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CENTRAL INTELLIGENCE AGENCY

OFFICE OF RESEARCH AND REPORTS

CIA/RR Project 6-51: Contribution to NIE-3

THE EUROPEAN SATELLITE POWER COMPLEX

PART I
INDIVIDUAL SATELLITE COUNTRIES:
ECONOMIC STRENGTHS AND WEAKNESSES

BULGARIA

1 July 1951

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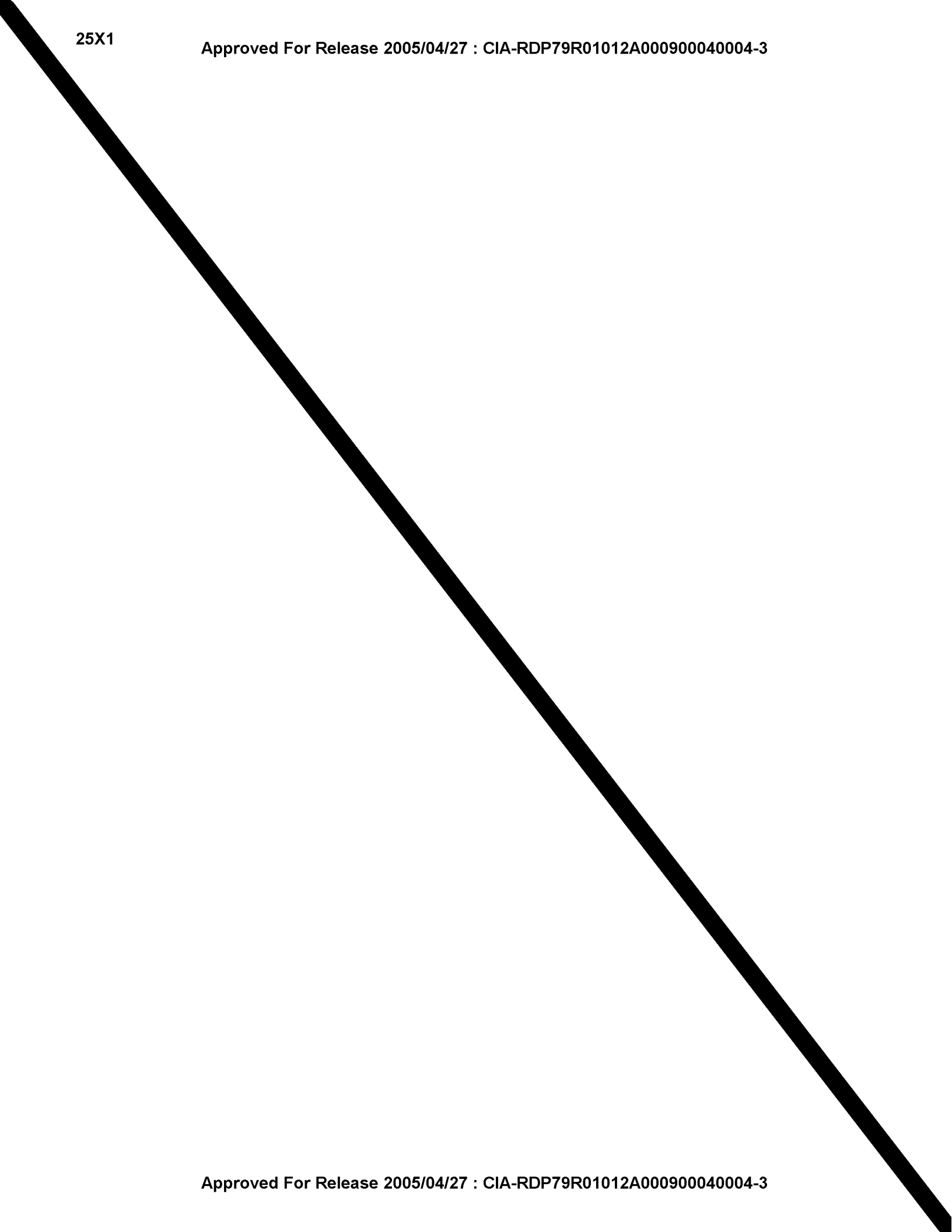

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CIA/RR
Project 6-51

THE EUROPEAN SATELLITE POWER COMPLEX
(Contribution to NIE-33)

PART I
INDIVIDUAL SATELLITE COUNTRIES: ECONOMIC STRENGTHS AND WEAKNESSES

BULGARIA

Summary and Conclusions.

The primarily agricultural economy of Bulgaria is scheduled under the Five Year Plan (1949-53) to be reoriented drastically toward industrialization, with over four-fifths of investment funds allocated to heavy industry. However, it is questionable that industry will be able to attain its planned goal of 55 percent of nonagricultural production in 1953 in view of (1) Bulgaria's great dependence on the Soviet Bloc and on the West for industrial materials and equipment, (2) inadequate electric power, and (3) deficiencies in trained personnel. In any event, the industrial development of the Bulgarian economy will continue to depend heavily on the Soviet Bloc for financial and industrial assistance in 1951 and 1952.

Organization of the Bulgarian economy for purposes of control is patterned closely after that of the Soviet Union. Since January 1950 the government has extended its jurisdiction over the economy, and private enterprise, previously eliminated entirely in large industries, has been progressively reduced in small local industries and trades.

Soviet control over the Bulgarian economy was extended in 1950 by the placing of a large number of Soviet personnel in major economic administrations, thus facilitating the Soviet Union's adaptation of Bulgaria to a specific role within the Bloc which will emphasize exploitation of mineral and agricultural resources.

The increased tempo of economic assimilation and the extension of control are placing severe strains on the economy. Weaknesses are apparent in the shortage of trained reliable personnel and in the disaffection of the population, particularly evident in peasant resistance to collectivization. Development of the Bulgarian economy is retarded by a shortage of skilled labor and by a generally low level of labor productivity. Increased technical training of Bulgarians and the influx of Soviet and Satellite technicians probably contributed to an improvement in labor productivity in 1950. Although the government is able to redirect productive effort to a considerable extent through discriminatory food rationing, a persistent basic weakness is the

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failure of the incentive program to overcome the apathy of the worker as a step toward raising productivity.

In food availability, Bulgaria is second only to Hungary among the Satellites, but production may decline. There is usually a grain surplus, and it is expected that by 31 July 1951 there will be a carry-over of stocks adequate to cover civilian requirements for 10 to 12 weeks. Food consumption remains below prewar levels, however, and it is considerably lower than that of Western Europe. Although 50 percent of the arable land had been consolidated by 1950 into larger units suitable for mechanized farming, and despite the fact that production goals for farm machinery may well be attained, both acreage and production are more apt to decline than increase by 1953. Expansion of agricultural production is limited principally by dislocations produced in the accelerated collectivization and mechanization of an essentially primitive agricultural economy.

The program for the industrialization of Bulgaria emphasizes expanded exploitation of mineral resources for the benefit of the USSR and other countries of the Bloc. By the end of 1950, Bulgarian ores and concentrates contributed 4 percent of the total uranium available to the USSR. Bulgaria has no iron and steel industry, although it has in limited quantities most of the raw materials necessary to support a small metallurgical industry, including a good grade of iron ore and several of the more important ferro-alloying elements. Earlier plans for development of a small steel industry have been suspended, iron ore and ferroalloy minerals being exported to the USSR and the Satellites. Of nonferrous metals, Bulgaria exports some copper and significant amounts of lead and zinc to the Bloc. Coal supplies, though low in quality, are adequate for domestic requirements. There is no crude-oil production in Bulgaria, and the only prospect for a domestic petroleum industry is in the small unexploited reserves of oil shale, which could eventually yield from 30 to 35 million tons of crude oil. Postwar additions to Bulgaria's electric power industry, which was scaled to an agricultural economy, have made only a small contribution to the development of the Bulgarian economy. There are sufficient fuel and water resources to supply an expanding power industry, but Bulgaria is almost entirely dependent upon imports for increasing production capacity and replacing capital equipment. Such imports have been received only in limited quantities. Bulgaria is deficient in basic chemicals, which it imports from the Bloc and the West to meet its limited requirements. Some wood chemicals, as well as glycerine, are exported, largely to countries of the Bloc. No elemental sulphur is produced in Bulgaria, and total planned production of 40,000 tons of pyrites in 1951 is scheduled for shipment to Czechoslovakia. Production of pyrites is expected to be expanded. The very small rubber fabricating industry is supplied by imports of approximately 1,000 metric tons of natural rubber per year. The small engineering industry does not now make a significant contribution to the economy of the Soviet Bloc. The very large expansion of the machine-building industry projected by the Five Year Plan will be difficult of attainment. Meanwhile, almost all machinery and vehicles must be imported. Bulgaria does not have, nor does its predominantly agricultural economy require, extensive transportation facilities and equipment. Its small-scale foreign trade, primarily with the Soviet Bloc, is for the most

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Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

part carried across the Black Sea.

Recently Bulgaria has imported more from the USSR than it has exported to it. In relation to the Satellites the excess of imports, though small, is more appreciable. Exports to the USSR and to the other Satellites consist mainly of lead and zinc concentrates, tobacco, cement, and some foodstuffs. Imports from the Bloc include mainly cotton, metals, oil products, and industrial and agricultural machinery. The Soviet Union obtains some hard currency from the sale of tobacco and rose oil imported from Bulgaria. Receipt of industrial equipment, replacement parts, and medicines through extra-Orbit trade, primarily from Western Europe, contributes to the economic development program. Exports outside the Bloc consist almost entirely of foodstuffs such as wines and fruits. Little change in the composition or volume of Bulgarian trade is expected by 1953, although there may be some increase in the export of metallic ores to the USSR and some reduction in trade with Western Europe. The Bulgarian industrialization program cannot be expected to be sufficiently advanced before 1953 to eliminate continued dependence upon the Soviet Bloc for financial, economic, and technical assistance.

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Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

I. Trends in the Structure of the Economy.

Summary

The structure of the Bulgarian economy, patterned closely after that of the Soviet Union, is organized along functional lines under the direct administration of various Ministries. These Ministries are directed by the Ministerial Council, the chief executive organ of the state, which, with the advice of the State Planning Commission, establishes national economic goals. The major divisions of the economy and the Ministries responsible for these segments may be summarized as follows:

Divisions of the Economy	Ministries Concerned
Industry and Transportation	Ministry of Transportation Ministry of Industry Ministry of Forestry Ministry of Electrification Central Cooperative Union
Farm Workers' Cooperatives, State Farms, Machine Tractor Stations, and Auxiliary Enterprises	Ministry of Agriculture Ministry of Forestry
Local Industry and Communal Enterprises	Ministry of Communal Affairs
State and Cooperative Trade	Ministry of Foreign Trade Ministry of Internal Trade Central Cooperative Union
Number of Workers in State Enterprises, the Salary Fund, and Work Productivity and Cost Reduction	All Ministries and State Enterprises
Capital Investment	All Ministries Concerned
Distribution of Materials	All Ministries
Expansion of Local Industries, Agriculture, Capital Investments, Turnover, Communal Economy, Education, Public Health, and Cultural Activities, under the jurisdiction of the Local Soviets	Ministry of the Communal Economy

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Since January 1950 the government has extended its jurisdiction over the economy. Private enterprise, previously eliminated entirely in large industries, has been progressively reduced in small local industries and trades. The Bulgarian government also has undertaken a militant program of agricultural collectivization since the beginning of 1950. The proportion of individual farms collectivized increased from 14.2 percent in January 1950 to 43.4 percent in September 1950. Cultivated land under control of the state amounted to over 50 percent of all cultivated land at the end of 1950.

The government also has intensified its efforts to strengthen the centralized control over the country's productive resources. A State Coordinating Commission was formed within the Ministerial Council in 1950 to deal with problems of over-all economic direction. Techniques for controlling credits and industrial materials were refined, and special inspection agencies, such as the state and local control commissions, were ordered to increase the scope of their activities. In addition, executives at all levels of the economic hierarchy were replaced in order to assure that the directives of the central government would be reliably executed.

From the point of view of the Soviet Union, Bulgaria occupies a highly strategic position on an exposed flank, and apparently, as a result, the Soviets grasp every opportunity to take over the leadership of Bulgaria and the direction of its economy. A control device used by the USSR was the placing of large numbers of Soviet personnel in the major economic administrations in 1950. Their activities were facilitated by an official order granting Soviet citizens in Bulgaria the same civil rights as Bulgarians. Similarly, Soviet-trained Bulgarians continued to be placed in positions of major economic responsibility.

Coincident with the extension of Soviet control over Bulgarian economic policy in 1950 and 1951, there has been intensified emphasis on agricultural development, as important objectives planned for 1953 in the industrialization program are falling short of attainment.

Assimilation of the Bulgarian economy and the strengthening of Soviet control permit the USSR to achieve a better division of labor for the Orbit as a whole, as well as assuring the continued availability of Bulgarian resources in support of Satellite mobilization. This trend will continue through 1952. On the other hand, the increased tempo of economic assimilation and control places severe strains on large areas of the economy. The shortage of trained, reliable personnel needed to meet the problems of centralized economic administration is a major weakness in control of the economy, but the primary weaknesses are the disaffection of increasing proportions of the population and, especially, the inchoate resistance of the peasants to collectivization. Such disaffection directly affects production levels and will continue to be a source of economic weakness for at least the coming year.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

1. Control of the Economy by the Government (including Direct Control by the USSR).

The Bulgarian Government is committed to the policy of establishing complete and direct control over the utilization of the country's productive resources, both human and material. This objective and the institutions and techniques by which it is pursued are patterned after those of the Soviet Union. The continued dedication of the Bulgarian Communist Party in utilizing its monopoly of power to remake the country in the image of the Soviet Union constitutes the overriding trend of the current period.

In areas which are of direct Soviet interest, such as foreign relations and Soviet-Bulgarian trade, Soviet control approaches the absolute. The USSR also is exercising increasing direction over the economy of Bulgaria, relying on indigenous Communist elements as the primary instrument of control.

a. Economic Planning.

The economic policy of Bulgaria, like that of the USSR, receives its formal expression in periodic economic plans. A plan not only provides policy direction but also determines in large measure the intensity of control required. It is also an index against which the effectiveness of control is measured. 1/

(1) Preparation of Plans.

(a) Determination of Planning Policy.

Determination of policy in the process of plan preparation is the prerogative of the highest organs of the state, and, as in the Soviet Union, responsibility ultimately rests with the Communist Party. The State Planning Commission, a body of technical planning experts, is responsible for the over-all direction in the preparation of the plan. 2/ Following the Soviet model, Bulgarian policy was to put primary emphasis (as shown in the 1949 plan) on large-scale development of the heavy and extractive industries, planned expansion of production in light industries and in agriculture being relatively small. Under this policy the burden of the program for economic development falls on the rural peasantry, as economic support for the expansion of the labor force, increased foreign exchange for the importation of industrial materials and equipment, and the costs of an extensive control apparatus are to be provided for primarily out of agricultural surpluses. Compulsory agricultural deliveries at the level required could only be assured by separating the independent farmers from their holdings and placing them under the direct surveillance of the State. Therefore, collectivization of agriculture has been carried forward aggressively. The industrialization program, however, as initially planned, is not being fully

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

realized. From the point of view of the Soviet Union, modification of the initial program for Bulgarian industrialization could possibly be justified in the interest of a better division of labor within the Orbit as a whole.

(b) Procedural Preparation of Plans.

The State Planning Commission is responsible to the Ministerial Council for the preparation of over-all national plans. The Planning Commission is assisted in its task by planning departments "in every ministry and all enterprises under its jurisdiction, and all community and okoliya people's soviets." 3/ These planning departments are largely independent of the ministries and enterprises to which they are attached, being responsible to the State Planning Commission.

The process of plan preparation is a continuous one. Annual plans are directed toward the goals of the Five Year Plan. Quarterly plans or estimates are made in order to check progress and provide adjustments. Dynamics of the planning process are such that plan preparation and plan execution are closely interrelated. Preparation of the detailed annual plans engages the attention of the entire hierarchy of economic administration from the individual ministry to the individual farm and factory. The preparation process is initiated publicly by the Ministerial Council in a series of resolutions exhorting the chief economic ministries to correct deficiencies and to present their planning estimates to the Planning Commission within a specified time. The Ministries in turn direct their subordinate administrations to submit annual production estimates to the Ministerial planning sections. Basic productive units, the individual farm and factory, each prepare an estimate of their output for the coming year. For example, the administrative council of the cooperative farms is charged with preparing an annual production plan and, concurrently, a supporting labor distribution plan, broken down for each work brigade. 4/ Individual plans of the Ministries, local and regional soviets, and autonomous public organizations are reviewed and analyzed by the State Planning Commission to coordinate planning between different sectors of the economy. A separate planned estimate is made for each of the factors which enter into the total economic process. There is, for example, a controlled materials plan and a controlled personnel plan. Planned estimates also are made of the allocation of the national product. The over-all plan is in reality a series of plans, each dealing with different sectors of the economy and with the distribution of the factors comprising the national product.

