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CENTRAL INTELLIGENCE AGENCY

INTELLIGENCE MEMORANDUM NO. 268

25 January 1950

SUBJECT: Estimate of Soviet Capabilities and Intentions: Economic: 1951 and 1954.

CONCLUSIONS OF STRATEGIC SIGNIFICANCE TO THE SOVIET ECONOMY

The significant economic strengths and weaknesses of the Soviet orbit may be summarized as follows:

1. Strengths.

a. The industrial capacity of the Soviet Union in 1951 and 1954 will be considerably advanced over the prewar and the present level, and agricultural production is presently adequate for war purposes and will exceed the prewar level in 1954.

b. Even if the Soviet orbit could be cut off entirely from outside sources of supply, its war effort, though hampered in some degree, would not be immediately affected in 1951. The ability of the Soviet Union to wage a prolonged war in 1954 will be greatly increased.

2. Weaknesses.

Although largely independent of outside sources of supply, the economy of the Soviet Union is likely, in the course of a long war, to experience certain shortages which might make themselves progressively more seriously felt both in 1951 and 1954. These economic weaknesses will persist through 1954. The most significant among them are some special types of machine tools and production equipment, some types of electronic equipment, special instruments, industrial diamonds, certain ferro-alloys, tin and natural rubber, and, to a lesser extent, lack of skilled workers, transportation facilities, and perhaps high octane combat aviation fuel.

The state of the Soviet economy in 1951 will be such that the Soviet Union could not readily engage in a prolonged major war. However, although its economic position will be delicately balanced in some respects in 1951,

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economic factors alone would not render the Soviet Union incapable of waging a major war effectively and on a large scale, should one occur in that year. The length of time during which the Soviet economy could sustain a major war beginning in 1951 cannot be predicted with any accuracy, but it would be wrong to expect a rapid diminution of the Soviet war effort on purely economic grounds.

SOVIET UNION AND SATELLITES

1. Industrial Development.

It is the declared Soviet intention that, by the end of the fourth Five-Year Plan in 1950, industry and agriculture shall have been restored to their prewar level and, moreover, shall have exceeded this level to a considerable extent. It seems certain that the highest prewar output in most essential industries will be surpassed by 1951; but agriculture is not expected to exceed its prewar level until 1954. The satellite countries (excluding the Soviet Zone of Germany) have in general regained their prewar level of industrial output. Industrial development of basic industries will continue to grow at a steady pace through 1954 while new industries will be developed as required.

2. Industrial Efficiency.

The industrial efficiency of the Soviet Union, as judged by Western standards, will remain at a comparatively low level through 1951 because of the shortage of skilled labor, lack of machinery and equipment, backward technology, bureaucratic methods of management, industrial waste, continued dislocation of industry and population, and a limited transportation system. By 1954 definite improvement will be made and shortages removed in most categories.

3. Industrial Manpower.

It is estimated that the total population of the Soviet Union in 1951 will be about 202 million, and that there will be about 36.5 million workers including those in industry, trade and transport, office workers and skilled workers on State Farms, and in addition, an agricultural labor force of 50 million. The number of forced laborers is estimated at about 10 million and will remain the same for 1954. While productivity per man of this group is low, the usefulness of such a large, mobile, and cheap labor force to the Soviet economy, especially for the development of the most inhospitable regions, should not be discounted. However, the shortage of skilled workers will remain, but be less acute. The hasty attempts of the Soviet authorities to fill these ranks may result in an output of ill-trained workers. While this situation might be relieved in the long run, an extensive call-up of industrial workers

to the armed forces in 1951 or in 1954 would hamper Soviet industrial development. The supply of professional engineers, scientists, and unskilled workers will be sufficient for these years. By 1954 the population will rise to 210 million of which 41 million will comprise non-agricultural labor force and 48 million agricultural labor force. The population of the Satellites for 1951 and 1954 is estimated at 93 million and 96 million; the agricultural labor force, 23.6 million and 23.1 million; the non-agricultural, 21 million and 22.7 million. Yugoslavia's population will grow to 16.3 million and 16.9 million; the agricultural labor force will remain about 5 million, and the non-agricultural labor force will increase to about 2 million for 1951 and 2.5 million in 1954.

4. Key Limitations in Resources and Industries.

The production of petroleum products, coal, electric power, basic metals, machine tools, electronic equipment, basic chemicals, rubber, fertilizers, manpower, and transportation in the Soviet Union and Satellites is considered in Appendix A and the extent of their adequacy for the purpose of a major war is reviewed.

