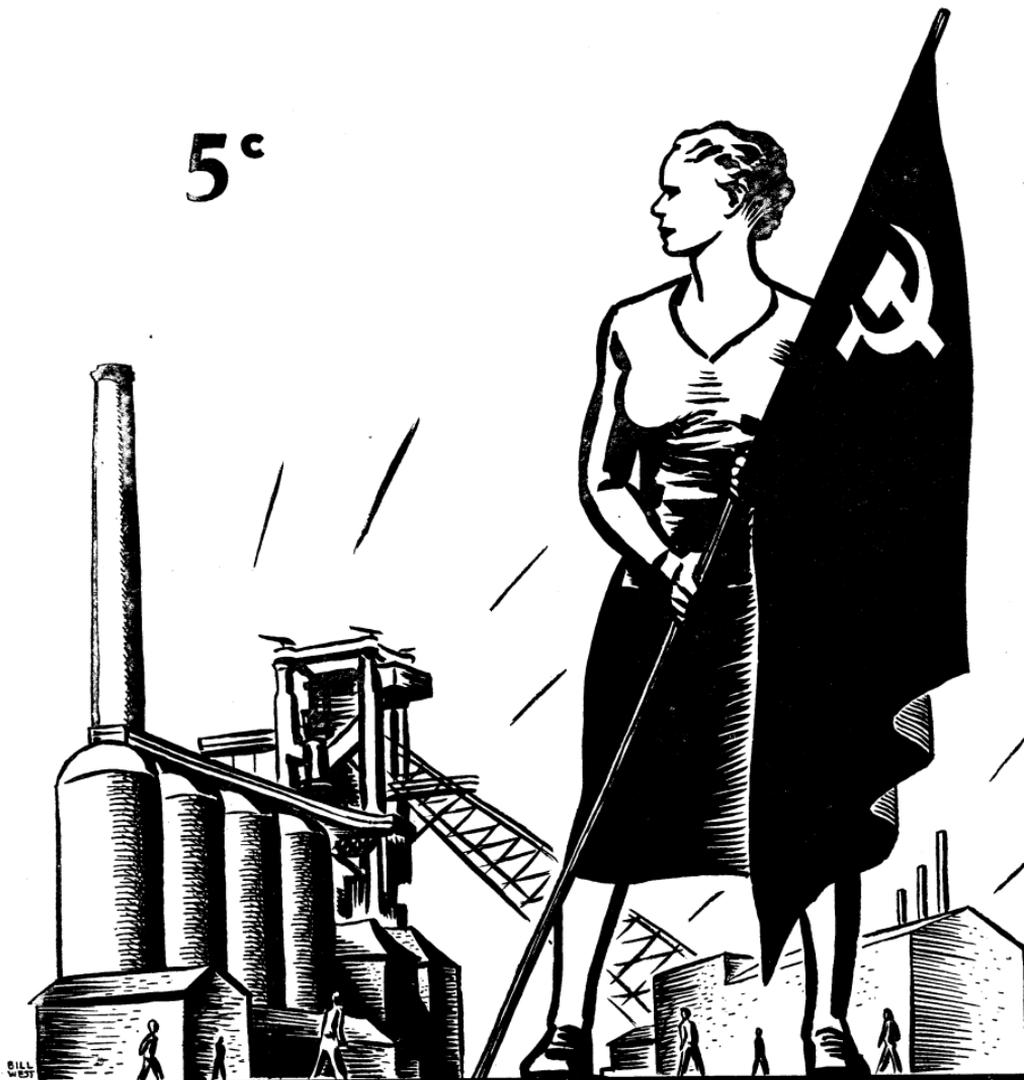


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Socialism Marches On in the Soviet Union

By JAMES B. TURNER

INTERNATIONAL PAMPHLETS No. 53

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Socialism Marches on in the Soviet Union

BY JAMES B. TURNER

TSARIST RUSSIA was one of the largest countries of the world. Its territory was exceeded only by that of the British Empire. It had a population of 180,000,000, in this respect being surpassed only by China and India. It possessed natural wealth sufficient for the development of all branches of industry.

Nevertheless, pre-war Russia was industrially one of the most backward of all countries. As regards industrial production, technical development and degree of utilization of natural resources, it was far behind the United States, England, Germany and France. It was an agrarian country whose agriculture was carried on by the most primitive methods; the standard of living of the workers and peasants was extremely low, exploitation was unrestrained.

Industry in Tsarist Russia

In total volume of industrial production Russia ranked fifth in the world. However, those branches of industry which determine the degree of economic independence of a country and its technical level were very feebly developed. This applies especially to machine-building. The only types of equipment pro-

duced in any quantity were locomotives, freight cars and farm machinery. Practically all other types of machinery, constituting about two-thirds of the requirements of the country, had to be supplied by imports. Aside from a few small factories, the chemical industry virtually did not exist. In the food industry only sugar-refining and distillation of alcoholic liquors were developed to any extent. The remaining branches of the industry were carried on in small and insanitary shops employing hand labor almost exclusively. •

Pre-war Russia produced no aluminum, nickel, automobiles, tractors, motorcycles, excavators, watches, cameras, phonographs, complex metal-working machines, to mention just a few items. In those industries which had attained some degree of development, such as coal, iron and steel, hand labor predominated. Although Russia, in 1913, was third among the countries of the world in population, it was fifteenth in production of electrical energy.

One of the principal factors in the backwardness of Russian industry was its dependence on other countries, especially England, Germany and France. Such important branches of industry as coal, oil, manganese, platinum, iron ore, steel and machinery were, to a large extent, owned by foreign capitalists. Foreign banks controlled the principal banks in Russia and consciously carried out a policy of hampering the development of certain industries in order that their control over the economic life of Russia should not be weakened.

Aside from its backwardness, Russian industry was distinguished by the intenseness of the class struggles which raged within it. Altogether there were 2,600,000 workers engaged in large-scale industries. It is a significant fact that, despite its backward technique, Russian industry was concentrated in large enterprises to a higher degree than in any other country of the world. This greatly facilitated the creation of solidarity among the workers, stimulated confidence in their power and gave great

scope to the strike movement. Economic strikes very often developed into political struggles.

The most important role in the development of the working class movement was played by the Bolshevik Party, under the leadership of Lenin and Stalin, which carried on persistent activity in educating the workers, in preparing them for the struggle for the overthrow of the tsarist regime.

The sharpness of the class struggle was intensified by the extremely low economic status of the workers and their lack of the most elementary political rights. Wages were far below those in other countries; the average working day was ten hours; the system of social insurance embraced only a few workers and the benefits were very limited. As in other countries, Russia was racked by periodic severe economic crises which threw tens of thousands of workers out of their jobs and greatly aggravated the already miserable conditions.

Only the centers of the cities, where the wealthy had their homes, were provided with modern facilities. Practically no attention was paid to the working class slums on the outskirts, where extreme overcrowding, dirt and epidemics were the rule.

For belonging to one of the radical parties, for any kind of opposition to the tsarist rule, the workers were fiercely persecuted. Nevertheless, under the pressure of the revolutionary movement, which by 1905 had attained vast proportions, the tsarist government was forced to make some concessions by establishing the State Duma. But the rights of the Duma were so restricted that its power in creating legislation was practically nil. And even this limited power was of little avail to the workers, whose representation in the Duma, because of the election laws, was only one-thirtieth of that of the big landlords.

Ruinous Results of the World War

With the beginning of the imperialist World War in 1914, in which Russia was allied with England and France, the eco-

conomic weakness and political disorganization of Russia were clearly revealed to the entire world. The war itself dealt severe blows to the economy of the country. The blockade of the Baltic and Black Sea ports led immediately to a drastic reduction in imports. Russia was cut off from those countries which had supplied it with machinery, chemicals and many industrial raw materials and it was not able to create these industries in a short period of time. The corrupt tsarist bureaucracy showed itself incapable of organizing the economic life of the country to meet the war needs.

In March, 1917, the tsarist government was overthrown by an uprising of the working class and the army. In its place was established a Provisional Government which continued the policy of the tsarist government of attempting to carry on the imperialistic war, with its annexationist aims, to a victorious conclusion. Being unable to cope with the impending economic catastrophe, the Provisional Government in words expressed its intention to undertake to regulate the economic life and in deeds connived at the shameless speculation in which the industrialists and financiers had engaged since the very beginning of the war and which intensified the disorganization of business life. As a result, industrial production in 1917 was reduced by 23 per cent as compared with 1913 and the output of the food and textile industries was cut in half. So when the Soviet regime was established in October, 1917, the deterioration of industry was already in an advanced stage, contacts with foreign countries had been cut off and stocks of raw materials and fuels were very low.

