rapid shift from production for war to reconversion for a peacetime economy. Plans had been made for reconversion, but they were based on a gradual transition to postwar operations. These circumstances involved many changes in the activities and personnel of the agencies during the latter half of 1945 and the first half of 1946, as well as termination of several of the agencies and the establishment of others. President Truman, on the surrender of Japan, called on the War Production Board to occupy a major role in "an orderly transition from war production to civilian production" and emphasized that WPB's controls "should be lifted as soon as they are no longer needed." In line with this public statement of the President, WPB began at once to remove its individual controls over industry and by August 20 had only 130 industry regulatory orders in effect compared with a wartime peak of more than 600 such orders.

Development of the atomic bomb and its use in bringing about an abrupt end to the war with Japan were followed by the issuance of an Executive order dated September 13, 1945, withdrawing and reserving for the use of the United States lands on the public domain containing radioactive mineral substances. Proposed legislation providing for the control of atomic energy was soon thereafter introduced in Congress, and scientific, military, industrial, and Government representatives were called upon to present their views before the Senate committee appointed to prepare the enabling bill. On June 1, 1946, the Senate passed the Atomic Energy Control Bill, S. 1717, which, how-
ever, was not destined to be signed by the President until August 5, 1946. The bill, as finally passed by the Congress and approved by the President, created a civilian commission for the control and development of atomic energy in the United States.

In September 1945 the Foreign Economic Administration was abolished by Executive order, and the functions of that agency were divided among the State, Commerce, and Agriculture Departments and the Reconstruction Finance Corporation. Announcement was made early in October 1945 that the War Production Board would be terminated on November 3 and that all its activities were to be transferred to a new agency, the Civilian Production Administration. The resignation of WPB chairman J. A. Krug was accepted by the President, effective with termination of the agency, and J. D. Small, Chief of Staff of WPB, was designated Administrator of CPA. Following the resignation in February 1946 of Harold L. Ickes as Secretary of the Interior, Krug was selected by the President for that cabinet post; the appointment was confirmed by the Senate early in March.

John R. Steelman, the administration's top labor consultant, was appointed in June 1946 to succeed John W. Snyder as Director of the Office of War Mobilization and Reconversion when the latter assumed the post of Secretary of the Treasury, vice Fred M. Vinson, who had been elevated to Chief Justice of the Supreme Court. In February 1946 a new agency, the War Assets Administration, with Lt. Gen. Edmund H. Gregory, Quartermaster General of the Army, as Administrator, took over disposal of surplus war property from the Surplus Property Board. Gen. Gregory was succeeded as Administrator in July 1946 by Maj. Gen. Robert M. Littlejohn.

Other recent developments include the passage and approval of the bill extending the life of the Office of Price Administration for 1 year and establishing a three-man Price Decontrol Board; placement of the Office of Economic Stabilization under the Office of War Mobilization and Reconversion; and the appointment of the members of the new Economic Advisory Council, the function of which three-man council is to study the economy of the Nation and make reports and recommendations to Congress and the President. Other changes in the organizations chiefly concerned with the mineral activities of the war program are recorded below.

War Production Board, Civilian Production Administration.—At the close of the war in the Far East, the functions of the War Production Board became wholly those of directing and guiding the United States toward orderly reconversion to peacetime activities, to be achieved as rapidly as possible. With this end in view, the year from July 1, 1945, to July 1, 1946, saw many changes in organization and personnel.

On October 4, 1945, the War Production Board was terminated, effective November 3, 1945. The residual functions were transferred to the Civilian Production Administration. On dissolution of the War Production Board, J. A. Krug resigned as Chairman, and J. D. Small, formerly Chief of Staff of WPB, became Administrator of Civilian Production Administration, with Philip Maguire as Deputy Administrator. At that time, in addition to the Administrator and
Deputy Administrator, Small announced the following organization and personnel of the Civilian Production Administration:

1. Bureau of Reconversion Operations; Director, Fred Glover. This bureau contains all the industry divisions, including Metals and Minerals, Rubber, Equipment, Forest Products, Textiles, Chemicals, Construction, and Consumers Hard Goods.