Few critical weaknesses in 1951 are revealed if the requirements of the Soviet orbit are judged by peacetime standards, but significant limitations emerge in that year in the light of probable war requirements; namely, in supplies of up-to-date electronic equipment, special machine tools, processing and production equipment, some precision equipment and instruments, high octane combat aviation fuel, natural rubber, tin, tungsten, copper, and perhaps some ferro-alloys. By 1954 increased production and stockpiling will have narrowed the gap between production and requirements for war purposes, but will still leave the Soviet Union in need of some of the items listed above.

5. Agricultural Production.

The production of bread and coarse grains, meat, fats, and oils, sugar and timber in the Soviet Union and Satellites is shown in Appendix B. It is considered that the Soviet orbit as a whole will be self-sufficient in foodstuffs both in 1951 and 1954 provided that low standards of domestic and animal consumption are continued and harvests are normal.

6. Dependence on Foreign Sources for Raw Materials and Key Manufactures.

It is estimated that in 1951 the Soviet Union and the satellite countries will remain dependent to a significant extent on foreign sources of supply for natural rubber, industrial diamonds, tungsten, tin, special types of machine tools and production equipment, and some precision instruments. They will continue to be dependent on foreign sources for these items in 1954 but to a lesser degree because of improvements in production of the manufactured products and of stockpiling natural products.

7. Strategic Stockpiling.

The Soviet Union would naturally wish to accumulate strategic stockpiles of those raw materials in which it is deficient, and there is some evidence of such stockpiling. However, present supplies of these commodities do not appear to be sufficiently in excess of consumption to permit the accumulation of more than adequate working reserves or moderate surpluses. It is certain, however, that every effort is being made to acquire the greatest possible quantity of uranium, and that a strategic stockpile of aluminum could be accumulated by 1951 which would be substantially increased by 1954. By exercising rigid economy and keeping consumption much below reasonable peacetime rates, stocks of certain of the more critical strategic materials, namely natural rubber, tin, and high octane combat aviation fuel might also be made. It is doubtful whether such stocks of these commodities as could be acquired by 1951 would suffice for more than a short period at war rates of consumption; but by 1954 these would be considerably augmented by increased production and stockpiling.

8. Railways.

Transportation in the Soviet Union depends largely on railways which will carry about 88 percent of all inland freight traffic in 1951 and 1954. The production of track, locomotives, and rolling stock necessary for the required traffic will be within Soviet capabilities. Based on Soviet utilization, new equipment necessary for the estimated traffic in 1951 and 1954 will be less than that produced in 1950. The Soviets will expand their electric locomotive production and their use of electrified lines, but the production of Diesel-electric locomotives will not increase appreciably. By 1954 the Trans-Siberian railroad, the sole rail connection between east and west, will have been improved and better able to meet requirements for peacetime economy and for war.

Although all war damage to trackage has been made good and all bridges restored, the condition of the railroads is inferior and will remain so through 1954. Despite certain improvements the railroad network is limited and poorly aligned for the support of military operations. Moreover the gauge of Soviet Union railways differs from that of its neighbors; consequently, all movement across frontiers must pass through transshipment stations. The railroads will be deficient in such qualitative factors as smooth riding roadbeds, high speeds, passenger conveniences, and other indices whose economic value is more important in the US than in the Soviet Union. Despite these infirmities, the railroads of the USSR will continue to meet the needs of a peacetime expanding Soviet economy.

It would be impracticable, even if it were desirable, to change the gauge of the satellite railway systems either in 1951 or 1954. Furthermore,

it would be undesirable to change the gauge of even a few of the main routes since this would largely dislocate the satellite railway systems and seriously affect the war economy of the satellite states. It would also increase the demands on the already inadequate stocks of Soviet gauge locomotives and cars--demands which would grow as the battle area moved further from the frontiers of the Soviet Union.

The railway systems of the satellite countries, with the exception of those of Czechoslovakia and Poland, are not comparable with those of Western Europe for efficiency of operation and maintenance, and poorly organized railway operation would appreciably impair a combined Soviet and satellite war effort in Europe.

All the satellite systems are operating at near-capacity and cannot now accommodate heavy increases in military traffic without reducing industrial traffic. The poor condition of satellite rail systems--particularly in Germany--will temporarily limit a combined satellite-Soviet war effort.

9. Motor Transport.

Motor transport is used mainly in the USSR for short freight hauls from farms and industrial plants to railways stations, ports, and airports. The general level of motor transport will be slightly improved by 1951 and this will continue, although only to a moderate extent through 1954. The strain on the railway system will not be relieved by these improvements to any appreciable degree, as the total inland freight turnover of motor transport will be only about 4 percent of the total freight carried for both of these years. In the event of hostilities in either 1951 or 1954, therefore, road transport systems cannot be expected to afford much relief to a somewhat overburdened railway system, particularly as it will be necessary to draw on the motor transport resources for military purposes.

