

USSR

Delegates
to the
22nd Congress
of the CPSU

See page 3

NOVEMBER, 1961 — 20 Cents



ILLUSTRATED MONTHLY

1706 Eighteenth Street, N.W.

Washington 9, D. C.

ADams 2-3426

The magazine *U S S R* is published by reciprocal agreement between the governments of the United States and the Soviet Union. The agreement provides for the publication and circulation of the magazine *U S S R* in the United States and the magazine *Amerika* in the Soviet Union.

November 1961 No. 11 (62)

	Page
Millions Debate Their Future	1
Who Are the Delegates?	3
Big Dreams Need Big Wings by Spartak Beglov	8
A Trip to the Country's Tomorrow by Alexander Maryamov	10
Twenty-five Hours in Space	13
First Flight to the Stars by Ilya Kopalín	16
Events and People	20
The People Run the City by Dmitri Petrov	22
More Automation—More Jobs by Victor Grishin	26
The October Revolution on Postage Stamps by Ilya Zbarsky	29
Queries from Readers	29
Architecture and Decorative Art by Yuri Tsenin	30
Warm Wind Across an Icy Continent	34
"Green Light to You, Friend" by Pavel Barashev	35
The Birthday of Archimedes by Valeri Kaner	36
A Salesgirl by Andrei Sakharov	38
Science and Social Progress by Nikolai Semenov	42
Sequel to the Story <i>The Earth</i> by Oleg Shmelyov	45
People's University of Culture by Sergei Andreyev	50
The Plays of Alexei Arbuzov by Leonid Dugan	53
Soviet Readers of American Books by Edward Saratov	56
World Youth Forum by Pyotr Reshetov	58
Flying for Sport by Pyotr Korzinkin	62

Front cover: Space brothers—Gherman Titov (left) and Yuri Gagarin.



ALL MATERIAL FOR THIS ISSUE
COURTESY OF
NOVOSTI PRESS AGENCY

Anything in this issue may be reprinted or reproduced with due acknowledgement to the magazine *USSR*.

Subscription Rate:

6 Months	\$1.00
1 Year	1.80
2 Years	3.00

Published by the Embassy of the Union of Soviet Socialist Republics in the USA.

Second-class postage paid at Washington, D. C. and at additional mailing offices.

Printed by Haynes Lithograph Co. Rockville, Md.



MILLIONS
DEBATE THE

СЛУЖБА
И
М
П
Г
П
П
Е



00

8

И





R FUTURE

THIS FALL millions of Soviet people debated the program for the country's future before it was presented for final approval to the Twenty-second Congress of the Communist Party. Communists and non-Communists alike discussed the details of this program and the goals in sight—the world's highest standard of living and shortest workday, comprehensive automation, modern, rent-free housing for every family, production of goods and services in sufficient abundance to satisfy all and every need.

This was not the first time that matters of great national concern have been submitted for the public judgment. This is general practice in the Soviet Union. The Communist Party and the Soviet Government have complete faith in the wisdom and fortitude of the people and consult them on all matters vital to the entire nation. But in terms of scope and magnitude, this debate had no precedent. The difference was that the Party Program was discussed by the nation as a whole and not by Party members alone. The draft Program was thoroughly discussed at the general meetings of primary Party organizations; at district, city and regional Party conferences; at the Congresses of the Communist Parties of Union Republics. Simultaneously, everywhere in the country factory and office workers held general meetings at which, on an equal footing with Communists, they passed judgment on the draft. All told, a total of 82 million people gave the draft their wholehearted approval. Of these, 9 million are members and candidate members of the Communist Party of the Soviet Union.

People had at their disposal every medium of public expression—press, radio, television—and used them freely. The editorial offices of newspapers and magazines were swamped with letters like this one from D. Kabertai, a teacher on a state farm in Krasnodar Territory. He wrote, "Although I am not a Communist, I have always felt close to the Party because it has my interest at heart. The Party submitted its draft Program for discussion to the whole country, not only to its members. It is truly a people's party, and its main everyday concern is the people's welfare, their peace and happiness."

Party member I. Fyodorov, a fitter at the Krasny Proletary Machine-tool Plant in Moscow was typical of many who asked for the floor after lengthy discussion on the draft had been completed to move that it be approved. He said that he hoped he was speaking not only for himself but for all the Communists and non-Communists at his plant, one of the largest in the Soviet Union. The roar of assent from the large gathering made it evident that he was.

Even while this national forum was under way, workers throughout the country were already planning how to carry through the great tasks set by the draft Program.

Team Leader I. Gorbatko at a meeting in a turbine plant in the Ukrainian city of Khar'kov made this pledge for himself and his fellow workers. "Like all Soviet people," he said, "we turbine builders approve heartily of our Party's ambitious plan, and not only in words but in action. Yesterday, for instance, our designers finished work on the 310,000-kilowatt hydroturbine for the Nurek Power Station, and we propose to complete the design for a million-kilowatt turbine by the day the Party Congress opens."

These facts convincingly show that the entire people approve of and support the Party's projects and that they are eager to bring nearer the radiant future of which the Program speaks.

There was much discussion at these meetings about the most effective use of material and manpower resources, and trenchant criticism of lagging sectors of the country's economy. The new Program opens up horizons that only yesterday seemed very remote—the reason speakers were so sharply critical of bottlenecks and so many proposals were forthcoming for better and faster ways of getting things done.

A meeting of building workers, for example, called for more productive use of funds earmarked for construction. They wanted money concentrated on building projects of decisive importance, some of them awaiting only the final touches, rather than having it spread among many construction sites simultaneously.

Power station builders pointed to an imbalance in the construction of stations and transmission lines. Their objection was that only 10 to 15 per cent of power development funds were being spent on new transmission lines, with the result that they sometimes had to build small and unprofitable stations to meet immediate local needs.

Economists were critical of plants that were not automating fast enough, thus lowering their whole industry's level of productivity. They referred to metallurgy and engineering,

where, despite over-all technological progress, inadequate attention was being paid to mechanization of auxiliary jobs. The consequence was that there were unnecessarily large numbers of workers employed on these jobs. That also served to lower the generally high standards of productivity set by those workers who used the most modern equipment.

Economic planners advised greater care in choosing locations for future plants and in deciding their size and specialization. They wanted better account taken of local resources to make for a balanced economic development of the different regions, to eliminate the disparity between production and consumption, and to lower transportation, investment and maintenance costs.

The draft Program called for priority use of natural resources that could be exploited rapidly and with the best over-all economic gains. This point evoked much discussion. I. Kalinin, chief geologist of the Mikhailovo Iron Ore Mines, suggested in an article in the newspaper *Kurskaya Pravda* that a combination of plants be built near the Kursk Magnetic Anomaly, where enormous deposits of iron ore have been found, and that a national iron and steel center be established there.

There was hardly an aspect of Soviet life and endeavor, large or small, that was not touched on in the nationwide discussion. Salesclerks and food workers wanted more stores and restaurants opened to free people of burdensome household chores. Scientists spoke of researches into new fields; architects, of the cities of the future; doctors, of the better organization of the health services. Writers, theater people and painters spoke of aesthetic standards and of molding public taste, and teachers of educating the new man of the communist society blueprinted in this new Program for the Party and the nation.

Regardless of who spoke and what was said, it all added up to one thing—concern for man's well-being, providing everything needed for a healthy and happy life. It was indeed a grand discussion of the Party's plans, which all the Soviet people accept as their own. And this is the guarantee that these plans will become reality.

The new Kremlin Palace of Congresses became the focal point of world attention in October when the 22nd Communist Party Congress was held there.





WHO ARE THE DELEGATES?

THE CONGRESS of the Communist Party of the Soviet Union is the highest organ of the Party. It is convened at least once every four years. The convening of a Party Congress, the agenda and the ratio for representation are determined by the Central Committee of the Party at least six weeks before the congress opens. The following norms of representation were established for the Twenty-second Congress: one voting delegate was elected for every 2,000 full members of the Party and one delegate with a voice but no vote for every 2,000 probationary or candidate members.

If we turn to the history of the Twenty-first Congress, we shall see that there was one delegate with a vote for every 6,000 members, and one delegate with voice but no vote for every 6,000 candidate members. Thus the number of delegates is considerably greater to the Twenty-second Congress, the most representative of all the congresses the Communist Party has held—4,408 voting delegates and 405 delegates with a voice but no vote.

The delegates to the Twenty-second Congress were elected at congresses of the Communist Parties of the Union Republics. In the larger republics—the Russian, Ukrainian, Byelorussian, Uzbek and Kazakh, in which there are administrative regions and territories—the delegates were elected at regional and territorial Party Congresses. Those from the Moscow and Leningrad Party organizations were elected at city district conferences.

The election of delegates to the congress, as well as to any Party body, is by secret ballot. All Party members have the unlimited right to speak for or against a nominee.

How is the list of nominees drawn up?

Representatives of the delegations elected by Party organizations

to a conference or congress draw up a preliminary list of nominees. After discussing the nominees and drawing up a preliminary combined list, the representatives report back to their delegations.

This conference of delegation representatives, usually attended by from 150 to 300 people, depending on the number of delegates, submits its list of nominees to the conference or congress, and the delegates have unlimited right to accept, reject or substitute candidates. Each nominee is discussed individually to determine who is to be left on the list. A majority vote is necessary for a candidate to be listed on the ballot. There is no restriction on the number of candidates on the ballot, but the number elected cannot exceed the established norm of representation. Those nominees receiving the largest number of votes are declared elected, with the proviso that each one must be approved by at least half the assembled delegates.

Delegates range from well-known Party and state figures to rank-and-file factory workers and farmers. Among the voting delegates at the Twenty-first Party Congress were 339 industrial workers and collective farmers; 50 specialists in science, public health and the arts; 91 servicemen; 287 engineers; 81 agronomists and zootechnicians; and 85 teachers.

Thirty of the 222 women delegates with a vote were Heroes of Socialist Labor, and 24 were deputies to the USSR Supreme Soviet and the Supreme Soviets of the Union Republics.

The Congress is a Party-wide forum in which all Party organizations are represented. Here are a few of the men and women from various walks of life who were authorized to solve the most important problems of Party policy and the life of the country at the Twenty-second Congress.



ANASTASIA KALGANOVA
TEACHER

ANASTASIA KALGANOVA of School No. 333 was elected a delegate to the congress from Nevsky District of Leningrad. She teaches what she calls "the kindest of sciences"—botany and zoology. In her flower-filled classroom, in the school's garden, and during field trips to the nearby collective farm, she instills in the children in her classes love for the plant and animal life of their native region. They take care of the flowers and fruit trees in the school garden that extends straight down to the Neva River.

This outlying part of the city was one of the fighting fronts in the Second World War, the scene of fierce battles with the Nazis. Anastasia had just received her teacher's diploma then. She took a special nursing course and volunteered for front-line duty. For a long time her days were filled with blood-clotted bandages and the smell of chloroform. That was when she joined the ranks of the Communist Party.

She came out of the war with a row of medals, and in the 15 years since then has worked in the school system. It is a tribute to her teaching that she has never had a failing pupil. She was one of those chosen to work out a new natural science curriculum for the country's schools.

Anastasia is active in civic causes and has served with distinction as deputy to the Leningrad City Soviet. At the nominating meeting for delegates to the Party Congress, people who knew her personally and others who knew her only by reputation spoke of "Our Anastasia." One fellow Communist said, in support of her election, "When Maxim Gorky wrote 'To be a human being is a wonderful occupation,' he was thinking of people like our Anastasia."

VICTOR KIRILLOV-UGRYUMOV
SCIENTIST

VICTOR KIRILLOV-UGRYUMOV is 37 and rector of the Moscow Engineering and Technical Institute. There are professors at the institute who remember the brilliant research he did as a student.

He graduated in 1949 and did postgraduate work in various problems of physics. At the age of 30 he became associate professor and dean of one of the institute departments, following that with a period of research at Dubna, the atomic research center near Moscow.

This young scientist has a warm concern for his large body of students. He greets almost all of them by name and knows their special talents and interests. They come to him for advice about things scientific as well as personal. His duties are many. At present he is busy with the new educational center the institute is building. But naturally he reserves his primary attention for science, the source of his greatest pleasure.

Because of his talent as an organizer and his professional reputation, his fellow Communists at the institute sent him as a delegate to the District Party Conference where he was chosen to represent a larger group of Moscow Party members at the Twenty-second Congress.





NIKOLAI SUDAVTSEV
CONSTRUCTION WORKER

NIKOLAI SUDAVTSEV is one of the people Muscovites have to thank for their new apartments. He has helped to construct more than a hundred apartment buildings in different parts of the city. He's a young man with thick brown hair, only partially covered by his cap, and the ruddy complexion that comes from working outdoors in all kinds of weather.

Ask him why he picked the building trade, and he'll tell you, "I was 14 when the war ended. A movie I saw showed Stalingrad after the battle. It was a terrible sight to see, hardly a house left standing. I made up my mind that I would help to rebuild homes. I went to the factory school, finished the course in 1949, and have been working on new apartment houses ever since."

Nikolai lives in a house he helped put up. He and his wife and child have a one-bedroom apartment.

For the past six years he has been leader of a construction group that won the honored title of Communist Work Team. All the men on the team, Nikolai included, go to school after work. He is in his second year at the Moscow Technical School.

Nikolai was an active member of the Young Communist League before he became a Party member. He thinks of himself as a run-of-the-mill sort of person, but apparently his fellow-Communists do not. Some time ago they elected him a member of the Party District Committee, and when they chose delegates to the Party Congress, his name was high on the list.

AMIRAN PANTSULAYA

STEELMAN

AMIRAN PANTSULAYA, one of the delegates elected to the Twenty-second Congress of the CPSU, is the Georgian steelman written up in the March issue of *USSR* magazine. He lives in Rustavi, about 40 miles from Tbilisi, the Georgian capital, and has been working at the Transcaucasian Iron and Steel Mill since its first smelt 11 years ago.

Amiran was 18 when he went to Taganrog to learn the craft of steel smelting from Ukrainian steelmen. During the time he was studying in Taganrog the Transcaucasian mill was being built in Rustavi.

Amiran returned to Rustavi when the mill had been completed and was ready to start operations. The young steelman had done so well in Taganrog that he was entrusted with the new mill's first smelt as a first assistant. Four months later he was put in full charge of the first of the mill's five furnaces.

Amiran was determined to learn everything he could about steel smelting and attended the mill's technical school where he studied metallurgy, mathematics, physics, chemistry and other sciences to get a good theoretical background.

Now he is considered a master at rapid smelting. Having cut the time for the smelting process from eight hours to four hours and forty-five minutes, he and his assistants produce 1,500 tons of steel above plan annually. Like all Communists, Amiran shares his skill, lecturing to young steelmen at the same mill technical school he attended.

In recognition of his work Pantsulaya was awarded the Order of Lenin and the Medal for Distinguished Labor. For the past two years he has been elected to the City Party Committee where he takes an active part in solving problems that come up in the life of the city. As a delegate to the Twenty-second Party Congress he participated in deciding problems of countrywide importance.



NIKOLAI OKHLOPKOV
DIRECTOR

NIKOLAI OKHLOPKOV, director of the famous Mayakovsky Theater, was one of the delegates from the Soviet capital to the Twenty-second Congress of the Communist Party.

The theater has always been the calling of this celebrated artist. His first job was with a shop that sold theatrical goods in Irkutsk, the city of his birth. He worked hard, studied painting and sculpture, played the cello in a theater orchestra, always with an eye to one day becoming a director.

A former secretary of the City Party Committee tells of the time when Okhlopkov, a dark-haired young man with light blue eyes, came to him and said, "I want to put on a mass spectacle." It was springtime, and the secretary took young Okhlopkov to the window, opened it and, pointing to the square below, said, "Go ahead, there's your stage."

It was this mass spectacle in the city square, on May Day, 1921, that launched Okhlopkov on his stage career. He subsequently worked with Meyerhold and directed and starred in many early Soviet films. Two of the roles he played are particularly memorable—Vasili Buslayev in *Alexander Nevsky* and the worker Vasili in the series of pictures about Lenin.

During the thirties he worked with the Moscow Art Theater's Fourth Studio, putting all his energy into creating a theater that would concentrate on producing the works of Soviet playwrights. In their small premises the group put on plays of great impact, among them *A Running Start*, about collective farm life; *The Iron Flood*, about the 1917 Revolution; and a dramatization of Gorky's *Mother*.

These productions served to test Okhlopkov's talent that later was so brilliantly displayed in *Aristocrats*, *Young Guard*, *The Irkutsk Story*, and *Ocean*.

Okhlopkov personally participates in all the important undertakings of his theater with a deep feeling of responsibility as its leading director and as a Communist.

For the fame that the Mayakovsky Theater enjoys today as a genuinely contemporary playhouse it is greatly indebted to Nikolai Okhlopkov and his ability to inspire the actors with whom he works. Many of them owe the beginning of a brilliant career to him.



YURI GAGARIN
COSMONAUT

YURI GAGARIN, known to people the world over as the first man to venture into space, was elected a delegate to the Party Congress from the Leningrad District of Moscow by acclamation.

The 27-year-old cosmonaut is a newcomer to the Party, having applied for membership a year ago when he was training for his pioneering flight. At that time he wrote, "I ask to be enrolled in the Communist Party of the Soviet Union. It is my wish to become an active Party member and energetically participate in my country's life."

In their recommendations, his comrades noted that he was rated high as a flier, was a disciplined and competent person active in civic affairs, and was responsible in his personal and family relations.

At the meeting that approved him as a member of the Party, Gagarin said simply, "I shall do everything to justify your confidence. I am ready to accept any task the Party or the government may assign me." The task he was assigned had never been undertaken before. He carried it through with the courage and modesty that mark the true Communist.

Yuri Gagarin and his friend Gherman Titov, Soviet Cosmonaut No. 2, recently wrote in a letter to *Izvestia* readers, "We have occasion to meet and talk with many people and to read letters addressed to us from all parts of our homeland. Each of these talks and letters tells us again and again of the wonderful people around us and of the friendship that unites all Soviet people into one family. We are happy to belong to this great family."

PYOTR SAPUNOV
COLLECTIVE FARMER

PYOTR SAPUNOV was born and raised in the village of Bryantsevo in the northern part of Orel Region where the famous Bryansk woods begin. Woods are a common sight in this part of the country, but not the kind that Pyotr grew last year on the Krasnoye Znamya Collective Farm that had people coming from other farms miles away to see—fodder corn that stood 11½ feet high. From 200 acres Peter harvested 45 tons of stalks and cobs per acre.

For some parts of the country, where the climate is right, corn this tall would be no great achievement. But for the northern Orel Region with its cold climate it was phenomenal.

Skeptics on the collective farm board said it was pure luck. These were the people Pyotr had had to fight to get the acreage for sowing the corn.

"You don't know what you're talking about," they told him at the time. "When did anybody ever grow corn in this part of the country? It's unheard of. All you'll do is use up the land without growing either leaf or stalk."

But 24-year-old Pyotr, a Communist, wouldn't give in. At every meeting of the collective farmers he spoke about the possibilities of growing corn. He convinced some other young people that it could be done in spite of the cold and the lack of the special cultivators corn requires.

This summer Pyotr and his friends silenced the skeptics once and for all. They gathered 33 tons more per acre than last year on a stretch of 250 acres, although the weather was no better.

Thanks to Pyotr Sapunov, corn has become a regular crop in the region, helping the livestock breeders get additional first-grade fodder for their cattle.

A Party conference was held in Dmitrovsky District in the fall. And for his initiative, enterprise and understanding of the people's needs, the local Communists elected Pyotr a member of the Party District Committee and one of the 28 delegates from Orel Region to the Twenty-second Party Congress.



YELENA KALINYCHEVA
SEAMSTRESS

YELENA KALINYCHEVA was one of the 22 Communists elected to represent the Bauman District of Moscow at the Party Congress. She works as a seamstress in a clothing factory only a few minutes' walk from the Kremlin where the congress convened.

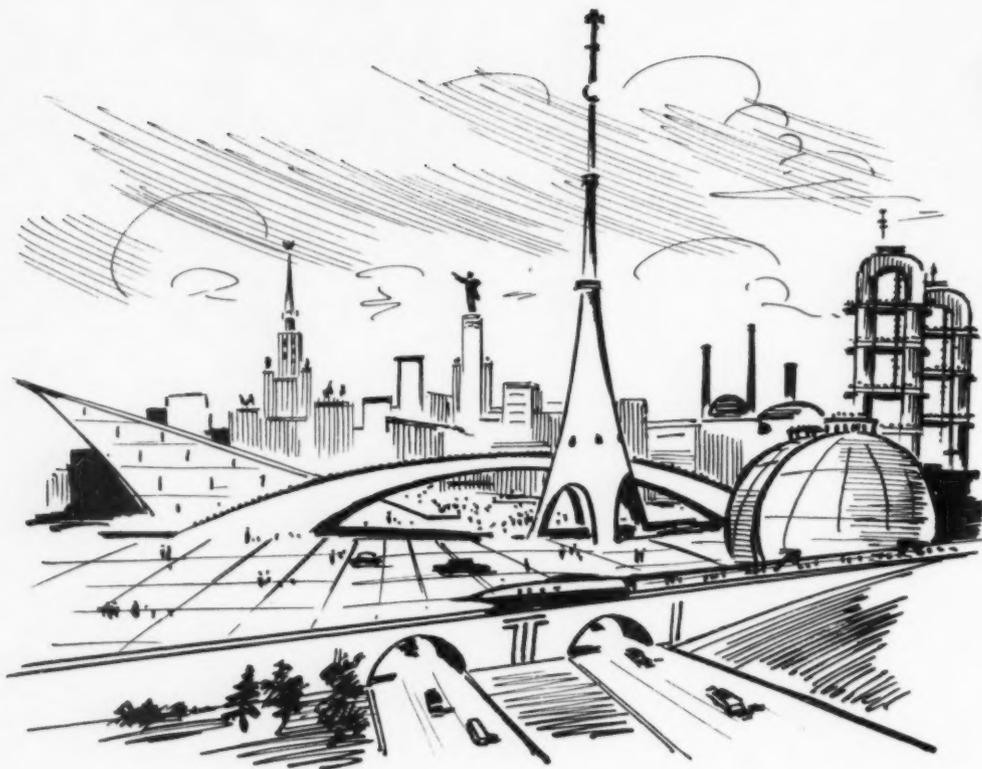
Yelena is 28. Her father was a fitter and had a large family, so Yelena went to work at an early age. She learned her trade at a three-year factory training school and completed her secondary schooling in the evening.

One of the biggest days in her life was when she became a member of the Communist Party four years ago. Another was when she was elected to the factory Party Committee.

Membership in the Party means continued study and self-improvement, and last year Yelena finished a 5-year correspondence course at a specialized secondary school for people in the garment trades. Her diploma thesis, dealing with the rationalization of garment manufacture and the effect of improvements she had suggested in some of the processes, was rated very highly by specialists in the field.

Her husband also took the specialized secondary school course. He is a mechanic at the factory and, says Yelena, was most cooperative in helping to look after their three-year-old son while she was hard at work on her paper.

Yelena Kalinycheva is highly respected among her fellow workers and was elected by the Communists to the factory Party Committee. In her life and in her work she is industrious, modest, active and purposeful. And the Communists of the factory, together with the entire District Party Conference, have authorized her to represent them at the Party Congress.



BIG DREAMS NEED BIG WINGS

BY SPARTAK BEGLOV
HISTORIAN

THE RUSSIAN peasant from some Vologda or Orel gubernia who marched in uniform on November 7, 1917, to storm the Winter Palace in Petrograd, where the counterrevolutionary Provisional Government had taken refuge, probably saw in his misty dream of a new Russia a good iron plow instead of his time-worn wooden one, a kerosene lamp to light his hut, and a school where his children could learn to read and write.

Perhaps his dream was for a little more, but he hardly thought that his everlastingly poverty-stricken, hungry village would soon have not only iron plows but tractors and combines, not only kerosene but electricity, and that his children would not only learn to read and write but would become doctors, engineers, scholars.

The worker from some Putilov or Sestroretsk factory who marched alongside him on that unforgettable fall night 44 years ago must certainly have had a larger vision of the new Russia. But, tempered as he may have been in long revolutionary struggle, he could hardly have foreseen such power giants in the people's service as the 2.5 million-kilowatt Volzhsk Hydroelectric Station that was put into operation this year.

He must surely have known that the victorious Revolution would throw the doors of schools and universities wide open to his children, but were his dreams bold enough to encompass a Russia with a student body as large as that of all the Western nations taken together and with more scientists than the combined total in the ten largest West European countries?

Dreams need wings. Big dreams need big wings. But the wings of those men who stormed the Winter Palace, even those whose dreams were most daring, could hardly have carried them so far and so high that they could see their sons exploring the cosmos in 1961.

In these 44 years deeds have kept outpacing dreams. What force made that possible? The creative power of the people that the Revolution set free. To use a scientific analogy, the 1917 Revolution was an enormously powerful social reaction that released the illimitable energy of a people.

Lenin's Party, dedicated to a Russia transformed along scientific socialist principles, worked out a program for each stage of struggle.

