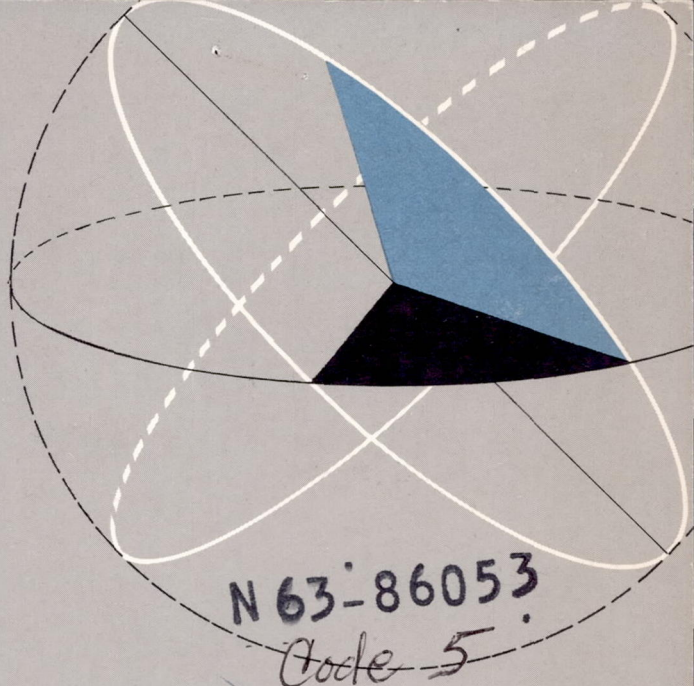


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TRANSLATION NO. 22
THE FIRST MAN IN SPACE

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C A L I F O R N I A I N S T I T U T E O F T E C H N O L O G Y

National Aeronautics and Space Administration

(NASA Contract # NASw-6)

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Translation No. 22

THE FIRST MAN IN SPACE .

Soviet Radio and Newspaper Reports on the
Flight of the Spaceship, Vostok

Compiled and Translated
by Joseph L. Zygielbaum

May 1, 1961 - 25 p

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May 1, 1961

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Radio Moscow, 5.93 mc, 2300 PST, April 11, 1961

TASS Communique, Moscow, April 12, 1961

The Soviet Union has successfully launched a manned spaceship-satellite into an orbit around the Earth. Present aboard the spaceship is the pilot cosmonaut, Youri Alekseyevitch Gagarin, an Air Force pilot, 27 years of age. The spaceship was launched about 9 a. m., Moscow time, April 12, 1961. The spaceship is named "Vostok" (East) and weighs 4,725 kg, including the pilot but excluding the last stage of the carrier rocket. The hermetically sealed cabin of the spaceship is equipped with a two-way radio, TV, and a telephone-type communication system. Transmissions are made on the frequencies of 9.17 mc, 20.06 mc, and 143.625 mc. The orbital period is 89.01 min, the perigee is 188 km, the apogee is 302 km, and the orbital inclination toward the equatorial plane is $65^{\circ}41'$.

At 9:22 a. m., Moscow time, Major Youri Gagarin reported that he was over South America and that he was in excellent spirits.

At 10:15 a. m., Moscow time, Major Gagarin reported flying over Africa. The state of weightlessness is no hindrance to a human being. He can eat and drink without any difficulties. The flight is proceeding in a normal manner.

At 10:25 a. m., Moscow time, the braking device was activated. The spaceship "Vostok" began its descent toward a preselected point on the territory of the Soviet Union.

The spaceship "Vostok" landed safely, by a command from a control station, on the territory of the USSR at 10:55 a. m., Moscow time.

Major Youri Gagarin said after landing: "I would like to report to the Party, our Government, and personally to Nikita Khrushchev, that the mission was successfully accomplished. I landed safely without any injuries or shocks. Acceleration was a rough experience, but endurable."

PRAVDA, April 13, 1961
TASS Communique

On April 12, 1961, the Soviet Union launched into orbit around the Earth the spaceship-satellite named "Vostok"--the first in history carrying a man aboard.

