



# Military Despatches

Vol 46 April 2021

## Coming to a battlefield near you

10 weapons and systems of the 21st century

## Surrender? Forget about it

Surprising responses to ultimatums to surrender

## "Let's go!"

Yuri Gagarin - the first man in space

## Reichsführer-SS Heinrich Himmler

Hitler's most loyal sycophant

*For the military enthusiast*



## Special Forces - Iraqi Special Operations Force

### Features

**6**

#### Ten weapons of the future

Military technology of the 21st century.

**16**

#### Happy birthday Uncle Syd

The South African Signals Association's oldest member, World War II veteran Sydney Ireland celebrated his 100th birthday in March.

**18**

#### Surrender? Forget about it

On given an ultimatum to surrender, some responses have been rather surprising to say the least. In this article we look at some of them.



**22**

#### Remembering Yuri Gagarin Pt 1

From humble beginnings to the first man in space! By **Regine Lord**.

**32**

#### Is that a fact

Some facts about World War I. Short, sharp and to the point.

**36**

#### Remembering Yuri Gagarin Pt 2

Memorial to Yuri Gagarin - the First Man in Space – unveiled at the southern tip of Africa. Article and photographs by **Regine Lord**.

**44**

#### Importance of role models

Sea Cadets invest in the youth's future - Officer Training 2021. By Lt Cdr Glenn von Zeil.

**48**

#### Rank Structure

Over the next few months we will be running a series of articles looking at the rank structure of various armed forces. This month we look at the Iraqi Armed Forces.

### Quiz

**35**

#### Nicknames

We give you the nickname of a famous military figure and you tell us who they are. Some of these nicknames were ones that the person did not approve of, but they stuck.

# Remembering Yuri Gagarin - Part One

*From humble beginnings  
to the first man in space!*

By REGINE LORD



**W**hen I was reading about the life of the first man in space, Yuri Alekseyevich Gagarin, what struck me immediately is that this young man – he was only 27 years old at the time of his space flight – came from such humble beginnings.

His family lived in a small village west of Moscow, in what was then the Soviet Union. His schooling was interrupted for several years during World War II when occupying Nazi soldiers, on their way to Moscow, evicted his family from their home.

He worked hard to overcome these challenges, throwing himself wholeheartedly into learning how to fly, and becoming an experienced fighter pilot. According to reports from family, friends, colleagues and fellow astronauts, he was a down-to-earth young man who remained calm and kept his sense of humour even under intense pressure.

After his return from space, he rubbed shoulders with government leaders, political officials and influential people around the world, but his fame as Cosmonaut No. 1 of the Soviet Union did not go to his head.

With his friendly smile, intelligent eyes, and boyish good looks, and his easy ability to connect with people, he captured hearts and minds everywhere. For the political leadership at the time, he was the embodiment of the ideal Soviet citizen – and the perfect poster boy for the Soviet space program.

## **Humble beginnings**

Yuri Alekseyevich Gagarin was born on 9 March 1934, in the small village of Klushino, Smolensk Oblast [‘oblast’ is a type of administrative division], about 200 km west of Moscow. His father Alexei Ivanovich was a carpenter, and his mother Anna Timofeyevna was a dairy farmer. Yuri was the third of four children.

When German Nazi forces advanced towards Moscow in November 1941, the village was captured. They evicted Gagarin’s family from their home and sent the two older siblings, Valentin and Zoya, as slave labour to Poland (they escaped and returned home in 1945 after the War ended). The family was permitted to construct a 3m x 3m mud hut on the land behind their house, where they lived for almost two years until the end of the occupation.

Yuri and his younger brother Boris did whatever they could to sabotage the garrison, by scattering broken glass on the roads, pushing potatoes up exhaust pipes of military vehicles, and generally causing mischief.

In 1946, after the end of WWII, the family moved their home to the nearby small town of Gzhatsk, 166 km from Moscow. They ‘moved home’ quite literally; they disassembled their house, physically relocated it, and re-constructed it in its new location. After Gagarin’s death in 1968, the town of Gzhatsk was re-named ‘Gagarin’, in honour of its most famous resident.

