

**THE SECOND FIVE-YEAR PLAN
FOR THE DEVELOPMENT OF THE NATIONAL ECONOMY
OF THE U.S.S.R.**

STATE PLANNING COMMISSION OF THE U.S.S.R.

THE SECOND FIVE-YEAR PLAN

FOR THE DEVELOPMENT OF THE
NATIONAL ECONOMY OF THE U.S.S.R.
(1933-1937)

WITH A FOREWORD

"FULFILMENT OF THE SECOND FIVE-YEAR PLAN DURING 1933-35"

BY V. I. MEZH LAUK

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of the U.S.S.R.*

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FOREWORD

*Fulfilment of the Second Five-Year Plan
During 1933-35*

By V. I. MEZHLAUK

FULFILMENT OF THE SECOND FIVE-YEAR PLAN DURING 1933-35

(Foreword to the English Edition of "The Second Five-Year Plan")

THE Second Five-Year Plan for the Development of the National Economy of the U.S.S.R., which embraces the period from January 1, 1933 to December 31, 1937, provides for the accomplishment of the following chief tasks: 1) the building of classless, socialist society; 2) the completion of technical reconstruction throughout the whole of national economy; 3) a still more rapid improvement in the standard of material well-being and culture of the entire Soviet population, a 2 to 3-fold increase in per capita consumption.

The three years that have elapsed since the beginning of the Second Five-Year Plan period (1933-35) have furnished sufficient material by which to estimate the degree of fulfilment of the chief social as well as production and construction tasks set by the Second Five-Year Plan.

1. The Building of Classless, Socialist Society

The building of classless, socialist society is the main goal of the Great Proletarian Revolution, the principal objective of the vast creative work that has been going on in the Soviet Union in the course of the past eighteen years. In the Soviet Union, where industry, transportation, the land, the banks and foreign trade belong to the State, the period of time necessary for the construction of classless, socialist society has depended primarily upon the development of a powerful, advanced, large-scale machine industry, above all heavy industry, upon the time required to bring about the conditions essential for switching the 25,000,000 small peasant farms to the track of socialized economy.

The consolidation of the key positions in the hands of the State, the persistent and intensive work done to introduce co-operative forms of economy into agriculture—from the most elementary

forms of co-operation (consumers' co-operative organizations) to the co-operation of various branches of peasant production, the policy of restricting and forcing out the kulaks (rich peasants) which has been pursued unswervingly—all these co-ordinated measures carried out for a number of years have ensured the successful realization of the collectivization of agriculture. Beginning with 1929, a powerful movement in favour of collective farms developed in the country, and by the end of the First Five-Year Plan period, in 1932, 61.5 per cent of all peasant households had joined collective farms. During the period of the First Five-Year Plan, the country established its own heavy industry capable of re-equipping all branches of national economy, including agriculture.

Collectivization, which during the years of the First Five-Year Plan period already embraced the bulk of peasant farms, could not have been achieved without the abolition of the kulaks as a class, inasmuch as the kulaks were its most bitter, most desperate enemies who stopped at nothing in their fight against this movement. The victory of the collective-farm system in the countryside at the same time meant putting an end to the conditions which engender elements of capitalism, meant doing away with the exploitation of man by man throughout the Land of the Soviets, since in the cities all means of production had already been socialized. During these years private trade, the domain in which private capitalist elements formerly developed intense activity, was likewise abolished.

²¹ Owing to the defeat of the parasitic classes, the Soviet Union has become a country *where everybody works*, where the possibility of parasitic existence has been completely and finally eradicated. This constitutes one of the most important achievements of the Great Proletarian Revolution, and one of the most important characteristics of the new social-economic order established in the U.S.S.R.

Socialism has greatly strengthened its position both in town and country during the past three years of the Second Five-Year Plan period (1933-35). Industry has been developing apace; transportation has been making rapid progress; cadres of engineers, technicians and skilled workers have been formed, who are successfully mastering the new technique.

Even the most backward among the peasantry have become convinced of the superiority of the collective-farm system. At the

present time about 90 per cent, or more than 22,000,000 peasant farms out of the 25,000,000, have been collectivized, and in the most important grain districts 95 to 98 per cent of all households have joined collective farms. Individual farmers—the collective farmers of tomorrow—are daily becoming fewer in number, and there is no doubt that the task assigned by the Five-Year Plan—to complete collectivization by the end of 1937—will be accomplished.

At the same time the collective farms have grown much stronger. The ranks of the collective farmers have supplied hundreds of thousands of excellent managers (collective-farm chairmen, brigade leaders, group leaders) who are successfully coping with the management of highly mechanized, large-scale agriculture. The constant aid provided by the State in materials, money, as well as political, scientific and managerial instructions, and the growing experience and political consciousness of the collective farmers create all conditions necessary for the further development of socialist agriculture.

The Soviet Union at the present time is a socially monolithic country where, as Stalin stated as far back as the beginning of 1934 at the Seventeenth Congress of the Communist Party of the Soviet Union, "the socialist system now has unchallenged predominance and is the sole commanding force in the whole of national economy." This may be clearly seen from the following figures showing the proportionate growth of socialist forms of economy in the national income:

	1932	1933	1934	1935
National Income (in billion rubles)	45.5	48.5	55.8	65.7
Proportion of socialist forms of economy (in per cent)	93.0	95.0	96.0	97.8

This predominance of socialist forms of economy signifies that the means of production are no longer owned by individuals but have become socialist property, *i.e.*, the property of socialist society. At the beginning of 1935, 95.81 per cent of the total fixed capital were already in the socialist sector and only 4.1 per cent were in the hands of small private property owners, while an absolutely insignificant fraction—0.09 per cent—was owned by the remnants of the capitalist elements.

The profound transformation of the economic system and the change in the social structure of the Soviet Union were bound to find their expression in the fundamental laws of the Soviet Union.

II

The victory of socialism reduced the number of those deprived of electoral rights, the formerly exploiting minority, to an insignificant fraction. The revolution destroyed the bourgeoisie and landlord class, and with the abolition of the last capitalist class, the kulaks, the number of disfranchised persons at the end of 1934 constituted only 2.5 per cent of the adult population of the country. This is incomparably less than the percentage of people disqualified, by means of various discriminatory measures and restrictions, from taking part in elections under any existing system of capitalist democracy.

The Seventh All-Union Congress of Soviets, which took place at the beginning of 1935, decided to amend the Constitution of the U.S.S.R. by further democratizing the electoral system—to replace not entirely equal suffrage by equal suffrage, indirect elections by direct elections, and the open ballot by the secret ballot. These changes signified that the Soviet Constitution is being brought in line with the present social structure of the U.S.S.R. (the creation of a new, socialist industry, the defeat of the kulaks, the victory of the collective-farm system, the establishment of socialist property as the basis of Soviet society). “We are advancing toward the complete abolition of all the restrictions on elections to the Soviets which were at one time introduced ‘as temporary measures to fight any attempt of the exploiters to defend or restore their privileges,’ as the Program of the Communist Party of the Soviet Union states. These facts bear out the oft-repeated statement of Lenin that the limitations of universal suffrage introduced in our country are of only a temporary nature.” (Molotov.)

The reshaping of social relations in the Soviet countryside found striking expression at the Second Congress of Collective-Farm Shock Workers which took place in February 1935. The Congress itself was a living confirmation of the words of Stalin: “One of the most remarkable gains of the collective-farm movement consists in the fact that it has already managed to bring to the fore thousands of organizers and tens of thousands of agitators in favour of collective farming from among the peasants themselves.” By the terms of the Model Rules for agricultural artels, adopted by the Congress on the initiative of Stalin and known as the Stalin Model Rules, the land occupied by a collective farm—the socialist basis of collective-farm production—is being secured to it in perpetuity.

As a result of the rapid progress made in the economic life of

the country and of the changes in the social composition of the population, a new social consciousness is being formed, the survivals of capitalist mentality are being outlived and a new, socialist attitude toward work is being developed. The progress made in this sphere between 1933 and 1935 is immeasurable. The profound revolution in the minds of people, in their attitude toward work, has received powerful expression in the movement which in the autumn of 1935 sprang from the ranks of the workers and produced exceptional results in raising labour productivity—the Stakhanov movement.

A plain miner, the Donetz Basin hewer, Alexei Stakhanov, in response to Stalin's speech of May 4, 1935, the keynote of which was care for the human being and which marked a new stage in the development of the U.S.S.R., proposed a new system of labour organization for the extraction of coal. The very first day his method was applied he cut 102 tons of coal in one shift of six hours instead of the established rate of 7 tons. In a few days he doubled his own record.

Within a few weeks this movement to exceed the established rates of output, to increase the productivity of labour, had taken hold of the workers in the most varied trades and enterprises. Steel smelters, metal rollers, weavers, pneumatic pick-hammer operators, locomotive engineers, firemen, mechanics, turners and lathe operators began to revise their methods of work, to organize their production processes more rationally and to exceed all established rates of output. At a number of enterprises world records were scored. Thus Dyukanov, a Communist, one of the initiators of the Stakhanov movement, using an automatic pick hammer, cut 133 tons of coal in one shift, which record Borissov, using an electric drill, later raised in Prokopyevsk to 778 tons. Bussygin, a blacksmith of the Gorky Automobile Plant, made 157 crankshafts an hour, while the American rate of output is 100. Smetanin, a worker of the Leningrad factory "Skorokhod," handles 1,360 pairs of shoes a shift, surpassing the standard of the Bata factory in Czechoslovakia where the rate is 1,125 pairs. At the Yenakiev Steel Mill a number of workers scored new records in steel smelting—13, 16, and even 20 tons per sq. metre of open-hearth furnace area.