The first Program, operative from 1903, the year of the Party's birth to 1917, called for the overthrow of the obsolete and inequitable social system and its replacement by a dictatorship of the victorious class—the proletariat.

The second Program, adopted in 1919, called for the creation of a new society founded on socialist principles—public ownership of the means of production and the public distribution of goods and services produced, disappearance of exploiting classes, cooperation of all working people, fraternal friendship and assistance of all the peoples in the Soviet Union.

This program has been fulfilled.

Reviewing Four Decades

The forty-fourth anniversary of the Revolution, celebrated this month, is especially noteworthy because the Soviet people have this year been summing up the results of the fulfillment of the second Party Program, a program for the construction of a new socialist society, before they embark on the tasks of a new, a third Program to build a communist society.

What are the accomplishments of these four decades? Let the figures speak for themselves.

By comparison with 1917:

Industry. Over-all production growth multiplied by 40 times. Engineering output multiplied by more than 300 times.

Agriculture. Power capacity multiplied by 6 times. More than 100 million acres of virgin land broken to the plow.

National Income. Multiplied by 25 times.

Employment. Full and complete. Permanent end of unemployment.

Real Income of Workers. Multiplied by 6 times.

Real Income of Farmers. Multiplied by 7 times.

Urban Housing. Multiplied by 5.4 times.

Number of Higher Schools. Seven times as many.

Death Rate. Dropped from 30 to 7 per thousand.

Longevity. Went up from 32 to 68 years.

The basic aim of the new society is man's well-being. It has freed

its citizens from the ancient fears of joblessness, of insecurity in sickness and old age, of tomorrow's uncertainties. It has guaranteed the right to work, made education and medical care free and accessible to everyone, set up a pension system for the old and disabled. These security values cannot be measured by figures and indices alone. They are an irrevocable part of Soviet man's life and work, his welfare and prosperity.

Social Progress and Democracy

What changes have occurred in Soviet power and in the Soviet state during this period?

With the Revolution the workers and farmers took power, to be administered through the Soviets of Working People's Deputies. From the Village Soviet to the USSR Supreme Soviet, the Soviets are representative bodies, elected by citizens by secret ballot.

What are the features of Soviet democracy?

Its outstanding feature is that it is bound organically with the people's life in contrast to the professionalism of government bodies in countries with other social systems.

The deputy to a Soviet is first and foremost a factory worker, a farmer, a teacher, a scientist, and *he continues to work at his job while carrying on his legislative duties*. This means that he is in close and constant touch with his constituents. Being a worker like themselves, he is consequently far more aware of what they think, say and need than even the most knowing career politician.

A glance at the composition of one of the two chambers of the USSR Supreme Soviet, the Soviet of the Union, makes that clear. We see that 322 of its 738 deputies work directly in production. Thirty-five are teachers, 22 doctors, 82 are in the sciences and arts, 113 are engineers. These people are not political hacks, they have the background and the experience necessary for coping with day-to-day problems.

Another unique quality of Soviet democracy is *its mass character*. This is expressed not only in the large number of deputies—about 2 million in the local, republic and national legislative bodies—but in the voluntary participation of some 2.5 million private citizens in the work of the standing committees of the Soviets. This serves as a way of directly involving the most active and civic-minded citizens in the administration of the country's affairs.

But even these large figures fall short of describing the extent of civic participation. There are many millions of people on house management and block committees, on pensioners' committees, in parent-teacher organizations and other public groups.

All these varied forms and expressions of the people's power keep growing and expanding, drawing into the work of state administration large new sections of the working people on the way to genuine communist self-government.

One should also note the special *concreteness* and *effectiveness* of Soviet democracy.

Firstly, the method of electing the deputies is aimed at selecting the person best suited for complying with the necessary qualifications of servant of the people.

Those who try to prove the advantages of a multi-party over a one-party system ignore the very vital fact that the voter in a multi-party political system is restricted to a choice between candidates he has had no voice in choosing, candidates who represent the interests of a particular group.

In a one-party system, in which the party is the political organization of all the working people, those candidates who best meet the needs and interests of the people they are to represent are chosen to run. That is why the selection of candidates is such an important part of the Soviet electoral procedure, with large groups of workers in factories, farms, offices and mass organizations participating directly.

At these meetings several people are nominated for each post. The records of the several nominees are compared at pre-election meetings,

and the one thought most worthy is chosen as the candidate and his name entered on the ballot.

Under these circumstances the candidate does not represent merely the special interests of a limited group or a particular party alignment, but all the voters. When he receives his mandate, he acts far more effectively in fulfilling his duties as deputy precisely because of his having been selected as the best qualified executor of the will of his electorate.

One other unique characteristic of Soviet democracy, and not the least by any means, is that *political and economic power are both concentrated in the same hands—the people's hands*. They not only run the state, through their elected representatives, but they also own the land and the factories—the means of production—and use them for the general well-being. This makes Soviet power a hundred times more effective. It is also one of the main reasons for the achievements of the past 44 years.

New Goals

As a result of these achievements the Soviet Union is now ready to move on from the socialist society it has built to a higher stage, communism, whose operating principle is "From each according to his ability, to each according to his needs." The further advance to this higher stage is possible not only because the foundation for it has been laid in these past four decades but also because a society organized along socialist lines *can foresee and plan* its continued advance.

At its Twenty-second Congress, the Party, and along with it all the people, set these goals—within the next 20 years to make Soviet industry the most productive in the world; to increase the volume of industrial output at least sixfold; to create an abundance of farm products, to multiply per-capita income by three and a half times; to provide a modern and rent-free apartment for every family; to furnish public utilities, city transport and most other similar services without charge.

With all-round automation and other advanced industrial techniques that make labor less burdensome will come a change in people's attitude toward work. They will not work primarily because they have to make a living—society will provide that—but because work will be the means through which each man develops his creative potentialities and fulfills himself. This is one of the major goals of the transformation of society and man.

In the process of building communism, the forms of public representation will be improved, and governmental functions will be increasingly transferred to public organizations. The ultimate aim is communist self-government and the gradual withering away of the state apparatus. With communism will come the fullest possible development of individual freedom and rights of the Soviet citizen.

We have spoken of the accomplishments of these 44 years. But we must remember that nearly half of these four decades were spent in defense of the young republic and in reconstruction. First came the Civil War and intervention by 14 foreign powers—five years of war and another five of rebuilding. Then came the fascist invasion—another five war years, followed by five in reconstruction. Each war thrust the country back at least a decade. It is interesting to speculate on what might have been accomplished had these been years of peace.

Many million people killed, 25 million houses leveled—that is what the war cost us. Is it necessary to elaborate on why the Soviet people hate war?

The banners borne by the Red Army soldiers when they marched on the Winter Palace in 1917 carried the inscription, "Peace to the Peoples, Power to the Soviets!"

World peace has been the urgent appeal of the Soviet Union ever since. Progress means building, and building needs peace. The Communist Party of the Soviet Union declares its goals in the newly adopted Program—peace, labor, freedom, equality and happiness for all peoples—and reaffirms its historic mission—to rid mankind of the curse of war.

BY ALEXANDER MARYAMOV

A TRIP TO THE COUNTRY'S TOMORROW

OUR TU-104 Jet Liner traveled the enormous stretch from Moscow to Irkutsk so swiftly that I had no time to finish the book I had taken along, nor my neighbor the long nap he had promised himself. Shortly before landing, our young stewardess told us to set our watches ahead five hours.

But none of us thought this speeding up of time at all strange. It seemed perfectly in order for Siberia, a young country of grand and extraordinary projects, where the present and future merged. A trip to Siberia was like a trip to the country's tomorrow.

"The Future Begins Today!" We saw this slogan lettered in whitewashed stones on the high shoulder of the road as we drove by in a truck crowded with young people. We were on our way to the settlement where the builders of the Bratsk hydropower project were living.

Six years ago there was nothing there but dense forest growing down to the rocky shores of the Angara River where it foamed over the Padun rapids. This was in 1955 when the first detachments of young builders pitched their tents on a narrow strip almost at the water's edge. They dubbed the spot Zelyony Gorod, Green City, and started on the construction

of the biggest hydropower plant in the world.

In winter their faces were bitten by frosts of 58 degrees below zero. It was so cold they could barely catch their breath. With the first spring thaw came maddening swarms of gnats. But they met all these hardships with a shrug of the shoulders or a joke. They were building their own future here.

This generation of Soviet people shall live under communism, the new Program of the Communist Party declares. That is the meaning and the reason for this great effort of a whole nation. I felt the reality of it at the Bratsk project. The slogan "The Future Begins Today" was a fact. It was tangible, something you could see and touch. Bratsk and other gigantic building projects like it were barometers of the country's labor.

"We Will Tame You, Angara"

You get your first view of the construction site from the rocky shores of the Angara River, more exactly, from Cape Pursei. There you see the whole of the great dam, the cranes on its upper trestle, the endless files of big dump trucks crawling to and from the excavator dippers. And below, rising from the



river's surface, tall white letters many feet high read, "We will tame you, Angara."

The challenge was flung by the men who built the dam, the young people who came to Bratsk from all parts of the Soviet Union. Reading the words, one becomes conscious of the swift passage of time; the phrase has already passed into history. The Angara has been harnessed. The words should read "have tamed" instead of "will tame."

Chief engineer Alexander Gindin gave us some dates. Excavation work began in 1955. The first batch of concrete was poured in the pit in March 1958. The foundation of the building that houses the generators was laid in April 1961. And at the time we were there, they were on the fourth and final phase—to get the first power units assembled by the time the Twenty-second Party Congress convened.

From the heights of Cape Pursei you cannot make out the faces of the workers in the grand panorama of construction below. They look like tiny, very busy ants walking upright, but it was these ants who built this 295-foot wall to tame the roaring Angara, another monument to man's conquest of nature.

... Plus Electrification

Lenin defined communism as Soviet power plus the electrification of the entire country, a definition that has guided the Party during these four decades of socialist construction. Over the years hydroelectric stations of varying capacities were built throughout the country. "Electricity factories" these were, each one of them a milestone marking backward Russia's transformation into the industrial power that is now blazing man's road to the stars.

Bratsk is one more such milestone, the biggest of its kind in the world. When the project was planned there were some who thought it an unattainable dream. And now, only a mere six years later, a huge pit is being dug for an even larger hydropower plant—the Krasnoyarsk on the Yenisei River.

Thermal plants are also being built in Siberia, as all over the Soviet Union, to make electric power available everywhere for the production of an abundance of manufactured goods, to lighten work and to make living easier for both city and country people.

Electrification is the prime mover of a communist economy. That is why the power plan is so important a part of the new Party Program. Bratsk is the plan in progress.

Bratsk People

I visited the project when the first power units were being assembled. The men were working at top speed. They had pledged themselves to get the first unit set up in ad-



Bratsk workers fulfilled their pledge to get the first unit operating on the eve of the congress, when the three-year job of filling the reservoir was also begun.





Workers on the giant Bratsk hydropower project come from all over the country. Victor Vitalyev helped build the Volzhskaya station before he came.

vance of the scheduled time as their greeting to the Twenty-second Party Congress.

I met team leaders Vladimir Mamedov and Victor Vitalyev. They were quite different in appearance and temperament, but they both had the stamp of builders, men who liked the challenge of new places and new experiences.

When I asked Vladimir Mamedov if he had come to Bratsk to stay, he said, "I live where I work. I feel like a permanent settler wherever I happen to be."

In his fourteen working years Mamedov has been practically everywhere in the Soviet Union. He has worked on assembling power units in the most widely scattered places—the Kuban, Georgia, Moldavia, Daghestan, Kakhovka, Irkutsk. But when he leaves after a station is built, he leaves part of his heart behind him, he says.

I visited his home, a new apartment in a block of tall buildings rising in the midst of the woods that still surround this very young city. The rooms were almost bare, just a few pieces of furniture scattered around. My eye was caught by a small, attractive carved desk and some wicker chairs of interesting design.

Mamedov's wife explained, "You won't recognize the house in a couple of months. My husband likes to make everything himself. His hobby is wood carving, and he's always sawing, planing or carving something in his spare time."

It won't be long before the twenty power units at Bratsk are finished, and then the Mamedovs will pick themselves up and move to a new construction job, as they have so often in the past. Their six-year-old Natasha was born in Georgia, and three-year-old Yura in Daghestan. It was evident that a new member of the family was on the way. This one, they laughed, was their Bratsk child.

When I first met Mamedov he shrugged off the notion of my including him in my article. "What for?" he asked. "I haven't done anything special. Why don't you write about Victor?"

But Hero of Socialist Labor Victor Vitalyev, also a team leader, reacted in pretty much the same way. "Why me? Talk to Mamedov's team. They're a fine bunch of men."

They're modest, these Bratsk builders. They

don't like to do much talking about themselves. What ordinary people might think impossible is part of the day's work to them. With their hands they are building the future—communism. It is not surprising, therefore, that the first Communist Labor Team to appear among the hydropower plant builders was one at Bratsk.

All Roads Lead to Bratsk

One of the young builders who came to the project from Byelorussia had painted on his valise, "All roads lead to Bratsk." The paraphrase was well taken, for Bratsk has attracted people from almost every corner of the country and from practically every nationality in the Soviet Union. But once you've come to Bratsk to work, no matter where you're from or what your nationality is, you become a Siberian. So says unwritten law and custom.

A crane operator talked of "Us Siberians!" But a singing inflection betrayed his Ukrainian origin.

A young Georgian girl smiled at me and began her sentence with "Here, in our Siberia . . ."

"Come again! We Siberians like visitors," a sunburned Uzbek yelled to me over the construction din.

One could see these young people were proud of the job they were doing in this grim but immeasurably rich country. They had the heart and the imagination Siberia demands of its people in return for its national riches. The way they lived and worked together was testimony to the comradeship of all Soviet people, regardless of national origin.

Yuri Litvinov came to Bratsk from Novosibirsk five years ago, when he was seventeen. He had had seven years of schooling and began working at odd rock-hewing jobs; then he became a concrete mixer operator.

"I've learned a lot here," he told me. "For one thing, I now have a good trade. I'm an assistant machinist. For another, I've finished the evening school for young workers and am going to matriculate at the institute. I want to become a construction engineer. And for a

third, I've seen how really big things get done."

Alla Mikhailova came to Siberia from the Black Sea resort town of Sochi. Like Yuri, Bratsk was her first job and she loves it. It's hard to imagine any two parts of the world more unlike than the Black Sea coast and Siberia. But when we were talking about the fierce Siberian frosts and the scarcity of fresh vegetables in winter, this girl from a subtropical resort town said, "Siberia has a beauty of its own. I like it and I am thinking of really settling down here."

You come across other kinds of people also. When I first arrived at the Bratsk airport, I saw three young men and a young woman sitting by themselves, away from the other passengers.

"Heading for the construction site?" I asked.

"No," answered one of the men, very curtly.

His tone and the sudden flush on the young woman's face told me they were on their way out, going back home. These were young engineers, I learned, who had come to Bratsk on their own and now, three weeks later, they were back at the airport. "What's the trouble?" I asked them.

"Things always look rosier from a distance," the young woman said.

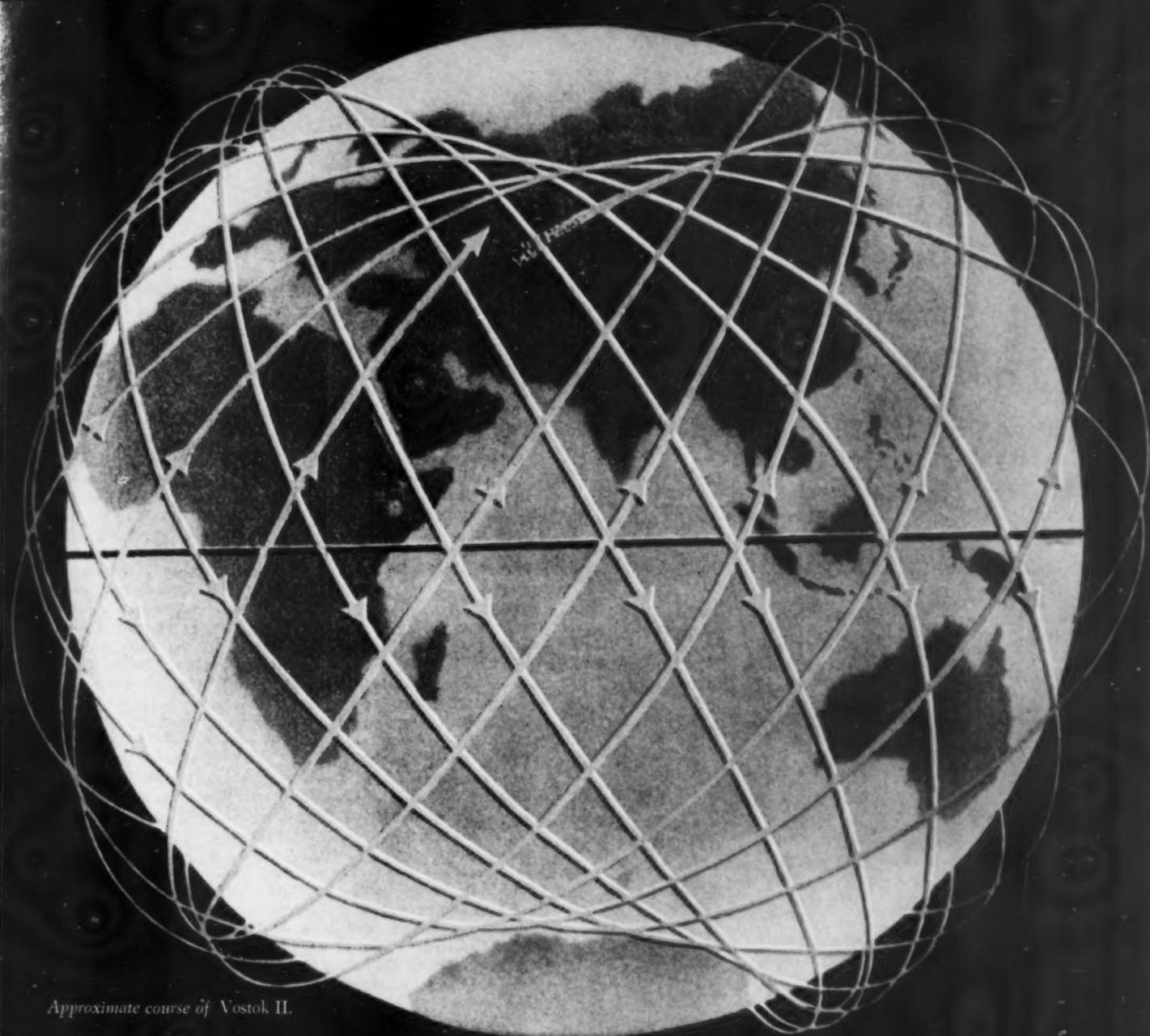
One of the men said, "Many of us can't take the climate."

Were there really many, I wondered, talking to these four young people who found it hard to meet my eye.

And then a truck full of cheerful young people, boys and girls, stopped a few feet away and the driver leaned out and yelled to me, "Going to the site? Get on." I climbed on, gratefully.

A young fellow in work clothes said, "Good riddance." He was talking about the four who were leaving. "They're the kind who like to live under papa's and mama's wings and want all the comforts of home right away. They never stop to think of the way their fathers and older brothers worked and sweated to create those comforts. We'll build up Siberia without them."

And they will.



Approximate course of Vostok II.

TWENTY-FIVE HOURS IN SPACE

ON THE MORNING of August 6, 1961, the spaceship *Vostok II* with cosmonaut Gherman Titov aboard was shot from the launching pad at Baikonur Airdrome, northeast of the Aral Sea. The ship landed in a prearranged area—near the Krasny Kut settlement in Saratov Region—after a successful and sustained space flight.

Less than four months before, Yuri Gagarin had made the first manned flight, relatively short in duration, in *Vostok I*. Titov, in *Vostok II*, orbited for more than 25 hours, covering a distance approximately equal that to the moon and back before returning to earth.

The development of spaceships of the *Vostok* type made it possible to place manned vehicles in orbit and bring them back safely, to study the effects of cosmic flight on the human organism and man's ability to function under zero gravity conditions.

Vostok II consisted of a pilot's cabin, an instrument compartment and a braking power-plant compartment. A thermal shield on the outer surface of the cabin provided insulation against the high temperatures on descent through the dense sections of the earth's atmosphere.

The cabin had three portholes and two snap-action manholes. The glass of the portholes was heat resistant so that the pilot could make observations while in orbit and on the downward leg of the flight. Each of the portholes had motor-driven curtains to shut out the sunlight, if necessary.

In the cabin were the life-supporting systems, the controls, part of the radio apparatus, the log book, the optical horizon scanner with which the

pilot made visual observations through the portholes, and the television cameras for observing the pilot during the flight.

The instrument compartment housed radio equipment, the controls and the temperature-regulating system.

For Forced Landing

The pilot's seat incorporated a number of systems and devices that permitted the cosmonaut to live in the cabin for an extended period or, in case of need, to escape from the ship and land safely on earth. The seat could detach itself from the cabin automatically in the event of trouble on take-off or on the powered leg of the flight. It carried a supply of oxygen and a ventilating device for the cosmonaut's pressurized space suit. It also carried a radio receiver-transmitter, a supply of food and other vital articles he might need for a forced landing. The supporting surfaces of the seat were upholstered with soft plastic cushions shaped to the human body. The parachute system contained in the seat allowed for a stabilized descent to the ground or water if the pilot had to leave the spaceship and land by parachute. If the landing had to be made on water, an automatically inflated boat would have been ready for his use the instant he touched the surface.

For added safety in a forced landing on water the space suit could keep the pilot afloat face upward. It was airtight and insulated so that the pilot could stay in water with a temperature of 32°F for 12 hours without discom-



The cosmonaut dressed in his pressurized and insulated space suit.

fort. The space suit was worn over woolen underwear. Under the space suit the pilot wore overalls. The glass face plate in his helmet could be opened and closed both manually and automatically in the event the pressure or composition of the air in the cabin changed beyond safe limits. The space suit and the systems contained in it would have made it possible for the cosmonaut to control the ship even had the cabin lost its airtightness.

The ship's air-conditioning and pressure-regulating equipment automatically kept the air composition, humidity and pressure at normal. In an emergency the pilot could take over the controls to raise or lower the temperature or humidity, or change the composition of the air. *Vostok II's* air-regenerating unit was an improvement on *Vostok I's* set-up, chemicals and design.

The specially prepared foods—juices, chocolate, patés, etc.—were packed in tubes. Water was carried in a tank and sipped through a mouthpiece and tube.

Vostok II was scheduled to make 17 revolutions of the earth, but the ship's design and the food, water, regenerating chemicals and power supply it carried would have made a longer flight possible.

As it passed over Soviet territory, the ship's equipment telemetered the orbital parameters and televised the pilot's image. The data on the trajectory parameters received by the ground tracking stations were relayed automatically through communication links to computing centers, where they were processed by electronic computers. The ship's movement was thus plotted throughout the flight.

The pilot maintained radio contact with the ground tracking stations for flight instructions and kept them advised of his condition, his progress, and the operation of the ship and its equipment.

The spaceship could have landed at any moment in case something went wrong with either the pilot or the equipment.

The pilot could have acted on his own or after consultation with the flight command station on the ground. The landing could have been made automatically or manually.

The ship was landed automatically at the start of the eighteenth revolution. The attitude of the ship was corrected automatically before the retro-rocket system was fired at a prearranged point on the orbit to brake the ship, which then moved out of its orbit into a downward trajectory. When it passed the zone of high temperatures and acceleration loads and was

near the earth's surface, the landing system went into operation so that the ship could touch down at low speed.

Two landing methods were possible—in the spaceship, and separate from the ship. In the second case the pilot would have been ejected in his seat at a low altitude and brought down by parachutes. Titov chose this latter method.

Communications Equipment

The communications equipment was designed for the fastest two-way contact with the ground over the greatest possible distances under any and all flight conditions. The ship carried three two-way radio telephone systems—two AM and one FM.

Short-wave communication is easily disturbed by ionospheric phenomena and cannot always be depended upon. For this reason the AM systems were supplemented by FM systems, which are very reliable over relatively short distances—up to 1,000 or 1,300 miles. For all practical purposes FM signals are unaffected by flight altitude; time of day, month or year; or other such factors governing the condition of the ionosphere.

Communications equipment included a tape recorder that was started automatically by voice and could play back the record at high speed on command from earth, and a broadcast receiver with continuous tuning on the medium- and short-wave bands.

A network of AM and FM ground stations maintained radio contact with the spaceship. The FM stations were equipped with special directional antennae and equipment for taking down tape-recorded messages played back at high speed. The AM stations also used special directional antennae, sensitive receivers and high-power transmitters. The ground stations were in constant contact with the dispatcher in charge of the communications program. He indicated which transmitter was to be used when and what information was to be relayed to the pilot. All messages from the ground receiving stations were sent to him.

With the spaceship traveling at such high speed, it was imperative that communication between the dispatcher and each of the many ground stations be reliable and continuous. Any delay, however short, in reporting messages received or in relaying information to the spaceship could upset the communications program.