The primary concern of the government in the process of plan preparation is to insure that estimated production targets are not placed too low. Estimates must be equated to productive capacity. As a guide to this equation, production norms for every possible type of output are worked out. Each higher unit in the administrative structure is responsible for seeing that plan estimates are in line with objectives at its level. Various

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

control arms of the state, Communist Party representatives, and special inspection services are utilized both to insure realistic planning on the part of productive units and to follow through on plan execution.

Productive facilities which are not under direct government supervision present a special problem for planning. Previously, assessment estimates for the compulsory delivery of agricultural products were made on an over-all regional basis, but the trend has been to refine the assessment on the basis of the estimated yield of the land available to the individual farmer. 5/ Little allowance is made for variable factors in crop yield in determining the amounts to be sold by the farmers to the state purchasing agencies. Planners assume, no doubt rightly, that the independent farmer will take advantage of every possibility to withhold the product of his labor for his own consumption or for sale at noncontrolled prices.

The 1950 plan was announced by the Ministerial Council in a series of 10 resolutions. Each resolution is a separate plan and indicates the lines of administrative control for the execution of the over-all plan. 6/

Announcement of the 1950 Plan by the Bulgarian Ministerial Council

Resolution Number	Subject Matter	Ministries Concerned
1	Fundamental Indexes	
2	Plan for Industry and Transportation	Ministry of Transportation Ministry of Industry Ministry of Forestry Ministry of Electrification Central Cooperative Union
3	Plan for Farm Workers' Cooperatives, State Farms, Machine Tractor Stations, and Auxiliary Enterprises	Ministry of Agriculture Ministry of Forestry
4	Plan for Local Industry and Communal Enterprise	Ministry of Communal Affairs
5	Plan for Education, Science, Public Health and Social Welfare	(As indicated by title)
6	Plan for State and Cooperative Trade	Ministry of Foreign Trade Ministry of Internal Trade Central Cooperative Union

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Resolution Number	Subject Matter	Ministries Concerned
7	Plan for Establishing the Number of Workers in State Enterprises, the Salary Fund, and Work Productivity and Cost Reduction	All Ministries and State Enterprises
8	Plan for Capital Investment	All applicable Ministries
9	Plan for the Distribution of Materials	All Ministries
10	Plan for the Expansion of Local Industries, Agriculture, Capital Investments, Turnover, Communal Economy, Education, Public Health, and Cultural Activities, under the jurisdiction of the Local Soviets	Ministry of the Communal Economy

(2) Plan Control.

Important agencies of control are (a) the material supply agencies, (b) the financial agencies, (c) the State Control Commission, (d) organs of special control, and (e) the Communist Party. All of these agencies are directly concerned with the proper fulfillment of the plan, as follows:

(a) The Ministry of State Reserves and the Ministry of State Supply are charged with holding and distributing the raw materials stocks of the State. Critical materials are supplied to industrial establishments at the rate required for planned production. Factory inventories are kept at a minimum, and careful audits are made of their utilization. 7/

(b) The Ministry of Finance translates the physical components of the plan into financial items. Through the Budget Control Commission and the nationalized banking system, the Ministry is in a position to supervise and control virtually all financial transactions. Government enterprises are required to maintain nearly all of their working capital and other funds as deposits with the banking system. All credits granted by the banking system are simply counterparts of the production plan. By watching the bank balances of the various enterprises, the authorities are in a position to detect deviations from the financial plan and to take appropriate measures. In 1950, financial controls were tightened, the circulation of all funds being placed under control of the Bulgarian National Bank. Credits for capital development are supervised by the Bulgarian Investment Bank. 8/

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

(c) The State Control Commission on the national level is paralleled by local Social Control Commissions. These special inspection agencies check on the fulfillment of all government decisions. In practice they direct their inspection activities into areas where the administration is encountering difficulties. For example, a continuous complaint of the Bulgarian administration and of the consuming public is that production quotas are met by lowering standards of quality.

Special orders for investigation are issued on the basis of complaints received from individual workers. People are encouraged freely to criticize local inefficiencies, and an attempt is made to see that such complaints are submitted directly to the appropriate state organs without observing the usual channels. Failure of the control commissions fully to carry out their functions is apparent in the disparity between planned objectives and actual attainments. 9/

(d) Special control organs or inspection teams are constituted from time to time to deal with specific problems. Late in 1949 a State Inspection was established for assessing the harvest. It was given a broad mandate to check on agricultural controls, the assessment of harvest yields, and other related matters. It is probable that the work of this control group was closely related to the intensive drive for collectivization which took place in 1950. 10/

(e) Communist Party members are being severely criticized for not properly understanding and fulfilling their functions. Large areas of the economy are not considered to be under effective Communist direction.

b. Administrative Control.

Over-all administration of the economy is the responsibility of the State Coordination Commission. This commission, which was formed in February 1950, acts as an economic cabinet for the Ministerial Council. Membership of the State Coordination Commission is as follows 10/:

President of the Ministerial Council
Vice President of the Ministerial Council
Special Minister appointed by the Ministerial Council
An Assistant of the Premier
Representatives of the State Planning Commission
Minister of Finance
Minister of Labor and Social Welfare
Representatives of the Professional Unions

The commission does not include representatives from line economic ministries such as industry or agriculture. It is probable that the need for a

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

coordinating body at the highest level arose as a result of serious problems of disorganization in the administration of the economy.

The intra-Party struggle in Bulgaria following the death of Georgi Dimitrov provided the Soviet Union with an opportunity to take over the leadership of the country. From the Soviet point of view, Bulgaria occupied a highly strategic position on an exposed flank, and its dependability in the Soviet power alignment was considered imperative. Therefore, the Soviet Union tightened its grip on Bulgaria, and all of the Ministries received large numbers of Soviet personnel in 1950. In contrast with previous years, the identity and activity of Soviet officials within the Bulgarian Government were no longer kept secret. 11/ Soviet citizens resident in Bulgaria were granted the same civil rights as Bulgarians, 12/ and Soviet citizens, or Soviet-trained Bulgarians, have been placed in strategic "advisory" positions in every Ministry and with every large economic, political, social, and military organization. 13/

(1) Industry.

The dearth of information on problems of industrial organization in Bulgaria is probably related to the primacy of agriculture in that country and may have some significance in what appears to be a scaling-down of the industrialization program in comparison with agricultural expansion.

(2) Agriculture.

Administrative control over the production of independent farmers is not considered adequate by the Communist regime. State purchasing agencies under the direction of the Ministry of Internal Trade and the Central Cooperative Union continually encounter difficulties in filling their quotas for farmers' forced sale of agricultural produce. The Party lacks the disciplined control needed to compel individual farmers to meet scheduled deliveries.

Following consolidation of Soviet control over the central administration of the Bulgarian regime, an intensive collectivization drive was launched in agriculture in 1950. This was the first sustained large-scale effort to win complete control over the lives, habits, and output of the Bulgarian peasants. The drive was somewhat like the Soviet collectivization effort of an earlier period. Urban Communist units were dispatched to the countryside with the same militant determination, and cooperatives were formed under the dual compulsion of force and glowing promises. A directive of the Ministry of Agriculture fixed the quota of new cooperatives for each district. 14/ In a period of 9 months the amount of cultivated land under control of the cooperatives was raised from approximately 10 to almost 50 percent.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

This overzealous action brought a peasant reaction of resentment, sporadic open resistance, and increasing disorganization of the productive life of the countryside. 15/ Prime Minister Chervenkov, emulating Stalin's "make haste slowly" speech in the 1930's, called a temporary halt to the drive. He stated that more than 50 percent of the farmers had joined the cooperatives but admitted that the Party "for the time being had failed to convince them that the cooperative cause was right." 16/ Every attempt is being made, psychologically and otherwise, to convince farmers of the "rightness" of cooperatives.

A major reorganization of the administrative structure for agriculture was undertaken simultaneously in an effort to consolidate control over the farm labor cooperatives. A new Ministry of Supplies and Food Production also was created. This ministry is primarily concerned with reviewing standards of production and enforcing deliveries to the State. It is significant in this regard that the Minister of Interior, Rusi Hristosov, was relieved of his duties in this capacity and appointed Minister of Supplies and Food Production. Hristosov is a rough and ready Communist willing to carry out any instructions to the letter. 17/

(3) Economic Services (Transportation, Communications, etc.).

Bulgarian economic services are regarded by the Communist regime as critical areas of the economy to control. As a consequence, economic services without exception have been nationalized and are closely administered by the state.

2. Factors Relating to the Effectiveness of Control.

a. Proportion of the Economy under Direct Government Control.

(1) Extent of Nationalization of Industry.

Under the 1947 Nationalization Law, industrial enterprises other than those engaged in lumber and food processing, or nearly half of the nationalized plants and factories, were put under the jurisdiction of the Ministry of Industry. Lumber and food-processing firms passed under the jurisdiction of the Central Cooperative Union and the Ministry of Forests. In addition, more than 3,000 enterprises of local significance were turned over to agencies of local governments. These enterprises included dairies, housing and hotel industries, slaughter houses, and the like. In 1949, it was estimated that 93 percent of industrial production was nationalized. 18/ Deputy Prime Minister Poptomov reported that "The private sector has been entirely eliminated in large-scale industry, whereas in the small local industries it has shrunk ... to 0.2 percent in the present year (1950)." He also stated that the total share of private business in the industrial sector amounted to 0.1 percent. 19/

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

(2) Extent of Collectivization of Agriculture.

The rapid growth of collectivization is indicated by official figures in the table below. By the end of February 1951 the number of individual farm collectives constituted over 50 percent of the total number of farms in the country. The pace of collectivization was slowed down in 1951 to permit the regime to consolidate its control, and it is probable that the collectivization program in the future will move at a slower tempo.

Collectivization in Bulgaria 20/

Date	No. of Cooperatives	No. of Individual Farmsteads	Percent of Total Farmsteads	Hectares Under Cooperatives a/	Percent of Cultivated Area
1 Jan 48	549	44,100	4.4	180,400	3.8
1 Jan 49	1,100	78,900	7.2	292,380	5.9
1 Jan 50	1,000	156,000	14.2	550,800	11.2
1 Sep 50	2,053	362,000	33.0	1,433,300	29.4
1 Oct 50	2,479	474,800	43.4	1,883,080	39.2

a/ One hectare equals 2.471 acres.

b. Nongovernmental Organizations as Instruments of Economic Control.

During the industrial nationalization drives, individual artisans were forced to join cooperatives. By 1949, with 44,000 employees enrolled in 1,000 artisan cooperatives, the state was in a position to direct the output of individual craftsmen. The government is taking further measures to strengthen its control over artisans. Production combines have been established for all artisan enterprises, bringing together artisans doing the same type of work in a particular region in order to exercise more effective supervision over work standards and output. The artisan combines in Sofia are broken down into four groups:

(1) Shoemakers, shoe repairers, glove manufacturers, leather workers;
(2) Tailors;
(3) Home services, including locksmiths, electricians, painters, plumbers, and tinkers;
(4) Miscellaneous, including watchmakers, goldsmiths, shoe polishers, chimney sweeps, photographers, etc.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

II. Capacity of Human Resources for Economic Development.

Summary

The agricultural labor force in Bulgaria has been estimated at 2,700,000 in 1949 and 2,650,000 in 1950, indicating a drop of about 1.9 percent. If emigration to Turkey continues, the supply of agricultural labor will probably decrease at approximately the same rate until 1953, but this is not expected to have a significant effect on agricultural production. On the other hand, the nonagricultural labor force is estimated to have increased from 809,000 in 1948 to 865,000 in 1949, or about 7 percent, principally in the fields of industry, mining, and construction. In 1950, such labor totaled 891,000, an increase of about 3 percent. Unless the planned industrial goal is changed, the annual rate of increase during the next 3 years will be only slightly above that of 1950.

The technical training of native personnel is increasing with the assistance of Soviet and Satellite technicians, but although productivity has apparently increased in the past year, it is still believed to be relatively low.

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1. Size and Distribution of the Labor Force.

The estimated size of the Bulgarian labor force, by category, is tabulated below.

Civilian Labor Force
(Estimated as of 1 January)
Thousands

Category	1949	1950	1951	1952	1953
Agriculture 1/	2,700	2,650	2,600	2,550	2,500
Industry, Mining, and Construction	341 2/	383 3/	407 4/	434 5/	460 5/
Transportation and Communications	84 6/	98 7/	100 8/	102 9/	104 9/
Commerce, Public Employ, etc. 10/	384	384	384	384	384
Total	3,509	3,515	3,491	3,470	3,448

The decrease in total employment is undoubtedly caused by increases in military, paramilitary, and forced labor groups. With the data at hand it is

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

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difficult to determine the exact size of the forced labor group. However, it is estimated at 75,000. 11/

The estimate of the agricultural labor force is subject to a margin of error of 10 percent, which will increase with the passage of time unless additional intelligence collection produces more accurate bases for estimates. The figures for total nonagricultural civilian employment and for industry (including construction) and transport are believed to be correct, assuming the accuracy of published data. No data are available for commerce and public employment, but as a residual figure within the total nonagricultural labor force it appears to be held constant.

The increase in the nonagricultural labor force was smaller in 1950 than in 1949 because the unemployed group was being absorbed into the economy, and the annual increment in the next 3 years is expected to be only slightly above that of 1950. The Five Year Plan shows the government's interest in increasing both industrial employment and employment in construction. The growth of the construction labor force has been sizable, and the planned percentage increase in construction labor for 1951 is fixed at a higher goal than the total increase in the nonagricultural labor force. The total number of persons engaged in construction is difficult to gauge, however, because of the seasonal fluctuation in this trade and the use of labor troops (Trudovaks), short-term "volunteer" labor brigades, and forced labor in addition to free labor. 12/

2. Level of Technical Training, Skill, and Efficiency.

Political appointees replaced many of the technicians and managers who were in Bulgaria at the end of the war. In 1948 the Bulgarian press reported that there were 3,000 engineers and architects and 16,000 technicians in the country. 13/ The native technical group has been supplemented with Soviet and Satellite personnel. The Soviets, in particular, are known to be numerous, but data are insufficient to make an accurate estimate.

Training programs for apprentices, as well as for engineers and technicians, have been expanded. In 1949 there were 61,000 students in intermediate vocational schools and 30,800 in trade schools 14/, and 6,543 engineers and technicians were reported to have been graduated. 15/ In 1951 there are to be 66,000 students in professional training schools. 16/ Trainees are also sent to the USSR and to other Satellites. 17/

Little specific recent data relative to efficiency and productivity are available, the best clues coming from published and broadcast complaints concerning defective production and inefficiency and from the enactment of remedial measures. Percentage increases in productivity are of little value in the absence of an adequate base, but the increase of 13 percent reported at the end of the first quarter of 1951 over the preceding year is a sizable gain in view of the failure to meet productivity goals in 1950. 18/

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Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

3. Expansibility and Adaptability of the Labor Force.

There are some indications that overtime work is practiced, but the extent is not known. Reduction of absenteeism would add perhaps 10 percent to the man-hour input. 19/ The expansion of the nonagricultural labor force planned for 1952 is smaller than that of the previous year. The annual increase in population of working age, however, would permit some expansion in the labor force even with larger military forces, as would the more widespread employment of women.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

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Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Next 4 Page(s) In Document Exempt

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

IV. Foreign Trade and Finance.

Summary

Bulgaria's postwar commerce is estimated as being 85 percent with the Soviet Bloc, initially almost entirely with the USSR and more recently with other Eastern European countries of the Bloc as well. Bulgarian exports to the USSR consist primarily of lead and zinc concentrates, tobacco, cement, and some foodstuffs. In exchange for these the Soviet Union sends Bulgaria cotton, metals, oil products, and industrial and agricultural machinery. The USSR enjoys special benefits from this trade by importing Bulgarian tobacco and rose oil, which is then sold on world markets for hard currency.

Bulgarian trade with the other Eastern European Satellites shows a somewhat larger excess of imports into Bulgaria than does its trade with the USSR. The general commodity composition resembles that of the trade with the Soviet Union.

Bulgaria's trade with non-Bloc countries is primarily with Western Europe and is of significant benefit to Bulgaria's economic program. Exports consist almost entirely of foodstuffs, such as wines and fruits. Imports, on the other hand, are composed mainly of industrial equipment and parts and medicines.

It is probable that there will be little change in the pattern of Bulgaria's foreign trade between now and the end of 1952. Some increase in ore exports to the USSR, and possibly a slight reduction of trade with Western Europe can be expected. The Bulgarian industrialization program makes it probable that Bulgaria's imports from the Bloc will exceed its exports to that area through 1952. Benefits of this industrialization program will not become evident before 1953. The total amounts involved, however, are so small as to have little effect on the economic potential for war of the Soviet Union.

