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SECURITY INFORMATION

PROVISIONAL INTELLIGENCE REPORT

THE DISTRIBUTION OF WORKERS IN THE USSR

CIA/RR PR-14

30 April 1952

Note

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(CRR Project 8-51)

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SECURITY INFORMATION

THE DISTRIBUTION OF WORKERS IN THE USSR

Summary

Since 1932 the implementation of Soviet manpower policy has succeeded, in spite of the interruption of World War II, in increasing the total number of workers in the USSR by an estimated 70 percent, to 39,200,000, and in almost doubling the number of those in industry, to roughly 15,255,000.* Although by 1942 the war had reduced the number of civilian workers to below the 1932 level, it gave impetus to the movement eastward of industry and of population, so that the labor force in the Urals, Central Asia, and Siberia is now more than twice as large as in 1934.

There is no general shortage of Soviet workers, but shortages of certain types of skilled personnel and shortages in specific areas exist. Current goals, however, appear to have been met, and goals previously established for the end of the Fourth Five Year Plan in 1950 have been exceeded.

In the next few years, under present conditions, the number of Soviet workers will grow less rapidly than in the past 5 years. Greater mechanization of industrial production would permit increased production without comparable increases in employment and may result in an actual decrease. Additional personnel could be directed into other types of employment.

The principal concentrations of Soviet workers at present are in heavy industry and transport. Although from 1946 to 1951 the bulk of new workers in the USSR went into industry, construction, transport, and State agriculture, there are indications that an increasing proportion of new workers is going into other sectors of the economy. On the other hand, the trends in the distribution of Soviet workers by area will continue with little change other than slight deviations resulting from particular projects.

* The term workers as used in this report refers to the Soviet category of workers and employees (including engineering-technical personnel) (rabochiye, sluzhaschiye, i inzhenerno-tekhnicheskiye rabotniki) -- those employed in the national economy by ministries and other government organs, including those in State agriculture. The term workers does not include collective farm personnel or those coming under the category of slave labor.

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I. Soviet Manpower Policy.

Soviet manpower policy has developed as an integral part of the program for industrialization and for development of natural resources. Basically, this policy has aimed at controlled acceleration of industrialization and urbanization and of the previously existing trends of migration to the east and north.

1. Prewar Developments.

Soviet planning of the migration of population and labor began in 1925. Through several changes in administrative responsibility, the techniques of population redistribution were elaborated, including monetary and other incentives* and various forms of coercion. Early results were not entirely satisfactory. In 1936 the Ministry of Internal Affairs assumed responsibility for migration and intensive central direction of migration followed in 1938 with the Third Five Year Plan (1938-42). During the course of this Plan a total of 5 million farmers were to be available for resettlement, of whom 3.5 million were to be transferred from rural to non-agricultural employment, leaving 1.5 million for agricultural resettlement. 1/**

Eastward migration in the USSR before 1939 did not include so large a number of agricultural settlers as was intended. The lack of voluntary migrants undoubtedly was partially offset by farmers who were removed from west to east during collectivization. During the Third Five Year Plan (1938-42) the Far East economic region*** was to have its economy given

* Among the inducements offered for agricultural resettlement were the following: credit for personally owned goods left behind (provisions, equipment, and livestock) and a supply of comparable goods at the new location; cancellation of tax debts and offer of tax exemptions; free or reduced cost of transport; credits for construction and repair; and, where possible, housing and barns. Industrial resettlement inducements included differential wages, special social services, and transportation. 2/

** Footnote references in arabic numerals refer to sources listed in Appendix C.

*** For the purposes of this report, the USSR has been divided into 12 economic regions as indicated on the map following p. 17. This map (CIA 12163, Feb 1952), entitled "USSR: Economic Regions in 1934, 1937, and 1951," had been developed from a map (CIA 12048, Sep 1951) showing the economic regions in the USSR based on an outline contained in the article "Integrated Development of Economic Regions during the Fourth Five Year Plan" by Yu. G. Saushkin, Voprosy Geografii, Second Symposium, 1946. For convenience, economic regions will be referred to henceforth in this report as regions.

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greater balance. Two hundred thousand industrial workers and 600,000 agricultural workers, accompanied by their families, were to be sent to the Far East and East Siberia regions. Workers for the Far East region were to be recruited* from the Tatar, Chuvash, and Mordov ASSR's and from the Kursk, Tambov, and Kirov oblasts. Approximately 2 million collective farmers were available for resettlement from the Central and Volga regions, which contain the above administrative divisions. 3/

The achievements of Soviet policy in accelerating industrialization and the trends of migration to the east and north is shown by the different rates of increase by region in the number of workers from March 1934 to March 1935. These rates of increase are shown in Table 1.**

* In order to eliminate competition among the various ministries or enterprises in securing workers, each Ministry was assigned special oblasts in which to recruit. The fish industry, for example, could recruit only in the Krasnodar kray and in the Stalingrad and Saratov oblasts. 4/ Previously, labor had been recruited by enterprises from kolkhozy (collective farms) in surrounding areas, with wasteful competition resulting. Since a large proportion (66 percent in 1938) of the labor drawn into industry from collective farms remained in the same oblast, there was a large labor turnover resulting from the tendency to return to the farm. This tendency increased the draft upon older industrial areas for the labor supply for new ones. 5/

** Table 1 follows on p. 4.

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Table 1

Number of Workers in the USSR by Region ^{a/} ^{b/}
1934-35

<u>Region</u>	<u>1934 ^{b/}</u> <u>(Thousand Workers)</u>	<u>1935 ^{b/}</u>	<u>1935 as</u> <u>Percentage of 1934</u>
North	2,456	2,584	1.052
West	518	563	1.087
South	4,336	4,511	1.040
North Caucasus	1,177	1,272	1.080
Transcaucasus	755	792	1.048
Volga	1,052	1,169	1.111
Central	6,383	6,863	1.078
Urals	1,780	2,050	1.152
West Siberia	1,030	1,038	1.005
Central Asia	1,101	1,246	1.132
East Siberia	556	602	1.083
Far East	301	493	1.637
Total	<u>21,445</u>	<u>23,183</u>	<u>c/</u>

a. The most recent Soviet data available showing the distribution by the their administrative areas of the workers in the USSR are for March 1935 and of the industrial labor force for January 1936. ^{7/} By 1935 the violence of collectivization and the resultant waves of voluntary and forced migration had diminished. The rapidity of the growth of the nonagricultural labor force had lessened, resulting in a lower rate of labor turnover and migration. ^{8/} Moreover, by 1935 the accuracy of Soviet statistical reporting is believed to have improved.

Therefore, the increases by region in the number of workers from March 1934 to March 1935 provide a reasonably good measure of their differential rates of increase. Some difficulty was encountered, however, in comparing different years because of the changes in oblast and other administrative boundaries. Adjustments were made wherever data would permit (see Appendix A).

b. These figures differ from the published data because of adjustments for boundary changes, incomplete distribution as shown in published data, and rounding.

c. The 1935 total as a percentage of the 1934 total was 1.081.

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Under the First Five Year Plan (1928-32) the number of workers in the USSR grew rapidly, increasing from 11.6 million in 1928 to 23.7 million in 1934* and to 27 million in 1937. As the unemployed and surplus farm labor resources decreased after 1932, the rate of growth diminished. Employment in heavy industry increased from 26.7 percent of all Soviet workers in 1928 to 30.9 percent in 1937, 9/ and training of personnel for heavy industry was given great emphasis. In 1930, graduates from technical colleges and higher technical schools of the Ministry of Heavy Industry represented 41.1 percent of those graduating from all colleges and higher technical schools. This proportion, however, declined to 34.2 percent in 1935. 10/

The percentage increases from 1934 to 1936 in Soviet employment in large-scale industry by region as shown in Table 2 reflect the government's emphasis on the development of heavy industry. Table 3** shows the number of Soviet workers in selected sectors of the economy under the Second (1933-37) and Third (1938-42) Five Year Plans. 11/

Table 2

Percentage Increases in Soviet Employment
in Large-scale Industry a/ by Region 12/
1934-36

<u>Region</u>	<u>1935 as Percentage of 1934 b/</u>	<u>1936 as Percentage of 1935 c/ d/</u>
North	1.083	1.079
West	1.190	1.105
South	1.108	1.113
North Caucasus	1.125	1.095
Transcaucasus	1.136	1.048
Volga	1.222	1.176
Central	1.121	1.122
Urals	1.112	1.079
West Siberia	1.023	1.071
Central Asia	1.214	1.101
East Siberia	1.311	1.383
Far East	1.542	1.097

a. Large-scale by Soviet definition.

b. The 1935 total as a percentage of the 1934 total was 1.112.

c. The percentage increases from March 1935 to January 1936 converted to annual rate.

d. The 1936 total as a percentage of the 1935 total was 1.12.