The pilot-cosmonaut of the spaceship-satellite "Vostok" is a citizen of the USSR, Air Force Major Youri Alekseyevich Gagarin.

The launching of the multi-stage rocket was successful, and after the first cosmic velocity was achieved and the last stage of the carrier rocket was separated, the spaceship-satellite began its free flight in orbit around the Earth.

According to preliminary data, the orbital period of the spaceship-satellite around the Earth is 89.1 min, its perigee is 175 km, and its apogee is 302 km. Inclination of the orbital plane toward the equator is $65^{\circ} 4'$.

The weight of the spaceship-satellite including the pilot-cosmonaut is 4,725 kg, not including the weight of the last stage of the carrier rocket.

A two-way radio communication was established and maintained with the cosmonaut, Comrade Gagarin. The frequencies of the shortwave transmitters aboard the spaceship were: 9.019 mc, 20.006 mc, and 143.625 mc. By means of radiotelemetry and television systems, the condition of the astronaut in flight is being observed continuously.

The cosmonaut, Gagarin, withstood the period of the spaceship's injection into orbit remarkably and at present he feels fine. The systems which secure the necessary life conditions inside the spaceship's cabin function normally.

The flight of the spaceship-satellite "Vostok," with Gagarin aboard, continues along its orbit.

9:52 a. m., Moscow time. According to the data obtained from aboard the spaceship "Vostok," at 9:52 a. m., Moscow time, Major Gagarin reported while flying over South America: "The flight is proceeding in a normal manner and I feel fine."

10:15 a. m., Moscow time. At that time, Major Gagarin reported while flying over Africa: "The flight is proceeding normally. The state of weightlessness does not bother me at all."

10:25 a. m., Moscow time. After orbiting the Earth, the braking motor of the spaceship was activated in accordance with the flight program, and the spaceship "Vostok" with Gagarin aboard began its descent from orbit for a landing at a pre-selected point in the territory of the Soviet Union.

PRAVDA, April 13, 1961
TASS Communique

After a successful accomplishment of the assigned investigations and after completing the flight program, the Soviet spaceship "Vostok" landed successfully in a pre-selected area of the Soviet Union on April 12, 1961, at 10:55 a. m., Moscow time.

The pilot-cosmonaut, Major Gagarin made the following statement: "I would like to report to the Party and to the Government, and personally to Nikita Sergeyeovich Khrushchev, that the landing was normal, I feel fine, and I have no injuries or shock."

The realization of a manned flight into cosmic space opens tremendous perspectives for the conquest of the cosmos by mankind.

IZVESTIA, April 16, 1961

THE DAWN OF A NEW ERA

Press Conference Dedicated to the Successful Flight of Major Gagarin
Aboard the Spaceship-Satellite "Vostok"

The fourth day of a new era. Four days have passed since a man has broken all obstacles which nature has put before him and made his exit into cosmos.

On April 15, 1961, a press conference took place with the first spaceman Youri Gagarin. The press conference was opened by the President of the Academy of Sciences, USSR, Academician A. N. Nesmeyanov.

Speech by A. N. Nesmeyanov

On April 12, 1961, the Soviet Union has placed into orbit a spaceship-satellite named "Vostok" with the pilot-cosmonaut Youri Gagarin aboard.

The cosmic ship was equipped with everything that is necessary for a safe flight and successful landing for the cosmonaut. Many of the spaceships systems were duplicated. Aboard the ship were installed instruments which permitted the pilot to determine accurately at any time his position in the orbit. A continuous two-way-radio communication was established with the cosmonaut during the spaceship's preparation for launching, as well as during the entire flight.

We must underline the extreme bravery and stamina, as well as self control, of the pilot-cosmonaut Youri Gagarin. Following the instructions of his physicians, the night before the flight Youri Gagarin took a sedative and slept well until he was awakened several hours before take-off time. His pulse was 70 to 75 per minute

during the entire period of preparation for the flight and after the launching of the rocket. Gagarin was in a very good mood and was joking at the launching site, strengthening the assurance of a successful flight. While strapped down in his cabin inside the nosecone aboard the huge rocket, he cried out happily, "Let's go", when he was informed that the firing command was about to be given. (See Figs. 1-3.)