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1. Introductory.

The primitive agricultural nature of the Bulgarian economy is reflected in the composition and volume of its foreign trade. Practically all industrial goods and means of transportation must be imported and paid for by sales of agricultural products.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Bulgaria obtains from Western Europe materials which are not readily available from within the Bloc, including precision instruments, abrasives, railroad equipment, textile machinery, automotive and aircraft equipment, ball bearings, and bolting silk. In certain instances the quantities sought have indicated that some of these imports may be destined for third parties. Imports from the West are beginning to be curtailed by export controls. The denial of a German license for airbrake spares, for example, will considerably handicap Bulgaria's strained railway system.

2. Trade with Non-Soviet Bloc Countries.

a. General.

Switzerland, Italy, Austria, and West Germany have accounted for the bulk of Bulgaria's trade with the West. This trade has been complicated by Bulgaria's inability to supply commodities desired by the West, as well as by trade practices such as the refusal to accept agreed-upon secondary items under a trade pact with Italy and the undercutting of legitimate business in Austria in dealing through USIA (the Soviet-controlled firms in Austria). Failure to reach settlements regarding compensation for nationalized Western properties further deters expansion of trade.

b. Exports to Non-Soviet Bloc Countries.

The largest Bulgarian exports to non-Soviet areas are foodstuffs. During the first half of 1950, for instance, Bulgarian exports to West Germany consisted of eggs, fruits, tobacco, wine, and crude chemicals. The extent of this trade is small, totalling only $344,000 for the half-year. Exports to Italy for the same period, composed mostly of grain, with some meats and eggs, were $354,000. 1/ Other food exports included such items as tomato paste, rose oil, and red pepper. 2/

c. Imports from Non-Soviet Bloc Countries.

Imports have been characteristically industrial. For example, machinery, electrical equipment, and nonprecious metals and manufactures comprised the great bulk of Bulgarian imports from Sweden in 1949 and during the first 9 months of 1950. There was, however, a noticeable shift in emphasis during this period from imports of technical equipment to imports of metals and metal products. 3/ The regular trade agreement with Belgium provides for Bulgarian imports of electrical equipment, machinery, and transport equipment. 4/ In addition to this, Bulgaria is reported to have completed a recent agreement for 360,000 Belgian francs worth of air compressor hammers to be paid for with Bulgarian wines. 5/ Austria is Bulgaria's largest trading partner outside the Soviet Bloc and provides bearings, steel products, electrical apparatus, machine tools and parts, transportation equipment and parts, and chemicals. 6/

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Trade with the other Western European countries follows the same pattern. Other countries outside the Soviet Bloc, such as Egypt and Argentina, supply raw materials (cotton, wool, hides, and quebracho, etc. 7/) which are utilized by Bulgarian fabricating industries.

d. Trends.

It is probable that the general composition of Bulgarian trade with non-Soviet Bloc countries will remain about the same in 1951 and 1952 as it was in 1950. Imports of equipment from Soviet Bloc countries, however, will gradually reduce Bulgarian dependence upon Western European countries for replacements and spare parts. This shift to Soviet Bloc sources, combined with Western export controls, may reduce the volume of Bulgarian trade with the West.

3. Trade with Soviet Bloc Countries.

Trade with other countries of the Soviet Bloc composed about 80 to 85 percent of Bulgaria's total trade in 1949. Of this amount, the Soviet Union accounted for about one-third of the imports and one-half of the exports, and Poland, Czechoslovakia, and the USIA together provided about one-third of the imports. Czechoslovakia was the most important recipient of Bulgarian exports after the USSR.

a. Exports to Soviet Bloc Countries.

The USSR, and, to a much lesser extent, Czechoslovakia, Poland, and Hungary, import all of Bulgarian ore exports. The most important of these are lead and zinc concentrates and some copper. In addition, the USSR receives the bulk of Bulgarian tobacco and rose oil and sells most of these items on world markets for the Soviet account. This adds to the Soviet Union's supply of hard currencies. In addition, the USSR receives from Bulgaria foodstuffs, wines, and other agricultural products.

Exports to Czechoslovakia consist primarily of tobacco, hides, wheat, other agricultural products, and some nonferrous ores and concentrates. These exports represented about 10 percent (about $10 million) of Bulgarian exports in 1949.

Bulgarian foodstuffs have been exchanged in large quantities for industrial goods from USIA. These exports of foodstuffs are of importance to the Soviet Union because of the Austrian black-market operations of USIA. Imports from Bulgaria are usually brought in without passing through customs, thus giving the USIA outlets a big competitive advantage in the Austrian markets. Bulgaria exports goods of similar categories to the other Satellites but in lesser quantities. 8/

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

b. Imports from Soviet Bloc Countries.

Bulgarian industrialization, such as it is, is being developed primarily with imports of materials, supplies, and equipment from Soviet Bloc countries. The Bulgarian economy will thus become less and less dependent upon imports from other countries for replacements and spare parts. Furthermore, since the Bloc absorbs the overwhelming proportion of its exports, Bulgaria would be unable to pay for any large quantity of imports from the West.

Imports from the Soviet Union, totalling about $45 million to $49 million in 1949, included for the most part iron and steel products, nonferrous products, machinery, petroleum products, cotton, wool, and chemicals. 9/ Imports from Poland are second only to those from the Soviet Union. They totalled $24 million in 1949 and were composed primarily of road-building and other heavy machinery and chemicals. 9/ Bulgaria receives from Czechoslovakia machinery, electrical apparatus, transportation equipment, construction equipment, and industrial machinery. The total of this trade was about $10 million for 1949. 9/ USIA supplies large amounts of trucks, some electromotors, and other industrial products to Bulgaria. 10/ Electrical apparatus and instruments are the main imports from Hungary. Petroleum products come from Rumania. Trade with Albania is unimportant.

c. Probable Trends.

The Bulgarian Five Year Plan as originally conceived projected a large-scale and intensive development of foreign trade. Support of the Plan by the USSR and the rest of the Soviet Bloc called for a considerable effort on their part. There have recently been indications that, in Bulgarian development, the emphasis on industrialization may be reduced and promotion of agriculture increased. Such a shift in emphasis would, of course, in the long run reduce Bulgarian requirements for capital goods and industrial materials below the levels at which they would otherwise have been. However, shipments of construction equipment, agricultural equipment, and industrial equipment continue. The probability is that sufficient industrialization will be undertaken to develop further the nonferrous metals industry, to increase somewhat the electric power capacity, to complete the nitrogenous fertilizer plant, 11/ and generally to provide the maintenance and repair facilities for increased mechanization of agriculture and of related elements of the economy, such as transportation.

Trade with the Orbit is likely to continue along present lines for the next year and a half, with possibly some increases in volume. Trade with the Soviet Union in 1950 reportedly increased 20 percent over 1949. 12/ This trend will probably continue, although it is doubtful whether Bulgaria can greatly expand the actual volume of its total exports before 1953. In the meantime, the Soviet Union and particularly the other countries of the

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Soviet Bloc will continue to provide Bulgaria with the industrial products needed to sustain the economy and increase agricultural and metals production.

4. Percentage of Trade with Non-Soviet Bloc Areas.

Bulgaria's trade with non-Soviet Bloc areas is about 15 to 20 percent of its total trade. The bulk of its non-Orbit trade is with Western Europe and will undoubtedly decrease as Bulgaria's exports become more absorbed within the Bloc and as Western controls on trade with the Bloc increase.

5. Uncompensated Deliveries to the USSR.

At the end of the war the Soviet Union traded German assets in Bulgaria for Bulgarian assets in Germany, making a net profit of about $100 million on the transaction. 13/ Other war claims and assets were settled to the benefit of the Soviet Union between 1945 and 1948, including one goods credit of $19 million. 13/ There are at present no Soviet or joint-stock companies in Bulgaria, nor does Bulgaria pay any reparations to the USSR. 13/ Financial manipulations, however, provide a method of Soviet exploitation which is used in trade with Bulgaria. The official rate of the leva has been progressively reduced from 15 to the ruble to 100 to the ruble. In addition, the disproportionate increases in Soviet prices have lessened the return to Bulgaria for its exports. 13/

6. Trends.

The primary trends reflected by the Bulgarian Five Year Plan (1948-53) show a sharp increase in the exports of animal products and processed goods and a decrease in the exports of industrial crops, as well as a sharp increase in the imports of machinery, equipment, and metal products and a decrease in the imports of raw materials. The pattern of trade until 1953 probably will continue to reflect these trends. (See the following table on percentage allocations in Bulgarian foreign trade.)

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

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Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Bulgarian Foreign Trade
1948-49

Millions of US Dollars

Country	Imports 1948	Imports 1949	Exports 1948	Exports 1949
Eastern Europe				
Orbit				
USSR	59.2	47.5	42.5	45.0
Czechoslovakia	15.5	10.4	11.9	10.9
Hungary	1.5	8.5	1.6	8.5
Poland	6.0	24.0	6.0	2.4
Rumania	2.0	4.0	2.0	4.0
USIA (Soviet Zone)	6.0	10.0	6.0	1.0
Subtotal	90.2	104.4	70.0	71.8
Non-Orbit				
Finland	0.5	0.4	0.1	0.3
Yugoslavia	6.8	-	16.6	-
Subtotal	7.3	0.4	16.7	0.3
Western Europe				
Austria	2.6	5.9	3.4	4.5
Belgium	0.8	2.4	0.2	0.3
Denmark	0.6	0.3	0.4	0.1
France	1.1	0.5	1.3	0.4
Germany	0.1	0.4	0.2	3.0
Italy	2.7	2.5	2.4	3.2
Netherlands	0.3	0.5	0.3	0.4
Norway	0.1	0.1	0.2	0.1
Sweden	0.6	0.9	1.5	0.9
Switzerland	1.0	2.0	1.2	0.4
UK	1.6	2.8	0.6	0.6
Subtotal	11.5	18.3	11.7	13.9
Others				
Egypt	0.9	0.4	1.9	1.2
Greece	-	-	-	-
Turkey	0.8	0.4	1.3	0.4
US	2.1	1.4	2.6	1.9
Other	-	1.3	-	2.6
Subtotal	3.8	3.5	5.8	6.1
Total	112.8	126.5	105.2	93.5

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3
SECRET

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Five Year Plan Percentage Allocations in Bulgarian Foreign Trade

Exports	1948	1953
Industrial Crops	75.3	34.6
Grains and Legumes	3.6	9.8
Fruits and Vegetables		
Fresh	2.8	8.9
Canned	3.2	11.5
Wine and Spirit Products	1.4	9.0
Animal Products	4.7	17.0
Minerals	6.2	3.2
Products of Wood-processing Industry	1.6	2.7
Other Goods	1.2	3.3
	100.0	100.0
Imports		
Machinery and Equipment	24.9	48.9
Metals and Semiprocessed Metal Goods	25.5	23.1
Textile Raw Materials	12.4	6.7
Hides and Leather Goods	0.3	1.0
Rubber and Rubber Products	1.9	1.3
Petroleum Products	5.3	5.0
Chemicals	7.5	9.7
Medicinal Articles	2.3	1.7
Cellulose and Paper	6.4	0.6
Food Products	10.7	0.4
Other Goods	2.8	1.6
	100.0	100.0

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

V. Agriculture.

Summary

At the close of World War II, Bulgaria was a country with a primitive, self-sufficient type of agriculture characterized by small peasant holdings divided into widely scattered strips, by primitive tools, and by customs and habits handed down from generation to generation. Since then, the government has inaugurated its collectivization program, and by the end of 1950 approximately 50 percent of all arable land was in collective, or state, farms. Peasant resistance to the collectivization program has retarded production and may tend to decrease it further.

Because grain is the most important food crop, a separate analysis is presented. Exports of other agricultural products form an important part of Bulgarian foreign trade, and tobacco is the most important single item exported.

The 1950 grain production is estimated at 3,247,000 metric tons, or 9 percent below the prewar average. In the postwar period, population increased 10 percent. Therefore, the per capita availability of grain in 1950 was appreciably below the prewar level. Grain stocks as of 31 July 1951 (the end of the 1950-51 consumption year) are expected to be 385,000 metric tons, or almost a 3-month supply. The size of these stocks is not large enough to indicate war intentions.

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1. Production.

a. Bulgarian agriculture at the close of World War II was of the traditional, primitive, small-peasant type, based on customs and habits handed down from father to son for generations. Since the war the government has made attempts to consolidate the small individual holdings into larger units suitable for mechanized farming. By the end of 1950 about 50 percent of arable land had thus been consolidated. Mechanization, however, does not necessarily increase production per hectare, although it does increase production per man and thus releases man power for other activities. In some districts the peasants are resisting collectivization, and there is the possibility that, because of sabotage, production may decrease throughout the current Plan period.

The important crops are grain* and tobacco. Tobacco is the most important single commodity in value exported by Bulgaria, whereas grain is the chief item in the nutrition of the population. In addition, small quantities of sugar, beans, tomato paste, and other agricultural products are exported, the combined total forming an important part of Bulgarian exports. Because of its importance as the basic food and feed item, grain is the only agricultural commodity analyzed in detail.

* Grain unless otherwise specified includes corn (maize), wheat, rye, oats, barley, rice, and such minor grains as spelt, meslin, and buckwheat.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

SECRET
Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

b. About 50 percent of all grain is produced in the Danubian plain north of the Balkan mountains. Some 30 percent is grown south of the mountains in the Maritsa Valley. The remaining 20 percent is scattered over plateaus and upland valleys. Before World War II, Bulgaria seeded to grain an average of 2,862,000 hectares, which produced 3,578,000 metric tons, of which 269,000 metric tons, or 7.6 percent, were exported. During the war, acreage dropped slightly to 2,714,000 hectares, but since the war this has increased, reaching 3,039,000 hectares in 1950. Grain production in 1950 is estimated at 3,247,000 metric tons, or 9 percent below the prewar average.

Latest Annual Estimates of Grain Production
1948-50

Year	Estimate	Thousand Metric Tons Probable Range of Variation of Estimate
1948	3,575	3,387 to 3,763
1949	3,411	3,231 to 3,590
1950	3,247	3,076 to 3,418

2. Probable Production.

Grain acreage in Bulgaria is, within a narrow margin, static, and it is unlikely that there will be a significant increase in the sown area in 1951. Because of unrest among the peasants, there will probably be no significant increase in 1952, and there may possibly be a slight decrease.

Estimated Grain Production
1951-52

Year	Estimate	Thousand Metric Tons Probable Range of Variation of Estimate
1951	3,634	3,443 to 3,825
1952	3,658	3,466 to 3,851

The 1949 and 1950 crops were both below average because of unfavorable weather conditions and peasant resistance, the principal factors which will also determine production in 1951 and 1952. Estimated production for 1951 and 1952, therefore, assuming average weather conditions, should be equal to or slightly above the 1948 level.

SECRET
Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

SECRET
Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

3. Domestic Requirements.

Domestic civilian requirements of grain in 1950 are estimated at 3,328,000 metric tons but may range from 3,269,000 to 3,388,000 metric tons. Estimates of total requirements are based largely on annual increases in population. The drop in requirements between the 1949-50 and the 1950-51 consumption years is, however, accounted for by the slight crop in 1950, since less grain was used for livestock feed. The reduction in feed for livestock was not sufficient to decrease livestock numbers materially. This is reflected in the estimated grain requirements for 1951-52 consumption year, which are based on normal practices.

Estimated Domestic Requirements of Grain
1948-53

Thousand Metric Tons

Year	Estimate	Probable Range of Variation of Estimate
1948-49	3,407	3,341 to 3,472
1949-50	3,370	3,308 to 3,431
1950-51	3,328	3,269 to 3,388
1951-52	3,497	3,430 to 3,565
1952-53	3,528	3,461 to 3,596

4. Stockpiles.

Because of the poor harvest in 1950 and the discontinuance of imports, the Bulgarians may have been forced to draw on their total stocks. The decrease probably amounted to about 81,000 metric tons.

Stockpiles of Grain

Thousand Metric Tons

As of	Estimate	Probable Range of Variation of Estimate
31 July 1950	466 (3 months' supply)	344 to 466
31 July 1951	385a/ (2.7 months' supply)	151 to 669

a/ Statistical cumulation.

SECRET
Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

SECRET
Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

5. Surplus or Deficit.

The probable surplus or deficit as of 31 July 1951 and 1952 is given below without taking into account carry-over stocks or net trade. If carry-over stocks are considered and the 1951 harvest estimate is correct, then there should be a total surplus of 515,000 metric tons on 31 July 1952. Stocks or a surplus of this size, if not exported, might indicate that the Bulgarians were expecting an emergency.