* See Table 1, note b.

** Table 3 follows on p. 6.

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Table 3

Number of Soviet Workers in Selected Sectors of the Economy
under the Second and Third Five Year Plans
1932, 1937, 1942

	<u>1932 a/</u> (Thousand Workers)	<u>1937 a/</u> (Thousand Workers)	<u>1942 b/</u> (Thousand Workers)	<u>1937 as Percen- tage of 1932</u>	<u>1942 as Percen- tage of 1937</u>
Total Employment	22,942.8	26,989.5	32,000	117.64	118.6
Industry	7,999.8	10,111.7	11,899	126.30	117.7
Construction	2,835.1	2,023.2	1,829	71.40	90.4
Rail Transport	1,296.6	1,512.2	1,700	116.70	112.4
Water Transport	145.5	179.5	230	123.40	128.1
Other Transport	598.5	1,092.1	1,735	182.40	158.9

- a. Actual employment.
b. Planned employment.

It will be seen by comparing the increases in total employment by region in Table 1 with the percentage increases in industrial employment in Table 2 that in every case, except the Urals and Far East regions, industrial employment was increasing at a greater rate, notably in the Volga, Central Asia, and East Siberia regions. Diminution of the rate of increase in industrial employment from 1934 to 1936 appears in all regions except the South, West Siberia, and East Siberia.

An evaluation of the achievements in increasing and redistributing the number of workers in the USSR from 1936 to the beginning of World War II must be made on the basis of scattered data. It is clear, however, that by 1941 the Soviet government had succeeded in considerably expanding industry in the Urals and West Siberia regions. The degree of success in inducing migration to the East Siberia and Far East regions after 1938 is less certain, but it can be partially gauged by a comparison of population figures of these two regions for the years 1933 and 1939. 13/ It is evident, nevertheless, that the greater part of Soviet industry still was in those areas of the European USSR that were subsequently invaded or threatened by invasion. Employment data for territory added to the USSR by January 1941 (see Appendixes A and B1) are included in the figures in Table 4,* giving the estimated number of workers in the USSR by region as of 1 January 1941.

* Table 4 follows on p. 7.

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Table 4

Estimated Number of Soviet Workers by Region
1 January 1941

Region	Thousand Workers	
	Total Employment	Industrial Employment
North	3,000	1,160
West	1,800	585
South	7,100	2,450
North Caucasus	1,600	394
Transcaucasus	900	240
Volga	1,350	330
Central	8,400	3,700
Urals	2,900	936
West Siberia	1,350	440
Central Asia	1,600	386
East Siberia	900	265
Far East	600	130
Total	31,500	11,016

2. Effects of World War II.

World War II gave considerable impetus to the eastward movement of Soviet industry and population. Workers, particularly in the more highly skilled categories, were evacuated with their factories in order to escape the German invasion. The balance of the movement eastward also consisted largely of urban population. These refugees were absorbed into the armed forces and civilian employment in the areas to which they fled. Although no accurate data are available, estimates from several sources indicate that the number of persons evacuated from the areas of the USSR which were later occupied by Germany, including the recently annexed territory, amounted to about 10 million. ^{14/}

Beginning in the second half of 1940, civilian labor was mobilized by a series of decrees. Those already employed were held to their jobs, and highly skilled and technical labor was subject to compulsory transfer. The State labor reserve school system was instituted for the recruitment and training of young workers. From 1940 to 1945 these schools trained 2.5 million persons. ^{15/} The Committee for Registering and Redistributing Labor Forces was established, through which those persons of working age not already employed were drawn into the labor force. ^{16/} In 1943 alone, 7.6 million persons were recruited. ^{17/}

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As a result of mobilization into the armed forces and losses from occupation of territory by the Germans, the number of Soviet workers fell from 31.5 million in 1941 to 18.5 million in 1942, actually below the number of workers in 1932, given in Table 3 as 22.9 million. By 1943, however, the number increased to 19.6 million. Industrial personnel did not decrease proportionately, because of deferment and recruitment policies. Industrial personnel constituted 35 percent of all Soviet workers in 1941 and 39 percent in 1943. ^{18/} Table 5 shows the number of workers by region in 1943, indicating both total and industrial employment.

Table 5

Estimated Number of Workers by Region in Territory Held by the USSR ^{a/}
1943

<u>Region</u>	<u>Thousand Workers</u>	
	<u>Total Employment</u>	<u>Industrial Employment</u>
North	1,600	600
North Caucasus	400	100
Transcaucasus	700	200
Volga	1,566	545
Central	6,200	2,800
Urals	3,944	1,544
West Siberia	1,660	754
Central Asia	1,712	594
East Siberia	1,100	350
Far East	700	200
Total	19,582	7,687

a. See Appendix B3.

The number of Soviet workers increased by 10 million from 1943 to 1946, surpassing the prewar level in 1946.

3. Postwar Trends.

Developments in the distribution of Soviet manpower since World War II have been conditioned by reconstruction requirements in the territories formerly occupied by Germany. Emphasis has continued, nevertheless, on the further development of the economy, especially in Siberia and the Far Eastern USSR.

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In order to increase the centralization of control of the allocation of labor in the USSR, the Ministry of Labor Reserves was created in 1946, 19/ and migration administrations were attached to Union Republican Councils of Ministers. The Ministry of Labor Reserves assumed the functions of the war-time Committee for Registering and Redistributing Labor Forces and of the State labor reserve school system. Territorial redistribution of labor is achieved chiefly through the assignment of State labor reserve students and through the recruitment by the Ministry of Labor Reserves of contract workers for industries in the Urals and for other industrial centers in Siberia and Far East regions. The European oblasts generally have not needed an influx of labor from other areas. Some of these oblasts, even those which had been occupied, still had an agricultural population surplus to transfer to other oblasts. 20/

The economic privileges for the newly recruited Soviet workers also were increased, including free transportation at the expense of the hiring enterprises, allowances and food while in transit, lump sum assistance for workers and families, loans for housing construction, and free production-technical training. The lump sum grants varied according to the industry concerned, the location of the enterprise, and the length of the contract signed. 21/ There also were tax privileges for members of families of collective farm workers employed under contract in industry. Families of those working in coal mines, for example, were exempted from 50 percent of the agricultural tax. Wage differentials were another inducement offered for work in distant areas, wages in the Urals and other eastern regions averaging about 20 percent higher than in other areas. 22/ In addition, wages are set higher for the coal, ferrous metallurgy, and oil industries. 23/

Gosplan (State Planning Commission) in its plan for the recruitment of labor includes allocations of the recruitment of contract workers, by oblast and by other administrative divisions, and of conscription of youth for State labor reserve schools. The local organs of the Ministry of Labor Reserves contract workers for the following: coal, oil, and ferrous and nonferrous metallurgy industries; construction of electric stations; construction of heavy industry, fuel, and military and naval enterprises; timber, cement, and asbestos industries; and loading and unloading operations of river and sea fleets. 24/ Of the 4.5 million workers planned to graduate from State labor reserve schools during the Fourth Five Year Plan (1946-50), 660,000 were for coal mining and 570,000 for ferrous metallurgy, while only 100,000 were to be trained for light industry. 25/

Of the planned total of 602,000 graduates from higher educational institutions in the USSR from 1946 to 1950, 120,000 were to go to industry and construction, 24,000 to transportation and communications, and 47,000 to State agriculture. Of the planned total of 1,326,000 graduates from special secondary schools, 347,000 were to go to industry and construction, 74,000 to transportation and communications, and 198,000 to State agriculture. 26/

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The goal for the total number of workers to be employed in the USSR at the end of the Fourth Five Year Plan in 1950 was set in 1946 at 33.5 million persons. The total number attained was announced as 39.2 million, or an additional 5.7 million. ^{27/} The number of graduates from secondary schools during the period 1946-50 was 48,000 short of the goal, but the goal for higher school graduates was exceeded by 50,000. In the same period there were 3.4 million graduates from State labor reserve schools instead of the planned 4.5 million. Additional individual and brigade training made up the deficit. The total number of new workers to be trained in brigades during the 1946-50 period was set at 7.7 million, including 2.3 million for State agriculture, 1.9 million for industry, 0.6 million for construction, and 1.9 million for transport. ^{28/} By the end of 1948, 7 million new workers had completed these training courses.