During the period of the strongest acceleration, when the spaceship was being injected into orbit and the cosmonaut was subjected to the effects of terrific g forces, vibration and noise, even during this intense period, the pilot cosmonaut Yuri Gagarin kept on broadcasting not only about his own state of being, but also about the operation of the systems inside the cabin of the spaceship. After passing through the dense layers of the atmosphere, when the cosmonaut looked back at the Earth, he said, "It is indescribably beautiful."

From then on during the flight, Yuri Gagarin carried on a continuous communication with Earth. At 9:52 am, Moscow time, while flying over South America he reported: "The flight is proceeding in a normal manner. I feel fine." At 10:15 a.m. Moscow time, while over Africa, Yuri Gagarin reported: "I endured the state of weightlessness very well."

At 10:25 a. m., Moscow time, the braking motor of the spaceship was activated and the spaceship, together with the pilot-cosmonaut, Major Gagarin, began its descent from orbit for a landing at a preselected area. At 10:55 a. m., Moscow time, the Soviet spaceship "Vostok" accomplished a successful landing.

Everything is symbolic in this achievement. The fact that the first cosmonaut is a Soviet citizen, the fact that the first cosmic spaceship carrying Major Gagarin

was named "Vostok," which means East or Dawn, and also the fact that the flight was completed in the morning, these are all symbolic. So this morning became the morning of a new era.

From now on the day of April 12, 1961 will be connected with the achievement which was accomplished by Youri Alekseyevitch Gagarin. The entire flight around the Earth was completed in 108 minutes, and these minutes shook the world.

On the threshold of the 20th Century, the genial Tsiolkovsky who was not acknowledged by anybody, pointed out to mankind for the first time the road towards the stars. His works have placed the cornerstone for the science of cosmonautics, one of the most outstanding triumphs which we are witnessing today. The following words by Konstantin Tsiolkovsky came true: "The Earth is the cradle of reason, but one cannot live forever in a cradle."

Youri Gagarin, the first pilot-cosmonaut, passed through an intense period of preparations. This was an unusual system of preparation, a deeply scientific system. The tremendous effort was crowned by the first-in-history cosmic flight.

In the name of the Presidium of the Academy of Sciences USSR, I congratulate you, Comrade Gagarin, as an outstanding Soviet citizen, the Columbus of cosmos.

Centuries will pass, but your name will always be a reminder of the greatest achievement which was accomplished by Soviet scientists, designers, and you yourself, completing the first flight of a man into cosmic space. You have given the entire world an example of bravery and heroism in the name of serving mankind.

After his opening speech, Academician Nesmeyanov gave the floor to the Hero of the Soviet Union, Major Youri Alekseyevitch Gagarin.

Speech by YOURI GAGARIN

Many people are interested in my biography. I have read in the newspapers that some irresponsible persons in the United States of America, who are distant relatives of the Gagarin nobility, consider that I am one of their offsprings. I will have to disillusion them. They have acted very stupidly. I am a simple Soviet man. I was born March 9, 1934 to the family of a peasant. The place of my birth was in the Smolensk region. There were no princes or nobility in my family tree. Before the revolution my parents were poor peasants. The older generation of my family, my grandfather and grandmother, were also poor peasants, and there were no princes or counts in our family. Therefore, I will be forced to disillusion my self-appointed relatives in America.

I attended grade school, then a manual school in Lyubertsy near Moscow. After that, I went to the Saratov Industrial Technicum to become a smelting designer.

However, my oldest dream was to become a pilot. At the time of my graduation from that technicum in 1955, I simultaneously completed studies at the Saratov Aeroclub. I was next accepted to the Orenburg Aviation School, from which I graduated in 1957 and was granted the title of Air Force Fighter Pilot. I served with one of the branches of the Soviet Armed Forces.