"The significance of the Stakhanov movement consists in the fact that it is a movement which is smashing the old standards of output because they are inadequate, which in a number of cases is surpassing the productivity of labour of the foremost capitalist

countries and is thus creating the practical possibility of further consolidating socialism in our country, the possibility of converting our country into the most prosperous of all." (Stalin.)

The Stakhanov movement is based on the achievements of the First and Second Five-Year Plans; it was prepared for by the technical re-equipment of national economy brought about by the growth of heavy industry; it was prepared for by the socialist reconstruction of agriculture, the abolition of the last capitalist class, the kulaks; it was prepared for by socialist competition, by a new, socialist attitude toward work, by the transformation of labour "from a disgraceful and painful burden," as it necessarily is in capitalist countries, into "a matter of honour, glory and heroism"; it was prepared for by a radical improvement in the condition of the working population, by a rise of the cultural level and the growth of technical knowledge of the workers.

The Stakhanov movement is a new and higher stage in socialist competition.

The Plenum of the Central Committee of the Communist Party of the Soviet Union, held in December 1935, pointed to the following features as summarizing the essence of the Stakhanov movement: the organization of labour in a new way, rationalization of technological processes, proper division of labour, exemption of skilled workers from preliminary work of secondary importance, better organization of the work place, rapid growth of labour productivity and a considerable increase in wages for workers and employees.

Resulting as it does from the victory of socialism in the U.S.S.R., the Stakhanov movement opens up "the practical possibility of the further consolidation of socialism," of a still more rapid increase in production, particularly articles of consumption, and of a constantly increasing well-being of the whole working population.

Stakhanov workers are workers who have mastered technique, who have smashed the established technical standards of output and get the utmost out of the machinery they operate; they are plain workers who, however, are able to supplement and correct the work of engineers and scientists. Stakhanov workers approach their work like real masters of the country who feel their responsibility to the whole people, who practice genuine socialist labour discipline. Stakhanov workers are workers who not only know how to turn out high-grade products but also how to organ-

ize work, to rationalize it and direct it along new lines. Stakhanov workers are workers who not only know how to plan their own work and the work of their brigades but who, thanks to the unprecedented productivity of their labour, make changes necessary in the plans of whole enterprises, branches of industry and even in the entire plan of national economy. A number of factories, mines and railroads, which for a long time failed to fulfil their plans, have begun regularly to overfulfil them. The Stakhanov movement has revealed vast latent potentialities of production, has demonstrated the possibility of materially increasing production without new capital investments.

The powerful Stakhanov movement in industry and transportation finds its counterpart in the radical change that has occurred in the minds of the collective-farm peasantry. The very act of joining a collective farm, of abandoning the age-old forms of individual husbandry, was the reflection of a most profound revolution in the minds of the peasant masses.

The fact that the peasants are now discharging all their obligations to the State in full and in advance of schedule is striking evidence of the radical change in their mentality. For several years deliveries to the State of grain and of industrial crops have been completed before the time specified, but never yet at so early a date as in 1935.

The third year of the Second Five-Year Plan period is notable not only for its high harvest in a number of crops—grain, cotton, sugar beet—but also for excellent records of labour productivity in agriculture. In the sugar-beet collective farms, a movement known as that of the “five-hundreders,” initiated by Maria Demchenko, a young Ukrainian collective-farm girl, has become widespread. While in 1935 the average yield per hectare was 130 to 132 centners, these collective-farm girls harvested 500 centners and over. This movement of the “five-hundreders” has already made it possible to set the planned task for 1936 at 204 centners of sugar beets per hectare.

The rise and rapid spread of the Stakhanov movement not only in the towns but also in the countryside in a sense sums up all the successes achieved in the fulfilment of the Second Five-Year Plan during 1933-35. This movement which sprang spontaneously from the masses was made possible by the radical improvement in the material conditions of the working people; it is the result of the introduction of modern machinery and of the mastery of this

Second Five-Year Plan period the production in the numerous new enterprises completed during the First Five-Year Plan period had to be mastered at one and the same time resulted in great difficulties. For this reason during the first years of the Second Five-Year Plan period, industrial output, though exceeding in absolute figures the output of the preceding years, showed lower rates of growth. As anticipated by the Second Five-Year Plan itself, the output of all industry rose in 1933 by 6.2 per cent, but already in 1934, when these difficulties had been surmounted, the output of industry rose by 18.7 per cent and in 1935 by 20.7 per cent. The value of the entire industrial production (in fixed 1926-27 prices) was 65,900,000,000 rubles in 1935, 22,600,000,000 rubles in excess of the corresponding value in 1932, the last year of the First Five-Year Plan period.

The rates of increase in the most important branches of industry and the extent of plan fulfilment during the first three years of the second five-year period can be judged by the following data:

Branches of Industry	Units of measurement	1913	1928	1932	1935		
					Five-Year Plan's quota	Actual fulfilment	Percentage of fulfilment
Gross output of large-scale industry	bill. rubls. (1926-27 prices)	10.25 ¹	16.9	38.5	59.6	61.9	103.8
Metal-working industry	"	1.1	2.1	9.4	14.6	17.0	116.4
Electricity	bill. kwh.	1.9	5.0	13.5	24.0	25.9	108
Coal	mill. tons	29.1	35.5 ²	64.4	110.0	108.9	97
of which:							
Donetz Basin	"	25.3	27.3 ²	44.8	66.7	67.3	100.8
Pig iron	"	4.2	3.3 ²	6.2	12.2	12.49	102.4
Steel	"	4.2	4.3 ²	5.9	12.1	12.5	103.5
Rolled steel	"	3.5	3.4 ²	4.3	8.0	9.4	112.5
Chemical industry	mill. rubls.	no data	no data	1.49	2.5	3.57	142.8
Meat	thous. tons	no data	no data	435	600	585	94.1
Fish	"	no data	870.0	1,333	1,550	1,540	99

The higher rates of increase in output during 1934-35 make it possible to fulfil the tasks assigned for 1937 ahead of schedule in several branches of national economy and in various districts. In 1935 the output of harvester-combines had already exceeded the

¹ Exclusive of the timber cutting and the fish industry.

² 1927-28.

figure set for 1937. The Krivoy Rog Basin, the principal iron-ore district, fulfilled its five-year plan in three years. There is every prospect of fulfilling in four years the five-year plan for coal extraction in the Donetz Basin, for the manufacture of agricultural machinery, for plastic masses, synthetic rubber, sulphur production, the varnish and dye industry, the output of rare metals, and for pig iron, steel and rolled products in some of the biggest iron and steel works. The Stakhanov movement, though only in its initial stage, has already proved to be a vital factor in accelerating the fulfilment of the Second Five-Year Plan.

As a result of the successful fulfilment of the Second Five-Year Plan during the past three years, the Soviet Union is surpassing one country after another in output of all the most important branches of industry. In 1935 the Soviet Union occupied second place in Europe¹ in generation of electricity, third place in coal mining, first place in oil and peat extraction and copper smelting, second place in production of superphosphate, steels, etc. The Soviet Union, which but recently satisfied its requirements in special steels, aluminium, machine-tools, tractors, combines, automobiles, etc., almost entirely by imports, has now taken first place in Europe in the manufacture of machine-tools, motor trucks and high-grade steel, and second place in the manufacture of aluminium. Moreover it now occupies first place in the world in the manufacture of tractors, railroad freight cars and locomotives. Seventy-five to eighty per cent of the world's tractor and combine production are now concentrated in the U.S.S.R.

The technical reconstruction of industry is being carried out along the following main lines: 1) maximum degree of electrification; 2) mechanization of all laborious processes; 3) mastery of the most modern technological processes; 4) manufacture of all necessary metals, chemicals and equipment.

During the first three years of the Second Five-Year Plan period the capacity of electric power stations rose by 2,200,000 kw., 1,520,000 kw. being accounted for by regional stations. (The Plan for the generation of electricity has been overfulfilled.) Scores of stations have been built or are under construction; the construction of the Volga stations, which will be the basis for the biggest power system in the world, has been started. While electricity generation shows rapid rates of increase as a whole, output is growing most

¹ The output in 1935 is taken as the basis of comparison also for the capitalist countries.

rapidly in hydro-electric power stations, as a result of which the share of the regional hydro-electric stations in the total output of the regional power stations increased from 7.5 per cent to 16.5 per cent. Considerable progress has also been made in heat-and-power development. In 1935, 15.5 trillion British Thermal Units were generated as against 7.2 trillion B.T.U. in 1932. The Soviet Union's electric power stations have the most modern equipment. Suffice it to state that 71.5 per cent of all steam turbines and 57 per cent of all boilers have been installed during the last five years.

As a result of the progress made in electrification the electric power supply available per worker has risen, now constituting 3,440 kwh., while in Germany in 1930 it constituted 2,910 kwh.

In 1934 the coefficient of electrification in industry was, as high as 78.9 per cent. A number of new branches of industry have been established—the electro-metallurgical industry, electro-chemical industry, etc.

The machinery industry has learnt to produce many new types of equipment. As a result great strides have been made during the first years of the Second Five-Year Plan period in the mechanization of laborious processes and the replacement of arduous hand-labour by machinery.