The net increase in the Soviet labor force as planned for the period 1946-50 was 6.25 million workers over the annual average for 1945, although the total number of new workers to be added through educational and training programs was to be 14.1 million. The actual increase, however, was 12 million persons, ^{29/} so that the overfulfilment of the employment plan probably was derived in part from a lower than anticipated level of retirement. ^{30/}

II. Number and Distribution of Workers.

As of 1 January 1951, the total number of Soviet workers was announced as 39,200,000, or a 70-percent increase since 1932. The total number in industry is estimated as 15,255,000 workers, or almost double the number in 1932. (See Appendix B for the methodology in arriving at estimates.)

1. By Region.

The estimated distribution by region of the number of Soviet workers as of 1 January 1951 is set forth in Table 6,* the comparison with the 1941 and 1943 distribution serving to indicate the effects of World War II as well as to show the government policies for reconstruction and development of the Soviet economy.

* Table 6 follows on p. 11.

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Table 6

Estimated Number of Workers in the USSR by Region a/
1 January 1951

<u>Region</u>	<u>Thousand Workers</u>	<u>1951 as Percentage of 1941 b/</u>	<u>1951 as Percentage of 1943 c/</u>
North d/	3,600	120	225
West e/	2,000	111	2/
South g/	7,300	103	2/
North Caucasus d/	1,850	115	463
Transcaucasus	1,200	124	171
Volga	1,750	130	112
Central d/	10,200	121	164
Urals	4,600	158	116
West Siberia	2,100	150	127
Central Asia	2,300	144	134
East Siberia h/	1,300	144	118
Far East i/	1,000	166	142
Total	39,200		

a. See Appendix B4.

b. 1951 as percentage of 1941 averaged 124 for all regions.

c. 1951 as percentage of 1943 averaged 200 for all regions.

d. Partially occupied by the Germans in 1943.

e. Including postwar territorial addition of Kaliningrad.

f. Not applicable, since the region in January 1943 was occupied by the Germans.

g. Including postwar territorial addition of Transcarpathian Ukraine.

h. Including postwar territorial addition of Tannu Tuva.

i. Including postwar territorial addition of South Sakhalin.

2. In Industry by Region.

The regional distribution of industrial employment in the USSR was projected from 1941 to 1951 on the basis of scattered and incomplete information. It is true that the estimated figures seem reasonable when compared with the regional distribution of all workers as well as of population. The figures as shown in Table 7* however, should be considered as provisional only, since there is no check, even in the form of a firm figure for total Soviet industrial employment (see Appendix B5).

* Table 7 follows on p. 12.

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Table 7

Estimated Soviet Industrial Employment by Region
January 1951

Region	Thousand Workers	1951 as Percentage of 1941 a/	1951 as Percentage of 1943 b/
North c/	1,500	130.0	250
West	700	119.6	d/
South	2,950	120.0	d/
North Caucasus c/	495	125.0	495
Transcaucasus	335	140.0	167
Volga	595	180.0	109
Central c/	4,800	130.0	171
Urals	1,685	180.0	109
West Siberia	900	204.0	119
Central Asia	650	170.0	109
East Siberia	425	160.0	121
Far East	220	169.0	110
Total	<u>15,255</u>		

- a. 1951 as percentage of 1941 averaged 138 for all regions.
b. 1951 as percentage of 1943 averaged 198 for all regions.
c. Partially occupied by the Germans in 1943.
d. Not applicable, since the region in January 1943 was occupied by the Germans.

3. By Sector of the Economy.

The data available on employment and graduations from State labor reserve schools and from other forms of training are not sufficient to permit firm estimates to be made of the distribution of Soviet workers in all sectors of the economy. Employment in 1951 in some sectors, however, may be approximated by various means (see Appendix B6) and is shown in Table 8.*

* Table 8 follows on p. 13.

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Table 8

Estimated Number of Soviet Workers in Certain Sectors of the Economy
1951

Sector	Employment	Thousand Workers
		Probable Range of Variation of Estimate
Industry	15,000	13,000 to 15,000
Construction	3,000	2,000 to 4,000
Rail Transport	2,000	2,000 to 3,000
Water Transport	230	200 to 300
Other Transport	2,500	2,200 to 2,800
Communications	600	400 to 600
Trade	3,100	2,500 to 3,300
Public Feeding	800	700 to 900
Credit	300	250 to 350
Education	3,200	2,800 to 3,600
Art	250	
Public Health	1,500	1,200 to 1,800
State and Public Institutions	2,200	1,900 to 2,500
Dwelling and Communal Economy	1,200	900 to 1,500
Other Nonagricultural Activity	400	
Agriculture and Forestry	2,900	2,500 to 4,000
Total	<u>39,180</u>	

Estimated employment in 1951 in certain Soviet industries is shown in Table 9.*

* Table 9 follows on p. 14.

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Table 9

Estimated Employment in Certain Soviet Industries
1951

Industry	Employment	Thousand Workers	
		Probable Range of Variation of Estimate	
Electric Power	325	300 to	350
Petroleum	300	250 to	300
Coal	950	880 to	1,000
Ferrous Metallurgy	890	850 to	925
Nonferrous Metallurgy	375	350 to	400
Metalworking and Machine Construction	4,500	3,000 to	6,000
Timber	460	400 to	500
Chemical	390	310 to	460
Textile	1,000	800 to	1,000
Fish	189	150 to	225
Food	1,200	1,100 to	1,300
Meat and Dairy	254	200 to	300
Paper	110	90 to	130

III. Adequacy of Number and Distribution of Workers.

The content of recruiting advertisements in the Soviet press and radio indicates a localized rather than a general shortage of workers; otherwise the stringent labor control and mobilization decrees of World War II presumably would be invoked. ^{31/} Government measures inducing entrance into the labor force at early ages have been relaxed; enrollments in higher primary grades, in secondary grades, and in higher educational institutions continue to increase; and the length of certain vocational training courses has been extended. Moreover, the overfulfilment of the labor force goal under the Fourth Five Year Plan (1946-50) is greater than the overfulfilment of the Plan's production goals, resulting, at least in part, from more employment in education, public health, and other nonproductive work than originally was planned. Current goals apparently are being met.

Some shortages of personnel with specific skills exist as well as some shortages of workers in specific areas. Recruiting advertisements indicate both the areas of need and the types, but seldom the number, of personnel required. Among the advertisements which seem to be most urgent are those for seasonal workers, such as those needed in the food-processing industry. The types of personnel which are sought range from guards and ice salesmen

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to engineers and university professors. At present, for example, there is a need for qualified specialists to head the enlarged collective farms. ^{32/} Personnel for the large hydroconstruction projects are required, as a result of the current expansion in this field, ^{33/} and training courses are being established. On the other hand, workers have been released from the coal industry as a result of increased mechanization and productivity. ^{34/} Reductions in the number of administrative personnel in some ministries and organizations were ordered, but the number of persons affected presumably is small. ^{35/}

The need for workers in given areas varies over periods of time. Most large urban areas generally are represented as requiring only a few types of personnel. Advertisements for workers to go to the Far Eastern areas of the USSR have declined, if not disappeared. Advertisements for workers for the Far Northern area of the USSR continue, however, and range from almost all types of engineers to German-language instructors and various types of medical personnel.