At my own request, I was accepted as a candidate to become a cosmonaut of the Soviet Union. As you can see, after the selection I became a cosmonaut.

I passed through a proper preparation period which was designed by our scientists. This was described in detail by the president of our Academy of Sciences.

I successfully passed all preparations, learned the necessary technique and was ready for a cosmic flight.

I am very happy and immensely thankful to our party and our government, for entrusting me with this flight. I have completed this flight in the name of our Fatherland, in the name of the great Soviet people, and the communist party of the Soviet Union.

Before the flight I was in good health and felt very well. I had complete assurance in the success of this flight. Our technique is very reliable and I, as well as all my comrades, scientists, engineers, and technicians did not doubt for a minute its successful completion.

My state-of-being during the flight was superb. During the active portion, when the spaceship was injected into orbit, the effects of gravitation, vibration and noise, as well as other factors of the cosmic flight, did not have any bearing on my condition. I was able to work productively in accordance with the program which was assigned for this flight. After injection into orbit, when the carrier rocket was separated, a state of weightlessness began. In the beginning this feeling was somewhat unpleasant, in spite of the fact that, before the flight, I was subjected to short periods of weightlessness. However, it didn't take long at all, and as I became used to this condition, I continued to carry out the program.

In my own opinion, the effect of weightlessness has no influence on the normal state of the organism and on the physiological functions of a human organism.

During the flight, I ate and drank water, maintaining a continuous radio contact with the Earth over several channels, as well as over the telephone and telegraph. I observed the surrounding area, I followed the operation of the installations

aboard the spaceship, I reported to Earth and recorded observations and other data in my log book as well as on a tape recorder. My state of being during the entire period of weightlessness was superb.

Then, in accordance with the flight program the command was given for descent. The spaceship was automatically adjusted, the braking installation was activated and the speed of flight began to decrease. The ship landed safely, and it gave me great pleasure to meet immediately my own Soviet people. The landing took place at a preselected area in our country.

I would like to tell you a little bit about what I observed.

The view of the Earth from an altitude of 175 to 300 km is very sharp. The Earth's surface looks approximately the same as seen from a high-flying jet plane. Clearly distinctive are large mountain ranges, large rivers, large forest areas, shorelines, and islands.

The clouds which cover the Earth's surface are very visible, and their shadow on the Earth can be seen distinctly. The color of the sky is completely black. The stars on this black background seem to be somewhat brighter and clearer. The Earth is surrounded by a characteristic blue halo. This halo is particularly visible at the horizon. From a light-blue coloring, the sky blends into a beautiful deep blue, then dark blue, violet, and finally complete black.

When I left the Earth's shadow, the Sun's rays penetrated the Earth's atmosphere. At this point, the Earth's horizon was dark blue, violet, and finally black.

The transition into the Earth's shadow took place very rapidly. Darkness comes instantly and nothing can be seen. Obviously, the spaceship passed over the

ocean during this period of time. If the spaceship would have passed over large cities, then I would have probably been able to see the lights of those cities. The stars were well visible.

The exit from the Earth's shadow is also rapid and sharp.

Because I was prepared for it, the influence of the cosmic flight factors were endured very well. Now I feel excellent.

I would like to praise here our Soviet designers, engineers and technicians, as well as the entire Soviet nation, for creating the remarkable spaceship "Vostok", its remarkable equipment and the powerful carrier rocket which has placed such a huge spaceship in orbit.

I am immensely glad that my beloved fatherland was the first in history to penetrate cosmos. The first airplane, the first satellite, the first cosmic spaceship, and the first manned flight into space, these are the stages on the great road of my fatherland toward the conquest of the mysteries of nature.

We plan to fly some more and intend to conquer cosmic space as it should be done.

Personally, I would like to fly some more into space. I like flying. My biggest wish is to fly toward Venus, toward Mars, which is really flying.