Movement of freight by motor transport is being developed to a moderate extent by the Satellites to supplement the overtaxed rail system and it is estimated that motor freight will represent 5 percent of total freight movement in those countries in 1951 and 1954. Further utilization of motor transport will be limited by the number of vehicles and the highway network. In the event of hostilities the lack of adequate motor transport would impair the operations of the satellite armed forces.

10. Civil Air Transport.

Although the volume of freight carried by Civil Air Transport is less than 1 percent, civil air routes are of some importance to the Soviet economy, especially in the west and southwest. Efforts are being made to increase still further the already considerable volume of air traffic. The distances involved and the almost complete lack of developed land communications in large areas of

Siberia and Central Asia make air transportation essential. The civil air fleet provides important passenger service and emergency cargo carriage while serving at the same time as a valuable para-military organization.

11. Inland Waterways.

Inland water transport is expected to handle about 8 percent of the total inland freight. Lack of adequate shipbuilding and repair facilities, low priority on improvements, and the freezing of rivers are some of the handicaps to an increase in the level of river freight turnover. However, inland water transport will continue to increase in volume in 1951 and in 1954 but it will not be able to haul a larger percentage of total freight.

Shipping on the Danube, by far the most important inland waterway in Eastern Europe, will account for a considerable quantity of Yugoslav, Rumanian, and Hungarian freight shipments and lesser amounts for Eastern Austria, Czechoslovakia, and Bulgaria. Only a small proportion of Polish freight and a considerable volume of German shipments will move on inland water transport. The Danube is usually rendered unnavigable by ice conditions in its lower and middle reaches from late December to mid-February. Navigation is restricted in early spring by floods and drifting ice, and occasionally, in late summer, by drought.

12. Coastal Shipping.

As the territories of the Soviet Union are developed, the importance of coastal shipping routes, as a necessary adjunct to the inland waterways, railways and air transport, is growing. Energetic steps are being taken to develop the Northern Sea Route. An extension of the period when it can be used can be expected when larger and more powerful icebreakers have been built, but at best its usefulness will be limited.

Apart from a sizable coastal trade, considerable reliance is placed on the Black Sea tanker fleet to transport oil from the Caucasus to the Balkan countries and Soviet ports on the north Black Sea coast. The principal importance of the Soviet merchant fleet to the Soviet Union is for coastal and inland sea transport. It is not engaged in overseas traffic to anything like the extent of the merchant fleets of other maritime nations. Poland and Finland carry on extensive overseas traffic.

13. Strategic Significance of Transport Capabilities.

The main strategic strength of the land and river transport systems of the Soviet Union and Satellites lies in the fact that they possess interior connecting lines. They are not, therefore, subject to the forms of attack which can be developed against sea transportation. In many respects, on the

other hand, the Soviet and satellite transportation systems suffer from inherent strategic weaknesses. Within the land mass of the Soviet orbit there is a strategic weakness in the poor transportation between east and west. The Trans-Siberian railroad probably would be incapable of moving the quantities of freight which would be required in the east in the event of a major war. This deficiency cannot be eliminated by the use of alternative land, sea, or air routes. The Soviet Union does not control the necessary merchant vessels to permit extensive movements of troops or supplies by ocean routes. A strategic weakness is the poor disbribution of land transportation. North-South rail lines in the Balkans, for example, are too sparse by themselves to support large movements directed at the Bosphorus or into Greece. The road network, moveover, despite certain improvements, is sparse and poorly aligned for the support of possible Soviet military operations. A major weakness of the Soviet land transportation system is the problem of gauge difference which has long been a source of difficulty.

14. Merchant Shipping.

The Soviet production of merchant shipping vessels in 1951 of over 1,000 gross tons is expected to be very small. Yards are currently concentrating on the production of river craft and auxiliary types. Small additions to the Soviet-Satellite merchant fleets will come mainly from Poland. At the same time, the Soviet Union is attempting to increase its gross tonnage of shipping.

15. Estimated Production of Selected Military Items.

It is estimated that the combined Soviet and Satellite production of selected military items during 1951 will be as follows:

a. Aircraft.

Production of aircraft by the Soviet Union in 1948 is considered to have been 12,000 with a structural weight of 66,000,000 pounds. A substantial increase in output can be achieved and it is estimated that the production will be about 13,500 in 1951 and 18,000 in 1954. Satellite production in either year will not be significant.

b. Armored Combat Vehicles.