The Workers Take Power

Immediately upon taking power the Soviet state was met by active opposition on the part of the bourgeoisie, who attempted to sabotage every measure undertaken by the state to revive industrial production. From this opposition they passed over to

active struggle against the workers' and peasants' government, assisted by the capitalists of other countries.

In order to organize the defense of the revolution and to undermine the economic position of the bourgeoisie, it became a matter of life and death for the Soviet state to push the nationalization of all industrial enterprises. At first the Soviet government had intended to nationalize only large industries and to wait until sufficient trained forces were available before embarking on the program of general nationalization. But the needs of the civil war made it impossible to follow out this gradual program and the industries were actually nationalized much sooner than had been planned.

During the period of the civil war, from 1918 to 1920, the direction of industry was determined entirely by the requirements of defense. Soviet Russia was opposed by fourteen foreign states, which not only helped the White Guard generals with arms, money and food, but sent their own troops with the aim of crushing the Soviet state. The intervention campaigns of the imperialist powers were prosecuted on all sides and with a calculated plan. On the north, east, west and south the interventionist forces joined hands with the White Guard armies and surrounded the Soviets with a ring of steel. Some of the most important industrial regions, such as the Caucasus, the Ukraine and the Urals, were captured by the invaders after bloody struggles. Surrounded on all sides by enemies, the Soviet regime was entirely blockaded from the outside world.

• Under such conditions the principal task of the Soviet government was to apportion the available resources of the country in such a manner as to assure first of all that the needs of the army were met. Those enterprises whose production was essential for defense needs were given preference in regard to raw materials, fuel and food supplies for the workers.

However, it was impossible to maintain industry at its former level during the period of the civil war. Thousands of mines,

factories and blast furnaces were damaged or entirely destroyed in the areas overrun by the counter-revolutionary armies. And even in those parts of the country which always remained under Soviet control, the shortage of raw material and fuel resulted in continuously falling production despite the most heroic efforts of the workers.

At the beginning of 1921, the civil war was terminated with complete victory for the Red Army. Here and there, it is true, there were still a few bandit gangs carrying on their operations and the Far East was occupied by Japanese interventionists, but during the course of 1921 the bandits were cleaned up and by the fall of 1922 the Red Army and the Far Eastern partisans forced the Japanese imperialists to evacuate Soviet territory.

The Restoration Period

After the conclusion of the civil war the Soviet government was faced with the task of rehabilitating industry, which had been almost totally ruined during the World War and the counter-revolution. Industrial production in 1920 was only 14 per cent of that of 1913. The amount of pig iron smelted was only one-fortieth of the former figure, cement production one-hundredth, textile output one-twelfth, output of the food industry one-eighth. Many branches of industry were completely shut down.

The enormous task of restoring industry was completed in the period from 1921 to 1926. Some idea of the magnitude of this achievement may be gained when it is considered that not only industry but also transportation and agriculture had suffered tremendous damage. The Soviet government accomplished this task without any help from the outside world, indeed often against all sorts of obstacles interposed by other countries. Nevertheless, it succeeded in rehabilitating its industry to the pre-war level in a much shorter period of time than such countries as England, France and Germany, where industrial pro-

duction had suffered much less than in Russia and where large foreign credits were available. Germany, for example, reached the pre-war level only in 1928 and England in 1929.

The socialist system of economy thus demonstrated its vast superiority over the capitalist system in the first years of the restoration period. The hopes of the bourgeoisie that the working class would not be able to build up industry were crushed.

In 1926 industrial production was 4 per cent larger than in 1913. Output of machinery, however, was 33 per cent greater and electric power 79 per cent greater. This was due to the fact that, from the very beginning of the period of peaceful upbuilding, the Soviet government worked on the premise that the interests of socialism, the interests of the defense capacity of the country, dictated the necessity for developing heavy industry and particularly its nerve center—machine building.

Nevertheless, in 1926, the Soviet Union was still primarily a backward agrarian country, technically and economically dependent on other countries. To overcome this it was necessary to intensify the program of industrialization. The task of creating a modern industry and of freeing the country from dependence on the outside world was accomplished during the course of the First and Second Five-Year Plans.

Through Industrialization to Socialism

From the very first day of its existence the Soviet state set for itself the goal of creating a classless socialist society. This means not only the abolition of classes, the abolition of exploitation of man by man, the elimination of private ownership of means of production, but also the assurance of a prosperous and happy life for all the toilers, which can be realized only on the basis of large-scale and technically advanced industry. Having nationalized industry, transport, foreign trade, land and the banking system, the Soviet government was faced with the problem of

transforming the millions of tiny peasant farms with their medieval methods of cultivation into a socialized system of large-scale agriculture employing the most modern methods.

This tremendous task could not, of course, be carried out in one or two years. From its very inception, the Soviet government attempted to spread cooperative forms among the peasantry, starting with the simplest types of cooperatives to the most advanced. In the meantime, however, the backward individual peasant economy was falling further and further behind the rapidly growing needs of socialist industry. The widespread mechanization of agriculture, an absolutely necessary condition for its rapid development, could be accomplished only on the basis of industrialization. On the other hand, it was quite clear that the introduction of great quantities of tractors, combines and other machines which could be rationally utilized only in large-scale cultivation would greatly stimulate the collectivization of agriculture. And this proved to be the case.

In laying out the course of its future development the Soviet Union was forced to take account of the fact that it is encircled by unfriendly capitalist countries. Some imperialist states, like Japan and Germany, are quite openly preparing to make war against the Soviet Union. It may safely be stated that war against the Soviet Union would long ago have been a reality had some of the imperialist powers been certain of success. Under modern conditions war means metals, machines, precision instruments, that is, those means of defense and attack the production of which can be assured only in countries with a highly developed industry. The U. S. S. R.'s struggle for industrialization is a struggle to assure its independent existence and to build up its defense capacity.

Soviet industry is more than the sum of its individual enterprises. It is a great force in the hands of the government which enables it to determine the direction and tempo of the entire economic life of the country. The development of industry also

implies the expansion and strengthening of the working class to whom the power belongs.

Thus, the direct and indirect interest of socialist construction, the defense of the country, its very independent existence, all hinge on the problem of industrialization. Inasmuch as industrialization was a matter of life and death for the Soviet Union, it was to be expected that the enemies of socialism would strive with every means at their command to defeat this program of the government and the Communist Party.

Counter-Revolutionary Groups

The policy of forcing the development of heavy industry was actively opposed by groups of the old bourgeois-technical intelligentsia, Trotskyists and Bukharinists. The damaging activities of the bourgeois engineers dated back to 1922. Their harmful machinations were facilitated by the fact that the majority of the older technicians occupied important posts in industry and in the planning organs of the government. This gave them the opportunity of directing wrecking activity and issuing ruinous plans and orders with a considerable degree of immunity. At their trials it was conclusively proved that some of these groups were in close contact with the general staff of countries hostile to the Soviet Union and worked under their supervision. They were also closely tied up with the White Guard emigrés who had fled from the country during and after the civil war. These wrecking organizations were exposed in the period from 1928 to 1930 and received their just deserts. Some of the technicians found guilty of these crimes later showed, by constructive work on behalf of their country, their desire to make amends for their former activity, and are now occupying useful places in Soviet industry.

The Trotskyists at first raised active opposition to the plan of socialist industrialization while they were still within the Party. Their proposals were overwhelmingly rejected by the Party and

the country. Despite this fact and despite the fact that every opportunity was given them to submit to the will of the majority, they kept up their anti-party agitation. When, because of their continued sabotage of the government and Party program, they were at length expelled in large numbers from the Party, they passed over to illegal methods, finally winding up in the ranks of counter-revolutionists, wreckers, traitors and spies. The fascist enemies of the U.S.S.R. found in these demoralized elements perfect tools for their purposes. At the trials in Moscow, the Trotskyists, under the pressure of the incontrovertible facts brought out by the prosecution, were forced to acknowledge that they were operating on behalf of the Japanese and German espionage services; that they had promised the fascist governments, in return for aid in bringing the Trotskyists to power, the Ukraine and the Far East.

Likewise, the Right opportunists, under the leadership of Bukharin and Rykov, actively opposed the industrialization policy of the Party. The plan they proposed would have had the effect of keeping the Soviet Union in semi-colonial dependence on capitalist countries. If the U.S.S.R. had adopted the snail's pace in building up industry which the program of this bloc involved, there is little doubt that the fascist countries would long ago have felt it safe to attack the socialist fatherland. Eventually the Rykov-Bukharin bloc joined up with the Trotskyists and also organized groups of terrorists carrying on spying and wrecking activity.