Speech by Academician N. M. SISAKYAN

A cosmonaut is the newest profession in the world. Youri Gagarin is the first cosmonaut that is entirely entitled to that name. He combines in his character the bravery of Alexander Matrosov, the persistence of Zoya Kosmodemyanskaya, and the iron will of a graduate from the great party of Lenin.

This is our cosmonaut. Science has equipped him with the necessary knowledge and the ability to withstand the difficulties of flight.

The selection of people who were acceptable for flights into cosmic space and their scientifically based special preparation and training, are new problems. During the solution of these problems, scientists have based their decisions on the peculiarities of a cosmic flight, the results of numerous preliminary biological experiments, the knowledge of conditions and the activity of a man in a cabin of a spaceship, as well as the reactions which could have been anticipated from an astronaut in flight. It is natural that a cosmonaut could only be a completely healthy man, of a high intellectual level and technical knowledge; a man of a strong will who would be capable of making quick and logical decisions under extreme pressure, who would be able to carry them out immediately, and who would be able to evaluate situations quickly.

The system for selecting a cosmonaut provided for a thorough investigation of the candidates in a special clinic. During the selection of candidates for flights into space, special methods of investigations were utilized which permitted us to determine with sufficient reliability the functional possibilities of a man's organism, his adaptability to the effects of unpleasant factors of the external environment. These experiments were conducted on centrifuges, ejectors, heat chambers, baro-chambers, under conditions of extended isolation, and limited mobility in specially designed chambers from which external distractions were removed (for instance, sound and light).

The psychological investigation was of great importance during the selection of a cosmonaut. During the process of preparation and training, the investigations which are necessary for a final solution of the problem on the acceptance of a

cosmonaut for a flight were increased. The preparation consisted of the study of theoretical problems which are connected with the assignments of the forthcoming flight, as well as with the adaptability of a cosmonaut toward the practical use of the equipment in the cabin of a spaceship as well as the scientific research instruments.

The cosmonaut has absorbed a deep knowledge of many special problems which are connected with the flight dynamics of rocket-propelled instruments, the physics of cosmic space, and the effect of flight factors on the organisms of a man.

It is obvious that the physical development of the cosmonaut was of great importance in the preparation toward a flight.

The physical training was very purposeful. Methods and means were utilized which are applied during normal sessions of physical culture and sports in order to complete these physical characteristics which are particularly necessary for a man during a cosmic flight. Emphasis was placed on the increasing of stability of the organism toward the effects of acceleration, the exercising and perfection of habits for free control of the body in space, as well as fine coordinated movement. The capability of the cosmonaut to endure extended physical tensions without decreasing his work ability, as well as the will power characteristics were increased.

In addition, the system of special training was of great importance. The basic purpose was to acquaint the cosmonaut with the conditions which were anticipated in space. In other words, in laboratory conditions on Earth or during the flight aboard a plane the characteristics of a cosmic flight were imitated as much as possible.

This phase of preparations of a cosmonaut was the most important and the most difficult.

Thus, the preparation of a cosmonaut toward a flight into cosmic space was a complicated scientific problem. However, in spite of all these complications and the unusual difficulties, this problem was successfully solved.

The road into space is open. A huge task was completed and a huge victory was achieved. Our science has opened new unusually broad perspectives. A man should not only penetrate cosmic space but also strengthen his position, and he should master interplanetary space.

Speech by V. V. PARIN

Member of Academy of Medical Sciences, USSR

The preparation of a man for the first flight into space required considerable effort on the part of a large group of physicians, physiologists, biologists, and psychiatrists. The flight of a man was preceded by extended work during the launching of the first Soviet satellites, which were populated with animals: dogs, small animals, and other biological objects. During these experiments not only were extremely important scientific data on the effects of factors of cosmic flight on live organisms obtained, but also a system was worked out for scientific medical control.

Scientists have created special instruments which, as is known, passed successful tests during preceding cosmic flights aboard spaceships-satellites.

Preparations for the flight immediately before launching presented a particular problem. An increased medical control, special food, a systematic investigation with ground condition methods, which were designed for a flight--all this has secured unity and superiority in obtaining the valuable scientific information.