The Soviet Union and Czechoslovakia are the only countries expected to produce armored vehicles during the periods considered. The Soviet Union is expected to produce about 7,000 tanks and S.P. guns in 1951 and about 9,000 in 1954. Armored car production in the USSR in the same years will be approximately 20 percent of these figures. Czechoslovakian production of tanks and S.P. guns, while significant, is small in comparison with the USSR. Production of armored vehicles will be about 25 percent of the USSR.

16. Comparison of Soviet and Allies Economic Strength.

A comparison of the relative economic strengths in 1951 and 1954 of the Western Allies and the Soviet Union with its Satellites shows that the Allies possess or hold at their disposal a great preponderance in resources and production in practically every basic strategic commodity, a preponderance much greater than that of the Allies over the Axis powers in World War II. Nevertheless, it is certain that current Soviet production of armaments, particularly of military aircraft and armored combat vehicles, is considerably greater than the present combined production of the Allies and will no doubt continue through 1954. Moreover, standing Soviet armed forces are maintained at far greater strength in peace than those of the Western Allies.

Appendix A

BASIC RESOURCES AND INDUSTRIES OF THE SOVIET UNION AND SATELLITES

1. Electric Power.

a. Electric power output in the Soviet Union in 1951 will be about 92 billion KWH with a capacity of about 22.5 million KW. The USSR will be capable of producing annually 2.0 to 2.5 million KW of power plant equipment. This should meet all normal requirements and should not limit Soviet ability to wage war.

b. In 1954 production will be increased to about 123 billion KWH with a capacity of about 30 million KW. Electric power plant equipment will be produced at the annual rate of 3 million KW.

c. A high proportion of electric power in 1951 will continue to be provided by a relatively few major stations, and no complete grid system is expected at this time to provide alternative supplies to main industrial areas. The existence of these weaknesses is fully realized, and efforts will be made to correct them by 1954.

d. The bulk of the electric power output of the Satellites is produced principally by Czechoslovakia and Poland, and will be consumed by them.

2. Coal.

a. The output of coal (including brown coal) in the Soviet Union in 1951 will be about 286 million metric tons of which over 75 percent will be hard coal. This production is an increase of over 50 percent of prewar, and consequently is more than sufficient to meet probable wartime consumption requirements. Considerable progress will continue in the mechanization of coal production. The satellite area is expected to produce as much coal as the USSR in 1951.

b. Production of coal in the USSR in 1954 is estimated at 360 million metric tons.

c. The Satellites are likely to have an appreciable surplus of coal both in 1951 and 1954, which could be made to a large extent, available to meet any increase in Soviet requirements over and above the growing production in the Soviet Union itself. USSR imports from the Satellites in 1951 will be 7 to 8 million tons. It is not expected this will be needed in 1954.

3. Petroleum.

a. Indigenous crude oil production in the Soviet Union in 1951 will be about 41 million metric tons. Satellite petroleum output is expected to total not more than 7 million metric tons, of which about 4 million metric tons might be made available to the Soviet Union in time of war.

b. Indigenous production of crude oil in the USSR in 1954 is estimated at 54 million metric tons. This will leave a surplus of 4 million metric tons which, together with an equal quantity of imports from the Satellites and Soviet synthetic production, will provide a surplus for stockpiling of 9 million metric tons. The Soviet Union through 1954 will continue a policy of vigorous exploitation of indigenous reserves, stringent allocation of domestic production, utilization of synthetic fuel and imports from the Satellites.

c. In the event of a war in 1951, the Soviet Union would probably be unable, after the initial phases, to meet more than 60 percent of its full operational requirements of high octane combat aviation fuel, but in 1954 it is expected that the deficiency will be almost satisfied. It is estimated further that supplies of jet fuel will be ample to meet all future requirements of the jet aircraft component of the Soviet and Satellite Air Forces. In 1954, this will reduce further the needs of high octane combat aviation gasoline. In all other aspects it can be assumed that oil shortages would not be serious enough to impair the Soviet war economy. Those factors which may hamper Soviet wartime production in 1951 are a shortage of specialized equipment, such as catalytic cracking plants, alkylation and polymerization units; an inadequate supply of technicians on the operational level, and transportation bottlenecks. These shortages will be greatly reduced by 1954.