Estimated Surplus or Deficit of Grain (Domestic Production)

Thousand Metric Tons

Year Ending	Estimate	Probable Range of Variation of Estimate
31 July 1951	(-) 81	(-) 193 to (+) 30
31 July 1952	(+)130	(+) 5 to (+) 255

6. Collectivization.

Collectivization of agriculture in Bulgaria began in 1944 with the formation of 147 so-called Labor Cooperative Farms. Consolidation of small peasant holdings into large fields seeded to a single crop was facilitated by the long-established custom common to many villages in Bulgaria of village crop rotation. Although each peasant seeded his own individual plots himself, only wheat was seeded in one part of the village, corn in another, the barley in still another, etc. Bulgarian peasants were accustomed to a system of large areas, comprising hundreds of individually owned plots, seeded to a single crop. It was, therefore, not too difficult for the peasants to cooperate in the cultivation of the Labor Cooperative Farms as an outgrowth of their village crop rotation system. Pressure brought by the government on individual peasants hastened the process of collectivization, so that by December 1950 fully 50 percent of the tillable land of Bulgaria was cultivated by 2,568 Labor Cooperative Farms.

7. Trends — Including Indications of Mobilization for War.

There is no indication that there will be an increase in the area seeded to cereals in the near future. Because of the relatively static position of the Bulgarian grain acreage, it is unlikely that intentions to mobilize for war would be reflected in a change in the grain acreage. Such quantities as might be required to conduct a campaign against Yugoslavia, for example, could readily be shipped from Odessa.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

VI. Industrial Capacity and Levels of Production.

A. Ferrous Metals.

Summary

Bulgaria has no iron and steel industry, its small fabricating plants being entirely dependent for semifinished iron and steel upon imports from the USSR, Austria, Hungary, Czechoslovakia, and Poland. Bulgaria has, however, a good grade of iron ore and several of the more important ferroalloying metals, which are now shipped to the other Soviet Bloc countries. High-quality coal suitable for making metallurgical coke is not mined in Bulgaria, and the small amount of metallurgical coke used in industry is imported from Czechoslovakia and Poland. Deposits of iron ore, chrome ore, manganese, nickel, titanium, and tungsten exist, but none has been thoroughly developed. Bulgaria needs equipment, mining experts, capital, and improved transportation facilities in order to expand production of ferrous metals. Plans for a small domestic iron and steel industry appear to have been abandoned.

---

1. Production.

Bulgaria has most of the raw materials needed to support a small steel industry — a good grade of iron ore and several of the more important ferroalloying metals — but all production is now shipped to the other Soviet Bloc countries.

Production of Ferrous Metals
1948-50

Metric Tons

Year	Iron Ore (60% Fe)	Chrome Ore	Manganese Ore
1948	38,000	33,000	3,000
1949	38,000	34,000	3,000
1950	40,000	34,000	4,000

2. Estimated Possible Production and Capacity.

Deposits of iron ore, chrome ore, manganese, nickel, titanium, and tungsten exist in Bulgaria, but none has been thoroughly developed, and reserves of these metals are not large. Production in 1952 is estimated as follows: iron ore, 40,000 metric tons; chrome ore, 35,000; and manganese ore, 5,000. Because there is no iron and steel industry, there are no domestic requirements for ferrous

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

metals and no stockpiles. All iron ore produced is exported to Hungary, Poland Czechoslovakia, and Rumania, and all chrome ore is sent to East Germany. It is believed that all manganese ore is shipped to the USSR. The Five Year Plan calls for the production of 20,000 metric tons of pig iron and 10,000 metric tons of raw steel by 1955. In order to accomplish the production goals for 1955 of the Five Year Plan, a coke plant, two blast furnaces, and a small integrated steel mill were to have been built, but there is no evidence that such construction is under way.

3. Internal Limitations.

Bulgaria needs equipment, mining experts, capital, and improved transportation facilities in order to expand production of iron ore, chrome ore, and manganese and to exploit resources of other ferroalloying metals.

4. Trends -- Including Indications of Mobilization for War.

Since Bulgarian plans for a small iron and steel industry appear to have been abandoned, it is not anticipated that great strides will be made in the mining of ferrous metals.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

B. Nonferrous Metals.

Summary

The production of nonferrous metals in Bulgaria except for copper and lead and zinc concentrates is unimportant, and any requirements would have to be supplied through imports. Nor is Bulgaria a particularly important producer of copper, estimated production being from 1,250 to 2,000 metric tons of contained copper in copper matte, which is shipped to the USSR for further processing. Recent information on the capacity of the smelter at Elisenja is lacking, but production of from 6,000 to 7,000 metric tons of matte a year may be possible by the end of 1952. Production of electrolytic copper will begin as soon as the Pazdra-Kurilo high-tension power line is completed. Ore reserves are not extensive. Any increased production of copper will probably be shipped to the USSR, with limited quantities going to Czechoslovakia.

Lead and zinc concentrates are exported. The metal content of lead concentrates produced in 1949 was 11,250 metric tons, which in terms of recoverable metal after smelting and refining is estimated at 10,000 metric tons. In 1949 the zinc concentrates mined contained 4,640 metric tons of zinc, which in terms of recoverable metal is estimated at 3,700 tons of zinc. The production of recoverable metal in 1952 is estimated at 13,100 metric tons of lead and about 5,000 tons of zinc. According to the Five Year Plan, the capacity of existing concentrating plants is to be enlarged, and lead and zinc smelters are to be constructed. Details are lacking, however, on construction deadlines. Present domestic requirements are estimated at 1,000 metric tons of lead and 1,800 to 2,000 tons of zinc per year.

The USSR has sent a number of technical personnel to Bulgaria to aid in the development and exploitation of mineral deposits and will supply equipment for new metallurgical plants in Bulgaria.

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1. Copper.

a. Production.

Bulgaria is not a particularly important producer of copper, and the entire output is exported to the USSR. A small copper smelter 1/ located at Elisenja near Sofia produces a copper matte containing approximately 69 percent copper. Production in 1950 is estimated to be from 1,250 to 2,000 metric tons of contained copper in the copper matte.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

b. Estimated Possible Production and Capacity.

No recent information on the capacity of the Elisenja smelter is available, but previous estimates indicate a production of about 20 tons of matte a day. This would amount to between 6,000 and 7,000 metric tons of matte a year, allowing for interruptions and shutdowns for repairs.

The smelter and concentrating plants at Elisenja, which were built by a Franco-Belgian company and nationalized about 8 years ago, process ores from the Burgas area on the Black Sea coast and from the Plakalnitza mine. Information indicates the possible production of electrolytic copper as soon as a high-tension power line is completed from Mesdra to Kurilo. 2/

c. Domestic Requirements.

Information is lacking on present requirements. However, according to the US Bureau of Mines 3/, Bulgaria imported an average of about 1,600 metric tons of copper a year for the period 1935-39. All copper minerals and matte are shipped out of Bulgaria for further processing and refining and it is believed that very little, if any, copper is stockpiled. Therefore, the country depends upon outside sources, probably the USSR, for its domestic requirements.

d. Internal Limitations.

(1) Availability of Raw Materials.

The reserves of copper ore in Bulgaria in 1935 were estimated as follows 4/:

	Metric Tons	Copper Percent
Proved Ore	190,000	4.5
Probable Ore	500,000	4.5
	150,000	2 to 3

These reserves are not very extensive, but they could be exploited by the USSR for about 8 years at the rate of 4,000 tons of copper a year.

(2) Shortage of Raw Materials, Technical Personnel, and Equipment.

The USSR has taken over the Bulgarian mining industry and has sent technical personnel in considerable numbers to Bulgaria to exploit the mines. According to the Five Year Plan, copper production in 1953 should

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

be 317 percent over 1948 5/, which would mean the mining and processing of about 100,000 metric tons of ore a year. The Plan also includes the installation of a converter in the Elisenja smelter, which will make possible the production of blister copper for the proposed electrolytic plant. The equipment will probably be imported from the USSR 6/ or other Satellite countries such as East Germany or possibly Czechoslovakia.

e. Trends.

All information points to the increasing production and processing of Bulgarian copper, which will probably be shipped to the USSR and in limited quantities to Czechoslovakia.

2. Lead and Zinc.

a. Production.

The latest information on production of lead and zinc concentrates is for 1949. 7/ It is reported that all of these concentrates were shipped to the USSR.

Lead and Zinc Production
1949

	Production	Metal Content	
	Metric Tons		Metal Percent
Lead Concentrates	15,000	11,250	75 a/
Zinc Concentrates	8,000	4,640	58

a/ Other sources indicate 73% lead. 8/

b. Estimated Possible Production and Capacity.

According to the Five Year Plan, the production of lead and zinc ores is to be increased 68 percent over 1948 levels. To this end, the capacity of existing concentrating plants is to be enlarged, and it is planned to construct lead and zinc smelters. 9/ Thus far all concentrates have been shipped out of the country for processing.

Based on the scanty information available on production in 1949 and using the increase proposed in the Five Year Plan, the estimated production of lead and zinc concentrates in 1951 and 1952 would be approximately as follows:

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Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Estimated Lead and Zinc Production
1951-52

Metric Tons

	1951	1952
Lead Concentrates	18,600	20,200
Metal Content at 73% Pb.	13,600	14,700
Recoverable Lead at 89%	12,100	13,100
Zinc Concentrates	9,900	10,900
Metal Content	5,750	6,320
Recoverable Zinc at 80%	4,600	5,056

Planned production of lead metal in 1953 is 13,300 metric tons. This requires the construction of one or more lead smelters. No figures were given for zinc metal production planned for 1953. There is, therefore, no basis for comparison.

c. Domestic Requirements.

Information on domestic requirements is lacking. However, the Bureau of Mines 10/ reports that Bulgarian imports in the period 1935-39 averaged 739 tons of lead and 1,216 tons of zinc annually. Present requirements have probably increased to some extent, possibly up to 1,000 tons of lead and 1,800 to 2,000 tons of zinc, an increase of approximately 50 percent. The requirements are for semifabricated material such as sheets, lead and zinc tubes, and lead shot. Information on quantities is lacking.

The metal content of the lead and zinc concentrates produced in 1949 indicates a surplus over domestic needs. This will prevail through 1952. Information on stockpiling is lacking.

d. Internal Limitations.

(1) Availability of Raw Materials.

No authentic data on ore reserves are available, but according to a Bureau of Mines report there is an important mineralized region in the Rhodope mountains in southern Bulgaria, occupying parts of Plovdiv and Stara-Zagora Oblast. Metal content of ores from the Rhodope district varies widely--1 to 47 percent lead, 2 to 20 percent zinc, up to 2 percent copper, and up to 500 grams of silver and 50 grams of gold per ton. Ore reserves of the district have been estimated as high as 200 million metric tons. Production from these deposits began in 1925.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

(2) Shortages of Raw Materials, Technical Personnel, Equipment, and Other Limiting Factors.

Known deposits are a considerable source of raw materials. It takes time, however, to prepare ore deposits for extensive mining operations. The USSR has sent a number of technical personnel to aid in the development and exploitation of Bulgarian mineral deposits.

Equipment will be obtained through trade agreements, as announced in a speech by the Bulgarian Minister of Foreign Trade in July 1950. Under a long-term trade agreement with the USSR the Soviets will supply equipment for new metallurgical works.

Transportation problems may cause some delay in the exploitation of the Rhodope area.

e. Trends.

All information indicates an extensive, though probably unrealistic, program for increased production of lead and zinc.

3. Other Nonferrous Metals.

The production of other nonferrous metals in Bulgaria is unimportant, and any requirements would have to be supplied through imports.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

C. Coal.

Summary

Bulgaria produced 5,250,000 metric tons of coal in 1950 as compared with an estimated 4,800,000 tons in 1949 and 4,015,000 tons in 1948. Nearly 95 percent of the output consists of lignite, and nearly 80 percent of the total comes from the mines at Dimitrovo (formerly Pernik). The quality of coal, in general, has been poor, principally because of its high ash content and inadequate preparation.

The revised plan for 1951 calls for production to increase 24.8 percent, or 1,300,000 metric tons over the 1950 output, which is equivalent to the original goal (6,550,000 tons) for the last year of the Five Year Plan (1953). A gain of 1 million tons in 1951 appears to be a more realistic projection of what is likely to be accomplished. It is estimated that output in 1952 will be 6,875,000 tons, or 10 percent higher than 1951.

It is believed that production was more nearly in balance with requirements in 1950 than in several preceding years. The shortages that have existed have been felt mainly by household consumers. Allocations are approximately as follows: railroads, 35 percent; electric power plants, 15.5 to 17 percent; other industries (including briquetting), 30 to 35 percent; and domestic heating, 18 to 20 percent.

There is no evidence of any imports of coal in 1950, but Czechoslovakia probably has been furnishing about 2,500 tons of coke annually, probably of metallurgical grade. Bulgaria has a coke plant at Plachkovtsi and another at Kazanlik, but production as well as requirements is very small. There may have been small exports of coal to Egypt and Austria.

A few mines in Bulgaria have received modern equipment in the last few years, apparently from the USSR, but mining methods in general are primitive. Most of the equipment is of German make and is now old and in poor condition.

Bad working conditions and low pay make the industry unattractive to labor. Production depends to a considerable degree on forced labor, and in the fall of 1950 about 200 women were hired to work in the Dimitrovo mines.

Increased production of coal is not itself indicative of preparations for war. In order to meet the rising civilian and industrial requirements implicit in the Five Year Plan, production of coal must be accelerated.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

1. Production.

Bulgaria produced approximately 5,250,000 metric tons of coal in 1950 as compared with a target figure of 5,580,000 tons. The output represents an increase of 9.4 percent over the estimated production of 1949 of 4,800,000 tons. In 1948, production was only slightly more than 4 million tons and far short of the goal of 4,920,000 tons. 1/

About 95 percent of the coal produced is lignite, the major source being the 8 to 10 mines operating at Dimitrovo (formerly Pernik), 20 miles southwest of Sofia. This area furnished 3,120,550 metric tons 2/ of coal in 1947, or more than 75 percent of total production. It is probable that the Dimitrovo mines produced close to 4 million tons in 1950, or about 80 percent of the total output of coal. The balance of the lignite production is scattered throughout at least a dozen areas, none of which accounts for any significant tonnage. It is possible that none of these areas produced more than 350,000 tons in 1950. According to 1947 data, the Bobov Dol and Pirin mines in southwestern Bulgaria were producing approximately 100,000 metric tons each, and five principal mines in the Maritsa coal basin in the vicinity of Rakovsky accounted for a total of between 190,000 and 240,000 tons. The only other important source of coal was the Chermo More (Black Sea) mine, located about 9 miles northwest of Stalin (Burgas), which produced about 100,000 metric tons. 3/ All of these mining areas have increased their production, in particular the Maritsa mine, which is now probably the most highly mechanized in the country.

Estimated Coal Production 4/
1948-50

Type and Area	1948	1949	1950
	Thousand Metric Tons		
Anthracite			
Svoge	25	30	35
Bituminous			
Balkan Basin	125	155	190
Lignite			
Dimitrovo	3,050	3,650	4,000
Other Areas	815	965	1,025
Total	4,015	4,800	5,250

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

2. Estimated Possible Production and Capacity.

According to the Five Year Plan, the coal production goal for 1953 was 6,550,000 metric tons 5/, but this figure is now the revised objective for 1951. Although an increase of 24.8 percent 6/ over 1950 appears to be an ambitious undertaking, it is likely to be accomplished, since production in the first quarter of 1951 was reported to be 20.1 percent greater than in the same period of 1950. 7/

It is doubtful that output will reach the new target for 1951 unless the peasants, who generally return to their farms in the summer, are compelled to continue working in the mines. Increased coal production depends mainly on better organization, greater labor efficiency, and more manpower. Output in 1952 is estimated at 6,875,000 metric tons, or an increase of about 5 percent over the revised 1951 goal.

3. Domestic Requirements.

Coal supplies in 1949 improved considerably in comparison with 1948, when there was an acute shortage of fuel for heating. The situation was somewhat better in 1950, and it is probable that in the winter of 1950-51 supplies were more closely in balance with requirements. However, the quality of all types of coal is generally very poor because of high rock content and inadequate processing, which reduce fuel efficiency and increase consumption.

Although there are little data available concerning coal requirements, it is known that railroads are the largest consumers, using an estimated 35 percent of production in 1949. This proportion, however, may decline to 32 percent by 1952 as output increases and quality improves. Allocations to other consumers are estimated as follows: electric power, 15.5 to 17 percent; other industries (including briquetting), 30 to 35 percent; domestic heating, 18 to 20 percent. A more detailed breakdown is given in the table below.