Yuri and Boris started going to school here; his favourite subjects were science and

mathematics. He was fascinated by airplanes, and was part of a group of children who built model aircraft. As a young child, he had witnessed a Yakovlev fighter plane crash-landing near Klushino, and the sight of the pilot emerging from the crashed plane reportedly made a huge impression on him, leading to a lifelong love of flying.

## **Learning to fly**

In 1950, at the age of 16, he enrolled at a vocational school in Lyubertsy, a city on the south-eastern outskirts of Moscow, where he entered an apprenticeship as a foundryman at a steel plant. At the same time, eager to further his education, he attended seventh grade evening classes at a local ‘young workers’ school. He graduated from both the following year.

Next, he underwent training at the Industrial Technical School in Saratov, a city on the Volga River, some 700 km southeast of Moscow. Here, he studied tractors, while earning money on the side as a part-time dock labourer on the Volga River.

More interestingly for Gagarin, however, Saratov had a local flying club, where he volunteered as a Soviet air cadet. He learned how to fly in a biplane and a Yakovlev Yak-18, which was a tandem two-seat military training aircraft. An amusing anecdote tells of how Gagarin, who was quite short in stature, struggled to master smooth landings – until his instructor gave him a cushion to sit on so that he had a better view of the runway!

After graduating from the Industrial Technical School in

1955, he was drafted into the Soviet Army and sent to study at the Air Force pilots aviation school in Orenburg, from which he graduated at the top of his class in 1957, with the title of Air Force Fighter Pilot. On the day of his graduation, he married Valentina Ivanovna Goryacheva, a medical technician, whom he had met earlier that year. They had two daughters, Yelena Yurievna Gagarina (1959) and Galina Yurievna Gagarina (1961).

His first posting was to the Luostari Air Base in Murmansk Oblast, near the Norwegian border. This fell under the Northern Fleet, whose headquarters and main base are at Severomorsk in the Soviet Arctic. Two years later, in November 1959, he was promoted to the rank of Senior Lieutenant.

## Soviet space programme

Gagarin applied to join the Soviet space program, joining a pool of 3,000 of the best pilots from all over the USSR. His small stature (1.57 m tall, weighing less than 72 kg) and youthfulness (the Central Flight Medical Commission was looking for pilots between 25 and 30 years old) counted in his favour. The extensive and rigorous – even gruelling – medical, physical and psychological testing whittled this number down to 20 potential candidates.

The experiments and examinations included oxygen starvation tests in which candidates were locked into isolation chambers, while the air was slowly pumped out; they were placed in a centrifuge to test their responses to high



**CLOSE STUDY:** The cosmonaut training group, including Gherman Titov (centre left) and Yuri Gagarin (centre 2nd left), are closely studying the equipment.

G-forces; they spent many days on their own in sound-proofed isolation chambers to test their psychological resilience. They were subjected to experiments with weightlessness, their endurance in heat chambers was assessed, and their reactions to stressful situations were carefully monitored.

During the intensive training that followed, Gagarin reportedly excelled at completing all the required tasks, while keeping a sense of humour and remaining calm under pressure. He was exceptionally fit and healthy, as well as mentally disciplined, intelligent, curious, and eager to learn. He was also very popular among his cohorts.

Because some of the candidates, including Gagarin, did not have higher education degrees, they enrolled in a correspondence course at the Zhukovsky Air Force Engineering Academy. He only graduated from this in February 1968 (a

month before his death), after successfully defending his aerospace engineering thesis on the subject of spaceplane aerodynamic configuration.

## The 'Chief Designer'

The head of the Soviet space program in the 1950s and 1960s was Sergei Pavlovich Korolev (1907 – 1966), who was a leading Soviet rocket engineer and spacecraft designer during the Space Race between the US and the USSR.

His name and identity were kept secret, to protect him from assassination attempts by the USA; he was officially only referred to as 'the Chief Designer' or by the initials 'S.P.'. Only after his death was his name revealed and did he receive the public recognition for his extraordinary ground-breaking work in Soviet space exploration.