Present Soviet labor problems arise largely from maldistribution rather than from a shortage of workers. Workers often are reluctant either to move to distant, unfamiliar, or unpleasant places or to remain in them for more than a few years. As contracts expire, labor turnover and vacancies result. Short-run labor turnover, in the absence of contract expiration, also occurs as a result of dissatisfaction with working conditions and advantages offered elsewhere. ^{36/} In addition, there is the failure to use workers at optimum skills, which is criticized by the Soviet press.

The degree of difficulty caused by the maldistribution of labor is difficult to gauge. The presumption is that, since existing stringent controls have not been invoked, the problem is deemed soluble by slower, less radical measures, such as the establishment of special training courses as the need for them arises.

IV. Probable Developments.

In the next few years, under present conditions, the number of Soviet workers will grow less rapidly than in the past 5 years. From 1946 to 1951 the bulk of new workers went into industry, construction, transport, and State agriculture. The distribution of secondary and higher school graduates in 1950 and 1951, however, indicates that the proportion going into other sectors of the economy is increasing. ^{37/}

Further mechanization of Soviet industries would permit increased production without comparable increases in employment or with actual reductions in some industries. Additional personnel, therefore, could be directed into other employment. Trends in the distribution of workers by areas probably will continue with little change, although emphasis on the Far Eastern area of the USSR appears to be declining. In the Far Northern area of the USSR the tendency appears to be toward the development of permanent settlements in preference to the filling of requirements with contract workers. Elsewhere in the USSR the construction of canals, hydrostations, and other projects will have a slight effect on the distribution of workers.

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APPENDIX A

ADJUSTMENT OF STATISTICS DUE TO ADMINISTRATIVE BOUNDARY CHANGES IN THE USSR

Data from Trud v SSSR (Labor in the USSR) for 1934 and 1935, published by the Soviet Central Statistical Administration and representing the most recent available information concerning the distribution of the Soviet workers by regions, have been used as the basis for projections of labor figures to later dates. In order to utilize these Soviet statistics, adjustments had to be made for administrative boundary changes which occurred after 1934. For convenience, only those adjustments were made which would render the data applicable to areas comparable to present regions. The numerical size of the adjustments was based on analysis of maps showing the boundary changes, 30/ on population data, 39/ and on evidence in published statistics of the magnitude of groups of persons affected. The following statistical adjustments were made:

1. 1934 to 1935.

a. Volga Region.

Kuybyshev kray in the Volga region lost territory, including approximately 130,000 workers, to what is now Chkalov oblast in the Urals region. Mordov ASSR, including 65,000 workers, was separated from Kuybyshev kray and now is in the Central region.

b. Urals Region.

Udmurt ASSR, including 110,000 workers and employees, was separated from Gork'i'y kray in the Central region and now is in the Urals region. Cholyabinsk in the Urals region lost about 150,000 workers in the area ceded to West Siberia kray. The area ceded approximates the present Kurgan oblast in the West Siberia region.

c. East Siberia Region.

The present Krasnoyarsk kray gained approximately 87,000 workers with territory acquired from the West Siberia region.

2. 1935 to 1941.

a. Volga Region.

Kuybyshev kray in the Volga region lost approximately 200,000 persons to what is now Penza oblast in the Central region.

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b. East Siberia Region.

Chita oblast in the East Siberia region gained Zeya oblast from the Far East region together with approximately 17,000 workers. There were other minor administrative boundary changes for which adjustment could not be made because of lack of data. The number of persons involved in each of these changes, however, is believed to have been small.

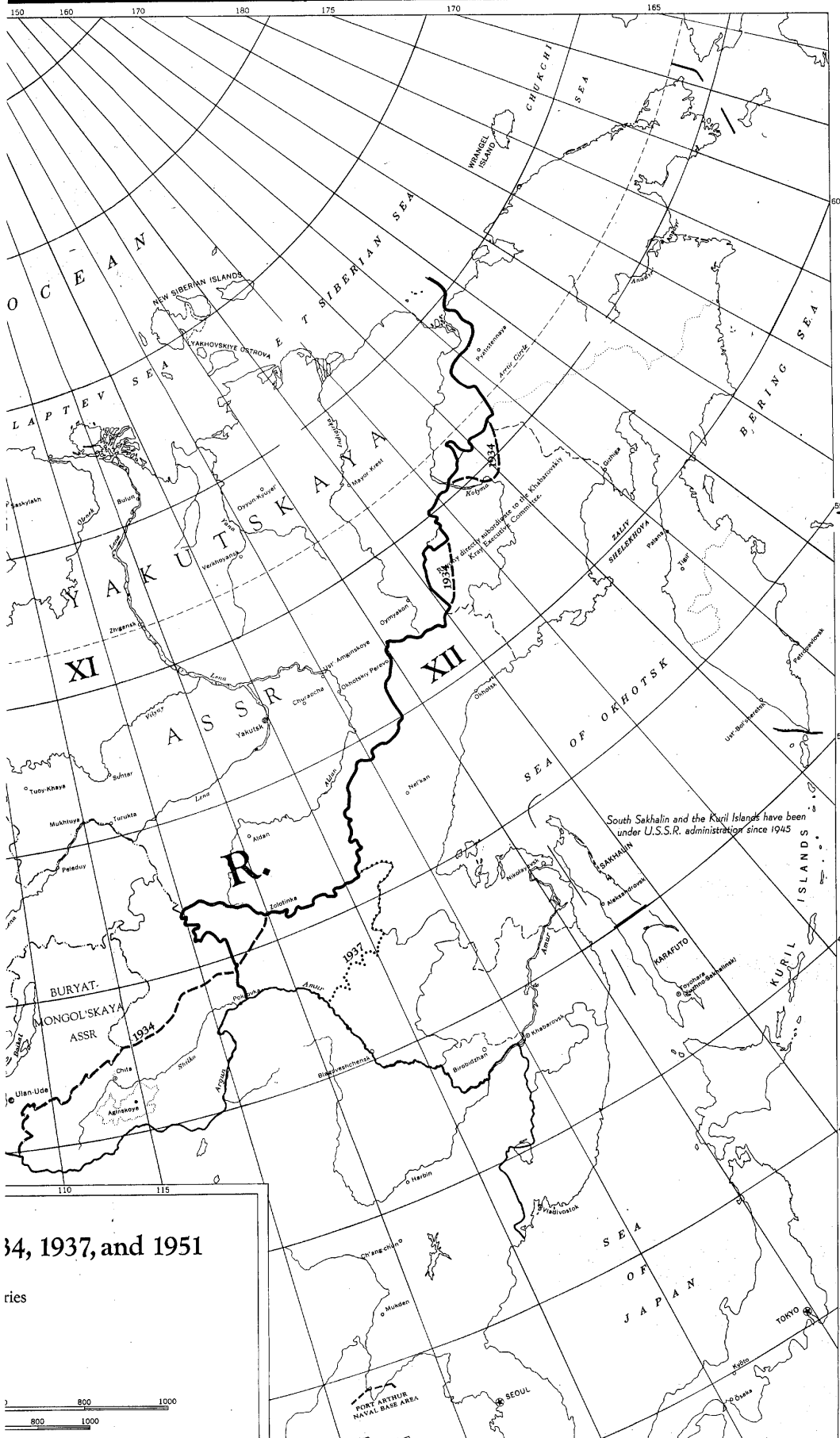
It was necessary to make later adjustments in projection for Soviet territorial expansion, and these adjustments were effected in the following three stages:

(1) Increased area gave the Belorussian SSR about 500,000 workers and the Ukrainian SSR about 1.3 million. These labor increments in late 1939 were included in the annual average figure of 30.4 million workers in the USSR for 1940 as cited by Voznesenskiy.

(2) The labor increment derived from the addition of the Baltic States to the USSR and of the territory added to the Moldavian SSR in mid-1940 was included in the second annual average figure of 31.2 million workers cited by Voznesenskiy. The above labor increment also was included in the 31.5 million workers for the end of 1940, which figure was obtained from the report of the fulfilment of the Fourth Five Year Plan (1946-50).