The functioning of all the units and components of the communications system was tested last March, well before Gagarin's and Titov's flights, when vehicles were launched carrying biological payloads.

These test flights provided a thorough check on the range of radio communication on AM and FM bands, the effects of noise on speech audibility during the powered leg of the flight, the possibility of simultaneous operation of receivers and transmitters in flight, etc. The operation of the electro-acoustic equipment of the pilot's communications system and its sensitivity to noises was also checked under flight conditions.

Vostok II carried equipment to televise the pilot's condition, behavior and physical coordination. An equally important reason for the TV equipment was to obtain more data on transmission from space vehicles so as to improve existing apparatus. The ship carried a narrow-angle and a wide-angle TV camera, each of which operated independently and had an FM transmitter. The images transmitted to the ground were viewed on monitors and recorded by motion picture and still cameras. The film records were synchronized with records made of the pilot's basic physiological functions—heartbeat, respiration, etc.—so that the various types of data could be checked against each other and analyzed.

Climate Control System

Vostok II's microclimate was kept close to normal by an air-regenerating system that absorbed the carbon dioxide and moisture given off by the human body and supplied the proper amounts of oxygen for breathing.

Any deviations in the content of oxygen, carbon dioxide and water vapor in the cabin's atmosphere were sensed by pick-ups that signalled an automatic controller to make the necessary adjustments in the regenerating system.

The automatic system was backed up by manual controls and, if necessary, the pilot himself could make the adjustments required to get the desired composition, humidity and temperature in the cabin. He could set the temperature at anywhere from 50° to 77°, and it would then be maintained automatically. The relative humidity throughout the flight varied from 50 to 70 per cent.

Variations in the air-regenerating system and in the cabin's atmosphere were recorded and telemetered to the ground.

To study the effects of weightlessness on the human body, initial experiments were done on the ground. But these studies were hardly definitive, since the weightless state could only be maintained for a second or two.

The weightless state was also simulated by immersing a human test subject wearing a special suit in a liquid whose specific gravity equaled that of the human body. These studies shed considerable light on vital functions under conditions approximating weightlessness, in which some portion of the neurosensory system is affected.

A great deal of headway in studies of zero gravity effects was made with aircraft. By flying at high speed in a parabolic curve, it is possible to counterbalance the force of gravity by centrifugal force so as to maintain a state of weightlessness for periods as long as 40 to 50 seconds. But the time factor was obviously a vital one, and these findings did not necessarily apply for longer periods. Moreover, many important studies could not be carried through at all with aircraft.

The next stage of investigation was to test zero gravity effects on various animals—mice, rats and dogs—carried aloft in rockets and later in artificial earth satellites. In some cases the animals tolerated weightlessness for more than 24-hour periods without any pronounced unfavorable changes in physiological functioning or vital activity. These experiments warranted the conclusion that several hours of weightlessness—up to a 24-hour period—would not be inimical to human life or health.

When Gagarin, on April 12, 1961, was placed in orbit, he experienced about an hour of weightlessness without unpleasant consequences. He ate, wrote and made the necessary observations without difficulty.

The medical research program planned for the second flight was, of course, much broader. It covered an entire daily cycle of human life under space flight conditions and tested the ability of the cosmonaut to work in long, sustained periods of weightlessness.

Both subjective and objective data were gathered. The cosmonaut described his feelings and sensations by telephone over a two-way radio link in messages written in a special form. Objective data was recorded automatically and televised or radiotelemetered to the ground stations. The data is still being analyzed and interpreted.

Radiation Safeguards

The unmanned orbital spaceship launchings that preceded the Gagarin and Titov flights carried through a wide program of biological studies. They led to the conclusion that manned flight was possible and safe. Among other things, it was found that the hazards of radiation need not be a deterrent. However, not all the biological aspects of cosmic radiation had been clarified. Special precautions had to be taken against solar flares. Some of them sharply increase the intensity and the qualitative and quantitative composition of cosmic radiation and may be dangerous to human life. The mechanism of the flares has not yet been studied, and forecasting them presents great difficulties.

A whole range of procedures were worked out to provide radiation protection for Titov, including observation of solar activity and direct measurement of cosmic radiation in the upper atmosphere.

Prior to the launching and throughout the flight a widespread network of astronomic observatories kept the sun under close surveillance by means of special methods which made it possible to forecast solar activity and solar flares with a high degree of probability. During the same period pilot balloons were launched from various spots within the Soviet Union, particularly in the polar regions, that directly measured the intensity of cosmic radiation in the stratosphere. The information obtained was immediately processed, and the decision on the date of launching and the flight program was made in the light of this information. Solar activity had been normal prior to the launching and remained normal throughout the flight. The intensity of the cosmic radiation in the stratosphere as measured with pilot balloons was also normal. Thus the flight took place under favorable radiation conditions.

The powered leg of their flights gave neither Gagarin nor Titov any trouble. In his press conference on August 11, Titov said, "I bore up well under the acceleration loads, noise and vibration on the powered leg of the flight and had no unpleasant sensations. I carried on observations through the portholes, read the instruments and maintained two-way contact with the ground throughout the active stage."

In spite of his good objective reaction, the cosmonaut did have a somewhat quickened heartbeat that went up to 118-134 beats a minute. These changes in heartbeat and respiration rate are attributable to the flight factors (noise, vibration, acceleration loads) and to the emotional strain natural under the circumstances. These physiological changes were comparable to those Titov experienced in the centrifuge during the training period.

The noise, vibration and acceleration stopped as soon as the spaceship was placed in orbit, the rocket engines cut off, and weightlessness set in. According to Titov, his first sensation was that of flying with his legs upward, but the feeling passed in a few seconds.



The pilot's seat included everything needed for survival in an emergency.

An hour after blast-off the cosmonaut took over the attitude control system and made some maneuvers required for scientific measurements. He reported that the manual controls operated faultlessly. On the seventh circle of the earth he took over the manual controls once more.

Weightlessness

Weightlessness did not prevent the cosmonaut from taking care of his physical needs—he ate, disposed of body wastes and slept. It should be noted, however, that his sleep, especially at the beginning, was restless, and his appetite was smaller than usual. Titov's loss of appetite and slight dizziness and sickness were obviously due to the unusual stimulation of the vestibular system under conditions of weightlessness. Note too, that these symptoms of changes in the vestibular system disappeared as soon as the cosmonaut assumed a rigid posture and did not make any sudden movements of his head.

These symptoms were sharply reduced after sleep and left him completely with the onset of the acceleration load during re-entry.

In orbital flight Titov's heartbeat, when he was awake, varied from 80 to 100 per minute, slightly higher than his initial rate. In sleep the rate dropped to 54 to 56 beats a minute, in keeping with ground conditions. There were no substantial changes in the wave form or other elements of the electrocardiogram throughout the flight in orbit.

The cosmonaut's long period of weightlessness did not result in any pathological disturbances. Some changes were observed in the operation of the vestibular system, but they had no effect on the cosmonaut's ability to function.

We will have to determine from subsequent studies whether the changes occurring in the vestibular system were due to Titov's increased sensitivity or whether they are to be generally expected in zero gravity conditions. If the latter is true, it may be necessary to provide artificial gravitation on spaceships. This can be done.

The cosmonaut felt fine and was in a cheerful mood throughout the flight. No pathological effects were evident, and the postflight medical checkup revealed no deviations from his normal health.

Gherman Titov's flight in *Vostok II* resolved many space problems. Most important for future cosmic exploration was that it proved a man can maintain his full working capacity throughout a 25-hour stay in space.



Konstantin Tsiolkovsky, rocket navigation theory pioneer, traced the outline of today's spaceship.



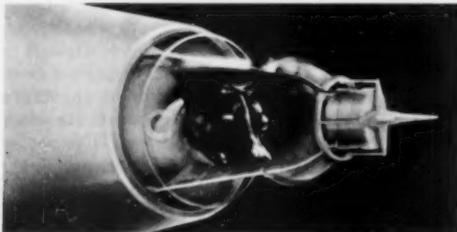
Prologue to space flight. Lenin at the country's first air parade. A still from the documentary.



Another step to the stars. Valeri Chkalov makes the first USSR-USA flight over the North Pole.



Breakthrough into space. Sputnik I, man's first earth satellite, is launched on October 4, 1957.



A few months later, Sputnik II is orbited with the dog Laika, the first living cosmic voyager.



In 1959 a Soviet pennant is landed on the moon. That year the moon's hidden side is photographed.



FIRST FLIGHT TO

I HAVE SPENT more than 35 years of my life making documentaries on a variety of subjects, but I have never been wrapped up in any project to the degree I was in *First Flight to the Stars*, the film about the first manned space flight. And that goes for everyone who had anything to do with the picture.

We were proud that our country had blazed the trail to the cosmos, that our scientists had built spaceworthy ships and marvelously precise computers that could calculate a vehicle's orbit and velocity almost instantaneously, that our industries had made alloys capable of withstanding the thousands of degrees of heat to which the ships would be subjected on re-entry into the dense layers of the atmosphere and fuels that could boost rockets weighing many tons into space.

With this feeling of pride came a sense of our own great responsibility. This was not an ordinary film that would be buried in the archives once its run was over. We were making a historic document that posterity would be turning to again and again to study man's first venture into outer space. We strove for absolute authenticity in every sequence, in every frame.

Our film does more than picture the first flight into outer space on April 12, 1961, that thrilled the world. It tells the whole great story of man's dream of cosmic flight and its realization.

From the towers of Babylon nameless sages searched the skies for an answer to the mystery of the movement of the celestial bodies. The first stellar charts of ancient Egypt are older than the Pyramids. Jules Verne carried people off to the moon in his fantasies. In every age man sought to break his bonds with earth.

Nikolai Kibalchich, a Russian revolutionary and scientist, on the eve of his execution by the czarist government, drew a design for a jet-propelled machine on the wall of his cell in the Peter and Paul Fortress. The police hid his notes from the world.

Konstantin Tsiolkovsky, never doubting the real substance of his dream, wrote, "Man will not remain bound to the earth forever. Step by step he will conquer the space around the sun."

Our film shows this step-by-step progress—how the Soviet people developed their aircraft industry, carried through long nonstop flights, and broke through into space with Sputnik I whose "beep-beep-beep" echoed round the globe in October 1957.

One by one the sputniks and luniks opened the road to the stars. Thousands of Soviet people wrote in volunteering to make the first manned flight. Airman Yuri Gagarin was one of them.

Then came the selection of an astronaut. He had to be a man in top-notch condition whose body could adjust to great stress and strain, a man with extraordinary powers of mental concentration and physical coordination and with an uncommon degree of body control in parachute jumps.

We shot the whole complicated and taxing routine of testing and

To

ntaries
in any
out the
ything

osmos,
precise
almost
with-
uld be
d fuels

esponsi-
in the
cument
's first
every

ace on
tory of

for an
he first
Verne
sought

the eve
a jet-
ortress.

of his
r. Step

people
flights,
p-beep"

e stars.
he first

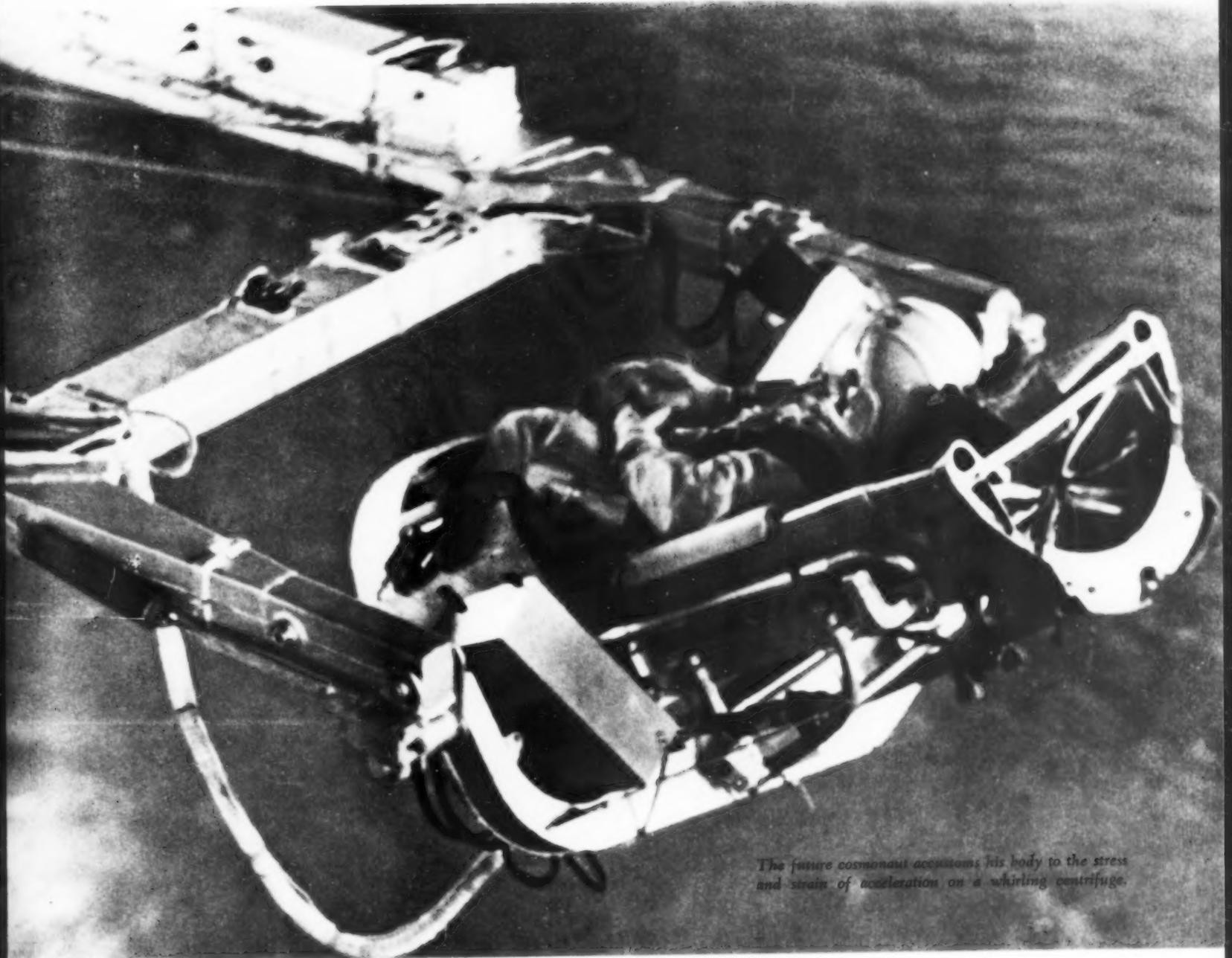
in top-
train, a
physical
n para-

ing and



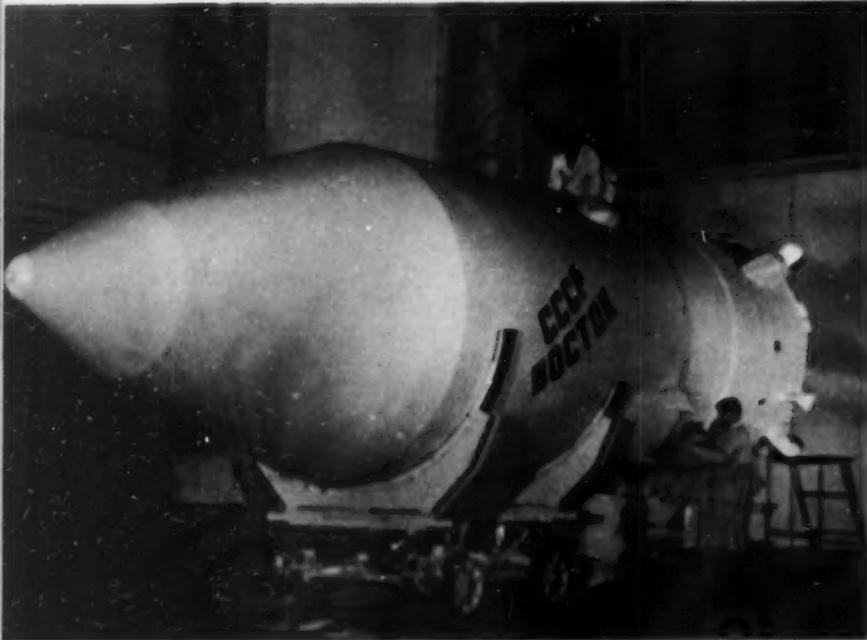
THE STARS

BY ILYA KOPALIN
EVA GREGORY



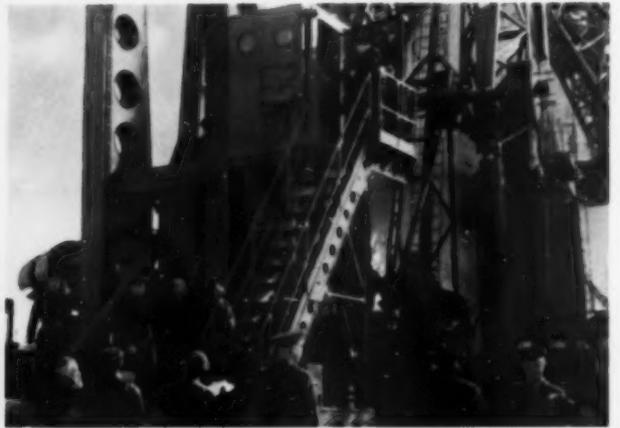
The future cosmonaut accustoms his body to the stress and strain of acceleration on a whirling centrifuge.

Vostok I, the ship that took Yuri Gagarin, the first cosmonaut, to outer space and returned him safely.



Months of rigorous training and preparation for the pioneer cosmic flight with constant examinations by space doctors.

In a few minutes the lift will carry the cosmonaut to the ship, the cabin's hatch will close and the countdown begin.



The future space pilots had to become invred to overload, heat and vibration. Training for weightlessness.

The space suit, a veritable traveling laboratory with complicated equipment, is checked before the take-off.



training that the astronauts were subjected to. Day after day, month after month, our cameramen filmed the spacemen in pressure chambers, on vibration stands and in centrifuges under zero gravity conditions. We photographed them studying astronomy, geophysics, rocketry, space technology—the large body of knowledge that is part of an astronaut's equipment.

We filmed all this because we wanted to show how difficult the road to space was and the courage and perseverance it required from such dedicated men as Yuri Gagarin, the hero of our film.

I find it hard to describe the quality of that very brave man. He would take his seat in the centrifuge with a smile, aware that in a moment he would be whirled around, his blood as heavy as mercury and his body weight multiplied several times. We watched this father of two children smile as he fondled his baby daughter and kissed his wife before leaving for a tough and dangerous training session. We watched him smiling as he rode off to Baikonur Cosmodrome.

He was calm, confident—a confidence rooted in his country's concern for its people and its scientific progress. That is why, addressing the State Commission on the eve of the flight, he declared, "I have no doubt as to the successful outcome of this flight, but if difficulties do arise, I shall meet them like a Communist."

He went into action like a soldier, armed with faith and courage. He was not seeking glory and personal reward; that was foreign to his way of thinking and living. This farm lad, who by dint of hard work mastered a pilot's skills, is a true son of his country.

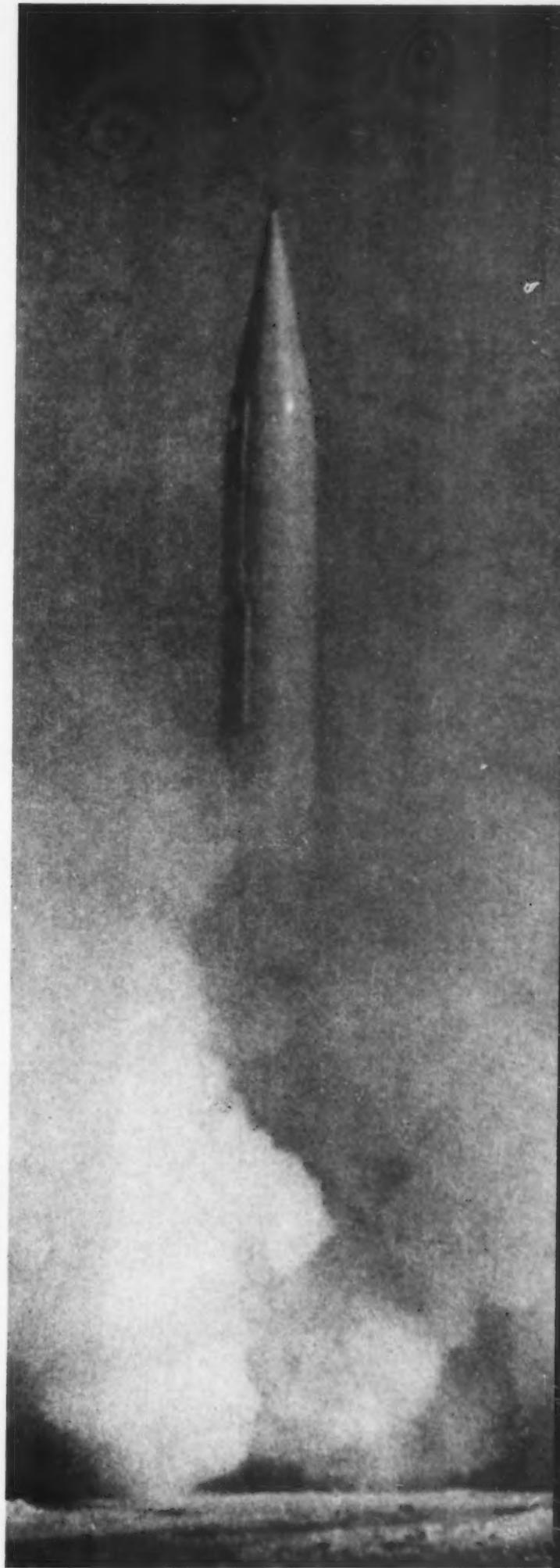
We filmed Gagarin before his flight, when he was known only to his circle of friends and fellow pilots. We also filmed him with the Gold Star of the Hero of the Soviet Union on his breast, being acclaimed by the world. He was always the same modest man with a smile on his lips.

What we hoped to do was to light up our whole film with his smile, to render in cinematic terms the poetry and wonder of that first flight of man into the cosmos.



A final check of the instruments and he is ready to take off. The gantry is removed, the ship freed.

Blast off! The giant rocket shudders and rises from the launching pad. The historic flight begins.





WORLD BIOCHEMISTS MEET

THE FIFTH Biochemical Congress brought 6,000 scientists from 58 countries to Moscow this summer. About half of the living Nobel Prize winners in science are biochemists, and practically all of them were at the international gathering. The Soviet and American delegations were the largest—1,650 and about 1,000 respectively. The American biochemist Dr. David Green gave the plenary report at the opening session—a paper reviewing the most recent findings on the structure and function of cell particles.

The 2,750 papers read provided a view into the fascinating future now being created by advances in

biochemistry. Principles that govern the physiological reactions of the living organism will be applied to industrial chemical plants. A knowledge of photosynthesis will make it possible to extract food products from water and air with the help of sunlight. An understanding of the physicochemical processes that take place in the living cell will provide the key to the cure for many diseases, among them cancer, that scourge which physicians, biologists, chemists and physicists are battling. International exchanges like the congress and the joint work of scientists of many lands will hasten that future.

MOSCOW SELECTS MAYOR

THE Moscow City Council elected a new mayor, Nikolai Dygai, at its last session. The previous mayor, Chairman of the City Soviet, Nikolai Bobrovnikov, had left for a national ministerial post.

The new mayor was born in Rostov Region in 1908. He has been a member of the Communist Party since 1929 and is a construction engineer by profession—one of the country's outstanding men in this field. Nikolai Bobrovnikov was formerly First Deputy

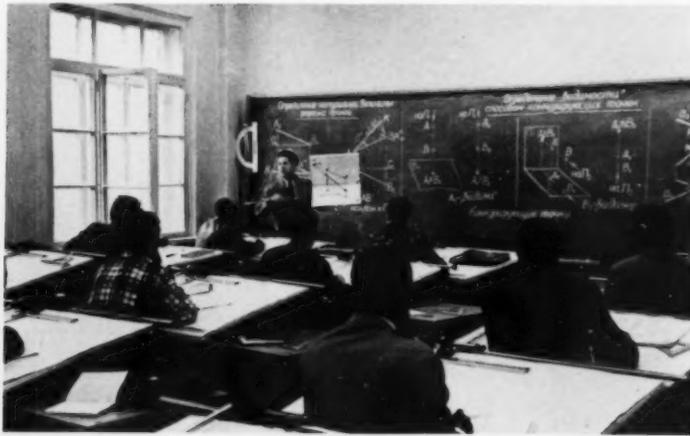
Minister of Transport Construction.

The choice of a building engineer for mayor of the Soviet capital is no accident. Housing construction is—and is likely to be for some years to come—one of the most important activities of the City Soviet. There is no city in the world where housing development is being pushed so hard. The City Soviet and its new head have the big job of providing Muscovites with 130,000 new apartment units annually.