4. Iron Ore, Pig Iron and Steel.

a. It is estimated that during 1951 Soviet production of iron ore, pig iron, and steel will be as follows:

	Million Metric Tons
Iron Ore	47.6
Pig Iron	23.0
Steel	28.6

These quantities are considered adequate for the Soviet Union's wartime needs. Production of steel in the satellite area will probably total about 6.5 million metric tons. Of this amount 1.6 million metric tons may be available to the USSR. Production of steel is contingent in part on shipments of iron ore from Sweden to Poland and Czechoslovakia. A cessation of these imports might force

a reliance on low-grade domestic ores and bring about a reduction in output. Coke supplies are sufficient to meet all satellite requirements and to permit sizable exports to the Soviet Union.

b. Production for 1954 is estimated as follows:

	Million Metric Tons
Iron Ore	65.0
Pig Iron	31.6
Steel	39.0

This should be sufficient to meet wartime needs and to provide a surplus. Satellite production of steel is estimated at 8.0 million metric tons of which about 2.0 million metric tons may be available to the USSR.

5. Ferro-Alloys.

The production of ferro-alloys in the Soviet Union during 1951 will be adequate for fulfilling normal industrial requirements as envisaged for that year. The Soviet Union will have an adequate supply of nickel and vanadium for both peace and war usage; supplies of tungsten, however, might prove inadequate in war. It will have an inadequate supply of cobalt and molybdenum, as these are partly obtained from foreign sources. In 1954, however, the shortage of the latter two items may have been overcome by stockpiling to the extent that the Soviet Union will be able to take advantage of technical advances in the field of ferro-alloy metallurgy. These metals are to some extent interchangeable and wartime shortages in any one or two of them would be unlikely to prove a serious disability. The satellite countries produce sufficient quantities of manganese and chrome to meet their own requirements, but they are deficient in tungsten, nickel , and vanadium.

6. Aluminum.

a. The aluminum production program of the Soviet Union is progressing at a far better rate than that of any other major non-ferrous metal. It is estimated that production of aluminum during 1951 will be about 275,000 metric tons, which is considerably in excess of estimated consumption. Of the Satellites, Hungary will produce about 25,000 metric tons, from which it may provide the USSR 5,000 metric tons, although this will not be needed. Yugoslavia is expected to produce a small amount and will require its full production.

b. In 1954 the production of aluminum by the USSR will be increased to about 325,000 metric tons. The production in Hungary will have been increased to about 45,000 metric tons, of which 20,000 would be available to the USSR, but it is highly doubtful whether it will be required. Yugoslavia will produce about 15,000 tons, most of which is required for its own economy.

c. The stockpile of aluminum in 1951 will be of the order of 500,000 metric tons and will have been considerably increased by 1954.

7. Copper.

a. Primary copper production of the Soviet Union during World War II was as high as 160,000 metric tons. Since consumption exceeded 310,000 tons annually, large amounts had to be imported to meet its war needs. During 1951 the Soviet copper production, including secondary metal, is estimated at 275,000 metric tons, which is still short of World War II consumption. It may, therefore, be expected that supplies of copper would be inadequate to meet full requirements in the event of war in 1951.

b. Production in the satellite countries is likely to be about 75,000 metric tons in 1951. Of this amount Yugoslavia produces about two-thirds, and it is assumed that it will be withheld. The production of the other Satellites is barely sufficient to meet their needs.

c. In 1954 production of copper will be about 300,000 metric tons which is hardly enough for war requirements. Satellite production will be about 90,000 metric tons with Yugoslavia accounting for about 65 percent. It is not expected that the satellites will have an exportable surplus in 1954.

8. Tin.

a. It is estimated that the annual rate of tin production in 1951 will be between 9,000 and 10,000 metric tons, and it is probable that production will be far below war needs in that year.

b. Production of tin in 1954 in the USSR is estimated to be between 10,000 and 11,000 metric tons. It will be in short supply for war purposes, but may be augmented to some extent by imports from China and limited stockpiling.

c. There is no tin production in the satellites. Some of the tin imported by them may be available to the USSR.

9. Lead.

a. Although some progress has been made since the war, Soviet production of primary lead will still be inadequate during 1951. It is estimated that total annual production in the Soviet Union during 1951 is expected to reach between 100,000 and 120,000 metric tons.

b. Satellite countries may produce about 80,000 metric tons, of which Yugoslavia is expected to produce about one half.

c. In 1954 the production of lead in the USSR is estimated at 130,000 - 150,000 metric tons. Satellite production will be of the order of 100,000 metric tons of which Yugoslavia will produce about one half.

d. In both 1951 and 1954 the Soviet Union will be obliged to obtain lead from the Satellites to increase its supply, unless sizable deposits are found in the meantime.