Estimated Availability and Requirements of Coal
1949-52

Thousand Metric Tons

	1949	1950	1951	1952
Availability				
Production	4,800	5,250	6,250	6,875
Stocks (As of 1 Jan)	50	125	250	300
Imports	- 8/	-	-	-
	4,850	5,375	6,500	7,175
Exports	-	-50 9/	-50 9/	-50 9/
Stocks (As of 31 Dec)	-125	-250	-300	-300
Total Availability	4,725	5,075	6,150	6,825

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Requirements				
Railroads	1,650	1,725	2,025	2,200
Electric Plants	755	885	970	1,065
Industrial 10/	1,370	1,425	1,850	2,250
Briquetting	100	100	105	110
Domestic Use	850	940	1,200	1,250
Total Requirements	4,725	5,075	6,150	6,875
Requirements		Percentage		
Railroads	35.0	34.0	33.0	32.0
Electric Plants	15.9	17.4	15.8	15.5
Industrial	29.0	28.1	30.0	32.7
Briquetting	2.1	2.0	1.7	1.6
Domestic Use	18.0	18.5	19.5	18.2
Total	100.0	100.0	100.0	100.0

4. Stockpiles.

Coal stocks have always been relatively small, although they were larger in 1950 than they had been for many years. No figures are available, but it is doubtful that stocks would meet requirements for more than 15 days during the winter months. Since most of the coal is lignite, it is unsuited to prolonged storage. Total inventories of coal on hand probably did not exceed 250,000 metric tons at the end of 1950.

5. Surplus or Deficit.

There have been shortages of coal in Bulgaria during and since World War II, but the hardships caused by these deficiencies have been confined principally to private consumers who use coal for heating. Railroads and industries probably have not been seriously affected. Coal production in 1950 probably balanced essential requirements and permitted a modest increase in stocks, as well as small shipments to Egypt and Austria. Supplies of coal are expected to be adequate for all requirements in 1952.

6. Internal Limitations.

a. Labor.

Difficult working conditions and poor pay make coal mining unattractive to laborers. Bulgaria therefore relies heavily on forced labor and "Trudovaks" in the mines; in the fall of 1950, 200 women were hired to work at Dimitrovo. Other handicaps to the smooth functioning of the industry include chronic

SECRET

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

absenteeism, the exodus of peasants to the farms in the summer months, the high proportion of unskilled workers, and a general lack of initiative.

b. Equipment

Only a few mines have modern equipment, which consists mostly of conveyors and probably some machinery for cutting coal. Little if any coal is mechanically loaded. In general, all equipment is in poor condition. Since most of it is old, considerable repair is necessary, and spare parts are difficult to obtain. The small quantities of available Soviet machinery are of poor quality. Bulgaria apparently is dependent upon foreign sources for all equipment, including such indispensable items as pipe, pumps, and possibly rails for mine trackage and feeder lines.

7. Trends — Including Indications of Mobilization for War.

Coal production increased about 20 percent in 1949 and 9.4 percent in 1950, and a jump of 24.8 percent is planned for 1951, advancing the date for fulfillment of the Five Year Plan goal by 2 years. This accelerated production schedule is considered to reflect the country's industrial growth rather than to indicate mobilization for war. Some thermal power plants and a few industrial plants, notably the chemical plant at Dimitrovgrad, are under construction, and these will require more coal. Expanding output of industrial products is resulting in increased freight traffic and fuel requirements of the railroads. Increased production probably will make more coal available for civilian needs.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

D. Petroleum.

Summary

There is no crude-oil production in Bulgaria. The only possible domestic source of oil is shale. There are a number of shale deposits, the two largest being near Bresnik and Serbinovo. Together these have some 150 million metric tons of shale, containing from 30 million to 35 million tons of oil. A plant has reportedly been built for the experimental recovery of oil from shale, but no details are available. Although three small topping plants with an annual capacity of 60,000 tons were in operation before World War II, there is no record of their operation since the end of the war.

All of Bulgaria's domestic requirements are met by imports from Rumania and the USSR. Of the 200,000 metric tons of petroleum products imported in 1950, an estimated 165,000 tons were consumed. Efforts are being made to build up stocks, but the actual size of stockpiles is not known.

Bulgaria is not and will not be an important contributor to the petroleum economy of the Soviet Orbit. Lack of indigenous petroleum, technical skill, and equipment make the country a drain rather than an asset.

1. Production and Estimated Possible Production and Capacity.

Although the only indigenous source of petroleum in Bulgaria is oil shale, there are quite large shale deposits which are well-suited to development. The shales are high in oil content and would lend themselves readily to open-pit mining. The two most important deposits are located immediately north of Bresnik, where an estimated 30 million metric tons of shale have a recoverable crude-oil content of about 3.9 million tons, and at Serbinovo, 9 miles south of Gorna-Dzhumaya, where some 120 million tons of shale are estimated to contain nearly 30 million tons of crude oil. There are other deposits near Kyustendil, Popovtsi, and Kazanlik. A number of other geological structures are considered promising. 1/ Periodically, plans for the development of these sources of oil are reported. Although it is probable that some experimentation is being conducted, there is no information on the extent of development or on probabilities for the near future. However, production will probably be inadequate to satisfy domestic requirements. A plant for the experimental recovery of oil from shale is in operation in eastern Bulgaria, but its exact location and size are not known.

Before World War II there were three small topping plants at Ruse on the Danube River, with a combined annual capacity of only 60,000 metric tons. Some 25,000 tons of crude oil were imported annually from Rumania for processing 1/, and the output was approximately 25 percent gasoline, 12.5 percent kerosene, 12.5 percent gas oil, and 50 percent residue, the last being used as a low-grade fuel oil. 2/ These refineries have not operated since World War II. 3/

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

2. Domestic Requirements.

Bulgaria's domestic requirements are met entirely by imports from Rumania and the USSR. In 1949 the following petroleum products were imported and consumed:

Imports of Petroleum Products
1949

Products	Metric Tons 1949
Gasoline	19,000
Kerosene	28,000
Diesel Oil	35,000
Lubricants & Greases	12,200
Others	1,800
Total	96,000

In addition, about 8,000 metric tons of aviation gasoline were imported, most of which was stockpiled. 4/ As the result of the build-up of the armed forces in 1950, requirements increased. Military requirements were met by an increase in imports and by a decrease in allotments to the civilian economy. 5/ Actual consumption in 1950 was about 165,000 metric tons of the total imports of 200,000 tons. Civilian consumption was probably no more than 50,000 tons.

3. Stockpiles.

Before the end of World War II, permanent storage capacity was estimated at 125,000 metric tons. 6/ Since then a number of depots have been expanded, and even drums are used for storage. Stockpiles at the end of 1950 amounted to approximately 35,000 tons, plus any stocks carried over from 1949, which may have been considerable.

4. Surplus or Deficit.

Bulgaria has always been entirely dependent on imports to supply domestic requirements for petroleum, and there is no indication that the situation will change in the near future. Even if the experimental recovery of shale oil is successful, it is extremely doubtful that dependence upon imports will be relieved by 1952.

5. Internal Limitations.

The lack of known crude-oil deposits, plus the inadequate facilities for oil refinement, are basic limitations to Bulgaria's petroleum industry. Dependence on outside sources for technical assistance and equipment is great.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

6. Trends -- Including Indications of Mobilization for War.

The USSR has recently extended aid for the development of the petroleum industry. This trend is considered to be in line with the over-all plan for greater Bulgarian industrialization and economic self-sufficiency and does not necessarily indicate a step toward mobilization for war. The efforts directed toward stockpiling of petroleum products, however, may prove the most significant single indicator that war mobilization plans are being implemented within the framework of the industrialization program.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

E. Electric Power

Summary

Since the economy of Bulgaria is primarily agricultural, electric power is less important than in other more developed economies. Failures in electric power would have dislocating effects in local industries and in transportation, but the effect on the total economic potential of the Soviet Orbit would be almost unnoticeable.

Electric generating capacity at the end of 1950 amounted to 192,000 kilowatts, and the ratio of thermal to hydroelectric capacity was about 55 to 45. The greatest concentration of power plants is in the area within a 40-mile radius of Sofia, where about 60 percent of the total installed capacity is situated. By the end of 1952 the total installed capacity in Bulgaria is expected to be between 230,000 and 270,000 kilowatts.

There is incomplete information on the amounts of electric power being used today by various classes of consumers, but 56 percent of the power generated in 1947 was consumed by industry, the balance being accounted for by transportation, street lighting, home uses, and transmission losses.

Bulgaria has sufficient fuel and water resources to supply an expanding power industry but is almost entirely dependent upon imports for increasing production capacity and replacing capital equipment. This handicap also applies to transmission and generating equipment, which comes chiefly from the USSR and Czechoslovakia.

The increases in power production accomplished since the end of World War II not only have been insufficient to contribute to the economic strength of the Bloc but also have made only a small contribution toward the development of the Bulgarian economy.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

1. Economic Importance of the Industry.

The electric power industry plays a minor role in the Bulgarian economy and offers no significant contribution to the economic potential of the Soviet Orbit. The agrarian nature of the economy and the lack of large-scale industrial users of electricity have been largely responsible for retarding electric power development. Despite the emphasis given to electric power development in the 1947-48 and 1949-53 Plans, production falls far short of requirements, and electricity remains less important than coal and fuel wood as a source of energy.

2. Prewar and Present Trends and Developments.

The present electricity supply system follows the prewar pattern of concentration of the generating capacity around major population centers and fuel deposits. The greatest concentration of power plants is in an area within a 40-mile radius of Sofia. Hydro and thermal electric plants in this area constitute about 60 percent of the total installed capacity in the country. The Plovdiv-Dimitrovgrad and the Black Sea coast areas each contain about 15 percent of the total capacity, and there are minor concentrations in the center of the country, in the area of Ruse on the Rumanian border, and in the extreme northwest.

Power production has been increased since the war by repairing existing plants, operating plants for longer hours, and installing new capacity at a rate of about 10 percent per year. The development of new capacity, however, falls far short of the goals outlined in the Two Year Plan (1947-48) and the Five Year Plan (1949-53). The present trend is to attain wider distribution rather than to increase generating capacity. Greater emphasis is now being placed on power-irrigation projects through the construction of small and dispersed hydroelectric stations. Since the construction of the large hydroelectric plants envisaged in the Five Year Plan appears to have been postponed, the prior ratio of thermal to hydroelectric generating capacity (55 to 45) remains basically the same.

Probable additions of capacity by the end of 1952 will be two 50,000 kilowatt thermal installations, one in the Pernik area near Sofia (for the lignite industry) and the other in the Maritsa River basin (as part of the plan to manufacture fertilizer at Dimitrovgrad). Information indicates, however, that not more than 20,000 kilowatts of the 100,000 kilowatt capacity planned for these areas will be installed by the end of 1952. 1/

3. Internal Limitations.

a. Energy Resources.

Bulgaria has sufficient lignite fuel and water power resources to permit further increases in the production of electricity.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

b. Electricity Generating Plants.

There are no large electric power plants in Bulgaria. About 75 percent of the capacity, estimated at 192,000 kilowatts in 1950, is installed in plants of the 5,000 to 15,000 kilowatt size. The equipment presently installed, which is 15 to 20 years old, needs extensive repair or replacement, because it was abused by untrained personnel and operated excessively during the war period.

c. Transmission Systems.

The construction of a 110-kilovolt network running from Sofia northeast to Mezdra and Pleven, thence to the central-eastern section at Gorna Orehovitza, and back to Sofia through Dimitrovgrad and Plovdiv was begun after the war. The Sofia-Plovdiv link of this network was completed in June 1949, but it is unlikely that this link will be of value unless capacity is increased in the areas of Pernik and Dimitrovgrad. Because the rest of this network extends through areas where fuel for thermal installations is lacking, the hydroelectric plants proposed for the power irrigation projects must be built in order to make an extensive 110-kilovolt network feasible.

The other transmission project of importance involves an agreement, signed on 16 July 1947, by which Bulgaria and Rumania undertook to create a common power supply area for southern Rumania and northern Bulgaria. Rumania was to provide power in increasing amounts up to 1956, at which time 10,000 kilowatts were to be annually available to Bulgaria. The latter country, in turn, was to install in 1951 sufficient generating capacity on its side of the border to allow for some surplus, which would be available to Rumania. 2/ A trans-Danube cable of 60-kilovolt capacity was completed and put into operation in July 1949. 3/ Intensive effort presently is being exerted toward the construction of the Rositsa dam and hydroelectric project in the north-central part of Bulgaria, and attempts have been made to purchase a large-capacity transformer for Gorna Orekhovitsa in the same region. The trans-Danube cable has been completed, but it is not known how much power is now being transmitted to Bulgaria from Rumania, nor how great an area is being supplied.

The building of rural supply systems and additional transmission facilities in population centers is another part of the proposed transmission network, and large amounts of foreign currency have been allocated for the purchase of necessary equipment. Failure to expand the transmission network will mean that other parts of the Five Year Plan will be delayed and will continue to retard the Bulgarian economy.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

4. Production.

Increases in electric power production in Bulgaria compare favorably with percentage increases reported in other Satellites. The per capita availability, however, is less than that of any other European country except Albania. Production rose from 266 million kilowatt-hours in 1949 4/ to 548 million kilowatt-hours in 1948, 5/ primarily through more intensive use of existing capacity, and secondarily through new installations. Production estimates of 730 million kilowatt-hours for 1950 and 890 million kilowatt-hours for 1952 are based on an estimated average increase in capacity of 20,000 kilowatts per year and an output of 4,000 kilowatt-hours by every newly installed kilowatt of capacity. Dependence on foreign sources for design of installations, trained personnel, equipment, and spare parts will continue to hamper production through 1952, since assistance from Soviet Bloc countries will be limited.

5. Consumption.

The Sofia area ranks far ahead of other centers in the consumption of electric power. The Plovdiv-Maritsa area, the cities on the Black Sea, and the Danube port of Ruse consume most of the remainder. There is insufficient information on the amounts of power being used by various classes of consumers. Industry consumed 56 percent of the power generated in 1947; commercial and home use, power plants, transmission losses, and street lighting accounted for the rest. 6/ The building of small hydroelectric plants in remote regions and the construction of the Dimitrovgrad fertilizer plant indicate that the agricultural sector of the economy will benefit most from the expansion of the electricity supply.

Since World War II, electricity requirements have increased, and production is not equal to demand. Civilian consumption is rationed, and industrial shortages have been reported. The Sofia area appears to have the strictest regulations; therefore, it is possible that the requirements of certain industries in this region have increased. A decree of October 1950 which placed heavy restrictions on all but the most essential consumers and permitted most industries to operate only 4 days a week, exempted the following industries: canning, textiles, chemicals, locomotive repairs, mining, water pumping stations, refrigerating, milk processing, baking, and the tobacco monopoly. It can be assumed that priority is given to those installations producing military goods.

6. Input Requirements.

Input requirements for the electric power industry fall into two categories. The first includes requirements for the daily operation of the plants, such as fuel, lubricants, expendable operating supplies, and manpower; the second, those things required for the replacement of capital items and the expansion of transmission and generating facilities. Bulgaria is in a much more favorable

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

position in the first category than in the second, since it has adequate supplies of fuel and sufficient manpower to handle daily operations of the industry. However, it must import almost all items included in the second category, as is shown in the following quotation from a broadcast of the Bulgarian Radio: "The capital investment for the entire Two Year Plan is 126.4 billion leva, of which 19.4 billion leva, or 15.4 percent, are allocated for the electrification of the country. As to the cost of the equipment to be imported, from the total sum of 43.7 billion leva for imports, 13.3 billion are allocated for electrical equipment." Although it is impossible to make exact estimates of the investments actually made, it is likely that the actual pattern is similar to that of the Plan.

The capital equipment obtained since the war was acquired from foreign firms, both Orbit and non-Orbit. Austria, Czechoslovakia, Italy, Hungary, and the USSR have been the principal sources for new generating capacity, transmission equipment, and the skilled manpower which is necessary for installing this equipment. The purchase of spare parts, the need for which has been great because of the varied origin and antiquated nature of the installed electrical equipment, has also consumed large amounts of foreign exchange.

7. Vulnerability.

The vulnerability of the electric power industry is very high. Cutting off all imports of equipment and technical skills would have the following effects: (a) a deterioration of equipment at an increasing rate as a result of lack of spare parts and (b) inability to install additional capacity.

Elimination of imports from non-Orbit countries would force some diversion of the manufacturing facilities of Soviet Bloc countries to supply Bulgarian needs for electrical equipment, at least in quantities sufficient to prevent deterioration of the Bulgarian electric power industry. The actual amount diverted would depend on a decision as to the importance of the electric supply in Bulgaria in relation to other areas within the Bloc. It is probable that an effort would be made only to maintain the present status of the industry, and then only if it could be done without severe strain on the resources of the Bloc.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

F. Chemicals.

Summary

The chemical industry of Bulgaria is unimportant and underdeveloped. Under the Five Year Plan the industry is to be expanded to produce most of the basic chemicals needed in the economy and in sufficient quantities to cover increasing requirements.