This process is graphically illustrated in the following table:

*Mechanization of Laborious Processes in the Principal
Branches of Industry*
(In per cent of total)

Classification	1932	1935
Mechanized coal extraction	65.4	78.2
Mechanized gathering of coal	76.5	78.2
Mechanized peat cutting under Chief Peat Board of People's Commissariat of Heavy Industry	49.7	71.1
Mechanized pouring of pig iron	43.6	75.0
Pig iron smelted in completely mechanized departments	25.6	53.5
Mechanized timber hauling under People's Commissariat of Timber	4.4	26.4

Some of these figures come very near or even exceed the level specified by the Five-Year Plan for 1937. Thus, the proportion of mechanized coal extraction for the Donetz Basin is to be 98 per cent in 1937; that of mechanized peat cutting, 71.7 per cent; of mechanized timber hauling, 28.3 per cent.

Because of the shortage of labour in the Soviet Union the task of replacing labour power by mechanical power in all laborious processes has become exceptionally urgent. With this aim in view,

the production program provides for the most rapid development of the manufacture of coal-cutting machines, pneumatic pick hammers, electric locomotives, mining combines, excavators, pouring machines, equipment to mechanize the charging of blast furnaces, etc.

In order to solve all these problems, to ensure the technical and economic independence of the country and increase its defensive strength, it was necessary to introduce new manufactures. Many pages could be filled by an enumeration of such manufactures mastered during the first three years of the Second Five-Year Plan period. The list below includes only a few of them.

The machinery industry has learnt to produce electric passenger locomotives having a speed of 130 km. per hour, type "VM" (Vyacheslav Molotov) Diesel locomotives, 8 and 12-axle flat cars, all-metal welded railroad passenger cars, subway cars, a number of special tank cars, caterpillar tractors with a capacity of 60 h.p. delivered to shaft, trolley-buses, Diesel tractors, 40-foot harvester-combines, large-size flax-pulling machines, 1-drum high-pressure boilers, welded drums for high-pressure boilers, turbines with a capacity of 50,000 kw., blast-furnace turbo-blowers, high-voltage equipment and high-power 110,000 to 220,000-volt transformers, 15,000-volt mercury rectifiers, 4,200 h.p. Diesel engines for ice-breakers, flax-spinning water frames invented by Engineer Zvorykin which double productivity per frame, wool ring-spindle spinning frames invented by Engineer Khrushchov, extra high-stretch twist and weft ring-spinning frames, automatic changing looms (cotton), special exhausters, electro-magnet equipment, super-centrifuges, spur-gear shapers, single and 4-spindle full automatic lathes, radio drilling machines, horizontal and vertical drilling machines, tool-room lathes, heavy machine-tools for railroad shops, mining combines, tabulating machines, rotary presses, paper-making machines, etc.

The output of the machinery industry in 1935 was 15 times as great as that of 1913.

In the iron and steel industry the manufacture of the following kinds of steel and tubing has been introduced: free-machining steel, cold-drawn bars, auto-body sheets, steel for ball-bearings and silchromal steel, full-finished sheets for discs, silico-manganese steel, stainless cold-rolled strip for aircraft, rotary-drill pipes, piping for ball-bearings, stainless steel pipes, chromo-molybdenum pipes.

In the manufacture of aluminium which was only commenced

in 1932 when the output was 900 tons, alumina produced in the Soviet Union is now being used. The manufacture of carbon and graphite electrodes has been mastered. With an output of 25,000 tons in 1935, the U.S.S.R. ranks second in Europe in the production of aluminium.

During the first three years of the Second Five-Year Plan period the Soviet Union has mastered the mass production of nickel, established the production of tin, and has sharply raised the output of zinc, lead, copper and a number of rare metals, as a result of which it gained in 1935 one of the foremost places in the world for the variety of non-ferrous and rare metals manufactured.

During these years the chemical industry has learnt to manufacture hundreds of new products, a number of dyes, chemico-pharmaceutical products, plastic materials, synthetic products (methanol, phenol, etc.). The U.S.S.R. was the first country in the world to begin the mass production of synthetic rubber, the mastery of which process represents a major victory. In 1935 it produced 25,000 tons of synthetic rubber, and owing to systematic improvement in the method of its production the amount of raw material consumed per ton of output was considerably reduced, quality was improved and production costs lowered. Thus, while in 1934, 12,000,000 deka-litres of alcohol were consumed in the production of 11,000 tons of rubber, in 1935 only 13,000,000 deka-litres were required to produce 25,000 tons of rubber.

The wood-chemical and paper industries have learnt to produce ethyl alcohol from wood pulp, compressed wood fibre, heat insulating material, butyl acetate, resin soap, perforated cardboard paper, Kraft paper bags, fibre tubing, veneered plywood, etc.

Heavy industry, established along modern lines during the First Five-Year Plan period, made it possible to develop the technical reconstruction of the timber industry, of light industry and of the food industry on a large scale during the Second Five-Year Plan period.

All these branches of industry, which but recently consisted of poorly equipped small-scale enterprises have now been transformed into large-scale machine-operated industries. Large meat-packing plants have been built in which hand labour has been completely eliminated; hundreds of entirely mechanized canneries, bread factories, vegetable-oil mills, dairies, etc., have sprung up. Besides reconstructing old enterprises, light industry has built big cotton and linen-goods combinations, knit-goods mills, shoe fac-

tories, plants producing artificial soles, cottonine, etc. In 1935 the timber industry of the People's Commissariat of Timber alone employed in timber hauling hundreds of steam locomotives and internal combustion locomotives, and thousands of powerful caterpillar tractors, traction automobiles, motor trucks, etc. Dozens of completely mechanized saw mills, wood-planing mills, furniture and paper factories, and a number of cellulose and wood-chemical mills have been erected. Several hundred enterprises were put into operation in the industries under the People's Commissariats of Light Industry, of Timber and of Food Industry during 1933-35, representing an aggregate value of over 4,500,000,000 rubles. To appreciate the significance of this figure it should be pointed out that during the years of the First Five-Year Plan the enterprises opened for exploitation in all branches of industry producing articles of consumption represented a total value of 2,500,000,000 rubles.

The mastery of the new technique required the formation of cadres of skilled workers, engineers and technicians capable of operating the new equipment efficiently. This was one of the main difficulties facing the country in the fulfilment of the Second Five-Year Plan. It may be safely asserted that the Soviet Union is coping successfully with the solution of this most difficult problem.

The numerous technical schools and courses, the keenness of millions of workers who were determined to master the new technological processes, and the zealous studies of these workers ensured an improvement in their skill. This made it possible to introduce the rule that only workers who have passed State technical examinations be admitted to certain lines of work. By November 1935, 800,000 workers in heavy industry had passed such examinations. Beginning with October 1, 1935, the workers of 160 of the principal trades in light industry took State examinations. At the same time the influx of new workers of the younger generation who had graduated from higher schools considerably raised the average cultural level of the working class.

During the first three years of the Second Five-Year Plan period, 64,700 new engineers and more than 124,300 technicians entered industry, thus effecting an improvement in technical management.

The progress made in the mastery of technique found its direct expression not only in increased production, but also in a marked

improvement of the qualitative indices: the indices of utilization of equipment, of consumption of raw material, quality of production, labour productivity and production costs.

The coefficient of utilization of the installed capacities of electric-power stations was 4,650 hours in 1935 as against 3,470 hours in 1932, and 3,047 hours in the U.S.A. and 2,187 hours in Germany in 1929. In point of fuel consumption per kwh. delivered at the bus bar, the U.S.S.R. has reached the low rates prevalent in Germany and the U.S.A. In the U.S.S.R. the amount of coal mined per cutting machine exceeds that of any other country. The coefficient of volumetric efficiency of blast furnaces was 1.22 in 1935, *i.e.*, better than specified in the Plan for 1937, as against 1.75 in 1932, coming close to the corresponding coefficients in the U.S.A. Within the next few years the quantity of steel smelted per sq. metre of furnace bed in the U.S.S.R. will undoubtedly be on a par with steel smelting in American and German works. The Stakhanov workers of the iron and steel industry have established a number of world records in the manufacture of steel and rolled products. Records have also been scored by the automobile and tractor industries. During a seven-hour shift the Stalingrad Tractor Plant produced 160 tractors instead of the 72 that constituted its projected capacity as set by American engineers. The Kharkov Tractor Plant turned out 150 tractors per shift instead of the 72 it had produced previously.

Particular attention is being paid to quality of output. The State has set industry the task of turning out high-quality products. The improvement in the material well-being of the working population has given rise to an especially great demand for high-quality consumers' goods. To achieve this, higher standards were introduced for raw materials used in the cotton goods, woollens, silk, shoe and other industries. The technological processes have been revised and particular attention is being paid to the high-grade finish of products. In this respect quite remarkable progress has been made, above all, by the food industry, which is now able to offer the Soviet consumer a great variety of high-quality goods. The government keeps constant check on this, approving specifications for merchandise in certain lines, determining proportions of output in other lines, as for instance, in the case of fresh fish, frozen fish, smoked and salt fish, the assortment of meat products, etc.

Considerable though inadequate progress has been made in this direction by light industry.

The Second Five-Year Plan period is a period of declining production costs. *In 1935 industry for the first time in a number of years completely fulfilled its plan for lowering production costs.*

The third year of the Second Five-Year Plan period was marked by a further increase in the productivity of labour. In 1933 labour productivity in large-scale industry rose 8.7 per cent in comparison with the preceding year; in 1934, 10.7 per cent and in 1935, 12.9 per cent, while in heavy industry the increase was 18 per cent.