Korolev's life had been turned upside down early in his career:

He was a hard-working disciplined man who was devoted to his work as chief engineer at the Jet Propulsion Research Institute (RNII), which designed and developed rockets.

In 1938, during Stalin's 'Great Purge', Korolev was arrested after being denounced by spiteful colleagues and accused of deliberately slowing down and sabotaging the RNII's work. Initially sentenced to death, he was instead sent to a Soviet Gulag labour camp in the far east of Siberia for some time, and exposed to such horrific conditions that he almost died.

After repeated appeals, his sentence was reduced, and he returned to Moscow – but not to be freed. Instead, he worked in a sharashka penitentiary for several years; these were secret research and development laboratories operating from the 1930s to the 1950s within the Soviet Gulag labour camp system. Korolev continued to work in his field (rockets and rocket motors) until his discharge in 1944.

Thereafter, he was appointed at a newly established research institute, which designed long-range and intercontinental ballistic missiles. Korolev's passion, however, was to get the Soviet Union's space program off the ground (quite literally), and his work culminated in the design of the R-7 Semyorka rocket, which would ultimately send Yuri Gagarin into space!

## **Preparing for the Vostok 1 mission**

A few days before the launch of the Vostok 1 mission, Yuri Gagarin was chosen as the pi-

lot, with his fellow cosmonaut Gherman Titov as backup, and Grigoriy Nelyubov in turn chosen as Titov's backup.

The son of a humble peasant family, intelligent and bright, with a disarming smile and calm demeanour, Gagarin was the perfect poster child of the Soviet space program.

Before his flight, Gagarin recorded the following stirring speech:

“Dear friends, both known and unknown to me, fellow Russians, and people of all countries and continents, in a few minutes a mighty spaceship will carry me into the far-away expanses of space.

What can I say to you in these last minutes before the start? At this instant, the whole of my life seems to be condensed into one wonderful moment. Everything I have experienced and done till now has been in preparation for this moment. You must realize that it is hard to express my feelings now that the test for which we have been training long and passionately is at hand.

I don't have to tell you what I felt when it was suggested that I should make this flight, the first in history.

Was it joy? No, it was something more than that. Pride? No, it was not just pride. I felt great happiness. To be the first to enter the cosmos, to engage single handedly in an unprecedented duel with nature - could anyone dream of anything greater than that?

But immediately after that I thought of the tremendous responsibility I bore: to be the first to do what generations of people had dreamed of; to be the

first to pave the way into space for mankind. This responsibility is not toward one person, not toward a few dozen, not toward a group. It is a responsibility toward all mankind - toward its present and its future.

Am I happy as I set off on this space flight? Of course I'm happy. After all, in all times and epochs the greatest happiness for man has been to take part in new discoveries.

It is a matter of minutes now before the start. I say to you, 'Until we meet again,' dear friends, just as people say to each other when setting out on a long journey. I would like very much to embrace you all, people known and unknown to me, close friends and strangers alike. See you soon!"

On the morning of 12 April 1961, Yuri Gagarin settled into the small spherical Vostok 3KA space capsule on top of a Vostok K rocket, preparing to be launched from Baikonur Cosmodrome in Kazakhstan. According to official records, he had slept well the night before, his pulse rate was steady and slow (64), and he seemed relaxed and calm. Korolev, in contrast, was fretting and worried, closely monitoring all the preparations at ground control, double-checking everything, and ensuring that no mishaps occurred.

Gagarin was wearing his orange SK-1 space suit and a helmet, with the letters CCCP painted on in red paint at the last minute. Someone had suggested, partly as a joke, that Gagarin could be mistaken for the pilot of an American spy plane if he landed somewhere unforeseen,

and officials promptly decided to paint the letters CCCP (the Russian abbreviation of the USSR) onto the front of his helmet, just in case.

The year before, on 1 May 1960, an American U-2 spy plane performing aerial reconnaissance deep inside Soviet territory had in fact been shot down by the Soviet Air Defence Forces over Sverdlovsk (Yekaterinburg), and the pilot (Captain Francis Gary Powers) had been captured. The subsequent cover-up by the Americans had caused great international embarrassment to the United States, and further strained relations with the Soviet Union.