Bulgaria has a small exportable surplus of wood chemicals (methanol, acetic acid, acetone, etc.). Glycerine production is greater than normal demand and is exported to Czechoslovakia and Hungary. Of the basic heavy chemicals, only calcium carbide is produced in sufficient amount to meet requirements. Elemental sulphur is not produced, and the only indication of pyrites production is the known export of 10,000 metric tons in 1949 and the planned export of 40,000 tons in 1951, all to Czechoslovakia. Nitric acid is produced only for the small explosives plants. Production of caustic soda and sulfuric acid is insufficient to meet demands, and caustic soda, mostly for soap manufacture, is imported from Sweden, Rumania, East Germany, the USSR, and Poland. Some sulfuric acid was formerly supplied by Yugoslavia, but current sources are Italy, East Germany, and the USSR. There is no known production of other basic heavy chemicals. Soda ash is supplied by East Germany, and coke chemicals are imported mainly from Czechoslovakia. Dyes are received from Czechoslovakia and Hungary.

Bulgarian agriculture requires some nitrogenous fertilizers, which are furnished by East Germany and the USSR. On a tonnage basis Bulgaria consumes more copper sulfate than any other chemical, most of which is used as a fungicide in the grape vineyards. East Germany and probably the USSR are the chief suppliers.

Bulgaria has a small rubber fabricating industry supplied by imports of natural rubber, but finished rubber products also must be imported. Although production of automobile tires has increased since World War II, it is insufficient to meet requirements, despite some imports of tires, because the bulk of Bulgarian tire production is exported to the USSR.

Bulgaria cannot furnish any chemicals in significant quantities to the Soviet Orbit, and its import requirements from the Soviet Bloc are small. Bulgaria may become self-sufficient in basic heavy chemicals if planned installations like the Stalin fertilizer plant at Dimitrovgrad and others are completed and in operation by 1952.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

1. Calcium Carbide.

a. Production.

The production of calcium carbide in Bulgaria is insignificant. Only one plant, the State Carbide Factory (formerly Kolarov Works) located at Ilienci near Sofia, is known to be in production. Production was 1,500 metric tons in 1948, and estimated output was 2,000 metric tons in 1949 and 2,500 metric tons in 1950.

b. Estimated Possible Production and Capacity.

Production is unlikely to increase much over the 1950 level. No expansion is known to be planned for the Ilienci plant, the capacity of which is about 3,000 metric tons per year. 1/ It is therefore estimated that production will be 2,600 metric tons in 1951 and 2,700 tons in 1952.

Calcium carbide will be made at the new Stalin State Factory of Nitrogen Fertilizers at Dimitrovgrad. 2/ This plant has been under construction since early 1948 and is not scheduled for completion until November 1952. 3/ No calcium carbide capacity is reported for the plant, but it may produce about 27,000 metric tons annually.

c. Domestic Requirements.

Bulgaria's calcium carbide demands are slightly less than annual production. There have been no imports since World War II, but small amounts have been exported to Albania. One plant (the Stefain Zaneff) at Kurilowo was producing calcium cyanamide fertilizer on an experimental basis at a rate of about 60 metric tons annually, which would require less than 50 metric tons of carbide. 4/ Other chemicals derived from carbide and acetylene are not in production. All of the carbide production is consumed primarily by industry and mining. A stockpile of calcium carbide has not been established, although Bulgaria had a slight surplus in 1950. The surplus in 1952 may be less than that of 1950 because of rising domestic requirements.

d. Internal Limitations.

Sufficient coke or charcoal and lime are available for the small annual production.

e. Trends — Including Indications of Mobilization for War.

The Plan goal in 1953 is 8,000 metric tons of calcium carbide. It is not known whether the increase in production is to come from the new plant at Dimitrovgrad or some other new plant or from expansion at the Ilienci plant.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

2. Caustic Soda.

a. Production.

There is no conclusive information that caustic soda is produced in Bulgaria.

b. Domestic Requirements.

Caustic soda is required by Bulgaria principally for the production of soap, the most important single chemical plant in the country being the Nikola Chilov soap factory at Kostinbrod near Sofia. Although this plant employs about 900 workers, a large proportion of the total number of workers engaged in the chemical industry, production in 1949 was only 4,000 metric tons, about half of the prewar output. 1/ Bulgaria processes very little pulp and paper products, and its small textile production demands little caustic soda. Before the war, requirements averaged nearly 2,500 metric tons a year and in 1946 reached 3,600. 2/ Estimated demands for 1952 are 4,000 metric tons. It is not likely that a stockpile has been established, and Bulgaria will continue to be deficient in caustic soda until the completion of Plan installations.

c. Internal Limitations.

Salt, the essential raw material for the production of caustic soda, is produced at the Solopoden Salt Works near Provadia.

Even if construction of those chemical plants projected under the Five Year Plan is actually completed, production will be hampered by a shortage of skilled labor and technicians. Equipment for this new industrial capacity must be supplied from the Soviet Bloc.

d. Trends -- Including Indications of Mobilization for War.

A caustic soda factory is scheduled for completion in 1953, with production estimated at 3,700 metric tons a year. In succeeding years the output is to be increased sufficiently to meet domestic needs. This plant also is to produce 8,500 metric tons of soda ash in 1953. 3/ The construction of this plant is no indication of mobilization for war, as the establishment of facilities to produce caustic soda is a step toward self-sufficiency.

3. Synthetic Ammonia.

Synthetic ammonia is not now in production, and it is doubtful that it will be by 1952. Requirements for this product are negligible. A small amount of liquid ammonia (possibly anhydrous) is imported from the USSR. There is a slight demand for fixed nitrogen in the form of nitrogenous

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

fertilizers. However, no nitrogenous fertilizers, except a small amount of calcium cyanamide, are produced. The USSR supplied ammonium nitrate in 1950, but it is doubtful that the total equaled 10,000 metric tons.

The Five Year Plan calls for the production of the following products, with annual output as noted:

	Metric Tons	
Ammonia, Synthetic	40,000	(33,000 T-N)
Ammonium Nitrate	30,000 1/	(11,500 T-N)
Calcium Nitrate	35,000 1/	(5,400 T-N)
Calcium Cyanamide	35,000 2/	(7,350 T-N)
Nitric Acid a/	60,000 1/	

a/ Acid concentration not reported. If the concentration is 100% acid, the nitrogen equivalent required is 14,800 T-N, but if 40% (the usual concentration to produce ammonium nitrate), then the acid is 24,000 T (100% basis) and requires 5,900 T-N to be made.

Since ammonium nitrate is a constituent of Amatol (an explosive), as well as of TNT, some or all of the production could be diverted in event of war to the manufacture of explosives.

4. Nitric Acid.

The small domestic production of nitric acid is confined to plants making explosives. Total nitric production at present probably does not exceed 500 metric tons (100 percent acid basis) a year. The completion of the Stalin fertilizer plant in Dimitrovgrad will provide Bulgaria with nitric acid for the production of nitrate fertilizers (ammonium and calcium nitrates). Annual capacity of the plant is to be 60,000 metric tons, 1/ but there will be no facilities for concentrating the acid to high strength. If the output of 60,000 metric tons is 40 percent acid, then the capacity represents only about 24,000 metric tons on a 100-percent acid basis. In time of war the nitric acid and ammonium nitrate will unquestionably be used in the production of explosives rather than fertilizer.

5. Coke Chemicals.

Bulgaria does not produce coke chemicals, nor is it likely to by the end of 1952. All of the metallurgical coke used by the iron and steel industry must be imported, because Bulgaria's coal is of inferior quality. The demand for coke chemicals is negligible.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3
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6. Sulphur and Pyrites.

a. Production.

No elemental sulphur is produced in Bulgaria, 1/ and data on the production of pyrites are not available. In the absence of any substantial domestic consumption of pyrites, the known exports are indicators of the minimum production because the bulk of production is exported. These exports amounted to 10,000 metric tons in the last 9 months of 1949 2/ and 40,000 tons planned in 1951, all under trade agreements with Czechoslovakia. 3/ It is possible that additional exports went to the USSR via the Black Sea.

b. Domestic Requirements.

No sulfuric acid is now produced in Bulgaria, and a plant provided for in the Five Year Plan will probably not be completed by the end of 1952. 4/ Thus there are no requirements for this industry. Consumption of pyrites by other industries is small. Insignificant quantities of elemental sulphur are required by agriculture. Bulgaria has no stockpiles of pyrites.

c. Internal Limitations.

The location and extent of the deposits of pyrites in Bulgaria are not well known. Further development of pyrites resources depends on the amount of Soviet assistance given.

d. Trends--Including Indications of Mobilization for War.

Production of pyrites will be accelerated to meet rising requirements in the Soviet Bloc.

7. Rubber.

a. Production.

There is no production of synthetic rubber in Bulgaria, and the amount of natural rubber obtained from latex-bearing plants is insignificant. Production of automobile tires 1/ has increased, since World War II, as follows 2/: 1939, 4,000 tires; 1948, 12,500; 1949, 26,875 3/; and 1950, 42,731. 4/

b. Estimated Possible Production and Capacity.

Postwar plans provided for the construction of a synthetic rubber plant, which may be the one located in Sofia that was to start operation in 1949. 5/ However, it appears doubtful that any commercial installation for synthetic rubber production is yet in operation.

The Five Year Plan calls for the construction of a new tire plant and expansion of existing facilities and production of 100,000 automobile tires by 1953. Equipment for one tire plant was to come from the USSR and Czechoslovakia in 1950. 6/ Expansion of tire production will depend upon procurement of such equipment and upon the availability of rubber, carbon

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Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

black, and rubber chemicals. Carbon black and rubber chemicals have been in short supply in the Soviet Bloc in postwar years.

c. Domestic Requirements.

Natural rubber must be imported to supply requirements of the rubber industry. Postwar imports are as follows 7/: 1948, 650 metric tons; 1949, 929 tons; and 1950, 775 tons. Additional quantities may have been supplied in 1949 and 1950 by the Soviet Bloc. Requirements for rubber will probably increase in 1951 and 1952, possibly to a total of 2,000 metric tons. With an estimated motor park of approximately 12,000 vehicles in 1950, tire requirements would probably be about 50,000 units per year.

d. Surplus or Deficit.

Both raw materials and finished rubber products must be imported, and stockpiling of either rubber or rubber goods does not exist. Despite some imports of tires from the Bloc and the West and the expansion of the Bulgarian tire industry, domestic requirements remain unfulfilled because the USSR takes the bulk of the Bulgarian output.

e. Internal Limitations.

Bulgaria is completely dependent upon imports for raw rubber. Natural rubber is procured mainly by reexports from the UK and the Netherlands, and the USSR has provided some rubber (whether natural or synthetic is not known). Another major factor limiting production is the inadequate supply of carbon black, tire cord, and rubber chemicals necessary for the manufacture of rubber goods. Some carbon black and rubber chemicals are obtained from Western European countries, and the Satellite countries also may furnish small quantities of these products. Tire cord is supplied by Czechoslovakia, some imports also being obtained from Italy and the Netherlands. Lack of manufacturing equipment, especially for tires, likewise is a limiting factor in the expansion of production. The USSR and Czechoslovakia were to supply some of this equipment in 1950.

f. Trends -- Including Indications of Mobilization for War.

Expanded and newly constructed plants for the manufacture of tires will increase production of a potentially military item. If the UK and the Netherlands ceased to reexport natural rubber from Southeastern Asia, Bulgaria's rubber fabricating industry would be entirely dependent upon the USSR and East Germany for synthetic rubber.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

G. Engineering Industry.

Summary

Bulgaria's engineering industry is small, and almost all machinery and vehicles must be imported. The country therefore represents a drain on the engineering resources of the Soviet Bloc.

Bulgaria does, however, have ambitious plans for development of its engineering industry. The Five Year Plan (1949-53) placed heavy emphasis on the development of machine manufacture, which by 1953 was to be 65 times greater than in 1939. Production goals established for 1953 include 6,250 metal-working machines, 21,200 electric motors, 4,600 units of construction equipment, and 90,000 units of agricultural machinery. In order to implement these goals, the Plan called for the construction of two machine tool plants, a plant for automobile and tractor parts, two automotive repair plants, and three agricultural machinery plants.

This program, representing only the beginnings of industrialization, is nevertheless an ambitious one which will probably be difficult to fulfill, for Bulgaria lacks the raw materials, electric power, trained manpower, technological skill, and industrial facilities necessary for a viable engineering industry.

Despite these limiting factors, the Bulgarian government, during the 2 years that the Plan has been in operation, has continually claimed great production successes. Machinery production in 1949 increased 340 percent over the 1947 total. The production plan for the first quarter of 1950 was fulfilled 100 percent; for the second quarter, 101 percent. On the other hand, the government has admitted certain deficiencies, indicated in the statement of the Chairman of the Council of Ministers, Chervenkov, that "defective production is still tolerated; waste and excess continue to hamper and reduce the output of production tools and consumers' goods."

The USSR is the principal supplier of industrial equipment, followed by Czechoslovakia and East Germany. Western European countries also are making a substantial contribution, with Austria in the lead, followed by Italy, and, to a much lesser extent, Sweden, Finland, and Belgium.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

1. Machine Tools.

Until 1949, Bulgaria produced no machine tools or other metal-working machinery. The Five Year Plan, however, scheduled an output of 6,250 metal-working machines for 1953. In order to implement this Plan, two machine tool plants were to be constructed and in operation by 1953. There is no evidence that either of these plants has been completed, although fulfillment of Plan goals for machine tool production is claimed with monotonous consistency by the State Planning Commission. Compared with 1947, machine tool production increased 304 percent in 1948 and 340 percent in 1949. With little previous production experience, technical skills, equipment, and few component-parts plants, it is likely that the 1953 production target will only be approximated. Even the optimum goal of fulfillment would result in no significant contribution to the economy of the Soviet Bloc, inasmuch as the machine tools produced would be of the simplest types.

Bulgaria's limited requirements for machine tools will continue to be for general-purpose types such as drill presses, lathes, milling machines, and planers. These are presently obtained from Czechoslovakia, the USSR, and Austria. The current trade agreement with the latter provides for the annual export to Bulgaria of $250,000 worth of metal-working machinery.

2. Electrical Equipment.

The Five Year Plan calls for the production of electric motors, generators, transformers, and other electrical equipment required in connection with the industrialization of the country. The Bulgarian electrical industry before World War II consisted of a few small branch plants of foreign firms, which manufactured light bulbs, batteries, and other small electrical items. These plants have now been merged into one enterprise, the "Elprom" plant in Sofia, which concentrates on electric motor manufacture. In 1947, before consolidation, electrical enterprises produced only 107 motors. In 1948, after nationalization and consolidation, the Bulgarian press claimed a production of 950 motors. The production goal for 1953 is 21,200 motors, which, while small when compared with Czechoslovakia's output of 290,000 motors in 1949, is an ambitious goal for Bulgaria. There is no evidence that Bulgaria has produced any quantity of heavier electrical equipment, and the country will continue to be dependent upon outside sources for its requirements. Trade agreements in effect in 1949 provided for the import of $3,400,000 of electrical equipment annually from Czechoslovakia, Hungary, East Germany, Austria, and the Netherlands.

3. Agricultural Machinery.

Production of agricultural machinery in Bulgaria was negligible before World War II. The Five Year Plan, however, has scheduled a 1953 output of 90,000 units of agricultural machinery, including cultivators, plows, seeders,

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

binders, and harvesters. In order to implement this program, three new agricultural machinery plants are to be completed by 1953. At present there are two plants in Bulgaria engaged primarily in production of agricultural machinery — the Georgi Dimitrov Agricultural Machinery Works at Ruse, which manufactured the first Bulgarian fertilizer spreader in 1949, and the former aircraft assembly plant at Lovech.

An interpolation of official Bulgarian statistics indicates that approximately 44,000 units of agricultural machinery were produced in 1949. (Poland during that year was producing about 30,000 units a month.) Production will thus have to be doubled during the 5-year period in order to achieve the 1953 goal of 90,000 units. Since the bulk of Bulgarian production consists of simple plows and cultivators, it is possible that the planned figure will be reached.

Bulgarian production of agricultural machinery will insure domestic self-sufficiency for only a few items of equipment, probably horse-drawn types, and the country will continue to depend upon outside sources for most of its requirements. Between September 1944 and December 1949, according to the Bulgarian press, the USSR shipped 1,200 tractors, 1,087 tractor plows, and "hundreds" of seeders, cultivators, and harrows to Bulgaria. Although the USSR has been the most important supplier, Czechoslovakia, Hungary, and Austria also have trade agreements which provide for the export of agricultural machinery to Bulgaria.

