

*This chapter from my 1981 book “Red Star in Orbit ”was an outgrowth of my research paper, “Korolev, Khrushchev, and Sputnik”, published in 1977 in the British Interplanetary Society’s monthly magazine ‘Spaceflight’ (and later winner of the ‘Goddard Space History Prize’ sponsored by the National Space Club in Washington, DC). That research first introduced the English-speaking world to Sergey Korolev and his role in getting Sputnik launched, so it’s fitting to re-issue the chapter (and in coming months, additional chapters from the 1981 book) in honor of the 30<sup>th</sup> anniversary of book. Fortunately, we are also much better informed now than 30 years ago, so many of the statements, guesses, and assessments in this chapter have been modified (and sometimes overturned) by subsequent research. Without interfering too much in the narrative flow, I have tried to insert updates and corrections, in special font, where needed.*

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### **Man and Woman in Space**

For several weeks every spring, the steppes of central Asia are covered with flowers. They burst forth soon after the snows have melted, to thrive in the brief period before the sun scorches the ground to a yellowish brick-hard glaze. Only the hardy grass survives through the summer.

These prairie flowers were blooming on April 12, 1961, when Yuriy Gagarin became the first human being to venture into space. For Korolev and his team it must have been a glorious day, the best since Sputnik. Disasters, deaths and political deceptions were momentarily forgotten in the celebration of an epochal event whose significance even Moscow’s propaganda machine could not exaggerate.

Russians love flowers, and there was an additional need for them that spring: wreaths were needed for dozens of fresh graves near the settlement of Tyuratam, graves less than six months old. The flowers were blooming, but the hot, parching summer still lay ahead.

During the year leading up to the voyage of the spaceship

Vostok, a series of unmanned test flights had paved the way. The first flight, in May 1960, had been a test of the Vostok attitude-control system (an orientation system), with a mannequin seated in the cosmonaut's couch; but instead of returning to earth, the vehicle went into a higher orbit when the retrorockets were fired in the wrong direction. The next attempt, in July, failed when the carrier rocket exploded in midair (of course, no public announcement was ever made), but the following month a successful mission was flown: a canister containing two dogs was returned safely to earth after twenty-four hours in space.

Two major setbacks occurred in December: one ship was destroyed during reentry, incinerating its canine crew, and a second ship fell back to earth after a launching mishap. Following three months of redesign work, two more unmanned test flights were made, in which test animals made a single pass around the earth. Both shots were successful and the way was then clear for a man to follow.

Expectations and excitement mounted among informed circles in Moscow during the first week in April, since it was obvious that the first manned space flight was imminent. (The American plans for a short suborbital Mercury flight were at least a month away.) Then on April 10 came electrifying news from London (!) that the space shot had already occurred, but that the pilot -- identified as Lieutenant Colonel Vladimir Ilyushin, son of a leading aircraft designer -- had been badly injured. This story was written by Dennis Ogden, the Moscow correspondent of the British Communist party newspaper *Daily Worker* -- who presumably had good contacts in Moscow. But the story was quickly denied by official Soviet spokesmen.

Even today, the origin of this report is obscure. The most reasonable explanation is that Ogden leaped to a wrong but plausible conclusion when he learned that Ilyushin, a neighbor of his who also was a test pilot, was in the hospital after an "auto accident." Ogden reported the flight had made three orbits around earth, which was really the plan for the American Mercury program. He also claimed that the space-ship was named Rossiya. Radar sites in the United States and Europe confirmed that no rocket had been launched, so the entire affair was imaginary. Ogden had picked up a random collection of

pieces and had woven them into a logical but totally fallacious picture -- a pitfall which is all too easy to fall into when dealing with sensitive subjects in the Soviet Union.

The actual flight of the spaceship Vostok on April 12 was almost anticlimactic. At 9:07 AM. Moscow time, the rocket was launched, and the first official announcement came out at 10:00 A.M.-- when Gagarin was still in flight. By 10:55 he was back on earth, and the successful landing was announced over *Radio Moscow* at noon.