All of these counter-revolutionary forces were exposed and isolated. But this by no means signifies that the Soviet Union can relax its vigilance. Past history offers many examples of capitalist states which have sent groups of spies and wreckers into other countries. It is to be expected, therefore, that such activity would be greatly intensified when applied to the first socialist state in history. For this reason the interests of socialist industrialization demand that the greatest vigilance be exercised

and the sternest measures taken against the counter-revolutionary agents of Japanese and German fascism.

First and Second Five-Year Plans

In the historical struggle to convert the U.S.S.R. from an agrarian into an advanced industrial country, technically and economically independent, the greatest role was played by the First Five-Year Plan which covered the period from October 1, 1928, to January 1, 1933. During these years construction of new factories and mines and basic reconstruction of existing enterprises were carried out on a scale never before witnessed in history. An idea of the extent of this development may be gained from the fact that, whereas capital investments in industry in the five years preceding the First Five-Year Plan totaled five billion rubles, during the Five-Year Plan period such investments exceeded 24 billion rubles. In 1928, 723,000 persons were engaged on construction projects; in 1932, there were 3,125,000. During the five-year period there were constructed some 1,500 factories and mills, many of them among the largest of their kind in the world.

As Stalin brought out in his speech of January, 1933, summarizing the results of the First Five-Year Plan, prior to the plan the Soviet Union had no metallurgical, tractor, automobile, machine-tool, chemical or aviation industries to speak of. In the course of four and one-quarter years huge enterprises, designed and equipped in accordance with the most modern technique, were created in all of these branches. The formerly backward agricultural machinery, power, oil and coal industries were transformed into modern industries occupying leading places in their fields. A new coal and metallurgical center was created in Siberia, whereas formerly the country was dependent solely on the Ukraine. New centers of the textile industry were established in Central Asia and Western Siberia; previously there

had been only one such center in the northern part of European U. S. S. R.

The Second Five-Year Plan, covering the years 1933-1938, was also a period of intensive industrialization. During the first four years of the plan capital investments totaled 46 billion rubles, about double the total of the preceding five years. In 1936, over 75 per cent of the total industrial production was accounted for by plants either built or entirely reconstructed during the First and Second Five-Year Plans. Over 70 per cent of the motors and over 65 per cent of the 250,000 machine tools in industrial enterprises were installed during these periods. The Soviet Union has become one of the most advanced industrial countries and is now in a position to produce any type of machinery and equipment.

Production Soars Upward

Whereas during the First Five-Year Plan the greatest emphasis was placed on new construction, during the second plan the basic task was to master the technique of the newly constructed enterprises. Consequently, the most serious attention was devoted to the problem of increasing productivity of labor, which is the basic criterion of the success attained in mastering technique. During the first plan industrial production was increased to a large extent by means of increasing the number of workers. During the second plan, however, the gain in output was attained with relatively few additional workers, due to the greater productivity.

The Soviet Union, in contrast to capitalist countries, has increased its production each year and has been free from the periodic crises which plague other countries. Its planned system of socialist economy has demonstrated its superiority over the anarchic system prevailing elsewhere.

From 1928 to 1931 industrial production increased by about one-fourth each year. In 1932 and 1933 the tempo of gain was

somewhat less, due to difficulties experienced in establishing efficient production in some of the newly-built plants. Beginning with 1934, industrial output has shown annual increases ranging from 21 to 30 per cent.

During all the years of the world economic crisis, which began in 1929 and reduced industrial production in capitalist countries at a catastrophic rate, the Soviet Union showed a steady and rapid increase in production. As a result of this development, the Soviet Union has jumped from fifth place in total volume of industrial production to second place, being exceeded only by the United States. Since 1913 the U. S. S. R. has risen from fifteenth place in power production to third place; in output of coal, from sixth place to third place; in pig iron, from fifth to second place; in steel, from fifth to third place. Before the war automobiles, tractors, combines and superphosphates were virtually not produced at all in Russia; in 1936, the U. S. S. R. was sixth in the world in output of automobiles, second in tractors, first in combines, and third in superphosphates. It is also second in output of oil, shoes and soap. The fish catch has risen from fourth place before the war, to second place at present. In cultivation of sugar beets the U. S. S. R. has risen from second place to first place.

In an extremely short period of time the Soviet Union has attained technical and economic independence of other countries. It now completely satisfies, without imports, its requirements of coal, oil, iron ore, manganese ore, electrolytic ferro-alloys, aluminum, chromite, zinc, tractors, combines, locomotives, freight cars, most types of machinery and equipment, superphosphates and other chemicals, paper, cotton, sugar and other agricultural products. Having created a powerful industry for the production of synthetic rubber, the U. S. S. R. already covers more than half of its rubber requirements by domestic production and in the near future will cover them completely. Production of nickel is increasing rapidly. Thus in the near future the Soviet Union

will be in a position to satisfy its requirements of practically all raw materials through domestic production. No country in the world, not even the United States, can point to such complete independence as regards the basic raw materials and foodstuffs.

Why Socialism Works

The principal factors entering into these great accomplishments, which have demonstrated the superiority of the socialist system of production over the capitalist, are as follows:

1. The Soviet Union has a planned economy and therefore is free of crises and anarchy in production and has the possibility of utilizing most effectively the natural wealth of the country.

2. Under the planned socialist economy the state has the possibility of concentrating all means of production and resources toward the solution of any given problem.

3. Since in the enterprises of the U.S.S.R. there no longer exist two antagonistic classes, the causes for strikes have disappeared.

4. The transfer of power to the working class brings about a new attitude toward labor. This is manifested by such things as socialist competition, shock brigade workers and the Stakhanov movement, all of which have played an important part in increasing production and efficiency.

5. The elimination of parasitic elements, combined with the planned development of the national economy, makes possible the mobilization of enormous resources for capital investments.

6. The policy of the Party and government, directed toward a systematic improvement of the standard of living of the workers and peasants, the steady growth of industry and consequently of the number of workers, guarantee an unlimited market for the sale of goods.

7. The socialist system of agriculture, which is developing production at a far higher rate than the agriculture of any capi-

talist country, assures industry of ever increasing quantities of raw materials.

Finally, it should be pointed out, the Soviet Union has by far the largest population of any country in Europe and the largest territory of any country in the world. It has enormous natural resources for the development of all branches of industry. It is first in the world in resources of iron and manganese ores, oil, peat, potassium salts, phosphorites, timber and potential water power; it is second in coal resources and fourth in copper.

The production apparatus already created and the degree to which it has been mastered, combined with the great natural resources and the social-economic structure of the country, assure a steady and rapid economic development in the future.

Jobs for Everyone

The enormous amount of industrial construction and the starting of operations in thousands of new plants and mills necessitated a great increase in the number of industrial workers. In 1929 there were three and a half million persons engaged in large-scale industry while by 1936 this total had increased to eight million.

Up to 1930 unemployment still existed in the Soviet Union. The reasons for this were quite different from those prevailing in capitalist countries. It was not due to falling production since, as was noted above, each year there was a rapid gain in industry and in the number of workers employed. The basic reason was that the small-scale individual peasant economy, with its primitive technique which then prevailed, was not able to assure a living to all the peasants. This, coupled with the fact that the backward villages had not yet created the many cultural institutions now seen on the collective farms, such as clubs and libraries, resulted in an annual exodus of hundreds of thousands of peasants to the cities. This swelled the army of unemployed, the

number of registrations at the labor exchanges totaling 1,700,000 in 1929.

Beginning with 1930, unemployment began to fall very rapidly. On the one hand the collectivization and mechanization of agriculture began to demand many new types of workers in the villages, such as tractorists and chauffeurs, and on the other hand industry and construction absorbed huge numbers of new workers. As a result, by the end of 1930, the number of registered unemployed had been reduced to 240,000. These were mostly unskilled workers who were undergoing some kind of training to learn trades. By 1931 unemployment was finally and completely eliminated. The right to work is guaranteed all citizens of the U.S.S.R. by the Constitution. The abolition of unemployment and the attendant security which this gives all workers are an integral part of that general improvement in the conditions of the working people.*

Full Equality for Women

Another important factor in the rise of living standards has been the greatly increased number of women in industry. One of the first steps of the Soviet power was the annulment of all the tsarist legislation limiting rights of women. Full equality for women was established in property matters, in wages and salaries, and in access to all professions. All women of 18 years and over have the same right as men to vote and to be elected to all offices.