10. Zinc.

a. It is estimated that Soviet production in 1951 may be 120,000 - 140,000 metric tons. Total zinc production in the Satellites is likely to be about the same.

b. In 1954 zinc production in the USSR is estimated at 140,000 - 160,000 metric tons. Satellite production will be of the order of 100,000 tons, of which about 75 percent will be an exportable surplus. Of the total satellite production, Yugoslavia will account for less than one fifth. Total availablity of zinc, therefore, will be adequate for war needs.

11. Machine Tools.

a. It is estimated that the total number of machine tools in the Soviet Union in 1951 will be about 1,200,000 as compared with about 2,000,000 in the United States. Quality and individual capacity of Soviet machines are very much lower on the average than those in the United States. The Soviet Union will be hard pressed to maintain this present level of inventory because of the large number of foreign-make machines, and the difficulty in obtaining replacement parts. The Soviets are in dire need of special high-production equipment and skilled labor to provide additional types of machine tools and production machines, especially for war needs. Deficiencies of machine tools may possibly be met by imports. This is, however, unlikely.

b. By 1954 the machine tool inventory may be of the same order as in 1951, both as to number and type. This conclusion is based on the estimate that the rate of deterioration will be balanced by production. The machine tool production industry and inventory in the satellite nations can be expected to furnish the Soviet Union with some of the required machine tools at an annually increasing rate.

12. Electronic Equipment.

a. The manufacturing capacity of the Soviet electronics industry in 1951 will be small by Western standards, though a considerable expansion is in progress. The assistance of German production experts will accelerate this expansion. In 1951, however, the electronics industry will not be capable of

supplying normal wartime requirements of radar and communications equipment on a scale comparable to that of the Western Powers. One of the chief manufacturing difficulties of the Soviet Union in this branch of industry lies in the mass production of electronic tubes for military equipment. It is possible that considerable assistance in this technique could be provided by Hungary. Moreover, if demands are made for new electronic equipment for guided missiles, the provision of conventional forms of electronic equipment will be correspondingly reduced.

b. In view of the known priorities assigned to the electronics industry, it may be assumed that technical know-how difficulties may have been overcome by 1954, particularly with the help of German, Hungarian, and other technicians. However, in spite of this assistance output will lag owing to the scarcity of skilled production technicians and specialized equipment of the precision type. It is therefore not expected that they will meet their full requirements by 1954.

13. Basic Chemicals.

a. The basic chemical industry in the USSR has made rapid strides during the past two decades. Sulphuric acid production in 1951 is expected to be about 5,000,000 metric tons. Of this tonnage, however, it is believed about one half will be of suitable quality for munitions or for general industrial use. The balance would be suitable for fertilizer production. Sulphuric acid production in the satellite countries, exclusive of Yugoslavia, will be about 1,300,000 metric tons. Production of other basic chemicals in 1951 such as synthetic ammonia, calcium carbide (for acetylene production) and chlorine will be about 900,000, 340,000, and 350,000 metric tons respectively.

b. Synthetic ammonia production in the Satellites in 1951 is estimated to be about 550,000; calcium carbide production 850,000, and chlorine 300,000. Yugoslavia's production of these three basic chemicals is relatively small with the exception of calcium carbide which will be about 150,000 tons in 1951; however, more than half of this production originates in the Sovzone of Germany.

c. Production of basic chemicals in the USSR in 1954 is estimated to increase to about 6,300,000 metric tons of sulphuric acid, 1,100,000 tons of synthetic ammonia, 400,000 to 450,000 tons of calcium carbide and 450,000 to 500,000 tons of chlorine. Production of calcium carbide (for acetylene) and chlorine for 1954 may be greater if the organic chemical industry, now in its infancy and ready for expansion, follows US developments.

d. The fertilizer production in the USSR in 1951 comprising superphosphates, nitrogenous and potash fertilizers will total about 5,500,000 metric tons of which about 3,100,000 will be superphosphates. Fertilizer production in the Satellites in 1951 will be about 4,000,000 metric tons, exclusive of Yugoslavia, which will produce about 180,000 metric tons.

g. The output of basic chemicals in the Satellites in 1954 is expected to be about 630,000 metric tons of synthetic ammonia, 950,000 tons of calcium carbide, and 330,000 tons of chlorine; however, more than half of this production originates in the Sovzone of Germany. Fertilizer production will increase to about 7,000,000 metric tons with proportional increases over 1951 production in the individual types. Yugoslavia is not expected to increase its output to any considerable extent over 1951.

f. The Soviet Union is expected to meet all requirements of basic chemicals for peace and war use, particularly with imports from the Satellites, in 1951 and 1954. There may be shortages, however, with respect to special products of the chemical industry, particularly in 1951. These shortages may be attributed to a scarcity of some raw materials and specialized equipment which, however, may be largely overcome in 1954.