4. Construction Equipment.

The Five Year Plan has scheduled the establishment of a construction equipment industry. An annual production of 4,600 units is to be attained by 1953, including such items as concrete mixers, graveling machines, compressors, and pneumatic hammers. Three plants for the manufacture of construction equipment are to be built and in production by 1953, but there is little evidence of any production as yet. The Georgi Dimitrov Locomotive and Car Works in Sofia is reported to have produced three 14-ton steam rollers in the spring of 1949, the first units of such equipment ever manufactured in Bulgaria.

Even with a production of 4,600 units in 1953, Bulgaria will continue to import most of its requirements for construction equipment. Present sources of supply are the USSR, Czechoslovakia, Austria, Belgium, and Italy.

5. Transportation Equipment.

Production of transportation equipment is negligible. The Five Year Plan calls for the construction of a plant for the manufacture of automobile and tractor parts, as well as two automotive repair plants. There is one railroad equipment repair plant, the Georgi Dimitrov Locomotive and Car

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Works in Sofia. This plant claims to have built two locomotives in 1949, but there is no evidence of any new production since that date. Trucks are currently being imported from the USSR, Czechoslovakia, Austria, and Italy, and locomotives from Czechoslovakia and Italy.

6. Munitions.

There are two fair-sized munitions plants in Bulgaria. At Sofia the State Arsenal (Zavod 12) has 2,000 workers engaged in the production of artillery shells, small-arms ammunition, and ground mines. At Kazanluk the Military Factory employs 2,700 workers in the production of machine guns, mines, grenades, ammunition, explosives, optical devices, and anti-gas equipment. The production of these two plants fills only a portion of Bulgarian military requirements. The USSR is the principal supplier of equipment for the Bulgarian Army.

7. Aircraft.

Bulgaria does not manufacture aircraft or engines for the Air Force or the civil airline but depends upon imports from the USSR. A small domestic industry, chiefly for overhaul and maintenance, exists within some seven factories which manufacture or assemble other equipment. Some Czechoslovakian parts have been assembled into sport or training types, but the rate was only 4 or 5 per year in 1946 and probably does not now exceed 150 per year, including some gliders.

It is unlikely that the USSR will help Bulgaria develop an aircraft production or final assembly industry, because of the basic lack of aluminum and steel capacity, technical competence, and aviation gas supplies. Bulgaria's aircraft shop facilities, however, are important to the USSR for the repair and maintenance of Soviet tactical and transport aircraft stationed in, or operating in and out of, the country in support of Bulgarian Army or Soviet Air Force operations in time of war.

8. Shipbuilding.

The Bulgarian shipbuilding industry is a state-owned organization operating under Soviet control and supervision. Before and during World War II the demand on shipyards was primarily for small wooden sailing craft. After the war, there was greater production of diversified types and tonnage. The economic potential of the industry, however, is still negligible.

There are three shipbuilding centers: Stalin (Varna) and Burgas on the Black Sea and Ruse on the Danube, with an estimated combined total of 6,500 workers. The capacity of these yards is limited to the building of ships up to 1,000 tons, although one drydock in Stalin may have a capacity of 3,000 tons. Fishing schooners and wooden-hulled tugs and barges were the

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

major output until 1950. In 1950, however, two steel hulls were launched in the Stalin yard at Varna, and in the Karolovak yard five small barges and one cargo vessel of reinforced concrete were laid down. The Varna yards are potentially able to build submarines and small destroyers.

In the period 1946-49 the average annual production of new shipping was 4,700 tons. Complete data for 1950 are unavailable, but production will probably be about 4,700 tons. Four launchings and five deliveries were reported. A new yard for building fishing boats is believed to have been completed in the latter part of 1950.

In view of this additional yard and the present practice of training shipbuilding apprentices, a system instituted by the Soviets, the annual output for 1951-52 can be expected to rise. Since existing capacity has never been fully utilized, any expansion will be in response to Soviet requirements. These would probably be for small cargo vessels or motor torpedo boats, as the building of larger ships would necessitate the import of machinery and installations that Bulgaria cannot manufacture.

The country's rich forest reserves, which could provide an extensive source of raw material for wooden-hulled ships, remain undeveloped. The lack of iron, steel, and most raw materials needed to produce steel ships limits Bulgaria's capacity in this regard. All propulsion units for ships must be imported. These were previously obtained in Germany, Czechoslovakia, and Hungary, but present reporting indicates that the USSR is now the major source of supply for engines.

There is no sign of the conversion of other industry to shipbuilding. The construction of steel hulls and Soviet-designed MTB's began in 1950. It can be assumed that steel plating and engines will be provided by the USSR to maintain production for the Soviet account.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

H. Uranium.

Summary

Production of uranium in Bulgaria began in 1946 under Soviet control. By the end of 1950, Bulgarian output of uranium ore and concentrates accounted for 4 percent of the total uranium available to the USSR. All production is shipped to the USSR.

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1. Production.

Production of uranium in Bulgaria began in 1946 under Soviet control, and output increased steadily in the 1946-50 period. By the end of 1950, Bulgarian production of uranium ore and concentrates accounted for 4 percent of the total uranium available to the USSR. The 1946-50 rate of output is expected to continue through 1952. There are no atomic energy plants in Bulgaria, and, therefore, no domestic requirements for fissionable materials, all production being shipped to the USSR. No stockpiles are maintained within the country.

2. Trends -- Including Indications of Mobilization for War.

Although the deposits of uranium in Bulgaria are not large, Soviet requirements for this material are such that all available sources are being exploited. Sufficient manpower is available, but mechanical equipment, safety precautions, and replacement parts for mechanical equipment are in short supply. The ever-increasing demands for expanded output by the Soviet directors of the Bulgarian uranium mines are evidence of the continued trend toward a program geared to a war economy.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

VII. Transportation.

Summary

Because of the undeveloped state of the Bulgarian economy, requirements for transportation are sharply limited. Consequently, Bulgaria does not have extensive transport facilities, nor does it possess large inventories of transport equipment. The contribution to the Soviet economic potential for war which can be made by the Bulgarian transport system is, therefore, of minor importance. Substantial improvement can be accomplished only by extensive assistance from the USSR and elsewhere within the Bloc, as in the case of the current airfield improvement program.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

A. Railroads.

1. Direct Contributions of Railroads to the Economic Potential for War of the USSR.

a. General Description of the Network.

The 4,050-kilometer Bulgarian railroad network is a grid of three east-west lines and three north-south lines which connect the ports of Stalin (Varna), Burgas, and Ruschuk with the agricultural hinterland and the chief population centers. These lines also provide the Soviet Union with direct connections to the frontiers of Turkey, Greece, and Yugoslavia. The Balkan mountains, which separate the Danube and Maritsa valleys, are a barrier penetrated only by the Sofia-Mezdra line and the Stara Zagora-Trnovo line. A third line, to run through the Balkan chain from Lovetch to Karlovo, has been completed as far as Troyan. The density of the network is among the lowest in Europe, 5.7 miles per 100 square miles, but the distribution is quite even throughout the country. About 90 percent of the network, or 3,600 kilometers, is standard-gauge, and all but 10 kilometers are single-track. 1/

b. Traffic.

Rail traffic is not heavy in Bulgaria, 1950 traffic being estimated at 2,700 million ton-kilometers, some 32 percent above 1948 levels. 2/ Coal is the largest single item transported, amounting to 17.6 percent of all freight traffic; grain is 11.1 percent; lumber, 6.5 percent; and flour, 5 percent. This traffic supports the relatively undeveloped economy of Bulgaria and, except for some possible shipments of chrome and uranium ore, makes only a small contribution to the economic potential for war of the USSR.

c. Equipment.

The fixed equipment used in the Bulgarian rail network is old, worn, and of light design. Rails are long overdue for replacement and can support axle loadings of only 14 tons, well below the European standard. Rails and ballast are of insufficient weight--less than 20 percent of the network in 1945 had 82-pound rails. A program of rail replacement was begun in 1949-50 on some sections of the Sofia-Plovdiv line. There are no modern classification yards in Bulgaria. Lack of adequate switching facilities presents difficulties for large-scale economic and military movements. A program of installing modern safety and signal equipment has been started but remains a long way from completion.

d. Capacity.

The capacity of the rail system is limited by the obsolescent condition of fixed facilities and rolling stock. Only two lines, the Caribrod-

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Plovdi and the Pernik-Sofia-Gorna Orekhovitsa, have a capacity of 16 trains a day in each direction at 420 tons each. Most of the lines will support only 12 trains a day at from 250 to 300 tons a train. Furthermore, if all lines are to be operated at capacity, locomotive inventories must be doubled and freight car inventories tripled. 3/

e. Vulnerability.

The existence of numerous bridges and tunnels and the absence of excess workshop capacity make the railroads highly vulnerable to both sabotage and air attack.

f. Conclusions.

The facilities of the Bulgarian railroads will contribute only slightly to the economic potential for war of the USSR.

2. Direct Contributions of Railroad Equipment to the Economic Potential for War of the USSR.

a. Inventories.

Equipment inventories are apparently adequate for traffic requirements, but equipment in most categories is obsolescent. Rolling stock is estimated to include 612 locomotives and 11,790 freight cars. Equipment is relatively light by Eastern European standards, and double-heading of locomotives is frequently necessary. Most of the freight cars have only two axles, and only a very small percentage has air brakes.

b. Production Capabilities.

Although the Georgi Dimitrov plant in Sofia claims to have built two locomotives in 1949, the railroad equipment industry nevertheless continues to be limited to the four chief repair shops of the State Railroads, a plant at Drenovo, and one at Stalin (Varna) which produce some rolling stock. Production at these plants consists largely of assembling components, many of which are imported. Bulgaria cannot yet produce necessary replacement equipment.

c. Effect of Transfers to the USSR.

Most railway equipment is of standard European guage and is not suitable, without extensive modification, for service in the USSR. Bulgarian equipment is in poorer condition than are the rolling stock and locomotives of any other Satellite and therefore will be the last to be confiscated for service in central Europe. Should it be removed, the effects would not be severe, because Bulgaria's economy is not heavily dependent upon transportation. For example, the largest single item transported by rail is coal, 90 percent of which is consumed by the railroads themselves. The loss of railroad service, therefore, would not be a great blow to the internal economy or to the war potential of the USSR.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

d. Conclusions.

Direct contributions of Bulgarian railroad equipment to the economic potential for war of the USSR will be negligible.

3. Indirect Contributions.

a. Role of Railroads in Soviet Trade.

The role of Bulgarian railroads in Soviet trade is of small importance. Little direct railway traffic exists between Bulgaria and the USSR, although there is considerable movement between the Bulgarian interior and the ports of Burgas, Stalin (Varna), and Ruse. This traffic is largely military, but there is some traffic in lead and zinc concentrates, tobacco, wheat, and uranium ore. Such traffic, however, is inconsequential to the Soviet economy. Even the shipments of uranium ore are only a small part of total Soviet procurements of this commodity.

b. Role of Railroads in Trade with the West.

The role of Bulgarian transport commerce with the West also is minor. Trade with the West is only about 15 percent of total Bulgarian foreign trade, and little more than half of this moves by rail.

4. Inverse Contributions.

Bulgarian railroad requirements from the USSR are not great. The volume of railroad components and materials imported into Bulgaria from the Soviet Union in any given year is an insignificant fraction of total Soviet production, although it is vital to the Bulgarian transport system. Locomotives and freight cars are procured largely from the Satellites.

Bulgaria depends upon the USSR for skilled manpower at several levels in railroad operations, but the numbers are few, and the term of service is short. Soviet control of Bulgarian railroads is absolute, and is assured by reliable native Communists who are placed at every level of operations. Thus very few Soviet personnel are required for this function.

5. Probable Developments.

There will be few changes in the Bulgarian railroad system by the end of 1952, and the net gain to the Soviet economic potential will be slight. Inventories of locomotives and freight cars will be slightly increased; considerable worn rails will be replaced with heavier rails on some of the main lines, particularly the Sofia-Plovdi-Burgas line; and the percentage of cars equipped with air brakes will increase. Work will go forward on the new Troyan-Karlovo line, and the Samuel-Silistra line may be pushed to completion. It is unlikely that the Sub-Balkan line between Sofia and Karlovo or the connection between Gigen and Pleven will be completed.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

B. Highways.

1. Direct Contributions of Highways to the Economic Potential for War of the USSR.

a. General Description of the Network.

Sofia is the focal point of the Bulgarian highway system. Although the network is sparse (average density being about 0.2 kilometer per square kilometer), improved roads connect Sofia with all major cities, as well as with Rumania, Yugoslavia, Greece, and Turkey. Most of the major roads are waterbound macadam with stone foundations and rolled gravel or sand surfaces (asphalt or concrete surfaces are largely confined to urban areas), and most of them, with the exception of certain mountain sections, are wide enough for two-way traffic. Local areas, on the other hand, are usually served only by narrow, unimproved dirt roads. Sharp curves and grades of from 10 to 20 percent are common on the mountain roads of central and western Bulgaria. 1/ The total network of surfaced roads is estimated at 26,750 kilometers. 2/

b. Traffic.

In 1939, trucks transported 170 million ton-kilometers of freight, and buses, operating over 10,000 kilometers, reportedly carried 6.7 million passengers. 3/ Accurate figures for the postwar period have not been reported. A known increase, however, in the number of motor vehicles and the progressive improvement of the road system suggest that the current volume of traffic probably exceeds the prewar level. The major portion of road traffic is carried by various forms of animal transport.

c. Road Construction and Maintenance Equipment.

The number and type of roadbuilding machines employed since World War II are not known. Road construction and maintenance are generally performed by manual labor, using local materials.

d. Capacity.

The traffic capacity of the entire Bulgarian road system has never been accurately determined. It is quite certain, however, that the system has not been used to capacity and that highway capacity has not been a limiting factor in the development of motor transport. Seasonal variations in capacity are not great, although climate and terrain do limit potential traffic throughout much of the year. With few exceptions, average speeds in excess of 30 to 35 kilometers an hour are impossible, and 15 to 20 kilometers an hour is a more usual speed. 4/ The traffic potential is also limited by the lack of uniformity in bridge construction.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

e. Vulnerability.

The main weaknesses of the road system are the absence of good alternative routes between major towns and the limited capacities of bridges.

f. Conclusions.

Road construction and repair work have been reported constantly since World War II, and the highway network has probably been expanded and improved to some extent. However, its potential value to the USSR in wartime is not believed to have increased significantly. Although much road work has been reported in the border areas, work on the highways has been evenly distributed throughout the country in accordance with plans for over-all economic development. In addition, it might be noted that Bulgarian road construction is, for the most part, of a type that requires almost constant maintenance and repair, and this fact tends to minimize the importance which may be attached to reported road work. It is believed that the Bulgarian road system would be of great value to the USSR in a short, limited campaign but that its condition and seasonality would sharply limit its usefulness in any extended military operation.

2. Direct Contributions of Highway Transport Equipment to the Economic Potential for War of the USSR.

a. Inventories.

Since 1947 the total inventory of highway transport equipment has in all likelihood been increased somewhat through imports from Czechoslovakia and the USSR, but it is doubtful that the present total exceeds 12,000 vehicles. Before the war serviceability of the motor park was about 70 percent, and since the war it probably has not greatly exceeded 60 percent. 5/ In addition, there is a substantial number of animal-drawn wagons and carts which account for a significant portion of road traffic movements.

b. Production Capabilities.

There is no production of motor vehicles in Bulgaria. Wooden bodies are built for imported chassis, and possibly some imported components are assembled, but a motor vehicle industry as such does not exist. Some spare parts are produced at Sofia and Plovdiv, and two vehicle repair plants are reported to be under construction. 6/

c. Effect of Transfers to the USSR.

No highway transport equipment has been shipped to the USSR from Bulgaria, and it is extremely unlikely that any will be shipped through 1952.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

d. Conclusions.

The Bulgarian motor vehicle park makes no significant contribution to the Soviet economic potential for war. There is a heavy dependence upon imports of transport equipment from the USSR. There is no reason to believe that Bulgaria through 1952 will make any direct contribution of highway transport equipment to the USSR.

3. Indirect Contributions.

There is virtually no highway traffic between Bulgaria and the USSR, nor with the West.

4. Inverse Contributions.

a. Equipment.

In February 1950, 65 Soviet-built trucks were imported through Burgas as part of a consignment of 375 trucks promised by the USSR. 7/ The Bulgarian press reported in 1949 that 2,020 "automobiles and tractors" had been received from the USSR in the period 1945-47. 8/ Bulgaria has perhaps received up to 1,000 motor vehicles per year from the USSR since the end of World War II. This amount is barely enough to maintain an inventory of 10,000 vehicles. The small annual increases in the size of the motor vehicle park are believed to have been the result of additional imports from Czechoslovakia, East Germany, and the West.

b. Materials and Manpower.