2. Bureau of Field Operations; Director, C. A. Woodruff.

3. Bureau of International Supply; Director, Robert Turner. This bureau has charge of exports, imports, and international supply. The Combined Boards, through which the United States, Great Britain, and Canada coordinated activities in shipping, food supply, and allocation of raw materials during the war, were under its jurisdiction until they disbanded at the end of the year.

4. Bureau of Reconversion Priorities; Director, Lincoln Gordon. General administration of priorities, allocations, regulations, inventory, compliance, and such controls as are required came under the functions of this bureau.

5. Bureau of Demobilization; Director, G. Lyle Belsley.

6. Office of General Counsel; General Counsel, L. M. Lombard.

7. Review and Analysis Staff; Director, Robert Turner.

8. Office of Labor Requirements; Director, Ralph Hetzel.

9. Information Division; Director, Maxey Morrison.

In the organization of the Civilian Production Administration, the Office of Vice Chairman for Metals and Minerals under the War Production Board became the Metals and Minerals Division. Before this transition, James Douglas resigned as Deputy Vice Chairman for Metals and Minerals on August 31, 1945. He was succeeded by F. H. Hayes, formerly Assistant Director of the Copper Division. With the advent of the CPA on November 3, R. C. Allen resigned as Vice Chairman, and Hayes became Director of the Metals and Minerals Division. At the same time, Roland D. Parks, who had been Assistant Deputy Director of Metals and Minerals Production, became Deputy Director. Parks returned to private employment in February 1946, and in May 1946 John J. Croston, Assistant Chief of the Tin, Lead, and Zinc Branch, succeeded him as Deputy Director. The Mineral Classification Committee and the Minerals and Metals Advisory Committee were disbanded, while the Mineral Resources Operating Committee continued on a "stand-by" basis, to function as needed.

On August 20, 1945, immediately following VJ-day, the War Production Board canceled 210 of 340 industry regulatory orders. On VJ-day 53 of these orders were handled by the Metals and Minerals organization. Orders were canceled as the need for them disappeared, so that on July 1, 1946, the Metals and Minerals Division had only 7 in effect, dealing with steel, tin, lead, antimony, and uranium. As reconversion progressed, the number of personnel was likewise reduced. On July 1, 1945, the Metals and Minerals organization totaled 616 employees. This number was reduced to 144 by November 3, when the War Production Board was terminated, and to 128 by July 1, 1946.

Membership in the Premium Price Quota Committee remained unchanged. In May 1946 John J. Croston took over the chairmanship, when he became Deputy Director of Metals and Minerals. Landon F. Strobel remained as secretary.

N. H. Bell resigned as Director of the Aluminum and Magnesium Division on September 1, 1945. A. B. Menefee assumed the duties as Director but left at the end of October. He was succeeded by R. L. Sebastian.
Michael Schwarz resigned as Director of the Copper Division at the end of September 1945. He was followed by J. J. Hines, Jr., who remained until the end of the year, when D. L. Forrester took over.

On October 2, 1945, Arthur S. Knoizen left the Mining Division, and Marcellus H. Stow became Director. At the end of the year, Stow resigned and his duties were taken over by Harold Montag. June 24, 1946, Montag resigned, and at that time the Mining Branch was combined with the Miscellaneous Minerals Branch under F. G. Rockwell.

When the War Production Board was terminated, November 3, 1945, W. B. Todd resigned as Director of the Steel Branch. His duties were taken over by P. J. Treacy.

Erwin Vogelsang continued as Chief of the Tin, Lead, and Zinc Branch.