14. Rubber.

a. Synthetic rubber production is expected to reach the yearly rate of about 220,000 metric tons during 1951. The two chief types now being produced are the Divinyl and Sovpren. The GR-S type commonly made in the United States is not being produced on a large scale in the USSR and the highly specialized types do not appear to have been developed. This affects both the output and the quality of the product on the USSR. As would be expected, considerable difficulties have been encountered in developing heavy duty tires for military use. Consequently, there is greater dependence on natural rubber imports and need for stockpiling. Imports of natural rubber in 1951 will be about 140,000 tons from which possibly 50,000 tons per year will be available for strategic stockpiling.

b. In 1954 the production of synthetic rubber is expected to reach about 260,000 metric tons with improved quality. The need for imports and stockpiling of natural rubber to meet minimum requirements for war will continue through 1954.

15. Transport Capabilities.

a. Railways.

(1) Transportation in the Soviet Union in 1951 and 1954 will continue to depend mainly on the railways which carry about 88 percent of all inland freight traffic. The planned traffic goals will be achieved in 1950; and by 1951, rail traffic will be in the magnitude of 576 billion ton-kilometers. Thereafter, traffic, projected on the basis of comparative indices of industrial growth and freight traffic, will increase to about 717 billion ton-kilometers by 1954.

(2) The restoration of the war-damaged tracks has eased the shortage of steel rails. The production of the track, locomotives, and rolling stock necessary for the achievement of the required traffic will be within Soviet

capabilities. In fact, based on the Soviet utilization, the estimate of new equipment necessary for the traffic required in 1951 and 1954 will be less than that produced in 1950. The Soviets will expand their electric locomotive production and their use of electrified lines, but the production of Diesel-electric locomotives will not increase appreciably. By 1954 the Trans-Siberian railroad, the sole rail connection between east and west, will have been improved and better able to meet requirements for peacetime economy and for war.

b. Civil Air Transport.

The Soviets will continue to maintain their Civil Air Fleet at approximately 3400 aircraft through an annual production of about 355 units.

c. Inland Waterways.

Inland water transport is expected to handle about 8 percent of the total inland traffic. Annual increase of inventory will approximate 60,000 horse-power of self-propelled craft and 600,000 tons of carrying capacity in dumb barges. The use of river transport will be emphasized to relieve the railways wherever possible in the carrying of bulk freights.

d. Coastal Shipping.

The Soviet merchant fleet in the Far East, the Black Sea, the Baltic Sea, and the Arctic engages largely in coastal tramp operations. Less than 10 percent of the current fleet of 522 vessels appears in a single month outside of Soviet waters. However, by 1954, under the stimulus of trade with Sakhalin, Korea, and China, traffic may increase. The Northern Sea Route will be able to carry more traffic in 1954.

APPENDIX B

AGRICULTURAL PRODUCTION IN THE SOVIET UNION AND THE SATELLITES

1. Grain.

a. The grain production of the Soviet Union is considered adequate, provided harvests are normal, to feed the population and livestock both in 1951 and 1954 at about the prewar level of consumption. Net production of all grains in 1951 is estimated to be 88 million metric tons which is 95 percent of prewar production; there will be a carry-over of 8 million tons. Distribution is estimated as follows: 80 million tons will be utilized, 61 percent by the population, 20 percent for livestock, 17 percent for seed, and 2 percent for industrial use. Of the remaining 16 million tons, 3 million will be exported, 10 million will be carried over to the following year, and about 3 million will be loss and waste. These figures do not include possible imports of grain from the Satellites, Manchuria, and Korea. If stockpiling of grain is to increase significantly, it is clear that it must be at the expense either of the consumption level or of exports to obtain capital equipment.

b. The estimated total grain production for the Satellites of about 45 million tons is expected to be sufficient to maintain the old consumption levels in these countries and will not provide an exportable surplus.

c. Production of all grains in 1954 will be about 95 million metric tons. To this is to be added a beginning-of-the-year stockpile of 11 million tons, totalling 106 million tons, of which 91 million will be consumed in about the same proportion as in 1951. The balance of 15 million, minus about 3 million for exports and 3 million for loss, will leave 9 million tons for stockpiling. Satellite production for 1954 will be about 47 million tons and will not provide an exportable surplus.

d. Yugoslav production of 9.1 million metric tons for 1951 and 9.6 million metric tons for 1954 will provide a surplus of less than one million tons for each of the two years.