The attention of the whole country is centred on increasing labour productivity. In the final analysis the superiority of any new social-economic system is shown in the level of its labour productivity. Knowing no crises, depressions, limitations to the growth of demand, nor anarchy of production, the Soviet Union's production apparatus works at full load, making better use of its equipment than any other country.

Thanks to the superiority of its new economic system, the Soviet Union has surpassed all countries of the world in rates of increase of output and of labour productivity, all European countries in degree of utilization of equipment, and sets itself the task of winning first place in the world also in the standard of labour productivity. The solution of this problem is necessarily attended by great difficulties. The starting point from which the Soviet Union began to surpass the other countries was that of a backward country, without long-established habits of work in large-scale machine industry and with a very low level of technical development. All the more striking therefore are the present achievements and unlimited prospects of increasing labour productivity that had been disclosed in connection with the Stakhanov movement.

To such an extent has the Stakhanov movement revolutionized all existing rates of output that it is by now quite clear that in 1936 the increase in labour productivity will be higher than ever before. In coal mining the Stakhanov workers are accomplishing five to six times the standard rate of output; in steel smelting, four to five times; in weaving, six times and over; in saw mills, three to four times, etc.

Finally, the successes achieved in the mastery of technique have found their expression in improved organization throughout the whole of national economy and in the establishment of a

normal production rhythm in thousands of huge enterprises, and have helped to overcome the seasonal character of production.

In the U.S.S.R. industry knows no fluctuations in production such as are called forth by crises, depressions and varying business conditions. None the less for a number of years there used to be a decline in production during the summer, extending as a rule over the months of July to September. This is explained by the fact that workers in certain industries used to leave for the farms at this time of the year, that large numbers of workers went on vacation simultaneously, that repair work was concentrated during these months, etc. In 1935 these things were done away with to a great extent and the level of industrial output rose with each successive month, with the exception of July when it slightly receded. Thus an even rise from month to month in the level of industrial production was ensured. At the present time a curve of development rising steadily from January to December has become the law of the dynamics of industrial production in the U.S.S.R. throughout the year.

The great material and financial reserves available have greatly facilitated the establishment of a normal production rhythm and improved organization in industry. The general upgrade movement in *all* branches of production and a marked improvement in the work of transportation have made it possible to set aside reserves of fuel and raw materials at the enterprises, thus ensuring their smooth operation.

2. *Agriculture*

The completion of technical reconstruction in national economy requires the introduction of mechanization and the latest scientific methods in farming. By establishing the largest-scale agriculture in the world, where the private ownership of land and of the principal means of production has been abolished and which works according to plan, all barriers to the removal of the traditional backwardness of agriculture, to the transformation of agricultural labour into a variety of industrial labour, have been cleared away. In the U.S.S.R. there are unlimited possibilities for the growth of agricultural production, and thus also for a well-to-do life on an increasing scale for the farming population.

The State machine and tractor stations, in which almost the entire fleet of tractors and combines, and the agricultural machinery tilling the fields of collective farmers are concentrated, are the

most important instrument for the mechanization of agriculture. During the first three years of the Second Five-Year Plan period, 1,904 new machine and tractor stations had been set up. The total number of these stations, which was 2,446 at the end of 1932, has risen to 4,350 at the end of 1935. During 1935 they served more than 72.8 per cent of the total collective-farm sown area. The machine and tractor stations are not only concentration points for high technique but also for the application of scientific farming methods, and are the economic and political bases of the State in the rural districts.

During the three years under review the tractor fleet of agriculture in the U.S.S.R. was increased from 2,225,000 h.p. as of January 1, 1933 to 6,543,000 h.p. (allowing for depreciation) by the end of 1935, which means a 20 per cent overfulfilment of the Five-Year Plan assignment for 1935. In 1935 alone agriculture was supplied with additional tractors having an aggregate capacity of 2,080,000 h.p. The U.S.S.R. has far surpassed all European countries in aggregate tractor power.

The large scale of the farms and the planned character of agriculture have made it possible to use tractors in the U.S.S.R. to better advantage than anywhere else in the world. The area worked per tractor, which is increasing from year to year, is one of the most important indications of the successful mastery of the new technique in agriculture. As a result of this, though the Soviet Union's tractor fleet possesses only half the power of that of the U.S.A., twice as much work in terms of ploughing was done in the U.S.S.R. in 1935 as in the U.S.A. in 1929. The composition of the tractor fleet has undergone considerable change as a result of the increase in the number of powerful caterpillar tractors manufactured by the Chelyabinsk Tractor Plant. So far 20,000 of these tractors have been supplied to agriculture during the Second Five-Year Plan period.

Great progress has been achieved in the mechanization of some of the most laborious processes of agriculture—harvesting and threshing. The quota of combines to be manufactured according to the assignment of the Five-Year Plan in 1937 was exceeded in 1935. The number produced was 20,200 as against 20,000 specified for 1937. At the end of 1935, the combine fleet was 52,500 strong and, due to better utilization, the area harvested by combines in the U.S.S.R. was equal to the area harvested by combines in 1930 in the U.S.A., where agriculture is more highly mechanized

than anywhere else in the world and the number of combines totals 61,000. The new plan for 1936 provides for the manufacture of 61,000 combines which will assure the overfulfilment of the five-year combine production plan a year ahead of time.

The Soviet Union was compelled to break new ground in the production of machinery for industrial crops, the cultivation of which depends to a considerable extent on hand labour even in the U.S.A. During the three years under review agriculture has received 4,170 wide flax-pulling machines and 8,400 tractor-drawn cotton cultivators. The mass production of sugar-beet lifters, potato planters, cultivators of various types and systems, and of numerous other machines, many of which are of original Soviet design, has been mastered as has the mass production of special tractors for row crops, the output of which reached 12,700 in 1935.

The fact that in 1935, on all collective farms, 50.1 per cent of spring ploughing, 56.4 per cent of fallow ploughing, 48.1 per cent of autumn ploughing, 30.4 per cent of grain harvesting and 47.2 per cent of sugar-beet harvesting were mechanized illustrates the extent to which hand labour has been eliminated in agriculture.

The State farms have already been transformed into mechanized grain, flax and cotton factories. In 1935, ploughing was fully mechanized, while more than 97 per cent of the entire State grain farm area was harvested by combines.

The principal means of raising the production of grain and industrial crops during the Second Five-Year Plan period must be increase in yield and not increase in sowing area. The Second Five-Year Plan accordingly provides for the introduction of a number of scientific farming measures in addition to equipping agriculture with modern machinery. In 1935, bare fallow constituted about 75 per cent of the total area under winter crops. Fifty per cent of the entire spring crop area for 1936 are to be sown on fallow land ploughed in 1935; forty per cent of the entire grain area were sown with pure-bred seeds. The entire area under sugar beet was sown with improved seeds and completely fertilized, while work was largely mechanized. Forty per cent of the area under cotton were sown, cultivated and harvested by machinery. Fifty per cent of the entire cotton area were sown with improved high-grade seeds.

All these measures assured an increase in the gross totals of all crops harvested. In 1935 more than 920,000,000 centners of grain crops were harvested, 30 per cent in excess of 1932; 17,000,000

centners of unginned cotton as against 12,700,000 centners in 1932; 5,500,000 centners of flax as against 5,000,000 centners; 162,100,000 centners of sugar beet as against 65,600,000 centners, etc.

The improved organization and economic growth of the collective farms, and the new Collective-Farm Model Rules adopted in the spring of 1935 have played an important part in raising crop yields. The new rules adopted by the general meetings of the collective farmers provide for the introduction of certain agronomic measures on the collective farm concerned. The system according to which the incomes of the collective farms are distributed consists in making the share which each collective farmer receives at the end of the agricultural year depend directly on the total income of the collective farm, and on the quality and quantity of labour performed by him.

In 1935, we witnessed a great outburst of labour enthusiasm among the collective farmers. The Union-wide competition among tractor drivers and combine operators brought to the fore hundreds of workers who ploughed and harvested more than 500-600 hectares each for the season.

One may already venture the statement that for the Soviet Union cycles of good and bad harvests are a matter of the past. In pre-war agriculture climatic conditions played a decisive role, giving rise to extremely sharp fluctuations in the amount of crops harvested. Despite the fact that during the last three years climatic conditions in certain districts were extremely unfavourable, the Soviet Union harvested record crops for the third year in succession.

Stock-raising is the most difficult problem of agriculture, due to the fact that animal husbandry was particularly infested with kulak elements, and that kulak agitation in favour of the slaughtering of cattle during the years of the reorganization of agriculture had resulted at the beginning of the Second Five-Year Plan period in a sharp decline in the number of cattle—a decline which did not cease even in 1933, except in the case of hogs. It was only in 1934 that a considerable improvement was to be noted. At present the restoration of stock-raising is proceeding steadily and, what is particularly important, at an increasingly rapid tempo.