The Soviet government was not satisfied to establish merely formal juridical equality for women. It set about creating the necessary social and economic conditions to enable women actually to enjoy this equality. The most important of the measures in this direction was the drawing of women into industrial

* For further details on conditions of Soviet workers see *Life and Labor in the Soviet Union* by Robert W. Dunn and George Wallace, in this series.

life. The number of women in industry increased from 636,000 in 1913 to 2,580,000 in 1936. There is hardly a field of industry or a profession in which women are not engaged.

The great increase in the number of women industrial workers necessitated the creation of a widespread system of institutions for the protection of mothers and infants in order that the employment of women should not in any degree interfere with the care of their infants. For example, there are now permanent and seasonal day nurseries accommodating over 4,700,000 children (as compared with only 11,000 before the war). Kindergartens and playgrounds take care of an additional 5,000,000 children in the cities.

An important step in the protection of women and children was the law passed in June, 1936. This measure, which prohibited abortions except by special permission of a medical commission, provided for great increases in the number of lying-in hospitals, nurseries and kindergartens, stiffened the rules for payments for support of dependents by divorced parents and established a system of cash payments for mothers of large families.

Wages and Social Insurance

With the development of industry there has taken place a corresponding growth in average wages. These rose from 870 rubles for workers in basic industries in 1928 to 2,864 rubles in 1936. At the same time there has been a steady reduction in the working day. Before the war the working day averaged about ten hours. One of the first decrees of the Soviet regime was the establishment of the eight-hour working day. In 1927 this was reduced to seven hours, and at present the average working day is 6.9 hours. Minors from sixteen to eighteen years of age may work six hours a day and those from fourteen to sixteen years four hours a day while learning a trade. On exceptionally heavy or dangerous work a six-hour day prevails. The working week is five days, followed by a day of rest. In certain industries where

the work is more hazardous or heavy, the working week is four days. Every employed person receives a vacation of from two weeks to one month with pay.

One of the important elements in the life of Soviet workers is the comprehensive system of social insurance, which is the most progressive in the world. It embraces all wage and salary earners without regard to age, profession or salary. All social insurance payments are made by the employing organization; the workers contribute absolutely nothing. As is well known, in all other countries workers contribute about half of the social insurance funds.

In case of sickness or disability the social insurance provides payments of 100 per cent of the wages (with the exception of certain newly employed workers who receive from 66 to 75 per cent). Women workers receive eight weeks' vacation with pay before confinement and eight weeks after. These provisions are far more liberal than those existing in any other country.

The social insurance organizations in the U. S. S. R. are controlled by the trade unions. Their income totals over six billion rubles a year. All medical services are given to workers absolutely without any charge. In addition there is a great network of sanitariums, rest homes and resorts where workers are sent at the expense of the social insurance funds. In 1936 the number of workers so accommodated totaled 2,275,000.

Cultural Advances

Similar progress has been made in the cultural field. Pre-war Russia was one of the most illiterate countries in Europe; over 60 per cent of the people could not read or write. Immediately after the revolution a great program for the liquidation of illiteracy was inaugurated and, at the present time, the proportion of illiterates is less than 10 per cent. A few years ago universal compulsory education was instituted in the seven-year primary schools. The number of children in schools increased from 7,-

800,000 in 1913 to about 30,000,000 in 1937. A huge network of higher educational institutions has been created. There are now 127 technical colleges with 150,000 students and 470 technical academies (secondary schools), with 153,000 students. Tuition is free for all students and the great majority of students receive in addition special stipends sufficient to defray their living expenses.

It is interesting to note that the great mass of students are children of working class or peasant parents. For example, 45 per cent of the students in colleges are children of workers (this compares with 3 per cent in Nazi Germany); 16 per cent are from peasant families (2.8 per cent in Germany). Aside from the regular schools and colleges, the industrial enterprises have established many special schools and evening courses which enable workers to improve their qualifications.

The housing conditions of workers and municipal facilities have been steadily improved. The slums and barracks in which a large proportion of the workers lived before the revolution have been done away with. In recent years from five to six million square meters of new housing with modern conveniences have been constructed each year. During the Soviet regime 194 cities have been provided with water supply systems and 62 cities with sewer systems, while in 39 cities trolley lines were established for the first time.

Mention should be made also of the great increase in the number of libraries, moving-picture theatres and parks. Before the war there were 12,000 libraries with 9,000,000 volumes; now there are over 53,000 libraries containing 105,000,000 books. In addition there are 72,000 workers' clubs and reading rooms. The number of moving-picture theatres totals 28,600 as compared with only 1,200 before the war; the number of museums has increased from 112 to 738.

The Soviet Union publishes more books and newspapers than any other country in the world. Each year from 42,000 to 45,000

new titles are published. The number of newspapers published is over 10,000 as compared with 859 in the pre-war period.

All of this is convincing evidence of the radical transformation which has taken place in the life of the working class in the U. S. S. R. It is realized, of course, that a great deal still remains to be done. The struggle for further improvement of the standard of living of the working masses occupies the center of attention of the Party and the government. The assurance of success in this direction is afforded by the great achievements already recorded and the solid foundation which has been laid.

A New Attitude Toward Labor

One of the most important problems which confronted the Soviet Union was the creation of a new type of labor discipline, a socialist discipline corresponding with the form of the new society. The main disciplinary force in capitalist industry, the fear of losing the job and consequently the only source of livelihood, does not exist in the Soviet Union, where work is available for all and is a right guaranteed by the basic law of the land. In its place there has arisen an entirely new attitude toward labor as a result of which millions of workers voluntarily set for themselves tasks far above those demanded of the average, and in so doing set examples to the others.

The first example of this new attitude among the workers was the *subbotniks*, or volunteer work on rest days. This movement started in 1919, the most difficult year in the existence of the Soviet regime. Some workers on the Moscow-Kazan railroad decided to remain after hours one Saturday evening to do some additional work on the repair of locomotives without extra compensation. When their example became known through the press it started a chain of similar events which spread like wildfire. Hundreds of thousands of workers throughout the country volunteered to give their free time to load freight cars, clean away snow drifts, or do a thousand and one other jobs with which the

regular working forces were unable to cope. They performed these tasks not because of any hope of personal gain but because they realized that it was important to the country that the work be done.

In 1925, when the country was beginning to face the problem of increasing the speed of industrialization, there began the system of "production conferences" in factories. These conferences brought together workers from various shops and departments who shared their experiences with others and presented many valuable proposals for increasing efficiency. These meetings brought forth thousands of workers who demonstrated hitherto hidden administrative and technical talents and proved to be a reserve from which the government was able to draw forces for the new enterprises.

At the beginning of the First Five-Year Plan a new type of socialist organization of labor arose in the form of "shock brigades" and the widespread development of "socialist competition." In place of the brutal competition in capitalist society in which success is gained only at the expense of others, there has been established in the Soviet Union socialist competition between individual workers, squads, departments, whole enterprises, regions and republics with the aim of improving the quality and quantity of the work done. The distinguishing characteristics of these contests is that each side agrees to help the weaker party fulfil the plan. This principle of mutual help through friendly competition plays a great educational role in drawing the workers together and in sharpening their realization of the fact that the fulfilment of the economic plans is a matter in which all the workers have a common interest.

The "shock brigader" was a worker who set examples to the others in improving technique, increasing the tempo of production, helping the more backward workers. In a short period of time, millions of workers were enrolled in this category and together with socialist competition this movement was an im-

portant factor in the successful carrying out of the First Five-Year Plan.

About 1930 the "counter-plan," a new and higher form of socialist competition, made its appearance. The organized workers would go over the plans submitted by the administration of the enterprises and the government planning organs and, drawing on their intimate knowledge of all the details of production, would set forth their own proposals, which invariably provided for increases over the original plans.

During the period of the Second Five-Year Plan the system of technical examinations became very widespread. These examinations, which the workers take voluntarily, are a part of the general program for increasing the mastery over the new machines and processes and for training workers for more responsible jobs. To aid the workers in passing these examinations, special courses have been organized in factories throughout the country.

What the Stakhanov Movement Means

Finally, at the end of 1935, the Stakhanov movement, which is revolutionizing the methods of work in Soviet factories, made its appearances. This movement took its name from the Donetz Basin miner, Alexei Stakhanov, who demonstrated that by proper preparation of the working place and use of the available equipment it was possible to increase the amount of coal cut to ten and twelve times the former output. Other coal miners following his example exceeded the established norms by as much as fifteen and twenty times. The news of these exploits spread rapidly throughout the country and soon similar records began to be registered in almost all branches of industry.