2. Meat.

a. The prewar production of meat of about 2.66 million tons, all consumed within the USSR, averaged only 17 kg. per capita, which is very low according to Western standards. In Eastern Europe, generally, meat does not form a large part of the normal diet and there is no likelihood of imports into the Soviet Union, except in very small quantities from the Satellites. The production of meat in 1951 will be 3.2 million metric tons and in 1954, 3.5 million metric tons which conforms generally with the above pattern of requirements. Satellite production may provide only a very small surplus.

3. Fats and Oils.

Availability of fats and edible oil in the USSR has been low in the postwar years. Production in 1951 is estimated at 1.6 million metric tons, which is below prewar in terms of per capita consumption. Soviet Union production of fats and oils in 1954 should increase to 1.8 million metric tons as a result of increased slaughter of livestock and increased acreages and yields of the oilseed crops. This may provide, on a per capita basis, 0.7 kilogram more per annum than in 1951. Production of fats and oils in the Satellites in 1951 is estimated at slightly above 1 million metric tons. This should increase to about 1.2 million metric tons in 1954 or equal to the prewar level. A small exportable surplus may be available. Yugoslavia's production of fats and oils in 1951 is expected to reach about 210,000 metric tons, i.e. a 70 percent increase over prewar. Production in 1954 may show a slight increase over 1951. Yugoslavia's exportable surplus in 1951 and 1954, therefore, should somewhat exceed the prewar level.

4. Sugar.

The production of sugar available for consumption in 1951 in the USSR is estimated at 2.2 million metric tons which compares with a prewar average of 2.6 million metric tons. The comparison is even less favorable on a per capita basis because of increase in population. USSR sugar production in 1954 is estimated at 2.5 million metric tons, i.e. about 12 kilograms per capita as compared to 11 kilograms in 1951. Sugar production in the Satellites in 1951 is estimated at 2.8 million metric tons which will give a surplus of 0.9 million metric tons. Satellite production of sugar in 1954 is expected to increase to 3.0 million metric tons, thereby allowing a surplus of less than 1.0 million metric tons. Yugoslavia's production of sugar both in 1951 and 1954 is expected to be approximately 170,000 metric tons. This will not provide an exportable surplus.

5. Timber.

Although the estimated production of 270 million cubic meters of timber in 1951 exceeds the prewar average of 204 million cubic meters, requirements will be heavier because of rehabilitation and reconstruction, industrial expansion, and increased population. Timber production in 1954 may reach 300 million cubic meters. Production of timber in the Satellites is well above domestic requirements. The timber output in 1951 is estimated at 83 million cubic meters and may rise to 85 million cubic meters in 1954. The surpluses could well take care of any future Soviet demands. Estimates of Yugoslavia's timber production in 1951 and 1954 are 25 million cubic meters and 23 million cubic meters respectively, compared with 27 million cubic meters in prewar. Despite this drop, exports may exceed prewar for the Yugoslav Government will probably seek foreign exchange through timber sales.

CENTRAL INTELLIGENCE AGENCY

INTELLIGENCE MEMORANDUM NO. 268

ERRATA

27 February 1950

Holders of IM-268 are requested to substitute the following for corresponding sections b, d, and e of paragraph 13, "Basic chemicals," on Pages A - 6 and A - 7.

b. Synthetic ammonia production in the Satellites in 1951 is estimated to be about 550,000; calcium carbide production 850,000, and chlorine 300,000. However, more than half of this production originates in the Sovzone of Germany. Yugoslavia's production of these three basic chemicals is relatively small with the exception of calcium carbide which will be about 150,000 tons in 1951.

d. The fertilizer production in the USSR in 1951 comprising superphosphates, nitrogenous and potash fertilizers will total about 5,500,000 metric tons of which about 3,100,000 will be superphosphates. Fertilizer production in the Satellites in 1951 will be about 4,000,000 metric tons, exclusive of Yugoslavia, which will produce about 180,000 metric tons. Fertilizer production in the USSR in 1954 will increase to about 7,000,000 metric tons with proportional increases over 1951 production in the individual types. The Satellites (including Yugoslavia) are not expected to increase their output of fertilizers to any considerable extent over 1951.

e. The output of basic chemicals in the Satellites in 1954 is expected to be about 630,000 metric tons of synthetic ammonia, 950,000 tons of calcium carbide, and 330,000 tons of chlorine; however, a substantial part of this production originates in the Sovzone of Germany.

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