During the 108 minutes of the flight, Gagarin experienced a sequence of sensations. At lift-off, he excitedly shouted, "*Poyekhhalil*" ("Let's go"), and then kept assuring flight controllers that "the machine is working normally." As the rockets' fuel burned off, the acceleration forces built up (less mass, constant thrust -- ergo, higher acceleration), finally reaching 6 Gs about nine minutes into the flight. Then as the rockets shut down, the capsule entered a free-fall orbit around earth. He flew across Siberia, Japan, southeastward to the tip of South America, then northeastward across west Africa. The course of the spacecraft gave Gagarin an excuse to relay revolutionary greetings to many third-world countries. Then the retrofire forced the capsule back down into the atmosphere, where the deceleration forces exceeded 8 to 10 Gs. Moments later, as the capsule descended under a series of parachutes, the flight ended.

The space scientists had not known what to expect from the flight. On earlier flights dogs had come back alive and their heartbeat rates showed they had adjusted to weightlessness. But many doctors feared that the psychological stresses of the mission would render the human pilot senseless, totally incapable of controlling the spacecraft.

So prior to blast-off the decision had been made to conduct the entire flight on automatic pilot. As a precautionary move that made some sense, but the space doctors carried it to an extreme: they were not simply concerned that the cosmonaut would be somehow unable to control the spacecraft; they feared that the man would actually interfere with the guidance system. Hence, the manual controls were deactivated. The pilot was effectively disconnected from his own ship.

Naturally, the pilots objected. They wanted to be more than

experimental animals, particularly since the Vostok autopilots had broken down twice already.

The space doctors made a slight concession about a month before the first flight. A combination lock was installed in the cockpit, and the doctors at the control center promised to radio up the correct sequence in the event of the failure of the autopilot. But at this point Korolev intervened: since a radio failure seemed more probable than an autopilot failure, the doctors' plan didn't make much sense. Instead, the secret combination would be placed in an envelope which would be fastened to the inside wall of the cockpit.

Gagarin never needed the combination (it was 1-4-5, by the way), since the autopilot performed perfectly. From launch to landing, he never touched the controls.

Gagarin's flight grabbed headlines around the world. But outside of the simple fact that the event had taken place, the world knew very little about the round-the-world flight. It would be at least five years, for instance, before photographs of the spacecraft and rocket booster would be released. And what little was known was usually misinterpreted: for example, the spaceship's name, Vostok, became translated as "East," with all the concomitant political and geographic connotations however, the word also means "an upward flow," as in a sunrise or as in the original meaning of "orient." The symbolism was quite appropriately connected with the upward flow of humanity into the universe. No doubt it was Korolev's idea (and he may have had the name in mind for decades).

Meanwhile, the Ogden report of the "Ilyushin flight" helped confuse Western observers -- eliciting strong skepticism in some commentators. And Soviet newsmen themselves obscured even the most basic details of Gagarin's flight, in particular one aspect which very quickly assumed a great significance: the method of the final landing. How was it done?

The earliest published Soviet descriptions of the landing told of Gagarin swinging from a personal parachute, singing hymns to the motherland. But suddenly the official accounts became vague. At the post-flight press conference, a Western newsman asked the question directly: At touchdown, was Gagarin inside or outside his ship? After a moment's consultation with the political official in charge of the conference (who had already

approved the script of questions and answers for the Soviet journalists), Gagarin delivered a hymn of praise to the brilliance of the “chief designer” of the spaceship (Korolev, of course -- but it was forbidden to reveal his name, so his job title was used instead), who had made *both* modes of descent possible. But he would not answer the question: *Which* mode had been used?