The changes in the numbers of the principal kinds of cattle, according to the census taken on the first of June of each year, appear from the following data (in million head):

	1929	1933	1934	1935
Horses	34.0	16.6	15.6	15.9
Cattle	68.1	38.6	42.4	49.3
Sheep and goats	147.2	50.8	51.9	61.1
Hogs	20.9	12.2	17.4	22.6

In 1935, the decline in the number of horses which had continued for the last five years came to a halt. In a year's time (June 1934 to June 1935) horses increased by 300,000 head, cattle by 6,900,000 head, sheep and goats by 9,200,000 and hogs by 5,200,000. Figures for the end of 1935 show the following increases for the year: for horses, 700,000; for cattle, 7,200,000; for sheep and goats, 10,100,000; for hogs 6,400,000.

The State plan for the development of stock-raising which went into effect on January 1, 1935 has done much to improve matters. It assigned quotas to all sections of agriculture for the increase of all livestock, for the rearing of young stock and the creation of an adequate fodder base.

The increase and preservation of young stock are the chief factors in the solution of the stock-raising problem. The number of young stock up to one year of age rose as follows in 1935: colts, 57.8 per cent; calves, 23.8 per cent; lambs and kids, 17.6 per cent; young pigs, 31.2 per cent. There has been a marked increase in the proportion of young stock in the herds. When compared with 1928, the best year for stock-raising in the Soviet Union known hitherto, the year 1935 can show the following increase in the numbers of young stock up to one year of age per mother animal: for mares, 64 per cent; cows, 20 per cent; sows, 10.5 per cent.

Thanks to the marked development in all branches of agriculture, its gross production increased in 1935 by 11 per cent in comparison with 1934 and by 22 per cent in comparison with 1932, equivalent to an average annual increase of over 7 per cent for the three years. If this increase is compared with the average increase of agricultural output in the U.S.A. in 1925-29 (1.7 per cent), and with that of the U.S.S.R. in 1926-29 when small peasant farming prevailed (2.7 per cent), the vast superiority of the socialist mode of production in agriculture becomes clearly apparent.

The Second Five-Year Plan period had set the task of establishing the conditions necessary for the complete elimination of the contrast between town and country. The past three years have been marked by great progress in the solution of this problem: the

adoption of socialist forms of economy by the vast bulk of the peasantry, the mechanization of farming, the basing of agricultural production on scientific principles, the overcoming of the age-old backwardness of agriculture, the approximation of the rate of increase of agricultural production to that of industrial production, the growing well-being and culture of the peasantry and the inculcation of a socialist attitude toward work in the minds of the peasant masses are all processes which tend to eliminate to an increasing extent the contrast between town and country.

3. Transportation

The rapid growth of all branches of national economy, the opening up of new districts, the throbbing economic life throughout the whole country, have confronted the railroads, the principal mode of transportation in the U.S.S.R., with a number of difficult tasks. Accordingly, the Government has adopted numerous measures to accelerate their technical re-equipment. Capital investments in railroad transportation totalled 8,500,000,000 rubles during the first three years of the Second Five-Year Plan period, as against 6,400,000,000 rubles during the entire First Five-Year Plan period. The value of construction put into operation was 8,100,000,000 rubles as against 5,600,000,000 rubles during the whole of the first five-year period.

One of the measures taken was to re-equip the rolling stock.

During the First Five-Year Plan period the principal type of freight locomotive became the type "E" engine, the tractive power of which is 75 per cent greater than that of the most widely used engine in pre-war Russia. Under the Second Five-Year Plan the output of type "E" locomotives, 2,045 of which were produced in 1933-35, is being supplemented by the manufacture of type "FD" (Felix Dzerzhinsky) locomotives whose tractive power exceeds that of the type "E" locomotive by 30 per cent; 724 "FD" locomotives have already been put out.

Of the powerful "SU" passenger locomotives, 772 units have been produced. Electric locomotives have been put into operation to serve sectors having difficult grades, and Diesel locomotives for sectors lacking adequate water supply.

During the last few years the number of railroad cars has considerably increased. In 1935, the U.S.S.R. produced 90,800 railroad cars, the total number of cars in use rising from 552,000 in 1932 to 671,200 (in 2-axle equivalents) in 1935.

The increase and renewal of freight cars was accomplished in the main by the introduction of 4-axle cars, gondolas, hoppers, tank cars, isothermic and container cars, the manufacture of which multiplied several times in 1935 in comparison with 1932. The Five-Year Plan for the manufacture of freight cars will be fulfilled in four years, and for freight locomotives in less than five years.

In order to increase the speed and safety of traffic, the Five-Year Plan provides that by the end of 1937 all railroad cars be equipped with automatic brakes and air-line pipes. In 1935, 36.7 per cent of all cars were already equipped with automatic brakes, and the remaining 63.3 per cent with air-line pipes. During the three years 20,000 cars were provided with automatic couplings.

A number of the most important trunk lines have installed the automatic block system (3,700 km.), the semi-automatic block system (17,800 km.); automatic regulation; the electrification of switches, radio stations, etc.

During these years the trackage was reconstructed by the laying of new ties, increasing their number per km. and strengthening the crushed stone and gravel ballast. More than 5,000 km. of rail were changed. To enhance the carrying capacity of a number of sectors, additional lines have been built and yard tracks lengthened. The total length of railroad lines has increased 1,200 km. during 1934-35.

Electrification is a most important element of railroad reconstruction. More than 1,000 km. have been electrified during the Second Five-Year Plan period. The principal electrified lines run through the Urals, Transcaucasia and the suburban zones of Moscow and Leningrad. Though considerable work has been done in electrification, the latter is still behind the quotas set by the Plan and the chief burden of fulfilling the five-year railroad electrification program will have to be borne by the last two years of the five-year period (1936-37).

During the first two years of the Second Five-Year Plan period, the railroads still lagged behind and partly impeded the growth of national economy.

In order to remedy this situation, the government, in addition to speeding up the technical re-equipment of the railroads, issued instructions to reorganize the system of administration and to overhaul obsolete wage schedules. Measures were also taken to improve labour discipline.

It was not long before these steps yielded results. Beginning

with February 1935, railroad transportation exhibited a steady up-grade movement. Cases of delay in freight shipments are now a thing of the past. Railroad transportation is making rapid progress, the quality of its work has greatly improved, and at the present time there is every prospect that it will fulfil its assignment for the Second Five-Year Plan period in four years.

Freight turnover by rail for the last few years and for 1913 was as follows:

Years	Freight hauled (in mill. tons)	Average daily loadings (in thous. carloads)	Freight turnover (in bill. ton-km.)
1913	192.4	27.4	65.7
1928	156.2	32.3	93.4
1932	267.9	51.2	169.3
1933	268.1	51.2	169.5
1934	317.1	55.7	205.7
1935	300.0	68.0	259.7
1937 (Plan)	475.0	79.0	300.0

During the last months of 1935, daily car-loadings regularly averaged 75-77,000 and at times even reached 80,000. For 1936 the railroads have been assigned the task of loading 78,500 cars a day on the average. This almost equals the quota assigned for 1937, which undoubtedly will be filled in 1936.

Actually, average daily car-loadings for the last quarter of the year, the most difficult quarter and for many years marked by a definite decline in car-loadings, reached the record figure of 75,114.

These achievements of the railroads are a result of the progress made in mastering the new transportation technique and in re-organizing railroad operations. The best proof of this is supplied by the decided improvement in all qualitative indices of railroad work.

The average daily run per freight locomotive has increased from 146 km. in 1932 and 168.5 in 1934 to 193 km. in 1935. The average daily run per freight car has increased from 97.32 km. in 1932 and 117.2 km. in 1934 to 130 km. in 1935.

The Stakhanov movement in railroading has taken in all the chief categories of railroad workers—locomotive engineers, firemen, conductors, oilers, switchmen, dispatchers, etc. Stakhanov locomotive engineers drive freight trains at a speed of more than 45-50 km. without accident or uncoupling, while the average ser-

vice speed achieved in the Soviet Union is 17-18 km. an hour. Thus they open up great possibilities for accelerating the turnover of the rolling stock and effecting an increase in the freight shipped.

Beginning with October 1, 1935, a fixed schedule was drawn up for the movement of freight trains on Soviet railroads; this immediately improved the organization of work in all departments. Railroad transportation is a vast conveyor constantly in motion. This conveyor is now working better than ever before: The railroads have ceased to be a brake on the development of other branches of economy and the rapid successes scored by the army of railroad workers have fostered the conviction that the railroads will take a foremost place in the Soviet economic system.

Much construction work has been done in the field of waterway transportation. The total of capital investments in river and maritime transportation during the first three years of the Second Five-Year Plan period is almost twice as great as the sum invested during the entire First Five-Year Plan period. The aggregate capacity of freight and passenger boats in river transportation, expressed in thousand i.h.p., rose from 188,000 in 1932 to 222,000 in 1935, while the figure assigned for 1937 is 260,000 i.h.p. The tug-boat fleet has grown from 322,000 i.h.p. to 400,000 i.h.p., with 500,000 i.h.p. planned for 1937.

In 1933 the new White Sea-Baltic Canal was opened to traffic.

Work on the construction of the Volga-Moscow Canal is proceeding rapidly, some of its projects having been completed and put into operation as early as 1935.

The maritime merchant fleet is being increased both by the construction of a number of ships within the country and by extensive purchases abroad. Scores of lumber boats, refrigerator boats, tankers, Diesel boats, etc., have been added to the list of sea-going vessels.

In order to increase the volume of waterway transportation, measures have been taken to further improve equipped and lighted riverways, to mechanize loading and unloading, improve warehousing, reconstruct port facilities, reorganize the use of electrical and radio communication, extend dispatcher service, etc.