So that was the reason why Gagarin's helmet sported the letters CCCP in red paint.

On their way to the launch site, Gagarin apparently asked the bus driver to stop in the middle of the steppe so that he could relieve himself. This story – possibly apocryphal – gave rise to the tradition of all subsequent astronauts flying out of Baikonur relieving themselves against the right rear tyre of the bus transporting them to the launch site. Female astronauts instead splash a vial of their urine against the tyre.

There are several other superstitions and traditions that originate from those early days of human space flight:

- Soyuz crews visit the memorial wall on the Cosmonauts' Avenue of the Moscow Kremlin to lay flowers.
- They sign the visitors' book in Yuri Gagarin's office, which is preserved as a museum at Star City.
- They plant a tree in the ave-

nue of trees behind the Cosmonaut Hotel in Baikonur; every person who has flown into space on a Soviet or Russian spacecraft has planted a tree here before departure.

- The Soyuz Launcher with the Soyuz capsule on top is rolled out on a special railway carriage exactly 48 hours before the launch; although it is considered bad luck for the crews to see this happening, their families, personnel and visiting guests always put coins on the railway track for good luck.
- The crew always gets a haircut two days before launch.
- The night before launch, they watch the 1970 Russian movie 'White Sun of the Desert'. This tradition dates back to the Soyuz 12 mission in 1973, when the crew watched the movie before take-off; as the previous Soyuz 11 mission had resulted in the death of the entire three-man crew in 1971 due to asphyxiation when a breathing ventilation valve had ruptured during their descent, and the subsequent Soyuz 12 mission was a success, the movie became a good luck charm!
- On launch day, crew members sign the door of their room at the Cosmonaut Hotel, and sip a glass of champagne.
- Once the crew is sitting inside the capsule, and waiting for the countdown to start, mission control plays some music for them; this tradition started when Gagarin

asked them to play some Russian love songs while he waited for the launch.

## Lift-off and orbit

Gagarin's exuberant exclamation "Поехали!" (Poyekhali!) – "Let's go!" – as the booster rockets of Vostok 1 ignited in a blinding flash of light and his spacecraft roared up into the heavens – has become legendary.

The name of the spacecraft, Vostok (Russian: Восток, translated as "East" or "Sunrise") and the timing of the launch in the early morning symbolised the dawning of a new age of space exploration.

His flight was a single orbit around the Earth, its trajectory taking him east across the Soviet Union, southeast across the Pacific Ocean, through the Straits of Magellan at the southern tip of South America, then northeast across Africa and the Middle East, before ending back in the Soviet Union.

Gagarin's entire mission was automatically controlled from mission control on the ground, as medical staff and engineers were uncertain how the human body would respond to the particular challenges of space flight, such as microgravity. Doctors were apparently fearful that he might become mentally unstable, unable to make rational decisions, and act erratically. The engineers added a three-digit security code that Gagarin would need to enter to enable him to take manual control of the spacecraft in an emergency; this was placed in a sealed envelope that he was handed just before take-off. As



**READY TO GO:** Yuri Gagarin and back-up cosmonaut Gherman Titov on the way to the launchpad on 12 April 1961.

it turned out, it wasn't necessary – and besides, both his instructor, as well as production designer Oleg Ivanovsky who escorted Gagarin to the capsule had revealed the secret code to him, just in case!

During his flight, Gagarin drank water, ate some space food from squeeze tubes, kept notes in his notebook (using a pencil, which he lost at some stage during the flight) and spoke into a tape recorder, describing what he observed through the capsule's window and the tasks he completed. He used a high-frequency radio and a telegraph key to communicate with ground control.

Gagarin's call sign was кедр ['Kedr' – meaning Siberian cedar], while the call sign for the launch site at Tyuratam (Baikonur) was Заря-1 ['Zarya-1' – meaning dawn]. There was a series of tracking stations along

the projected route; these used either VHF (Tyuratam, Kolpashchevo [Tomsk Oblast, central Russia], Yelizovo [Kamchatka Krai in the far east]) or HF (shortwave) (Novosibirsk [central Russia] and Khabarovsk [far eastern Russia]). Moscow used both VHF and HF. The reason why HF needed to be used was because the Soviet Union at the time did not have a fleet of tracking ships that could follow Gagarin's flight once he left Soviet territory.