(3) In 1945 and 1946, Southern Sakhalin, Kaliningrad, Transcarpathian Ukraine, and Tannu Tuva oblasts were added to the USSR. The territory added to the Karelo-Finnish Republic does not require an adjustment, since the residents transferred to Finland.

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Scale 1:16,500,000

— U.S.S.R. boundary 1951
 - - - U.S.S.R. boundary 1937

⊙ National capital
 ○ Selected settlement

ADMINISTRATIVE BOUNDARY	ADMINISTRATIVE CENTER
—	Union Republic (S.S.R.) ⊙
- - -	Autonomous Republic (ASSR) ⊙
—	Oblast' or Krai ⊙
- - -	Autonomous Oblast' or Oblast' included in a Krai ⊙
⋯	National or Administrative Okrug ⊙

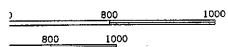
BASE: POLITICO-ADMINISTRATIVNAYA KARTA (USSR) 1:10,000,000, 1948

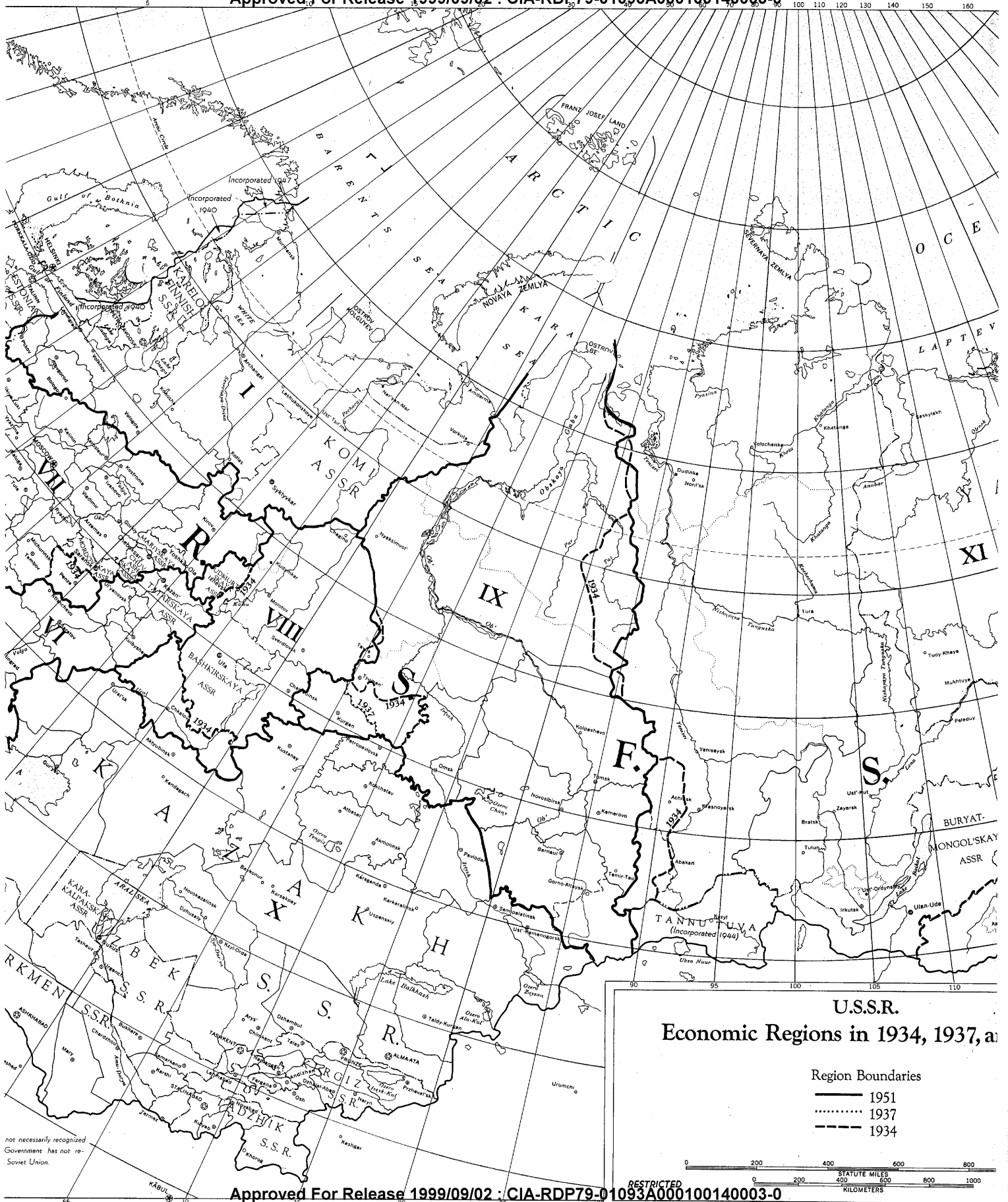
ECONOMIC REGIONS

- I North
- II West
- III South
- IV North Caucasus
- V Transcaucasus
- VI Volga
- VII Central
- VIII Urals
- IX West Siberia
- X Central Asia
- XI East Siberia
- XII Far East

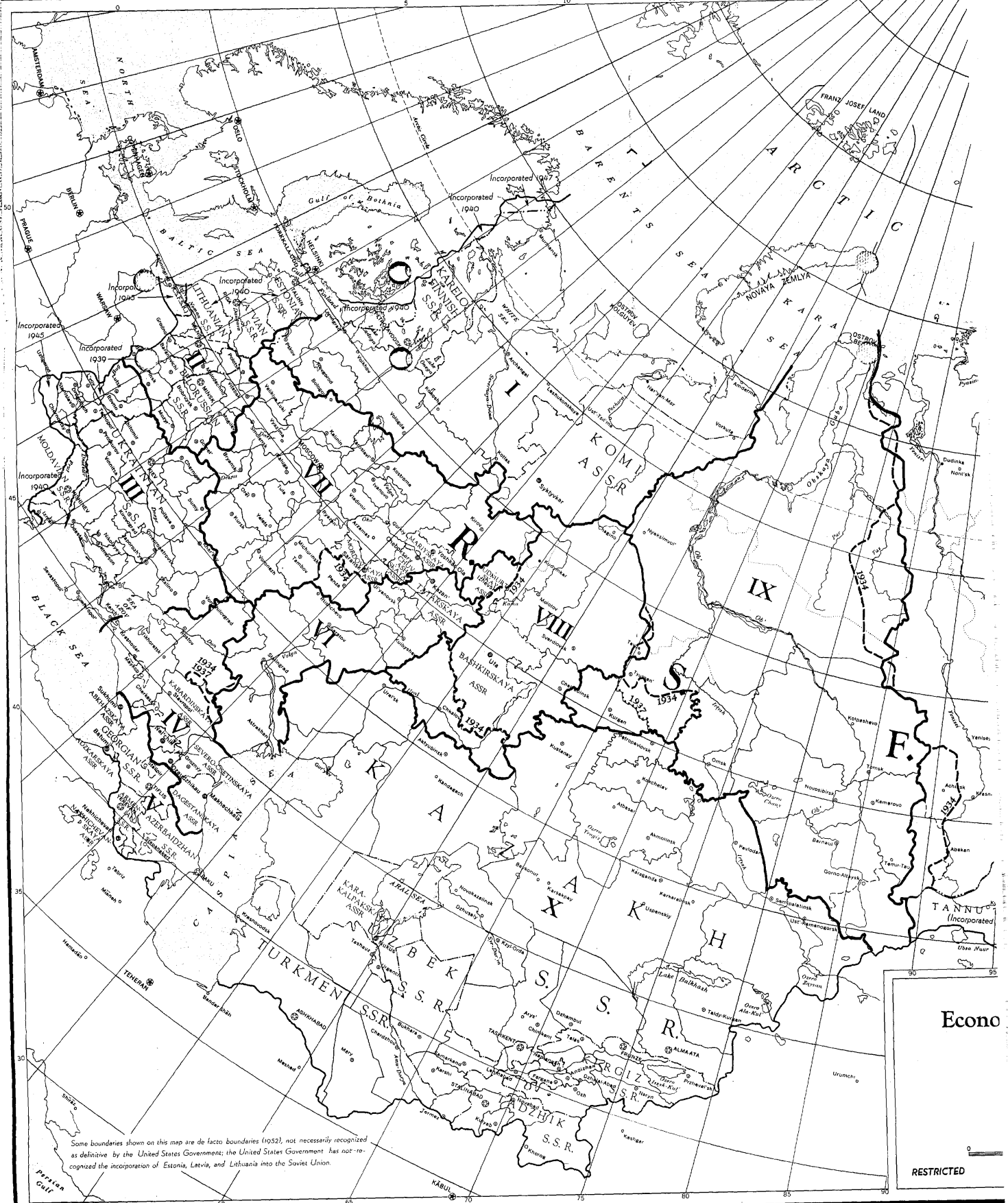
1934, 1937, and 1951

ities





not necessarily recognized
Government has not re-
cognized Soviet Union.