As a result of these measures the volume of tugged river transportation has increased from 46,900,000 tons in 1932 to 64,000,000 tons in 1935. Freight shipments carried in sea-going bottoms increased from 14,800,000 tons in 1932 to 26,200,000 tons in 1935.

Transportation is a vital factor in the defensive strength of the

country. This circumstance brings out in bold relief the significance of the fact that transportation is keeping pace at the present time with all the other rapidly growing branches of national economy, thus ensuring high rates of development for national economy as a whole and the enhancement of the country's defensive strength.

III. Rising Welfare and Cultural Standard of the Working People of the U.S.S.R.

Socialism creates a life of well-being and culture for all working people; it means care and attention to each individual worker. "We must first of all learn to value people," said Stalin, "to value cadres, to value every worker capable of benefiting our common cause. It is time to realize that of all the valuable capital the world possesses, the most valuable and most decisive is people, cadres. It must be realized that under our present conditions, 'cadres decide everything'."

The past three years were characterized by a further and rapid rise in the living standards of the people.

The abolition of the card system for the rationing of supplies was a most important measure in this regard. The card system was introduced at the beginning of the First Five-Year Plan period to enable the State to satisfy at low prices the foodstuff requirements of the urban population, the Red Army and the population of districts specializing in industrial crops, at a time when agriculture was still in a backward state.

Gathering momentum, agriculture at the present time is making solid progress. The reconstructed food industry is increasing its output from year to year. In 1935, the total output of this industry under the People's Commissariat of Food Industry exceeded that of 1934 by 22.4 per cent. Foodstuffs—bread, meat, fats, sugar, etc.—have become plentiful throughout the land and thus the causes that made the card system necessary have ceased to exist. By now all conditions have been established for the rapid development of light industry. In 1935 its output increased 9.5 per cent, while in 1936 the planned increase is 25.9 per cent, a higher rate than that of heavy industry, made possible by the good harvest of cotton, flax and other industrial crops.

The Second Five-Year Plan assigned the task of preparing the way for the abolition of the card system, but actually the card

system was already done away with in 1935. This proved a great incentive to commodity circulation which in 1935 reached a total of 80,470,000 rubles, or double the 1932 figure.

The improvement in the material well-being of the people has been strikingly reflected in the increased variety of goods offered for sale. There is an increasing demand for high-quality merchandise. Today radio sets, cameras, musical instruments, bicycles, phonographs, etc., are eagerly bought by the workers and peasants. These are the commodities which despite the big increase in their production still fall far short of the demand. One must know the utter dreariness of life in the countryside before the Revolution to be able fully to appreciate the progress which the Soviet collective farm village has made with its constantly increasing demand for cultural supplies.

At the same time that the card system for foodstuffs was abolished, prices for the latter were reduced. By decree of the Government, prices of foodstuffs were lowered 33 per cent on the average as of October 1, 1935. The price reduction in State and co-operative trade was followed by price reductions on the collective-farm markets. In 1935 prices on these markets were cut in half in comparison with the preceding year.

The increase in the number of employed persons and the rise in total wages were important factors making for improvement in the material well-being of the population. Unemployment had been finally and irrevocably abolished as early as 1930. By 1935, the number of employed persons had increased by 1,800,000 as compared with 1932. Total wages grew from 32,700,000,000 rubles in 1932 to 56,200,000,000 rubles in 1935. The average annual wage per worker in national economy as a whole rose from 1,427 rubles in 1932 to 2,271.5 rubles in 1935.

Particularly large increases in workers' wages were brought about by the Stakhanov movement. Thanks to the graduated premium system of wage payments, many thousands of Stakhanov workers are now earning more than 1,000 rubles a month.

The increase in total wages was accompanied by an increase in expenditures for cultural and social services extended to the workers. These increased expenditures of the State and the trade unions rose in industry, transportation, etc., from 4,300,000,000 rubles in 1932 to 7,600,000,000 rubles in 1935.

According to a survey, made in 1934, of 83,000 out of the 240,000 collective farms, the quantity of grain products received

in payment for work performed increased from 5.5 centners per collective-farm household in 1932 to 10.9 centners in 1934, i.e., a 2-fold growth. By the end of 1936 all collective-farm households will have been provided with cows. The collective farmer has no worries about the purchase of seed, means of production or tractive power. The collective farm secures all this for him. The farmer in the U.S.S.R. has no rent to pay for his land. At the present time a special deed is issued by the State to each collective farm, transferring the use of its land to it in perpetuity. With the agricultural tax, which absorbs only an insignificant fraction of the farmers' income, representing a fixed sum, and the quotas of obligatory grain sales to the State remaining fixed irrespective of the rapidly increasing incomes of the collective farmers, the farmers' standard of well-being is directly dependent upon the quality and quantity of work done by them.

The conferences between the Government and people who have gained distinction in the various lines of production brought to light striking instances of the growing welfare of the workers and collective farmers. In the winter of 1935 the Government held such conferences with Stakhanov workers in industry and transportation, with collective farmers who had achieved sugar-beet crop yields of over 500 centners a hectare, with the best combine operators, with the most efficient collective-farm cotton growers of Central Asia and Kazakstan, with construction workers and engineers, and collective farm tractor drivers who had scored new records.

All the speeches of the workers and collective farmers were full of interesting facts showing how life had become easier and more joyous, how the introduction of Stakhanov methods in industry and transportation and the increasing application of scientific methods and of mechanization to agriculture had resulted in an unprecedented rise in workers' wages and the incomes of collective farms and their members.

The rise in the national income is the most general expression of improvement in the material well-being of a country where the entire national income is placed at the disposal of the working people. In 1935 the national income (in fixed 1926-27 prices) was 65,700,000,000 rubles as against 45,500,000,000 rubles in 1932 and 21,000,000,000 rubles in 1913.

The Second Five-Year Plan makes provision for much housing construction and great municipal improvements. During the past

three years street car service was started in 15 cities, water pipes laid for the first time in the same number of cities, and sewer pipes in 21 cities, while approximately 500 new public baths were built. The first line of the Moscow Subway, the best in the world in technical and architectural design, was completed and opened. Work on the construction of its second line is developing, 40,000 workers having been employed for this purpose at the end of 1935.

The ten-year plan for the reconstruction of Moscow, which was adopted by the Government in 1935, is of the greatest significance in the field of municipal development. This plan provides for the construction of dwelling houses having an aggregate housing space equal to that of present-day Moscow, *i.e.*, a total of 15,000,000 sq. metres (about 2,500 big apartment houses). The Plan further provides for the erection of 6 hotels, 530 schools, 50 motion picture theatres, etc., the straightening of numerous streets and the laying out of a number of new thoroughfares. In scale and unity of purpose permeating all its constituent elements, this reconstruction plan far excels anything done heretofore in city planning throughout the world.

The housing problem is very acute in the U.S.S.R. Housing construction did not keep pace with the growth of the urban population, the rates of increase of which were particularly high in districts of rapid industrialization. During the three years of the Second Five-Year Plan period, 17,000,000 sq. metres of housing space were built and opened for occupancy. Housing is still a lagging sector of construction. Therefore the Government has provided, in the Plan for 1936, for a vast increase in capital investments in housing construction so that the fulfilment of the quota set by the Second Five-Year Plan may be assured.

The increasing concern of the State for the well-being of the people finds expression in great building activity in the field of public health. During the past three years notable progress was achieved in medical, sanitary, crèche and health-resort service. The number of hospital beds in cities rose from 230,000 in 1932 to 290,000 in 1935; in rural localities, from 107,000 in 1932 to 135,000 in 1935.

Hand in hand with the improvement in material conditions much has been done to develop construction for cultural purposes.

The Second Five-Year Plan provides for universal compulsory polytechnic education covering a seven-year course. Accordingly

there has been an increase in the number of children in schools of general education. The number of children attending such schools rose from 21,700,000 in 1932 to 25,500,000 in 1935, or 3.5 times the number of children attending school before the war. In tsarist Russia a peasant would send his children to school for two years at best, and then only his sons, and in the cities a worker would send his children for 3 to 4 years; whereas in 1935 all children in the cities and 67 per cent of those in rural districts who completed the fourth grade entered the fifth grade to continue their studies. Comparing 1932 with 1935, the number of children attending fifth to tenth grades increased from 3,600,000 to 6,700,000. Moreover, before the Revolution the high schools were attended by the children of the bourgeoisie and the big landowners, the intelligentsia, the clergy and the kulaks, while there was only a sprinkling of workers' and peasants' children.

Particular attention is being paid to creating all conditions necessary for improved quality of education.

The large school construction program now being carried out will make it possible to hold day sessions exclusively. In Moscow alone 72 big school buildings were built and fully equipped in 1935. In 1936, 152 additional schools are to be built in Moscow. In 1935 the total number of schools built in cities was 496, while in rural districts 1,000 elementary schools and 2,000 seven-year schools were erected. The annual current expenditure allowance per pupil has doubled since 1932.

In the course of this period instructions were issued by the Government for improving the general educational system. New school curriculums were drawn up and approved by the Government. The supply of standard text-books was assured, the output of school supplies was increased, etc.

During these years there was a considerable increase in special courses and schools of general education for adults. By 1932 the number of illiterates in the U.S.S.R. had been reduced to 10 per cent, and at the present time much is being done to abolish the remaining illiteracy and semi-literacy.