As of July 1946, the members of the Civilian Production Administration dealing with policy or administration affecting the mineral industries were as follows:

Administrator: John D. Small.
Deputy Administrator: Philip F. Maguire.
Deputy Administrator: John C. Houston, Jr.
General Counsel: Harold L. Price.
Office of Labor Requirements, Director: Ralph Hetzel.
Review and Analysis Staff, Director: Robert E. Johnson.
Information Division, Director: Karl Keyerleber.
Bureau of Industry Operations, Director: Fred Glover.
Metals and Minerals Division, Director: F. H. Hayes.
Deputy Director: John J. Croston.

Premium Price Quota Committee:
Chairman: John J. Croston.
Secretary: Landon F. Strobel.
Civilian Production Administration, Tin, Lead, and Zinc Branch: C. A. Wright.
Civilian Production Administration, Tin, Lead, and Zinc Branch: Edgar E. Barker.
Civilian Production Administration, Copper Branch: P. B. Blakemore.
Office of Price Administration: Jesse L. Maury.
Office of Price Administration: J. J. Beeson.
Tin, Lead, and Zinc Branch, Chief: E. Vogelsang.
Deputy Chief: S. K. Butterworth.
Aluminum and Magnesium Branch, Chief: Robert L. Sebastian.
Copper Branch, Chief: D. L. Forrester.
Miscellaneous Minerals and Mining Branch, Chief: F. G. Rockwell.
Steel Branch, Chief: P. J. Treacy.
Deputy Chief: Charles Halcomb.

Office of Price Administration.—Price controls over most minerals remained in effect throughout the period January 1, 1945, to July 1, 1946, although steps were taken to decontrol such items as aluminum, aluminum mill products, and many ferro-alloys. Where controls remained, however, increasing costs and other factors characteristic of the transition from a wartime to a peacetime economy led the OPA, in applying its standards of price action, to permit a number of price increases. Prices of coal, iron ore, pig iron, and basic steel products were increased in amounts ranging from 3 to 8 percent. The Premium
Price Plan for copper, lead, and zinc continued in operation, although at the close of the period increases of about 20 percent and 25 percent, respectively, were permitted in the base maximum prices of copper and lead, to offset some of the increased costs resulting from wage increases in the mining industry, and to restore base period earnings. As of July 1, 1946, the following officials had chief responsibility for price actions in the field of minerals:

Industrials Price Division, Director____________________________ Frederick C. Holder.
Metals Price Branch, Price Executive__________________________ Warren M. Huff.
Metals Mining Analysis Office, Director________________________ Jesse L. Maury.
Rubber, Chemicals, and Drug Price Branch, Acting
  Price Executive____________________________________________ George W. Strasser.
Building and Construction Price Division, Director____________ Gordon Rieley.
Building Materials Price Branch, Price Executive______________ Julian Littau.

Petroleum Administration for War.—In the early months of 1945 demand on the United States for all oils reached record levels and taxed the facilities of the Petroleum Administration and the petroleum industry to meet, world-wide, the urgent needs of the United Nations in the final stages of the war. With the surrender of Germany in May, a major problem of coordination of supply and transportation of petroleum and products was posed by the shift in emphasis from the European to the Asiatic theater of military operations. It was necessary to curtail the eastward movement and to direct all available means to augment the rapid flow of products westward to the Pacific through the Panama Canal and overland through West coast ports until the surrender of Japan in August.

As had been frequently promised during the war, prompt action was taken to remove controls over the petroleum industry upon the end of hostilities. The day after the surrender of Japan, August 15, 1945, rationing of gasoline and fuel oils was ended, and wartime restrictions upon gasoline quality and most refining operations were removed. On August 23 most of the distribution and marketing regulations were rescinded. Many of the controls over petroleum supply and transportation were canceled on August 27, and regulations covering well spacing in the oil and natural-gas fields expired on September 1, as did limitations on construction in all branches of the industry. By October 15 all domestic orders had been terminated, and those affecting foreign operations became void by November 1.

By the end of 1945, six of the Division directors had resigned and the Washington staff had been reduced to 161 from 665 on August 1 and from a wartime peak before VE-day of 1,438. By April 1, 1946, the remaining Division directors had resigned and the staff numbered 58. The Administration’s field staff, which had totaled 313 on August 1, 1945, was eliminated by April 1, 1946.