What is the essence of the Stakhanov movement and how was Stakhanov able to accomplish such remarkable results? In the first place he noted that in the old method of working a great deal of his time was spent in timbering and during this time his pneumatic hammer was lying idle. He therefore established strict

division of labor within his group of workers, some handling the timbering, others the transportation of coal away from the working place, etc., while he used his machine through the entire shift. His example had an enormous influence throughout industry. Everywhere, the more advanced workers began to examine their methods of operation and to separate out those elements which could be handled by less qualified workers, thus saving the time of the skilled workers and greatly reducing idle time of machinery.

In the second place, many improvements were made in the technological processes themselves. It was found possible, for example, to increase the cutting speed of metal lathes, to reduce the smelting time in open-hearth and blast furnaces, and to effect numerous similar reforms in other lines of work.

The Stakhanovists also devote great attention to the preliminary organization of the production processes—seeing to it that a sufficient supply of raw material is on hand, that the tools and instruments are properly sharpened. The Leningrad shoe worker, Smetanin, by these methods was able to increase his productive time from about 75 or 80 per cent of the working day to 95 per cent and to increase the output on his operation from 655 to 1,000 pairs per shift.

Other Stakhanovists made notable records in increasing the number of machines tended by a worker. For example, young Evdokia Vinogradova had been operating four automatic "Northrop" looms in the Vichuga weaving mill. She gradually raised this number to sixteen, then twenty-six, then fifty-two and so on, until she was finally tending 210 looms. This was not accomplished by any system of speed-up but merely by the most careful observation of the processes and elimination of mechanical defects and waste motion. As she herself wrote in describing her methods of work: "We take it easy, we do not bustle or hurry, we watch our machines carefully and try to eliminate all defects. As soon as we depart from our systematic method of

working then we really have to hurry and the work suffers.”

A Mass Movement for Efficiency

Hundreds of similar examples from other industries could be cited. The Stakhanov movement is a real mass movement. It originated with the workers themselves and is a mighty manifestation of their creative initiative and activity. The leading Stakhanovists for the most part are ordinary manual workers, many of whom have worked in the shops and mines since their early youth. Through years of experience at their trades, through special evening courses and continuous study, they have not only become masters of their professions but have learned how to analyze their operations and to impart their knowledge to others. The great significance of this movement to the Soviet Union may be seen from the fact that the average productivity per worker is increasing at an accelerated rate each year. In 1933 the gain in average productivity over the preceding year was 8.7 per cent; in 1934, 10.7 per cent; in 1935, 16.4 per cent; and in 1936, 25 per cent.

Increased efficiency and the consequent gain in industrial production do not, as often happens in other countries, result in putting workers out of jobs. In fact, despite the 25 per cent increase in labor productivity in 1936, the number of industrial workers increased by 500,000.

Realizing the historic importance of Stakhanovism to the entire country, the government has devoted the greatest attention to popularizing it and educating the working masses as to its significance. The 10,000 newspapers of the U. S. S. R. every day carry reports of new production records and pictures of prominent Stakhanovites. As Stalin pointed out in his address to the 2,000 delegates to the conference of Stakhanovites held in November, 1935, the reasons why such a movement could arise and flourish in the U. S. S. R. are the radical improvement in the material conditions of workers, the absence of exploitation, the

conversion of labor from drudgery to a matter of honor and heroism, the higher technical level to which the country has risen in the last few years, and, finally, the existence of a sufficient force of trained workers capable of taking the lead in the campaign to increase efficiency to an even higher degree.

The Stakhanov movement has also played an important role in furthering scientific progress. Breaking the old established norms and rationalizing the production processes, it has compelled the engineers and scientists to re-examine the technological methods and to solve new problems arising from the shattering of many old, conservative traditions.

“Is it not clear that the Stakhanovites are innovators in our industry, that the Stakhanov movement represents the future of our industry, that it contains the seed of the future rise in the cultural and technical level of the working class, that it opens to us the path by which alone can be achieved those high indices of productivity of labor which are essential for the transition from socialism to communism and for the elimination of the distinction between mental labor and manual labor?”*

Collectivization of Agriculture

As was pointed out above, the industrialization of the Soviet Union has had an enormous influence upon the reconstruction of agriculture and the strengthening of the collectivization movement. In the early days of collectivization 25,000 skilled and politically advanced industrial workers were sent to the villages to help the peasants cope with the complicated problems arising in connection with the organization of the collectives. The experiences gained in large-scale industry enabled these workers to become leaders in the organization of work on the collectives and to apply the socialist form of labor to agriculture.

In the pre-war period Russian agriculture was among the most

* Joseph Stalin, *The Stakhanov Movement in the Soviet Union*, p. 8, Workers Library Publishers, New York, 3 cents.

backward in the world. The revolution, which abolished the rule of the landlords and capitalists, and handed over 375,000,000 acres of land for perpetual use by the peasantry, could not at once change basically the methods of agricultural labor. This required a period of years during which it was possible to create an industry capable of supplying agriculture with the advanced machinery and equipment required for the introduction of modern methods. This was one of the most important accomplishments of industrialization. Thus, the number of tractors was increased from 26,700 with a total of 278,000 horsepower in 1928, to 400,000 tractors, with 8,000,000 horsepower, at the beginning of 1937. The number of automobile trucks on farms was increased from 700 to over 70,000. In 1928, there were no harvesting combines in the Soviet Union; now there are over 120,000.

All of this has basically altered the character of farm labor. Before the war plowing was carried on principally by means of a most primitive wooden plow, the *sokha*. Only the landlords, kulaks and a very small proportion of the working peasants were able to employ horses in plowing. In 1928, wooden hand plowing still accounted for 10 per cent of the area under spring crops and horse plowing for 90 per cent. By 1936, the *sokha* had already completely disappeared and tractors were cultivating over half of the farm area. Taking agricultural operations as a whole, in 1928, horses and oxen supplied 96 per cent of the motive power and machinery 4 per cent; in 1936, working animals supplied only 40 per cent and mechanical equipment 60 per cent.

Agricultural labor has thus become more and more similar to industrial labor. Dozens of new occupations, such as chauffeurs, machine-operators, etc., have made their appearance in the villages. Working at them are people who know and like machinery, who realize that machines lighten human labor, that they do away with the terribly exhausting labor which the peasants formerly had to perform, and that they assure the collectives of a high and ever improving standard of living. The in-

production of machinery has also been one of the most important factors in stimulating the rapid development of collectivization. At the present time 18,000,000 peasant families, constituting over 90 per cent of all the peasants, are united in 250,000 collective farms.

The Stakhanov movement has also spread to the village. Following the example of industrial workers, hundreds of thousands of farmers on the collective farms have registered records in increasing crop yields and in operating tractors and combines. An outstanding example is Maria Demchenko, who succeeded in raising fifty tons of sugar beets per hectare (two and one-half acres) of land when the average for the country as a whole was from fifteen to twenty tons.

Industry has thus played a great part in changing the character of peasant life. Each year the factories send to the villages hundreds of thousands of radio sets, phonographs, bicycles, cameras, watches and other manufactured goods which tend to raise the standard of living of the peasants to that of the city workers.

Transport: Rail—Water—Air

The development of industry has made it possible to expand and thoroughly overhaul the transportation system. The supply of rolling stock has been greatly increased. The type of locomotives now being produced is twice as powerful as the old ones. Similarly, the production of large freight cars and special types, such as dump cars and gondolas, has been expanded. Over 900 miles of road have been electrified. A great volume of new railroad construction has been carried on, the length of roads in operation increasing from 36,000 miles in 1913 to 53,000 in 1936.

The most important railway project completed is the Turkestan-Siberian Railroad, the first main line built under the Soviet regime. This road of 900 miles is of great economic im-

portance, as it offers a direct route to transport grain and lumber from Siberia to Central Asia and cotton from Central Asia to Siberia.

Water transportation has witnessed even more impressive developments. In this field the most noteworthy projects are the White Sea-Baltic and the Volga-Moscow canals which are part of the great general scheme to link up by internal waterways all of the seas washing the European part of the U. S. S. R.—the Baltic, White, Black, Caspian and Azov seas. *

The 141-mile White Sea-Baltic Canal, which was completed in 1933, makes it possible to carry freight and passengers between the two seas in a fraction of the time it formerly took. Previously it had been necessary for vessels to sail hundreds of miles around the Scandinavian countries. The greatest waterway project completed under the Soviet regime, and one of the greatest in all history, is the Volga-Moscow Canal, which was put into operation in July, 1937. The work involved in the building of the eighty-mile canal and subsidiary structures was similar in scope to that of the Panama Canal, which was under construction for a period of thirty-five years. The Volga-Moscow Canal was completed in five years.