In 1935, 38,500,000 persons, or approximately 25 per cent of the entire population of the U.S.S.R., were studying in general educational and vocational schools. This includes both children and adults, but leaves out of account those studying in the various short-term courses, of vocational or technical training.

During the years of the First and Second Five-Year Plan pe-

riods a widespread network of colleges, technical colleges and middle technical schools was established in order to meet the need for specialists. During the three years of 1933 to 1935, 1,300,000 persons were enrolled in colleges, technical colleges and middle technical schools, while 485,400 specialists with college or middle school training were graduated.

In order to provide improved training to specialists, the system of college education has been thoroughly reorganized during the Second Five-Year Plan period. Several small colleges were abolished, in compensation for which the remaining colleges were reinforced, courses of study were lengthened, graduation dissertations were made compulsory, the study of general scientific and special technical subjects was intensified, etc. All these measures considerably improved the qualification of the specialists.

Altogether 509,900 persons studied at colleges and technical colleges in 1935, as against 477,200 in 1932 and 124,000 in 1913.

Pre-school training is a constituent part of the educational system of the U.S.S.R. By 1935 the number of children in pre-school institutions (kindergartens and playgrounds) had increased by 627,000 as compared with 1932, the number at the present time being approximately 6,000,000.

The Soviet Government has created conditions for scientific institutions and scientific workers unparalleled anywhere in the world. In the U.S.S.R. scientific work, which is being carried on on a large scale, is financed entirely by the State. During the course of the Second Five-Year Plan period, the following projects among others are proceeding at accelerated rates of construction: the All-Union Institute of Experimental Medicine, Academy City for the Academy of Sciences, and the Lenin Public Library. Geological research and the work of expeditions for the comprehensive study of the natural wealth and productive forces of the country have taken on particularly great scope during the Second Five-Year Plan period.

Between 1933 and 1935, the number of places of entertainment increased by 9,000; furthermore, 2,285 motion picture theatres were equipped with sound installations and 150 new theatrical groups were formed. The tens of millions of people who have been stirred for the first time to cultural life make very great demands upon Soviet art.

No less is the demand for printed publications. The aggregate newspaper circulation per issue has risen from 35,500,000 to

37,000,000 in the period under review. The Soviet Union maintains first place in the world in respect to the number of books published, while editions are larger than in any other country. The works of Marx, Engels, Lenin and Stalin as well as the classics of general literature are published in millions of copies. The inadequate paper supply is the sole limiting factor here. Increased paper production is one of the most important conditions of the further development of the cultural revolution.

IV. General Conclusions and Prospects of Development

Certain disproportions in national economy which were inherited by the Soviet State or manifested themselves in the process of the restoration of national economy during 1922-26 and the ensuing reconstruction period, have been or are being done away with during the First and Second Five-Year Plan periods.

Industrialization has changed the relation between industry and agriculture. The U.S.S.R. has been transformed from an agrarian into an industrial country. Simultaneously the reconstruction of agriculture is putting an end to the traditional backwardness of the latter, is overcoming its slow rates of growth. In socialist society agriculture develops harmoniously with national economy as a whole.

Transportation, formerly a backward sector, is now being brought in line with the requirements of national economy. In 1935 the principal branches of economy—industry, agriculture and transportation—developed fairly evenly.

The backwardness of the border districts and nationality republics is being eliminated by a more even geographic distribution of the productive forces. Much progress is being made in transforming agricultural consumers' regions into producers' regions.

The great work accomplished in the training of new cadres is removing the disparity between the country's new technical equipment and the forces available for handling it. The successes achieved in the struggle to master the new technique demonstrate that the workers are raising their qualifications to a par with the new technique. The best proof of this is the Stakhanov movement.

Within industry the disproportion between the volume of machinery production and what is required for the technical reconstruction of the country has in the main been overcome. The lag

of the branches supplying fuel is being successfully eliminated. During the last few years the oil industry has been unable to keep pace due to insufficient drilling. The Government has taken steps to improve the work of the oil industry and there can be no doubt that this industry will soon fall in step with the others. The coal, peat and oil-shale industries are advancing rapidly. In volume and assortment of its output, the iron and steel industry satisfies almost completely the requirements of the machinery industry, transportation and the other principal branches of national economy. The non-ferrous metals industry, which during the last few years used to be classified as one of the lagging industries that did not fulfil their plans, has now become one of the rapidly progressing industries that fulfil and overfulfil their plans. The socialist reconstruction of agriculture ensures an adequate supply of raw materials for light industry and the food industry. The disproportion between raw material resources and the production possibilities of the industries producing articles of consumption has been eliminated. Proper utilization of raw materials and improvement in the quality of output are now the principal problems of these industries.

Large-scale industry as a whole fulfilled its yearly plan in 1935 both with respect to volume of output and all qualitative indices.

In agriculture, cadres of tractor drivers and combine-operators have been formed who have mastered the new technique. The definite improvement achieved in 1934-35 in the application of scientific-farming measures (early sowing, vernalization, ploughing of fallow land, weeding, autumn ploughing, etc.) is removing the disparity that began to be noted between the high level of machine technique attained by agriculture and its relatively low agricultural level. By Government decision measures were taken to strengthen the fodder base of the growing stock-raising industry.

Railroad transportation is undergoing reconstruction in all its departments. Reconstruction of the rolling stock is accompanied by a radical reorganization of the entire trackage, communication and the repair base.

The discrepancy between the rising cultural and material demands of the masses and their satisfaction is being successfully eliminated. The Government has taken steps to accelerate construction for social and cultural purposes (municipal, housing, hospital and school construction), to increase printing facilities and

augment the output of paper, scientific school supplies, electrical household supplies and similar commodities.

Internationally, the economic and financial position of the Soviet Union has gained in strength. During the last few years, the Soviet Union has had a favourable balance of trade. In 1935 the balance of payments also became favourable. Its foreign debts, which totalled more than 1,000,000,000 rubles, have now been reduced to 100,000,000 rubles, to cover which would require far less than a single year's gold output of the Soviet Union.

The steadfast policy of peace consistently pursued by the Soviet Government and the measures taken to increase the defensive strength of the country, as a result of which the U.S.S.R. has become a first-class military power, have greatly enhanced the prestige and weight of the Soviet Union in international affairs.

All this does not mean that in future the Soviet Union will have plain and peaceful sailing, without any difficulties, or that we shall rest content with what has been achieved. The strength of the Soviet Government consists in the fact that it has clear perspectives, that it is fully aware of the difficulties of development, and is able, together with the Communist Party of the Soviet Union, to mobilize the entire people to overcome these difficulties. The U.S.S.R. sets itself the task of achieving a level of development of the forces of production that will completely satisfy all the constantly increasing demands of the people. The U.S.S.R. sets itself the task of eliminating the contrast between town and country, between mental and physical labour, of completing the building of socialist society and of proceeding to the creation of Communist society.

Stalin in his speech at the First All-Union Conference of Stakhanovites (November 17, 1935) pointed out the following differences between socialism and communism:

"The principle of socialism is that in a socialist society each works according to his ability and receives articles of consumption not according to his needs but according to the work he performs for society. This means that the cultural and technical level of the working class is still not a high one, that the distinction between mental and manual labour persists, that the productivity of labour is still not high enough to ensure an abundance of articles of consumption, and, as a result, society is obliged to distribute articles of consumption not in accordance with the needs of the

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members of society, but in accordance with the work they perform for society.

"Communism represents a higher stage of development. The principle of communism is that in a communist society each works according to his abilities and receives articles of consumption not according to the work he performs, but according to his needs as a culturally developed individual. This means that the cultural and technical level of the working class has become high enough to undermine the basis of the distinction between mental labour and manual labour, that the distinction between mental labour and manual labour has already disappeared, while productivity of labour has reached such a high level that it is able to ensure an absolute abundance of articles of consumption, and as a result society is able to distribute these articles according to the needs of its members."

The main and irrevocable consequence of the development of the U.S.S.R. is the fact that *all the chief difficulties of socialist construction are behind*. The extent to which the new technique has been mastered by the country is so great that national economy in its entirety is assured of harmonious and rapid progress.

In the course of the fulfilment of the Second Five-Year Plan new factors, which must find their reflection in the further fulfilment of the Five-Year Plan, have made their appearance. The Stakhanov movement opens up new possibilities of growth, and therefore the rates of increase of output can be set higher during the last two years of this second five-year period than heretofore; increased labour productivity will be the main factor in determining rates of output. Thus the problem of the construction program likewise presents itself in a new way. It has already become quite clear that we can fulfil the production quotas assigned by the Second Five-Year Plan with a smaller volume of capital investments than planned before. This makes it possible to devote a greater proportion of the national income to consumption, and increase the share of capital investments in construction for social and cultural purposes.

According to the Plan, 1936 will be a year of further expansion of socialist production, and increasing material well-being and cultural development for the working people. A particularly noteworthy feature of the Plan for 1936 is the fact that this year the rates of increase of output will be considerably in excess of those

obtained in any of the preceding years of the Second Five-Year Plan period. Thus in 1936 the output of industry as a whole under Union jurisdiction will show a growth of 23 per cent. For the People's Commissariat of Heavy Industry, this increase amounts to 26 per cent; for the People's Commissariat of Timber, 22.3 per cent; for the People's Commissariat of Light Industry, 29.2 per cent and for the People's Commissariat of Food Industry, 22 per cent. For individual industries the increase is as follows: electric-power generation, 22 per cent; coal mining, 22 per cent; iron and steel industry, 23 per cent; non-ferrous metals, 32 per cent; machinery production and metal working, 31 per cent; chemical industry, 19 per cent; cotton goods, 27 per cent; linen goods, 57 per cent; silk, 42 per cent; meat, 31 per cent; sugar, 30 per cent; leather and footwear, 26 per cent; confectionery, 30 per cent.