PROUD GOLD NUGGET

BIG GOLD nuggets are not unusual finds these days with mining done with big excavators and draglines and mechanized scrapers and washers—standard equipment in Soviet gold fields. But the nugget in the accompanying photo is so huge it was dubbed the "Gold Giant." It came from the Mikhail Frunze Gold Field on the Kolyma River in Magadan Region, Siberia, and weighed 31 pounds. The mined gold-bearing concentrate is shipped to a factory for extraction, and the refined metal is then sent off to the government treasury.



STUDENTS OF 70 COUNTRIES AT FRIENDSHIP UNIVERSITY

THE PATRICE LUMUMBA Friendship University, founded in Moscow for students from the underdeveloped countries, opened this fall for its second academic year with its enrollment doubled. Newly arrived from 70 countries in Asia, Africa and Latin America were 700 young men and women. They will have a preparatory year of study in the Russian language, physics, chemistry and mathematics, and will then be accredited first-year students of one of the university's six faculties—physics

and mathematics, engineering, agriculture, medicine, history and philology, economics and international law. The lecturers are eminent academicians and authorities in the humanities and the sciences drawn from other universities in the Soviet capital.

The entering students were welcomed by the "veterans" who had completed the preparatory course and had spent the summer vacation in the Ukraine, Moldavia, Georgia and Kazakhstan seeing Soviet life firsthand.

EVENTS AND

WORLD'S BIGGEST POWER STATION

THIS IS the three-mile-long dam of the new hydroelectric station on the Volga at Stalingrad, the biggest power project of its kind in the world. It was dedicated to the Twenty-second Congress of the Communist Party of the Soviet Union.

At the opening ceremonies Pyotr Naporozhny, USSR Deputy Minister of Electric Power Stations, told newsmen: "This new station will generate 11 billion kilowatt-hours of electricity a year at very low cost. To give you an idea how low—we expect to cover all our construction costs in five years. The station will be supplying electricity to the Donbas and the Ukraine generally. Three-fourths of its generated power will be going to Moscow through a 500,000-volt transmission line."

"What effect do you think the project is likely to have on the



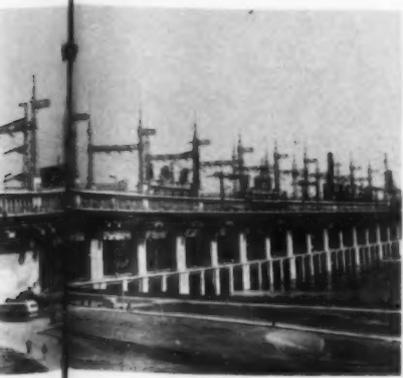
NTS

PEOPLE

POWER STATION IS GENERATING ELECTRICITY

...long dam
...lectric sta-
...Stalingrad,
...ject of its
...was dedi-
...cond Com-
...Party of

...surrounding area?" he was asked.
"An enormous effect. The canal to be dug from the Stalingrad Sea to the Ural River will bring water to tens of millions of acres of arid land. We'll be getting two crops a year from some 6,250,000 newly irrigated acres on one side of the river alone."
"This station is currently the world's largest. Will it be for long, do you think?"
"Not very," the deputy minister answered. "It has a capacity of 2.5 million kilowatts. The Bratsk power station in Siberia, which will have a capacity of 4,750,000 kilowatts is about to start operating. (See story "A Trip to the Country's Tomorrow," p. 10). The Krasnoyarsk station, now under construction, is bigger still. And we're planning a six-million-kilowatt project at Sayany on the Yenisei River."



KAZAKHSTAN ON EXHIBIT

NOT ONLY Kazakhstan's past and present but its future is on graphic display at an exhibition this Central Asian Soviet Republic has opened at Alma-Ata, the capital.

The Kazakhs of czarist times were a nomadic people, with poverty, disease and illiteracy the normal way of life. Since the Socialist Revolution the republic has built dozens of new and modern cities like Temir-Tau, where an iron and steel mill is presently under construction, and Balkhash, the burgeoning center of the republic's copper-smelting industry.

In the exhibition's Science Pavilion are 120 specimens of minerals, including coal and iron, gold and silver, copper and lead, tin and

manganese that geologists have found in Kazakh territory.

The 28 schools of higher education in the republic are training research specialists. Every fifth person is studying. Kazakh scientists are doing research in nuclear physics and probing the secrets of the galaxy; engineers are automating the factories and mechanizing farm work. In the past few years alone 62 million acres of virgin land have been broken to the plow.

The well-being of the population keeps improving with the growth in the republic's economy. More than 400,000 apartment units and hundreds of stores, restaurants, clubs and motion picture theaters have been built in the past four years in this regenerated land.

NEW SHOSTAKOVICH SYMPHONY

DMITRI SHOSTAKOVICH has just completed a new major work, his Twelfth Symphony. American music lovers probably best know his Seventh Symphony, written for the heroic defense of Leningrad, which was performed widely in the United States during the Second World War. The first radio performance of his Eighth Symphony in the Western Hemisphere was sponsored by the U. S. Rubber Company on April 2, 1944. The American National Institute of Arts and Letters elected the world-famous composer an honorary member.

The theme of Shostakovich's more recent work is the Russian

Revolution. His Eleventh Symphony—the Symphony of 1905—recreates in memorable musical imagery the mood of the first Russian working-class revolution. It has been performed frequently by orchestras at home and abroad.

His newest symphony is, so to speak, a sequel to the Eleventh. Its theme is the 1917 Socialist Revolution, and it is dedicated to the memory of Vladimir Lenin. The symphony is written in four parts, to be played without interruption. It had its first public performances in Moscow and Leningrad this fall while the 22nd Congress of the Communist Party was in session.



ZOO SURGERY

THIS TIGER in the Kaliningrad Zoo is named Amur, and he comes from the Ussuri Taiga. Amur had an ulcer in his mouth near one of his canines that gave him—and the zoo people—no end of trouble. The ulcer would seem to close up for a while and then open up again, until it was clear that Amur would have to be operated on—a large-sized job with a tiger as patient.

He was put in a cage—the kind used for transporting big animals—with a hole cut in the side for his head. The zoo veterinarian succeeded in administering a soporific, but even with a dose five times that ordinarily given to people, the tiger only fell into a half-stupor. With great difficulty, the unusual patient was finally laid on his back, his four great paws

tied to the bars of the cage, his head securely clamped, and an anesthetic administered.

Operating surgeons were Drs. Anatoli Pirogov and Ella Melts, chief stomatologist of the Kalinin Region. Osteomyelitis of the jaw had set in as a result of caries in a canine and had eaten right through the bone. The big tooth was completely hollow inside, only the enamel remained. The canine was extracted and the wound cleaned and stitched.

Every once in a while during the operation the half-doped tiger would roar and frighten the assisting nurses half to death. But all told, everything went off smoothly, and Amur doesn't seem to miss the canine. After all, for a zoo tiger it was more ornamental than functional.





Pyotr Seminenko, Yevgeni Loskutov and Maria Shmigora meet with Grigori Duboltsev (center), Chairman of the City Soviet.

DNEPRODZERZHINSK is called the City of Iron and Steel. Its mills, factories, and dwellings spread for ten and a half miles along the broad Dnieper River, the ancient artery of Ukrainian civilization.

This was once a neglected provincial town in prerevolutionary times, with only two schools and no library facilities. Today the city has about fifty schools and eighty-three libraries.

And the old-time civic lethargy and official corruption and incompetence also went out with the czar. Dneprodzerzhinsk is publicly administered in a very real sense. The citizens are working out a new and very promising experiment in municipal government.

Like every other Soviet city, Dneprodzerzhinsk is administered by the City Soviet of

Working People's Deputies, elected for a two-year term. The day-to-day management and supervision of municipal transport, local industry, trade, housing, education, public health and cultural services are relegated to the Executive Committee of the Soviet and its various departments staffed by paid workers.

This is the usual method, and until recently Dneprodzerzhinsk was no exception. Now, however, the setup is somewhat different inasmuch as the inhabitants of Dneprodzerzhinsk have displayed great initiative in the work of city administration for the past three years. Thanks to their volunteer services, the Executive Committee of the City Soviet has been able to reduce its paid full-time staff from fifty to eleven.

But economy, as desirable as it may be, is

not the major consideration here. What is more important is that the people of this city have become an active force in the various sectors of municipal administration through the standing commissions of the Soviet.

Such commissions are not new to the Soviet, of course. But whereas formerly their work was done mainly by elected deputies, today more and more volunteers are doing it. As a result, some of the departments of the Executive Committee have no paid employees at all.

Both the deputies of the Soviet and the volunteers, who are not members of the Soviet, do the work of the commissions without remuneration when their regular workday is over.

The people of Dneprodzerzhinsk have been

THE PEOPLE run the city

BY DMITRI PETROV
PHOTOS BY GEORGI PETRUSOV



What is
of this city
e various
through
viet.
to the So-
erly their
deputies,
doing it.
ts of the
employees
and the
of the So-
s without
orkday is
ave been

performing their duties in aiding the Soviet in its administrative work with great enthusiasm, for each of them regards this as a matter of honor, of civic duty. This is one of the forms of communist self-government mentioned as far back as the time of the Revolution by Lenin, the founder of the Soviet state. In 1918 Lenin wrote that gradually the entire population would be drawn into the work of administering the state. The results of civic self-government on a voluntary basis, so successful in Dneprodzerzhinsk, visibly confirm Lenin's prediction.

We are visiting Dneprodzerzhinsk on a rather special Sunday—special because some 50,000 citizens, a quarter of the city's population, on their own initiative are contributing part of this day toward beautifying their city

—planting trees and flowers, creating new park areas.

We are introduced to Yevgeni Loskutov, power technician and chairman of the Housing and Communal Services Commission. "Our object," he explains, "is not to save money on city improvement by using volunteer labor. The City Soviet has enough money on hand for the purpose; our municipal budget exceeds 14 million rubles this year. The important thing, as we see it, is that people are on their own initiative taking part in such projects, doing the work with their own hands. This voluntary labor for the benefit of all reflects most vividly the characteristic feature of the Soviet people—collectivism."

The commission that Loskutov heads is composed of the 13 deputies elected to the





Housing Commission Chairman Loskutov goes over plans for a new project with the architect.



City Soviet assisted by volunteers, each of whom is responsible for a definite part of the work. Cooperating with the City Soviet, the commission members and volunteers check on the progress of housing construction, the repair and maintenance of dwellings, the gas and water supply, sanitation measures, road repairs, etc.

The commission serves as the vigilant eye of the public, ever on the lookout for ways of making the city a better place to live in, an eye incidentally, much feared by slipshod city officials and apartment building managers unresponsive to tenant needs. A complaint brought in by a volunteer building inspector, for example, gets speedy action from the commission.

"And that's the way it should be," says Yevgeni Loskutov. "Our job is to see to the

comfort of the citizens. We don't tolerate incompetence, bureaucracy, and unnecessary delay. And it's public pressure that gets things done. There's no substitute for active citizen participation, in my opinion."

At City Hospital No. 2 we are introduced to nurse Maria Shmigora, who serves on the Public Health Commission. The commission's function is to supervise the city's health facilities, and volunteer workers contribute in large measure to this job. The members of the commission carefully study the functioning of the city's hospitals, dispensaries and other medical institutions, and make suggestions for improvements.

When necessary, the volunteer workers, public health employees and hospital personnel cooperate on various measures to combat infectious diseases. One of the chief

obligations of the commission is to provide good health protection for children and adolescents. It was on the initiative of the members of the commission, for instance, that steps to improve the infant food kitchens were recently discussed at the plenary session of the City Soviet. The recommendations of the commission, moreover, are binding on all medical workers.

"It's a good thing our people have come to handle all the affairs of the city themselves," said nurse Shmigora. "We're always ready and willing to do everything that has to be done, for we know that we are doing these things for ourselves. We have drawn everyone connected with medicine into the work of our commission. The protection of public health is our main point of concentration, and I think we are doing a good job of



Public Health Commission members Maria Shmigora and Dr. Yakov Guba talk to Nursery Director Shafran.

cooperating with the personnel in the medical institutions of Dneprodzerzhinsk."

Pyotr Seminenko, who teaches at the local vocational school, is chairman of the Educational Commission. Its chief task is to improve instruction, educational work and school discipline for the 25,000 city pupils and students.

In this work the commission relies largely on the aid of the teachers and the pupils' parents. And results are evident. The members of the commission widely publicize in the local press the best and most useful work done in the schools. Ways of developing pupil creativity, polytechnical training, teaching methods, and many other practical questions have been successfully dealt with by the commission members in their day-to-day activities.

Pyotr Seminenko is enthusiastic about the

contributions the unofficial members of his school commission have made. "We've been getting some fine things done," he says. "So have all the commissions—on finance, on trade and public catering, and all the others."

Direct participation in government means added headaches and responsibility for these volunteer workers, but they feel—as do Soviet people generally—that activity in the public behalf brings its own moral satisfaction. Such volunteer workers are treated with respect and admiration in the Soviet Union, for everyone knows that their mission is a noble one. Everyone knows, too, that they are not out for recognition, for personal advantage or privilege. The people know that everything these workers do is done unselfishly and voluntarily with the single aim of serving the

people and improving their well-being.

The public similarly plays an important role in other spheres of municipal life. At some of the city's enterprises, for instance, the pay is distributed by the workers themselves without the aid of cashiers. Each worker checks his name on the payroll, notes the amount of pay indicated, and removes that amount from the stacks of currency that represent the enterprise's payroll. Some theaters have no ticket collectors; many of the public vehicles have no conductors for collecting the fares. Public order has become the concern of the citizens, who no longer need the intervention of the militia.

These are the characteristics of some forms of public self-government, a method born in the Ukrainian city of Dneprodzerzhinsk on the initiative of its population.

BY VICTOR GRISHIN
CHAIRMAN, ALL-UNION CENTRAL COUNCIL OF TRADE UNIONS

MORE AUTOMATION—MORE JOBS

In any country with a highly developed economy the automation of industry and the resulting economic and social problems occupy the attention of the broad public and are a subject of passionate discussion as well as scientific research.

One of the problems which technical progress poses for society can be formulated in essence as follows: Is automation a boon or a burden to the working man? No one can deny that automation is a powerful lever for economic development and that it makes possible greatly expanded production and increased labor productivity, without which a rise in the people's standard of living is impossible. At the same time, depending on the way the economic system of a country is organized and what its social structure is based upon, automation may spell privation for the working people. It can be a disaster for them, inasmuch as it may be accompanied by a cut in employment with tremendous numbers of factory workers and office employees thrown "overboard."

Under the conditions in the Soviet Union, where all manifestations of a developing economy, including automation, are subordinated to the principle of planning, automation cannot lead to unemployment. In the Soviet Union one of the major problems raised by automation is the planned redistribution and most rational use of the labor resources. Much attention is paid to this problem in the USSR, inasmuch as the pace of the economic development of the country and the rise in the people's living standards greatly depend on its solution. It is especially important today since the Communist Party of the Soviet Union, in its Program to be adopted at the Twenty-second Congress, will indicate concrete ways for the Soviet people to advance toward communism, a society where there will be an abundance of both material and cultural values. The Soviet people well understand that the better each person works, the quicker the country will reach its cherished goal.

How are the economic and social problems that are connected with the automation of industry solved in the Soviet Union? What role do the trade unions play?

In this article Victor Grishin, Chairman of the All-Union Central Council of Trade Unions, discusses automation in Soviet industry and its implications for the working people and for the economy.

INDUSTRY AND AGRICULTURE in the Soviet Union are developing under conditions of uninterrupted technical progress. The development of the Soviet economy is based on the broad introduction of the achievements of science and technology in industry, the all-round mechanization and automation of the production processes, and specialization and cooperation in all branches of the national economy. The Seven-Year Plan for the Development of the National Economy of the USSR (1959-1965) is permeated with the idea of further technical progress. It contains a concrete program for the further improvement of production, for the creation in the USSR of a material and technical base for a highly developed economy capable of ensuring an abundance of material benefits for all the Soviet people and the fullest satisfaction of their constantly growing needs.

The technical improvement of production is being effected on an ever greater scale and in all branches of the national economy. Last year 90 per cent of the country's pig iron was smelted in highly mechanized and, to a considerable extent, automated blast furnaces. The metal-rolling industry is also being automated. There are a number of automatic machine-building plants and shops. Automatic transfer lines have been created at many machine-building enterprises.

In the chemical industry considerable automation has been effected in the production of synthetic rubber, alcohol, hydrochloric acid, etc. In the oil refining, coal, light and food industries many processes have changed over to automatic and remote control. All state hydroelectric stations have been automated and most of them transferred to tele-control. At thermoelectric stations the regulation of the combustion processes and the charging of the overwhelming majority of the boiler units have been automated.

Automation is being introduced in agriculture on an ever greater scale. We have experimental automatic tractors, and automatic production lines are being introduced for the processing of grain, the preparation of fodder and other such operations.

The seven-year plan provides for the automation of hundreds of plants, factories and mines, not to mention thousands of shops and units. At the same time the machines and equipment presently in use





are being modernized in all branches of the national economy. The people of our country are very much in favor of mechanization and automation because they know that it means increased production with a higher standard of living and easier working conditions. It goes without saying that the Soviet trade unions are also vitally interested in all-round mechanization and automation.

Contact with foreign trade unions, however, shows that not everyone in the West understands that in the Soviet Union, despite the rapid technical progress and the ever greater automation of industry, the entire population is fully employed. This question arises first of all among the trade union representatives of those countries where there is mass unemployment and where automation is aggravating this problem even more.

In the Soviet Union unemployment was done away with for all time more than thirty years ago. Automation has not changed this fact, nor can it.

One of the most important features of the Soviet system of economy is planning. The national economic plan is drawn up by the state organs with the direct participation of the people. The expansion of production, its technical improvement and provision with manpower, the development of housing construction and trade, the improvements in living conditions and cultural services, and the rise in the living standards of the working people are all an integral part of this plan.

Despite rapid technical progress, the accelerated development of industry and construction in the Soviet Union is in constant need of manpower. The seven-year plan provides for an increase of 12 million factory workers and office employees in the national economy. Needless to say, in addition to these 12 million people many more will be needed to supplement the inevitable loss in manpower due to the retirement of workers and employees on pension. In the USSR such pensions are given to men at age 50-60, and to women at age 45-55. People are also needed to take the place of the hundreds of thousands of workers and employees who leave their jobs every year to study in specialized secondary and higher educational institutions, where they not only receive their education free of charge but also receive stipends.

Another reason for the increased demand in manpower is the shorten-

ing of the workday in keeping with the seven-year plan. This reduction in the length of the workday is accompanied by the preservation of, and even a rise in, wages, especially those in the lower-paid categories. By the beginning of this year the transfer to a 7- and a 6-hour workday was completed, and the workweek now averages 39.4 hours.

According to the seven-year plan, in 1962 the workweek will be shortened by an additional hour on days before free days and holidays, without, of course, any reduction in pay. In 1964 the transfer to a 30-hour week will be begun for those working underground or at hazardous occupations. All others will have a 35-hour workweek. Wages will be preserved at the same level and will be raised according to plan. The carrying out of these measures even under conditions of further automation will call for additional manpower, for in the Soviet Union the reduction in working time goes hand in hand with an uninterrupted, rapid rise in production.

It should be added that in prerevolutionary times the chief source of manpower for industry in Russia was the countryside. Most of the peasants had exceedingly small plots of land and could not extract even a meager living from the soil with their primitive implements. Impoverished and bankrupt, they were often forced to work for the landowner or abandon their farms for factory jobs in the city. The transfer of the land and all other natural resources to the people as well as the subsequent collectivization of agriculture put an end to the poverty in the countryside and to its causes.

Most of the enterprises in our country, especially the construction projects, need more labor. One can see advertisements for workers at almost every railway station and on the billboards in the streets of cities and villages. In the Soviet Union a person does not have to look for work; he is guaranteed the right to work, just as he is guaranteed the right to leisure, education and social security.

Stagnation, depression and economic crises are ruled out in a national economy that develops according to plan. In such an economy automation does not threaten the workers with unemployment. People who are released from their jobs because of the improvement of production processes in one section of industry receive work in another,

frequently at the same enterprise, in view of the expansion of output.

For instance, take Spinning and Weaving Mill No. 2 in the city of Furmanov, Ivanovo Region (one of the oldest and largest textile regions in the country). In 1960 and 1961 much was done there in the all-round mechanization of laborious processes and in the automation of production. As a result, 119 workers in its various sections were released from their jobs. What happened to them? Ninety-four were given work in other sections of this mill, 37 of them filling places left open by retiring workers and 52 at jobs in the machine shop, where qualified workers were needed to expedite the job of further modernizing the equipment.

These textile workers did not have the required skill, but since the release from their jobs was anticipated, special study courses were organized where they were given free instruction in the trades of mechanic, lathe operator and electrician.

Thus the workers lost nothing through this redistribution of labor but rather benefited from it. The most experienced replaced assistant foremen who had retired on pension and now receive higher pay than formerly.

That takes care of 94 of the 119. The other 25 were transferred, with their consent, to other factories in the city which are expanding production and require additional labor. Not one of the people was without work for even a day.

Many such examples could be given. When any enterprise plans to change over to automation, it also takes measures to find jobs for the displaced workers. Whether it is an individual factory or an entire economic area or branch of industry that is involved, everything is decided in a planned way; nothing is left to chance.

Take the food industry, for instance. During the current seven-year plan period about 430,000 workers will be released as a result of automation in this branch of industry. But 2,000 new food enterprises will be built in this period. Although they will have the most modern equipment, it has been calculated that they will need more than 300,000 workers. The existing enterprises will also expand, which means that additional labor will be required. And people will be needed to replace workers who retire or leave for other reasons. The result is that not only will all those workers be provided with employment, but additional workers will be needed.

In our country job placement is one of the most important activities of the economic bodies and trade unions and is decided according to plan. For instance, the seven-year plan provides for radical changes in the fuel balance. Low-calorie and relatively expensive types of fuel, such as the brown coal found in the region not far from Moscow, are being replaced by gas and oil. The extraction of brown coal in the Moscow basin is being reduced, with the result that in the 1960-1965 period 30,000 miners will be released in the Tula Economic Area.

When they were planning to reduce brown coal extraction in this area, the planning and economic bodies simultaneously provided for the construction of 30 new industrial enterprises in the region that would employ about 40,000 workers, more than the total number of displaced miners.

It is true that not all of them will want to change their trades. Most of the miners like their work, and there is the force of habit to consider. Besides, Soviet miners are very well paid and enjoy special privileges. But that is no problem. Those who wish to remain miners can, if they choose, get jobs in other coal regions. The state will pay their moving and travel expenses to the new place, and give them a lump sum in addition. Housing at the new place of work is provided by the state. In 1960 about 4,000 families moved from Tula Region to other parts of the country under these conditions.

The Whole Country Is Studying

The pace of technical progress impels Soviet workers, young and middle-aged, to keep on studying. They know that in our age of automation, a worker must be able to handle modern lathes and machines, precision measuring and control instruments and be able to read technical specifications and blueprints.

The Soviet state is ready and willing to meet every educational need. It organizes courses of all kinds and on all levels. It keeps opening new tuition-free general education schools, technical schools and colleges. Those who study after work enjoy numerous privileges, such as being

excused from working the evening and night shifts, getting additional vacation time to prepare for exams, etc.

Large numbers of people are taking advantage of these educational opportunities. About 8 million workers annually acquire new vocational skills or improve those they already have. About 5 million study after working hours at evening schools and colleges. One out of every four citizens in the Soviet Union is studying, the percentage among workers is even higher.

Census figures show that 39 per cent of the workers have a secondary or higher education; the figure twenty years ago was 8 per cent. It is with this educational background that Soviet workers are entering this period of intensive automation.

The Trade Unions Favor Automation

Soviet trade unions actively participate in carrying out measures for the mechanization and automation of industry. They see to it that the new technology is of maximum benefit to every working person. The trade unions also take part in drawing up plans for the technical improvement of industry which are elaborated by the state and economic bodies. They draw the workers and employees into discussing these plans at meetings of the permanent production conferences elected at every enterprise and construction site.

The extent of active participation of workers in the struggle for technical progress and their interest in modernizing industry can be judged from the increased scope of the innovators' movement in the country. In 1960 about 2.4 million innovators and inventors, mostly factory and office workers, submitted more than 4 million proposals for the improvement of production. A considerable number of these proposals were carried out and saved a great deal of materials, time and money. It goes without saying that the authors of the proposals received proper remuneration. Many factory and office workers, engineers and technicians are members of the USSR Society of Inventors and Innovators and the scientific and technical societies in the various branches of industry organized by the trade unions.

The economic bodies and trade union organizations consult with the workers on questions concerning jobs for those who will be replaced by automatic machines, their re-education and instruction in new trades, so that everyone may benefit from the innovations in production techniques. The plans for technical improvement are corrected by the workers and in their interest.

To protect the interests of the working people, the trade union organization has the final word. In the Soviet Union no worker may be discharged, regardless of the reason, without the consent of the factory, plant or institution trade union committee. Its consent is also required if a person is to be transferred to another job. In labor disputes between a worker and management the factory, plant or institution trade union has the last and decisive word. Should the administrative head of an enterprise violate the labor laws, he is removed from his post on the demand of the trade union. Our country's labor legislation and the active participation of the trade union organizations guarantee that the workers' interests will also be protected when automation is introduced.