By Executive order of the President the Petroleum Administration for War was terminated, effective May 8, 1946. Shortly thereafter, however, a new Oil and Gas Division was organized in the Department of the Interior to undertake a program, recommended by the President, of coordination of Government activities with respect to petroleum and natural gas and to serve as a liaison agency of the Federal Government in its relations with appropriate State bodies and the petroleum industry.
Solid Fuels Administration for War.—The 1945 activities continued the agency’s policy of encouraging the maximum production of coal, of requiring an equitable distribution of available supplies, and of educating consumers in methods of conservation. To augment the shortage of Southern Appalachian and other high-grade coals, SFAW encouraged the substitution, in part, of lower-grade solid fuels, especially run-of-mine sizes and reclaimed coke.

Special efforts were made to supply the Great Lakes docks before the close of the navigation season. This cut the Southeast short during the summer and fall, and, as soon as the lakes froze over, the deficiency in the Southeast was made up by special directives.

After the surrender of Japan the conservation campaign was dropped, and the regulations were modified as rapidly as possible, although the more important types of coal continued in short supply. As coal produced west of the Mississippi River began to meet requirements, all controls in that area were eased. By August 1945 restrictions on shipments of reclaimed coke to Canada were lifted; by September, controls over deliveries by retail dealers were revoked. In October most of the wartime restrictions on producers’ and wholesalers’ shipments of anthracite and coke to retail dealers were lifted. Scarcity of special purpose and other Southern Appalachian coals continued, and their distribution had to be further restricted.

Because of the serious manpower shortage, efforts were made throughout the war to have miners released from the draft. After the war, demobilization of experienced miners occurred too slowly to relieve the shortage during the winter. By the end of the fuel year, March 31, 1946, most of the remaining regulations and orders had been revoked, except for reporting to SFAW on production and distribution. At that time, SFAW was planning to liquidate at the end of the fiscal year. There followed the long strike in the soft-coal mines, necessitating a freezing order of coal on mine track, the issuance of an interim directive to provide for the emergency, and later a new regulation on soft-coal distribution.

With the fall of Germany, the demand for coal for the liberated nations of Europe placed a heavy responsibility upon SFAW. Only coal that was surplus, principally strip-mined coal, run-of-mine sizes, and low-grade, could be released for export without upsetting the national economy. The rapid increase of strip mining during the war provided enough soft coal of usable quality to warrant a large export program, but care had to be taken that only usable coal was carried to the ports, and the compliance activities of SFAW in this field were increased.

In April 1945, the Government, by Executive order, again took over the soft-coal mines, because the miners failed to return to work under the new Government-approved contract between the coal operators and the United Mine Workers of America. In May, a break-down in anthracite wage negotiations threatened a fuel crisis, and the Government temporarily took over the hard-coal mines. SFAW carried out the take-overs as it had done several times during the war. By the end of the summer all the mines had been returned to their owners. In April and May 1946, during the long strike, the Government again
took over the soft-coal mines, setting up a new Coal Mines Administration in the Department of the Interior. SFAW was called upon to assist the new agency, utilizing its wartime experience and records.

As of August 1, 1946, the organization and the executive heads of principal units of the Solid Fuels Administration for War were as follows:

Administrator .................................................. J. A. Krug.
Deputy Administrator ........................................ Dan H. Wheeler.
Assistant Deputy Administrator ................................ Harlen M. Chapman.
Assistant Deputy Administrator (heads Bituminous Distribution Division) .................................. Walter P. Neekamp.
Assistant Deputy Administrator ................................ E. Boykin Hartley.
Assistant Deputy Administrator (heads Anthracite Distribution Division) .................................. Thomas G. Valleea.
General Counsel (heads Legal and Compliance Divisions) ......................................................... Thomas J. O'Brien.
Anthracite Distribution Division ............................................................ Thomas G. Valleea.
Bituminous Distribution Division ............................................................ Walter P. Neekamp.
Legal Division ...................................................................................... Thomas J. O'Brien.
Compliance Division ........................................................................... Thomas J. O'Brien.
Production, Conservation and Information Division .............................................. William J. Dougherty.
Field Office Division ........................................................................... N. W. Wood, Jr.
Budget and Administrative Services Division .................................................. Mabel S. Bush.
Personnel Division ............................................................................. Julia Carpin.