The investigation of biofluxes of the brain, the detailed electrocardiographic investigations, vector cardiography, and many other tests have secured the necessary scope and depths of control for the state of health of the cosmonaut during the pre-launch period. At the same time, a constant medical and psychological observation, biochemical, immunological and other tests which control the nervous emotional state of the cosmonaut were conducted.

During the entire flight, Yuri Gagarin was subjected to continuous medical supervision and observation of his condition. In addition to reports about his state of being, which Yuri Gagarin made periodically over the radio, physicians and physiologists kept a constant watch, by means of radiotelemetry systems, on the pulse and breathing of the first man in space.

A lot of experience which was accumulated by telemetry, that new branch of science which unites the latest achievements of medicine and radio electronics, was placed in service of mankind on April 12, 1961. It is difficult to over-evaluate the meaning of the objective data of biotelemetry in assuring safety in this outstanding flight. In the cosmonaut's coverall, simple and convenient instruments were installed which converted the physiological parameters: biofluxes of the heart, pulse oscillations of the vessel panel, breathing motion of the chest, etc., into electrical signals. Special amplifying and measuring systems have secured the transmission over radio channels of impulses which characterized breathing and the flow of blood during all stages of flight.

Preliminary data, which were obtained during the processing of radiotelemetry information, indicate that from a medical viewpoint the flight of Yuri Gagarin proceeded extremely well. Changes in pulse and breathing during the active portion

of the flight and during the period of re-entry were approximately the same as during the period of numerous training sessions. During conditions of weightlessness, the pulse and breathing were almost completely normalized.

Thus, the first experience in the application of biotelemetry for the purpose of medical control during a cosmic flight of a man, proved to be very successful. This proves that the work of our scientists in this field is following a correct road on which new successes await them.

In conclusion, it should be said that the first cosmic flight yielded extraordinarily important data on the state of a man in space. It confirmed the prognosis of Soviet scientists, not only about the possibility of such a flight of a man into space, but also about the possibility of man maintaining his creative forces and various activities.

QUESTION AND ANSWER PERIOD

The President of the Academy of Sciences, USSR, A. N. Nesmeyanov answered a few questions which were directed to Gagarin. All questions were in a written form and not oral. A number of questions deal with one problem and that is, "Were there any previous attempts to launch a man into cosmic space?" Reference is thereby given to information which appeared in foreign press.

"Here is my answer: Such attempts did not take place. Youri Gagarin was the first astronaut and his attempt was very successful."

"Mr. Krushchev said in his speech that the flight of Gagarin is the first Soviet step into space. When can the next attempt be anticipated? Can you please explain why the Soviet Union is so far ahead of the United States of America in cosmic conquest?"

Nesmeyanov answered that apparently there are many reasons why the Soviet Union is ahead. "You must remember that Tsiolkovsky also lived within the Soviet Union. He was the first, even in prerevolutionary Russia, to develop the theory of cosmic flights. However, the most important reason, I assume, is the possibility of much more purposeful organization of scientific technical work in a socialist state than in a state which is based on free enterprise, where a multitude of conflict of interests exists."

Questions answered by Youri Gagarin.

"I have received many requests for information of how the landing took place. Please allow me to answer this at once.

"The technique of landing in our country was developed in various ways, including a parachute variant. In this particular flight, the following system was carried out: the pilot remained inside the cabin; the descent was successful, showing a high effectiveness and remarkable operation of all systems for landing. "

Q: "Will there be photographs published of the Earth's surface taken from aboard the spaceship "Vostok" ?

A: "There were no cameras aboard the spaceship "Vostok" and, therefore, no pictures were taken and cannot be published. "

Q: "When were you informed that you were to be the first candidate ?"

A: "I was informed in due time. There was plenty of time for training and preparation for the flight. "

Q: "How do you evaluate the role of radio communication during that historic flight and how does a voice from Earth sound in cosmos ?"