The working people of our country are confidently building a new society whose banner bears the words: "From each according to his abilities, to each according to his needs." "Figuratively speaking," Nikita Khrushchev explains, "this society will be like a bowl that is overflowing with the products of physical and cultural labor, a bowl accessible to all. For each—an abundance of foodstuffs, clothing, footwear, apartments and books. That is what we call communism. And in this society each will work according to his abilities, for all and for himself, and people will receive according to their needs. That will be joyous, creative work."

The Soviet people, inspired by their lofty goal, are successfully carrying out the seven-year plan to create an even better life for every working person. In our country we call automation the wings of the seven-year plan, which reflects the significance of automation for the country and the people's attitude toward it.

The automation of industry, which is directed by the wisdom and will of man who has created a planned economy, is a mighty implement in the building of a new society. In socialist countries it paves the way to abundance and a happy life for the workers.

QUERIES FROM READERS

QUESTION: *Who builds the apartment houses in the Soviet Union and how are new apartments distributed?*

ANSWER: Housing in cities and industrial communities is built by the local Soviets at state expense, and by state enterprises and various administrative agencies. The funds of public organizations and, through housing cooperatives, the savings of private citizens are solicited for financing the construction of large apartment houses and rural cottages. Individual citizens also build their own homes with state loans.

Housebuilding in the countryside is proceeding at an equally fast rate. The state farms build homes for their personnel at state expense, the collective farms use their own funds. Some collective farm members build homes using their own savings and receiving help from the collective farm.

Since all land in the Soviet Union is publicly owned, a person who wants to build a house applies to the local Soviet for a plot. He pays nothing for it.

In large cities housing construction is in the hands of special construction agencies of the local Soviet. The Moscow Soviet, for example, has several such agencies whose sole job is the construction of apartment houses and public buildings—theaters, stores, restaurants and the like.

Industrial plants, administrative agencies and housing cooperatives either do their own apartment-building or contract with one of the construction agencies for the job.

Individual home builders can buy prefabricated houses or building materials at lumber yards and in special building materials shops. Industrial plants and offices usually help their employees by providing transportation, materials and technical know-how.

The distribution of new housing is done as fairly and equitably as possible. Priority is given to families living in substandard apartments and those in houses slated for demolition. Then come families with inadequate living space.

The draft of the Communist Party Program sets the task of ensuring every family, including newlyweds, a comfortable apartment within twenty years. Families that need apartments file housing applications with the appropriate department of the local Soviet. The living conditions of the applicant are investigated, and if the request is warranted and the requirements met, it is approved by the Executive Committee of the Soviet. The applicant is then placed on the list. The Executive Committee of the local Soviet approves the list of citizens who are to receive apartments in the new houses, and the lists are posted for everyone to see. All citizens have equal rights to new apartments. The strict observance of priority, while meeting definite requirements, is obligatory for all.

The apartments in houses built by state enterprises and administrative agencies are distributed jointly by the management and the trade union committees. Each of the local trade unions has a housing committee which checks on the housing needs of its membership and makes recommendations for the distribution of new apartments. The recommendations are turned over to the trade union committee of the factory or office for decision which then goes over the list with the management. Both must approve the list.

Priority is given to the best workers. Applicants for apartments in houses built by state enterprises and administrative agencies must also be on the housing list of the local Soviet. The same rule of need applies.

The Executive Committee of the local Soviet has the final say. It can override the decision of the trade union committee and the management if it sees fit. Thus the Soviets in all cases have the decisive voice in housing distribution, an additional guarantee that new apartments will go to those who need them most.

The rent in houses belonging to the Soviets and those owned by state enterprises and administrative agencies are fixed by law. As a rule, they do not exceed 4 to 5 per cent of the family's earnings.



THE OCTOBER REVOLUTION ON POSTAGE STAMPS

BY ILYA ZBARSKY

THE GREAT OCTOBER 1917 REVOLUTION, which set Russia on its socialist course, is the theme around which many Soviet postage issues are designed.

The very first Soviet stamp, issued forty years ago, showed a worker trampling a dead dragon that symbolized the defeated exploiting classes.

A commemorative series was issued for the fifth anniversary of the Revolution in denominations of 5, 10, 25, 27 and 45 rubles. Each of the stamps showed a worker chiseling the anniversary date "1917-1922" on stone.

A pictorial seven-stamp series was put out in 1927 to celebrate the tenth anniversary of the October Revolution. The 3-, 5-, 7-, 8-, 14-, 18- and 28-kopeck stamps depicted episodes in the 1917 struggle of the revolutionary workers, soldiers and sailors for Soviet power. The 18-kopeck blue stamp pictured the people of the Caucasus and Central Asia who, together with the Russian people, were building a new life.

The fifteenth anniversary of the Revolution came at a period when the whole country was stirred by the great goals of the first five-year plan. The commemorative seven-stamp issue, in denominations of 3, 5, 10, 15, 20, 30 and 35 kopecks, bore illustrations of revolutionary scenes as well as of the first giant Soviet industrial projects in construction.

The 3-kopeck violet stamp commemorated Lenin's return from exile in April 1917. He is shown in Leningrad addressing the people from the top of an armored car. The 20-kopeck stamp has a red-purple background and a picture of the big Magnitogorsk Iron and Steel Mill put into operation in 1932.

The twenty-fifth anniversary of Soviet power fell in the grim war year of 1942. It was marked by an eight-stamp commemorative issue—in denominations of 5, 10, 15, 20, 30, 60 kopecks and 1 and 2 rubles—that pictured episodes of the 1917 Revolution and of the war against fascism.

On the thirty-eighth anniversary three commemoratives were put out—two 40-kopecks and a 1-ruble. One of the 40-kopeck stamps showed the people storming the Winter Palace, the seat of Russia's last bourgeois government.

The fortieth anniversary of the Revolution was celebrated with special ceremony. For the occasion 22 new commemoratives and two blocks were issued. The striking multicolored 40-kopeck stamp shows Lenin, leader of the Revolution, against a red flag.

In November 1958, for the forty-first anniversary, a 40-kopeck and a 1-ruble stamp were issued. The 40-kopeck carries bas-relief portraits of Marx and Lenin. In 1959 a 40-kopeck commemorative pictured a November 7 demonstration in Moscow's Red Square. The 1960 commemorative, for the forty-third anniversary, is engraved "Glory to the Great October." The stamp pays tribute to Soviet industry. A sputnik symbolizes the great horizons which the 1917 Revolution opened to the working people of Russia.

ARCHITECTURE

BY YURI TSENIN
PHOTOS BY IGOR VINOGRADOV

WHEN WE SAY every city has its own face, we generally mean its most striking buildings and architectural groupings, the layout of its streets and parks. But the modern city has another face—the ugly monotony of metal, brick and concrete that constitutes its mills and workshops.

How can a city's industrial district be beautified? How dress a shop with its row on row of steel-gray machines so it will please the eye? Soviet architects and industrial decorators have long pondered these questions. With color and modern design they have done much to make factory exteriors less forbidding, in some instances on a city planning scale.

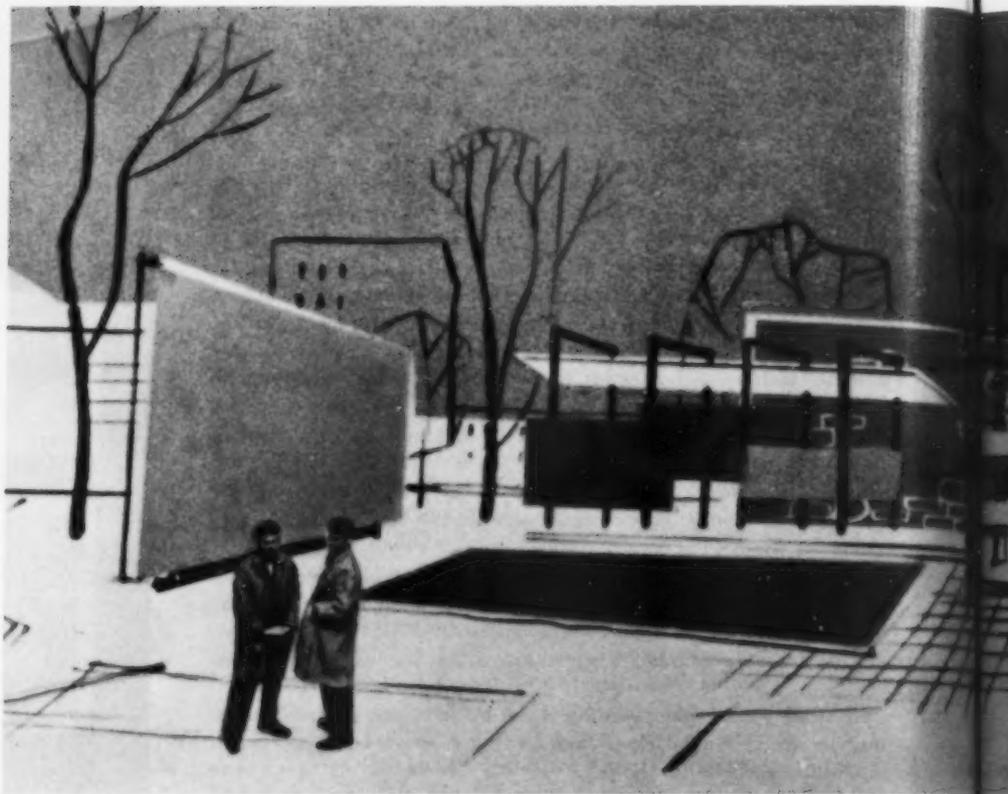
Some time ago I visited Stalinogorsk, a city less than thirty years old. Here were pleasant residential districts set in the midst of greenery, separated from the North End with its big chemical mills, power stations and coal mines by a half-mile "health" belt.

But city planning of this kind, where residential and recreation areas are some distance removed from industrial plants, is only a partial solution of our problem. How about the working environment itself?

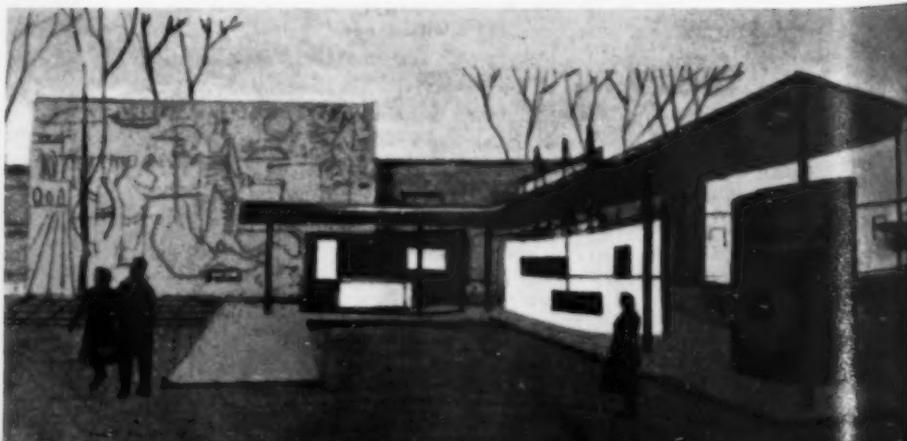
Stalinogorsk interior designers had done an interesting job there, too. I looked into the newly built main shop at the chemical plant. It is a very large shop flooded with light, the floor of white and colored tile harmonizing with the gleaming silvery sides of the converter's sixty-foot cylinders. The collectors and pipes are painted in rich reds, greens and yellows. A profusion of potted plants that soften the steel gray of the automatic machines, and the operators in white smocks completed the picture of the truly modern shop.

The shop was planned by an architect and interior designer working together, the architect's blueprints complemented by the artist's drawings. The sketches were gone over at a meeting of the mill workers who offered suggestions on lighting, machine arrangement and décor.

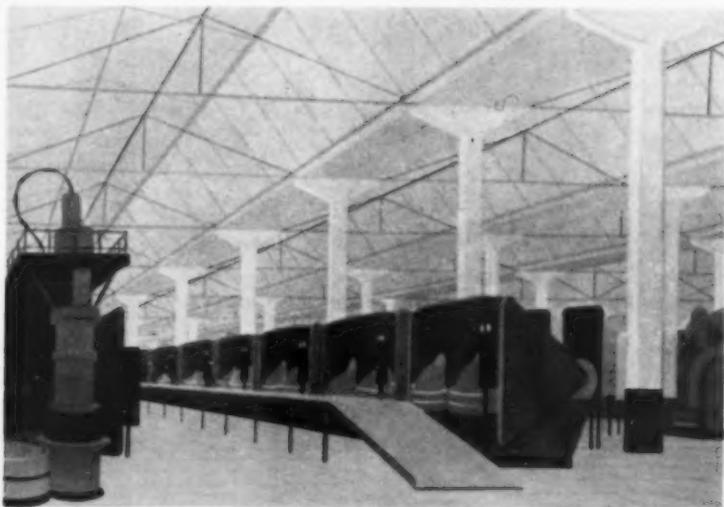
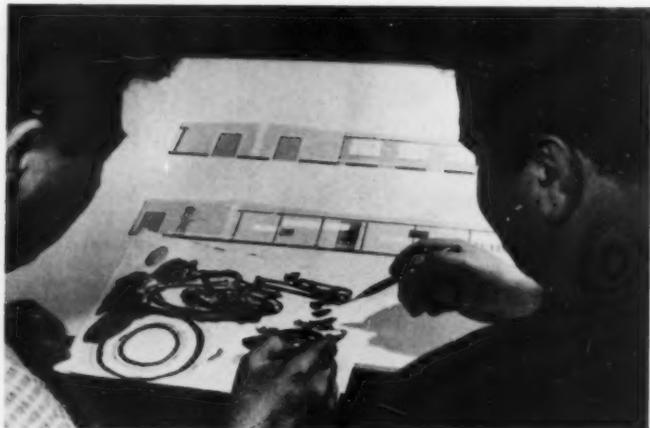
The Stalinogorsk chemical plant is no isolated example. Along with automation, beauty is a must in newly built or modernized Soviet factories. When surroundings are attractive and restful, say both workers and factory executives, productivity is higher.



Studio 7's head Yevgeni Rosenbloom (left) and artist Georgi Lutsky beautify factory interiors.



ECTURE and...



Architect Natalia Roschina (right) and artist Anna Dobroklonskaya work together on the décor of a building materials plant.

A year ago ten large Moscow studios, employing hundreds of decorative artists and architects, formed a combine sponsored by the USSR Artists Union. They design and replan factory and office interiors and grounds for maximum comfort, utility and beauty. They have done a remarkable face-lifting job on some venerable eyesores.

I dropped in at the combine's Studio No. 7, a large, light workroom in a new building in the Southwest District of Moscow. The floor was crowded with drafting boards and models, the walls with sketches. A studio is the one place where clutter and commotion seem perfectly in order. It is in this kind of creative stir and confusion that designs are crystallized and take shape.

I asked to see the person in charge of the studio and was directed to a tall, lean man of forty or so wearing a sweater with the sleeves rolled up. He stood at one of the desks, rocking on his heels with his hands in his pockets, examining a sketch being worked on by one of the men. He made a comment and went on to the next desk. I wasn't the only one who wanted to talk to him, I found out. There were other visitors waiting, not to speak of his own artists. He seemed to be very much in demand.

I was introduced to Yevgeni Rosenbloom, an ex-major in the Engineers Corps and an architect by training, who went into designing interiors after the war. His fine work at large Soviet and international exhibitions won him admission to the USSR Artists Union.

He planned a number of the displays for the Soviet Pavilion at the Brussels World's Fair. Two of the largest sections of the Soviet Exhibition in 1959 at the New York Coliseum, "Science" and "Cosmos," were designed by this gifted man who is a civil engineer, architect and artist all in one—the three professions necessary to successfully solve the problems connected today with interior design.

"We live in a time when people have a real craving for beauty," says Rosenbloom, "and we artists try, wherever possible, to create a more beautiful environment for living and working. Relaxing colors, good proportions and attractive groupings in shops and offices give the people who work in them a sense of peace and order."

... DECORATI

The studio is constantly getting orders from factories and mills for replanning their interiors. Artists spend time on the scene exploring the physical possibilities and limitations. They try to plan a shop so that everything—floor, walls, machines, light fixtures—will please the eye. The most important element is color. Blue, yellow and the lush greens—the colors of nature—have been found to be particularly relaxing.

While working on plans for the interiors and grounds of individual shops and factories, the studio decided to produce standard designs that might be suitable for dozens of industrial plants.

In cooperation with the personnel of the Moscow Krasny Proletary plant, a group headed by Rosenbloom worked out one of these projects. The plant's trade union and Party organization set up a special Methods Council, made up of trade union and management representatives, to help the artists with suggestions. The design was discussed at shop meetings before final approval.

The plan turns the traditional cheerless pathway from the factory gates to the buildings into a bright roadway flanked by stands on which are posted the latest factory news—trade union announcements, orders from the management, club programs, wall newspapers. This at once creates a cheerful yet businesslike work atmosphere.

The plan also calls for a Square of Honor to be laid out on the factory grounds for open-air meetings and celebrations, to be decorated with portraits of the best workers.

A "Before" and "After" Shop

Natalia Roshchina is one of Studio 7's young artists. She graduated from the Moscow Architectural Institute two years ago, became interested in factory decoration and joined the studio. With another studio artist, Anna Dobroklonskaya, she planned the interior decoration for a chemical plant. Natalia talks of the plant as "my plant." She has every right to, I concluded, when she showed me the "before" and "after" sketches of the main shop.

"Before" was a long single-story structure with gray concrete floors and dark walls lined with boilers for colored polystyrene plastics, a mill for rolling linoleum, machines for making vinyl tiles—altogether a pretty cheerless place.



Studio 7's artist Boris Milyukov helped design these very striking ceramic panels for factory club interiors.



ATIVE ART



"After" will be a bright neon-lighted shop with walls of a restful and pleasant pale lavender highlighted by red, blue and yellow plastic wicker benches for the workers.

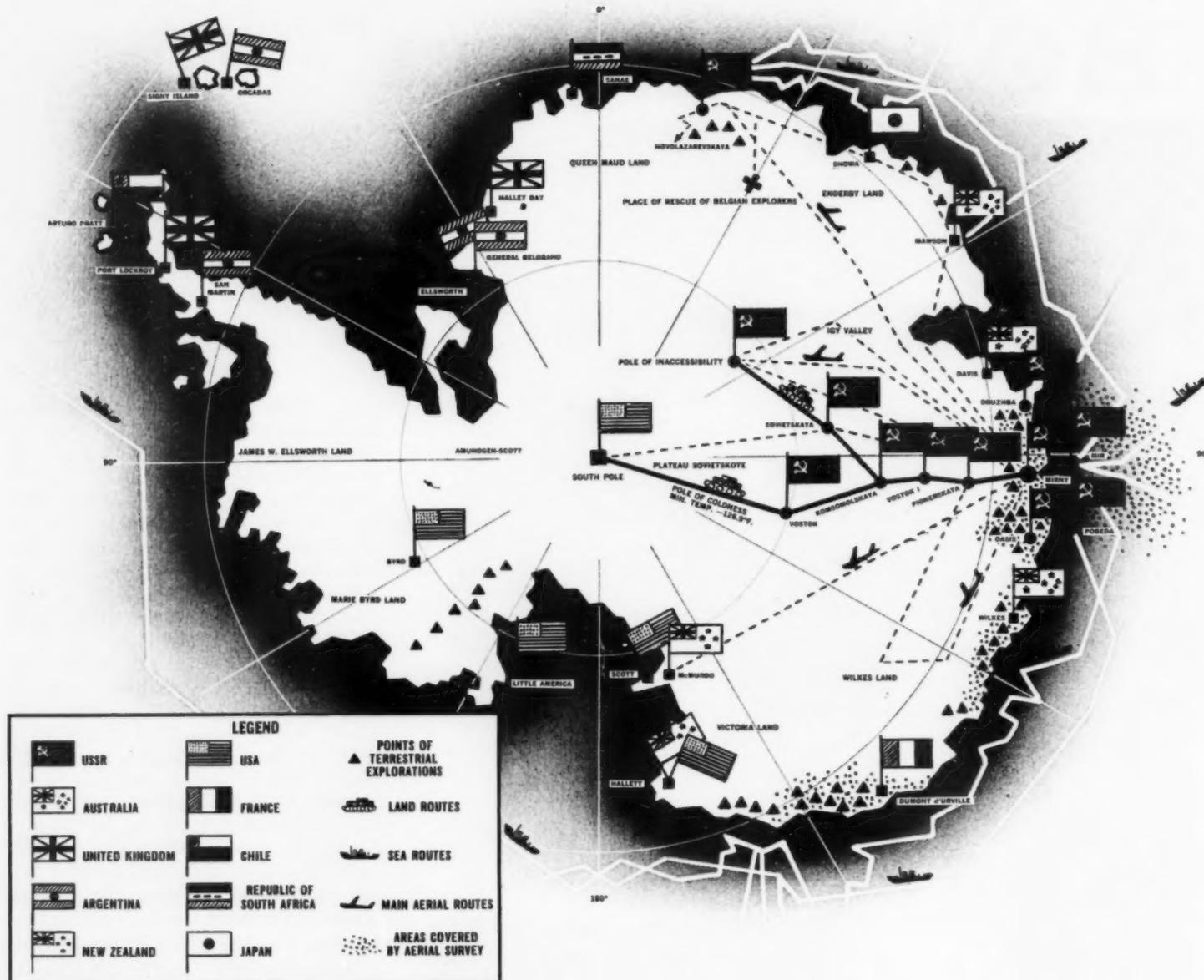
Natalia and the shop manager also redesigned the preparation shop, where the raw and processing materials arrive. They worked out a new and much more efficient unloading system, a storage setup and a sort of conveyor. The renovated shop is tidier, more orderly and much more productive.

Nor did the articles produced by the plant escape the eye of the decorators. Natalia Roshchina and Anna Dobroklonskaya suggested ways of making more artistic use of the natural beauty of the fabric itself in designing linoleum patterns. On their advice also, the color scheme was changed. The result was a better-looking linoleum and less paint used.

The plant is presently building three new shops and Natalia, at the same time, is redesigning the half square mile of grounds and buildings. Her plan calls for the conversion of a large part of the grounds into a recreation area for plant personnel with an artificial pond framed by trees and decorative walls of polystyrene plastic. Fronting the pond will be an open-air café under a large awning, with chess and ping-pong tables nearby and a secluded area for reading.

Natalia has been carrying on a private war against asphalt. She proposes to rip it all up, substituting it with lawns that reach to the very walls of the shops. The approach roads are to be circular, at no point crossing the recreation zone. At one end of the grounds, as far away from the shops as possible, are to be tennis, volleyball and basketball courts. Another corner of the grounds is set aside for the display of the plant's products. The side walls of the shops are to be covered by large, decorative panels and the windows shaded by light-colored awnings.

Factory clubs constitute another large area of activity for decorative artists like Boris Milyukov and Victor Markov, who are planning the interior of a miners' club near Tula. They are using such materials as stained glass, colored ceramics and metal for the lobby and the rooms. They work out their designs, as do all Soviet interior decorators, in collaboration with the architects and builders. Their new approach to this interesting field is bringing joy and beauty to thousands of Soviet workers.



WARM WIND ACROSS AN ICY CONTINENT

FIVE YEARS AGO the warm winds of international amity began to blow across the icy wastes of Antarctica with scientists of twelve countries cooperating in a study of the South Polar regions. These states subsequently signed and ratified an International Treaty on the Antarctic which declares that the continent is to be utilized only for peaceful purposes and prohibits military activity of any kind—the establishment of military bases, the building of forts, the testing of any type of weapon. The treaty specifically bans nuclear testing on the continent and the extraction of radioactive ores. Among the signatories were the USSR, the USA, Great Britain, France, Australia, Chile and Japan.

Recently, representatives of the twelve nations gathered once again, this time in Canberra, Australia, for the first International Conference of Countries Participating in the Treaty on Antarctica.

Reporting on the work of the conference, Alexander Afanasyev, Chief of the Central Board of the Northern Sea Route Administration of the USSR Ministry of the Merchant Marine and deputy head of the Soviet delegation, noted that the participants had unanimously adopted recommendations on cooperation in various fields of scientific research, pro-

vision of material and technical facilities, transport, and the preservation of the fauna and flora of the sixth continent.

The signatory countries also agreed to keep one another informed in detail about all expeditions to the icy continent, stations already set up or to be set up, the personnel of stations and expeditions and their research programs.

Polar expeditions from the participating countries have gathered a good deal of experience these past few years. Explorers have been devising improved types of transport, clothing, food, and living and working facilities for subzero temperatures. They have perfected station supply and radio communication techniques.

To make this experience generally available the conference scientists recommended that a meeting of experts be held to discuss problems of radio communication and to exchange information and experience on material and technical facilities and transport in Antarctica.

Other important proposals adopted concerned the preservation of historic sites on the continent, cooperation on postal service, and mutual assistance for field expeditions.