This uncertainty came to a head in Paris three months later, when the International Aeronautical Federation, or FAI (the acronym for the French name), convened a meeting to certify the world records being claimed for the flight. A longstanding FAI rule could have meant an embarrassing propaganda defeat: to qualify for any new world flying records, a pilot must take off *and land* in his aircraft or spacecraft. The rule book was quite explicit on this point.

As it turned out, the Vostok capsule was equipped with an ejection seat, which served to catapult the pilot clear of the booster in the event of a launch failure. The same system was to be used during the final descent to earth, since the three-ton spherical landing capsule did not pack a parachute large enough to ensure a gentle (or even a survivable) landing. The pilot was supposed to fire the ejection seat at about 10,000 feet and come down separately. Gagarin had almost certainly used this method.

In Paris, the FAI director-general confronted the Soviet delegate with the crucial question: “Where was the pilot on in return in relation to the space vehicle?” Perhaps sensing a plot to deny the Soviet Union its rightful recognition, the Soviet spokesman loudly protested: “Ask the Americans if the U.S.A. believes that these records claimed for Gagarin were actually made. All the people of the world have already endorsed Gagarin’s flight and have accepted it as fact.” The wrangling went on for five hours, with the FAI officials demanding documentation that Gagarin had landed inside the ship and the Soviet delegates denouncing such requirements as obstructionist and insulting. Finally, as dinnertime approached, the FAI officials gave in and agreed to certify the Soviet version of the flight that Gagarin had been inside the capsule. Subsequently, when foreign newsmen asked for evidence that Gagarin had landed inside the ship, Soviet officials would

point to the FAI certification as independent proof of their claims. But as the proverb goes, nobody has a good enough memory to be a successful liar. A year later cosmonaut Popovich was asked how he landed, and without checking he blurted out, "Like Titov and Gagarin, I landed outside the ship"; in 1964 the three-man Voskhod capsule would include a small retrorocket to cushion the final landing, and boastful Soviet space officials would point to it as "the first time that a crew could land in its ship." Ten years later a book by chief Soviet space correspondent Evgeny Riabchikov would describe how the Vostok came down in a plowed field while Gagarin himself came down in a pasture near a deep ravine.

If the landing-method deception has evaporated with time, the launch-site hoax has grown stronger. Another piece of information required by the FAI for certification was the precise point of takeoff and of landing. Since the field where the Vostok landed (without Gagarin) had no strategic significance, its exact location could be released without any harm (and the Russians even generously offered to take FAI officials to that site!). However, it was inconceivable that the true location of the space center could ever be officially revealed to the outside world. That was an inviolable state secret.

So another space fiction was invented: the Baikonur Cosmodrome. Official Soviet documents gave the location of the launch site as 47°3'N, 65°6'E, near the town of "Baikonur" on a rail spur southwestward from Karaganda. However, an analysis of Soviet satellite trajectories soon showed that the actual launch site was more than two hundred miles to the southwest of Baikonur (the fiction was so clumsy that somebody had even misspelled the name of the town). Western intelligence agencies of course knew the correct location from U-2 pictures and, later, spy satellite pictures. The Western public's first view of the real Soviet space center didn't come until 1974, when some photographs from LANDSAT-1, NASA's first earth resources satellite, showed a sprawling missile row right in the middle of what the Soviet maps showed to be empty desert.

This space center is just north of the town of Tyuratam, on the main rail line from Russia to Tashkent. To this day, twenty years after Gagarin's flight, all Soviet space stories are

datelined “Baikonur Cosmodrome” and all world space-flight records filed with (and approved by) the FAI in Paris contain this geographical deception -- while the name “Tyuratam” has vanished from the latest editions of official maps and gazetteers. The people in Baikonur, who have never seen a space rocket, probably get some measure of amusement out of the deception -- but they know enough about the KGB’s security regulations to keep their amusement to themselves.