A: "I evaluate very highly the role of radio communication during that flight. This contact has permitted me to carry on a continuous conversation with the Earth, to receive commands, to transmit information about the operation of all systems, to report on observations and to feel continuously the support of our people, government and party, and most of all not to feel isolated from the world. "

Q: "Did the people that were to meet you arrive at the landing point before or after landing ?"

A: "The greeting party arrived almost at the same moment that I landed. "

- Q: "How much do you weigh?"
- A: "I weigh now exactly the same as before the flight, 69.5 kg."
- Q: "Have you ever flown before aboard ballistic missiles?"
- A: "No, I have not."
- Q: "What did you eat during the flight? Was it normal food or specially designed food for conditions of weightlessness?"
- A: "This was special food developed by the Academy of Medical Sciences."
- Q: "Is it possible to utilize once again the same spaceship or some of its separate parts?"
- A: "This question is more appropriate for our technicians and engineers. However, I think I will not be wrong if I say that the entire spaceship and its equipment can be used again for flight into cosmos."
- Q: "You have reported that you were flying over South America, that your flight was proceeding normally and that you felt fine. As a native of South America, I would like to ask you the following: Is our continent beautiful from the altitude of a cosmic flight?"
- A: "Yes, very beautiful."
- Q: "You said yesterday that your friends, pilot-cosmonauts are ready to complete new cosmic flights. How many pilot-cosmonauts are there? More than a dozen?"
- A: "In accordance with the plan for the conquest of cosmic space, our country is preparing pilot-cosmonauts. I think that there are enough men to accomplish a series of flights into space."

Q: "Do you think that you will fly again, or will somebody else take the next flight?"

A: "I already reported to the party and government that I am ready to carry out any new assignment. However, I think that there are many cosmonauts in our country who would like to undertake such a flight."

Q: "You said that you saw the Earth very well. Does that mean that you could look out through windows in the wall of the spaceship, or did you see the Earth by means of a color television set?"

A: "I could look out through the illuminator with which the spaceship was equipped."

After a few more questions and answers of less importance the press conference was adjourned.