"GREEN LIGHT TO YOU, FRIEND"

BY PAVEL BARASHEV

A QUIET, gray-bearded man from Santa Barbara, California, was speaking: "I know what war is. . . . In the winter of 1944 I flew a Boeing to bomb the Nazis in Austria. An anti-aircraft shell hit the wing and the plane caught fire. The crew was wounded and couldn't bail out, so I had to make a forced landing in the middle of the night. I was the only survivor. After eighteen months in various hospitals, I came home minus my left foot. Now I have to wear an artificial limb to get around. I certainly know what war is. . ." Vernon Johnson repeated.

He smiled—the smile made him look like Hemingway—then added, "That's why I don't want *them* to have a taste of war."

"Them" are his eight children. Christie, the eldest, is 18; Anders, the youngest, is three.

When all of them started to pour out of the old bus crisscrossed with signatures and greetings in a dozen languages, I thought I had somehow landed in the middle of a big children's party at which gracious Mrs. Anna Johnson, mother of this huge family, was the hostess.

It was wonderful how she managed them all. In the several hours we spent with them the children gave her no trouble to speak of. We commented on it, and she said, "The children help us in every way they can. That is why our trip around the world is not nearly as hard as my husband and I had anticipated."

Mrs. Johnson whispered something in Anders' ear, stroked his flaxen hair, and off he ran to the bus. He came back in a few seconds wearing a sweater he had put on—it had started to rain—and carrying a small plastic bucket in which to fetch water for coffee.

Johnson got the idea of setting off on a mission of peace and friendship around the world in September 1959, when Nikita Khrushchev visited the United States. One day the Chairman's train stopped at the small Santa Barbara station and he walked out on the platform. Among those who greeted him was a friendly bearded man with a winning smile. Khrushchev smiled back and said, "I like you."

"And I like you too," Johnson replied.

He described the incident with evident pleasure, and went on to say, "Two years have since gone by and I'm not disappointed in Mr. Khrushchev. On the contrary. I've come to respect your energetic Prime Minister still more. After meeting Mr. Khrushchev I took out all my savings, bought an old bus, fixed it up and set off on this trip to carry the idea of peace everywhere. It's a year and four months now that we have been living on wheels. I don't have to do much talking about peace to people. The children are best proof of the fact that my family, like the majority of people in my country, is against war."

"What do you think about our country?" we asked him.

"As a builder I was struck first of all by the scale of your housing construction. I haven't seen anything like it in any other country. And, of course, I like the people very much. Your countrymen have written so many kind things on the bus that there won't be room for any more soon."

It was true. The sides of this bus with California license plate MRN 319 and an American flag in the rear window are crisscrossed with messages written in pencil, ink and paint by thousands of friendly strangers saying one and the same thing: "Peace to the world." "Long live the friendship of the American and Soviet people."

And someone had written: "Green light to you, friend."



"Around the World" is the Johnson bus sign.



We're driving through Siberia to the Far East and from there by boat to Japan.

We'll go broke, but we'll be carrying the idea of peace everywhere we travel.





THE SQUARE fronting Moscow University fills with students and teachers of physics and curious onlookers from other departments. The most adventurous clamber onto the pedestals of the monuments to Stoletov and Lebedev, famous names in science. The steps of the physics building are transformed into a stage on which Archimedes and Roentgen, Lomonosov, Einstein and the other great men of science pass in review before a festive audience. For this is no solemn convocation but the annual frolic of Moscow University physics students called "The Birthday of Archimedes."

A flourish of trumpets and the venerable Archimedes—with student Alexander Loginov in the role—makes his appearance and asks the crowd of assembled physicists: "So, my descendants, what have you achieved? Tell me!"

And one after another, representatives of the five courses of the university's Physics Department step onto the stage and report to the father of their science on the progress his Soviet offspring have made.

This year a huge clock of history counted off the centuries as the scientists of all ages came out to greet Archimedes. Lomonosov, the great Russian scientist, after whom Moscow University is named, came riding up from his statue on a rocket followed by strange visitors from other planets who took up positions alongside Newton, Copernicus and Giordano Bruno.

The revel mixes fable with fact, extravaganza with actuality. Last year one of the great men of science whom the students portrayed was Niels Bohr, President of the Danish Academy of Sciences. This year the eminent atomic physicist was there in person, standing beside Soviet academicians Lev Landau and Igor Tamm.

After Archimedes had spoken his last line and left the stage, Niels Bohr addressed the gathering. "My belief in the eventual success of the great work your university is doing," he said to resounding applause, "has been fortified by my get-togethers with your physics students."

The pageant opens with a parade and the arrival of a silver rocket carrying the great scientists of past and present.



The venerable Archimedes mounts the steps to the seat of honor.

THE BIRTHDAY OF ARCHIMEDES

BY VALERI KANER
MOSCOW UNIVERSITY STUDENT

There are more of them here, I venture to say, than in any other school of higher education in the world. The good cheer and humor of your yearly festival to Archimedes is something that my wife and I are not likely to forget soon."

"Eureka!" Archimedes exclaimed three times, and this triumphant cry of all researchers was echoed by the throng of spectators. Then began the carnival procession, led by Archimedes on a blue rocket, holding a torch. Behind him followed men of the future on motor scooters with banners flying. After them marched the great savants, fellow scientists of Archimedes of all epochs and all countries. Then came the academic procession of Archimedes' alma mater, Syracuse University, with third-year students in appropriate costume followed by marching robots, with a great crowd of cheering physicists bringing up the rear.

The parade over, everyone gathered at the University Club where a comic opera, called *Archimedes*, of course—written, acted and sung by the students—was presented. The scene was Syracuse; the time, every century preceding our own; the protagonists, Archimedes and the gods Mars, Venus, Apollo and Bacchus; the plot, the heroic struggle of Archimedes for the triumph of science; the applause, thunderous.

The Birthday of Archimedes presents endless possibilities for fun and inventiveness. Last year the carnival centered on a "Museum of Archimedes" that exhibited the bathtub in which he conceived his great law that an object immersed in fluid displaces its own weight, and a box of the sand in which he traced the design of his ingenious machines. All about the "museum" were placards and cartoons with the theme "Imitate Archimedes." On one of them the Greek ancient was shown doing setting-up exercises.

"The Birthday of Archimedes" is a traditional gala event. Historians and archaeologists may argue the precise day of his birth but not the physics students of Moscow University. For them it is the day they have everything set for the carnival.



Niels Bohr, President of the Danish Academy of Sciences, and his wife attended the gala birthday celebration with Soviet Academician Lev Landau.



The entrance to the Physics Department is transformed into a square in the Greek city of Syracuse.



Beaming with approval, Mikhail Lomonosov greets the gathering.

Almost every student of Moscow University's Physics Department took part in the festival.



Fable and fact mix as a scientist from Swift's *Laputka* takes his place with Roentgen and Einstein.

a Salesgirl

BY ANDREI SAKHAROV

LIDA SERGEYEVA's vital statistics? Twenty-one years old. Unmarried. Saleslady with a salary of 70 rubles a month and the firm conviction that the best in life lies ahead of her.

There are 4,000 salesgirls like Lida working in Children's World, a big department store, and many others like her in Moscow. They hurry to work in the morning, dash out at one o'clock for lunch. Almost all are unmarried and earn 70 rubles a month.

At first glance they all look alike in their gray, black or brown smocks with white collars. They're all of an age—20, 21 or thereabouts. But get closer and you'll feel that you've been gazing through the wrong end of a pair of binoculars. They had looked so small and so much alike. And here they are, closeup, as big as life and all different.

Lida will tell you, "We only look alike. The uniform we wear gives that impression. But each one of us is very much an individual."

Lida became a department store clerk four years ago. She left school in the ninth grade to earn her own living. Not much choice in the matter. Like many boys and girls of her generation, she had lost her father in the war, had suffered all the hardships and privation of the time. Her mother was a hospital attendant, and as the children grew up they had to leave school to go to work. They couldn't afford to study full time but had to earn a living first and qualify for some better position later. Lida went through commercial school and then took a sales job at the Children's World.

From 8 A.M. to 4 P.M. she sells toys. It's not very exciting, this kind of job and this kind of talk.

"No, dear, that toy isn't for you."

"Why do you think it isn't for him? Let me show it to him. Here, let me show you how it works. See how simple it is."

... But a job's a job. "How can anybody get excited about selling toys?" asks Lida.



Lida Sergeeva works behind the doll counter of the big Moscow department store called Children's World.

Each customer requires individual attention. Her job is to find the right doll for each child—and parent.





It would be hard to find a pleasanter place to do evening-school homework than Sokolniki Park.

The break for lunch is long enough to sit outdoors and chat leisurely with a friend.



One of Lida's several extracurricular activities is this wall newspaper put out by the store personnel.

Lida has just graduated from secondary school and is preparing to enroll at a teachers' college.





*She can't understand why people get so impatient.
There's the whole day's news to tell Vladimir about . . .*

*. . . even if she's going to be seeing him that evening after work. Vladimir
is one of the reasons Lida says, "I'm never bored, haven't time for it."*





A world of things to talk about—people and politics, the theater, music, art and, of course, themselves.

The recreation park is very popular with the young people. Lida and Vladimir often go there when the weather is nice.

"I'd get pretty tired of it if I didn't like children so much."

Lida can earn sales commissions that run as high as 10-15 rubles a month, but her feeling is that sales aren't nearly as important as making children happy—even if it means suggesting that the parents reconsider their choice of toys. "It's worth it," she says, "to see the way the kid's eyes light up."

Real Work

Not surprising, is it, that Lida made up her mind to be a teacher. Then she would really be working in a children's world, helping them to grow up and mature. But to enter a teachers' training college you have to be a graduate of a secondary school. And so Lida enrolled in the evening school that adjoins the store. It's attended by so many of the salesclerks that they call it the Children's World School.

Glance into any of the classrooms and you find that almost every girl in the store has decided to become a doctor or teacher or scientist or even a department store manager. When they graduate, they go on to a college or institute for professional training, and their jobs are taken by other girls who repeat the same pattern.

"I'm halfway through and on the way to real work," Lida says. "It's impossible for anyone to be satisfied standing behind a counter when the world's moving ahead so fast."

Last spring she finished her evening school course and received a certificate making her eligible to enter an institute. She had a month's leave with full pay to prepare for her final exams and came to the store only on payday to pick up her pay envelope.

At the graduation party a radiant Lida in a new white dress listened to the congratulatory speech of the school director, danced till the early morning hours, and then greeted the sunrise in Red Square—a long-standing tradition of Soviet high school graduates.

Entrance exams for the teachers' training institute weren't given until the fall, so Lida returned to her job at the store and was immediately swept into a whirlwind of activity. She had to write an article about her graduation class for a youth newspaper. She spoke at a conference of salesclerks and representatives of Moscow's toy factories at which she told the toy executives that if they really wanted to know what children liked and didn't like, they ought to spend a few days behind a sales counter. And she organized some of her shopmates into a group who help take care of children. The girls baby-sit and help mothers with their shopping.

A Talent for Children

Lida and her mother share a pleasant one-room apartment crammed with books on art and music, reproductions of paintings, and recordings. Tchaikovsky is her favorite composer. "When I listen to one of his symphonies," she says, "I forget everything else in the world." She not only knows the music of this Russian composer but has read a great deal about him—his biography, correspondence and diary. She can talk about him for hours. "A wonderful person, he must have been—talented and hard-working." Lida's feeling is that a lazy person can never really be inspired.

You'll see her at the Moscow Conservatory Concert Hall frequently; she doesn't mind waiting in line for a ticket to hear a celebrated pianist or violinist.

Many of her friends are active in various amateur groups—art, dramatics, music. About herself Lida says, "I have no talent." But she has. Perhaps not for art or music, but she has a very decided talent for teaching children. She's demonstrated that at the teachers' training institute. She passed her entrance exams, needless to say. There's a new girl now behind the toy counter at the Children's World Department Store.



SCIENCE AND SOCIAL

WE ARE rapidly approaching the time when progress in science and engineering will make it possible for people the world over to free themselves from monotonous and unrewarding physical labor and the triple scourge of hunger, cold and homelessness; when creative work and the world's cultural wealth will be within everyone's reach.

In the past two or three decades science and technology have moved forward at such a dizzy pace that it is difficult to conceive the limit to man's mastery of nature. It has become possible for us to build the scientific-technical base for a good life for everyone on our globe.

If it were possible to place unlimited quantities of electrical energy at man's disposal in every part of the world, then, given the proper social system, the welfare of every person could be improved immeasurably. At present, however, we generate only enough electric power to give everyone on earth about one-tenth of a standard kilowatt—not very much. With this short supply hard physical labor is unavoidable, particularly in the underdeveloped countries.

But we do have the resources to multiply the present total many times over. The Soviet Union, which has increased its own electric power output 60-fold in 43 years, with an annual increase of approximately 10 per cent, proves the point. With the proper organization of the forces of society, the complete elimination of the war danger, the liberation of the colonial peoples and active assistance to them in building up their own industries, the world's power supply could very quickly be multiplied tenfold.

Assuming the Soviet Union's rate of electric power growth to be true for all countries, we could increase power production 40-fold by the year 2001 and raise the world per capita figure to four standard kilowatts. Population growth could be met by raising the efficiency of power stations, particularly of atomic power stations.

We have very considerable reserve possibilities with the development of fuel elements that burn oil or coal, whose chemical energy can, in theory, be converted into electricity with practically no losses. There are also reserve possibilities in the development of a magnetohydrodynamic generator with a probable fuel efficiency of 60 per cent.

Energy from the Atom

Nevertheless our coal, oil, uranium, thorium and hydropower resources are not infinite. Sooner or later they will be exhausted, no matter how large the present supply.

Controlled thermonuclear reaction would open incomparable potentialities for power. The possibility of achieving such reactions during an atomic explosion is proved by the very existence of the hydrogen

bomb. However, it seemed at first to be impossible to achieve a continuous reaction. Such a reaction generates huge quantities of heat; the temperature in the reaction zone climbs to hundreds of millions of degrees, precisely what is required for the reaction to proceed with sufficient speed and to sustain itself. But with such heat the walls of a thermonuclear furnace, regardless of their composition, would immediately vaporize.

Soviet and foreign physicists have advanced a theory of magnetic insulation which solves the heat transfer problem, but there are many serious difficulties in the way of its practical application during an uninterrupted thermonuclear reaction. New ideas are required and will undoubtedly be forthcoming. For example, physicists are studying relatively new alloys that have superconductive properties and very large magnetic fields. Such alloys will perhaps make magnetic insulation by high frequency fields possible.

We do not know how soon we will learn to control thermonuclear reaction, but the likelihood is that it will be within this century.

The energy released in the thermonuclear process is formed by the transformation of light nuclei—chiefly the nuclei of deuterium (the heavy isotope of hydrogen) and lithium—into the more stable nuclei of helium. The energy of deuterium contained in one liter (1.056 quarts) of ordinary water equals that released in the combustion of 160 kilograms (352.7 pounds) of coal. This means that there is as much energy contained in a volume of 230 cubic meters (300.8 cubic yards) of water as in all the world's annual coal output.

To obtain electrical energy from thermonuclear reaction we would have to build stations of very great concentrated capacity. Would the capacity be limited? It would, in spite of the seeming contradiction. The limit is set by the fact that the high temperatures at which the reaction takes place would overheat the earth's surface and atmosphere.

We estimate that the average earth temperature would rise by seven degrees if the heat released by the thermonuclear reactors equaled ten per cent of the solar energy that reaches the earth. This would be sufficient to quickly melt the arctic and antarctic ice. We would therefore have to confine our production of thermonuclear energy to about five per cent of the solar energy.

But this would mean that we could generate about 12,500 times the amount of power now being produced, so that even if the population of our planet multiplied ten times, we would have 125 standard kilowatts per capita. That is a great deal of electricity, 1,250 times as much per person as there is today.

We should qualify this statement since only about five per cent of the energy we now use is electrical. Therefore, the aforementioned limit

PROGRESS

of thermonuclear energy production will not be 1,250 times the present-day level of per capita consumption of all types of energy but approximately 60 times. But even this figure is tremendous, particularly in view of the immeasurably greater value of electric as compared to thermal energy.

Energy from the Sun

The prospects are even more promising once we learn to convert solar energy into electricity, assuming an efficiency slightly higher than in photosynthesis.

The greater part of the sun's radiation is dispersed and partly absorbed by the atmosphere, and only about 40 per cent reaches the earth's surface. But even if all the heat the earth receives from the sun could be converted into electricity with an efficiency, let us say, of no more than 20 per cent, we would still be able to produce more power than with the maximum use of thermonuclear energy. As little as one-tenth of the energy thus obtained would be enough to provide a world population dozens of times larger than ours with all the electricity it could use.

Solar energy has many advantages, except for the fact that it is so widely dispersed and has to be collected over huge areas. The only feasible way of collecting it would appear to be to cover the surface areas with a layer of light-sensitive liquid or water emulsion, with a thin plastic film on top. A central station would isolate the high-energy product and use it in electric elements, resembling fuel elements, with almost 100 per cent efficiency.

The technical problems involved are extremely difficult and need a great deal of study. Power catalyzers would have to be created to convert the solar radiation into the chemical energy of the reaction products with a sufficiently high efficiency. Green plants have such catalyzers in their chloroplasts that contain chlorophyll. They make it possible for the plant to obtain high-energy, oxygen-emitting organic substances from carbon dioxide and water with the help of sunlight. The efficiency of the photosynthesis process in plants is approximately 10 to 15 per cent. We need catalytic agents that operate on the same principle but with double the efficiency.

With well-organized and extensive research we can solve the problem of solar power. The rewards would be enormous. An irradiation surface of one square kilometer (.38 square mile) would give us an average 22,000 kilowatts of electricity, and in the southern latitudes the figure would be considerably higher.

With electric power in these great quantities we could have an un-



BY ACADEMICIAN NIKOLAI SEMENOV
NOBEL PRIZE WINNER

limited supply of metals. We could transform metallurgy by the wide application of electrolysis and electrothermics and place all the elements in the earth's crust at our disposal. It is not too far fetched a possibility that at some future time we will be able to extract raw material from the very bowels of the earth, that we will be able to drill down to molten rock and guide its flow to the surface like lava from a volcano. We might even be able to obtain ore from the ocean floor.

Alloys of great strength, resistant to heat and corrosion, will be created. As output increases and basic modifications of our methods of producing cement and concrete are made, the variety of inorganic building materials will be considerably enlarged. Quarries opened anywhere will yield high-quality building materials.

The most typical materials of the future will be the polymers, the products of organic synthesis—plastics and synthetic fiber, rubber, leather and fur. All these materials, created by chemistry only in recent years, will largely replace natural materials in industry, construction and the home before the close of the century. They will also be replacing metals to a very considerable extent.

It will really be a technological revolution when we are able to produce inorganic polymers with specified properties. The raw material sources available are inexhaustible.

When we learn to tap thermonuclear and solar energy, our electric power resources will be large enough to enable us to use oil for the most part in the production of synthetic materials.

What all this implies is that with rapid development of new electric power sources we can meet all the material requirements of the planet's population, no matter how large it grows.

With electronics, telemechanics and automation taking over much of the labor, the workday need not be longer than, say, three or four hours, leaving that much additional time for creative expression, sports and entertainment.

In this connection the rapid progress being made in such fields as mathematical logic and computer mechanisms is especially important. The various kinds of machines we see every day relieve man of heavy, manual labor; electronic computers relieve him of mental jobs that are largely automatic—production-line work, traffic regulation, office procedures of many types.

But these electronic mechanisms do more. They are so designed that in a more or less narrow field of application their "memory" and the speed and precision with which they analyze information far exceeds human possibilities.

The computers of the near future will be able to provide information, systemized and partly analyzed, on vast amounts of data fed into them.

This will greatly expand human possibilities for creative effort since the researcher will not have to do the primary analysis of the enormous quantities of factual data that must be considered today in solving problems in science and other spheres of creative activity.

Our Daily Bread

Better cultivation, fertilization and irrigation, not to speak of expanding acreage, could yield a sufficient quantity of highly nutritive food for an even larger world population than we have at present. This could be done easily if countries would pool their efforts.

With efficient agrotechnics and adequate mechanization and moisture we can get about 6.5 tons of dry produce per acre. If the crops are grown for human consumption—grain, for instance—of the 6.5 tons about 2.6 will be edible. For livestock all 6.5 tons can be used with a return of about one-tenth—0.65 tons—in the form of meat, milk, butter, fat and eggs, all of this in dry weight figures.

The normal daily food ration for a man is about a kilogram (2.2 pounds) dry weight. Vegetable food accounts for about three-fourths of the total (750 grams—1.7 pounds), meat and dairy products for the remaining fourth (250 grams—one-half pound). So that in the course of a year a human being requires 270 kilograms (595 pounds) of vegetable food and 90 kilograms (198 pounds) of meat and dairy products. The three billion people on our earth need 881 million tons of vegetable food and 297 million tons of meat and dairy products in dry weight a year.

To grow this quantity—naturally under conditions where people know how to get large yields—would require only 321 million acres of land planted to food for people and another 445 million acres to fodder crops for livestock. All told, this is only 2.2 per cent of the land on our planet—Antarctica excluded. Actually, we would need even less, since the southern regions could grow two or three crops a year.

There is nothing to prevent us, assuming proper agrotechnics and adequate irrigation, from planting as much as 30 per cent of the earth's land to crops. If we generate enough power to water the fields and heat hothouses and learn how to make strong, low cost, plastic film for hothouses and soil covering, we can expand our sowing areas and obtain larger harvests. It is estimated that the maximum yield per acre can be five or six times the 6.5 tons of dry produce previously mentioned.

Two Basic Research Areas

As I see it, we have two fundamental research problems today. The first is in physics—to develop a theory of elementary particles and a field theory. This will give us an insight into one of the best kept secrets of nature, the molecular structure of the universe. Outer space research will play a vital part in solving this problem. In time it should be possible to set up laboratories, staffed with scientists and equipped with the most modern instruments, on giant sputniks and even on the moon.

The second is in biochemistry—to discover the molecular physicochemical principles that govern the processes taking place in the living organism; in other words, the secrets of organic activity. Proteins and nucleic acids are the most important components of living matter, not only quantitatively but for the active role they play in life—in the metabolic process, growth and fission of cells, heredity.

Proteins and nucleic acids are really large polymer molecules containing hundreds and thousands of monomeric groups. In the living organism the processes of the synthesis of the most complicated polymers proceed on quite different principles than those we apply in our laboratories. We cannot make such complicated syntheses.

More than that, there are many other, and simpler, reactions in the living organism that are influenced by catalytic agents called enzymes. These enzymes also work on quite different physicochemical principles than our laboratory catalytic agents to produce reactions we cannot duplicate.

An especially interesting example is the function of biopolymers as transformers of energy—for example, the conversion of the chemical energy released during the oxidation of food elements into the mechanical work of muscles. This is a machine quite different from any man has ever built, and it operates with an efficiency of almost 70 per cent.

Chemists and biochemists have been doing intensive molecular biology research for only a few years. We have the first data on the chemical structure and the external picture, but the mechanisms of the phenomena are still unknown. We must look into the mechanisms of stamping the molecules of proteins and nucleic acids, the catalytic effect of enzymes, the transformation of energy. Present work in this field by scientists all over the world is directed toward finding ways to influence the organism by chemical means, particularly in medical treatment.

Once we learn the physicochemical principles of the vital processes, we will be able to duplicate these processes in the laboratory. Observation of birds in flight helped us to develop the science of aerodynamics and then to design aircraft. Similarly, with a knowledge of the principle behind the functioning of proteins and nucleic acids, we will be in a position to elaborate a general theory on the processes that take place in highly organized matter. With the wealth of chemical compounds at our disposal, we will be able to create catalysts resembling enzymes, but with more potency, to use solar energy more effectively than plants, and to construct machines with more power than muscles.

Creative Work

For real happiness, man must live and work creatively. This is as true for the genius as for the man with ordinary endowments. But if the individual is to free his latent creative forces, he must have a certain level of education, aesthetic taste, and ethical judgment. And as a guarantee that people generally will have an opportunity for the widest possible creative expression there must be a suitable social and political environment.

The creativity of highly trained and gifted individuals will reach full development only if they identify with the people, only if the people are genuinely interested in their creative activity and only if the people's own cultural standards are high.

Note the remarkable efflorescence of sculpture, architecture, drama and philosophy in ancient Greece. A major factor responsible for the eminence of Hellenic culture was the high aesthetic level of its citizens. This accounts, too, for their insatiable curiosity about the secrets of the universe.

The great interest people show in the creative work of leaders in science, engineering and the arts always serves to inspire them. By the same token, it stimulates the creative impulses of the people themselves, inspires them to create not merely material but spiritual values. The talent of an outstanding scientist is enriched by the school he builds around himself and by the engineers and industrial workers who apply his theories. Without a large body of colleagues and disciples, the scientist today, no matter how talented, is hamstrung.

Since anyone who creates spiritual values is a member of the society in which he lives, it will be the society and its structure that essentially determines the direction and limits of his creative activities. Creativity will consequently have the greatest freedom where it is independent of the influence of self-seeking interests, where it is consciously subordinated to the public interest, and where it gets its material and spiritual support from the society itself.