Behind this curtain of Soviet misinformation, cover-up, sad outright deception, and hampered by anti-Soviet wishful thinking and rumor-mongering, many Western observers tried to formulate rational theories about the techniques, tools and motivations of Soviet space officials. They had precious few real clues to on, and the literature of the first few years is stocked full of fantastic stories about the “truth” behind the Soviet space program. Perhaps the program was being run by “smarter Germans” (it wasn’t); perhaps Russian missiles were launched on long ramps up mountainsides (they weren’t); perhaps the cosmonauts in orbit were only tape recorders (they weren’t!). In the absence of hard information, many similar stories were believable -- or at least could be made to appear so.

Probably the most interesting popular notion about the Soviet man-in-space program back in the early 1960s was that the announced flights were only the successful ones, and that a whole string of manned space shots had ended in failures which had killed the cosmonaut crews. These secret dead Russian spacemen have achieved near-mythic status, since reports about them are so widespread. The deaths of dozens of rocket technicians in the Nedelin catastrophe in October 1960 is now well documented -- but how about the in-flight deaths of several space pilots?

As a memorial to Russian and American space pilots who lost their lives in the course of their training or on actual space flights, the crew of the Apollo-15 moon expedition in 1971 left a plaque on the lunar surface, together with a small metal figurine representing a “fallen astronaut.” Eight Americans and six Russians are listed. But if one were to give any credence to the stories which circulated so widely in the early 1960s, that list of Russians would be considered incomplete. Additional

names would have to be added, names such Ledovskiy, Grachev, Belokonev and Dolgov. These and others allegedly were the names of Soviet cosmonauts who had perished on secret space missions whose fatal results were never revealed to the outside world.

Some were supposed to have lost their lives on suborbital flights in 1959. Others were trapped in orbit between May 1960 and February 1961, or were incinerated during rocket explosions. Even after Gagarin's flight, rumors continued about other unsuccessful attempts: in May 1961 a man and a woman were reported to have died in orbit; the following October a manned capsule was supposed to have been knocked off course by solar flares, whereupon it vanished into interplanetary space. Up to twenty such space disasters were described in the Western press.

With hindsight, it's easy to see how such stories came about (and stories they were -- there has never been the slightest indication that any of them were accurate). In the face of one Soviet space spectacular after another, juxtaposed with the humiliating explosions of American rockets, many people were eager to believe that the Soviets were suffering even worse disasters but were covering up. So whenever a mystery payload was launched (such as the first unmanned Vostok flight in May 1960, or an aborted Venus shot in February 1961), "reliable Western observers" began hinting that there were dead Russians on board, because the absence of official propaganda boasts was taken to prove the presence of some embarrassing malfunction.

Sometimes mysterious radio signals were picked up on frequencies used by Soviet space vehicles. (This was the strategy used by a pair of overeager Italian amateur radio listeners, the Judica-Cordeglia brothers, who singlehandedly wiped out an entire squadron of cosmonauts in the early 1960s.) Sometimes *any* signals from space would do. (In October 1961 a rumor was set off by the radio beacon of an American Discoverer satellite.) Sometimes an official Soviet news item would be misinterpreted, such as a magazine article in *Ogonyok* in October 1959 which portrayed men testing high-altitude aircraft equipment. When the men, who were incorrectly thought to be cosmonauts, failed to show up during



the Vostok series, observers decided they had perished secretly. Sometimes the stories came from presumably reputable sources, men such as Dr. Hermann Oberth, who claims he heard such stories while working for Wernher von Braun in America soon after Sputnik-1, and Oleg Penkovskiy, who reported in his journal that several “highly trained cosmonauts” had been launched into the stratosphere and were never heard from again.

The official Moscow space spokesmen repeatedly issued vehement denials. Aleksey Adzhubei, editor in chief of *Izvestia* by virtue of being Khrushchev’s son-in-law, denounced the reports in no uncertain terms in 1963: “These stories are concocted by American yellow journalists eager to outdo each other in defaming the Soviet Union.” General Nikolay Kamanin, director of cosmonaut training, also publicly denied the rumors -- a sure sign of Soviet sensitivity on the question. But the louder the Russians denied the stories, the more convincing the stories appeared.