Some boundaries shown on this map are de facto boundaries (1952), not necessarily recognized as definitive by the United States Government; the United States Government has not recognized the incorporation of Estonia, Latvia, and Lithuania into the Soviet Union.

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APPENDIX B

METHOD OF ESTIMATING THE NUMBER OF WORKERS IN THE USSR

1. Projection from 1935 to 1941 of the Number of Workers by Region.

The total number of workers in the USSR as of 1 January 1941 was 31.5 million ^{40/} and included those workers in the newly added territory. Estimates of the distribution of this total by the 12 regions were made by projecting from the 1935 data. The increase in total number of workers in the USSR from 1935 to 1941 (in terms of the 1939 boundaries) was approximately three times the increase from 1934 to 1935. Therefore, the regional totals were increased by three times their respective annual percentage increases from 1934 to 1935. For the Far East and East Siberia regions the projection was modified on the basis of the planned increases cited in Sonin. ^{41/} The same source indicated the regions from which the workers were to migrate, and the subtractions for those migrants were made. Data for the newly added territories were then included in the appropriate regional totals.

Several checks against the projections were provided. In the cases of the Ukrainian and Azerbaydzhan SSR's, the announcements of the fulfilment of the Fourth Five Year Plan (1946-50) included the number of workers employed in 1950 and the increase over 1940. A figure for workers employed in Kazakhstan SSR in 1940 was found in the publication *Strany mira*. ^{42/} The estimates for the Ukrainian and Azerbaydzhan SSR's were less than 3 percent below the published figures, and those for Kazakhstan SSR were less than 5 percent above.

2. Projection from 1935 to 1941 of Employment in Large-scale Industry.

Data concerning the distribution of employment in large-scale industry by region were available for 1 July 1934 and 1 January 1936, in addition to data for March 1934 and March 1935. All four sets of data were compared to ascertain what variations had occurred as a result of seasonal or other changes. The rates of increase in the different sets of data then were averaged to secure a single annual rate. Adjustments were needed for changes in administrative boundaries during the period.

The increase in employment in Soviet large-scale industry from 1935 to 1941 ^{43/} was about four times the 1934 to 1936 average annual increase. Therefore, each regional total for 6 of the 12 regions from 1935 to 1941 was projected by four times the average annual increase from 1934 to 1936 of each region's employment in large-scale industry. Figures for the Baltic States and new territory in the Belorussian, Ukrainian, and Moldavian SSR's

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were added. Data for the Volga, Urals, West Siberia, and Central Asia regions were derived from Voznesenskiy. Data for the East Siberia and Far East regions were derived from planned increases as cited in Sonin. llh

3. Projection from 1941 to 1943 of the Total Number of Workers.

The number of workers in the USSR were projected from 1941 to 1943 on the basis of the 38-percent reduction figure as cited by Voznesenskiy, yielding 19.6 million. The number of industrial workers in 1943 was cited as 39 percent of the total workers, or roughly 7.7 million. Although it is not clear whether the data refer to annual averages or end-of-year figures, they are treated as end-of-year figures in order to give continuity with postwar data. The 1943 employment as a percentage of 1941 employment in four regions was cited by Voznesenskiy as follows: Volga, 116 percent; Urals, 136 percent; Central Asia, 107 percent; and West Siberia, 123 percent. The number of workers in the other regions held by the USSR as of March 1943 llh was derived from Voznesenskiy's figures for the percent of the 1941 number of workers remaining in recovered territory and from evacuation estimates. The same source gave percentage increases in industrial employment for the four regions mentioned above, as well as the percent of total Soviet industrial employment contained in each of the regions. It is therefore possible to calculate the number of industrial workers in 1943 in two ways: for example, in the Central Asia region, industrial employment for 1943 is given as 8 percent of the total number of workers (7.6 million), or, by derivation, 608,000 workers; industrial employment in this region for 1943 also is given as 154 percent of 1941 employment (386,000), or, by derivation, 594,000 workers. The discrepancy is small. Industrial employment for 1943 in the other regions then held by the USSR was estimated in the same manner as was total employment.

4. Projection from 1941 to 1951 of the Number of Workers by Region.

The number of workers in the USSR was projected from 1941 to 1951 by region, as follows:

a. North Region.

1941 employment was projected to 1951 by multiplying the number of workers in 1941 by 1.2, a rate of increase somewhat below that of the RSFSR as a whole, * llh to allow for the effects of World War II and of government policy since that time.

* When the 1951 estimates for the component parts of the RSFSR are totaled, the figure exceeds the 1941 number of workers by 27 percent, as compared with the 24.4-percent increase cited in the Plan fulfillment announcement.

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b. West Region.

Employment in 1951 in the Belorussian SSR was estimated as being the same as in 1941 on the basis of the Fourth Five Year Plan (1946-50). 47/ Employment in the Lithuanian SSR was derived from data on the increase in the number of workers in 1949 48/; in the Latvian SSR, from the number of trade union members 49/; in the Estonian SSR, on the basis of Plan fulfillment data 50/; and in Kaliningrad oblast, on the basis of population data. 51/

c. South Region.

Employment in 1941 in the Crimea was projected to 1951 by multiplying by the rate of increase in the Ukrainian SSR; that is, by 1.01. 52/ 1951 employment in the Moldavian SSR was twice that of 1941 employment on the basis of Plan fulfillment data. 53/

d. North Caucasus Region.

Employment was projected to 1951 by multiplying the number of workers in 1941 by 1.15, which was less than the RSFSR rate of increase over 1941 but more than that of the Ukrainian SSR to allow for the effects of evacuation and occupation.

e. Transcaucasus Region.

Employment in 1951 was projected by multiplying by 1.24 the rate of increase over 1941 derived from the Five Year Plan fulfillment in Azerbaydzhan SSR. 54/ For the component parts of the region there is an employment figure of the number of workers for Azerbaydzhan SSR, an approximation for the Armenian SSR from trade-union membership there, 55/ and an estimate that the Georgian SSR increased at about the rate of Azerbaydzhan SSR, from Plan fulfillment data. 56/

f. Volga Region.

Employment was projected to 1951 by using 130 percent of 1941, or slightly less than twice the rate from 1941 to 1943.

g. Central Region.

Employment was projected to 1951 by using 121 percent of 1941, a rate of increase slightly below that of the whole RSFSR, to allow for effects of World War II.

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h. Urals Region.

Employment was projected to 1951 by using 158 percent of 1941 as compared with the rate of increase from 1941 to 1943 of 36 percent, on the basis of increases in production cited in USSR and RSFSR Plan fulfillment data. 57/

i. West Siberia Region.

Employment was projected to 1951 by using 150 percent of 1941, or slightly more than twice the rate of increase from 1941 to 1943, based on the population changes indicated in election district data 58/ and reports of increases in production during the Fourth Five Year Plan (1946-50). 59/

j. Central Asia Region.