This canal serves several important purposes; it establishes the most direct route between Moscow and the Volga River, the longest in European U.S.S.R.; it raises the level of the waterways along the entire route to a degree sufficient to permit navigation of large vessels, and it solves the problem of the Moscow water supply. A reservoir called Moscow Lake was created, with an area of 125 square miles. In order to form this reservoir, it was necessary to transplant 125 villages and a town.

The construction of the canal necessitated overcoming the most difficult engineering problems. For example, vessels coming from the Volga have to be lifted, by means of a series of locks and dams, to a level of 125 feet above the river before being lowered again into the Moscow River. In order to increase the water

supply of the city of Moscow, a special nineteen-mile canal was constructed, at times flowing through pipes and at times in the open. When the water station is completed at the end of 1937, the per capita consumption of water in Moscow will be greater than that of London or Berlin. Altogether, the Moscow-Volga Canal involved the construction of ten huge dams, eleven sluices, and five pumping stations.

Another form of transport which has undergone tremendous development is aviation. In a very short period of time the Soviet Union has created a military air force which will be invincible in the defense of the country. The great exploits of Soviet civil aviation have become known to the world through a long series of record flights, particularly over the Arctic regions. One of the outstanding achievements in the annals of aviation was the rescue by Soviet aviators of the 101 members of the *Chelyuskin* expedition who were marooned on an ice floe after their vessel had sunk in 1934. In 1937, aviators of the U. S. S. R. again electrified the world by landing at the North Pole a squadron of four airships which had been flown from Moscow. They left at the Pole a party of four scientists to remain a year making studies of the meteorological and other conditions prevailing there. In the summer of 1937 occurred the great non-stop record-making flights from Moscow to the west coast of the United States over the North Pole. Few flights in history have thrilled the world as much as these.

Electric Power Development

Since the very beginning of the Soviet regime the greatest emphasis has been devoted to electrification as the foundation of technical and industrial progress. In this connection it should be pointed out that the socialist system prevailing in the U. S. S. R. makes possible a degree of application of electrical energy which is not feasible in countries where the existence of private prop-

erty in means of production and land is an insuperable obstacle to the most rational development of electrification.

The capacity of electric stations in the U.S.S.R. increased from 1,100,000 kw. in 1913 to 8,000,000 kw. in 1936 and the production of electrical power rose from 1,900,000,000 kw. hrs. in 1913 to 33,000,000,000 in 1936. Before the war Russia was fifteenth in power output while at the present time it stands third after Germany and the U.S.A. The creation of a single unified power system covering the entire European part of the U.S.S.R. is one of the tasks to be carried out in the not distant future.

The most important power project completed by the Soviet Union is the Dnieper River power plant and dam, construction of which was begun in 1927 and completed in 1932. This hydroelectric station of 810,000 hp. is the largest in Europe. It not only supplies electrical energy to the great industrial center which has been built around it, but at the same time it solves the problem of navigation on the Dnieper River. Before the construction of the dam the river was cut in two by a series of high rapids which prevented the passage of ships. By raising the level of the river the rapids were submerged and the Dnieper became navigable throughout its entire length. The Dnieper project was a good apprenticeship for the engineers and workers now employed on the construction of the vastly larger Greater Volga project.

Iron and Steel

The most important task in the development of heavy industry was the expansion of the production of iron and steel, on which practically all other industries depend. The successes recorded in this field may be seen from the following figures: The output of pig iron rose from 4,200,000 tons in 1913 to 14,500,000 tons in 1936; of steel from 4,200,000 tons in 1913 to 16,300,000 tons in 1936.

This record is all the more notable when it is remembered that during the civil war practically all of the iron and steel furnaces were put out of commission. As a result of the rapid growth of production, the U. S. S. R. surpassed all European countries except Germany, with which it is now on a level. Mass production of ferro-alloys and all types of special and high-speed steels has been organized.

In the solution of the metal problem the most important part was played by the Ural-Kuznets enterprises. It was decided at the Sixteenth Congress of the Communist Party, in 1930, that the U. S. S. R. could no longer put entire dependence on the single coal and metallurgical base in the Ukraine and that it was necessary to create a second center in the East. So the building of the Ural-Kuznets combine, the greatest complex of industrial enterprises working as a unit in the entire world, was undertaken. This project is an outstanding example of the rational utilization of the natural resources of a territory of a million square miles. The principal units are two giant steel plants, the Kuznets steel mill in Western Siberia which operates principally with ore transported from the Urals, and the Magnitogorsk mill in the Urals which in turn receives coking coal from Kuznets 1,200 miles away. Despite the distance between the two enterprises, this plan has proved entirely feasible, since the same cars which bring Kuznets coal carry a return load of Magnitogorsk iron ore.

The Magnitogorsk plant, one of the largest in the world, was put into operation in a period of about two years. Constructed on an absolutely desolate steppe and under the most difficult climatic and technical conditions, its successful completion represented an example of bold planning and heroic labor rarely equaled in industrial history. Where only a few years ago bleak prairies stretched in all directions there has arisen a vast complex of blast furnaces, open-hearth furnaces and rolling mills which already produce 1,000,000 tons of metal a year, that is, a quarter of the output of pre-war Russia. Around the enterprise

there has been constructed a city of over 210,000 people with numerous factories, public buildings, homes, schools and theatres.

All that has been said of Magnitogorsk can, in large measure, be repeated in describing the development of the Kuznets steel mill and the new city of Stalinsk with its population of 200,000. In connection with the growth of the Ural-Kuznets combine the coal output of the Kuznets Basin, which amounted to only 799,999 tons in 1913, increased from 2,743,000 tons in 1927-28 to 17,285,000 tons in 1936. In recent years Magnitogorsk has also received coal from the newly developed Karaganda field in southern Kazakstan, where a few years ago deposits estimated at twenty billion tons were discovered.

New Giants of Industry

The Ural-Kuznets combine means much more than coal and iron. Taking into account the huge resources of non-ferrous metals, potassium salts and other minerals in these regions, the Soviet government in recent years has constructed a series of great machine-building, chemical, copper, zinc, nickel, aluminum and other enterprises in the Urals, Siberia and Kazakstan. Aside from the great scope of these projects, the notable thing about them is that they were designed and are operated in accordance with a single plan which provides for the maximum degree of cooperation among them. One plant will use the waste products of another, for example, and in turn may supply the first plant with power.

Some of these enterprises are unsurpassed in magnitude. The Urals machinery works near Sverdlovsk, for instance, can produce each year complete equipment for four blast furnaces, ten open-hearth furnaces, two blooming mills, eight rolling mills, etc. The Cheliabinsk tractor works has the largest foundry department in the world. Its capacity is 40,000 60-hp. tractors of the caterpillar type each year.

Among the other giants in the machinery industry constructed

during the periods of the First and Second Five-Year Plans, the Stalingrad and Kharkov tractor factories are outstanding. The Stalingrad plant, the first large industrial project completed under the First Five-Year Plan, aroused worldwide interest on account of the difficulties experienced in its early stages. Skeptics abroad said that this proved that while the Soviet Union might, with the help of foreign experts, be able to build some big factories, putting them into efficient operation was another story. The passing of time has proved the fallacy of this notion and the Stalingrad works consistently operate at capacity production and turn out a first-class machine. The Kharkov plant, with the same capacity as Stalingrad—42,000, 30-hp. tractors per year—was completed in the record time of one and a half years. Production of tractors in the U. S. S. R. increased from 1,000 in 1927-28 to 173,300 in 1936. The Soviet Union now accounts for 40 per cent of world tractor output. This has been accompanied by a corresponding development in the production of tractor-drawn farm implements such as seeders, cultivators and plows. One of the biggest achievements in the agricultural machinery field was the creation of the combine-harvester industry. A few years ago this most complex of farm machines was entirely unknown in the Soviet Union. The first few machines were produced in 1930 and by 1936 the three great plants at Saratov, Rostov and Zaporozhie turned out 42,500 combines, 70 per cent of the output of the entire world. An automobile industry has also been created for the first time in the Soviet Union.

The reconstruction of the transportation system has necessitated the building of huge locomotive and freight-car works. A short time ago partial operations were started in the Tagil freight-car factory in the Urals. When completed, in the near future, its capacity will be 57,600 large freight cars per year, eight times that of the entire annual production of pre-war Russia, and larger than the capacity of any American plant.