During a press conference a few days after his flight, Gagarin gave a speech, which described in vivid detail what he saw through the window of his capsule:

“The view of the Earth from an altitude of 175-300 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.”

His entire speech can be found [here](#).

His craft reached a maximum height of 327 km above the Earth's surface, which is described as low earth orbit (LEO). It only emerged many years later that Gagarin's orbit had overshot the planned apogee (its highest point) of 230 km by almost 100 km; due to a faulty valve, the upper stage

engine worked longer than it should have. His spacecraft thus reached a height of 327 km, which could have had serious repercussions for his safe return to solid ground.

If the retrorocket system responsible for his reinsertion into the atmosphere had failed at the crucial moment, the Vostok 1's orbit would not have decayed naturally within a week to ten days, but only after 30 days. As Gagarin only had life support – air, food and water – for 10 days, he would not have survived this.

## Re-entry and landing

The mission almost ended in disaster.

After the de-orbiting burn, the re-entry module with Gagarin inside failed to disconnect from the service or instrument module beneath, to which it was connected by 'umbilical cables', and the two started to spin at high speed about their axes. At the same time, the friction with the Earth's atmosphere caused the heat shield to start burning and temperatures to rise rapidly inside the cabin; Gagarin almost lost consciousness. Thankfully, the re-entry module eventually broke free and stopped spinning, and Gagarin could re-orient it.

About 7 km from the ground, the hatch opened and Gagarin was ejected. Both his parachute and that of the capsule deployed, and both floated safely back down to Earth, about 26 km southwest of the city of Engels in the Saratov region (where he had first learned to fly!).

There was almost another

mishap when Gagarin's reserve parachute partly deployed, as the two parachutes could easily have become entangled. Additionally, he struggled for some six minutes to open a respiration valve on his helmet to enable him to breathe atmospheric air while floating down. Tense moments indeed!

He landed in open countryside, near the village of Smelovka, just east of the Volga River. According to Gagarin's own description, he almost touched down in the river itself, but luckily the wind gave him a bit of a push. Gagarin tells this lovely story in his logbook, of his encounter with a local woman, Anikhayat Takhtarova and her five-year-old granddaughter Rumiya Nurskanova:

"Having stepped onto firm ground, I saw a woman and a girl who were standing near a spotted calf and who were watching me with bewilderment. When they saw me in my space suit and the parachute dragging alongside as I walked, they started to back away in fear. I told them, don't be afraid, I am a Soviet like you, who has descended from space and I must find a telephone to call Moscow!"

From lift-off (09h07) to landing (10h55), his flight lasted 108 minutes. A Russian docudrama/biopic about Gagarin's flight on the Vostok 1 called Gagarin – First in Space, released in June 2013, has a running time of 108 minutes, thus approximating the length of his flight. Other sources have marked the landing at 10h53, stating that the flight in fact lasted 106 minutes.

It was this landing – by par-

achute, and separate from his capsule rather than inside it – that almost led to Gagarin losing the title of first man in space on a technicality.

The institution tasked with certifying this achievement, the Fédération Aéronautique Internationale (FAI, or in English, the International Air Sports Federation) had previously, in the 1950s, drafted guidelines for what constituted a spaceflight. These guidelines made it clear that the pilot/cosmonaut/astronaut had to land with (inside) his spacecraft (after all, the same rule applied to conventional flights in an aircraft).

When the Soviet Union submitted their official statement to the FAI, they declared that Gagarin had landed with the spacecraft. This was despite newspaper articles in the local press, in which witnesses said they had seen him parachute to earth; these were hurriedly confiscated by the KGB, as it would have contradicted the official story. Thus, Gagarin was officially recognised as the first man in space. Technically, however, he couldn't have landed inside the Vostok 1, as it did not have a braking system; so, the only and safest way to land, was for him to eject from his craft and for separate parachutes to deploy.