The discomfiture of the Soviets is particularly ironic because they probably were really telling the truth. But by this point they had been caught in so many distortions and cover-ups regarding their space program that nobody doubted that they would try to lie their way out of any potential embarrassment about “secret dead cosmonauts” -- if there ever were any.

These dead-cosmonaut stories have been repeated and embellished for so long that there seems little hope of ever stamping them out. Columnist Drew Pearson endorsed them in 1962. Publications as diverse as *Fate*, *Reader’s Digest*, *U.S. News and World Report* and *Saga* magazine’s *UFO Report* have chronicled these deaths as established facts. Bob Conside’s news column on the secret space fatalities was read into the Congressional Record. A week after the Apollo fire which killed three astronauts in 1967, Washington political columnists Robert Allen and Paul Scott disclosed a “secret CIA report” which described five fatal Soviet flights and six fatal ground accidents the report would soon be released, the newsmen expected, “to demonstrate that the U.S. space program is still by far the safest.” These uncontrolled recyclings of the same old rumors underscore the point that people accept what they

like to believe and that believing in these space fatalities was comforting to many people in the West -- the stories “felt” true.

Today, none of these indications bears much weight. Just the opposite is true: a very convincing circumstantial case can be made that there were *no* Soviet in-flight fatalities in this period. As Dr. Charles Sheldon II, the Library of Congress’s leading authority on the Soviet space program, has put it: “We are asked to believe that in parallel with a public success program, which always brought its pilots back alive, the Soviets were also conducting a secret failure program, which always killed its pilots. That is hardly credible.”

This is not to say that some of the early cosmonaut candidates have not mysteriously disappeared. In fact, I’ve discovered evidence which clearly demonstrates that many of the original members of the Soviet cosmonaut cadre have become nonpersons due to injury, indiscretion or character flaw (or perhaps death -- in training, not in flight).

My discovery was made possible when, in their typical way, the Soviet space-news censors blundered badly. They had somehow authorized the publication of two different versions of the same group photograph. In one, the top six cosmonauts of the class of 1960 were shown smiling with leading space-training officials at Sochi, a resort on the Black Sea in the other version, there are only *five* cosmonauts -- one man had been airbrushed out of the middle of the back row. In his place was a shadowed rose bush.

And that was just the beginning. Other before-and-after photo pairs showed up after I made a careful search of Soviet books and magazines. Sometimes I found a sequence of re-touching stages: a backup cosmonaut stood behind Gagarin in one photo, but in the subsequent edition his face had been smudged away. This clumsy job was cleaned up in the final version of the scene when the *entire* background was blacked out.

Soon after the publication of the before-and-after cosmonaut photos in space magazines in the mid-1970s, the Soviets released an official explanation for the missing men. In the autobiography of Georgiy Shonin, one of the first cosmonauts

(the book was entitled *The Very First*), some remarkable revelations were made: the original cosmonaut class had had twenty members, of whom only twelve “graduated” to space flight. The eight dropouts left the program for various reasons, some medical, some academic. No other information about these men was published, except their first names: Ivan, Anatoliy, Dmitriy, Grigoriy, Mars (a Tatar), and three Valentins (distinguished as “Number One,” “Junior” and “Gramps”).

The first casualty occurred late in the summer of 1960, when the cosmonaut corps had been in existence only six months. Valentin “Number One,” the most promising cosmonaut candidate, injured his back while swimming in a shallow lake near the training camp. He spent a month in a hospital and recovered sufficiently to return to air force flying duty -- but his space career was aborted. This was particularly tragic since he was the only one of the group who had no trouble at all with the theoretical schooling given to the future cosmonauts. He was considered one of the best pilots and unquestionably the most intellectually brilliant of the group.