Employment was projected to 1951 by using 144 percent of 1941, a balance between the increase in Kazakh SSR of 160 percent of 1941 60/ and lower rates of increase in the other republics. The employment figure derived for Kazakh SSR is roughly 1.3 million workers, equal to trade-union membership. 61/ An employment figure of 205,000 workers 62/ for Turkmen SSR was published. Employment in Kirgiz SSR was estimated at 200,000 workers in 1951 on the basis of 1948 trade-union membership. 63/ Employment in Uzbek SSR is estimated at 500,000 workers, or 122 percent of 1940 employment. 64/ The estimate for Tadzhik SSR is 100,000 workers.

k. East Siberia Region.

Employment in 1951 was estimated at 1.44 times 1941 employment based on data similar to that used for the West Siberia region.

l. Far East Region.

Employment in 1951 was estimated at 1.66 times 1941 employment.

5. Projection from 1941 to 1951 of the Number of Industrial Workers by Region.

The number of industrial workers in the USSR was projected from 1941 to 1951 by region as follows:

a. North Region.

Industrial employment in 1941 was projected to 1951 by multiplying by 1.3 on the basis that industrial employment in the past

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increased at a slightly greater rate than total employment. In addition, great emphasis has been placed on the development of the northern areas of the USSR.

b. West Region.

On the basis that industrial production was reported to have reached prewar levels in the Estonian and Belorussian SSR's, industrial employment in 1951 was set at the 1941 level. 65/ In the Lithuanian SSR the industrial labor force by 1948 was reported as 1.3 times the prewar level. 66/ Industrial employment in the Latvian SSR in 1951 is estimated as being somewhat over the prewar level. An estimate for Kaliningrad oblast was added.

c. South Region.

Industrial employment in 1951 in the Ukrainian SSR was projected as 115 percent of 1941 on the basis of increases cited in the Fourth Five Year Plan (1946-50) fulfillment announcement. In the Crimea, employment was estimated as being about equal to prewar employment. Employment in the Moldavian SSR increased to 2.5 times the prewar figure. 67/

d. North Caucasus Region.

Industrial employment in 1951 was estimated to have increased at a more rapid rate than did total employment. (See d, above.)

e. Transcaucasus Region.

In the light of increases in gross industrial production, 68/ industrial employment in 1951 was estimated to have increased to 1.4 times that of 1940 as compared with a 124-percent increase in total employment.

f. Volga and Urals Regions.

Industrial employment increased from 1941 to 1943 by 65 percent. General information indicates a slower rate of increase since that time.

g. Central Region.

Industrial employment in 1951 was estimated on the basis of some increases indicated in the Fourth Five Year Plan (1946-50) fulfillment data. 69/

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h. West Siberia Region.

By 1943; industrial employment increased to 1.71 times that of 1941. General information indicates a slower increase to 1951.

i. Central Asia Region.

Industrial employment in 1951 in Kazakh SSR increased to 1.8 times that of 1940. In Turkmen SSR, industrial production increased to 1.5 times that of 1940 and in Uzbek SSR to 1.89 times. 70/

j. East Siberia Region.

Industrial employment in 1951 was increased over 1941 on the basis that some industrial production increased from two to three times and other production less rapidly. 71/

k. Far East Region.

Industrial employment in 1951 was increased over 1941 on the basis of population increases and of increases in some industrial production. 72/

That the Soviet industrial labor force approaches the order of magnitude indicated above is partially supported by the fact that with 1940 as the base year the index of industrial production divided by the index of industrial labor productivity yields an industrial employment index of 133. 73/

6. Estimates of the Number of Workers in 1951 by Sector of the Economy.

The number of workers in some sectors of the economy for 1951 has been estimated on the basis of prewar data. Employment in the other sectors of the economy has been estimated as follows:

a. Transport.

Employment in the Ministry of Rail Communications has been cited by several sources as being from 3 million to 3.5 million persons, or 10 percent of all Soviet workers in 1948. 74/ On the basis of the 3.5-million figure and the percentage distribution by branch of the rail economy, the 1948 employment pattern of workers under the ministry is shown in Table 10.* 75/

* Table 10 follows on p. 24.

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Table 10

Employment Pattern of Soviet Workers
under the Ministry of Rail Communications
1948

	Thousand Workers
Railroad Operation	1,711.5
Subsidiary and Auxiliary Railroad Enterprises, including Agriculture	381.5
Construction and Reconstruction	427.0
Other Organizations and Enterprises of the Ministry of Rail Communications	980.0
Total	<u>3,500.0</u>

According to another source, the number of workers operating Soviet railroads in 1950 were to be 700,000 less than the number which would have been required at the 1945 levels of productivity. The figure thus derived is roughly 1.6 million workers, so that the 1948 figure of roughly 1.7 million for railroad operation is used for 1951 as well. 76/

The distribution by region of railroad operating workers for 1951 under the Ministry of Rail Communications, derived from an incomplete percentage distribution in 1948 77/ and from the 1935 distribution, 78/ is shown in Table 11.

Table 11

Distribution by Region of Soviet Railroad Operating Workers
of the Ministry of Rail Communications
1951

Region	Thousand Workers	Percent of Total
North	136.9	8
West	154.0	9
South	410.8	24
North Caucasus	85.6	5
Transcaucasus	51.3	3
Volga	85.6	5
Central	359.4	21
Urals	136.9	8
West Siberia	102.7	6
Central Asia	85.6	5
East Siberia	68.5	4
Far East	34.2	2
Total	<u>1,711.5</u>	<u>100</u>

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By adding railroad operating employment in other ministries to that in the Ministry of Rail Communications, total employment in 1951 in rail transport is estimated as being 2 million persons.

Assuming that union membership bears the same relationship to total employment in other forms of transport as in rail -- namely, 77 percent -- the 1951 employment figure derived from union membership in municipal transport is 311,000 and in air transport 169,000. 79/ Inland water transport workers for 1951 were estimated as being equal roughly to the figure in the 1941 Plan, or 150,000, while 1951 maritime transport employment is estimated to have increased to 80,000, or by 50 percent, on the basis of increases in the maritime fleet. 80/ Total employment in 1951 in water transport, therefore, would be 230,000 workers as compared with the 1941 Plan figure of 207,000. Employment in 1951 in vehicular transport at the rate of one person per vehicle would total 2 million workers, which probably is a low estimate. 81/

b. State Agriculture and Forestry.

Employment in the USSR in 1951 is estimated as being at least equal to prewar employment, or 2.9 million workers. During the Fourth Five Year Plan (1946-50), over 2 million persons were trained as tractor drivers and for similar occupations, and 160,000 graduates of secondary and higher educational institutions went into agriculture. 82/

c. Construction.

Estimates of the total number of Soviet workers engaged in construction are difficult to make because of the large number of voluntary or conscripted workers who remain on the project only a short time and because of the great fluctuation in the number of workers required at various stages of construction. It seems probable in view of the amount of construction in progress, however, that approximately 3 million workers are now engaged in construction.

d. Public Health.

There were 200,000 doctors in the USSR in 1948, approximately 18,000 being added annually, making a total for 1951 of 236,000. 83/ In 1951, over 1 million women were employed in public health, of whom 191,000 were doctors. 84/ If the sex ratio for all medical personnel is the same as for doctors, there are about 1,250,000 medical personnel. If employment in all phases of public health bears the same relationship to medical personnel as in the 1941 Plan, public health now employs about 1,550,000 persons.

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e. Education.

At the end of the Fourth Five Year Plan (1946-50) there were 1.6 million teachers in the USSR. 85/ If teachers in 1951 constitute the same proportion of total employment in Soviet education as in 1941, total employment in education now approximates 3.2 million persons.

f. Art.

The number of persons employed in art in the USSR in 1951 was announced as being 250,000.

g. Trade.

Since trade turnover in the USSR has increased by about 30 percent, employment in 1951 in trade is estimated to have increased by that much. 86/

7. Estimates of the Number of Workers in 1951 in Various Industries.

a. Electric Power Stations.

Because an increase in electric power output does not require a proportionate increase in employment, the employment figure in the 1941 Plan for the Soviet Ministry of Electric Power Stations is increased by 25 percent, with 15 percent added for employment in power stations of other ministries, giving a total of 358,000 workers for 1951. This total includes probably 30,000 workers engaged in peat extraction.

b. Petroleum Industry.