It was only after Gherman Stepanovich Titov's flight on Vostok 2 a few months later, on 6 August 1961, which involved a full day spent in orbit (17.5 orbits of Earth, to be precise), that flags were raised. Although the Soviet Union's official statement to the FAI was that Titov had landed with the spacecraft,



**LIFT OFF:** Take-off of the Vostok 3KA space capsule, mounted on top of a Vostok-K rocket, at Baikonur on 12 April 1961.

Titov himself publicly admitted that he had ejected from Vostok 2 and landed by parachute. This implied that Gagarin too had not landed inside his craft but parachuted to safety separately.

This revelation naturally caused a stir, leading to a special meeting of FAI delegates, who re-examined the records – and subsequently decided to change the guidelines rather than change the record books: They acknowledged that the greatest technological accomplishment of spaceflight was the launch, orbiting and safe return of the human being on-board, regardless of how they landed.

## Hero of the Soviet Union

A few days after his historic flight, Gagarin arrived in Moscow, where he was greeted by massive crowds, loudly cheering and waving hand-drawn pictures and large photographs of their heroic cosmonaut. They lined the surrounding streets and filled Red Square in front of the Kremlin, as a beaming Gagarin, standing on the balcony above Lenin's Tomb, next to Premier Nikita Khrushchev and

surrounded by party officials, waved cheerfully to the crowds.

He received the highest Soviet award from Premier Khrushchev – Hero of the Soviet Union, as well as the Order of Lenin, and an impressive list of further medals and awards.

During Gagarin's subsequent round-the-world tour of about 30 countries, he was greeted by cheering crowds everywhere. Everywhere except the United States, that is – US President John F Kennedy barred him from visiting the country.

During his visit to Manchester in the UK in July 1961, he made a huge impression on local residents, when, despite a torrential downpour, he insisted on standing in the car that was driving him around, with the roof up, so that the crowds could see him. He appealed equally to young and old, men and women. The Foundry Workers' Union even presented him with a medal and honorary membership, in recognition of his apprenticeship as a foundry worker. Gagarin's natural warmth and openness opened doors everywhere; he also cut a fine figure in his dashing military uniform! 50 years

later, in July 2011, a special plaque commemorating this visit was unveiled at Manchester International Airport.

All over, monuments were erected in his honour, and streets were named after him. The small town of Ghzatsk was renamed Gagarin. The launch pad from which Vostok 1 carried him into space is still called Gagarin's Start. A crater on the far side of the moon was named after him; even an asteroid in the asteroid belt, which was discovered in the year of his death, was given the name 1772 Gagarin. And, more recently, in March 2005, NASA's Mars Exploration Rover Opportunity used its rock abrasion tool to expose the interior of a rock called 'Gagarin', which is situated at a small crater that was informally named 'Vostok' in memory of his flight.

After his historic space flight and his tours around the world, Gagarin spent several years working at Star City (Zvyozdny gorodok), a closed military research and space training facility to the northeast of Moscow. Soviet and Russian cosmonauts have lived and trained here since the 1960s, and many Russian cosmonauts, past and present, and personnel of the training centre and their respective families, live here. Gagarin was working on designs for a reusable spacecraft, received the rank of Colonel in 1963, and became deputy training director of the Cosmonaut Training Centre, which was later named after him.

## The Soyuz 1 disaster

Even though Gagarin was

eager to return to space, the government refused to allow it. However, he did train as back-up crew for Soyuz 1 (the word Союз means 'Union'), which was to be piloted by his close friend and fellow cosmonaut Vladimir Mikhaylovich Komarov. On 12 October 1964, Komarov had successfully commanded the three-man mission onboard Voskhod 1, which was the first spaceflight with more than one crew member. Komarov and his fellow cosmonauts Boris Yegorov and Konstantin Feoktistov completed 16 orbits in space aboard Voskhod 1.

The launch date for the Soyuz 1 mission was 23 April 1967. A plethora of serious problems with the spacecraft should have postponed the launch, but the new Premier Leonid Brezhnev (who had replaced Khrushchev in a coup in 1964) and the Politburo were very insistent that it go ahead regardless. The Chief Designer of the Soviet space program, Sergei Korolev, had died in 1966, leaving a power vacuum; Vasily Michin had been chosen as his successor. The launch of Soyuz 1 was the first crewed flight since Korolev's death.