A second man, Anatoliy (who may be the erased face in the Sochi group photograph), was in training for the Vostok-3 flight in mid-1962 when he failed a 12-G centrifuge test. Shonin’s book says it was because of hemorrhages throughout his body; another cosmonaut attributed it to heart trouble. In any case, Anatoliy was grounded and replaced by his backup cosmonaut.

In mid-1962 there was also a purge of sorts. The junior Valentin faced a review board for “difficulty in adapting himself to the severe discipline which governed both work and leisure” of the cosmonaut corps. His expulsion evidently led to further unrest and a few months later he was followed by three more comrades, Ivan, Mars and Grigoriy. These four cosmonaut casualties seem to have left for a variety of academic and disciplinary reasons, but ideological unreliability may also have been part of it.

The third Valentin, nicknamed “Gramps” because of his relatively advanced age of thirty-eight, also failed a review board in 1962 -- but for medical reasons connected with his age. According to Shonin’s book, he was extremely well liked

by the other cosmonauts and they were sorry to see him go.

The last casualty did not leave the group until 1969, nine years after selection. Dmitriy, who had served on several backup crews and was about to command a Soyuz mission, failed a medical review board and was grounded.

“Yes, the road into space is difficult and thorny,” wrote Shonin (or, more likely, the political adviser to his ghost writer). “On this road there are not only victories but also defeats and even tragedies. Of the twenty people of the ‘Gagarin selection’ only eight still remain in our center. One died in space, another in the air, and still another on earth. Some nerves broke down; their health failed others. Such are the facts, such is life.” And such is the Soviet fetish for secrecy that these admissions came out only after the publication of the missing-cosmonaut retouched photos in Western magazines -- but Shonin’s book didn’t comment on that.

Still, the Shonin revelation may not be the whole truth, since it claimed that all eight men were still alive. Privately, Soviet cosmonauts have admitted that “six or eight” candidate cosmonauts had died in training between 1960 and 1975, and it would be surprising if they had all been from later groups. No, the Soviet response to the publication of the missing-cosmonaut photographs was intended only to save face, not to set the record straight. If that record showed that some of these young men were dead, we have no reason to assume that we are ever going to be told. The list of space casualties on the memorial moon plaque is still incomplete.

[Cut – section on Tereshkova flight]

Ceremonial duties were sufficient for Tereshkova, but by 1963 Gagarin was fed up with ribbon cutting, speech making and smiling into cameras. He kept insisting that he was a space pilot, not a diplomat, and that he wanted a chance to control a spacecraft, not just ride in one. Once there were additional cosmonaut heroes available for public display, Gagarin could be spared -- and he soon was assigned to a new space mission as a backup cosmonaut.

Early one morning in March 1968, Gagarin took off with a flight instructor for a routine jet proficiency flight. Other pilots

gathered at the airfield awaiting their turn with the two-seater training jet -- but Gagarin's flight became overdue. Search planes were sent out and soon spotted a column of smoke coming from a birch forest. Wreckage littered the trees; there were no survivors.

Since there had never been any call for help, investigators concluded that a mechanical failure had probably not been involved. The men had been flying at very high speed near the treetops and had suddenly nosed over and hit the ground. The accident report listed "pilot error." Less charitable gossip claimed that Gagarin had been drinking all night and was hot-rodding dangerously near the ground, but he was so close to flying again in space that it's hard to imagine him being so careless. He had been backup pilot on the disastrous Soyuz-1 mission a year earlier and had made brave speeches at that cosmonaut's funeral. He was young enough to be patient but old enough to be cautious. Neither helped.

Gagarin's remains were cremated and the ashes were placed in an urn which was to be inserted into a niche in the Kremlin Wall during a televised state funeral. Tereshkova and three other cosmonauts carried the flower-decked catafalque on which the urn rested. It was the second public cosmonaut funeral in less than a year. There were many more ahead.