The trade union of the petroleum workers of the Caucasus, South, and Central areas of the USSR was reported to include 200,000 workers in 1946. 87/ On the basis of the distribution of the petroleum industry, total employment in the industry would approximate 300,000 in 1946 and not many more in 1951. A somewhat similar 1951 estimate is reached by projecting the 1941 Plan figure for employment in the Petroleum Ministry on the basis of the percentage increases in production. 88/

c. Coal Industry.

During the Fourth Five Year Plan (1946-50), State labor reserve schools were to train 660,000, or 80 percent of all new workers, for the coal industry. 89/ The total number of new workers in the coal industry thus would be 825,000. The addition of the 130,000 persons trained in State labor reserve schools from 1940 to 1944 90/ yields an approximate

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minimum of 955,000 new workers if all those who entered the industry remained there. One source estimates employment in 1951 as being 162 percent of 1940, or about 1.1 million workers, 91/ and another source reports that 1951 employment would be 135 percent of prewar, or approximately 986,000. 92/ Alternatively, if employment is increased at the same rate as production, 1951 employment approximates 900,000 workers 93/ in the industry, or 1 million workers, including all enterprises of the Coal Ministry.

d. Ferrous Metallurgy.

According to the Fourth Five Year Plan (1946-50), State labor reserve schools in the USSR were expected to train 570,000 persons for ferrous metallurgy from 1946 to 1950, 94/ and an additional 250,000 were to be trained in brigades 95/, giving a total of 820,000 new workers. By adding to this total the 70,000 workers 96/ trained in State labor reserve schools during World War II, an approximate minimum 1951 employment of 890,000 is derived. According to another source, the rate of increase in the number of workers in ferrous metallurgy during the Fourth Five Year Plan (1946-50) was to be half the rate of increase in the output of pig iron, steel smelting, and rolled iron, 97/ which was to increase to 1.35 times the prewar output. 98/ The employment figures for 1951 for the Ministry of Ferrous Metallurgy thus derived are 914,000 workers, including transport, or 865,000 without transport. Overfulfilment of the Plan did not necessarily require proportional increases in employment. That the training goals probably were met is partially supported by the fact that by the end of 1947, 142,000 workers had been trained in brigades and courses, or more than half of the Plan goal. 99/

e. Nonferrous Metallurgy.

On the basis of increases in output from 1940 to 1951 in the USSR, 100/ employment in nonferrous metallurgy in 1951 is estimated to have increased by 50 percent, or to 400,000 workers in the industry proper or to 658,000 workers, including all enterprises of the Ministry of Nonferrous Metals as constituted in 1941.

f. Metalworking and Machine Construction.

If the ratio of metalworkers to the Soviet inventory of cutting and grinding tools in 1950-51 were the same as in 1939-40, "the number of turners, milling machine operators, lathe operators, electroautomatic welders, moulders, and press and stamp operators" would roughly be 2.2 million. 101/ The total number of metalworkers in 1951, including assembly workers, probably is 4 million to 4.5 million.

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From 1940 to 1945, 1 million Soviet metalworkers were trained in State labor reserve schools, 102/ of whom 500,000 were sent to armament and ammunitions industries to mid-1944. If the State labor reserve schools trained the same number for metalworking during each year of the Fourth Five Year Plan (1946-50) as in 1948, 690,000 additional workers were trained during this period. 103/ If State labor reserve school graduates constituted 70 percent of all new workers, new metalworkers during the Fourth Five Year Plan (1946-50) totaled about 1 million. 104/ This would mean that at least 2 million new metalworkers have been trained since 1940, although this figure probably should be reduced by 250,000 to allow for those classified improperly by sources.

Within this broad industrial category, approximately 171,000 workers are employed in construction and repair of railroad rolling stock under the Soviet Ministry of Rail Communication as compared with 182,000 workers cited in the 1944 Plan. 105/

On the basis of output of certain items of electrical equipment, 106/ 200,000 workers are estimated to be employed in the production of electrical equipment as compared with the other estimate of 271,000 workers. 107/

In 1934 the production of agricultural machinery in the USSR, including tractors, employed 174,000 workers. 108/ Incomplete data indicate that 197,400 Soviet workers were employed in the production of agricultural machinery and that there were 590,500 employed in tank and tractor production. 109/ By deducting roughly 200,000 workers for tank production and double-counting and because of other sources of error, an estimated employment in 1951 of from 400,000 to 500,000 workers in Soviet production of agricultural machinery, including tractors, is derived. Since production of several items in this field has trebled since 1940, this estimate may be somewhat low. 110/

Employment in the Soviet aircraft industry has been estimated at 400,000 workers in 1940 111/ and probably has increased slightly.

g. Forestry and the Timber Industries.

The fulfilment of the Fourth Five Year Plan (1946-50) in the timber industry was planned to be accomplished with 460,000 workers, 75 percent of whom were to be permanent cadres. 112/ A partial distribution of this total is shown in Table 12.*

* Table 12 follows on p. 29.

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Table 12

Partial Distribution of Soviet Workers in the Timber Industry
under the Fourth Five Year Plan (1946-50)

	Thousand Workers
Forestry and Construction Personnel	70 <u>112/</u>
Administrative and Technical Personnel	2 <u>112/</u>
Manufacturing Workers in Forestry	143 <u>112/</u>
Wood Industry Personnel	224 <u>113/</u>

The number of Soviet workers in woodcutting was planned to equal 112 percent of those in that industry in 1940, 111/ or approximately 1 million persons. This includes the first three categories mentioned above.

h. Chemical Industry.

During the Fourth Five Year Plan (1946-50), 116,000 Soviet workers were to be trained in brigades. 115/ If twice as many workers were trained in State labor reserve schools, estimated on the basis of the ratio in other industries, the total number of workers trained during the Plan for the chemical industry would approximate 350,000. With the addition of the 40,000 workers trained in State labor reserve schools during World War II, 116/ employment in 1951 would approximate 390,000, or 30 percent in excess of the 1941 Plan.

On the basis of the increases in chemical output in 1950 over 1940 117/ with no change in labor productivity, employment in 1951 was estimated to have increased by approximately 50 percent, or to 460,000 workers. If, on the other hand, output per worker in 1950 increased to 143 percent of the 1940 level, 118/ employment in 1951 would approximate 310,000 workers.

i. Textile Industry.

Workers in the textile industry in the USSR had been reduced from 808,000 in 1940 to 400,000 in 1946. 119/ This figure, however, does not represent total employment in the Ministry of Textile Industry. In 1946 and 1947 a total of 136,000 new workers were trained in brigades, 120/ and in 1947 and 1948 State labor reserve schools trained 112,000 workers. 121/ If the same level was maintained throughout the Fourth Five Year Plan (1946-50), 1951 employment in the Soviet textile industry would approximate 1 million workers. If there has been no increase in productivity, a similar figure may be reached by comparing the 1940 and 1950 textile production figures. 122/

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J. Other Industries.

On the basis of output data, 123/ employment in the fish industry in the USSR is estimated to be about equal to 1941 Plan figures, or 189,000 workers in the industry itself or 271,000 workers including all enterprises of the Ministry of Fish Industry. On a similar basis the Soviet meat and dairy industry employs about 254,000 workers, and the food industry, including the gustatory industry, about 1.2 million workers. Employment in the paper industry may have increased by 30 percent, or to about 110,000 workers.

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APPENDIX C

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13. State, OIR 1163-A, Guide to Changes in Administrative Division in the USSR, 10 Apr 1947.

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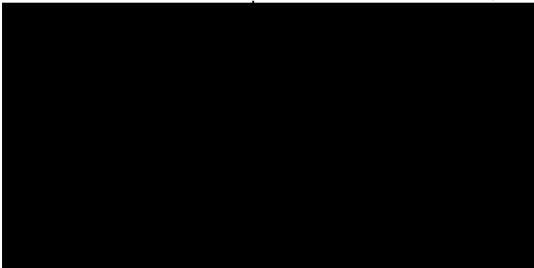
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