In January 1933, Stalin pointed out that the enthusiasm, the fervour for new construction must be supplemented "by enthusiasm, by fervour for *mastering* the new factories and the new technique, for seriously increasing the productivity of labour, for seriously reducing cost of production." He went on to say: "*This is the main thing now.* Because only on this basis will we be able, say, toward the middle of the Second Five-Year Plan period, to make a fresh powerful spurt forward in the sphere of construction as well as in the sphere of increasing industrial output."

This prediction is now coming true in every respect. In 1935 the country made "a fresh powerful spurt forward," which finds its expression in the vast increase in construction and production provided for by the Plan of 1936.

In 1936 capital investments will total 32,400,000,000 rubles as against 24,000,000,000 rubles specified in the Plan for 1935. This means that in 1936 alone the volume of construction will be equal to one half of the entire construction for the first three years of the Second Five-Year Plan period. Especially great is the growth of capital investments in industries producing articles of consumption and in construction for cultural purposes. Thus, while capital investments in industries producing means of production are growing 9.5 per cent, in industries producing articles of consumption they are increasing 55 per cent and will constitute 3,309,000,000 rubles, i.e., almost as much as was invested in these industries during the whole of the First Five-Year Plan period. Investments in municipal construction are rising from 1,400,000,000 rubles to 1,885,000,000 rubles, or 35 per cent; in

education and public health, from 980,000,000 rubles to 1,970,000,000 rubles or over 100 per cent; in housing construction, from 1,930,000,000 rubles to 3,065,000,000 rubles, or 58.8 per cent.

Taking into account the successes achieved during the past three years and the great possibilities created by the Stakhanov movement, the Plan for 1936 provides for raising the output in a number of industries by the end of the year to a higher level than was set by the Five-Year Plan for this year.

Classification	Units of measurement	Quotas for 1936 according to Five-Year Plan	Quotas for 1936 according to revised yearly plan
Electric-power generation	mill. kwh.	30,000	32,000
Coal	mill. tons	126.6	135.0
Pig iron	"	14.0	14.5
Steel	"	14.8	16.0
Rolled steel	"	10.5	12.2
Metal-cutting machine-tools	thousands	31.0	34.0
Tractors (in 15-h.p. equivalents)	"	145.9	154.8
Freight cars (in 2-axle equivalents)	"	67.4	90
Motor trucks	"	103.0	144.5
Harvester-combines	"	20.0	61.0

This overfulfilment of the assignments of the Second Five-Year Plan signifies that it will be quite possible to complete this plan in a number of industries in advance of schedule.

Based upon the growth of labour productivity in 1936—in heavy industry 23 per cent, in light industry 21 per cent—production costs will be reduced considerably, the decrease amounting to 6.2 per cent for industry as a whole and to 8 per cent for heavy industry.

A considerable increase in freight shipments has been planned for 1936. In railroad transportation this increase is set at 17.2 per cent (from 390,000,000 tons to 457,000,000 tons); in river shipping, 18.1 per cent (from 64,000,000 tons to 75,600,000 tons); and in maritime shipping, 20 per cent (from 26,200,000 tons to 31,600,000 tons).

The growing mass production of manufactured articles of general consumption, the developing commodity circulation (retail trade turnover rising by 24 per cent or 100,000,000,000 rubles), the reduction in prices and the rise in wages accompanying increased

labour productivity all lead to a further and still more accelerated improvement in the material welfare of the working people.

There must be a new approach to a number of problems involved in methods of planning. Collectivization has made the direct planning of agriculture possible, and thus all branches of national economy are now embraced by State planning.

Balance sheets, which are drawn up not only for the five-year period as a whole but also yearly and in numerous instances even quarterly, are acquiring increasing importance in the elaboration of the Plan. At the present time the following balances enter into the composition of the Plan: fuel, ferrous and non-ferrous metals, chemicals, building materials, machinery, agricultural raw materials for industry, and fodder. There is a unified plan for freight turnover to cover all systems of transportation. There is a unified financial plan which embraces the budgets and the credit system, also the funds of social insurance, State insurance as well as the funds of social organizations; there is likewise a unified plan for the training of cadres.

The abolition of the ration card system has strengthened the ruble and enhanced the importance of cost accounting. The ruble has become the sole medium of exchange and payment. The system of wage payments for workers and the engineering and technical personnel has established a direct interdependence between quality and quantity of labour expended and wages received. All enterprises in industry and transportation have been put on a cost-accounting basis. This has immeasurably increased the significance of the ruble and of cost accounting as incentives and controlling factors of plan fulfilment.

The past three years have been characterized by persistent efforts to render industry profitable and to increase this profitability. In 1935 profits in heavy industry totalled 1,701,000,000 rubles, as against 1,085,000,000 in 1933 and 438,700,000 in 1931. This increase in profitability is a striking expression of the rapid growth and flourishing state of Soviet industry.

Planning has likewise improved. Plan assignments reflect to an increasing degree all the objective possibilities of growth inherent in the social-economic order of the U.S.S.R. The increasing experience of the workers engaged in planning has contributed considerably to this end.

The national-economic Plan is not an abstract mathematical calculation but a directive, a guide to action. The organizing in-

fluence of the Plan, particularly now when all branches of the country's economy are subject to direct planning, is exceptionally great. By their persistent, heroic struggle the millions of the Land of the Soviets ensure the fulfillment of the Second Five-Year Plan, the Plan of great social and technical transformations.

In view of the prospect of successful completion of the Second Five-Year Plan, the planning bodies with the participation of the entire Soviet Union will in the very near future proceed to elaborate the Third Five-Year Plan for the Development of the National Economy of the U.S.S.R.

V. I. MEZHLAUK

Chairman of the State Planning Commission of the U.S.S.R.

January 1956

PREFACE

THE Second Five-Year Plan for the Development of the National Economy of the U.S.S.R. has been worked out by the State Planning Commission of the U.S.S.R., confirmed by the Seventeenth Congress of the Communist Party of the Soviet Union and adopted by the Central Executive Committee and the Council of People's Commissars of the U.S.S.R. It is a fully elaborated program of planned measures and tasks whose object is to carry out the decisions of the Party and the Government on the Second Five-Year Plan.

The successful completion of the First Five-Year Plan made it possible to encompass the development of all branches of national economy much more fully in the Second Five-Year Plan. Thus, for instance, the planning of the development of industry in the Second Five-Year Plan embraces not only large-scale industry but all industry in the U.S.S.R. Transportation in all its forms is also treated more inclusively. The socialization of agriculture and of commodity circulation have made it possible to comprise in the Plan also these branches of national economy with far greater completeness.

In pursuance of the goal of completing technical reconstruction, the Second Five-Year Plan sets up technical and economic indices on a wide scale. These indices are the basis of the specifications for quantity, quality and cost of production in the various branches of national economy.

At the time the Second Five-Year Plan was being drawn up, statistical reports on the course of fulfilment of the national economic plan for 1932 had been received from most branches of national economy. This made it possible to give more accurate data for the majority of indices than appeared in the *Summary of the Fulfilment of the First Five-Year Plan* published by the State Planning Commission of the U.S.S.R. in 1933. In the second edition of that work, complete statistics are supplied for all indices. The figures for 1933 are based on preliminary calculations of plan fulfilment made by the Central Board of National Econo-

mic Accounting of the State Planning Commission and the corresponding People's Commissariats. They are to be presented with greater exactitude in the publications of the Central Board of National Economic Accounting.

In the Second Five-Year Plan the value of output is given in fixed 1926-27 prices. The construction plan is given in the prices of the Plan of 1933 while the summary tables also show the 1932 prices.

The summary tables of the construction plans have been compiled according to branches of national economy as well as according to People's Commissariats and organizations. The purpose of this was to show the total volume of capital investments made in any branch of economy (for instance, the indicated capital investments in industry take into account investments made by the transportation system, agriculture, municipal services, etc., in the industrial enterprises of these branches of economy) as well as the distribution of construction according to the various organizations directly engaged in this work.

In working out the Second Five-Year Plan the State Planning Commission of the U.S.S.R. relied on the mass of material and projects submitted by the People's Commissariats and by the Republic and Territorial (Regional) Planning Commissions.

The foremost scientists of the Soviet Union—the forces of the Academy of Sciences of the U.S.S.R., of about 200 scientific research institutes, over 300 leading specialists in various departments of science and technology and a number of the country's most prominent scholars collaborated on the Second Five-Year Plan and participated in the fifteen all-Union conferences called by the State Planning Commission of the U.S.S.R. to discuss and work out particular questions and sections of the Plan.

The institute of Economic Research of the State Planning Commission of the U.S.S.R. as a body also took an active part in working out the Second Five-Year Plan. A list of the persons who participated in drawing up the Plan or worked out particular problems is appended to this volume.

The present publication is edited by a commission consisting of V. V. Kuibyshev (Chairman), V. I. Mezhlauk, E. I. Kviring, A. I. Gaister, G. I. Smirnov, B. V. Troitsky, I. A. Kraval, A. A. Troyanovsky and B. S. Borilin.

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