Foreign Economic Administration.—The origin and functions of this agency were described briefly in Minerals Yearbook, 1944.

An Executive order issued in September 1945 abolished the agency and provided for the division of its functions among the State, Commerce, and Agriculture Departments and the Reconstruction Finance Corporation. Resignation of the Director, Leo T. Crowley, was accepted, effective October 15.

The State Department took over administration of lend-lease, United States participation in the United Nations Relief and Rehabilitation Administration, and the purchasing of certain strategic materials in liberated areas. It was also made the disposal agency for all surplus property, except certain vessels, in foreign areas.

Reconstruction Finance Corporation took over the United States Commercial Company, including its functions in the procurement of strategic commodities abroad, and also the Petroleum Reserve Corporation and the Rubber Development Corporation.

The Department of Commerce took over export controls, technical industrial intelligence, facilitation of trade, and the functions of the clearing office for foreign transactions and reports.

Programs dealing with food and food machinery were taken over by the Department of Agriculture.

The Foreign Economic Administration operated through two major bureaus—a Bureau of Supplies, of which Sidney H. Scheuer was Executive Director, and a Bureau of Areas, directed by Arthur Paul. Foreign procurement of commodities was carried on in a Foreign Procurement and Development Branch, of which Arthur Z. Gardiner was Director and Alan M. Bateman Associate Director. Actual operations in the foreign minerals procurement and development fields were conducted by the Metals and Minerals Divisions of that Branch.

Key officials on the technical staffs of these two Divisions and of the
associated Technical Services Division were as follows just prior to the abolishment of FEA:

Director of Metals and Minerals: Alan M. Bateman.
Metals Division, Chief: Mahlon M. Miller.
Copper Division, Chief: William C. Schmidt.
Zinc-Lead Section, Chief: F. H. McIntosh.
Tin, Mercury, Antimony, Bauxite Section, Chief: Clarence E. Peterson.
Ferro-Alloy Section, Chief: Cayford Burrell.
Scrap Metals Section, Chief: Benjamin Schwartz.
Minerals Division, Chief: Hugh E. Mc Kinstry.
Mica-Graphite Section, Chief: Richard H. Vail.
Quartz and Abrasives Section, Chief: Carl Tolman.
Alloy and Rare Minerals Section, Chief: Robert W. Bridgeman.
Service and Supply Section, Chief: Marshall Walker.
Administrative Section, Chief: Alfred Wilson.

Reconstruction Finance Corporation. — This agency has had a tremendous part in carrying out the defense and war programs on the industrial front, including the construction and management of mineral processing plants and the procurement of strategic and critical minerals. Its activities up to July 1, 1945, were described briefly in Minerals Yearbook, 1944. As of May 31, 1946, authorizations for RFC activities, including direct commitments for war purposes of approximately $2,900,000,000, have amounted to $37,600,000,000. Disbursements have exceeded $23,800,000,000, including $3,177,841,000 for direct subsidy payments to increase or maintain production of strategic or critical materials. The latter figure does not include losses arising from the purchase and sale of such materials.

As of July 1, 1946, Charles B. Henderson, Chairman of the Board of Directors of the Reconstruction Finance Corporation, was serving also as Acting Federal Loan Administrator.