We believe the Soviet social system guarantees the freest creative activity. The communist ideal is to make it possible for each individual to develop and use his creative abilities for society's benefit and his own. Our country is moving ahead at an extraordinary rate in realizing this ideal.

We have built a truly all-embracing educational system. Further, we are constantly searching for ways to improve the system—by stressing the creative elements in the secondary school and college curricula, by setting up evening and correspondence schools directly at factories and construction projects where workers can get higher schooling without giving up their jobs. Not only our scientists and engineers but larger and larger numbers of our factory workers are developing new processes and inventing new machines. With every passing year the labor of our industrial workers and farmers requires less physical and more creative mental effort and takes on richer meaning.

We are striving for a happy, prosperous life for everyone, a life in which every man can realize his creative capacities. This is our ideal of social progress. We find it embodied in the communist society we are building, a social system dedicated to peace, labor, freedom, equality and happiness for all people on earth.

SEQUEL TO THE STORY THE EARTH



Sixty years ago the Ukrainian writer Olga Kobylyanskaya described Dymka village as a dismal, poverty-stricken place. She wouldn't recognize it today.

BY OLEG SHMELYOV
PHOTOS BY VSEVOLOD TARASEVICH

FROM TIME immemorial Bukovina has been Ukrainian country. Its name derives from the beech woods—*buk* is the Ukrainian for beech—that grow thick on its hills and in its valleys. The bountiful sunshine, rich soil and crystal-clear mountain streams all seem to have been created for human happiness, for a free and beautiful life. But those who lived here knew no happiness.

Some sixty years ago the Ukrainian writer Olga Kobylyanskaya pictured Bukovina in her story *The Earth*. The scenes she paints, drawn strictly from life, are cheerless indeed. What different scenes she would witness today!

The village of Dymka that she describes in her story has changed beyond recognition. Where the dismal thatched huts with their tiny windows once stood, there are modern roomy houses open to sunlight and air. Dymka now has its own schools and libraries and, in one of the picturesque spots near the village, rest homes.

The changes are all of Soviet vintage. The Soviet Government gave the farmers land and helped them buy new farm machinery. The villagers of Dymka and other farmers in the surrounding countryside formed a collective farm and named it after their favorite writer.

The Olga Kobylyanskaya Farm is a flourishing collective enterprise. Its cattle herds and field and garden crops bring in high profits.

The once destitute peasants of Bukovina are prosperous today. Along with all the other Soviet people they are building a new communist society, a society of abundance of spiritual and material wealth for everyone.

A glance into Kobylyanskaya's book is instructive today. There is the past, long forgotten but for her poignant descriptions. The present we see through the camera eye—the sequel to her story *The Earth*.





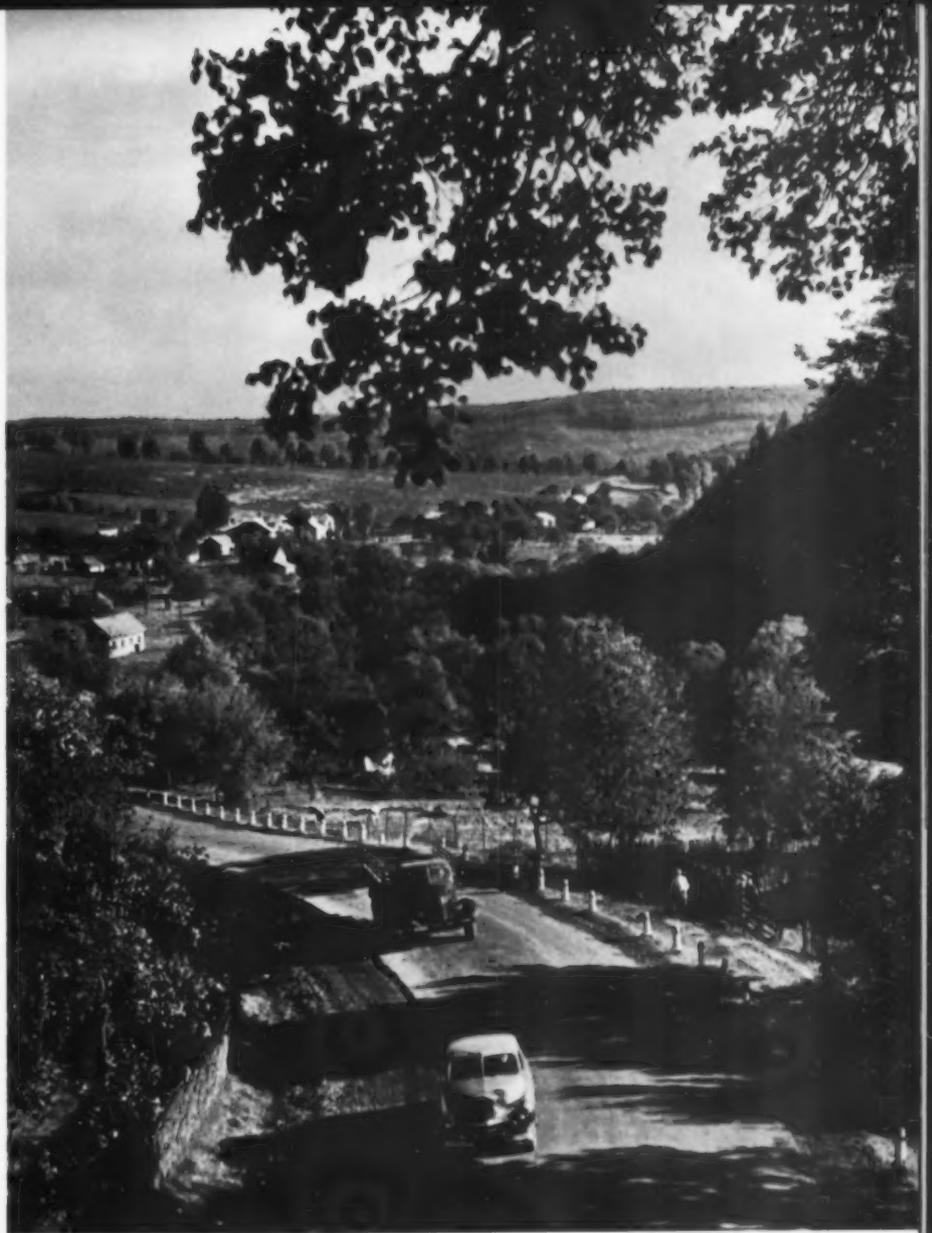


T
cr

and
ty



The villagers now use tank gas for cooking. Their cottages are a far cry from the bleak thatched huts that Kobylanskaya wrote about.



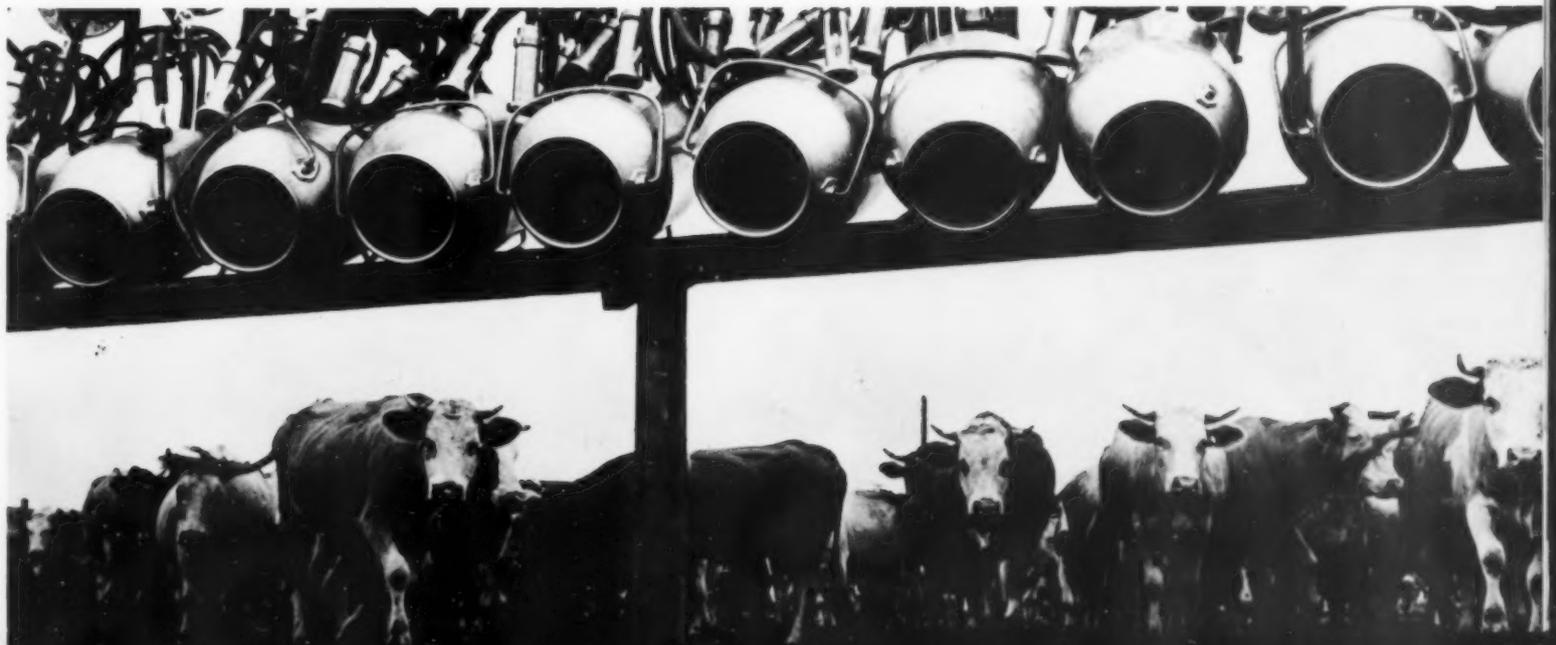
This was a dirt road the villagers used to tramp looking for work to keep body and soul together.



The farmers no longer have to fight these bogs with their bare hands; machines do the work.

andles went out a long time ago when electricity came in—except for birthday festivities.

Kobylanskaya paints a cheerless picture—a dim memory now—of squalid barns and lean cattle.





A Dymka family with ten strapping children. Infant mortality was once incredibly high.



Physicist Kornei Tovstyuk would probably have been an illiterate Dymka peasant 60 years ago.

And Vanda Pavlovskaya, a college trained agronomist, would have learned only housework.





Vacations used to be an unheard of luxury for peasants. Now Dymka farmers spend their holidays at the farm's rest home.



The Chernovitsy State University, housed in a former palace, is where the young people of Dymka get free higher education.



YEVGENI YATSKO

Team Leader at a Textile Mill

I ENROLLED at the people's university to learn as much as I could about the theater and other arts. I'm interested in dramatics and take part in the amateur plays of our People's Theater. At the classes I learn about the theater generally and the actor's and director's craft as well. I lead the dramatic group at the mill and direct one-act plays. I feel, however, that I lack knowledge and experience, and that's what I get at the university.

GETA LYUBENKOVA

Music School Student

I DO NOT attend all the music classes at the people's university because I am familiar with much of the material covered from my school lectures. At times, however, I find the classes very helpful. The lecturers and performers are usually teachers and students from the departments of our school, and we always find listening to them worthwhile. We try not to miss any opportunity to increase our fund of musical knowledge.



YEVGENIA ZOLOTOVA

Director, Chernovitsy Drama Theater

WHEN we theater people organized the Drama Department two years ago, we were not quite sure about how listeners would react to our lectures. As the dean of this department, I was particularly concerned. Our anxiety, however, proved to be groundless. The people in our city have a very genuine love for the stage. For our first lecture, on the origin of the theater, we had a packed hall, and our audience grew as we went along.



People's UNIVERSITY OF

THE CHERNOVITSY People's University of Culture in the Ukraine holds classes twice a month. They are attended by more than a thousand factory and office workers, teachers, engineers, housewives and pensioners. Each person takes the course he prefers—music, literature, the fine arts or the performing arts.

The Chernovitsy University of Culture, which is two years old, is one of 7,000 in the country with a combined enrollment of 1,500,000 people.

How did these universities get started? Why are they so popular? How do they function? What are the students like?

All of them originated in much the same way, as a result of popular initiative. The Chernovitsy university is the brain child of teachers in the local schools of higher education—artists, actors and musicians. They sensed the eagerness of people for cultural background, for a

more appreciative understanding of the beauty to be found in the world around them, drew up a course of study and began teaching. There are no fees for classes. The only prerequisite is interest.

The day of our visit, the Music Department was conducting its classes, as usual, at the town's music school. We sat in at lecture-concerts on Beethoven and Mozart.

Vladimir Bedusenko, pianist and music teacher, gave the talk on Beethoven's life and work. It was apparent from the questions that the audience was most interested in the great composer's symphonies. Thereupon, the instructor suggested that the class listen to his Fifth Symphony and then analyze his characteristic musical style.

A tape recording of the symphony was played. We found the audience reaction fascinating. Some of the people followed the music with

OLGA GULIA

Professor at Chernovitsy University

THIS IS the second year I have been teaching the history of literature at the people's university. When I see how closely my students follow my lectures on Shakespeare or Rolland, I can't help but feel elated. It is a wonderful thing to see these young and middle-aged people so interested in literature.

I am always bombarded with questions after a lecture, and the more questions, the more pleased I am.



STANISLAV MAK

Physical Training Instructor

I AM GOING to music classes at the university because I think every person should have an understanding of music, art and literature, and not only understand but learn to love great art.

I look forward to every lecture. I'm very much interested in learning the structure of a musical composition and about the instruments. I get all this in the course I'm taking. When it ends, I plan to take classes in the Fine Arts Department.



"What is happiness?" Anatoli Radchenko shares his ideas with the class during a discussion of Arbuzov's *The Irkutsk Story*.

FCULTURE

BY SERGEI ANDREYEV

PHOTOS BY ALEXANDER MOKLETSOV

a score and, judging from the occasional movement of their hands, were conducting the orchestra for themselves. Others listened with heads bent and eyes covered, as though trying to block out all other sounds and impressions. Some were obviously making an effort to understand and like classical music.

The illustrative part of these lectures is not confined to recordings. Every so often live performances are given by musicians from the regional symphony orchestra and by talented music school students—pianists, violinists, cellists and vocalists.

The music courses consist of 24 one-hour sessions. This year the university is offering "Forms of Musical Composition" and "How to Listen to Music" for the beginner, and for the more advanced listener a series of lecture-concerts on the work of Glinka, Tchaikovsky, Scriabin,



These students have stayed after class to show their work to artist Boris Kupnevsky, the instructor, and get the benefit of his expert criticism.

Rachmaninov, Chopin, Liszt, Verdi and other great composers.

Yura Gina, acting dean of the university's music department and director of the town's music school, told us, "We always include material in which our students are especially interested—'Ukrainian Music of the Nineteenth and Twentieth Centuries,' for example. On the centenary of the death of the great Ukrainian poet Shevchenko, in response to popular request, we scheduled a lecture-concert of his favorite music and its influence on his work."

The university's art classes, held at the town's House of People's Art, are taught by professors from the Chernovitsy State University and professional artists. The course material covers Russian, Ukrainian and West European classical and modern art. The lectures often result in heated debates on criteria for the beautiful in art and in life.

Included in the course of study is collective discussion and criticism of art work done by the students themselves. Many are ardent amateur painters, and professional artists help them master the techniques of the craft. Boris Kupnevsky, chairman of the local Artists Union, teaches drawing and composition; Vladimir Semankovsky, portraits; and Irina Beklemisheva takes her class outdoors for landscape painting.

Literature classes are held at the Chernovitsy State University. They include lectures on trends in Soviet and foreign literature, book discussions, meetings with writers, and writing workshops. Philologist Anatoli Volkov, head of the department, told us, "Our students want a deeper understanding of the books they read. They all are familiar with the work of Sholokhov and Hemingway, for example, but what they want

to hear discussed is why and how their books were written, the world outlook of these authors."

Nearly all the members of the town's amateur dramatic groups, besides people who just like the theater, take the university's drama courses. There are lectures on theater history, visits to dress rehearsals and first nights and, for budding actors and directors, classes in stagecraft held at a professional theater.

Professor Leonid Chernets, the people's university rector, says, "Our students keep coming to classes not because they have to, but because they are interested. It proves to us that we are doing a necessary and useful job."

The work these universities of culture are doing is indeed useful and important. Founded by popular initiative, they are unique centers for aesthetic development of the general public, for educating the new man, who will be richly endowed spiritually, morally and physically. The new Program of the Communist Party of the Soviet Union, in the section devoted to the "All-round and Harmonious Development of the Individual," lays great stress on this very point. Soviet society, it notes, has reached a level of development where each of its members is guaranteed a free and equal choice of vocation. As the productive capacity of society grows and less and less time needs to be spent on the production of material goods, the individual citizen has more time to develop his abilities and talents in science, technology, literature, music and the arts. People will have increasing leisure for civic participation, physical development, cultural interchange and artistic endeavor.



THE PLAYS OF ALEXEI ARBUZOV

BY LEONID DUGAN
DRAWINGS BY ALEXANDER VYSOTSKY

ALEXEI ARBUZOV writes about young people. The major characters in his sixteen plays staged to date are all Soviet young men and women of twenty or thereabouts.

Granted that this time of life when a young person is finding himself—choosing a career, falling in love—is wonderful play material. Nevertheless, people ask this very talented dramatist who has been writing plays for three decades why all of them are about youth.

"First," answers Arbutov, "because I was young myself and I know what it's like. Second, because when you write about young people, it helps you to forget that you are no longer young. Third, and most important, because I'm in love with youth. And when you are in love, you want others to be better and you do all you can to make them see and understand what you yourself have seen and understood, to teach them, without tedious moralizing, the things you yourself have learned. The time to do that is when a young person begins to strike out for himself, when he's on his own for the first time."

The trials and temptations, the ups and downs, the experiences of the young on the way to becoming what they will be—this is the recurring theme of Alexei Arbutov's plays, whether serious or comic.

Tanya

It is the subject of his *Tanya*, written in 1938. To create his heroine, Tanya Ryabinina, in the round it was not sufficient for Arbutov to imagine the character; he had to see her in life, and not only one Tanya but three, each one showing a different face but each one with the unmistakable mental and emotional features of Tanya.

In Act I his heroine believes in "Love, nothing but love!" She turns her home into a haven of love, isolated from life. Her husband, Gherman, begins to feel that all the things that make up his life—work, friends, ideas, dreams—are being choked in the close and narrow confines of his home. She loses his love.

In Act II her cry is "A child, nothing but a child." She gives herself up to motherhood in as all-encompassing a way as she did to love. But her child dies, and her life is once again shattered. Love and a child are big things, the playwright is saying, but they are not all there is to living, nor are they mutually exclusive.

"Work, nothing but work!" Tanya cries in the third act. She throws herself headlong into work, trying to forget everything else. But here, too, she comes to grief. Just as love divorced from life takes its revenge, so does work divorced from love.

Love, work, motherhood sustain one another; they are indivisible parts of living. This is what the play teaches.

"When I wrote *Tanya*," Arbutov says, "I realized what the function of a playwright really is. If we can draw two or three real and completely defined characters, we can help many people understand themselves. It seems to me that all the plays I have written are really parts of the same play, each new one saying things that I left unsaid previously."

Years of Wandering

Years of Wandering (1954), *The Irkutsk Story* (1959) and Arbutov's other plays are variations on the Tanya theme. While Tanya picks out a single segment of life and tries to lose herself in it completely, Vedernikov in *Years of Wandering* wants everything. He has convinced himself that there are no obstacles he cannot surmount. That these obstacles are humans he destroys in the process does not trouble him. Tanya is the cause of her own unhappiness. Vedernikov causes the unhappiness of everyone around him—his mother whom he forsakes; Galya, Lyusya and Olga whom he deceives; Lavrukhin, whose life he ruins.

Vedernikov is a medical researcher working on a new drug. It is wartime, and every moment could mean the life of a wounded soldier.

But Vedernikov plods on alone, shuns help from others because to take it might mean sharing the credit for the discovery.

In the last act life catches up with him. He has abandoned Lyusya, the woman who loves him. He has let his mother die without a sight of him. Now, when he needs the sympathy and support of a friend and the tender love of a mother, he is alone in this empty world.

The Irkutsk Story

Arbuzov's most recent play is *The Irkutsk Story*. The plot is built around a real incident which occurred at the construction site of the Irkutsk Hydroelectric Station told him on a visit to Siberia.

"I had seen it happen before," he explains, "the way love changes people. Here is a man whose finer qualities, choked by various circumstances in his life, are suddenly freed to sweep away everything mean and petty. I wanted to portray characters moved by a deep and very real passion, one that would make people say, 'So that's what it can be like—it's poles apart from the love I know.'"

Valya, a cashier in a grocery, whom people consider a superficial, self-centered person, marries Sergei Seryogin, a serious minded excavator operator, very highly thought of by his comrades.

How could a person like Sergei tie himself to such a shallow girl? Because love to Sergei meant faith and understanding. He had seen past Valya's superficialities to the real person. He wanted to help Valya find herself.

He writes to her, "I suppose you don't care anything about yourself, or about anybody else for that matter."

It was true. "I get bored with people very quickly," she told him.

But somehow she does not get bored with Sergei. She does not believe in love. "Love," she protests, "isn't for the likes of me." But still she wants to be with him. Sergei helps her to see into herself, to discover feelings and depths of character she had refused to admit existed. "I love you very much, Seryozha," she tells him, but only after they have been married for some time. "Do you know why? Because the more I learn about you, the more there is to learn. Do you understand?"

Her happiness is short-lived, however. Sergei drowns while trying to save children who have fallen into a river. She is left with an infant on her hands. Her husband's friends bring her "Seryozha's salary" every month which they have earned by doing extra work. Valya is deeply moved. She is not alone, there are people who care for her.

But she does not want to feel dependent on others. She remembers Sergei telling her about a girl on the Volga in command of a whole ship's crew. It was his dream that Valya would mature to the point where her life would take in more than himself and their child, where it would encompass the whole world of productive work that meant so much to him. Out of love for Sergei and to honor his memory, Valya takes his place behind the wheel of the big excavator.

Sergei says to her at one point in the play: What does a man need to be happy? He needs for his work to be just a little bit better than he is himself.

Valya: What do you mean? I don't understand.

Sergei: You see, if a man does good work, work that's needed, he becomes better than he was.

The main idea of the play is expressed in these words.

At a discussion of *The Irkutsk Story* held at the Vakhtangov Theater in Moscow, director Ruben Simonov characterized it as a study of "the birth of new relations between people, relations based on friendship, trust and mutual help. It is a study of poetic love. This is a play in which the director has something to direct, the actors have something to portray and the spectator has something to see. It has that essential ingredient of drama—man's character in the making."

Five Plays in Progress

Alexei Arbuzov's plays are so popular that in 1960 they were shown in 50 of the country's theaters.

Asked about work in progress, Arbuzov says, "I've thought up more plays than are good for me—five of them, and they get in each other's way. I'm trying to write them simultaneously. When I get tired of one, I take a rest by working on another."

His working methods?

"I work four to five hours a day, then put aside what I have written, to do tomorrow what I could have done today. I never reread in the evening what I have written that day. I leave this pleasure—or chore—for the next morning when my eye is sharper and my brain is better equipped to pick out rough spots. I still consider, though, that I work from morning to night, for roaming the streets, talking to people, observing and thinking are all work for the writer."

Alexei Arbuzov is a provocative and thoughtful playwright who wants the stage to make audiences "think harder and feel more." He demands "for the theater of this latter half of the twentieth century cogency and poetry." These are the two most striking elements of his own plays.



Yulia Borisova in the role of Valya in the Vakhtangov Theater production of *The Irkutsk Story*.



Vladimir Solovyev as Lavrukhin in *Years of Wandering*, staged by the Leninski Komsomol Theater.



Yelena Rastorguyeva in the role of Savishna and Nikolai Malyshev as Semyorkin in Six Beloveds.



Anna Gunchenko and Yuri Yakovlev, the leads in the Vakhtangov production of The City at Dawn.



Maria Babanova in the title role of Tanya, the earliest Arbuzov play about youth's problems.



People's Artist of the Russian Federation Mikhail Astangov as Karetnikov in The Twelfth Hour.

BY EDWARD SARATOV

SOVIET READERS OF AMERICAN BOOKS

DO YOU KNOW our literature? . . . Which of our contemporary American writers are most popular in the Soviet Union? . . . What books by American authors can be bought in your book stores? . . .

I was plied with these and similar questions by Americans during my year as an exchange student at Yale. And my replies invariably evoked surprise and skepticism. My American friends found it hard to believe that Soviet people know so much about American literature.

Books by American writers stand high on the list of translated fiction in our country. As many as 243 titles by American authors have been published during the 43 years of Soviet government. Moreover, these books have been translated into 50 of the languages spoken in the Soviet Union and published in a total of 100,220,000 copies.

Low Prices and Large Editions

The eight volumes of the recently published *Collected Works* of Jack London in a handsome hard-cover edition cost eight rubles 80 kopecks—about ten dollars. Low prices and big editions make books accessible to the large reading public. Editions of the works of O. Henry, Upton Sinclair, Mitchell Wilson, Erskine Caldwell and Ernest Hemingway are bought up as soon as they appear in the bookshops. Hemingway is a favorite with Soviet readers for his consummate skill as a story-teller and his unique ability to convey emotion without ponderous moralizing. A two-volume edition of his works was published in 1959. John Steinbeck is also widely read.