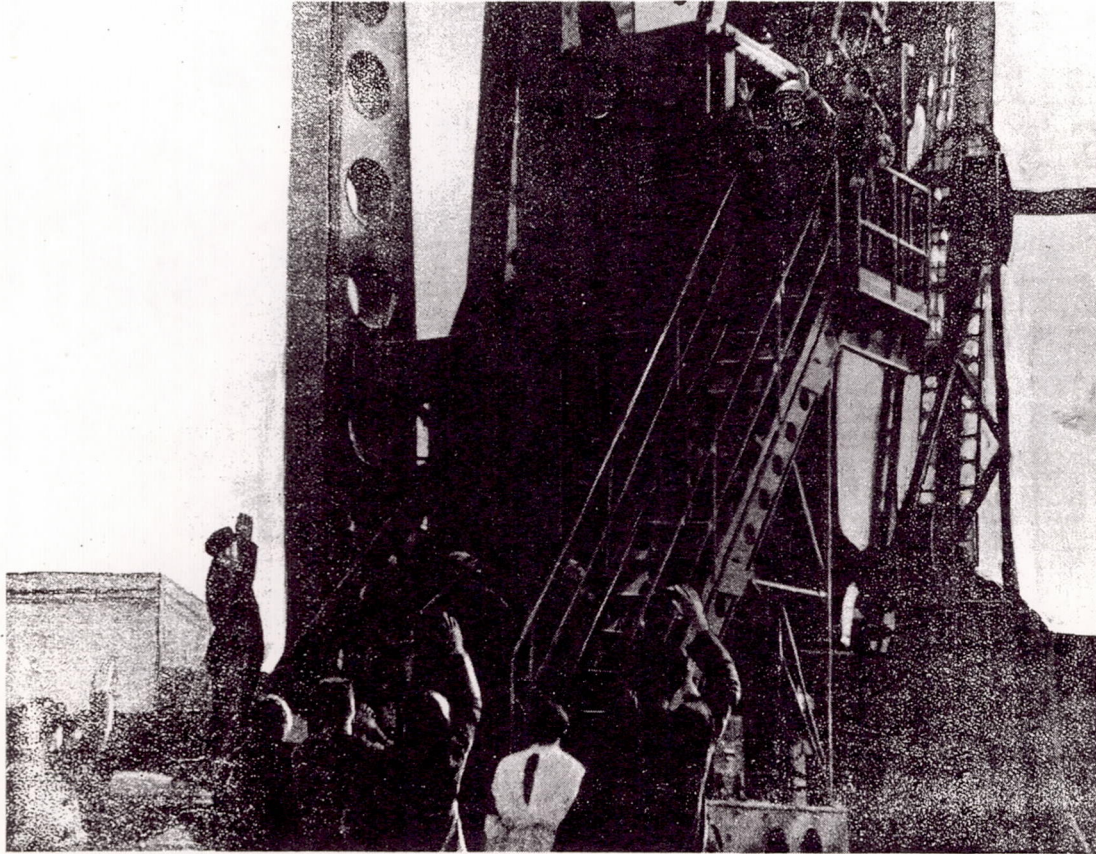


Fig. 1. Gagarin at elevator to spaceship cabin

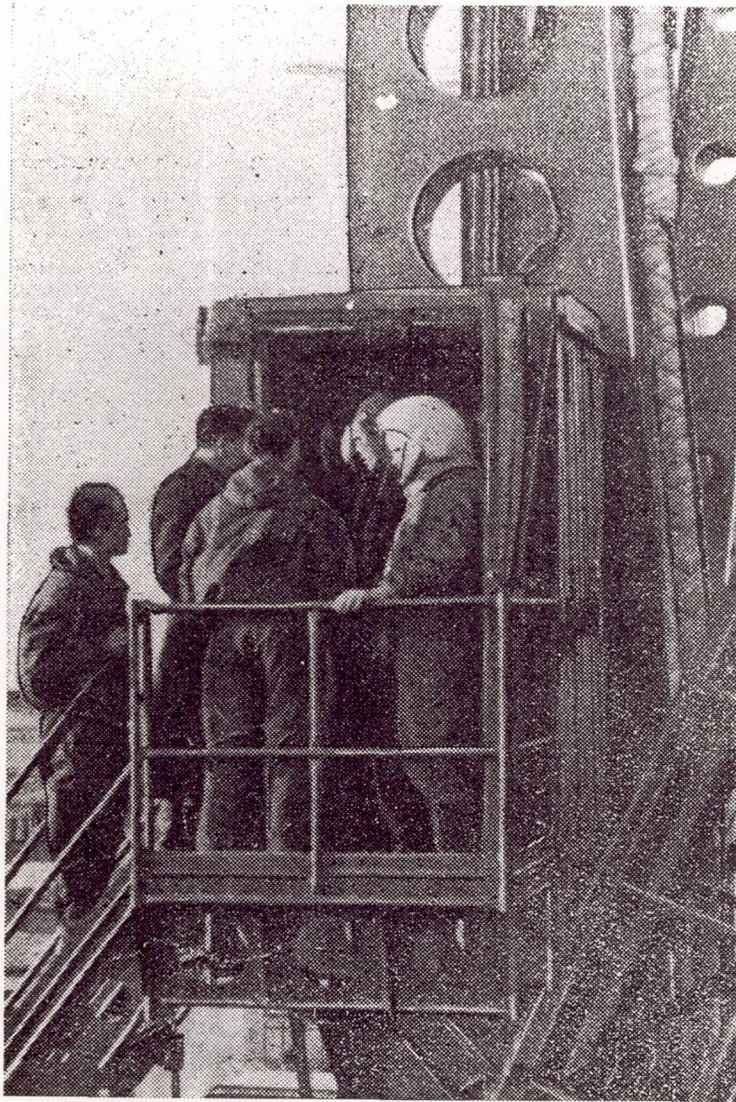


Fig. 2. Gagarin entering elevator



Fig. 3. Gagarin inside spaceship cabin