The mission plan was complex and very ambitious: it involved the launch of a second craft – Soyuz 2 – the next day, a rendezvous in space during which two astronauts from Soyuz 2 were supposed to spacewalk to Soyuz 1, and then the return of both capsules to Earth.

Unfortunately, it all went tragically wrong, with multiple system failures onboard the Soyuz 1. A solar panel failed



**HERO:** Soviet Premier Nikita Khrushchev and Yuri Gagarin arriving at Vnukovo Airport in Moscow, on 14 April 1961, after Gagarin's historic flight.

to unfold, leading to a shortage of power; orientation detectors malfunctioned; the automatic stabilisation system failed; the manual system was only partly working. Due to heavy storms at Baikonur, the launch of Soyuz 2 was scrubbed. Komarov in Soyuz 1 got the retrorockets to fire after 18 orbits and successfully re-entered the atmosphere.

But, tragically, things kept going wrong. Although the drogue parachute deployed, it did not detach as required; the main parachute did not unfold, and the manually deployed reserve parachute became entangled with the drogue. As a result, the capsule crash-landed on Earth at 140 km/h – an impact no one could survive. And finally, the retrorockets, which should have fired before touchdown to ensure a soft landing, only started firing once the craft had already crashed. When the raging inferno was finally extinguished by the ground crew, nothing much remained of Komarov's body.

It was an absolutely devastating loss of a talented, dedicated and experienced cosmonaut.

Tragically, Komarov's death had been avoidable – if more care had been taken with the design and construction of the spacecraft, if more checks and balances had been in place, if there hadn't been such relentless pressure put on the scientists and engineers to launch by a certain deadline, and if the politicians and people in power had bothered to listen to those actually working on the spacecraft and well aware of the multiple fatal flaws and problems.

But then, politicians seldom do.

And during the Cold War, with all its secrets and lies, propaganda and conspiracies, coupled with the political urgency of beating the USA in the conquest of outer space, it is perhaps not surprising that this tragedy happened.

## Gagarin's death

After the Soyuz 1 crash, Gagarin was permanently banned from participating in any further spaceflights. But they could not keep him away from his beloved planes. Sadly, less than a year later, on 27 March 1968, tragedy struck again. Yuri Gagarin and flight instructor Vladimir Seryogin were killed while piloting a MiG-15 jet fighter.

Out of the swirling mists of speculation and secrecy emerged various theories about the reasons for the crash. It was only revealed many years later, in June 2013, that the accident had most likely been caused by a Sukhoi fighter jet that, due to bad weather, had been flying too close to the MiG at supersonic speed; the turbulence created by its backwash had sent Gagarin's jet into a spiral,

plunging it into the ground.

Gagarin, who had been born on 9 March 1934, died just a few weeks after celebrating his 34th birthday. His body and that of fellow pilot Seryogin were cremated and their ashes placed in the Kremlin Wall necropolis, where his friend and fellow cosmonaut Vladimir Komarov had been interred in April the previous year. The funeral was attended by hundreds of thousands of grieving mourners, and people across the world shared their grief.

In his short but extraordinary life, Yuri Alekseyevich Gagarin had been the first human being on the planet to fearlessly launch himself into the darkness of space beyond the protective embrace of Earth's atmosphere – and return safely home.

Although he was a Soviet citizen by birth, and rightfully

revered by the Soviet people, he became a hero for the entire world. At a time when Cold War tensions between the USA and the Soviet Union threatened to boil over into mutual nuclear destruction, his amazing feat brought together and united people all around the globe.

As the inscription beneath his memorial reads, that now stands at the SANSa Space Science Centre in Hermanus:

“Orbiting Earth in the spaceship, I saw how beautiful our planet is. People, let us preserve and increase this beauty, not destroy it. – Y. Gagarin”.

His flight onboard the Vostok 1 burnt a blazing trail of fire across the skies that, still today, inspires hundreds of cosmonauts and astronauts who are following in his footsteps.