At Voroshilovsk (formerly Lugansk) in the Ukraine, the

largest locomotive works in Europe has been constructed. This plant produces each year 1,000 of the new heavy-duty locomotives of the "FD" (Felix Dzerzhinsky) type. This engine has a horse-power of 2,630 as compared with 1,500 hp. for the most powerful engine employed in other European countries.

Virtually an entirely new industry created in the past half-dozen years is the production of machine tools, which is a key industry in any modern country. In 1928 the U. S. S. R. produced only 1,783 metal-working machines, practically all of which were simple lathes or drills. In 1936 the country produced 32,408 machine tools, including the most complicated types.

As a result of these and other developments, the total output of the metal-working industry, figured at stable prices, increased from 1.1 billion rubles in 1913 to 24.7 billion in 1936. In view of the decisive importance of the metal and machinery industries in modern civilization, the significance of this accomplishment is apparent. In the period from 1933 to 1937 alone, over 150 large machine-building plants were constructed. It should be kept in mind, moreover, that every one of these utilizes the most modern technique and takes advantage of the inventions made in any part of the world. It is a well-known fact that very many factories in the capitalist countries are equipped with a large proportion of obsolete machinery which commercial considerations make it impossible to eliminate. Under the socialist system, where there is no private profit, there are no such obstacles to technical progress.

The same is true of the substitution of machinery for heavy labor, in which field the Soviet Union has already proved itself a pioneer. A good example is the case of such burdensome farming operations as sowing, cultivating and harvesting of technical crops such as cotton and flax. While the U.S.A., Egypt and India find it more profitable to exploit the cheap labor of Negroes, fellaheens and peasants in the cotton fields, the U. S. S. R. has made great advances in the mechanization of cultivating and har-

vesting of cotton. It has started mass production of special tractors for technical crops, cultivators, potato, cotton and flax seeders, sugar-beet harvesters and diggers, pneumatic cotton-picking machines, etc.

Production of Consumers' Goods

While during the First Five-Year Plan the greatest emphasis necessarily had to be put on heavy industry, the production of consumers' goods was by no means neglected. As a matter of fact, output of light industry increased by 90 per cent from 1928 to 1932. The most important development was the creation of an adequate raw materials base for the consumers' goods industries. During this period the area under cotton cultivation increased from 2,400,000 acres in 1928 to 5,370,000 acres in 1932, the area under sugar beets increased from 1,900,000 acres to 3,800,000 acres, and flax from 3,370,000 acres to 6,200,000 acres.

The cotton, woolen, shoe and sugar industries were thoroughly overhauled. In addition many industries were organized for the first time on a large scale, including artificial silk, clothing, knit goods, fur dressing, leather, oil pressing, combined feeds, dairy, meat packing, canning and perfumery. While in 1913 production of consumers' goods totaled 6,100,000,000 rubles, by 1936 this had increased to 30,000,000,000 rubles.

During the Second Five-Year Plan over 100 textile mills were either put under construction or completed, as well as 75 leather and shoe factories, fifteen glass works, etc. Outstanding among the textile enterprises is the Tashkent mill, which was put into operation in 1932. The principal significance of this project lies in the fact that it was the first cotton mill to be constructed in the capital of the Uzbek Republic, the principal cotton-growing region of the U.S.S.R. The policy of the tsarist regime was to hold back the development of industry among the minority peoples living in the outlying sections of the Russian Empire in order not to create too strong a proletariat in those

places. Therefore, Uzbekistan would have to send all of its cotton to Moscow and Ivanovo, the textile centers of pre-war Russia, and receive from them the finished cotton cloth. In all, the Tashkent mill can produce 100,000,000 meters of cloth a year, almost half the requirements of the Central Asiatic Republics. It now has over 6,000 workers, the majority of whom are Uzbek men and women. The importance of enterprises of this kind in helping to raise the standard of living of the national minorities is obvious.

Many branches of the food industry have been created almost entirely anew. For example, up to a few years ago, there was not a single large modern packing house, the slaughter of cattle and manufacture of meat products being carried on by primitive hand methods. In the last few years a number of packing plants have been constructed which are the last word in modern technique and utilize fully all of the waste products. The meat industry now produces over 100 meat products, many of which were formerly almost unknown in Russia.

Rebuilding Russia's Cities

One of the most important phases of the industrialization program of the Soviet Union is the great reconstruction work which has taken place in the cities and the construction of many new towns and industrial centers. The outstanding project is the famous ten-year general plan for the reconstruction of Moscow, which was ratified by the government in June, 1935.

Moscow, one of the most ancient of cities, is very badly laid out. It is a city of crooked, narrow streets intersected by innumerable lanes and alleys, and it has very few parks and greens. Since the revolution its population has grown tremendously and its area has been increased threefold. The general plan for the reconstruction of the city provides for doubling the area. This territory will be encircled by a ring of woods and

parks about 12 miles in diameter which will help to purify the air of the city.

In connection with the Volga-Moscow Canal project a vast amount of work will be done on the deepening and widening of the Moscow River within the limits of the city and lining it with steep embankments. Three great thoroughfares will be cut through the city in different directions, as well as many other streets and boulevards. During the ten-year period it is proposed to construct 15,000,000 square meters of new housing space. The magnitude of this plan will become clearer when it is realized that this is equal to the entire housing area of the present city. Thus, it is proposed to accomplish in a decade as much as was done in many centuries. Altogether 2,500 new apartment houses are called for by the plan.

All of the Moscow streets will be asphalted. Eleven new bridges will be built across the Moscow River, seven of which are already under construction and will be completed early in 1938. In ten years there are to be erected 530 schools, seventeen hospitals, twenty-seven dispensaries and fifty moving-picture theatres. During the two years, 1935 and 1936, over 200 new school buildings were built in Moscow.

In order to lay out the new avenues and boulevards and to straighten the many crooked streets, hundreds of old houses will be torn down. Green squares and parks will be laid out in all parts of the city. The density of population will be reduced from 1,000 persons per hectare at present to 400.

The great expansion of the city and the spreading out of the population will necessitate a complete transformation of the transportation system. On May 1, 1935, the first section of the Moscow Subway, the first in the U.S.S.R., was put in operation. It has been practically the unanimous opinion of all visitors who have ridden over the nine-mile stretch of the first section that in beauty, architecture and engineering technique, this is the finest subway in the world. The second section is now nearing

completion, and work will shortly be started on the third line. At the same time there is a steady increase in the number of buses and taxicabs.

The most conspicuous architectural item in the new Moscow will be the monumental Palace of Soviets which is planned to be one of the finest public buildings in the world. Rising to a height of well over 1,200 feet, it will far overshadow, for example, the Eiffel Tower in Paris. There will be two huge meeting halls, one accommodating 20,000 and the other 6,000 persons, libraries, offices, and numerous auxiliary rooms. The whole structure will be surmounted by a gigantic statue of Lenin, 350 feet in height.

The basic principle underlying the plan is the rational distribution of apartments, industry and transportation, the elimination of extreme concentration of people in small sections of the city.

The plan for the reconstruction of Moscow has been given in some detail not only because of its intrinsic interest but also because it typifies what is happening in cities all over the U.S.S.R. Similar plans have been drawn up for Leningrad, Kiev, Kharkov, Baku, Tbilisi (Tiflis) and many other Soviet cities.

Opening Up New Regions

The development of capitalist industry is characterized by extreme inequality in the territorial distribution of industrial enterprises. As a rule, industry is concentrated in a few regions and is therefore often widely separated from sources of raw material and from the market where the products are distributed. Pre-war Russia was a shining example of this irrational planlessness. Over three-quarters of all industry was concentrated in four regions: Moscow, Ivanovo, the former St. Petersburg and the Ukraine. Many of the territories with the richest natural resources, such as Central Asia and Transcaucasia, were simply suppliers of raw materials to these districts. Industry and an industrial proletariat were practically non-existent there. In places where the natural conditions required the creation of in-

dustrial enterprises, such as the Baku oil fields, the industry was in effect an island in an endless sea of primitive peasant economy.

Ninety per cent of the production of coal was concentrated in the Donetz Basin, while hundreds of valuable deposits in Siberia and the Urals lay untouched. Moreover, St. Petersburg had to receive its coal from England since this was cheaper than hauling it from the Donetz Basin. Machine-building was concentrated in Moscow, St. Petersburg and the Ukraine and the iron and steel industry almost entirely in the Ukraine. In the Urals there were only a few blast furnaces working on charcoal and such great iron ore resources as those of Magnet Mountain were entirely undeveloped. The cotton-growing regions had no textile industry and in the centers of wool production there were no woolen mills. The density of railroads was twenty times greater in European Russia than in Siberia and the other outlying regions.