Office of Metals Reserve

A substantial part of the war procurement and disposition of strategic and critical metals and minerals was conducted by Metals Reserve Company until July 1, 1945, when, under Public Law 109, 70th Congress, it was consolidated with the Reconstruction Finance Corporation. Activity continued through 1945 for war and reconversion needs and is expected to last through 1946 in order to meet the civilian deficiencies as estimated by Civilian Production Administration. Total purchase commitments as of May 31, 1946, exclusive of approximately $2,200,000,000 canceled or assigned to the Foreign Economic Administration, aggregated $3,581,342,000, of which $2,360,022,000 has been disbursed. Sales of materials, principally to war industries, have totaled $1,945,265,000. Strategic metals and minerals transferred to Treasury Procurement to become part of the permanent stock pile amounted to $109,001,000. Inventories on hand reflect a total cost of $587,448,000, not including such assets as advances to contractors and other receivables and mining supplies and equipment currently in use.

Reconstruction Finance Corporation, through its Office of Metals Reserve, also operates the tin smelter at Texas City and the Nicalo nickel plant in Cuba and operates the Premium Price Plan for domestic copper, lead, and zinc.
The following, by virtue of appointment by the Board of Directors of RFC, direct the activities of the Office of Metals Reserve:

Morris Levinson, Executive Director; Jesse C. Johnson, Deputy Director; George S. Jewett, Deputy Director; S. P. Petterson, Deputy Director; R. E. Leahy, Assistant Director; G. W. Brodie, Assistant Director; J. F. Morse, Jr., Traffic Manager.

**Office of Defense Plants**

Expansion of industrial plant capacity and plants for the production of munitions and strategic or critical materials required for the successful prosecution of World War II was, to a considerable extent, conducted through this agency. Total expenditures through May 31, 1946, for war plants, facilities, and machine tools were $7,433,589,850. (This includes 45 plants transferred to Office of Rubber Reserve, for which a total of $689,175,000 had been disbursed.) An additional $100,000,000 has been authorized and is pending cancellation settlements.

The expenditures involved the complete construction of 337 general-purpose plants, 529 special-purpose plants, 27 housing projects, and 300 scattered facilities—a total of 1,164 wholly owned projects, including land, buildings, and equipment costing $6,583,000,000. In addition, the Corporation provided machinery and equipment valued at $622,626,000 to 1,185 plants owned by other operators. Commitments for the production of critical and strategic materials in foreign countries totaled $57,589,850.

The following, by virtue of appointment by the Board of Directors of RFC, direct the activities of the Office of Defense Plants:

Frank T. Roman, Executive Director; James L. Kelehan, Associate Director; H. R. Rutland, Deputy Director in Charge of Plant Servicing Division; William J. Hickey, Assistant Director in Charge of Real Estate and Taxation Section; A. W. Greely, Deputy Director in Charge of Engineering Division; Leo Nielson, Assistant Director; John F. Williams, Assistant Director in Charge of Sales; James G. Boss, Chief Counsel; Fred Warren, Assistant Director in Charge of Accountability; Austin Roe, Assistant Director in Charge of Contract Terminating Section.

**Office of Defense Supplies**

Although this agency has been concerned chiefly with products other than minerals, it has had some important functions related to the mineral industries. Its operations have included the purchase of strategic and critical materials, the payment of extraordinary transportation costs on oil, coal, and sugar, and various other activities such as the making of loans and the payment of subsidies in connection with the purchase of materials. Disbursements for such purposes, as of January 1, 1946, were $8,100,000,000. Receipts from the sale of materials, repayment of loans, and other sources amounted to $6,100,000,000. Total expenditures authorized by Defense Supplies aggregated $12,300,000,000, of which $1,400,000,000 had been canceled or assumed by private industry.

The following, by virtue of appointment by the Board of Directors of RFC, direct the activities of the Office of Defense Supplies:

Stuart K. Barnes, Executive Director; George B. Stoner, Associate Director; Henry D. Buite, Deputy Director, Petroleum and Chemicals; Charles A. Jostes, Deputy Director, Materials and Supplies; Irving M. Griffin, Assistant Director, Traffic Division.