As for Jack London, no other American writer can begin to compete with him for our readers' favor. His stirring, romantic tales of strong-willed and courageous men fighting nature single-handed are especially beloved by Soviet young people. Jack London's books have been published in 704 editions in a total printing of 22 million copies. After him comes Mark Twain, with 12 million copies; and Theodore Dreiser, with more than 11 million.

In the past few years the State Literary

Publishers and Foreign Literature Publishing House have increased their editions of American literature. The State Literary Publishers put out a 12-volume edition of Dreiser's *Collected Works*, the *Selected Works* of Edgar Allan Poe, a two-volume O. Henry, *Main Street* and *Babbitt* by Sinclair Lewis, and eight volumes of the new 12-volume edition of Mark Twain's *Collected Works*, the largest ever issued in the Soviet Union or anywhere else.

The Foreign Literature Publishing House listed 74 titles by American authors in its 1960 catalogue. Included were William Du Bois' *Ordeal of Mansart*, Benjamin Appel's *Fortress in the Rice*, Millard Lampell's *The Hero*, and an anthology of poetry, *I Hear America Singing*.

Still Larger Editions Needed

Interest in American books has grown so much in the Soviet Union that even editions in the many thousands are insufficient to satisfy the demand. Varvara Volkova, who heads the Nekrasov Public Library—one of the 400,000 in the country—says: "In the past two or three years the demand for books by contemporary American writers has increased noticeably. We are asked to hold more frequent discussions on American novels. To help our readers orientate themselves, we have drawn up annotated lists of the best American fiction published since 1945. Included are Ernest Hemingway's stories; John Steinbeck's *The Pearl* and *The Grapes of Wrath*; Erskine Caldwell's short stories 'Savannah River Payday' and 'Saturday Afternoon,' and the novel *Georgia Boy*; John Killen's *Youngblood*; William Saroyan's *The Adventures of Wesley Jackson*; Albert Maltz's *A Long Day in a Short Life*; Sinclair Lewis' *Kingsblood Royal*; and William Faulkner's stories."

Readers of American prose and poetry in the original visit Moscow's Foreign Literature Library in ever-growing numbers. Some 20,000 English-reading subscribers borrowed books in 1960. The library receives five or six thousand books by American writers yearly. Of its 226,000 volumes in the English lan-



The permanent display of American books at the Moscow Foreign Literature Library is changed every month.



A two-volume edition of Ernest Hemingway, printed in 300,000 copies, sells for only 3 rubles 90 kopecks.



Upton Sinclair's novel Jimmy Higgins, issued in a 300,000-copy edition, was priced at 63 kopecks.



Theodore Dreiser's collected works in a 300,000-copy edition. The 12 volumes cost 14 rubles 40 kopecks.

guage, more than 113,000 are by Americans.

The library has had several get-togethers of Soviet readers with American writers—William Du Bois, Shirley Graham, Erskine Caldwell, Mitchell Wilson and others. It arranges monthly reviews of modern American literature and exhibitions in honor of such masters of the language as Mark Twain, Walt Whitman and Edgar Allan Poe. So do most other libraries in the country.

The Soviet people's interest in American literature is explained by their desire for firsthand knowledge of the American way of life. They want to know more about the men who fought valiantly for the freedom of the colonies under the banner of the Revolution, built modern industrial cities, were our allies in the struggle to rid the world of the fascist menace, and produced splendid works of literature and art.

Publishing Plans

This year Soviet publishers will be getting out the rest of the Mark Twain 12-volume edition, Stephen Crane's *The Red Badge of Courage*, Irving Stone's *Lust for Life*, Philip Bonosky's *Burning Valley* and *Magic Fern*, Harriet Beecher Stowe's *Uncle Tom's Cabin*, Albert Maltz's *The Cross and the Arrow*, and a collection of stories by Ambrose Bierce.

The Foreign Literature Publishing House is preparing a Russian translation of the William Faulkner trilogy *The Hamlet*, *The Town* and *The Mansion*; Ernest Hemingway's *Across the River and into the Trees*; a volume of *Best American Stories*; and the poetry of Carl Sandburg, Robert Frost, Langston Hughes and others. Yelena Romanova, noted Soviet scholar, has begun work on an anthology of American poetry.

The magazine *Foreign Literature* this year serialized Mitchell Wilson's new novel *Meeting on the Far Meridian*. The editors received Wilson's book in manuscript so that Soviet readers were the first to see it. The same magazine will be publishing several chapters from Hemingway's forthcoming *The Dangerous Summer*.



O. Henry's short stories, published in a two-volume 150,000-copy edition, priced at 1 ruble 63 kopecks.



An edition of Mayne Reid's collected works was printed in 300,000 copies. The six volumes sell for 9 rubles.

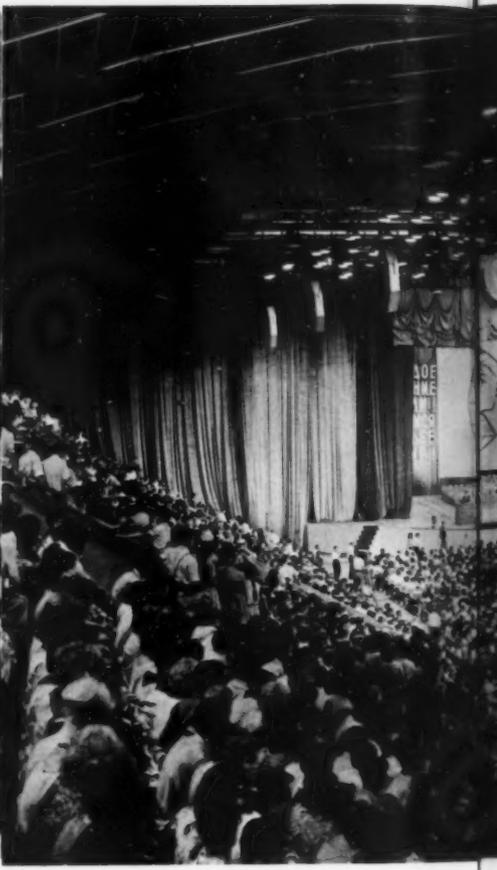


The 12-volume collected works of Mark Twain sells for 13 rubles 20 kopecks; 300,000 copies were printed.



Walt Whitman's Leaves of Grass was published in an edition of 25,000 copies. It costs 4 kopecks.

BY PYOTR RESHETOV
CHAIRMAN, COMMITTEE OF SOVIET YOUTH ORGANIZATIONS



THAT young people today are thinking, seeking and militantly striving for truth, reason and peace was amply confirmed by the World Youth Forum recently held in Moscow.

The international forum was conceived by Soviet youth organizations. Their thought was that the problems facing the world today are of vital concern to all young people, regardless of the land in which they live, the color of their skin or their political convictions. The younger generation, they felt, should make its voice heard.

Preparatory work for the forum took more than a year. During this period a veritable flood of letters from all parts of the world, from young and old, from world-famous personalities and modest working folk, poured into the offices of the Soviet Youth Organiz-

ations and the Soviet Sponsoring Committee.

First Cosmonaut Yuri Gagarin was one of those who greeted the forum. He wrote: "How beautiful life on our planet could be if the young people of all the continents of the world felt close to one another, if they understood that their common interests could be a wonderful foundation on which to build peace and friendship. May the World Youth Forum be a major milepost on the road toward the closer association of all the young people."

Yuri Gagarin, himself a young man, was speaking for his generation when he wrote of the community of interests of youth the world over and of the universal desire of young people for mutual understanding, friendship and peace.

The theme of the forum, which attracted more than 800 young people of different poli-

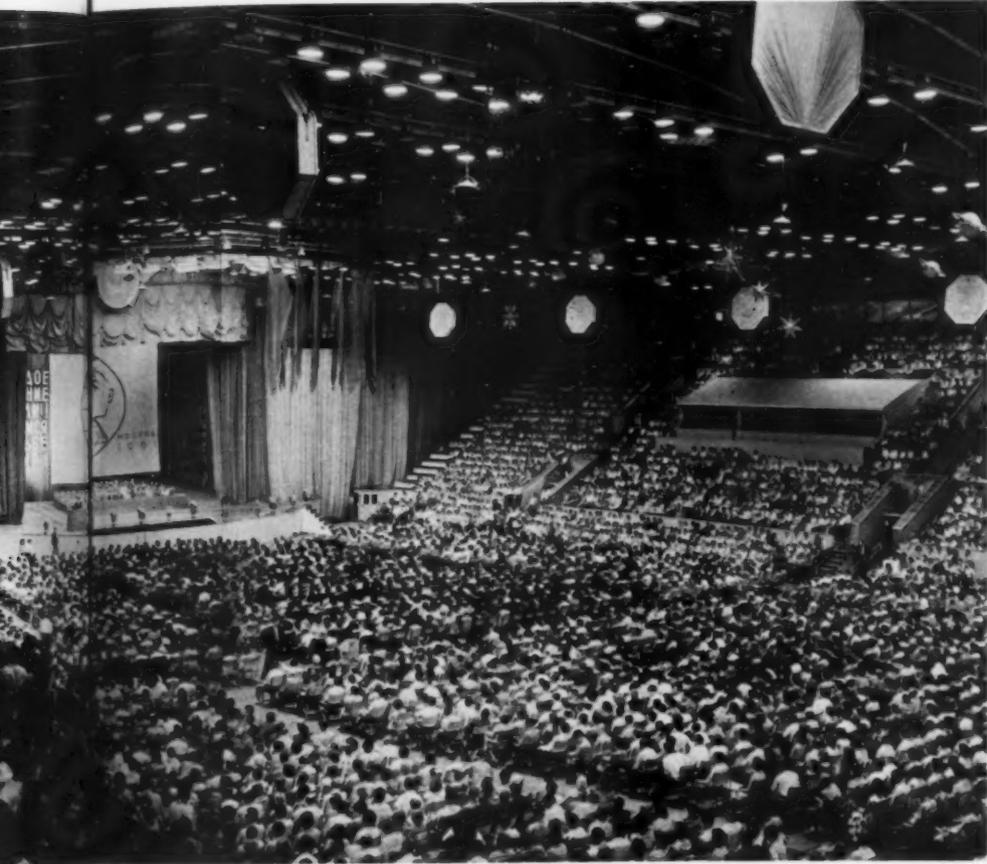
tical convictions, religious beliefs and racial and national backgrounds, was "Mid-Twentieth Century Youth and Its Problems." Represented were 330 national, regional and international youth organizations in 106 countries.

The delegates exchanged views on a wide range of problems freely, seriously, often critically, but always with mutual respect for differing opinions and a sincere desire for better understanding. Discussion centered on ways of preventing war and achieving peaceful coexistence, disarmament, national independence, the socioeconomic rights youth demands, young people's participation in public life, and many related problems.

The titles of the principal reports reveal the scope of the forum . . . "Youth—Understanding, Cooperation and Peaceful Coexist-



Young people from Yugoslavia, Ghana and the USSR at a World Youth Forum panel session. "Mid-twentieth Century Youth and Its Problems" was the theme.



The global gathering brought 800 young people from 106 countries to Moscow. They represented more than 330 national and international organizations.

The large number of seminars and panel discussions scheduled in the forum program made for a more informal exchange of the many points of view represented.

and racial
"Mid-Twen-
ems." Rep-
regional and
s in 106
on a wide
usly, often
respect for
desire for
centered on
ving peace
onal inde-
youth de-
n in public
orts reveal
i—Under-
ul Coexist-

ence"; "Youth and Disarmament"; "The So-
cial Rights and Obligations of Youth"; "Youth
and Progress."
It goes without saying that these young
speakers from different countries were not
always in agreement. Among the delegates at
the forum, representing millions of young peo-
ple in all parts of the globe, were radicals and
socialists, liberals and communists, Catholics
and Moslems. But the Soviet youth organiza-
tions that sponsored the gathering were eager
to have all points of view aired, to have the
discussion frank and open. And it was.
The tone of the debate was set in discus-
sion on the report "Youth—Understanding,
Cooperation and Peaceful Coexistence" made
by a representative of the Unione Goliardica
Italiana, to which young people of different
political views belong.





A quality of the international youth gathering was its warmth and informality. The words most often heard were friendship and understanding.



The delegates professed many different religious and political beliefs. The discussion, though friendly, was frank, critical and often heated.

1. Charles Salducci of France visits a factory.
2. Delegates go through a Moscow auto plant.
3. On a tour of a state farm near the capital.
4. Tunisian and Soviet delegates get together.
5. Just before the forum's opening session.



In the discussion a delegate of the Indonesian National Front cautioned that youth must not separate itself from the nation. "In our age," he asserted, "gigantic social, scientific and economic changes are occurring, and youth can play a great part in deciding the direction of these changes. By their demands and determination to improve life, young people can help society's advance toward social progress."

Youth Against War

The forum hall rang with youth's protest against war. We will not, reiterated speaker after speaker, sit back and wait for another world war to break out. Youth must turn all its energies and thoughts to uniting the peace forces of the younger generation. It must utilize every means and possibility to avert war. It must insist unequivocally that all controversial issues between states be settled by peaceful means. It must work increasingly to outlaw war. The forum declared itself for complete universal and controlled disarmament by all countries.

The statement on colonialism adopted by the forum reads: "We strongly condemn any attempt at armed suppression of the peoples' aspirations for freedom and independence. Colonialism is a malignant tumor, it must be excised once and for all. We affirm our wish and readiness to give all possible support and assistance to the youth of the recently liberated colonial countries."

From delegates of several African and Latin American countries the forum heard stories of the appalling poverty, hunger and injustice that are the lot of young people in so many parts of the world. Delegates from Italy, Japan, Argentina and many other lands told of chronic unemployment. Others from colonial and dependent countries told of the difficulties of getting an education.

More than 300 speakers took the floor at the plenary sessions and the panel meetings. As varied in tone and point of view as the speeches were, they were of a single mind on all the big and crucial issues—for peace and friendship, against colonialism and every

other form of oppression and social injustice.

In addition to the official meetings there were informal get-togethers. One—and a particularly significant one—was a friendly get-together of young people from the Federal Republic of Germany, the German Democratic Republic and West Berlin. In spite of their political differences, these young people all agreed that the Berlin problem must be settled by peaceful means. The overwhelming majority of those attending the affair expressed approval of the Soviet Union's proposal to sign a peace treaty with Germany.

Not all the speeches at the forum reflected the prevailing sentiment. This was particularly true of the speech made by a Canadian students' representative who tried to justify the divisive stand of COSEK (Coordinated Secretariat of the National Students Union), as well as that of Belgium's Young Guard criticizing the communist and working-class movement for its attitude toward the colonial peoples and accusing it of not giving them proper support.

The speech brought a sharp rejoinder from some of the delegates. But an honest exchange of opinion, even when heated, is the prime condition for any discussion whose object is mutual understanding.

Not a "Lost Generation"

In recent years sociologists in many countries have leveled the charge that modern youth is passive, that it has lost its ideals. They say contemporary young people lack will, are listless, indifferent to social problems, that violence is their only active principal. The forum proves these charges utterly without foundation as does the youth in the Soviet Union with its optimism, its determination to build a better world, its unwavering faith in communist ideals, in the triumph of reason, justice and the friendship of people.

Some time ago the Soviet youth newspaper *Komsomolskaya Pravda* asked nearly 20,000 Soviet young people what they consider to be their goal in life. Ninety-six per cent of them replied—the phrasing was different but the idea was the same—to be a good human being.

Nikolai Artamonov, a concrete worker from Stalingrad, put it this way: "My life, every bit of it, to the last second, is given to my country and my people not so that people may say, 'Look, how good he is,' but because this is the way I want to live, the only way I can be happy and get satisfaction out of life.

"Neither age, disappointment, nor the arguments of philistines will make me change. My communist ideas, my socialist principles and my worker's conscience guarantee that."

The confidence Soviet young people have is derived from life itself, from the great goals the Communist Party has proclaimed in its newly-adopted Program—"Peace, labor, freedom, equality and happiness for all peoples."

The forum was evidence of youth's awareness of the critical problems the world faces today. It was proof of the fact that more and more young people all over the globe are throwing in their lot with the struggle for peace, disarmament, national independence, the defense of civil, social and economic rights.

We need only look around us to see that youth is becoming a more and more active force in our current world and is growing increasingly aware of its place in the common struggle of all people for peace and a happier future.

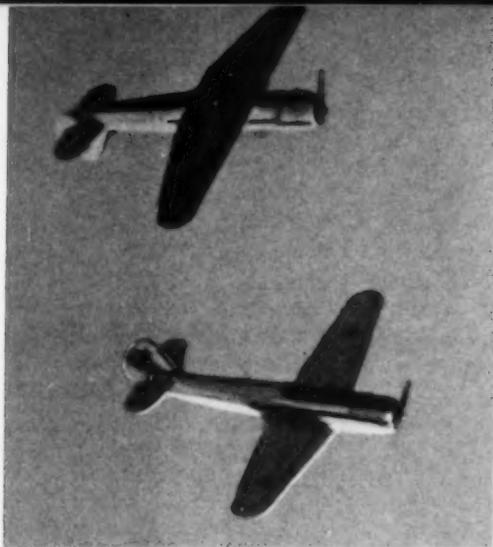
How, then, can one speak of the youth as indifferent to social problems, as a "lost generation." This is to deny all that youth has accomplished and achieved.

In his greeting to the forum Nikita Khrushchev said, "The young people are a mighty, dynamic, militant force playing an active part in mankind's struggle for a better future. In upholding the cause of peace, they defend their rights and interests against all encroachments by reactionary forces."

The forum delegates addressed a message to the youth of the world that reads in part: "The time has arrived for the youth of the world to unite its forces. The suspicion, lack of understanding and at times even enmity that unfortunately still divides our countries must be bridged by friendship. We shall carry on a tireless struggle and we shall win. We are proud of our duty and shall carry it out to the very end."



FLYING FOR SPORT



Members of the Moscow Air Club stunting at great speed. One is upside down, 50 feet above the other.



Voronezh Air Club members flying in perfect spiral formation after only one year of flight instruction.



Members of the Moscow Glider Club check their performance with instructor Maria Began after each flight.

Muslimat Kunbutayeva of Daghestan readying for her 25th parachute jump. Each republic has an air club.



BY PYOTR KORZINKIN

IT WAS the eminent astronomer Nikolai Morozov who suggested in the early twenties that air clubs be set up throughout the country. Lenin, founder of our socialist state, ardently supported this idea. Now all district and regional centers, as well as the capitals of the Union Republics, have their own air clubs.

They are financed mainly by membership dues. But since flying is an expensive sport, the state helps out with budgetary funds allocated for cultural needs. The result is that flying is a popular sport in the country, since anyone who is interested can afford to participate. Dues are quite modest—30 kopecks a year for secondary school and college students, 1 ruble 20 kopecks for wage earners.

Air clubs have for their members' use planes, gliders, helicopters, parachutes and workshops. Most of the paid instructors are old-time fliers, assisted by amateur birdmen who coach fledglings free of charge. Since anyone who tries flying once becomes a lifetime enthusiast, there are plenty of fans on all levels willing and eager to pass on their knowledge.

There are five types of aerial sports—flying, gliding, piloting helicopters, sky diving, and plane modeling. The newest addition is rocket modeling.

Air clubs use aircraft of various kinds—the sports piston-engined plane YAK-18 and the jet plane YAK-32 designed by Alexander Yakovlev, gliders designed by Oleg Antonov, helicopters by Leonid Mil, and dozens of other types of aircraft.

In the club workshops amateur sportsmen create their own original glider, helicopter, and plane model designs. Andrei Tupolev, Alexander Yakovlev and other famous plane designers started by building their own gliders. Many of the amateur-made machines do as good a flying job as those made professionally. The Lithuanian air sportsman Bronius Oskinis has designed a whole fleet of gliders in which several national records were made.

Most of the men and women who go in for aerial sports are young and represent the many Soviet nationalities and all walks of life. Nadezhda Pryakhina, for example, is a technician in instrument production. She went in

for skydiving while still a technical school student and in three years captured the world skydiving crown. Victor Goncharenko, leading singer with the Kiev State Philharmonic Society, was the long-time undisputed glider champion of the USSR until this year when he lost the title to Vladimir Chuvikov, a lathe operator at a Serpukhov plant. Another factory worker, fitter Valeri Zagainov, holds the record for the Mari Autonomous Republic.

The clubs—individual members and teams—compete for regional, republic and national laurels. Contenders for international honors are chosen at these meets.

Soviet birdmen have been bringing home a large fraction of international aeronautical prizes. As of the end of last year the International Aeronautical Federation (FAI) registered a total of 412 world records in air sports; the Soviet Union holds 182 of them. It looks as though the fraction will be considerably larger by the end of this year.

Last spring Georgi Mosolov set a new world altitude record, raising the flight ceiling to 34,714 meters (113,861.9 feet) in a delta-wing jet E-66. The previous record of 31,513 meters (103,362.6 feet) was held by Joe Jordan of the United States. With the same plane Mosolov also shot the speed record up to 2,654 kilometers (1,649.1 miles) per hour beating the former high of 2,456 kilometers (1,526 miles) set by Rogers, an American.

The name of the Soviet flyer Ivan Sukhomlin figures 33 times on the FAI's achievement list—a unique record. Soviet flyers have topped several world marks with the turbo-prop liner TU-114. Soviet skydivers hold three-quarters of all global records and are now getting ready for the Sixth World Championship contests to be held in the United States in 1962.

Cosmic trail blazer Yuri Gagarin, a former member of the Saratov Air Club, set the first space records, registered by the FAI as world records. Some of them were topped by Cosmonaut Gherman Titov four months later.

Soviet air sportsmen always welcome foreign competition at home or abroad. These meets do more than match flying skills; they help strengthen friendship among nations.



Soviet skydivers hold most of the world records. Over-water parachuting requires special skill.



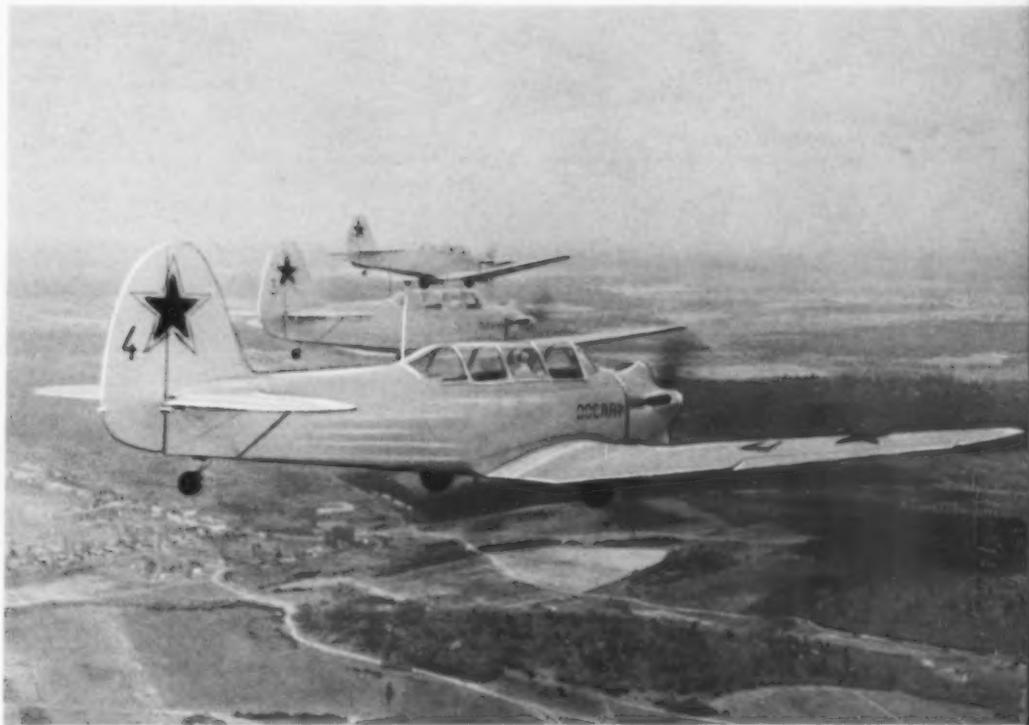
Some of the thousands of gliders available to enthusiasts. Amateurs can build their own in club shops.

Helicopters of this design by Leonid Mil won Soviet airman 16 of the 36 registered world flight records.





USSR's Pavel Starchenko and USA's Jacques Istel trading pennants at the Moscow world skydiving matches.



Amateur flyers start training on piston-engined planes and then graduate to faster jet-powered sports planes.

e to enthus-
club shops.

won Soviet
ght records.

Riga mechanic Andris Sprogis launching a radio-guided model plane he built at his local air club.



People of all vocations do skydiving. A Ukrainian physician and an Uzbek turner are republic champs.

President Jacques Allez presents the International Aviation Federation's 1961 gold medal to Yuri Gagarin.



Construction of a new hemical plant in Rustavi, Georgian Republic



hemical
Republic