With the exception of asphalt, which must be imported, Bulgaria has ample quantities of road-building materials. There is likewise no shortage of unskilled labor. The country is, however, mainly dependent upon outside aid for supervisory personnel, designers, and trained technicians.

c. Soviet Control.

Soviet control is exercised through Soviet personnel who hold positions of authority in the Ministry of Transportation. 9/ Although no definite information is available on the extent of this control, it is believed to be virtually complete.

5. Probable Developments.

It appears unlikely that any significant changes in the status of Bulgarian highway transport will occur through 1952. Continued moderate increases in traffic and in the size of the motor vehicle park may be expected, as may the further improvement of major roads and bridges. However, even if the current rate of development is radically accelerated, the contribution which Bulgarian highway transport will be able to make to the Soviet economic potential for war will remain small.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

C. Water Transport.

1. Direct Contributions of Water Transport to the Economic Potential for War of the USSR.

a. General Description of the Network.

The Danube River is the primary water transport route in Bulgaria. There are several other rivers in the country, but they are of little importance. The value of the Danube to Bulgarian water transport is lessened somewhat by the fact that, although the river forms much of the northern border of the country, its mouth is in Rumania. (Under the present Soviet domination of the Bloc countries, this disadvantage is probably more theoretical than actual.) Furthermore, the Danube does not penetrate the interior of the country, where much of the population and economic activity is centered. Along the Danube there are a few ports, such as Ruse, Lom, and Vidin, which might be of some use to the USSR in case of war, but their value is greatly reduced by the present poor state of all facilities for handling ships and cargoes.

Bulgaria has several ports on the Black Sea, but only two, Burgas and Stalin (Varna), are of importance. The economic significance of these Black Sea ports would be increased considerably, however, if there were water-route connections to the interior. Burgas is the main port for Western trade, and Stalin (Varna) is the principal port for traffic from the USSR, which comprises the major portion of Bulgarian foreign trade.

b. Traffic.

Bulgarian water transport is of little importance in purely domestic traffic. Both maritime and river traffic in Bulgaria consist principally of raw material exports, such as lumber and mineral products, and imports, largely machinery and finished goods, from the Soviet Bloc. About 15 percent of Bulgarian trade is with the West.

c. Equipment.

Bulgarian waterways are in poor condition, needing much technical assistance which the USSR is either unable or unwilling to furnish in adequate amounts.

d. Capacity.

The combined capacity of the two main ports of Bulgaria, Burgas and Stalin (Varna), is of some importance in meeting present requirements. It is believed that present port capacity is insufficient to provide for greatly expanded operations, although the capacity could be expanded through allocation of sufficient resources.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

e. Vulnerability.

Bulgarian waterways and port facilities would be extremely vulnerable to attack by Western aircraft based in the Near East or along the Adriatic. Land- and possibly carrier-based aircraft, for example, could hit the ports on the Black Sea, as well as lay mines in the Danube and disrupt traffic on that route.

f. Conclusions.

The contribution of Bulgarian waterways and ports to the Soviet economic potential for war is at present slight, being confined to limited traffic movements on the Danube and relatively small and unimportant cargo movements through the maritime ports. However, the potential contribution could be increased by intensive build-up of facilities.

2. Direct Contributions of Shipping to the Economic Potential for War of the USSR.

a. Inventories.

The ocean and river fleets of Bulgaria now total about 35 ships of 25,000 tons. There are in addition about 100 barges ranging from 50 to 1,000 tons. Ocean-going ships number 16 vessels totaling 13,841 gross registered tons, the river fleet comprising the remainder.

b. Production Capabilities.

Bulgarian shipyards for production of merchant ships are being expanded. The most important domestic shipbuilding activities are in the port of Stalin (Varna). Despite the provisions of the Five Year Plan to increase domestic construction of larger ships, actual output is still limited to small ships, probably under 1,000 gross registered tons. Consequently, contributions to the economic potential for war of the USSR are very slight.

c. Effect of Transfers to the USSR.

Transfer of the small inventory of Bulgarian ships to the USSR would have virtually no effect upon the Soviet economic potential for war and would probably work some hardship upon Bulgaria. Transfer of the entire ocean fleet and river fleet to the USSR would add less than 1 percent to the Soviet water transport potential.

d. Conclusions.

Bulgarian needs make it likely that there would be no major change in the status of the Bulgarian merchant fleet in the event of war. The most important change would probably be a further tightening, if possible, of present Soviet controls or, under certain military conditions, actual operation of the Bulgarian fleet within Bulgaria by the USSR.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

3. Indirect Contributions.

Bulgarian water transport is of little importance in trade with the USSR and the West. Most of this traffic utilizes the port of Stalin (Varna). Such trade as exists with the West is carried principally in Soviet, Polish, and Rumanian ships.

4. Inverse Contributions.

Bulgaria would require much in the way of equipment, materials, and technical manpower in order to contribute materially to the Soviet economic potential. The size of the river fleet would have to be increased well above its present level in order to utilize fully the Danube route. Major improvements in port facilities continue to depend on Soviet assistance. Continued complete Soviet control of Bulgarian shipping appears to be a foregone conclusion.

5. Probable Developments.

It is estimated that little or no change will take place that will substantially alter the present water transport situation in Bulgaria before 1952. The most significant development probably will be a slight increase in the size of the fleet through domestic construction and some few needed improvements in cargo handling in the ports. These changes, however, are likely to be of small consequence.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

D. Air Transport.

1. Direct Contributions of Air Transport to the Economic Potential for War of the USSR.

a. General Description of the Network.

Of approximately 38 1/ listed Bulgarian airfields and landing grounds, only 5 are utilized by the civil airline TABSO, and 4 of these fields are shared jointly with units of the Bulgarian or Soviet Air Forces. The network of airfields serving civil air transportation are located at Burgas, Gorna, Orchvitsa, Plovdiv, Sofia, and Stalin (Varna).

b. Traffic.

Scheduled operations are conducted on an infrequent basis with several LI-2 aircraft obtained from the USSR. The entire TABSO organization contributes nothing to the Soviet economic potential for war. Foreign airlines engaged in limited commercial operations into Bulgaria are the Czechoslovak airline CSA and the Soviet AEROFLOT. 2/

c. Equipment.

At least six airfields are believed to be equipped with radio navigational aids, and recent uncomfirmed reports indicate that such installations are being made at additional airfields. Other reports of this nature point to a Soviet-sponsored and supervised program for improvement of Bulgarian airfields which includes construction of repair and maintenance shops, the laying of concrete runways, and construction of underground storage facilities.

d. Capacity.

A majority of the 38 Bulgarian airfields are reserved for use by the Bulgarian and Soviet Air Forces. Runways are of sufficient length to permit use by DC-3 or LI-2 transport aircraft if necessary. The fact that most of these airfields have a natural, unpaved surface would not act as a deterrent to their use by the types of transports currently employed by the USSR and the Satellites. Therefore, the potential capacity of Bulgarian air facilities for the large-scale movement of transport aircraft is an important direct contribution to the Soviet air transport potential in southeastern Europe in the event of a rapid build-up for war.

e. Vulnerability.

Air transport equipment is vulnerable to sabotage, but Bulgarian equipment is of so little consequence that its destruction would be a matter of no serious importance. The vulnerability of the airfields is not a major consideration in Bulgaria's economic potential but is important to the strategic potential of the USSR.

f. Conclusions.

The extensive Bulgarian airfield network constitutes a direct and significant contribution to the air transport potential of the USSR.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

SECRET
Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

2. Direct Contributions of Air Transport Equipment to the Economic Potential for War of the USSR.

An inventory of Bulgarian aircraft indicates that Bulgaria is unable to make any appreciable contribution of air transport equipment to the USSR. The Bulgarian civil airline TABSO has the following transport aircraft 3/: 2 DC-3s, 7 LI-2s, and 3 JU-52s. The Bulgarian Air Force includes a total of 10 JU-52 transports. Bulgaria has no aviation production capabilities. The economy of Bulgaria would not be affected by transfers of air transport equipment to the USSR.

3. Indirect Contributions.

Bulgarian air transport aircraft do not enter the USSR, and traffic by Soviet air transports between the USSR and Bulgaria makes no contribution to the Soviet economy. There is no air transport trade with the West, and clandestine air traffic between Bulgaria and the West is negligible.

4. Inverse Contributions.

a. Equipment.

Bulgaria is almost entirely dependent upon the USSR for its air transport equipment. Seven of the nine DC-3 type of aircraft of the civil airline TABSO were obtained from the USSR under a Soviet-Bulgarian agreement establishing the TABSO organization.

b. Materials and Manpower.

Bulgaria is dependent upon the USSR for spare parts for its civil aircraft and for aviation gasoline. Bulgarian manpower requirements are principally for technical and supervisory engineering personnel. The Bulgarian airfield rehabilitation and construction program has been to a great extent directed by the USSR.

c. Soviet Control.

Bulgaria's dependence upon the USSR for equipment, materials, and technical assistance has enabled the USSR to control air transportation within the country. The USSR also has a favored position through the air agreement resulting in the establishment of TABSO. This airline is a joint stock company, nominally under the Bulgarian Ministry of Transport, whose policies and operations are largely directed and controlled by the USSR.

5. Probable Developments.

The Soviet-sponsored airfield improvement program will probably be continued through 1952. It is unlikely, however, that air transport operations will increase significantly in this period.

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Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

VIII. Current Allocations of Economic Resources.

1. Investment and Production in Industry.

Under the Five Year Plan (1949-53) the proportion between agricultural and nonagricultural production is to be changed from 70 to 30 to 45 to 55. In order to accomplish this accelerated industrialization, heavy industry is scheduled to receive 83 percent of all investment funds. Indications are that the Bulgarians are failing to meet the goals of the Plan and will not attain them by 1953 unless Soviet Bloc assistance is increased. An important obstacle to industrial development is the inadequacy of the electrical power output which, excepting Albania, is the smallest in Eastern Europe. Bulgaria lacks developed facilities and capital goods for major industrial progress, and development is contingent on imports of coal, coke, oil, iron, steel, equipment, machinery, and chemicals.

2. Agricultural Development.

The allocations of resources to agricultural development are considerably smaller than those to industry, as agriculture has only second priority under the Five Year Plan. The government is attempting to consolidate the small individual land holdings into larger units suitable for mechanized farming. By the end of 1950 about 50 percent of the arable land had been consolidated. Mechanization, however, does not necessarily increase production per hectare, although it does increase production per man and thus releases manpower for activities other than agriculture. The tempo of further collectivization will be largely governed by the availability of heavy agricultural equipment, most of which will have to be imported.

Production of agricultural machinery in prewar Bulgaria was negligible. The Five Year Plan, however, has scheduled a 1953 output of 90,000 units of agricultural machinery, including cultivators, plows, seeders, binders, and harvesters. In order to implement this program, three new agricultural machinery plants are to be completed by 1953. Since the bulk of Bulgarian production consists of simple plows and cultivators, it is possible that the planned figure will be reached.

3. Civilian Consumption.

Civilian requirements receive the lowest priority in allocation of economic resources. Food availability in Bulgaria, although second to that in Hungary, which leads the Satellite countries, is quite low as compared with Western Europe. The most striking development, as in other Satellites, has been the shift of economic advantage from the former small middle class to the new classes of Communist officials and managers and the few labor leaders. For purposes of food rationing the nonfarm population is divided into a number of categories, of which the most favored are heavy laborers and high government officials, and the least favored the workers in light industry,

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

minor civil servants, and professional people. Increases in food availabilities projected under the Five Year Plan would place 1953 consumption well above prewar, but the continued existence of rationing on most food items makes it doubtful that the degree of progress is as great as planned. A severe housing shortage exists in Bulgaria, and unsatisfactory progress has been made on postwar housing construction programs. General health and welfare conditions, however, are not appreciably worse at present than in recent years.

4. Contributions of the Economy to the War Capabilities of the USSR.

Bulgaria will impose a slight net drain on the war potential of the USSR, at least through 1952, because of its dependence upon the other countries of the Soviet Bloc for fabricated materials. The development of the economy toward greater self-sufficiency is impeded by the fact that major industrial raw materials, equipment, and fuels must be imported and that these items cannot be obtained in quantity either from the Soviet Bloc or from Western sources. Despite attempts to overcome basic economic weaknesses, the Bulgarian contribution to the war potential of the USSR will be negligible within the next 5 or 10 years.

5. Probable Shipments of Raw Materials.

a. Uranium.

Production of uranium in Bulgaria began in 1946 under the control of the Soviet Union. The output has increased steadily and by the end of 1950 Bulgaria accounted for 4 percent of the total uranium available to the USSR. The 1946-50 rate of output is expected to continue through 1952.

b. Ferrometals and Ferroalloys.

Deposits of iron ore, chrome ore, manganese, nickel, titanium, and tungsten exist, but they have not been thoroughly developed, and reserves are not large. All iron-ore production is exported to Hungary, Poland, Czechoslovakia, and Rumania, and all chrome ore is exported to East Germany. Bulgaria requires equipment and technological assistance from other Satellite countries in order to expand production of iron ore, chrome ore, and manganese.

c. Copper, Lead, and Zinc.

Lead and zinc make a more significant contribution than copper. All information indicates an extensive program for increased production of lead and zinc for shipment to the USSR. Copper production and reserves in Bulgaria are small, but if necessary facilities are provided, exports to the Bloc can be stepped up to make a small but significant contribution to the Bloc military-economic potential.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

d. Sulphur and Pyrites.

Elemental sulphur is not produced in Bulgaria. The only indicator of pyrites production is the known export of 10,000 metric tons in 1949 and planned exports of 40,000 tons in 1951, all to Czechoslovakia. The extent of reserves is not known.

e. Chemicals.

Bulgaria exports some wood chemicals (methanol, acetic acid, acetone, etc.), as well as glycerine, mostly to the Bloc. Basic heavy chemicals, with the exception of calcium carbide, must be imported from the Bloc, and some quantities of these also are obtained from the West. Despite its limited production, Bulgaria does not depend heavily upon the Bloc with respect to chemicals, because its requirements are very moderate.

f. Agricultural Products.

Since World War II, grain crops, except in 1948, have been below prewar yields. This has resulted from 3 years of unfavorable weather and some peasant resistance to the government's agricultural policy of crop quotas and collectivization. Because of unrest among the peasants, production probably will not increase in 1952, and there may possibly be a slight decrease. Moreover, increased acreages of industrial crops are being stressed in the Five Year Plan, and these increases will have to be made at the expense of food crop acreages. Bulgaria exports tobacco and some foodstuffs to the USSR and in exchange receives cotton, metals, oil products, and industrial and agricultural machinery. The Soviet Union benefits from such trade by selling the tobacco and rose oil on world markets for hard currency.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

IX. Estimated Degree of Vulnerability to Western Economic Warfare.

Since the Bulgarian economy is primarily agricultural, it is not highly vulnerable to Western economic warfare measures. The relatively unimportant industrial sector, however, is vulnerable. Although the volume of Bulgarian trade with Western Europe is small, imports include strategic industrial items not readily available from within the Soviet Bloc, such as precision instruments, abrasives, railroad replacements, textile machinery, automotive equipment, and ball bearings. Such imports are beginning to be curtailed as a result of Western export controls, and the ability of Bulgaria to take effective steps to compensate for such measures is very limited. The extent to which the Soviet Bloc would assist Bulgaria by supplying the raw materials, machinery, and equipment needed is questionable. Moreover, economic warfare measures directed by the West against the USSR and the other Satellites also would retard the Bulgarian industrialization program, since that country, in view of its negligible contribution to the economy of the Bloc, would probably receive a relatively low priority in any reallocation of resources within the Bloc. Postwar Bulgarian foreign trade is estimated as being 85 percent with the Soviet Bloc, principally with the USSR. Exports outside the Bloc are unimportant and consist largely of foodstuffs. Bulgaria's overseas trading partners include Argentina, which supplies raw materials such as wool, hides, and quebracho, and Egypt, which provides some cotton. Western economic warfare measures could cut off these overseas imports, but at most this would retard only a small segment of Bulgarian industry. In any case, there are now some indications that economic plans for Bulgaria have changed, and industrialization may be sacrificed in favor of the expansion of agricultural production.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

I. Indications of Preparations for War.

A considerable acceleration in the military mobilization of manpower in Bulgaria in recent months is an indication of preparation for war. There are no indications reported in the Bulgarian economy, however, which can be construed as immediate preparation for hostilities. The tempo of development of the industrial-military potential, the production of war material, efforts toward the accumulation of stockpiles, the reduction of dependence on the West, and the development of heavy industry, all conform to the pattern of Soviet Bloc programs over the past few years.

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

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Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3

Next 16 Page(s) In Document Exempt

Approved For Release 2005/04/27 : CIA-RDP79R01012A000900040004-3