Socialist industrialization could be realized only on the basis of a radical change in the principles of distribution of industry existing under capitalism. The basis of the industrialization program were those directives laid down by Marx, Engels, Lenin and Stalin regarding the necessity of bringing industry close to the source of the raw materials, doing away with the cultural and economic backwardness of minority peoples in outlying districts, and specialization of economic regions. All of this adds up to a more rational and equal distribution of industry and also increases the defense capacity of the country.

An analysis of industrial construction in the U.S.S.R. during the First and Second Five-Year Plans shows that in actuality the program was carried out precisely in accordance with these principles. Great new machinery centers have been established in the Lower Volga region, the Urals, Transcaucasia and other districts. New metallurgical industries have been created in Siberia, the Urals and the central part of European U.S.S.R. New centers

of fuel supply have been set up in Siberia, the Far East, the Urals, the Moscow district, Central Asia and the Far North. Textile mills have been constructed for the first time in the Central Asiatic Republics, Transcaucasia and Siberia. New centers of sugar refining have been established in Kazakstan, Siberia and Central Asia, as well as in other sections of the country.

New Life for the National Minorities

The policy of the Soviet power with regard to the nationality question is clearly reflected in the figures showing that the rate of industrialization in the national republics is considerably greater than in the country as a whole. Thus, while industrial production in the eight years from 1928 to 1936 increased 4.9 times in the entire Soviet Union, in the Georgian Republic it expanded eleven times, in Armenia eightfold, in Kazakstan sevenfold, in White Russia 7.5 times, in the Ukraine sixfold. The development of industry in the national republics has meant a complete transformation of their economic and cultural life.

An example of what this policy has meant in practice is the case of the Tadjik Republic, on the border of India and Afghanistan. Before the war this was a typically colonial area, absolutely devoid of large-scale industry and with an almost completely illiterate population. Agriculture was carried on in a medieval manner and to the brutal oppression and exploitation of the tsarist colonizers was added that of the local beys, emirs, and mullahs. During the First and Second Five-Year Plans there were constructed in Tadjikistan two regional electric stations, four municipal plants, cotton-ginning factories, silk mills, packing houses, canning factories, etc. The great Vakhsh irrigation project in the cotton regions is nearing completion. Thousands of tractors now cultivate the fields.

The same story can be repeated in Uzbekistan, Turkmenistan, Kazakstan, the Kirgiz Republic, Azerbaidjan, Georgia, Armenia,

White Russia and the Ukraine. Merely to enumerate the large enterprises in all branches of industry constructed in these constituent parts of the Soviet Union would require a complete pamphlet in itself. Even the far-off Arctic regions, formerly considered quite inaccessible and useless to mankind, have been brought to life by Soviet industry. In their vast expanse have been found valuable deposits of metals and other minerals, many of which are already being exploited. A great network of radio and meteorological stations has been established throughout the Far North. For the first time in history vessels have made the passage from the Atlantic to the Pacific by way of the Arctic Ocean in one navigation season.

Pioneering in Science and Technique

In many fields of science and technique the Soviet Union has done distinguished pioneering work. This is true, for example, of methods of manufacturing synthetic rubber and the invention of machines for mechanizing labor processes in the cultivation and harvesting of many crops. One of the most interesting scientific developments has been the underground burning of coal and the direct utilization of the gas generated. The U.S.S.R. is also a pioneer in devising special machinery for the extraction of peat. This equipment, by means of a powerful stream of water, crumbles the peat, which is then sucked up from the swamp by special types of pumps, and dried.

A new type of locomotive has been invented which condenses the steam in such a manner that the engine is able to go many hundreds of miles without taking on water. This is of great importance for those regions, such as the southeastern part of the U.S.S.R., where the problem of getting a sufficient supply of water is a difficult one.

Hundreds of machines, metals, chemicals and other products which pre-war Russia did not produce at all are now being turned out on a mass production basis. It is possible here to

enumerate only a few of these: aluminum, special steels, ferro-alloys, cracked gasoline, automobiles and trucks, motorcycles, heavy-duty locomotives, electric and Diesel locomotives, isothermic freight cars, cranes, generators for large steam and water turbines, turret lathes, pneumatic hammers, coal cutters, circular saws, excavators, graders, rollers, tractors, combine harvesters, tractor plows, discs and harrows, cotton and flax seeders, potato and beet diggers, cotton-picking machines, typewriters, motion picture sound apparatus, watches, ball and roller bearings, artificial fibers, synthetic rubber, plastics, moving picture film stock, potassium and phosphate fertilizers. Among the products, mass production of which was started during the Second Five-Year Plan, may be mentioned nickel, tin, steam and water turbines of over 25,000 kw., subway cars, automatic machine tools, bottle-making machines, rotary lithographic machines, offset printing presses, air compressors, tabulating machines, lumber carriers, anesthetics, etc.

Outlines of the Third Five-Year Plan

The year 1937 is the last of the Second Five-Year Plan. At the present time industrial enterprises of the Soviet Union are summing up their accomplishments of the past five years and completing their plans for the next five-year period, from 1938 to 1942.

It is already quite evident that all the basic tasks put before the country for the period of the Second Five-Year Plan have been successfully carried out. Industry in particular had already completed the production program laid down for the period by the end of the first quarter of 1937. In completing the plan in four and a quarter years, it thus duplicated the achievement of the First Five-Year Plan.

Although the final draft of the third plan has not yet been published, it is possible to indicate its main outline. During the second plan industrial production more than doubled. This was

due primarily to the great increase in productivity of labor, which in 1936 was 70 per cent higher than in 1932 as against the planned figure of 63 per cent. In 1937 labor productivity will be double that of 1932.

Despite this high rate of development, which is several times greater than that of the most advanced capitalist countries during the periods of their most rapid growth, the Soviet Union still lags behind the leading capitalist countries in this respect. This is explained primarily by the fact that when the U.S.S.R. began its industrial development a relatively few years ago it was on an extremely low technical level and had few experienced engineers, industrial organizers and skilled workers.

The U.S.S.R. enters the third five-year period with a powerfully developed industrial technique, with a tremendously expanded supply of skilled labor, including hundreds of thousands of Stakhanovists, who have passed through the excellent school of experience provided by the many new enterprises. For this reason the Soviet Union is now able to set for itself the task of surpassing the level of labor productivity existing in any other European country, just as it has already overtaken them in the total volume of industrial output.

Another important problem to be solved during the coming period is the lowering of cost of production. Here also the possibilities are very great. In the Soviet Union no tremendous sums are spent on advertising, on maintaining factories and millions of workers in idleness, on wasteful competition and anarchic methods of production, on swollen profits and dividends to capitalists and on land rents. The elimination of all of these outlays enlarged the capital available for the program of industrial construction. Together with the economies systematically being effected in consumption of fuel, raw materials and supplies, and the rational organization of industrial production, it provides the basis for reducing production costs below those of any other country.

The socialist system in agriculture has created inexhaustible possibilities for its further growth. During the second plan agriculture was mechanized to a higher degree and production increased more rapidly than in any other country. Nevertheless, the Soviet Union has virtually only begun to utilize the great potentialities inherent in the victory of socialism in the village. During the coming period, agriculture should reach far higher levels than at present. All of the prerequisites exist for this: a skilled labor force which has mastered the new machines, well-organized large-scale collective enterprises, a plentiful supply of equipment and fertilizers, and the constant assistance and supervision of the Party and the government.

For Peace and Plenty

The rapid growth of agricultural production will create very large reserves of raw materials for the development of the light industries. This, together with the technical reconstruction of the factories in these branches, will guarantee a great increase in the supply of consumers' goods and foodstuffs. The quality of these products is being steadily improved and the prices reduced.

The capitalist encirclement of the U.S.S.R. and the preparations being made by the fascist countries for war against the Soviet Union make it necessary to strengthen still more the defensive capacity of the country, and this will be one of the principal tasks of the third plan. The people of the U.S.S.R. have learned that the best guarantee of peace will be the creation of invincible armed forces and defenses.

The great distinguishing characteristic of the Soviet Union is that the will and the energies of tens of millions of people are all concentrated on the accomplishment of their aims. The creative force of these millions under the leadership of the Communist Party is directed toward the building of a society where there will be no classes and where the high level of productivity

of labor will guarantee to each person the full satisfaction of all his needs. And in this struggle for the building of a communist society the period of the Third Five-Year Plan will be one of the most important stages.

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